RICE Journal

of Creative Entrepreneurship and Management

VOLUME 5 NUMBER 1
JANUARY-APRIL 2024
ISSN 2821-9074 (Online)
ISSN 2730-2601 (Print)
https://ricejournal.rmutr.ac.th

ISSN 2821-9074 (Online)
ISSN 2730-2601 (Print)

RJCM

RICE JOURNAL OF CREATIVE ENTREPRENEURSHIP AND MANAGEMENT

Rattanakosin International College of Creative Entrepreneurship (RICE)
Rajamangala University of Technology Rattanakosin (RMUTR), Thailand

Volume 5, Number 1, January-April 2024

Published by:
Rattanakosin International College of Creative Entrepreneurship (RICE)
Rajamangala University of Technology Rattanakosin (RMUTR), Thailand

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RICE Journal of Creative Entrepreneurship and Management (RJCM)
Rattanakosin International College of Creative Entrepreneurship (RICE)
Rajamangala University of Technology Rattanakosin (RMUTR)

About Us

RJCM is an international journal for academics and scholars at the higher education level to communicate and share their viewpoints and academic work with fellow professionals in the areas of creative entrepreneurship and management as practiced in their fields of specializations in social sciences. Currently, it is classified as Tier 2 in Thai-Journal Citation Index (TCI).

RJCM publishes three numbers per volume annually and welcomes contributors to submit their manuscript in January, May, and September of each year. We accept both academic and research papers in social sciences from contributors. The papers are double-blind three-peer-reviewed in each volume and published online-plus-print thrice a year.

The length of the unformatted manuscript in WORD can be 15-25 pages in length including references. The contents of the manuscript should include (1) a title with the author's name, affiliate, email address and telephone contact, (2) an abstract of 150 words with 3-5 keywords, (3) an introduction, (4) a rationale and background of the study, (5) research objectives, (6) research methodology, (7) data collection procedure, (8) data analysis, (9) results and discussion, (10) research limitation (if any), (11) conclusion, (12) acknowledgement(s) (if any), (13) the author's biography of about 50-80 words, 14) references, and (15) an appendix or appendices (if any).

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RICE Journal of Creative Entrepreneurship and Management (RJCM)
Rattanakosin International College of Creative Entrepreneurship (RICE)
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Note from the Editors of *RJCM* Volume 5 Number 1

Dear *RJCM* Readers,

You are now with our first issue in Year 5 of *RICE Journal of Creative Entrepreneurship and Management* (*RJCM*). This issue contains six articles in the areas of consumers' awareness and purchase intentions, community-based tourism, learning management system development, and the use of artificial intelligence in marketing and education.

In this issue, we have two papers on consumers' awareness and purchase intentions: *"The Factors that Affect Consumer Product Awareness and Sentiment in the Age of Internet Celebrity Economy" (Article 1)*, and *"Consumers' Behavioral Intentions for Rural Tourism in Sichuan Province" (Article 2)*. One paper is on community-based tourism--*""Creative Community Tourism Development Based on Kudeejeen Community Identity, Thailand"* (Article 3), and another on learning management system development--*""The Development of a Learning Management System Platform on Historical Buddhist Plant Species in School Botanical Gardens in Thailand"* (Article 4). There are two papers on the use of artificial intelligence in marketing and education: *"Artificial Intelligence for Marketing"* (Article 5) and *"Information Technology for School Guidance"* (Article 6). As for *Sharing Professional Viewpoint*, the author shared her concern over production and education: *"The Integration of Production and Education for Chinese Talent Training in the Vocational Colleges"* These papers report interesting findings and current issues in the areas under study.

Our paper contributors in the first issue of 2024 are researchers from four higher education institutions in the central and northern provinces of Thailand: (1) Ramkhamhaeng University, (2) Bansomdejchaopraya Rajabhat University, (3) Uttaradit Rajabhat University, and (4) Rajamangala University of Technology Rattanakosin.

The editors-in-chief hope that the research findings and current developments reported in these papers will be interesting to both researchers and practitioners in similar fields of study. The *RJCM* editorial team and the authors would appreciate our readers' comments about these articles, if possible. We always welcome contributions from those who may wish to be part of our *RJCM* network.

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Address from RICE Director

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Dear *RJCM* Readers,

We have currently witnessed more of the role of AI in the paths of work and life worldwide. Business developments and education practices rely more on AI as smart assistants to reach the ultimate goals either on sustainability or continuous growth in human abilities in all fields of work and study. However, despite the positive claim on the applications of the information technology for the great good of mankind, there has been public agitation with the ethical use of human-like devices. Business developers as well as scholars are affected by AI in its transformative ability to generate creative and academic work as desired. Cybercrimes and fraud cases are flourishing to benefit those who use AI for ill purposes. In both business and education, people need to communicate cautiously with their counterparts, colleagues, and students in new AI-oriented contexts. Such disruptions have led to new business models for entrepreneurs and new teaching-learning modes as innovations that inevitably come with necessity and time.

As new innovative developments evolving out of the huge circle of technology applications, developers, scholars and researchers have conscientiously worked toward their goals by adding new knowledge and research findings to the existing source of knowledge and specialization. In this regard, the articles contributed to *RICE Journal of Creative Entrepreneurship and Management* in the AI era will reveal new dimensions under investigation in the business/ academic communities at both the local and international levels.

I feel much obliged to all the authors for contributing the betterment of their work to academic communities. Your research in different fields of creative entrepreneurship and management certainly supports sharing and bridging academic interests of all stakeholders.

ISSN 2821-9074 (Online)
ISSN 2730-2601 (Print)
RICE Journal of Creative Entrepreneurship and Management, Vol. 5, No.1, pp. 1-16,
January-April 2024

doi: 10.14456/rjcm.2024.1
Received 16.09.23/ Revised 18.03.24/ Accepted 28.03.24

The Factors that Affect Consumer Product Recognition and Sentiment in the Age of Internet Celebrity Economy

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Abstract

The rise of new information technology and the development of mobile internet have brought attention to the emerging form of business known as Internet celebrity economy. This article introduces the background and development of this economy, emphasizing its role in promoting market growth. As a marketing tool with wide influence and product recommendation abilities, Internet celebrities play an important role in guiding consumers' recognition and emotions toward products. Through literature review and theoretical analysis, we used the AISIA model to construct a research model for studying the impact of Internet celebrity economy on consumer product recognition and emotions. We collected relevant data through questionnaire surveys for statistical analysis to verify our research hypothesis. The results from 420 responses showed that there was a significant positive correlation between internet celebrities' recommendation, influence, professionalism, reputation, consumers' product recognition, and their emotional response toward products recommended by them. This indicates that enterprises should fully utilize the influence of internet celebrities by cooperating with them to enhance product awareness while actively upgrading consumers' level of product knowledge. The results also revealed influential online personalities with good reputations having a positive effect on customers' emotional response toward products recommended by them. Therefore, enterprises can use this finding by collaborating with such personalities so as to promote customers' active consumption attitude toward their products. Suggestions are made for enterprises to recognize the important role played by online influencers, monitor and evaluate marketing strategies for effectiveness in sustaining enterprise growth.

***Keywords*:** Internet celebrity economy, consumer product recognition, consumer sentiment, AISIA model.

1. Introduction

1.1 Research Background

The rapid development of the internet has led to the emergence of new business forms, including the internet celebrity economy (Yuan & Xie, 2016). In today's digital age, this economy has become a significant force in consumer markets. With social media's popularity and increased user engagement, individuals or groups with extensive influence and fan followings--known as internet celebrities--have become crucial in shaping consumer cognition and emotion (Wang, 2007). Consumers' perception and emotions toward these celebrities not only directly affect their level of product recognition but also play a vital role in purchase decisions. This has strengthened the ranks of internet celebrities and gradually formed an internet celebrity economy (Xie, 2021).

Despite its growing strength, many mysteries still surround how it influences consumers' product cognition and emotions. In this regard, this article aims to explore four questions related to this topic: (1) How do recommendations from internet celebrities impact consumers' product recognition? (2) What is the effect of an internet celebrity's reputation and professionalism on consumers' product recognition? (3) How do recommendations from individual units led by internet celebrities affect consumers' emotions? (4) What is the impact of an individual unit led by an internet celebrity's reputation and professionalism on consumers' emotions? By analyzing factors, such as recommendations from Internet celebrities, personal reputations, professionalism, and personal influence, this article aims to delve deeper into understanding factors influencing consumer cognition and emotion within the Internet Celebrity Economy. It fills gaps in related research fields while expanding theoretical knowledge about Internet Celebrity Economy, enriching relevant research areas for consumer behavior and marketing studies, helping businesses and marketers better understand customer needs, and optimizing product promotion strategies to improve market competitiveness while achieving commercial goals.

1.2 Research Objectives

(1) Examine Consumer Awareness: Explore how consumers become aware of products in the age of the Internet celebrity economy. This involves investigating the role of internet celebrities (or "internet celebrities," also known as "net idols" or "网红" in Chinese) in promoting products and capturing consumer attention.

(2) Analyze Consumer Sentiment: Investigate the emotional and cognitive responses of consumers toward products that are endorsed or promoted by internet celebrities. This includes assessing the impact of internet celebrities' content, trustworthiness, or persuasive ability on consumer sentiment.

(3) Identify Influencing Factors: Identify and analyze the various factors that play a role in shaping consumer awareness and sentiment. These factors cover the characteristics of internet celebrities, the content they create, the platforms they use, or the specific product attributes.

The researchers expected that understanding the internet celebrity economy and its influence on consumer behavior can shed light on the evolving dynamics of digital marketing and e-commerce in the context of social media and internet celebrities. This is also to provide practical insights and implications for businesses and marketers aiming to leverage the internet celebrity economy for product promotion and sales as strategies for enhancing consumer awareness and sentiment.

2. The Current State of Research on the Economy of Internet Celebrities

With the rapid development and widespread use of the internet, the economy of internet celebrities has emerged as a new form of business (Chen, Zhang & Guo, 2020; Lucas, 2020). This commercial model leverages the public influence and popularity of online personalities to generate economic benefits through specific monetization channels. Online celebrities engage their fans via social media platforms, utilizing carefully planned marketing methods to achieve product promotion, brand building, and sales growth goals (Cui, 2015). It is worth noting that this business model extends beyond individual online celebrities to encompass the entire industry chain centered around them. The internet celebrity economy is a complex phenomenon. Social media and other online platforms have made it easy for ordinary people to showcase themselves and develop personal brands, leading to the emergence of internet celebrities who attract large numbers of fans (Li & Yuan, 2016). This has created commercial opportunities that businesses and individuals are actively exploring through an influencer-based economic model. The influencer economy's precise marketing characteristics allow influencers or their operators to pursue economic benefits through specific monetization methods (Liu, 2020). By interacting with fans on social media using carefully planned marketing strategies, they can target consumers' product awareness and purchasing decisions, gaining competitive advantages in market competition (Bai, 2016).

However, there are also some challenges associated with the influencer economy. The increasing number of influencers has led to intense content creation competition, resulting in lack of originality or uniqueness (Robert & John, 1982; Lucas, 2020). Additionally, excessive pursuit of economic interests may cause quality degradation leading gradually decreasing fan loyalty (Yang, Zhou, Niu & Chang, 2017). Despite these challenges, the Influencer Economy presents itself as having rapid developmental momentum while its precise marketing characteristics make it an important driving force for market economic development (~~Cui, 2008;~~ Liu, Zhao & Long, (2020). In this regard, issues, such as lack of originality and declining fan loyalty require attention if this industry is to continue thriving under rapid Internet development background.

3. Research Methods

The AISIA model is a unique approach to studying the economy of internet celebrities. It combines the AIDA and PISIA models, which respectively focus on four stages--Attention, Interest, Desire, and Action--that describe consumer behavior during the purchasing process, and five elements--Perception, Interest, Sentiment, Intention, and Action--that analyze decision-making in social media environments. By merging these two models together into one cohesive framework for analysis, the AISIA model provides a comprehensive understanding of how consumers interact with internet celebrities online (Luo, 2002).

This study examines the impact of the "Internet celebrity economy" on consumer product cognition and emotions. The AISIA consumer model focuses on how social media influences consumer behavior, while the Internet celebrity economy affects consumers through social media platforms. Therefore, the AISIA model provides a relevant framework for understanding how the Internet celebrity economy impacts consumer product cognition and emotions. Additionally, this model considers multiple important influencing factors, such as internet celebrities' recommendations, influence, professionalism, reputation, as well as consumer product cognition and emotions. This comprehensive framework allows for a thorough analysis of how the internet celebrity economy affects consumer behavior from various perspectives by explaining relationships between related variables. Thus, this research uses the AISIA model to investigate how "Internet Celebrity Economy" influences consumers' product cognition and emotions in order to verify hypotheses. In this study, the researchers used a random sampling method to collect online data from 420 consumers in Beijing. Their multiple responses to the same question were excluded. (See Section 4.1 Descriptive Statistics of Questionnaire Results.)

3.1 The Hypothesis and Model of the 'Internet Celebrity Economy' on Consumer Product Awareness and Emotions

The following hypotheses are proposed as shown in Table 1.

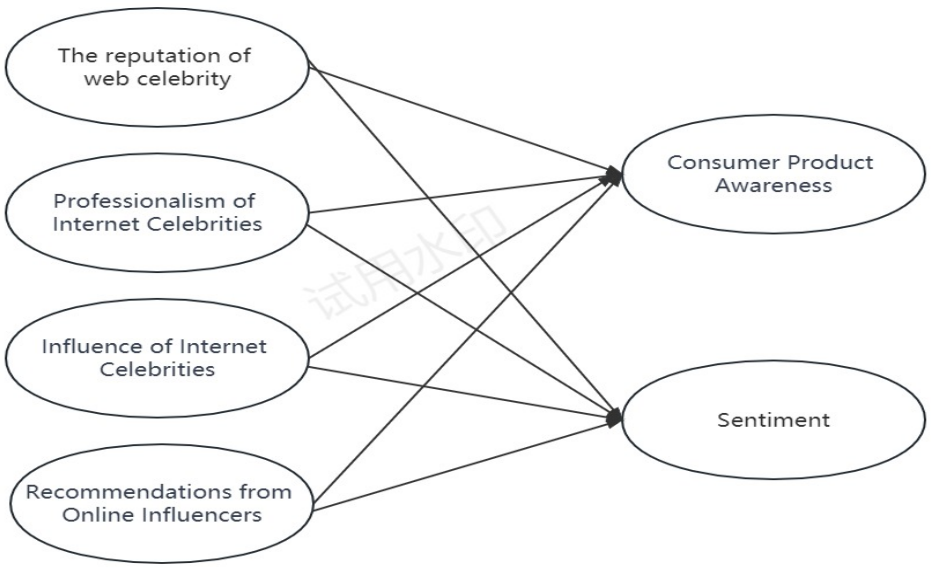
Table 1: Summary of Assumptions

No.	Assumptions Based on Six Key Factors
H1	The *influence* of Internet celebrities has a positive impact on *product awareness.*
H2	The *credibility* of Internet celebrities has a positive impact on *product awareness.*
H3	The *professionalism* of Internet celebrities has a positive impact on *product awareness.*
H4	The *recommendations* of Internet celebrities have a positive impact on *product awareness.*
H5	The *influence* of Internet celebrities has a positive impact on *consumer attitudes.*
H6	The *credibility* of Internet celebrities has a positive impact on *consumer attitudes.*
H7	The *professionalism* of Internet celebrities has a positive impact on *consumer attitudes.*
H8	The *recommendations* of Internet celebrities have a positive impact on *consumer attitudes.*

3.2 Research Hypothesis Model

Based on the theoretical hypotheses mentioned above, the causal relationship diagram illustrating the influences is depicted in Figure 1.

Figure 1: Based on the Consumer AISIA Model



3.3 Questionnaire Design

The scale design of this study consists of 6 latent variables and 19 items based on the five dimensions mentioned earlier. The questionnaire is divided into two sections: the first section includes demographic information of the participants, while the second section consists of measurement items to assess the latent variables in the proposed model. The scale adopts a Likert five-point rating scale, where respondents rate each item based on their own perspective: 1=completely disagree, 2=disagree, 3=neutral, 4=agree, 5=completely agree (Bin, 2006)

4. Results

4.1 Descriptive Statistics of Questionnaire Results

In this study, a random sampling method was used to collect data from consumers in Beijing. A total of 450 questionnaires were collected and screened manually. Samples with completion times that were too short or multiple responses to the same question were excluded, resulting in 420 valid questionnaires. The questionnaire validity rate was 94%.

Table 2: Basic Characteristics of Samples

Project	Item	Number of Persons	Proportion/%
Gender	Male	179	42
	Female	240	58
Age	20 years old and below	59	14
	21-25 years old	80	19
	26-30 years old	84	20
	31-35 years old	80	19
	36-40years old	42	10
	40 years old and above	75	18
Residential area	Chaoyang District	122	29
	Dongcheng District	143	34
	Xicheng District	93	22
	Haidian District	62	15
Watching a live stream	Yes	361	86
	No	59	14
Average monthly online shopping expenditure	1000 CNY or below	75	18
	1001 CNF to 2000 CNY	150	36
	2001 CNY to 3000 CNY	84	20
	3001 CNY to 4000 CNY	46	11
	4001 CNY to 5000 CNY	33	8
	Above 5000 CNY	32	7

Based on the descriptive statistics of demographic variables, there are more consumers who typically watch live broadcasts featuring internet celebrities. Additionally, the proportion of female respondents is slightly higher than that of male respondents, indicating a relatively high level of awareness among participants. The majority of respondents expressed their interest in watching live broadcasts by internet celebrities, suggesting that such broadcasts hold significant influence and popularity among consumers. Furthermore, research findings on shopping frequency demonstrate that there is a consistent and substantial demand for shopping among consumers in Beijing.

4.2 Data Analysis of Questionnaire Results and Research Model Hypothesis Testing

4.2.1 Reliability analysis

Table 3: Results of the Reliability Analysis for Each Variable

Variable Names	Reliability of Variable
Product Awareness	0.914
Consumer Attitudes	0.872
The reputation of web celebrity	0.872
Professionalism of Internet Celebrities	0.889
Influence of Internet Celebrities	0.863
Recommendations from Online Influencers	0.884

validates their use for further analysis.

Reliability analysis is used to examine the stability and reliability of a scale. Before analyzing questionnaire data, it is necessary to test the stability and validity of the scale. Cronbach's α coefficient is commonly used to measure the reliability of a scale, where a higher coefficient indicates better reliability. A reliability coefficient between 0.7 and 0.9 is considered acceptable, while a coefficient below 0.7 indicates a need for scale revision. In this study, the computer-based statistical software was used to examine the scale data, and the Cronbach's α coefficients are presented in Table 4. All coefficients are higher than 0.7, indicating a high level of data reliability, which validates their use for further analysis.

4.2.2 Validity analysis

Validity can be divided into four types: content validity, construct validity, convergent validity, and discriminant validity (China Publishing House, 2000):

(1) Content validity: The method for testing content validity should be referenced from relevant literature sources.

(2) Construct validity: The methods commonly used to test construct validity are exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). EFA is a

dimensionality reduction technique that involves conducting tests such as the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity to determine if the data is suitable for factor analysis. If the fit is satisfactory, CFA can be performed to assess the construct validity. The KMO test coefficient is calculated to compare the simple correlations and partial correlations between variables, with values ranging from 0 to 1. A higher KMO value indicates stronger correlations among variables. Typically, a KMO value greater than 0.6 indicates suitability for factor analysis. The validity verification using KMO and Bartlett's tests is presented in Table 5, with a KMO value of 0.825. Since the KMO value is greater than 0.8, the research data is highly suitable for information extraction.

Table 4: Results of Validity Analysis

KMO and Bartlett's Test		
KMO Data		0.825
Bartlett's Sphericity Test	Approximate Chi-Square	2366.780
	df	171
	p	0.000

Table 5: The Factor Loading Coefficients and the AVE and CR Indicators of the Model

Factor	Measurement Items (Manifest Variables)	Std. Estimate	AVE	CR
Product Awareness	A1	0.855	0.697	0.902
	A2	0.879		
	A3	0.804		
	A4	0.799		
Consumer Attitudes	B1	0.799	0.687	0.868
	B2	0.860		
	B3	0.826		
The reputation of web celebrity	C1	0.801	0.692	0.871
	C2	0.848		
	C3	0.845		
Professionalism of Internet Celebrities	D1	0.851	0.705	0.877
	D2	0.843		
	D3	0.825		
Influence of Internet Celebrities	EE1	0.839	0.678	0.863
	EE2	0.841		
	EE3	0.789		
Recommendations from Online Influencers	F1	0.872	0.721	0.886
	F2	0.848		
	F3	0.827		

(3) The method used to test convergent validity is generally Confirmatory Factor Analysis (CFA), which involves examining indicators, such as CR (Composite Reliability) and AVE (Average Variance Extracted). CR assesses the internal consistency of the construct, similar to Cronbach's α coefficient. A higher CR indicates higher internal consistency and stronger convergence. The typical threshold is >0.7. AVE represents the average amount of variance that is extracted by the latent variable and reflects the construct's ability to explain the observed variables. A higher AVE indicates higher convergent validity. The typical threshold is >0.5. In this study, CFA analysis was conducted on the five constructs of consumer acceptance: Technology acceptance, perceived usefulness, perceived ease of use, intention to use, and actual usage behavior. All factor loadings were above 0.7, indicating significance. The CR values were above 0.8, and the AVE values were above 0.5 for all constructs, demonstrating their convergent validity, as shown in Table 6.

(4) Discriminant Validity: Discriminant validity is generally assessed through the comparison of the Average Variance Extracted (AVE) values and the results of correlation analysis in Confirmatory Factor Analysis (CFA). The purpose of discriminant validity is to ensure that the correlations within dimensions are higher than the correlations between dimensions. The results are shown in Table 7: For the dimension of Technological Features, the square root of AVE is 0.835, which is greater than the maximum absolute value of inter-factor correlations (0.369), indicating good discriminant validity. For the dimension of Perceived Usefulness, the square root of AVE is 0.829, which is greater than the maximum absolute value of inter-factor correlations (0.379), indicating good discriminant validity. For the dimension of Perceived Ease of Use, the square root of AVE is 0.832, which is greater than the maximum absolute value of inter-factor correlations (0.495), indicating good discriminant validity. For the dimension of Intention to Use, the square root of AVE is 0.840, which is greater than the maximum absolute value of inter-factor correlations (0.059), indicating good discriminant validity. For the dimension of Usage Behavior, the square root of AVE is 0.849, which is greater than the maximum absolute value of inter-factor correlations (0.059), indicating good discriminant validity.

4.2.3 Structural Equation Model Analysis of Unmanned Store Acceptance Research

Structural Equation Modeling (SEM) is a multivariate statistical method based on the covariance matrix of variables, used to analyze the relationships between variables. It is suitable for studying the mediating effects and causal relationships among multiple independent and dependent variables. The combination of the Technology Acceptance Model and Structural Equation Modeling allows for the logical investigation of influencing factors based on reasonable hypotheses, while also verifying the significance and scientific validity of the hypotheses.

Table 6: Discriminant Validity: Discriminant validity Assessed by Using Pearson Correlations and the Square root of Average Variance Extracted (AVE) Values.

	Product Awareness	Consumer Attitudes	Influencer Recommendations	Influence of Internet celebrities	Professionalism of influencers	Influencer credibility
Product Awareness	0.835					
Consumer Attitudes	0.301	0.829				
The reputation of web celebrity	0.305	0.386	0.832			
Professionalism of Internet Celebrities	0.295	0.357	0.267	0.840		
Influence of Internet Celebrities	0.369	0.379	0.495	0.271	0.824	
Recommendations from Online Influencers	0.173	0.139	-0.046	0.071	0.059	0.849

Table 7: Model Fit Indices Statistics

Common indicators	$\chi 2$	*df*	*p*	$\chi 2/df$	GFI	RMSEA	RMR	CFI	NFI	NNFI
Judgment criteria	-	-	>0.05	<3	>0.9	<0.10	<0.05	>0.9	>0.9	>0.9
value	159.248	138	0.104	1.154	0.927	0.027	0.043	0.991	0.935	0.989
Other indicators	TLI	AGFI	IFI	PGFI	PNFI	SRMR				
Judgment criteria	>0.9	>0.9	>0.9	>0.9	>0.9	<0.1				
value	0.989	0.900	0.991	0.673	0.755	0.032				

Default Model: $\chi 2(171)=2463.023$, $p=1.000$

Note: The blue numbers along the diagonal represent the square root of AVE values.

4.2.4 Structural Equation Model Fitting Effect Fitness Test

To ensure the applicability of the model, it is necessary to test the model fit. The fitting results obtained using SPSS 2.0 software are shown in Table 8. The test results all meet the standard, indicating that the structural equation modeling used in this study is appropriate for the data analysis.

4.2.5 Analysis of Structural Equation Modeling Results

Using SPSS2.0, the exploratory and confirmatory analysis of the model's causal relationships was conducted. The standardized path coefficients and their significance were obtained, as shown in Figure 2 and Table 9. The model fit results indicate that all

hypotheses are supported, and the summarized results are presented in Table 10.

Table 8: Model Regression Coefficients Summary Table

X	Y	Unstandardized Path Coefficients	*SE*	*z* (CR value)	*p*	Standardized Path Coefficients	Result
The reputation of web celebrity	Product Awareness	0.138	0.068	2.024	0.043	0.146	significant
Professionalism of Internet Celebrities	Product Awareness	0.169	0.061	2.791	0.005	0.181	significant
Influence of Internet Celebrities	Product Awareness	0.240	0.072	3.331	0.001	0.239	significant
Recommendations from Online Influencers	Product Awareness	0.143	0.058	2.457	0.014	0.152	significant
The reputation of web celebrity	Consumer Attitudes	0.224	0.067	3.370	0.001	0.234	significant
Professionalism of Internet Celebrities	Consumer Attitudes	0.221	0.059	3.740	0.000	0.234	significant
Influence of Internet Celebrities	Consumer Attitudes	0.195	0.070	2.769	0.006	0.192	significant
Recommendations from Online Influencers	Consumer Attitudes	0.116	0.057	2.039	0.041	0.122	significant

Remarks: → Indicates the path influence relationship

Figure 2: Structural Equation Model of "Web Celebrity Economy" for "Consumer Product Cognition and Consumer Sentiment"

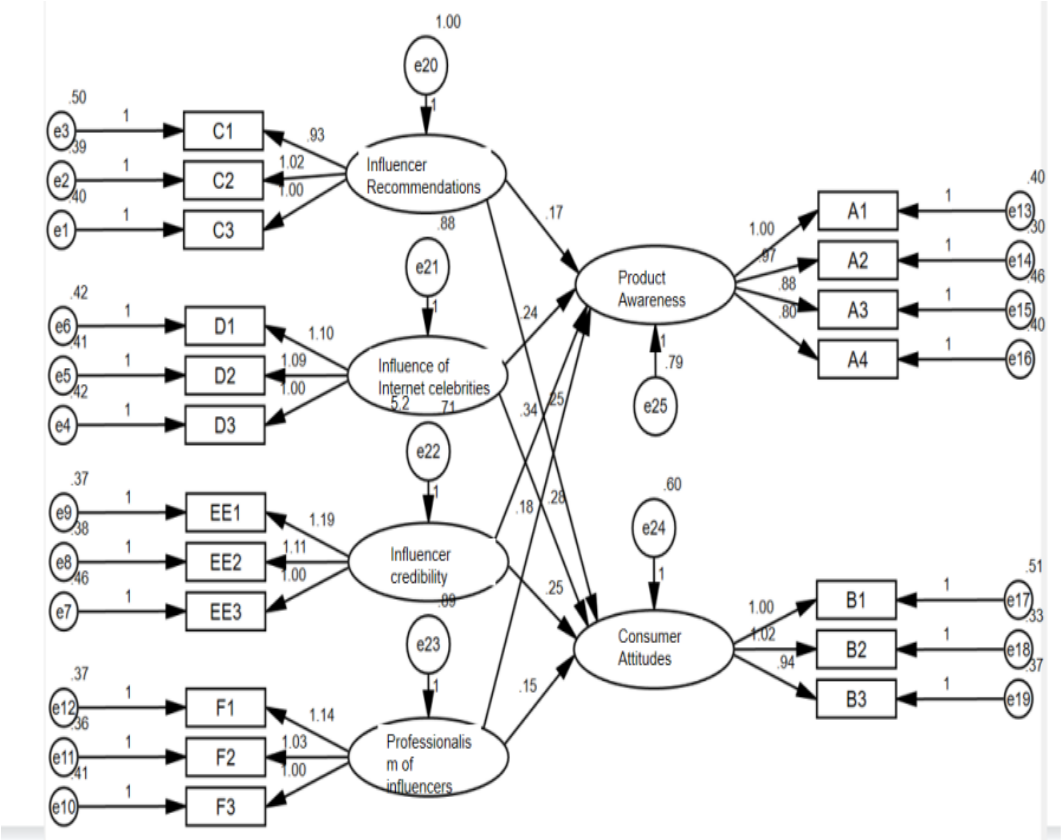


Table 9: Summary of Research Assumptions and Conclusions

NO.	Hypothetical Content	Result
H1	The influence of Internet celebrities has a positive impact on product awareness.	accepted
H2	The credibility of Internet celebrities has a positive impact on product awareness.	accepted
H3	The professionalism of Internet celebrities has a positive impact on product awareness.	accepted
H4	The recommendations of Internet celebrities have a positive impact on product awareness.	accepted
H5	The influence of Internet celebrities has a positive impact on consumer attitudes.	accepted
H6	The credibility of Internet celebrities has a positive impact on consumer attitudes.	accepted
H7	The professionalism of Internet celebrities has a positive impact on consumer attitudes.	accepted
H8	The recommendations of Internet celebrities have a positive impact on consumer attitudes.	accepted

5. Discussion of Results

5.1 Consumers' Product Recognition

According to the path analysis in the structural equation model to verify the questionnaire data, it can be seen that the recommendation of Internet celebrities is positively correlated with consumer product awareness (β =0.146, $p<0.05$). There is a positive correlation between the influence of Internet celebrities and consumer product awareness (β =0.181, $p<0.01$). There is a positive correlation between the professionalism of Internet celebrities and consumer product cognition (β =0.239, $p<0.01$). There is a positive correlation between the credibility of Internet celebrities and consumer product awareness (β =0.152, $p<0.05$). Assume that H1, H2, H3, and H4 are established.

The findings show that the users' product recognition in Li Jiaqi's live broadcast room on Taobao is greatly affected by Internet celebrities. The greater the influence, the more it can stimulate consumers' product recognition, thereby promoting consumers' purchasing decisions. Compared with other Internet celebrities, consumers are more willing to buy products promoted by Internet celebrities whose influence, credibility, professionalism and attractiveness are relatively high. These relationships were earlier reported by Liu et al. (2020), indicating that the characteristics of Internet celebrities' characteristics can guide consumers to generate purchase intentions.

5.2 Consumers' Attitude/ Sentiment

According to the path analysis in the structural equation model to verify the questionnaire data, it can be seen that the recommendations of Internet celebrities are positively correlated with consumers' emotional attitudes (β=0.234, $p<0.01$). There is a positive correlation between the influence of Internet celebrities and consumers' emotional attitudes (β=0.234, $p<0.01$). There is a positive correlation between the professionalism of Internet celebrities and consumers' emotional attitudes (β=0.192, $p<0.01$). There is a positive correlation between the credibility of Internet celebrities and consumers' emotional attitudes (β=0.122, $p<0.05$). Assume that H5, H6, H7, and H8 are established.

The obtained results show that the emotional attitude/ sentiment of users in Taobao Li Jiaqi's live broadcast room toward a product is greatly affected by Internet celebrities. The greater the attraction, the greater consumers' emotional attitudes, thereby promoting consumers' purchasing decisions. Compared with other Internet celebrities, consumers are more willing to buy products promoted by Internet celebrities whose influence, credibility, professionalism and attractiveness are relatively high. Liu, Zhao & Long (2020) also reported such relationships, indicating that the characteristics and attractiveness of Internet celebrities can promotes consumers' purchase intention.

6. Conclusion and Suggestions on the Impact of "Internet Celebrity Economy" on Consumers' Product Recognition and Attitude/ Sentiment

This study examines the impact of the "Internet celebrity economy" on consumer product cognition and emotions. The research was conducted using data collection, statistical methods, and structural equation models to draw important conclusions. The results indicate that Internet celebrities play a crucial role in shaping consumer product cognition and emotions. Therefore, companies can collaborate with them to increase product awareness and cultivate positive consumer emotions. The study reveals that the influence and reputation of Internet celebrities have a substantial positive impact on product cognition and consumer emotions. Thus, when choosing to collaborate with them, companies should prioritize their influence and reputation to convey positive product awareness while cultivating favorable consumer emotions. Furthermore, recommendations from internet celebrities' expertise positively affect product cognition by raising consumers' level of awareness about products they endorse effectively showcasing their professional skills. Additionally, influential internet personalities' reputations or social media followings within relevant fields, such as those who recommend related goods or services have a positive relationship with consumers' emotional state towards consumption behavior. Companies can utilize these findings by strategically collaborating with influential network reds possessing good reputations capable of actively shaping customer perception regarding both cognitive recognition for products as well as fostering favorable emotional states among customers toward consumption behaviors. As shown, this study emphasizes the importance of internet personalities in shaping consumer perceptions regarding both cognitive recognition for products as well as fostering favorable emotional states among customers toward consumption behaviors; Companies/brands may benefit from working alongside influential individuals possessing credibility capable of actively shaping customer perception through effective utilization/integration into marketing strategies which ultimately enhances market competitiveness/product purchasing decisions made by potential buyers/consumers.

Based on the above conclusions, we propose the following suggestions for product companies and marketing practitioners:

(1) Leverage the influence of internet celebrities: Collaborate with influential and well-known internet celebrities to use their influence to reach a wider audience, increase product awareness and attractiveness.

(2) Integrate internet celebrity marketing strategies: Incorporate internet celebrity marketing into overall marketing strategies, fully utilizing their influence to shape consumer perception and emotions towards products.

(3) Evaluate potential collaboration partners: When selecting an internet celebrity partner, evaluate their influence, reputation, and professionalism. Choose an influencer who matches the product's relevant field or target audience group while ensuring that they

have good reputation and credibility. This can enhance the image and value of products in consumers' minds.

(4) Precisely select collaborating influencers: Choose influencers that match target audience characteristics and preferences to improve marketing effectiveness.

(5) Emphasize product advantages: Promote products by highlighting unique selling points through leveraging influencer individuality or strengths to enhance consumer understanding of brands/products/services etc., thereby generating positive purchase intentions.

(6) Provide transparent and truthful information: ensure that influencers provide accurate, truthful, objective information when promoting products to avoid false advertising or misleading consumer behavior; consumers need accurate knowledge about product features/advantages.

(7) Continuously monitor and evaluate results: Regularly track and assess influencer collaboration effects on brand/product recognition and emotional impact via data analysis and customer feedback; adjust strategies based on feedback results for optimal marketing outcomes.

Although this study deeply explores how "internet celebrity economy" affects consumer perceptions/emotions toward products/services, there are still some limitations, such as sample selection bias/research scope restrictions which could be addressed by expanding sample representativeness using various research design methods exploring more comprehensive influencing factors in future studies.

7. The Authors

Chen Chen and Xuegang Zhan are MA graduates of the Department of Creative Industries Management, Rattanakosin International College of Creative Entrepreneurship (RICE), Rajamangala University of Technology Rattanakosin (RMUTR). Both authors share their research interest in the areas of marketing management, consumer behavior, product awareness, and Internet celebrity economy.

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ISSN 2821-9074 (Online)
ISSN 2730-2601 (Print)
RICE Journal of Creative Entrepreneurship and Management, Vol. 5, No.1, pp. 17-36,
January-April 2024

doi: 10.14456/rjcm.2024.2
Received 16.09.23/ Revised 22.03.24/ Accepted 31.03.24

Consumers' Behavioral Intentions for Rural Tourism in Sichuan Province

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Abstract

Rural tourism is of great significance to China's rural revitalization strategy. The purposes of this article are to (1) identify the current factors that influence consumers' behavioral intentions for rural tourism; (2) explore the interaction mechanism between each factor and consumers' behavioral intentions; and (3) provide suggestions to relevant managers and practitioners of rural tourism to promote China's rapid recovery and development of rural tourism. Random sampling was adopted, and an online questionnaire was constructed using Questionnaire Star software. Sichuan rural tourism consumers responded with 401 valid responses. The obtained data were analyzed for descriptive statistics, reliability test, validity test, confirmatory factor analysis and structural equation model analysis. The results revealed that (1) Rural tourism behavioral attitudes, subjective norms, perceived behavioral control, policy systems, tourism resources, new media information, and epidemic risk are all factors that affect consumers' behavioral intentions for rural tourism in Sichuan; (2) Rural tourism behavioral attitudes, subjective norms, perceived behavioral control, policy systems, and tourism resources can directly affect rural tourism behavioral intentions; policy systems, tourism resources, epidemic risk, and new media information can affect rural tourism behavioral intentions by affecting behavioral attitudes, subjective norms, and perceived behavioral control; (3) Sichuan rural tourism managers and related practitioners should strengthen the policy systems, stimulate investment to create unique tourism resources, avoid homogeneity, and improve adaptive epidemic response policies. They can encourage people's participation in Sichuan rural tourism by using new media to strengthen publicity, increase exposure and positive reviews, improve consumer awareness, and arouse tourists' interest and trust. This could lead to the future research scope on rural tourism in other regions in China.

Keywords: Sichuan, rural tourism, tourist behavioral intention, S-O-R model

1 Introduction

1.1 Research Background

The tourism industry is currently the largest and fastest-growing industry. The "14th Five-Year Plan for Tourism Development" proposed by the Chinese State Council emphasizes improving quality and expanding capacity, strengthening and optimizing the domestic tourism market, promoting tourism circulation within the country, and meeting the diverse needs of people at different levels (Wang, 2022). Rural tourism has developed rapidly in recent years with its scale continuously increasing. The identified rural issues are important problems in China today in solving them for comprehensiveness and compatibility of the industries concerned (Liu, 2017; Ge, 2019; Lou, Lu & Wang, 2019). The development of rural tourism has a huge impact on the implementation of China's rural revitalization strategy and has received strong support and extensive attention from local governments.

The COVID-19 pandemic has seriously affected the development of China's tourism industry. As China enters the post-pandemic era, the tourism industry is gradually recovering, but consumer demand for travel is also changing due to the impact of the pandemic. More tourists are now placing greater emphasis on health and hygiene conditions during their travels (Zhang & Peng, 2021). Rural tourism near cities has become people's preferred way of leisure and entertainment after the pandemic (Wang, 2022; Wang, Song & Xu, 2023) . Therefore, rural tourism provides new opportunities for the country’s economic development by attracting consumers as seen in the rapid growth of rural tourism. As known in the field of tourism, individual behavioral intention can indicate an individual's motivation to engage in a specific behavior and is a direct driving force behind that behavior. Therefore, it is a particularly important issue to investigate into the formation of behavioral intentions.

1.2 Research Objectives

The research objectives of this study were: (1) identify the current factors that influence consumers’ behavioral intentions for rural tourism; (2) explore the interaction mechanism between each factor and consumers’ behavioral intentions; and (3) Provide suggestions to relevant managers and practitioners of rural tourism to promote China’s rapid recovery and development of rural tourism.

2 Literature Review

2.1 Rural Tourism in Sichuan

Rural tourism refers to tourism activities that take place in rural areas and have a "rural" character (Liu, 2017). It is a type of tourism activity that targets urban residents as the main market and utilizes rural environment, culture, and agricultural activities as resources (Zhou & Huang, 2004). Sichuan is a major agricultural province in China, with 27,020 villages accounting for 76.3% of the village-level units in the province (Sichuan Bureau of Statistics, 2021). The large scale of rural areas has also made Sichuan the birthplace of "farmhouse tourism" in China's early rural tourism industry. In recent years, rural tourism in Sichuan has developed well. In 2021, the total revenue from rural tourism in the province reached RMB 363.743 billion, an increase of 15% year-on-year. Therefore,

it is important for the researchers to explore the development of rural tourism in Sichuan during the post-pandemic era. As the capital city of Sichuan Province, Chengdu received 280 million rural tourists in the first three quarters of 2021 alone, an increase of 16.5% year-on-year and accounting for 60% of all visitors to the province. Therefore, the researchers focused on Chengdu and its rural tourist consumers as research subjects.

2.2 S-O-R Model

The S-O-R model was proposed by Mehrabian & Russell (1974). This theory suggests that internal and external stimuli can affect an individual's psychological activity and cognition, which in turn affects their behavior. "S" refers to the external factors that stimulate individuals to take action, "O" refers to the internal processing between external stimuli and final responses, and "R" refers to an individual's behavior (Mehrabian & Russell, 1974). The S-O-R model has been widely used in studying individual behavior. Based on the S-O-R theory, Huang (2021) discovered that e-commerce platform construction and marketing can stimulate consumers' purchase attitudes and thus arouse their desire to buy. Peng (2021) established a model based on the S-O-R model using short video features as external stimuli, user internal states as personal psychological processes, tourism intentions as reactions. The finding pointed to tourism short video characteristics having a positive effect on tourist intentions with user internal states acting as mediators.

According to the S-O-R theory and previous research conclusions, external stimuli affect an individual's inner emotions which then influence their behavioral response. In the present study, the researchers constructed a research model based on the S-O-R model to explore the mechanism of various factors that could affect rural tourism behavioral intention among consumers in Sichuan Province.

2.3 Plan Behavior Theory

The Theory of Planned Behavior, proposed by Ajzen, suggests that behavioral intention is influenced by attitude towards the behavior, subjective norms, and perceived behavioral control. This theory has been widely applied to tourism research in that attitude toward the behavior, subjective norms, and perceived behavioral control significantly affect rural tourism intentions. As reported in Ge’s work (2019), the research results indicate that three factors have a positive impact on residents' intentions for rural leisure tourism. Similarly, Zhang, Sun & Mei (2021) found that those three factors have a significant influence on college students' intentions in low-carbon forest park tourism. These findings clearly value of the Theory of Planned Behavior in rural tourism research. Based on those previous studies and background analyses, this present study investigated the impact of attitudes toward rural tourism, subjective norms and perceived behavioral control as internal factors on rural tourism intentions.

2.4 Social Support

Social support refers to the spiritual or material assistance and support provided by various aspects of society to individuals. Scholars have different definitions of social support. Hong (2013) defined it as the degree of support for leisure tourism from economic, social, cultural, and legal policies, and Wang (2019) confined it to help agricultural

operators receive from external society, including economic, policy, and resource conditions. Research has shown that social support has an impact on individual behavioral intentions as shown in the study by Wang, Song & Xu (2023) that the COVID-19 pandemic has stimulated tourists' self-protection motivation and changed their behavior tendencies. Wang (2019) asserted that positive external social help can significantly promote agricultural operators' participation in rural tourism.

Based on previous research, the researchers in the present study specified "social support" as *the degree to which individuals perceive support from national policies, rural tourism development, tourist resources, infrastructure construction and epidemic prevention policies when participating in rural tourism activities.* This type of social support carries three dimensions: (1) Policy system dimension, (2) Tourist resource dimension，and (3) Epidemic risk dimension.

2.5 New Media News

New media has a significant impact on people's lives, and their reliance on new media technology is also increasing (Guo, Cai, Zhu & Huang, 2022). Scholars have studied the influence of new media on individual behavioral intentions. Zeng (2020) reported that online word-of-mouth has a positive effect on tourism behavior intention, while Han & Ming (2021) found that social media can influence consumers' tourism behavior intention.

Based on previous research, this present study treats new media as an information carrier with an impact on individuals, stimulating their behavioral intentions and triggering actual behavior. Especially for new media information about rural tourism destinations, particularly marketing promotion and travel information, it can stimulate consumers' rural tourism behavior intention. This present study treats new media information as one of the external stimulus factors affecting rural tourism behavior intention.

2.6 Related Research

Some scholars have studied the factors influencing rural tourism behavioral intentions. Qi et al., 2020) used the theory of planned behavior and cited attitude, perceived behavioral control, and subjective norms as independent variables to explore the influencing factors of rural tourism behavioral intention in Shandong Province. The results showed that the three independent variables all have a positive effect on individual rural tourism behavioral intention. Qi et al. (2022) studied rural tourism in Xinhui area, Guangdong based on the push-pull theory, using personal psychological factors as an internal push and destination resource conditions as an external pull. The results show that attitude does not directly affect rural tourism behavioral intention; instead, internal psychological factors, such as subjective norms and perceived behavioral control, as well as external destination resource conditions of scenic spots, can have a positive effect on rural tourism behavioral intention.

Tian (2016) and Li (2020) studied the influencing factors of Hangzhou/ Changsha residents' rural tourism behavioral intentions on the basis of the theory of planned behavior and destination image dimensions. Both studies revealed behavioral attitudes, subjective norms, perceived behavioral control, destination tourism attractions, destination facilities, and destination cultural heritage and other factors having positive impacts on rural tourism

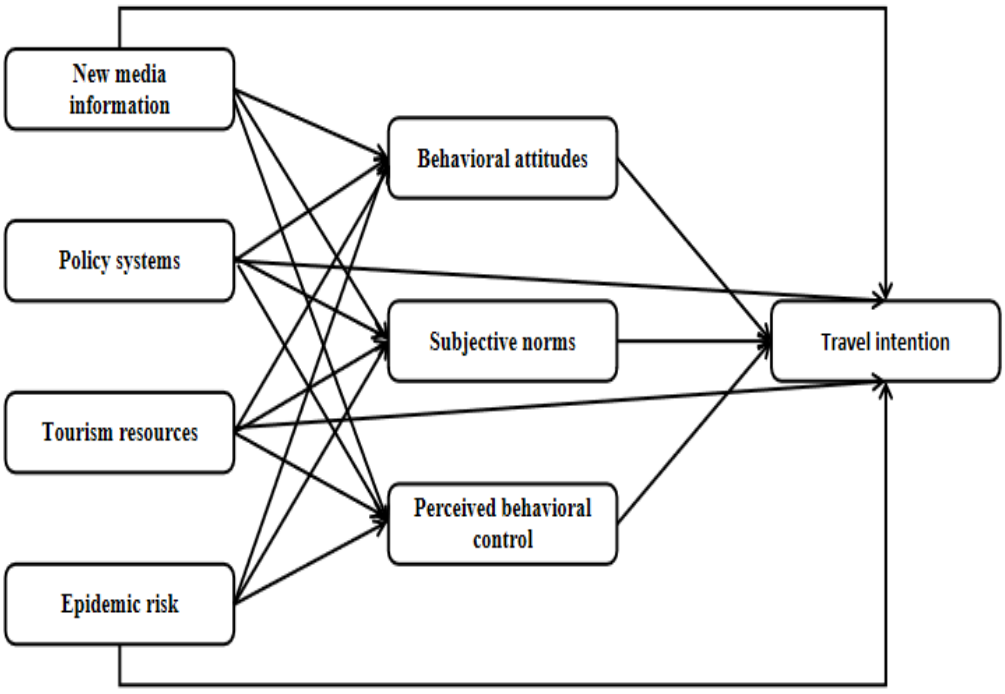
behavioral intentions.

According to the previous studies, the influencing factors of residents' rural tourism behavior intention in a certain area from the perspective of destination resource conditions and individual psychology appeared to vary by regional differences. The researchers of the present study therefore felt the need to investigate the impact of external environmental factors on individual psychology.

2.7 Research Model and Research Hypotheses.

Based on the S-O-R model and the elements of the planned behavior theory as intrinsic behavioral perception factors for individuals, the researchers incorporated *social support and information stimulus factors as external stimuli* to construct a research model. *Seven independent variables* include (1) behavioral attitudes, (2) subjective norms, (3) perceived behavioral control, (4) policy systems, (5) tourism resources, (6) epidemic risk and (7) new media information. Behavioral attitude, subjective norms and perceived behavioral control are *three intrinsic perceptual factors* for individual behavior, while policy system, tourism resources, epidemic risk and new media information serve as *four external stimulus factors*. The conceptual framework of the study is shown in Figure 1.

Figure1: Conceptual Framework of Study



The research hypotheses are shown in Table 1.

Table 1: Research Hypotheses

H1	Individual attitudes toward rural tourism have a positive impact on tourists' intention to participate in rural tourism activities.
H2	Individual subjective norms toward rural tourism have a positive impact on tourists' intention to participate in rural tourism activities.
H3	Individual perceived behavioral control toward rural tourism has a positive impact on tourists' intention to participate in rural tourism activities.
H4	Policy systems have a positive impact on tourists' intention to participate in rural tourism activities.
H5	Tourism resources have a positive impact on tourists' intention to participate in rural tourism activities.
H6	Epidemic risk has a negative impact on tourists' intention to participate in rural tourism activities.
H7	New media information about countryside travel has a positive impact on tourists' intentions of participating in countryside travel behavior.
H4a	Policy systems have a positive effect on individual attitude toward rural tourism.
H4b	Policy systems have a positive effect on individual subjective norms toward rural tourism.
H4c	Policy systems have a positive effect on individual perceived behavioral control toward rural tourism.
H5a	Tourism resources positively affect individuals' attitudes, subjective norms, and perceived behavioral control toward countryside travel behavior.
H5b	Epidemic risk negatively affects individuals' attitudes, subjective norms, and perceived behavioral control toward countryside travel behavior
H5c	New media information about countryside travel has a positive effect on individual attitudes, subjective norms, and perceived behavioral control toward countryside travel behavior.
H6a	Epidemic risk negatively affects individual attitudes toward countryside travel behavior
H6b	Epidemic risk negatively affects individual subjective norms toward countryside travel behavior
H6c	Epidemic risk negatively affects individual perceived behavioral control toward countryside travel behavior
H7a	New media information about countryside travel has a positive effect on individual attitudes toward countryside travel behavior.
H7b	New media information about countryside travel has a positive effect on individual subjective norms toward countryside travel behavior.
H7c	New media information about countryside travel has a positive effect on individual perceived behavioral control toward countryside travel behavior.

3 Research Methods

3.1 Survey Questionnaire Design

The design of this survey questionnaire is in three parts. The first part is a screening question aimed at selecting people who have participated in rural tourism in Sichuan as the target of the survey. The second part collects basic information about the respondents, including gender, age, family situation, occupation, income, and education level. The third part uses a seven-level Likert scale to measure seven variables that affect rural tourism behavior intention: (1) behavioral attitude, (2) subjective norms, (3) perceived behavioral control, (4) policy systems, (5) tourism resources, (6) epidemic risk and (7) new media information.

3.2 Samples and Sampling

In 2021, the total number of tourists received in rural Sichuan was 466 million (Sichuan Provincial Department of Culture and Tourism, 2022). According to the calculation formula: n=N/(1+N*e2) (where e is taken as 0.05), the total number of survey questionnaires required for this study was calculated to be 399.99. Therefore, this study needs to collect a total of 400 survey questionnaires. Considering certain uncontrollable factors during the questionnaire collection process, the researchers planned to collect 450 survey questionnaires using random sampling method and distributed them through travel groups on tourism platforms of Ctrip and Fliggy in Chengdu area via Questionnaire Star APP.

4. Data Analysis and Hypothesis Testing

The distribution and collection of 450 survey questionnaires for this study began on 5 May 2023 and ended on 10 May 2023. A total of 401 valid questionnaires were obtained with an effective recovery rate of 89.1%. The obtained data were entered onto the computer statistical software for data processing and analysis.

4.1 Descriptive Statistical Analysis

The descriptive statistical analysis was on the demographic characteristics of the respondents, and the results are shown in Table 2.

Table 2: The Descriptive Statistical Analysis

Project	Item	N	Percentage
Gender	Male	194	48.38
	Female	207	51.62
	18-30 years old	148	36.91
Age	31-50 years old	151	37.66
	Over 50 years old	102	25.44
	Single	38	9.48
Family situation	Married	320	79.80
	Other	43	10.72

Project	Item	N	Percentage
	Government agencies and institutions	134	33.42
	College students	38	9.48
Occupation	Private enterprise employees	84	20.95
	State-owned enterprise employees	82	20.45
	Self-employed individuals	63	15.71
	3000 yuan or less	111	27.68
	3000-5500 yuan	107	26.68
Monthly income	5500-7500 yuan	92	22.94
	7500-10000 yuan	47	11.72
	More than 10000 yuan	44	10.97
	Junior college and below	96	23.94
	Undergraduate	240	59.85
Educational level	Graduate	57	14.21
	Doctoral and above	8	2.00

Table 2 shows that the gender ratio of the respondents is relatively balanced. The age distribution is also relatively even, but overall, middle-aged and young people aged 18-50 are the main group. In terms of family situation, married people account for 79.80%, which is significantly higher than single and other individuals. This indicates that rural tourism in Sichuan Province may be more attractive to married tourists who prefer to travel with their families. In terms of occupation, government employees, private enterprise employees and state-owned enterprise employees are the main groups of tourists because they have stable work income and relatively fixed leisure time. In terms of monthly income level, a total of 310 people in the low-to-middle-income group with an income range between RMB 3,000-7,500 accounted for 77.31% of the research sample population; thus indicating that low-to-middle-income groups constitute the mainstream tourist group for rural tourism in Sichuan Province. As far as education level is concerned, those with undergraduate degrees or above accounted for 76.06% of the respondents--indicating a high educational level among them on the average.

4.2 Reliability and Validity Analysis

Reliability Analysis

Reliability analysis is used to test the scientific and rationality of a questionnaire. Before analyzing the questionnaire data, the researchers conducted reliability testing on the obtained data through computer statistical software.

Reliability testing uses Cronbach's α coefficient as the standard for testing. When Cronbach's α is greater than 0.7, it indicates that the design reliability of the scale questions is high and that the data can be used for research and analysis.

Table 3: The Reliability Test

Title	Cronbach's alpha
Behavioral Attitude	0.826
Subjective Norms	0.826
Perceived Behavioral Control	0.848
Policy and System	0.820
Tourism Resources	0.869
Epidemic Risk	0.803
New Media Information	0.860
Rural Tourism Behavioral Intention	0.794

As shown in Table3, the Cronbach's α coefficient values of all variables measured in this study are greater than 0.7. This indicates that all items on the scale used in this study can reflect the actual situation of tourists participating in rural tourism in Sichuan Province, and that the scale and data have good reliability. The next step of data processing can be carried out.

Validity Analysis

Validity refers to the effectiveness of the sample data, which reflects the accuracy level of the research questions measured by the questionnaire. KMO value and Bartlett sphericity test are used to test the validity of sample data. The selection criteria for testing are KMO value greater than 0.8 and a significance index P value less than 0.05 for Bartlett sphericity test. When the sample data meets these standards, it indicates that they are suitable for information extraction purposes.

Table 4: KMO And Bartlett's Test

KMO Date		0.912
Bartlett's Sphericity Test	Approximate Chi-Square	5288.794
	df	378
	p	0.000

In Table 4, the KMO value of the sample data is 0.912, which is greater than 0.8; and the significance index P value of Bartlett's sphericity test is 0.000, which is less than 0.05. This indicates that the sample data in this study is suitable for information extraction.

4.3 Structural Equation Model Test of Intention for Rural Tourism

Confirmatory Factor Analysis

A confirmatory factor analysis was performed on the sample data to analyze convergence validity and discriminant validity, in order to verify the authenticity and appropriateness of the construct validity of the scale construction in this study. The results are shown in Table 5.

Table 5: The Convergence Validity Test

Factor	Measurement Items	Std.Estimate	AVE	CR
Behavioral Attitudes	A1: I am very interested in rural tourism.	0.790	0.615	0.827
	A2: I believe that rural tourism can effectively relieve stress and make people feel relaxed.	0.796		
	A3: Rural tourism allows me to experience unique local culture and way of life.	0.765		
Subjective Norms	B1: My family and friends support me participating in rural tourism.	0.789	0.612	0.826
	B2: My family and friends often participate in rural tourism.	0.800		
	B3: I think many people nowadays often participate in rural tourism.	0.759		
Perceived Behavioral Control	C1: I can decide whether or not to participate in rural tourism myself.	0.768	0.583	0.848
	C2: I have the ability to deal with problems that may arise during the process of rural tourism.	0.763		
	C3: I have enough time and financial resources to participate in rural tourism.	0.769		
	C4: I can find sufficient information for my trip on rural tourism	0.754		
Policy Systems	D1: The country's statutory holidays policies are well implemented	0.798	0.605	0.821
	D2: Labor rights, such as work pressure, paid leave system, enterprise five insurances and one fund payment etc., are guaranteed	0.732		
	D3: Socio-economic security systems, such as "toll-free highways during statutory holidays" are effectively implemented	0.802		
Tourism Resources	E1: I think Sichuan has developed transportation infrastructure for travel industry	0.773	0.572	0.870
	E2: I think Sichuan's countryside environment is good for travel industry	0.743		
	E3: I think Sichuan's countryside tourist facilities are complete (such as accommodation, transportation tools)	0.733		
	E4: I think there is a wide range of products available for Sichuan’s countryside tourisms.	0.754		
	E5: Countryside service personnel provide high-quality services.	0.777		

Table 5: The Convergence Validity Test

Factor	Measurement Items	Std.Estimate	AVE	CR
Epidemic Risk	F1: I believe that government control policies regarding the epidemic will bring many restrictions on travel within the countryside.	0.751	0.576	0.803
	F2: I believe it is risky to go to areas where epidemic prevention measures are being taken while engaging in countryside tours.	0.763		
	F3: I believe it will be difficult to engage in countryside tours if you visit an area affected by an outbreak.	0.763		
New Media Information	G1：I frequently obtain information about rural tours through online media.	0.799	0.606	0.860
	G2：I am attracted by the information about rural tours on the media.	0.749		
	G3：My views on rural tourism may change due to information found online.	0.787		
	G4: Online promotions for rural tourism will encourage me to participate in it.	0.777		
Intention of Rural Tourism Behavior	H1: Under current conditions, I am willing to engage in countryside tours.	0.782	0.563	0.794
	H2: I have already prepared myself for participating in a countryside tour.	0.716		
	H3: I would recommend rural tourism to others.	0.752		

Standardized factor loading coefficients, average variance extracted (AVE), and composite reliability (CR) are used to measure the convergence validity of the analysis. Generally, when the standardized factor loading coefficient is greater than 0.4, AVE output value is greater than 0.5, and CR output value is greater than 0.7 at the same time, it indicates that all items of this latent variable have good internal quality.

In this study, confirmatory factor analysis was conducted on eight factors and twenty-eight analytical items. As shown in Table 5, according to the measurement relationship, all standard loading coefficients of twenty-eight analytical items were above 0.7 which is greater than 0.4; the AVE values corresponding to eight factors were between 0.563-0.615 which are all greater than 0.5; and their respective CR values were between 0.794-0.870 which are all greater than 0 .7. This indicates that the data analyzed in this study has good aggregation (convergence) validity.

Table 6: Discriminant Validity Test

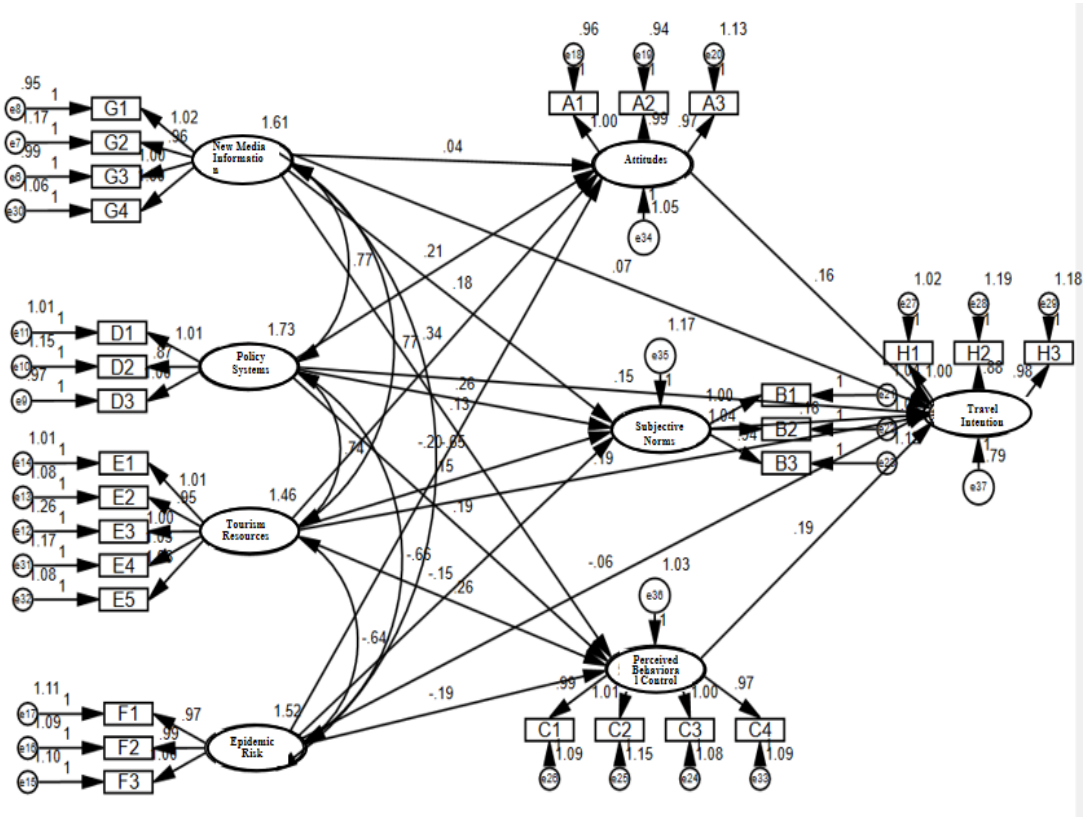
	Behavioral Attitudes	Subjective Norms	Perceived Behavioral Control	Policy Systems	Tourism Resources	Epidemic Risk	New Media Information	Intention of Rural Tourism Behavior
Behavioral Attitudes	0.784							
Subjective Norms	0.280	0.783						
Perceived Behavioral Control	0.412	0.373	0.764					
Policy Systems	0.377	0.376	0.360	0.778				
Tourism Resources	0.436	0.343	0.408	0.398	0.756			
Epidemic Risk	-0.345	-0.303	-0.341	-0.334	-0.357	0.759		
New Media Information	0.319	0.351	0.357	0.389	0.433	-0.342	0.778	
Intention of Rural Tourism Behavior	0.427	0.400	0.446	0.425	0.464	-0.348	0.387	0.751

In the discriminant validity test, the diagonal values in the table are the square root of AVE, and other values are correlation coefficients between latent variables. As shown in Table 6, the corresponding AVE square roots for behavioral attitudes, subjective norms, perceived behavior control, policy systems, tourism resources, epidemic risk, new media information and rural tourism behavior intention are 0.784, 0.783, 0.764, 0.778, 0.756, 0.759, 0.778 and 0.751, respectively, which are all greater than their absolute values of correlation coefficients with other factors. This indicates that all eight factors have good discriminant validity.

Analysis of Model Fit

The researchers constructed a structural equation model through computer statistical software, as shown in Figure2. Referring to the research progress of previous scholars, X^2/df, GFI, RMSEA, CFI, NFI, TLI and IFI are used for testing. The fitting standard for X^2/df is less than 3; the fitting standard for RMSEA is less than 0.10; and the fitting standards for GFI, CFI, NFI, TLI and IFI are greater than 0.9.

Figure 2: Structural Equation Model Diagram.



According to Table 7, the various model fit indices of the structural equation model in this study are as follows: The output value of X^2/df is 1.018, which is less than 3; GFI, CFI, NFI, TLI and IFI output values are 0.948, 0.999, 0.939, 0.999 and 0.999, respectively, all greater than 0.9; RMSEA output value is 0.007 which is less than 0.10.The model fit indicators have reached the standard range indicating a good model fit and that the model can be accepted.

Table 7: Model Fitting Index

Indicators	$\chi 2$	*df*	$\chi 2/df$	GFI	RMSEA	CFI	NFI	TLI	IFI
Evaluation criteria	-	-	<3	>0.9	<0.10	>0.9	>0.9	>0.9	>0.9
Values	330.955	325	1.018	0.948	0.007	0.999	0.939	0.999	0.999

Then, path analysis was conducted on the model for hypothesis testing. Generally, when the p-value of a path is less than 0.05 and the absolute value of critical ratio (CR) is greater than 1.96, it can be considered that the regression coefficient result of this path is significant, and the path exists, indicating that the null hypothesis holds.

Table 8: Summary of Model Regression Coefficients

X	→	Y	Unstandardized Path Coefficients	*SE*	CR	*p*	Standardized Path Coefficient
Behavioral Attitudes	→	Intention of Rural Tourism Behavior	0.161	0.045	3.109	0.002	0.164
Subjective Norms	→	Intention of Rural Tourism Behavior	0.162	0.043	3.071	0.002	0.163
Perceived Behavioral Control	→	Intention of Rural Tourism Behavior	0.193	0.047	3.440	0.001	0.192
Policy Systems	→	Intention of Rural Tourism Behavior	0.150	0.045	2.906	0.004	0.153
Tourism Resources	→	Intention of Rural Tourism Behavior	0.197	0.050	3.568	0.000	0.194
Epidemic Risk	→	Intention of Rural Tourism Behavior	-0.063	0.045	-1.442	0.149	-0.064
New Media Information	→	Intention of Rural Tourism Behavior	0.073	0.046	1.790	0.064	0.074
New Media Information	→	Behavioral Attitudes	0.045	0.051	1.475	0.140	0.044
Epidemic Risk	→	Behavioral Attitudes	-0.204	0.049	-3.353	0.001	-0.201
Tourism Resources	→	Behavioral Attitudes	0.351	0.054	5.429	0.000	0.343
Policy Systems	→	Behavioral Attitudes	0.210	0.049	3.805	0.000	0.210
New Media Information	→	Subjective Norms	0.190	0.054	3.174	0.002	0.183

Table 8: Summary of Model Regression Coefficients

X	→	Y	Unstandardized Path Coefficients	*SE*	CR	*p*	Standardized Path Coefficient
Epidemic Risk	→	Subjective Norms	-0.154	0.051	-2.539	0.011	-0.152
Tourism Resources	→	Subjective Norms	0.155	0.056	2.746	0.006	0.154
Policy System	→	Subjective Norms	0.269	0.051	4.251	0.000	0.265
New Media Consultation	→	Perceived Behavioral Control	0.150	0.050	2.826	0.005	0.152
Epidemic Risk	→	Perceived Behavioral Control	-0.196	0.048	-3.282	0.001	-0.198
Tourism Resources	→	Perceived Behavioral Control	0.271	0.052	4.436	0.000	0.265
Policy Systems	→	Perceived Behavioral Control	0.187	0.048	3.288	0.001	0.193

In Table 8, behavioral attitudes toward rural tourism (CR=3.109, P=0.002), subjective norms (CR=3.071, P=0.002), perceived behavioral control (CR=3.440, P=0.001), policy systems factors (CR=2.906, P=0.004) and tourism resources (CR = 3.568, P = 0.000) all significantly influence the intention of rural tourism behavior; while epidemic risk (CR = 1.442, P = 0 .149) and new media information (CR = 1.790, P = 0 .074) do not affect the intention of rural tourism behavior. Therefore, hypotheses H1-H5 are supported while H6-H7 are not.

The policy systems (CR=3.805, P=0.000), tourism resources (CR=5.429, P=0.000), and epidemic risk (CR=3.353, P=0.001) all have a significant impact on rural tourism attitudes, among which the standardized path coefficient of epidemic risk is negative, indicating a significant negative impact on behavioral attitudes caused by epidemic risk. However, new media information (CR=1.475, P=0.140) will not affect behavioral attitudes. Therefore, hypotheses H4a, H5a and H6a are established while hypothesis H7a is not supported by the data.

The policy systems (CR=4.251, P=0.05), tourism resources (CR=2.746, P=0.006), epidemic risk (CR=2.539, P=0.011) and new media information (CR=3.174, P=0.002) will all have a significant positive impact on subjective norms. Therefore, hypotheses H4b, H5b, H6b and H7b are established.

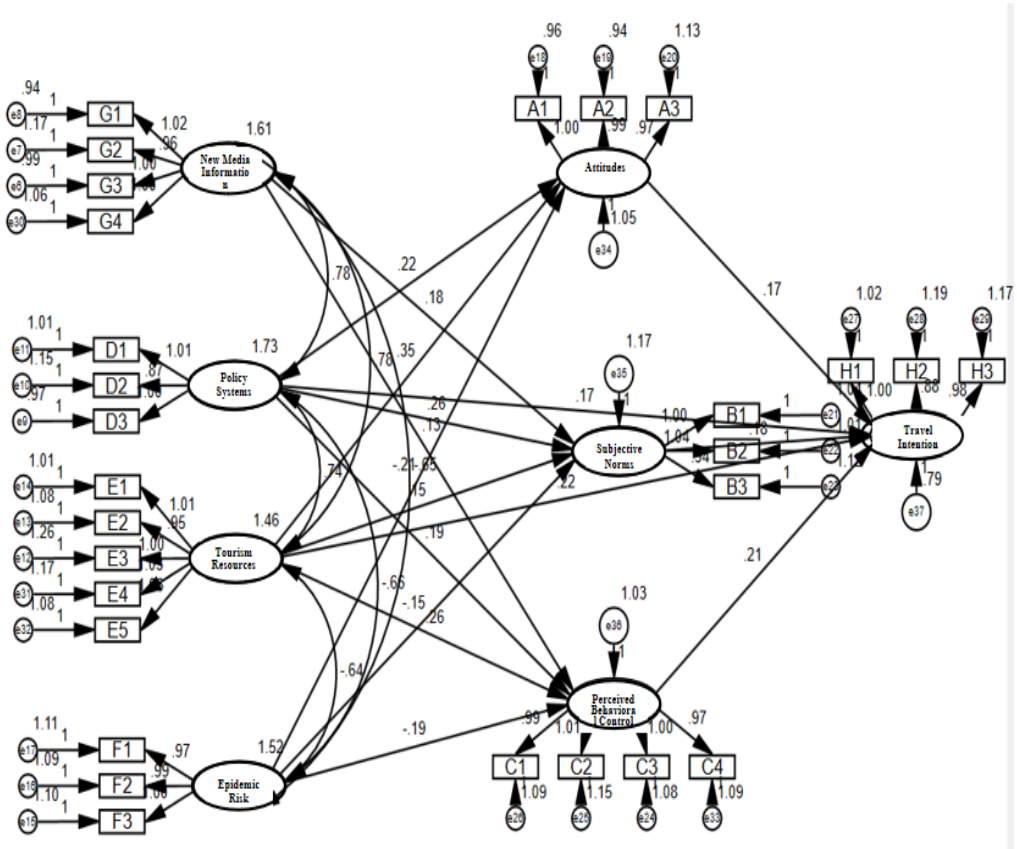
Policy systems (CR = 3.288, P = 0 .001), tourism resources (CR = 4 .436,P = 0 .000), epidemic risk (CR = 3 .282,P = 0 .001) and new media information (CR = 2 .826,P = 0 .005) will all have a significant positive impact on perceived behavioral control. Therefore, hypotheses H4c, H5c, H6c, and H7c are established as well.

The researchers deleted the three paths that did not pass the path detection, revised the structural equation model as shown in Figure 3, and conducted a model fit test on the revised structural equation model. As shown in Table 9, all of the model fit indices meet the standards, indicating good model fit and that the model is valid.

Table 9: Adjusted Model Fit Index

Indicators	$\chi 2$	*df*	$\chi 2/df$	GFI	RMSEA	CFI	NFI	TLI	IFI
Evaluation criteria	-	-	<3	>0.9	<0.10	>0.9	>0.9	>0.9	>0.9
Values	333.901	328	1.018	0.947	0.007	0.999	0.939	0.999	0.999

Figure 3: Revised Structural Equation Model Diagram



5. Conclusion and Recommendations

5.1 Conclusion

According to the results of this study, consumer attitudes toward rural tourism, subjective norms, perceived behavioral control, policy systems, tourism resources, epidemic risk and new media information are all factors that influence consumers' intention to engage themselves in rural tourism. Among them, attitudes toward behavior, subjective norms, perceived behavioral control, policy systems and tourism resources directly affect their intention to participate in rural tourism; policy systems, tourism resources, epidemic risk and new media information indirectly affect the intention to participate in rural tourism by influencing attitudes toward behavior, subjective norms and perceived behavioral control.

5.2 Discussion and Prospects

The research results of this study corresponded with the research conclusions of previous scholars, but in the context of Sichuan Province. Tian (2016) studied the factors influencing rural tourism behavioral intentions of Hangzhou residents, using behavioral attitudes, subjective norms, perceived behavioral control, policy systems and tourism resources as variables. The results were that all five variables can directly affect rural tourism behavioral intention. Qi et al. (2020) also probed into the rural tourism behavioral intentions of residents in the main urban area of Shandong and found rural tourism behavioral attitudes, subjective norms and perceived behavioral control directly affecting rural tourism behavioral intentions. In this regard, this study has in fact supported the earlier findings that rural tourism *behavioral attitudes*, *subjective norms, perceived behavioral control, policy systems, tourism resources, epidemic risk* and *new media information* are all influencing factors of rural tourism behavioral intentions.

Rural tourism-related practitioners and managers should focus on these seven aspects to further attract consumers and promote the development of rural tourism. Since this study focused on inbound rural tourism tourists' experience in Chengdu City, Sichuan Province, the researchers noted that there could be differences in the development of rural tourism destinations in various regions of China. Therefore, future research could look at value added differentiation in rural tourism destinations in many places in China as the research objects. In addition, qualitative data could be obtained to shed light on uniqueness of services and rural tourism products that could be appealing as signature activities to potential customers in different regions in China.

5.3 Recommendations

Based on the above conclusions, in order to quickly attract consumers and further develop rural tourism in the post-epidemic era, the researchers would like to give the following suggestions: (1) Strengthen policy systems, support rural tourism development and safeguard workers' rights. Rural revitalization is a current strategy for rural tourism. Relevant management agencies need to formulate stable and predictable policies and regulations, promote the development and construction of rural tourism, and enhance public awareness and guidance. (2) Government agencies should actively stimulate investment, develop unique characteristics, and improve tourist resource construction. Rural managers and practitioners need to attract investment to improve infrastructure (roads, scenic spots,

hotels), pay attention to protecting and developing unique rural tourism resources while delivering showcase traditional culture and tourists' travel experiences. (3) Improve adaptive epidemic response policies by establishing flexible measures for potential epidemic risk instead of one-size-fits-all policies. Health and safety management can be strengthened by providing clear information and guidance to ensure health and safety for both staff and visitors. (4) Follow trends closely and fully utilize new media platforms for accurate, timely, and useful information about rural tourism. Establish and maintain official social media accounts, tourism websites, and online platforms. Interact with tourists, answer their questions, cooperate with travel bloggers, influencers, media outlets, to increase exposure and obtain positive reviews. These are to prompt interest and trust among tourists toward rural tourism.

6. The Authors

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ISSN 2821-9074 (Online)
ISSN 2730-2601 (Print)
RICE Journal of Creative Entrepreneurship and Management, Vol. 5, No.1, pp. 37-46, January-April 2024

doi: 10.14456/rjcm.2024. 3
Received 8.09.23/ Revised 12.03.24/ Accepted 22.03.24

Creative Community Tourism Development Based on Kudeejeen Community Identity, Thailand

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Abstract

The study aimed to (1) enlarge Kudeejeen community identity via composed Kudeejeen song, (2) develop products of Kudeejeen community identity, and (3) create communication channels for Kudeejeen Community tourism. The researchers obtained qualitative data from ten community leaders via documentary research, participatory action research, in-depth interview, and focus group discussion. The results revealed: (1) Community identity consists of unity, music for performance in church, and pride in Portuguese ancestry. These identities are modified by the campaign "Luk Kudeejeen " (meaning Kudeejeen Children) song for orchestra and choir, which was composed for community participation and storytelling. (2) Community identity products as souvenirs were in the form of miniature clay Kudeejeen puff topped on a flash drive, and Luk Kudeejeen recorded song. (3) Communication channels for Kudeejeen Community tourism were by Luk Kudeejeen song, a souvenir, and storytelling medias in infographics and videos for online communication.

Keywords: *Creative community, community tourism, community identity, Kudeejeen Community*

1. Introduction

The trend of tourism in the 21st century has focused on sustainable development and promotion of tourism products (Carroll, 1999; Bussey, 2011; Miller 2012). Since tourism is one of the main aspects of social and economic development, the policy of most countries supports sustainable tourism for the economic growth of all communities concerned. Community participation in tourism management has become the target of community-based tourism. Communities are encouraged to preserve their environmental resources, and develop various tourism activities in order to attract tourists (Angkura et al., 2019).

Community-based tourism is an important domain of tourism management, because creativity in tourism can strengthen a community, as seen in Kudeejeen Community along Chao Praya River in Bangkok, Thailand. The community is located on Thesaban 1 Road, Wat Kalaya Sub-district, Thonburi District--a historical site of Thonburi Era. The community's members are multi ethnic groups: ranging from Thai, Portuguese-Thai, Chinese, to Muslims, Buddhists, and Christians. The landmark is Santa Cruz Church, one of the oldest Catholic churches in Bangkok. Santa Cruz Church was built in 1770, when King Taksin the Great gave the land to Thai, Chinese, and Portuguese people to live in this area. The church was first built in wood. The original wooden structure was severely destroyed in a fire accident, but was rebuilt using brick in 1916 during the reign of King Rama VI. The church boasts a Renaissance-neoclassical architecture. Kudeejeen House Museum displays information and history of the community, ancient instruments and appliances. The rooftop of the museum is for a scenic view. Kanom Farang Kudeejeen [local dessert of Chinese and Portuguese ingredients] was traced back to the last period of Ayudhya Era and the beginning of Rattanakosin Era. This kind of dessert reveals the community's identity. Its ingredients are flour, egg, and sugar. Topping is currently added with dried fruits as raisin, dry welding hatch, dried tomato, and sugar. A restaurant called "Baan Sakul Thong," serves authentic food of which the recipes were formerly used in the inner royal court cuisine. Voravuthkitsakul (2016) noted that Portuguese people in Ayudhya moved to stay along the river below Kudeejeen area and were called Farang Kudeejeen. These resources are for the area to become a unique site for community-based tourism in the west of Bangkok.

Kudeejeen Community reveals a mixed culture of Thai, Chinese and Portuguese. Its cultural and lifestyle resources hold unique history, culture, ways of life as local products for community-based tourism. Certainly, local people are the important factor that can appeal to tourists' interest in cultural activities that preserve local characteristics, wisdom, and unique identity; these in turn can help boost the community's economy.

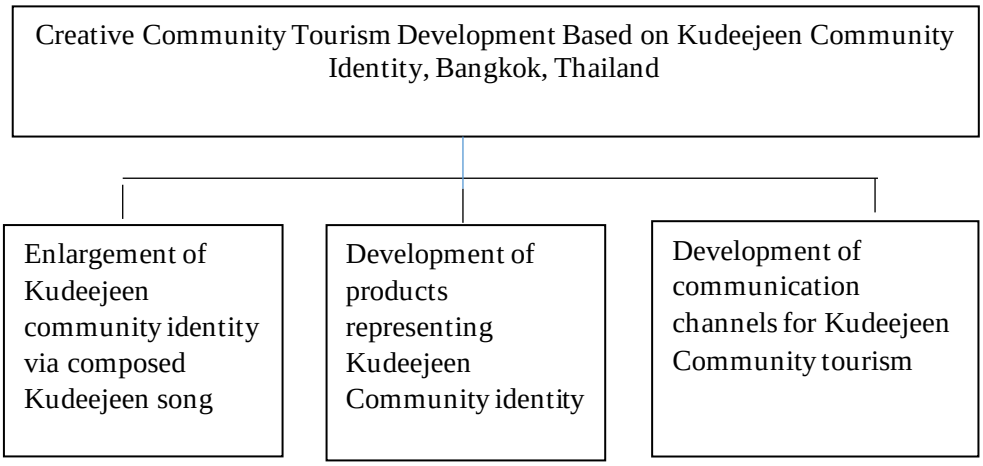
The researchers of this study were interested in examining and identifying new developments in support of community-based tourism in Kudeejeen area.

2. Purposes of Research

The purposes of research were to (1) enlarge Kudeejeen Community identity via composed Kudeejeen song, (2) develop products of Kudeejeen Community's identity, and (3) create communication channels for Kudeejeen Community tourism.

3. Research Framework

Figure 1: Research Framework



4. Research Significance

The researchers expected that the new developments for Kudeejeen Community can appraise its identity in the forms of a song, souvenirs, food and cultural products, and practical communication channels for the public to access the community. These are meant to support creative community tourism based on the community's identity as appealing to potential tourists.

5. Research Methodology

The researchers obtained qualitative data by documentary research, participatory action research, in-depth interview, and focus group discussion. The participants were 10 community leaders.

6. Scope of Research

The present study focused on Kudeejeen Community, Bangkok, Thailand to develop the community's capacity as a model for community-based tourism supported by effective communication channels. The area under study is in Thonburi district in Bangkok. The scope covered a song, souvenirs, food and tourism products, and communication channels for the community.

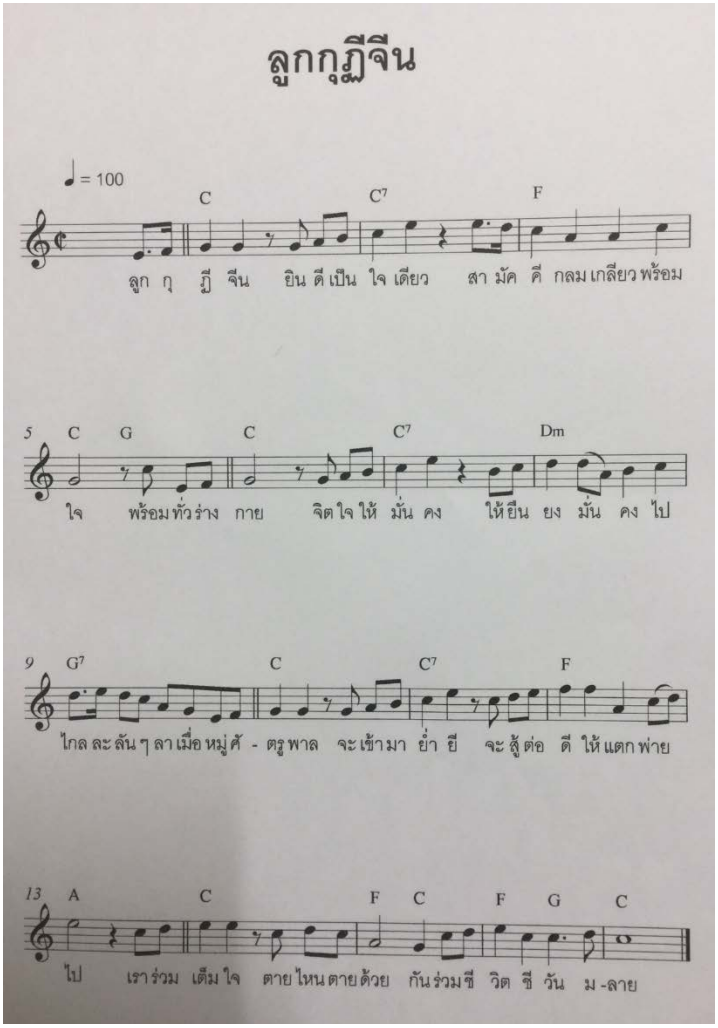
7. Results

7.1 Song Composed for Kudeejeen Community Identity

The original version of the song by Luk Kudeejeen (Kudeejeen Children) was march music for choir and orchestra. The original music was rearranged for variation and harmony. This song originated at the end of 2492 B.E. before the New Year Festival in 2593 B.E. It was firstly sung on 1 January 2493 B.E. by the festival organizing committee

members. The committee took it as a signature for Kudeejeen Community in addition to a village flag. So, they agreed that the village song was accompanied by the village flag. This song was composed using the rhythm of "It's a long way to Tipperary" by Jack Judge. The rhythm was fast with the feeling of unity, pride, and power of the community. The lyrics were written by Supakorn Maneeprasit conveying harmony and stable unity of people in Kudeejeen Community in overcoming all obstacles and conquering over enemies, and aspiring for living and dying as one.

Figure 2: Notes of Rhythm and Lyrics of Luk Kudeejeen Song
(Photo by Ekkachai Phoohirun, 2023)



The main symbol of the community is Carillon Bell at Santa Cruz Church, which is one of two sets in Thailand. Luk Kudeejeen Song was performed with the Carillon Bell. The bells are in different sizes of 16 bells of different notes. The Carillon Bell originated in Europe in the 16th century.

Figure 3: Santa Cruz Church, 2024

Figure 4: The Carillon Bell at Santa Cruz Church, Kudeejeen Community, 2024

The characteristics of 16 bells give power to the community's song. The musician uses a thumb finger to hit the keyboard, which links to a sling to hit each bell. At present, there are only two male players in the community who can perform on the Carillion Bell. With participation from the community's leaders, the research team rearranged a new version for Luk Kudeejeen to sing in accompaniment of the bells.

Figure 5: The History Book of Carillon Bell
(Photo by Ekachai Phuhirun, 2024)

7.2 The Development of Products Representing Kudeejeen Community Identity

Creative community tourism based on a community's identity can generate tourism products on the original culture to attract tourists. The dessert "Kanom Farang Kudeejeen" and other cultural activities around Buddhist and Chinese temples, boat and bicycle trips, and leisure walk offer pleasant experience to tourists.

The results of the study revealed that the community needs help in producing souvenirs reflecting the community's identity in the form of miniature clay and the signature dessert "Kanom Farang Kudeejeen" as a delicacy mix of Chinese and Portuguese ingredients. Three ingredients are flour, egg, and sugar. Dried fruits as raisin, dry welding hatch, dried tomato, and sugar are currently used for topping of small and big sizes, in contrast with the original recipe without topping. The body of the dessert is Portuguese and the topping is Chinese.

Figure 6: Kanom Farang Kudeejeen, 2023

The shape of Kanom Farang Kudeejeen was selected by the community as a souvenir. The data obtained from the interview confirmed that the community would like to make a souvenir from Thai clay which is easily found in the area. Molding clay is an easy production method for community people to do and adapt to different shapes and types of molded things. The souvenir is a Thai clay mold in the shape of Kanom Farang Kudeejeen and the molded clay is on the top of a flash drive. The story of Kudeejeen Community and Luk Kudeejeen Song are recorded on the flash drive. The developed souvenir is shown in Figure 7.

Figure 7: The Shape of Molded Clay on Top of Flash Drive after Kanom Farang Kudeejeen (Photo by Julalak Jarujutarat, 2020)

7.3 The Development of Communication Channels for Kudeejeen Community Tourism

Tourism products and souvenirs need good presentation to attract the public. Luk Kudeejeen march song requires effective marketing communication to reach the target audience. It is integrated marketing communication that can convey the ways of life and

community activities to potential customers (Singkhajorn 2018a, 2018b). The media used in communication should be related to products, and attractive to customers to remember tourism products and services.

In particular, the research team selected a logo of Kudeejeen as appropriate to Thai and foreign tourists, as shown in Figure 8.

Figure 8: Logo of Kudeejeen Community Showing Kanom Farang Kudeejeen and Santa Cruz Church (Designed by Singh Singkhajorn, 2019)

Singkhajorn et al (2020) reported planning marketing communication of Kudeejeen Community in the following procedure: (1) analysis of problems and opportunities as part of SWOT analysis, (2) identification of the objectives, which involve creating images, attitudes, perception, and purposes (Angkura 2019) in order to bring Kudeejeen tourism to life with souvenirs and a composed song in orchestra, (3) market segmentation toward local and foreign tourists, aged between 15-55 years old who access tourist information online, and 4) content creation to be precise and concise. Message brevity in marketing communication channels is accompanied by beautiful photos and creative storytelling (Singkhajorn 2018a, 2018b). The video on Kudeejeen Community Tourism is shown in Figure 9.

Figure 9: Video Promoting Kudeejeen Community Tourism (Photo by Singkhajorn, 2018a, 2018b)

8. Conclusions and Discussions

As seen in Figures 2-9, the research team worked on launching Kudeejeen Community tourism by rearranging Kudeejeen Song, developing a souvenir representing the community's identity, and creating integrated communication channels online. The community's participation was sought for its members' approval and willingness to carry on their work on community-based tourism on their own. To the researchers, the R&D project as such offered ample opportunities for the university staff in tourism marketing to learn from the target community and develop good relationships with the key persons of the community for follow-ups and academic services the university can render in its policy on community developments in the vicinity of the main campus for now and beyond.

9. Acknowledgement

The research team was grateful to Rajabhat University Network and Thailand Research Fund 2019 for financial support allocated to the R&D project on Kudeejeen Community.

10. The Authors

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ISSN 2821-9074 (Online)
ISSN 2730-2601 (Print)
RICE Journal of Creative Entrepreneurship and Management, Vol. 5, No.1, pp. 47-64,
January-April 2024

doi: 10.14456/rjcm.2024.4
Received 6.02.24/ Revised 15.03.24 / Accepted 28.03.24

The Development of a Learning Management System Platform on Historical Buddhist Plant Species in School Botanical Gardens in Thailand

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Abstract

The objectives of this research and development R&D project were: (1) to create, test and use a learning management system platform on historical Buddhist plant species in school botanical gardens in Thailand; (2) to evaluate the learning management system platform prototype; and (3) to deliver the learning management system platform prototype in Thai schools. The voluntary participants were 5 administrators/ teachers, 35 students involved in the School Botanical Garden Project, and 5 ICT developers in Academic Year 2023. The research stages were: (1) design and development of a learning management platform; (2) platform quality assessment and evaluation; (3) students' satisfaction with their use of the system after three months; and (4) platform improvement based on satisfaction data. The research tools were a constructed questionnaire and interview guide. The obtained quantitative data were analyzed for frequency, percentage, mean and standard deviation; and the qualitative data were analyzed by content analysis. The results pointed to: (1) The participants were satisfied with the use of the learning management system platform on historical Buddhist plant species; (2) The structure of the platform consisted of a content website, teachers' and students' database, knowledge evaluation model, knowledge memorandum, web board, knowledge asset, document download and gallery; (3) The process of the platform comprised: (i) knowledge identification; (ii) knowledge acquisition; (iii) knowledge creation and exchange; (iv) knowledge storage and retrieval; and (v) knowledge transfer and utilization. It was expected that the developed learning management platform prototype could equip learners and stakeholders with the skills to learn about historical Buddhist plant species for effective learning integrated with other subjects in the basic education curriculum used by Thai schools with botanical gardens.

Keywords: *Learning management platform, historical Buddhist plant species, school botanical gardens*

1. Introduction

The digital economy is considered an era of humans with a wide range of knowledge and expertise to operate under the circumstances of competition and rapid change. Phakamach et al. (2022) explained that Knowledge Management (KM) is a new type of learning that guides people to create experiences based on knowledge. Such a learning mechanism focuses on the consolidation of scattered knowledge into one place

and creation of an atmosphere for people to innovate. The most important thing is to provide channels and conditions for people to exchange or transfer knowledge between and among them (Oliveira et al., 2016; Kant et al., 2021). Its application is for improving the quality of education at all levels and enhancing skills and learning competencies required of 21st century learners for the country's social and economic development (Ratchavieng et al., 2022).

Rajamangala University of Technology Rattanakosin has participated in the royal initiative on plant genetic conservation under the patronage of HRH Princess Maha Chakri Sirindhorn. Academic operations focus on raising awareness of plant genetic conservation in schools. The initiative aims at awareness of sustainable development and maintenance of a balanced environmental quality in the long run. Ratchavieng & Phakamach (2021) worked on plant genetic resource conservation by campaigning and promoting activities in the form of training projects for youth and local general public. The purpose was to teach and train children to value plant conservation, appreciate natural beauty, and enjoy studying and conserving rare plants. Chen & Sun (2018) cautioned that the use of teaching methods that create a sense of fear, if not conserved, will cause negative consequences in causing stress to children, which will be detrimental to their country in the long run.

The operation of the school botanical garden project has developed students' awareness of plant genetic conservation by allowing them get close to plants, and value benefits and natural beauty in conserving rare plants. A botanical garden on the school's ground is used in teaching integrated subjects in the basic education curriculum. As of 4 July 2022, there have been 3,300 member botanical garden schools. The subtopics on botanical gardens on the basis of five learning elements are put in the normal teaching and learning schedule as prescribed in the policy and standards of the Office of Education Standards. Follow-ups reveal that member schools awarded with royal certificates for a long time changed school administrators and did not actively pursue the botanical project activities as prescribed, and some even withdrew their participation. Follow-ups from the school websites and annual reports on administrative matters could lead to reduction in receiving certificates and badges of royal initiatives, down to membership suspension from the school botanical garden project (Ratchavieng et al., 2022).

Historical Buddhist Plant Species is a book systematically compiled by the author Professor Payao Duangwongkin, an expert in plant taxonomy on herbs of the Royal Plant Genetic Conservation Project. The book is a reference document in support of the operation of the school botanical gardens. Todate, there have been very few documents on classification of the historical Buddhist plants and herbs. The operation of school botanical gardens in Thailand is on a web-based learning model as a a learning management system for teaching and learning processes that link learners with teachers and between learners and their peers by providing supplementary teaching materials or e-coursewares, for self-paced learning in knowledge management. This is a good opportunity for learners to access knowledge on the historical Buddhist plant species via the School Botanical Garden Project.

Based on the ongoing learning management operation of the school botanical gardens, the researchers were interested in developing a learning management system platform on the historical Buddhist plant species as part of the school botanical gardens.

The researchers were to modify the learning process by using an ICT platform to support teaching and learning activities. The design aims at educational innovations with dimensions consisting of (i) electronic learning materials, (ii) knowledge management support systems, such as knowledge libraries, knowledge records and assessments, (iii) databases of the faculty and students, as well as academic services, (iv) online e-bulletin boards for learning exchange, and (v) links with schools (e-schools). The researchers included teachers and learners performance improvements based on expert feedback. The constructed learning management system platform on historical Buddhist plant species was meant to serve students under the school botanical garden project in using effective knowledge management.

2. Research objectives

The objectives of this research and development R&D project were: (1) to create, test and use a learning management system platform on historical Buddhist plant species in school botanical gardens in Thailand; (2) to evaluate the learning management system platform prototype; and (3) to deliver the learning management system platform prototype in Thai schools**.**

3. Literature Background

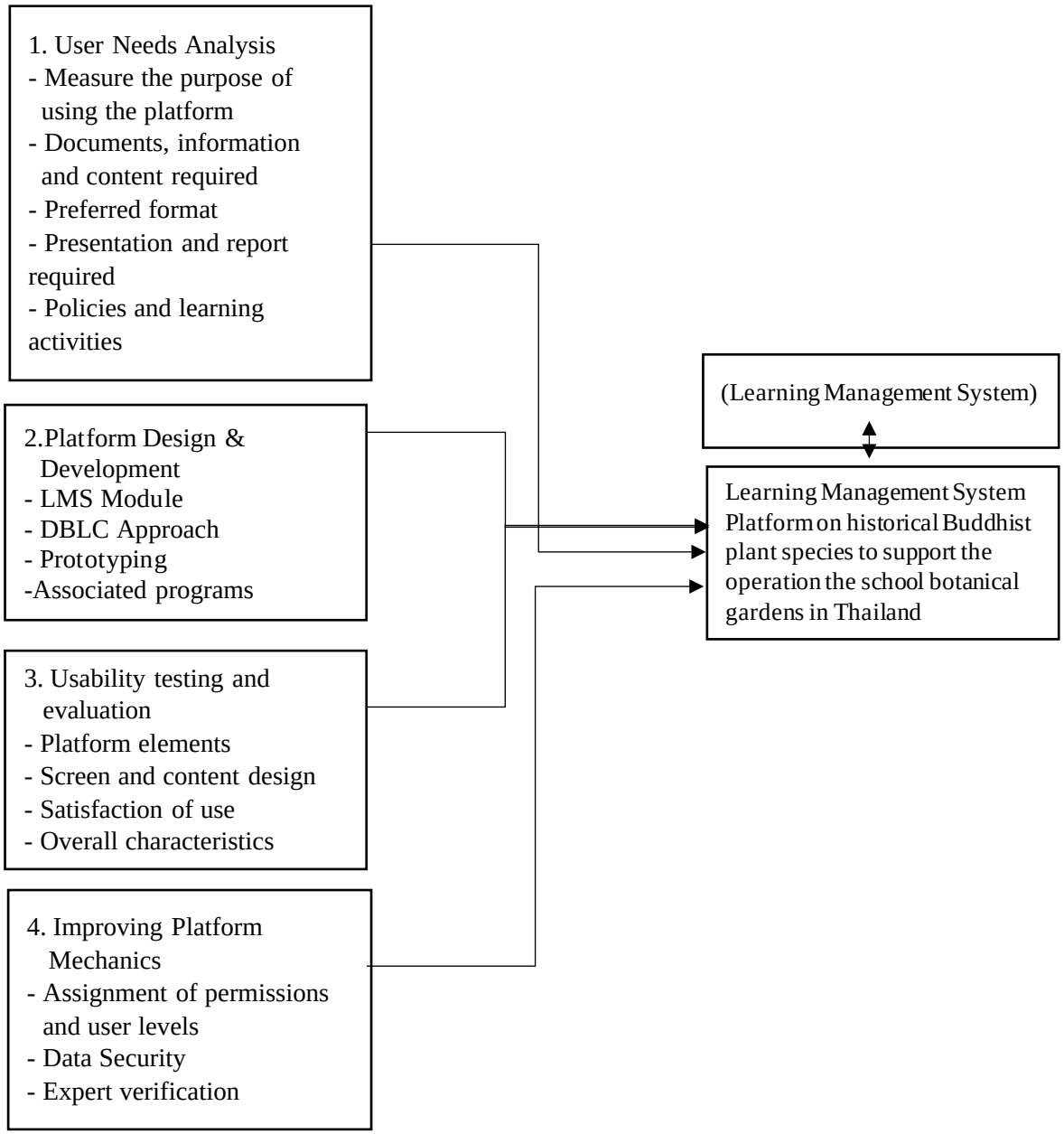
Information communication technology (ICT) is related to the way of life and livelihood of people in modern society. The development of ICT has greatly improved people's quality of life of in society. As known, the world is in the electronic era that has brought about unlimited changes. (Phakamach et al., 2021, 2022). In the education system, ICT has been adopted for better education in bringing in big data of news, knowledge, and all kinds of information sources in depth at a high speed andin high volume. Various media, in graphics, sound, and multimedia, as well as interactive systems are placed on digital platforms for learningand sharing. Modern learning uses a global treasure trove of knowledge. Resources are happening all the time and scattered all over the world. Learning in the modern age requires learning a lot at a high speed. Learners must be able to discern, search, and seek what they need for educational excellence (Sinlarat, 2020).

A learning management system platform refers to the application of ICT system to teaching and learning management by utilizing existing knowledge or learning for maximum benefit (Phakamach, 2023). It is a tool to achieve the goals of learning in many aspects, particularly knowledge development to build a learning organization in which mutual knowledge exchange occurs in support of important digital processes, such as design, creation, collection, exchange, and implementation (Phakamach, 2023) As planned in the present study, the development of a learning management system platform on historical Buddhist plant species for learning in school botanical gardens can demonstrate the process in five steps: Step 1: Identification, Step 2: Acquisition, Step 3: Creation and Exchange, Step 4: Storage and Retrieval, and Step 5: Transfer and Utilization (Phakamach et al., 2022).

4. Research Conceptual Framework

The research team created a conceptual framework as a guideline for constructing a learning management platform on historical Buddhist plant species, as shown in Figure 1.

Figure 1: Research Conceptual Framework



5. Research Methodology

This research uses Research and Development (R&D) methodology with four phases as follows:

5.1 Step 1: User Needs Analysis

Objective: To analyze and synthesize the learning management system about historical Buddhist plant species to support the operation of the school botanical gardens. The sub-operating steps are as follows: Step 1: Study information from documents and formats related to knowledge management. Step 2: Gather the opinions from school botanical garden experts. Step 3: Gather feedback from students and stakeholders from the school botanical gardens. Step 4 Gather feedback from ICT experts and educational innovators. The data gathered from Steps 1 to 4 are analyzed and synthesized into an overview of desirable platform development.

Participants: The participants were divided into 3 groups as follows:

Group 1: Five experts in knowledge management and school botanical gardens.

Group 2: Thirty-five students from nine schools with botanical gardens in Prachuap Khiri Khan province under the royal patronage of HRH Princess Maha Chakri Sirindhorn. These schools are: (1) Wang Klai Kangwon School, (2) Ban Maduea Thong School, (3) Ban Thung Yao School, (4) Ban Tha Kham School, (5) Ban Suan Luang School, (6) Ban Khlong Loi School, (7) Ban Nong Hoi School, (8) Prachuap Witthayalai, School (Muang District), and (9) Ban Khao Zhao Border Patrol Police School.

Group 3: Five ICT system and educational innovation specialists.

Groups 1 and 2 served as end users of the newly developed platform.

Data Collection: The data collection tools for three groups were:

An unstructured interview form was for Groups 1 and 3.

A questionnaire consisting of a check-list and fill-in the blank answers was for Group 2.

The questionnaire was validated for language appropriateness and wording, tried out for precision. Its Cronbach's Alpha Coefficient was at .924.

Data Analysis: The data obtained from Group 1 were on the educational platform and overall structure. Group 2 data were on the user's needs and satisfaction regarding the use of the platform. Group 3 data dealt with the methods, models, and strategies of I CT implementation of platform development. Quantitative data were analyzed for frequency, percentage, mean and standard deviation; qualitative data were analyzed by content analysis.

5.2 Step 2: Platform Design and Development

Objective: To create a model on a management system platform to learn about historical Buddhist plant species in the operation of botanical gardens in schools in Thailand. The data obtained from Step 1 specified periodic usability testing.

Research Method: The application of various standard softwares related to platform design and development using the DBLC database development process includes:

(1) System Analysis: This is the process of user requirements analysis to identify problems and needs in order to solve identified problems and improve the existing work system. The studied issues are the feasibility study and scope of the new work system.

(2) System Design: Database design uses an E-R (Entity-Relationship Model), known as a relational model and a normalized model.

(3) System Implementation is programming as designed, and testing the program by using system development strategies developed by the system owner. There are documents on program use in two types: User documentation and program author's document to explain and teach how to use the program.

4) System Installation is the installation of the system by bringing the validated program to the user and training for understanding of the system operation.

5) System Operation and Evaluation: The implementation and evaluation of the system.

6) System Maintenance and Evolution: The maintenance and enhancement of the system to be stable and safe.

The design and development at this stage are to build the platform from synthetic data from Step 1 according to the defined format.

5.3 Step 3: Usability Testing and Evaluation

Objective: To test the usability and development of the platform in accordance with the platform model obtained in Step 2.

Research Method: The operator adopts research methods to find out the efficiency and satisfaction of system users. The aim is to improve the performance of the system with the following implementation plan: Step 1: Organizing a workshop by introducing stakeholders and testing the use, which will be conducted three times. Step 2: Implementation testing by a user group consisting of teachers and students using a joint meeting in the organization (Workshop Facilitation). Step 3: Evaluation of the use of the system by inquiry and participatory observation (Participant Observation). Step 4: Finalizing the model of the historical Buddhist plant species learning management system platform to support the operation of the school botanical gardens.

Research at this stage can modify the process as seen appropriate. Practical testing is carried out as well as studied according to the prescribed pattern in order to obtain a suitable platform for knowledge management of the school botanical gardens.

Participants: Group 1: Five experts in knowledge management and school botanical gardens. Group 2: Thirty-five students and stakeholders of the school botanical gardens from nine schools in Prachuap Khiri Khan province from Step 1. Group 3: Five experts in ICT system and educational innovation.

Data Collection: The tool was an unstructured interview form on testing its effectiveness. Data collection was by group as follows:

Groups 1 and 3 with workshops and interviews.

Group 2 with workshops and participatory observations. They were asked to respond to a questionnaire on a scale of 1-5: A checklist and fill-in sections. Part 1: Participants' information, Part 2: Comments on the use of the platform regarding the

efficiency and satisfaction of system users, and Part 3: Suggestions and guidelines for platform development.

Very high	given weight value at 5
High	given weight value at 4
Moderate	given weight value at 3
Low	given weight value at 2
Very low	given weight value at 1

The questionnaire was validated by five experts for language appropriateness and tested for precision by Kronbach alpha coefficient formula, as shown in Step 1.

Data Analysis: Group 1 data were analyzed to find ways to improve and develop the platform according to the specified format so that users can use it effectively. Group 2 data were on the participants' information, analyzed by frequency and percentage. Part 2 data on opinions about the platforming were analyzed by mean and standard deviation. Part 3 data on suggestions and guidelines for platform development were analyzed by content analysis for suggestions on development approaches.

Group 2 obtained questionnaire data were interpreted as follows:

4.21-5.00: Very High: Maximum efficiency and satisfaction
3.41-4.20: High: High level efficiency and satisfaction
2.61-3.40: Moderate: Medium efficiency and satisfaction
1.81-2.60: Low: Less efficiency and satisfaction
1.00-1.80: Very low: Minimal efficiency and satisfaction

where the score discrepancy is by the formula = (5-1)/5 = 0.8.

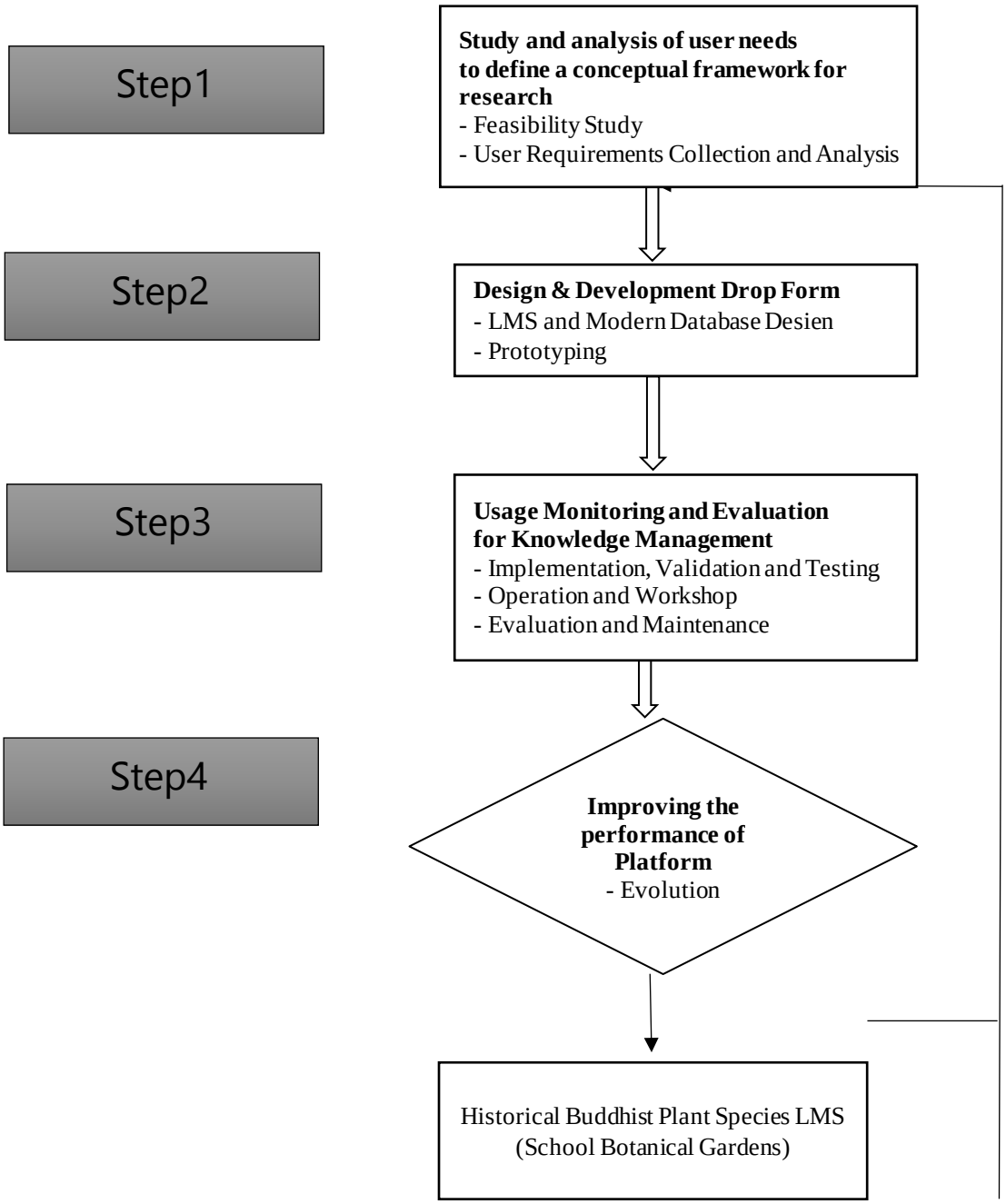
5.4 Step 4: Platform Performance Improvement

Objectives: To determine improvements of the platform from Step 3 regarding its performance to achieve more effective learning functions with the user in mind.

Research Method: The researchers conducted unstructured interviews using focused group discussion of five experts on the school botanical gardens and five experts in ICT systems and educational innovations. They provided opinions and suggestions to improve the platform to be complete in functions to be documented in a research report.

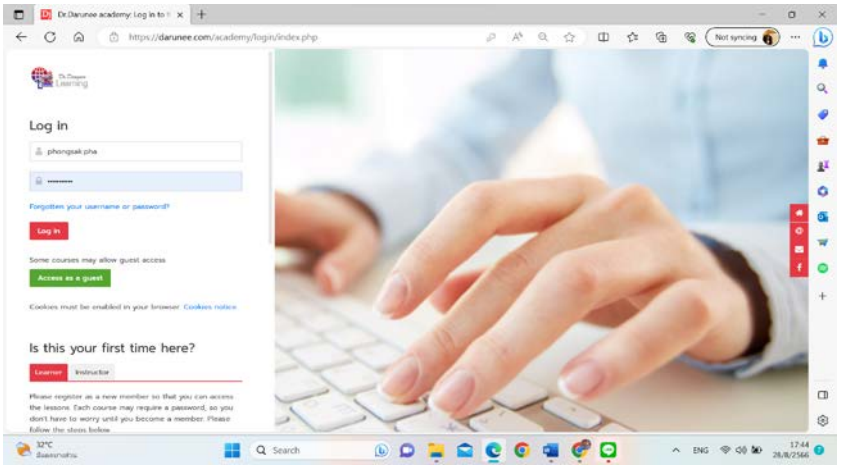
From Research Steps 1 to 4, the researchers summanarized all the process stages in a diagram on platform development, as shown in Figure 2 below.

Figure 2: Process in Research Methods



Two examples of the Historical Buddhist Plant Species Learning Management System Platform to support school botanical gardens are shown in Pictures 1and 2 below.

Picture 1: Main Page of the Learning Management Platform



Picture 2: Historical Buddhist Plant Species on the Learning Management Platform

6. Research Results

The researchers reported the obtained results according to the sequence of the research objectives.

6.1 The Study and Analysis of User Needs

The results on user needs of the historical Buddhist plant species to support the operation of school botanical gardens in Thailand revealed that all users under study were satisfied with the platform in accordance with the requirements and regulations related to

education management at the basic education level. The operational procedures were carried out sequentially: The opening of the course, the organization of teachers, writing instructional requirements, subject studies assessment (as applicable), notification of academic results, and reports to the school

The users under study considered ICT system development guidelines for the platform clearly defining the work structure related to knowledge management tasks at the educational level and in line with the project. The basic guidelines for platform development are listed:

(1) Establish clear and continuous policies, operational plans, and actual operations with emphasis on the standard operating model of the OECD.

(2) Provide powerful tools and programs to support and support effective management of school botanical garden knowledge.

(3) Prepare and plan the budget work to be consistent and appropriate to the preparation of the student service system.

(4) Publicize and campaign with all personnel to recognize the importance and the benefits of using the platform and ICT system for education in the school botanical garden project.

(5) Train personnel to understand and use the platform for the benefit of teaching and learning for academic enhancement.

(6) Appoint a central agency to coordinate, advise/recommend effective use continuously.

(7) Conduct usage evaluation to identify problems and find practical solutions.

6.2 System Design and Development

Platform design and development in this study were based on the DBLC standard system development process: (i) System Analysis: This is the process of user requirements analysis; (ii) System Design: Database design is presented using the E-R (Entity-Relationship Model), also known as the Relational Model; (iii) System Implementation; (iv) System Installation; (v) System Operation and Evaluation; and (6) System Maintenance and Evolution.

An appropriate program for use in platform design and development carried the following features : (i) Flexible in use; (ii) Providing functions to support knowledge management; (iii) Supportive to future functions; and (iv) Taking into account compatibility with normal forms and methods of operation without causing difficulties to users.

6.3 Usage Test Results and Evaluation

Part 1: The Results of the Assessment of the Quality of the Platform Prototype

The participants and experts in school botanical gardens expressed their opinions on a scale of 1-5 regarding platform composition, screen design and content, and usability. They showed their satisfaction at a high level ($\bar{x}$ =3.90, S.D.=0.43), as shown in Table 1.

Table 1: Efficiency in Use of the Historical Buddhist Plant Species on the Learning Management Platform to Support the Operation of School Botanical Gardens in Thailand

Efficiency in use of the historical Buddhist plant species on the learning management platform to support the operation of school botanical gardens in Thailand	$\bar{x}$	**S.D.**	**Percent**	**Efficiency level**
Data Recording/ Editing	3.95	.28	78.40	High
Data search	3.80	.76	76.00	High
Report issuance	3.80	.52	74.40	High
Contact with users, including administrators	3.98	.38	78.00	High
Data Security	3.86	.30	77.20	High
Platform User Manual	3.76	.39	73.00	High
The overall appearance of the platform	4.03	.51	79.00	High
Total	**3.90**	**0.43**	**76.80**	High

Table 1 shows that the participants' opinions on the overall platform usage performance is at a high level. When considering individual aspects, they also rank high in terms of overall appearance of the platform and efficiency in all transactions.

The participants' satisfaction with the use of the platform was also at a high level ($\bar{x}$=3.88, S.D.=0.63), as shown in Table 2.

Table 2: Participants' Satisfaction with the Historical Buddhist Plant Species Learning Management Platform to Support the Operation of the School Botanical Gardens

Participants' satisfaction with the historical Buddhist plant species learning management platform to support the operation of the school botanical gardens	$\bar{x}$	**S.D.**	**Percent**	**Satisfaction level**
Responding to teaching and learning	3.90	.48	76.20	High
Providing fast and convenient information services	4.10	.74	80.00	Very high
Data accuracy	3.50	.58	68.40	Moderate
Completeness of information	3.50	.58	68.00	Moderate
Data update	3.90	.88	76.20	High
Information meets the needs	3.90	.48	76.00	High
Center of information	3.93	.87	76.20	High

Participants' satisfaction with the historical Buddhist plant species learning management platform to support the operation of the school botanical gardens	$\bar{x}$	**S.D.**	**Percent**	**Satisfaction level**
Ease of coordination/command	3.70	.58	72.00	High
Easy to find information	4.30	.87	84.20	High
Convenient access to the system	4.10	.74	80.00	High
The process of use is clear and easy to understand	4.11	.74	80.20	High
Data change made easy	3.90	.48	76.00	High
Conference support	3.52	.58	68.00	Moderate
Clear manuals and procedures	3.90	.48	76.20	High
Issuance of appropriate reports	3.48	.48	64.00	High
Proper information security	4.31	.58	84.20	Very high
Total	**3.88**	**0.63**	**76.40**	High

Part 2: Interview Results of Partcipants' Opinions on the Historical Buddhist Plant Species on the Learning Management Platform to Support the Operation of the School Botanical Gardens

There were five issues worth attention as follows:

(1) *Knowledge and Application:* Students have the right platform to learn about historical Buddhist plant species so that they can apply their knowledge at higher levels in the future.

(2) *Behavior and Response:* The teachers and students use the platform to search knowledge records, practical training, learning exchange boards, as well as knowledge assessment in the knowledge management process to enhance their research experience.

(3) *Participation*: The teachers and students are involved in the use of online media. The platform can create an incentive for users to create an atmosphere for exchanging and transferring knowledge on social media.

(4) *Application:* The users were satisfied with the use of the platform by applying the knowledge to develop competency-based learning skills.

(5) *Problems and Suggestions:* The students want to have a system to customize their screens to be more beautiful and attractive when accessing the system and other social networks.

6.4 System Performance Improvement Effects

Five ICT and educational innovation experts confirmed in the interview session that the platform is useful for managing knowledge about the historical Buddhist plant species to support the operation of the school botanical gardens. They suggested a stand

alone one-stop service that can submit the results of the quality assessment of the platform and report to the public. Decision-makers concerned can choose results for the school's past quality assessment as well as recommend new educational developments as seen relevant to stakeholders' needs.

7. Conclusion and Discussion

The researchers summarized and discussed important issues according to the research objectives and procedures as follows:

7.1 Conclusions

(1) Study and Analysis of User Needs

The users of the historical Buddhist plant species learning management platform to support the operation ofschool were satisfied at a high level. They want this platform to manage knowledge about the historical Buddhist plant species in integration with the basic education curriculum.

As for design and development of the appropriate learning management platform, a standardized system development process should be used to to obtain a system that can fully respond to knowledge management at the basic education level.

The users under study need guidelines for the development of ICT system for a knowledge management skills development. The work structure related to knowledge management tasks at the basic educational level must be clearly defined and in line with the project's specifications. Development of knowledge management models and methods needs to comply with requirements in using appropriate ICT systems and educational innovations.

(2) Platform Design and Development

DBLC can be used to develop such a learning platform as shown in this present study to meet the needs of users, which is determined by the implementation test results and evaluation in Step 3.

(3) Usability Testing and Evaluation

The results of the study pointed to the efficiency in use of the historical Buddhist plant species learning management platform to support the operation of the school botanical gardens as follows:

(i) The overall performance of the platform ($\bar{x}$=3.90, S.D. = 0.43) indicates that the platform is suitable as a tool for teaching and managing knowledge as required.

(ii) The participants' overall satisfaction with the platform at a high level ($\bar{x}$)= 3.88, S.D. = 0.63) indicates that the platform responds well to the knowledge management on historical Buddhist plant species.

The platform provides information services for teaching and managing knowledge about historical Buddhist plant species. It can add some functions and information in accordance with the needs of both teachers and students. It is easy to change the data in the system for improvement or updates. The platform contains up-to-date information and issuance of instructional reports. It can also integrate standard software for more knowledge management tasks on demand in the future.

(4) Platform Performance Improvement

From the results of the study, the historical Buddhist plant species Learning Management Platform contains the following features:

(i) The historical Buddhist plant species platform can store information as required and contact users conveniently, quickly, and easily.

(ii) A platform can perform additional recording, editing, processing, issuance of reports and manual data deletion.

(iii) A platform can search educational information, documents, and data sorts according to the specified conditions correctly in order to effectively implement the project of the Office of theNational Education Commission (Thailand).

(iv) A platform can conveniently issue on-screen and printer-based reports.

(v) A platform has data security platforms by secured-password.

(vi) A platform can constantly move new information and knowledge to keep pace with changes in science and technology.

The platform development process can be summarized in the following steps:

Step 1: *Identification:* Providing an overview of knowledge related to the presented subjects correctly on historical Buddhist plant species to support the school botanical garden project.

Step 2: *Acquisition:* Gathering information and knowledge on related subjects on historical Buddhist plant species to create valuable documents. This stage creates a system on a website; learning materials are put on a database system to link teachers with learners.

Step 3: *Creation and Exchange:* Drawing deep-seated knowledge from experience and work to create explicit knowledge or new body of knowledge in the form of various media, and to support innovative community in practices. At this stage, teaching will be conducted through a prototype system through electronic media. The implementation of specified activities is in the form of question-answer related to course content and tests.

Step 4: *Storage and Retrieval:* Securing an educational database for learners, teachers and interested people. The database system can be stored and searched by creating a membership system for interested parties or used in combination.

Step 5: Transfer and Utilization: Supporting the dissemination of knowledge on a platform for learning exchange. Once the students have passed Steps 1 to 4, they can examine the results of their development of knowledge about historical Buddhist plant species in the operation of the school botanical gardens, and for further dissemination to the public.

7.2 Discussion of the Results

The researchers discussed the obtained finding as follows:

(1) Study and Analysis of User Needs

As reported in the obtained findings, the users of the educational platform need ICT systems for storage in knowledge management to access such a target topic as historical Buddhist plant species in the operation of the school botanical gardens. The research methods in data collection, platform development and project implementation appeared consistent with the studies by Altınay et al. (2019), and Ratchavieng et al. (2022). These previous researchers analyzed how to integrate ICT systems into management and quality

assessment in education to increase evaluation efficiency. Pakamach & Chaisanit (2019) earlier described the process of designing and developing a good platform with current technical qualifications for an appropriate system that can achieve the identified objectives. In addition Ukhov et al. (2021) emphasized that the design and development of a modern platforms require a thorough analysis of user needs in order to create functions that are suitable for real-world work conditions. This is to enable the constructed platform to respond well to users with required functions.

(2) Platform Design and Development

The results of the study showed that overall platform performance and user satisfaction were at a high level. This finding was in line with the studies by Oliveira et al. (2016) who found that good platform or application design must take into account user needs in development and implementation for maximum performance as intended. In addition, Phakamach et al. (2021) asserted that design and development is a major task of ICT because its process involves all users or stakeholders. Therefore, it requires the ability of experts in system analysis to match the objective with design and development. As for the management of the system development process, the developer needs to strictly adhere to the model as specified in the process. Altınay et al. (2019) emphasized that the new work system can achieve real operational development without placing too much burden on users.

(3) Usability Testing and Evaluation

The platform designed and developed with the topic of historical Buddhist plant species can add new functions and information in accordance with the user's usage for both teachers and learners. The development of the website format can support the expansion of knowledge management information by using standard software and basic education management for the future. In addition, five ICT experts in the study said that platforms are to contribute to increased efficiency and flexibility in teaching and learning at the basic education level. The developed platform can serve as an application model to support the current online teaching and learning format. The platform in fact requires flexibility in design to support a wide range of learning conditions as well as to create a new image for the organization (Kant et al., 2021; Ratchavieng et al.,2022).

(4) Platform Performance Improvement

It is important to improve the platform's full functions according to the curriculum benchmarks of the Office of the Basic Education Commission, Thailand. The platform needs to have all functions to create learning that meets the standards of operation by National Education Act as well as the international standards. This is to achieve a more standardized platform and network model consistent with the basic education management guidelines in short and long-term quality assurance operations. This point was highlighted earlier by Phakamach & Chaisanit (2019) and Wachirawongpaisarn et al.(2021). This was also in line with the findings of Supermane & Tahir (2018) and Ratchavieng et al. (2022) in that application performance improvement must be done continuously to respond to users' performance. In addition, Phakamach et al. (2022) and five ICT experts in the study commented on the development of high-performance platforms to be cost-effective. In order for the platform to be able to meet the long-term

use, various standards or regulations must be adapted to ensure that the operation of the school botanical gardens in the project succeed both quantitatively and qualitatively.

In this regard, the research on development of a learning management system platform on historical Buddhist plant species to support the operation of school botanical gardens in Thailand was meant to satisfy the participants under study. With the reported results, the researchers feel confident in the quality as sufficient for the practical implementation of this learning management system in botanical-garden schools under the Office of the Basic Education Commission. The developed platform can benefit teaching and learning in the school botanical garden project as effectively as planned.

8. Suggestions

Based on the obtained findings, the researchers would like to have the following suggestions:

(1) The development of educational systems or platforms requires a qualified and expert development team to achieve an appropriate and effective knowledge management system in accordance with the objectives of learning in the digital age.

(2) In order to make the learning management process fast and cost-effective, the operator needs to provide training so that students can understand the objectives, format, method of use, and can solve problems that arise during self-study.

(3) The operator needs to provide in-depth training to learners and promote wider learning regarding the subject matter, interaction sections, active discussion boards, notification system and hands-on instruction manual on relevant content.

(4) It is important to use text, graphics, sound, and multimedia appropriately and consistently.

(5) Platform performance testing must be carried out with planned periodic test work so that all functions of educational management and learning management can proceed well with expected quality at work.

9. Future Research

The research team would like to see research and development of other platforms to be carried out to cover all subject groups via knowledge management in support of teaching and learning at the basic education level in Thailand. Research should be conducted by putting this platform prototype in other educational institutions in order to evaluate its effectiveness in selected contexts so that its implementation can benefit the target learning management program in the real-world conditions.

10. Acknowledgement

The authors are grateful to Rajamangala University of Technology Rattanakosin for the provided research fund and publication support upon completing the research project.

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ISSN 2821-9074 (Online)
ISSN 2730-2601 (Print)
RICE Journal of Creative Entrepreneurship and Management, Vol. 5, No.1, pp. 65-73,
January-April 2024

doi: 10.14456/rjcm.2024.5
Received 8.05.23/ Revised 15.02.24/ Accepted 28.03.24

Academic Paper

Artificial Intelligence for Marketing

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Abstract

Artificial Intelligence (AI) is transforming the field of marketing by enabling marketers to analyze large amounts of data, automate repetitive tasks, and provide personalized experiences to customers. AI can help with various marketing activities, particularly generation influencing, customer segmentation, content creation, social media management, and email marketing. By leveraging AI, marketers can improve their targets, increase their efficiency, and enhance their customer experience. The adoption of AI in marketing evidently presents challenges concerning the need for high-quality data, the risk of bias, and the importance of maintaining human oversight. Artificial Intelligence (AI) has essentially supported marketers in analyzing vast amounts of data, personalizing customer experiences, automating various tasks, and generating predictive insights. Major AI applications for marketing include natural language processing (NLP), sentiment analysis, image and video recognition, chatbots and virtual assistants, recommendation engines, and predictive analytics. All these applications can definitely help marketers optimize their advertising and social media campaigns, improve customer segmentation, and enhance customer engagement and retention.

Keywords: *Artificial Intelligence (AI), personalization, predictive analytics, chatbots, image recognition, voice assistants, sentiment analysis*

1. Introduction

Nowadays AI has the potential to transform the way marketers operate and offer good personalized experiences to their customers in the following aspects (Ardissono & Goy, 2015; Mouli & Paul, 2020; Zhang, Zhao & Yang, 2021; Talreja Wassan & Ghuriani, 2023):

(1) Personalization: AI can analyze customer data to create personalized marketing messages and experiences. This can increase customer engagement and loyalty.

(2) Predictive analytics: AI algorithms can analyze customer data to predict their behavior and preferences, allowing marketers to make data-driven decisions and develop targeted marketing campaigns.

(3) Chatbots: AI-powered chatbots can provide personalized customer service, answer customer questions, and offer product recommendations.

(4) Image recognition: AI can be used to recognize images and videos, allowing marketers to analyze user-generated content and target ads to the appropriate audience.

(5) Voice assistants: AI-powered voice assistants like Siri and Alexa are increasingly used via voice search and making purchases--making it possible for marketers to optimize their content for voice search.

(6) Sentiment analysis: AI can analyze social media and other online channels to determine customer sentiment toward a brand or product--allowing marketers to make data-driven decisions and adjust their messaging accordingly.

In this paper, the author reports and explains how artificial intelligence or AI for short is transforming the field of marketing by enabling marketers to analyze large amounts of data, automate repetitive tasks, and provide personalized experiences to customers.

2. Personalization AI

Personalization AI refers to the use of artificial intelligence to create personalized experiences for individual customers. This technology involves collecting and analyzing customer data by browsing history, and purchasing history/ demographic information to create a unique profile for each customer. Such a profile can be used to customize marketing messages, product recommendations, and other experiences to individual customers' preferences and needs.

Personalization AI uses machine learning algorithms that can analyze large amounts of data to identify patterns and trends in customers' behavior, particularly their interaction with marketers (An, 2023) and loyalty to companies via specific digital platforms (He et al., 2023). This technology can help marketers to deliver more relevant content, improve customer engagement, and increase interactions. Major examples of personalization AI include:

(1) Product recommendations: AI algorithms can analyze customer data to suggest products that are likely to be of interest to the individual customer.
(2) Email marketing: AI can analyze customer data to create personalized email campaigns that fit each customer's interests and behaviors.
(3) Dynamic website content: AI can be used to create personalized website experiences that match the individual customer's preferences and behaviors.

Overall, personalization AI is becoming an increasingly important tool for marketers who want to create more engaging, relevant, and effective marketing campaigns (Ganotra & Rahi, 2018).

3. Predictive analytics AI

Predictive analytics AI refers to the use of artificial intelligence to analyze data and make predictions about future events or behaviors. This technology involves the use of machine learning algorithms to identify patterns and relationships in large datasets, which can be used to make predictions about future outcomes.

Predictive analytics AI can be used in a wide range of applications, including marketing, finance, and healthcare. In marketing, predictive analytics AI can be used to:

(1) Identify potential customers: By analyzing customer data, predictive analytics AI can identify individuals who are likely to be interested in a product or service.

(2) Predict customer behavior: Predictive analytics AI can be used to identify patterns and trends in customer behavior--allowing marketers to anticipate future behavior and make data-driven decisions.

(3) Optimize marketing campaigns: By analyzing past campaign data, predictive analytics AI can help marketers to optimize future campaigns for maximum effectiveness.

(4) Forecast sales: Predictive analytics AI can be used to forecast future sales based on historical data, allowing marketers to make data-driven decisions about pricing, promotions, and inventory management (Singh & Prashar, 2021).

Overall, predictive analytics AI serves as a tool for marketers who want to make data-driven decisions and create more effective marketing campaigns. By analyzing large amounts of data and making accurate predictions about future behavior, predictive analytics AI can help marketers to optimize their strategies and achieve expected results.

4. Chatbots AI

Chatbots AI refers to the use of artificial intelligence to power chatbots, which are computer programs designed to simulate conversation with human users. Chatbots AI technology involves natural language processing (NLP), machine learning, and other AI techniques to understand and respond to user input conversationally. Chatbots AI can be used in a variety of applications, including customer service, sales, and marketing. In marketing, chatbots AI can be used to:

(1) Provide personalized recommendations: Chatbots AI can analyze customer data and provide personalized product recommendations based on individual customer preferences.

(2) Assist with purchases: Chatbots AI can help customers find the products they are looking for and assist with the checkout process.

(3) Answer customer questions: Chatbots AI can provide quick and accurate answers to customer questions, reducing the need for human customer service representatives.

(4) Provide customer support: Chatbots AI can handle basic customer service requests,

(5) Order status updates and returns: Chatbots AI can be integrated with other marketing

technologies, particularly email marketing and social media marketing, to provide a seamless customer experience across multiple channels (Kuznetsova, 2018).

Overall, chatbots AI supports marketers who want to provide personalized, efficient, and effective customer experiences. By using chatbots AI technology to simulate conversation with human users, marketers can improve customer engagement, increase conversions, and reduce customer service costs.

5. Image Recognition AI

Image recognition AI refers to the use of artificial intelligence to analyze and understand visual content as in images and videos. This technology involves the use of machine learning algorithms to analyze and classify visual content based on its characteristics, such as color, texture, shape, and content. In marketing, image recognition AI can be used to:

(1) Analyze user-generated content: Image recognition AI can be used to analyze user-generated content, particularly social media posts and product reviews, to understand how customers are using and interacting with a brand or product.

(2) Target ads: Image recognition AI can be used to identify objects or scenes in images and videos--allowing marketers to target ads to the appropriate audience based on their interests and behaviors.

(3) Monitor brand presence: Image recognition AI can be used to monitor brand presence online by identifying images and videos that feature a brand or product.

(4) Enhance product search: Image recognition AI can be used to improve product search functionality by allowing customers to search for products based on visual characteristics as in color and shape (McDonagh-Smith & Benjamins, 2018; Mouli & Paul, 2020; Zhang, Zhao & Yang, 2021).

Overall, image recognition AI is an increasingly important tool for marketers who want to analyze and understand visual content and improve their marketing efforts. By using AI-powered image recognition technology, marketers can gain valuable insights into customer behavior and preferences and create precisely targeted and effective marketing campaigns.

6. Voice Assistants

Voice assistants AI-powered voice refers to the use of artificial intelligence to power voice-activated assistants, such as Amazon Alexa, Google Assistant, and Apple Siri, to name but the major ones. This technology involves natural language processing (NLP), machine learning, and other AI techniques to understand and respond to user voice commands in a conversational manner.

In marketing, voice assistants AI-powered voice can be used to:

(1) Provide personalized recommendations: Voice assistants AI-powered voice can analyze customer data and provide personalized product recommendations based on individual customer preferences.

(2) Assist with purchases: Voice assistants AI-powered voice can help customers find the products they are looking for and assist with the checkout process.

(3) Answer customer questions: Voice assistants AI-powered voice can provide quick and accurate answers to customer questions--reducing the need for human customer service representatives.

(4) Provide customer support: Voice assistants AI-powered voice can handle basic customer service requests, as in order status updates and returns (McDonagh-Smith & Benjamins, 2018; Mouli & Paul, 2020).

In should be noted that Voice assistants AI-powered voice can also be integrated with other marketing technologies, such as email marketing and social media marketing, to provide a seamless customer experience across multiple channels.

Overall, voice assistants AI-powered voice is an important tool for marketers who want to provide personalized, efficient, and effective customer experiences. By using voice assistants AI-powered voice technology to simulate conversation with human users, marketers can improve customer engagement, increase conversions, and reduce customer service costs.

7. Sentiment Analysis AI

Sentiment analysis AI refers to the use of artificial intelligence to analyze and understand the sentiment expressed in text data, such as social media posts, customer reviews, and survey responses. This technology involves the use of natural language processing (NLP) and machine learning algorithms to classify texts as positive, negative, or neutral based on the emotions and opinions expressed. In marketing, sentiment analysis AI can be used to:

(1) Monitor brand reputation: Sentiment analysis AI can be used to track social media and online reviews to understand how customers feel about a brand or product, and to identify potential issues or concerns.

(2) Measure campaign effectiveness: Sentiment analysis AI can be used to measure the effectiveness of marketing campaigns by analyzing customer feedback and identifying areas for improvement.

(3) Identify customer preferences: Sentiment analysis AI can be used to analyze customer feedback and identify customer preferences--allowing marketers to personalize their messaging and offerings.

(4) Identify influencers: Sentiment analysis AI can be used to identify influencers who have a positive impact on brand sentiment and engage with them to promote a brand or product (Ardissono & Goy, 2015; Kuznetsova, 2018)

Overall, sentiment analysis AI is an important tool for marketers who want to understand customer sentiment and optimize their marketing efforts by analyzing large amounts of text data and accurately identifying the emotions and opinions expressed. Sentiment analysis AI can provide valuable insights that can inform marketing strategies and improve customer engagement. These resources provide a good starting point for

understanding the research and application of AI in marketing. They cover a range of topics, from deep learning to personalized marketing, and provide insights into how AI can be used to improve marketing strategies and customer engagement. It is for marketers to create personalized, data-driven marketing campaigns that engage and retain customers.

Ganotra & Rahi (2018) discussed the potential impact of AI on digital marketing and provides insights into how AI can be used to improve marketing strategies and customer engagement. The authors covered a range of topics related to AI in digital marketing, including natural language processing, machine learning, and predictive analytics. They provided case studies and examples of how companies are already using AI in their marketing effort. Some of the key insights include:

(1) AI can be used to improve customer targeting and segmentation, allowing marketers to deliver more personalized and relevant content to customers.

(2) Natural language processing can be used to analyze customer sentiment and improve social media marketing campaigns.

(3) Machine learning can be used to identify patterns and trends in customer data, allowing marketers to optimize their campaigns and improve ROI.

(4) Predictive analytics can be used to forecast customer behavior and anticipate customer needs, allowing marketers to stay one step ahead of their competitors.

Overall, "The Future of Artificial Intelligence in Digital Marketing" provides a useful overview of the potential impact of AI on the field of digital marketing. It highlights the key benefits of using AI in marketing, but also acknowledges the challenges that need to be addressed to ensure that AI is used ethically and responsibly.

Singh & Parashar (2021) wrote about artificial intelligence in marketing. They provided a comprehensive review of the literature on AI in marketing and identified key research directions for the future. Their work covers a wide range of topics related to AI in marketing, including personalized marketing, customer segmentation, sentiment analysis, and chatbots. It also provides case studies and examples of how companies are already using AI in their marketing efforts. Some of the key insights from the article include:

(1) Personalized marketing serves as the most promising applications of AI in marketing, widely used by companies to deliver customized content and offers to individual customers.

(2) AI can be used to segment customers based on their behavior and preferences, allowing marketers to tailor their messages to specific groups of customers.

(3) Sentiment analysis is a powerful tool for understanding customer opinions and attitudes, and can be used to improve product development and customer service.

(4) Chatbots are becoming increasingly popular in customer service, as they allow companies to provide quick and efficient responses to customer inquiries.

Overall, Singh & Parashar (2021) highlighted the potential benefits of using AI in marketing and identified some key challenges that need to be addressed, such as privacy concerns and the need for greater transparency in AI decision-making.

McDonagh-Smith & Benjamins (2018) explored the ways in which AI is transforming the marketing industry and providing new opportunities for companies to engage their customers effectively. Their work covers a variety of topics related to AI in marketing, including personalized marketing, chatbots, predictive analytics, and voice assistants. It also provides case studies and examples of how companies are already using AI in their marketing efforts. Some of the key insights include:

(1) Personalized marketing is one of the most promising applications of AI in marketing, as it allows companies to deliver more relevant and engaging content to individual customers.

(2) Chatbots and voice assistants are becoming increasingly popular in customer service, as they allow companies to provide quick and efficient responses to customer inquiries and improve the overall customer experience.

(3) Predictive analytics is a powerful tool for identifying trends and patterns in customer data--allowing marketers to anticipate customer needs and optimize their campaigns accordingly.

(4) AI enables companies to create more engaging and interactive content, as seen in personalized videos and virtual reality experiences.

Overall, McDonagh-Smith & Benjamins (2018) provided a useful overview of the ways in which AI is transforming the marketing industry. They highlighted the key benefits of using AI in marketing, and acknowledged the challenges that need to be addressed, such as the need for greater transparency and accountability in AI decision-making, and the ethical considerations surrounding the use of AI in marketing.

Kuznetsova (2018) provided an overview of the challenges and opportunities associated with using AI in marketing, and explored the potential impact of AI on the marketing industry. Some of the key insights include:

(1) AI has the potential to transform the marketing industry by enabling companies to deliver more personalized and targeted marketing campaigns.

(2) Chatbots and voice assistants can provide a more seamless and convenient customer experience, but companies need to ensure that they are designed and implemented properly to avoid frustrating or alienating customers.

(3) Predictive analytics can help companies to better understand customer behavior and preferences, but there are challenges associated with data quality and privacy that need to be addressed.

(4) Companies need to be mindful of the ethical considerations surrounding the use of AI in marketing, such as the potential for bias and discrimination, and take steps to mitigate these risks.

Overall, Kuznetsova (2018) gave a useful overview of the potential benefits and challenges associated with using AI in marketing. The author highlighted the need for companies to carefully consider the ethical implications of their use of AI, and to ensure that they are using these technologies in a way that benefits both their customers and their business.

8. Conclusion

As seen in the benefits of AI applications reported so far, marketers can achieve their targets by increasing their efficiency as well as enhancing their customer experience. Artificial intelligence has evidently supported marketers in analyzing vast amounts of data, personalizing customer experiences, automating various tasks, and generating predictive insights. Major AI applications are currently playing their vital role in marketing: Natural language processing (NLP), sentiment analysis, image and video recognition, chatbots and virtual assistants, recommendation engines, and predictive analytics. All these applications have opened up a new era of digital marketing on a global scale. Marketers can optimize with ease their advertising and social media campaigns, manage customer segmentation, and enhance customer engagement and retention. What they need to keep in mind along with the rapid movement of lucrative AI applications is that such AI-based marketing cannot do without social responsibility, respect for customers' rights and professional ethics toward all stakeholders concerned.

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ISSN 2821-9074 (Online)
ISSN 2730-2601 (Print)
RICE Journal of Creative Entrepreneurship and Management, Vol. 5, No.1, pp. 74-82, January-April 2024

doi: 10.14456/rjcm.2024.6
Received 7.05.23/ Revised 15.03.24/ Accepted 25.03.24

Academic Paper

Information Technology for School Guidance

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Abstract

Using technology for guidance takes various forms of guidance activities and tools in support of guidance work. There are both technology images in the form of media used in guidance and the tools to help manage guidance. These are to make the guidance work effective in education to reach as many learners as possible. The prominent examples of applications are Computer Assisted Instruction (CAI), electronic books (e-Books), video conference (Video Conference) and online learning (e-Learning). This paper reports the technology-based guidance work with three considerations: (1) efficiency in achieving the goal, (2) productivity in precision and time-effectiveness, and (3) economy in saving both time and human resources. The researchers expected that the obtained results would generate practical implications for guidance counselors in support of students, teachers, and educational administrators.

Keywords: *Guidance work, technology-based guidance, guidance counselors, guidance effectiveness*

1. Introduction

Today's world has changed dramatically in technology and Thailand has quickly responded to such changes. Along with bringing the country into the era of innovation and high income by the policy of Thailand 4.0, the country has emphasized creativity and innovation for the management of Thai education. The majority of the country's students belong to Generation Z in which they are closely related and grew up with new technologies via smart phones as personal tools. In this regard, guidance teachers need to keep up with technologies in the cyber world. The guidance process requires various technologies in line with changing social conditions and contexts (Netasit, 2020). In order for the guidance to be effective, convenient and fast, it is therefore necessary to use appropriate and modern technology in the guidance operations. According to the study of Komontien et al. (2016), guidance teachers still lack knowledge and skills in using media and technology to perform

on guidance tasks effectively. Guidance teachers need the application of tools, materials, and methods particularly for services in individual learner surveys, information provision, psychological counseling sessions, follow-up and evaluation, and other guidance activities.

In this paper, the authors present a guide to the use of new technology for school guidance teachers with emphasis on efficiency, productivity and economy. The objective is to assist guidance teachers or related guidance personnel in applying modern technology appropriately to school guidance work. The main topics include forms of guidance technology, application of technology for guidance, and the benefits of technology-based guidance work.

2. The Importance of Using Technology for Guidance

Guidance in educational institutions requires change in the guidance system in all aspects. According to Netasit (2020), the use of technology in the guidance process is necessary for the following reasons:

(1) The rapid growth in academics around the world and the emergence of new technologies and innovations have a direct effect on education and guidance practices. It is very important to use appropriate technology to assist the guidance work.

(2) Rapid changes in society are affected by development in science and technology. The social process is constantly changing and dynamic in nature. Such changes have a direct impact on the way of life, adaptation and development of learners.

(3) Characteristics of information society or news society allow information to be transmitted quickly all over the world. A large amount of information is at the fingertips of those who want to use it. The need for education or guidance as a source of information tends to be diminished. School guidance needs a new role as an information provider which is difficult to accomplish without technology.

(4) Changes in learning methods prompt the use of technology in guidance at one's fingertips in response to learners' individual differences in ample learning opportunities at individual learning pace.

(5) Advances in new technologies bring about the new format of guidance activities, media and guidance evaluation to suit the rapid technological changes. Guidance activities must respond to new learning styles that help learners to learn a great deal quickly in a limited time. Therefore, guidance technology has to initiate innovations in handling guidance tasks effectively.

(6) Learners tend to learn more on their own and the use of technology can help access lifelong education more conveniently.

In addition, Bill Gates (cited in Kaewdang, 2000) discussed the use of technology in learning management as follows:

(1) Learning is not limited to the classroom. In the modern world, people can learn from various sources of knowledge. In particular, the information superhighway is about to play a vital role in the management of human education.

(2) Learners have individual differences. Each child is different. Therefore, it is necessary to manage teaching and learning in accordance with the differences between people. Each child has different knowledge, understanding, experience and worldview.

(3) Learning that meets individual needs requires education that teaches a large number of children via computer technology. This has been the dream of educators for a long time to be realized by teachers providing care, support and guidance.

(4) Learning uses multimedia in every classroom via a computer network where children can choose to study various subjects according to their needs and interests.

(5) The role of the information superhighway in teaching will lead teachers from many different places as models. Teachers can create their own website to publish for a large number of learners or in the form of mass learning as individually preferred.

(6) The role of the teacher has changed, particularly as a student's trainer to help give advice, and a friend of learners. It is a creative solution for learners and a bridge that connects the learner with the world.

(7) The relationship between students, teachers and parents will be based on the computerized information superhighway system. It supports the relationship between students, teachers and parents, especially the use of e-mails or social media.

Bill Gates has opened up the whole new world of education with the introduction of modern computer systems and a globally connected information superhighway to catalyze the revolution in education.

The existing teaching and learning systems still keep the classrooms intact. Technology gives students the opportunity to study individually, or collaboratively as desired with the teacher. In this regard, teachers, counselors or guidance personnel in the field of education need to adjust and keep up with the changes that are now taking place.

3. Forms of Guidance Technology

Technology used for guidance work carries several formats as follows:

(1) Technology in the form of *media* is used in guidance is known as Information Communication Technology (ICT) for learning activities. The nature of use depends on the technique and method, as seen in guidance activities using ICT media as learning tools. In this case, ICT conveys content to students to study and recreate a body of knowledge through ICT media products. The guidance teacher takes the role of a producer, and the guidance teacher and the learners jointly producing the desired ICT products. ICT media are generally available on the Internet; this type of ICT media is in the form of video media, electronic books (e-books) or computer-assisted instruction (CAI). Computer-assisted instruction has different techniques and formats, such as a game (Game), a search (Discovery), a tutorial (Tutorial), and a test and practice (Drill and practice) (Office of Technology for Instruction, 2012).

(2) Technology in the form of *tools* to assist in the guidance work utilizes ICT in guidance work to collect documents, store contact records with parents, surveys, and follow-ups. The tools are classified by three characteristics: (1) help record and store information related to guidance work, such as data on students' history, grades, health records, aptitudes and interests; (2) expand access to a vast amount of information available on the Internet to enable guidance teachers to empower themselves with knowledge, search, and research; (3) serve as a ready-to-use tool for guidance teachers to apply modern technology to plan and facilitate their work; they can use mobile phones to share guidance-related materials, presentations and contacts with colleagues and students.

(3) Technology in the form of an *information system* helps users manage structures in educational institutions, such as local networks, and a management information system (MIS) created for use in specific departments or organizations. The use of management information systems (MIS) is intended to solve management problems, show statistical data in support of school administrators, and in turn reduce paper. There are examples of information systems for educational guidance, as reported by Komontien et al. (2016) of an information system for educational guidance of a secondary school in Maha Sarakham Province under the school network of Mahasarakham University. The researchers reported a developed information system for educational guidance according to the System Development Life Cycle: SDLC in 5 steps of design analysis and information systems development. The web browser program was Microsoft internet Explorer 6.0 and above. The highlight of the network-based information system is that it saves time in installing the system for users—students, guidance teachers, and administrators. The results of the study indicated the users' satisfaction with the information system for education guidance.

As seen in guidance technology mentioned above, guidance teachers are to select technology that is appropriate for learners for effective guidance operations. The purpose of use is vitally important to obtain the desired value, advantages in the school's conditions, environment, traditions, and ethics propriety of copyright.

4. Application of Technology for Guidance

Technology development for guidance applications is to make the guidance work effective and distribute education to reach as many learners as possible. Technology applications for guidance cover the following:

(1) Computer Assisted Instruction (CAI) is applied to teaching and learning management in organizing guidance activities. The program uses a variety of presentation styles in texts, graphics, animations and sound to attract learners' interest in learning.

(2) Multimedia media or mixed media using computer technology show a combination of texts, numbers, still images, animations and sound together. "Multimedia" is a technology that has been developed rapidly to display images in a way that combines many types of media. It focuses on interacting with users. The way of learning in today's society has changed and developed rapidly. Therefore, the integration of technology media from the base of computer use for learning has resulted in applications of information and communication technology for guidance that currently plays a vital role in education.

(3) Electronic books or e-Books are digital publications in text, images, or a combination of both. It can be read on a digital device (e-reader) or on a computer that requires specific software to provide interactions with students. Electronic books can easily insert images, sounds, animations, quizzes, and can print out the desired document. Downloading or reading from the internet sites can be done or updated at any time. These features make it easy for students to read and understand electronic books like paper books on a computer, smart phone or tablet.

(4) Video Conference or teleconference via screen allows people to meet in a group of persons located in different places. Meetings can be conducted via a computer monitor or electronic device, such as a smart phone with a camera and a specific application. Add-on applications are also available on Line, Facetime and Zoom for 2-way communication.

In the context of education through video conferencing, students and teachers can communicate with each other via screens in multimedia format. Students in remote classrooms can communicate with teachers and classmates via visual interactions in real time.

(5) Online learning or e-Learning allows students to learn through the Internet computer network. Students can choose to learn according to their abilities and interests. The lesson content may consist of texts, images, audio, video and other multimedia; students can use a web browser program to access and display the results. Online learning supports teacher-student/ student-student interactions anytime and anywhere as preferred by learners.

5. Examples of Using Multimedia in Guidance

The multimedia type of Chigozie & Akamobi (2015) are: (i) Audio Technology in announcing through a school line and sound to publicize various news, and (ii) Video Technology for students' orientation. The school or guidance event can record events on the day of orientation and compile the essence and atmosphere stored in the guidance room for students to listen. (iii) Image Technology is the development and application of images, format management, image galleries, image search, creation and decoration, such as the use of illustrations on a variety of public relations media in guidance work for learners to understand the public relations media easily. (iv) Text Technology refers to messages or characters, such as sending messages via mobile phones, LINE, and Facebook to communicate with students. (v) Animation & 3D Technology can display animations in both 2D and 3D formats, Virtual Reality, decoration, and processing, as seen in animated media for use in guidance activities. (vi) Storage Technology can be in compressed formats of recording information, as shown in the systematic archive storage of guidance media.

6. Examples of Guidance Activities through Electronic Media or e-Learning

Laohajaratsaeng (2001) classified three characteristics of electronic media or e-Learning: (1) Supplementary Media in creating webpages for guidance services work. (2) Use Alternative Use for students to choose in addition to a normal class mode. (3) Teaching Tool to guide students to study, practice, and test their knowledge online without attending a class. The paper examinations can be optional as seen appropriate by the teacher/ program manager.

7. Guidance Services in Schools Using Appropriate Modern Technology

(1) Individual learners respond to survey services via an online questionnaire, follow-ups and evaluation as feedback. In general, guidance teachers will use the method of distributing documents to students, but in the 4.0 era, they create online questionnaires and quizzes to collect data and interpret results quickly. They can move or store large amounts of documents, copy or jot down various information categories or even save the budget of printing paper. The use of Google Forms is for questionnaires and quizzes, which allows guidance teachers to gather and share information quickly and economically.

(2) Making infographics is convenient in the media, on public signs, or even user manuals in various formats. Statistical information, electric train map, plans, and weather forecast diagrams are for guidance work. The use of infographics is currently widespread

in use on the Internet and most learners tend to choose the most accessible information. Bringing it into the form of an infographic is a good way to present information services to learners. Infographic items are presentable and appealing to learners to understand and can be shared through social media applications, such as Facebook, Instagram, and Line.

(3) Social media applications in psychological counseling services currently facilitate communications on both telephone networks and the Internet via networks worldwide. With social media applications, most students spend rather long hours on activities using technology through mobile devices for communication, entertainment and knowledge seeking. Therefore, it is a good opportunity for teachers and counselors to make use of these tools in communicating, providing information, and giving advice to learners and related parties effectively.

(4) Creating an application in the guidance activities in schools to handle all guidance tasks consistently. Guidance counselors can help learners to discover for themselves what they are interested in and what they are good at in choosing a career and further study in the future. As known, the use of smart phones and tablets with installed applications makes it easier for users to access various media in contact with their customers and online education programs as preferred. Enrollment procedure, preparation of teaching and learning materials, knowledge exchange and management, and guidance services are accessible on the electronic devices for benefits of all parties concerned.

8. Benefits of Using Technology for Guidance

In the overview of guidance operations, the use of technology, when used correctly and appropriately, will yield good results. Three considerations--Efficiency, Productivity, and Economy--can help save both time and human resources. Chaloesap et al. (2012) reported the benefits of using technology for guidance as follows:

(1) Benefits to learners: (i) Learners have the opportunity to choose to access guidance services through channels that are suitable for their abilities, aptitudes, and interests. (ii) Learners have access to guidance services anytime and anyplace. (iii) Learners practice thinking and solving problems on their own. (iv) Learners are encouraged to have skills in finding learning resources. (v) Learners can learn wider and deeper content. (vi) Students make the most of their free time in accessing knowledge.

(2) The benefits to the guidance teachers: (i) Allowing them to plan more variety of guidance activities. (ii) Supporting guidance activities for learners to understand more concrete lessons. (iii) Increasing the efficiency of the guidance teachers' work with the use of technology. (iv) Aiming at learners to self-assess and the guidance teachers to process the assessment of the learners. (v) Making the learning atmosphere pleasant for learners. (vi) Bridging the learning gap among students.

(3) Benefits to educational institutes and guidance work: (i) Collecting data on guidance work in educational institutes. (ii) Reducing costs and increasing productivity and efficiency in office automation systems. (iii) Communicating with fewer contact steps in the educational institution. (iv) Reducing the use of paper. (iv) Providing online guidance services that can perform various activities efficiently as in an online questionnaire and report submission systems.

9. Limitations on the Use of Technology for Guidance

Namburi (2003) and Katasila (2020) identified limitations in the use of technology for guidance work as follows:

(1) Schools in remote areas have limited computers for students' frequent use.

(2) The levels of learners' technology tend to vary in collaborative learning.

(3) The use of technology decreases learners' social and interaction skills. Learners can chat with others online intimately but tend to distance themselves from real people in face-to-face interactions.

(4) Asking and answering questions sometimes doesn't happen spontaneously/ immediately and such delay in interactions can lead to incomprehensibility or miscommunication.

(5) The used technology in good guidance is rather difficult to achieve flexibility suitable for students with different aptitudes.

(6) Guidance teachers spend a lot of time preparing for work in terms of content via computer programs. They also need to train the students to use computer programs competently.

(7) Schools and educational institutions need to allocate sufficient budget for both hardware and software.

It can be seen that the use of technology in guidance work has both benefits and limitations. If a guidance teacher chooses to use technology for guidance, he/she may start with a blended or hybrid mode as a transition from the paper-based human contact to the orientation toward the virtual mode.

10. Ethics for Users of Information Technology

Guidance teachers as technology users in guidance operations need to observe ethics for users of information technology (The Office of the Secretary of the National Information Technology Commission, 2001). Information technology ethics cover personal information, development, production and invention. Users' ethics include the following:

(1) *Users of information technology for work* refer to operators, employees and people who use information technology with the purpose of working or performing work-related tasks. Ethical considerations are: (i) Take into account the benefits of the organization, not harass other users, not cause any damage to the organization. (ii) Have responsibility on duties and keep confidential information of the organization without disclosing to others. (iii) Have knowledge and understanding of information technology and can perform duties accordingly. (iv) Beware of the importance of duties and maintain professionalism by focusing on self-improvement and advancement in the information technology environment. (v) Not misuse information technology knowledge, or not exploit those who lack equal knowledge and understanding.

(2) *Users of information technology for personal use* refer to those who use information technology for purposes other than performing duties. Such users may utilize information technology for personal purposes by the prescribed guidelines: (i) Beware of responsibility for oneself, others and society in using information technology properly. (ii) Evaluate technology, data, information and appropriate applications. (iii) Respect the rights

and copyrights of other people's creations. (iv) Not disseminate inappropriate content—violence, hatred, sex, drugs, gambling, illegal actions, and other people's personal information. (v) Not commit computer crimes or offenses by using a computer as a tool to destroy computers or computer systems. Computer crimes include (i) unauthorized alteration of data; (ii) writing or creating computer programs embedded in other programs for the purpose of destroying data or computer systems; (iii) the use of the balance consolidation technique by rounding amounts; (iv) the use of utility programs as tools to access the system; (v) writing or creating a program that imitates the normal screen of any website which deceives computer users, and stores the user's user ID and password in a secret file; (vi) circumstances as specified by the conditions in tracking the movement of the accounting system and payroll system and change the numbers; (vii) The leakage of information whether deliberately or not, electromagnetic radiation being emitted while working, or the installing process being intercepted when receiving information as required; (viii) eavesdropping communication signals; and (ix) computer-based crime related to planning, control and monitoring process modeling.

It should be noted that information technology has been designed, produced, invented and developed continuously to meet users' needs. In this regard, guidance teachers need to observe professionalism in guidance work as well as information technology ethics in guidance practices. It is certain that they need to take into consideration the interests of learners, educational institutions and society at large.

11. Reflections

As shown in the synthesis of guidance work with the use of information technology, the authors considered it as a practical tool to promote and organize a new environment for learning. Guidance teachers use media or various channels for learners to understand and interact with them. Learners are encouraged to learn by themselves in a more widely distributed education via Computer Assisted Instruction (CAI), electronic books (e-Books), video conference (Video Conference) and online learning (e-Learning). The overall guidance operations emphasize efficiency, productivity and economy.

Individual learner can now access survey services via online questionnaires, and tracking services with Google Forms. Infographics are easy to communicate with the target audience, and suitable for presentations on tasks with complex data. The use of social media programs in psychological counseling services is apparent among learners. Electronic devices--smart phones, computers, tablets are commonly used for communication, entertainment and knowledge seeking. Therefore, it is a good opportunity for guidance teachers to take into account the suggestions and ethical issues in using social media in guidance activities. Guidance teachers can educate learners with cyber etiquette and information technology ethics so that they can avoid complications that may arise from unintentional cyber privacy intrusion, harassment, plagiarism, frauds, or crimes. Guidance teachers should also keep in mind that the quality of guidance operations does not always rely on technology, but on the quality of the teachers regarding their professionalism and ethics.

12. Suggestions

Technology investments require sufficient budget and long-term commitment from educational institutions. Decision making should involve all parties concerned in the organization. The authorities in schools/ educational institutions need to protect electronic data and resources in a well-designed security system to ensure that the information technology tools can support intended operations effectively.

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Sharing Professional Viewpoint

The Integration of Production and Education for Chinese Talent Training in the Vocational Colleges

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1. Opening

At present, there has been a certain gap between students cultivated by higher education and talents demanded by Chinese society. As time goes by, the social demand for talents is constantly looming large, and how to train talents in colleges and universities has become a current discussion topic that needs to be explored further. In particular, the integration of production and education has been recognized as a practical tool to bridge the gap between higher education practices and industry for the country's economic and social development in settling for an equilibrium state (Yang, 2019;Yuan, 2019). The integration as such is highly valued by the Chinese government, colleges and experts and scholars in cultivating application-oriented talents as an important function of vocational colleges. However, at present, the talent training of vocational colleges and universities does not seem to have a clear guidance for the integration of production and education (Xu, 2018). To the author, it is necessary to assess the value of the integration of production and education embedded in the talent training of vocational colleges. From the perspective of institutional change theory (Luo, 2017), the author would like to see the government providing effective institutional supply in three aspects: (i) improve the system design, (ii) formulate special laws for the integration of industry and education, and (iii) establish special departments for the integration of industry and education. The three aspects are covered in light of the integration of production and education.

2. Integration of Production and Education

The integration of production and education is useful for personnel training in vocational colleges. Through the integration of industry and education, students in vocational colleges can be trained to promote economic and social development and meet the needs of industries and enterprises. Since research on the integration of production and education in vocational colleges in China is rather scarce (Che, 2015; Luo, 2017), the author will look at its connotation and classification, followed by the value issue of the integration of production and education in vocational institutions. The present situation requires clarification in value and the path of value realization.

This paper reports the previous scholars' discussion and conclusions on research into the integration of production and education in vocational colleges, the value change process of domestic education integrated with the talent training practiced in vocational colleges since the founding of New China (Che, 2015; Luo, 2017). According to the current situation and problems of vocational college talent training, the author will identify causes as reported by the stakeholders concerned. This is to give a clear picture of the current state

of attempts of the vocational colleges at the integration of production and education for talent training.

3. Research on Integration of Production and Education

Theoretical research on the integration of production and education includes connotation, value, and function. The internal logic of the development of vocational education prompts vocational colleges to adopt the integration of production and education in personnel training (Zheng, 2019). By sorting out the rational origin of talent training for the integration of production and education at home and abroad, the author found that educational scholars of all countries believe that the inherent particularity of vocational education makes it necessary to conform to the logic of economic development (Yang, 2019; Zheng 2019), that is, to form a closed-loop system for the integration of production and education in three aspects: system mechanism, school-running mode and talent training mode. Yang (2019) pointed out that the realistic demand and proper meaning of vocational education in the new era is to deepen the integration of production and education. Such integration is the inevitable path to promote the sustainable and healthy development of vocational education, and also the key to modernize vocational education. Luo (2017) asserted that the integration of industry and education has the value of enhancing the connotation of the relationship between industry and education in vocational education, respecting the development law of vocational education, helping to establish a vocational education governance system, and providing theoretical basis for multiple school-running subjects.

Yuan (2019) emphasized that the quality of talent training in vocational colleges can get better results through the integration of production and education, and realize students' subjectivity needs derived from the inherent integration value. Xu (2018) positioned students as the most direct beneficiaries among the stakeholders of the industry-education integration. The key to improving the level of integration between industry and education lies in the joint efforts of stakeholders to improve the quality of talent training. Such improvement can be done by constructing practical teaching platform, curriculum system, teaching team and the four-ring linkage and collaborative education management mechanism.

4. The Mode and Approach of Production-Education Integration to Vocational Colleges

Zheng (2019) reported the situation of regional industrial clusters, Guangdong Province using five typical models of the integration of industry and education-- Shenzhen model, Guangzhou model, Shunde model, Pearl River Delta model and park model. These five models have common characteristics, one of which is the park being led and developed by the government. Che (2015) investigated China's vocational education alliance and parks mainly initiated and constructed by the government, partucularly Changzhou Higher vocational Education Park, a typical example of vocational education parks in China, whose organizational elements include government-led, idea-oriented, open and sharing of resources and industry-university-research clusters. Under the leadership of Changzhou Science and Education City Management Committee, Changzhou Higher Vocational Education Park adheres to vocational education as the core, builds a public service platform

for the integration of production and education and collaborative education, and establishes an effective operating mechanism for the service platform.

Ma (2019) studied the "Belt and Road" vocational education alliance in promoting the internationalization of vocational education in China and solving the problem of insufficient Sino-foreign cooperation in running schools. Song & Yan (2016) discussed the construction of vocational education alliance and parks in China on a full scale that the effect is not ideal in actual practice. There are some problems, particularly differences in coordination and organization culture, obstacles in the governance of educational management institutions and teacher exchanges, lack of Chinese-foreign cooperation in running schools, and the convergence of specialties in higher vocational education parks. In handling these problems, scholars have proposed solutions from different theoretical and practical perspectives; for example, the establishment of teacher sharing management and operation system, the optimization of the career path structure of teachers in colleges and universities, and the standardization of the management of teacher sharing process to solve the problem of teacher exchange barriers.

Laine (2015) proposed that in order to promote the integration of vocational, industry and education, colleges and universities should connect majors with industries according to their own characteristics, organize industries based on the missions of colleges and universities, and provide internship platforms and bases for personnel training and teacher training, as well as internship opportunities for students. Siegel & Waldman (2003) and Brodkey (2005) explained that enterprises' willingness will affect their cooperation objectives and enthusiasm, and short-term profit-making enterprises are less interested in the integration of industry and education. In order to improve the level of integration between industry and education, it is necessary for colleges and universities to increase cooperation with long-term profitable enterprises. Santoro & Chakrabarti (2002) and Chang (2006) proposed from their empirical research results that the teaching conditions of vocational colleges themselves would affect the integration of production and education. Differences in understanding of professional curriculum, teachers and policy implementation will affect their views on the integration of industry and education, and in turn impact the implementation of the desired integration. In all situations, colleges and universities should impart the right knowledge and clear understanding of the integration of production and education to be implemented in specific vocational education contexts.

5. Integration of Production and Education Training of Talents in Vocational Colleges

Wu & Huang (2014) clarified positioning of application-oriented undergraduate talents as the premise of clear training goals. Compared with academic talents, applied undergraduate talents should have distinct applied research ability and technical knowledge and skills. Compared with employment-oriented skilled talents, application-oriented undergraduate talents should have more comprehensive and profound professional theoretical knowledge and good cultural literacy, and need to have more profound basic education and follow-up development motivation and ability. In the formulation of talent training quality standards, trainers must refer to the needs of social and economic development and the needs of industry development for talents, and design in three aspects: knowledge and skills, ability and emotion, attitude and values. The establishment of quality

standards for application-oriented undergraduate talents training requires the participation of multiple subjects. Enterprises are to participate in the process of formulating the training goals and programs for application-oriented undergraduate talents. Only in this way, trainers can help application-oriented undergraduate talents master the knowledge and ability in line with the requirements of enterprises, apply profound theoretical knowledge to the actual working environment, and maintain innovation in the practice process. The application-oriented undergraduate talent training mode focuses on the combination of production, learning and research, and the training course content. Those teachers who train talents need to possess professional ethics, excellent teaching ability, scientific research ability and engineering practice ability. Tang, Zhou & Zhang (2019) emphasized that the key to success in application-oriented undergraduate talent training lies in the integration of essential elements: professional structure and industrial structure, professional standards and career requirements, teaching resources and industrial resources, campus culture and corporate culture. Zhang (2018) cautioned that applied undergraduate talents need to adapt themselves to the general trend of artificial intelligence work via a well-established modern apprenticeship training model selected by the host vocational colleges.

6. Reflection

From the previous studies on the integration of production and education for Chinese talent training in the vocational colleges, we can see that the Chinese vocational colleges have been well aware of the significance of the industry-education connection. It is necessary that enterprises and vocational colleges share their goals in nurturing and developing talents for the country's social and economic development in the long run. In principle, such production-education integration has been well recognized by the stakeholders concerned—educational institutions, enterprises and government authorities.

As seen in the literature from 2005-2019, both enterprises and vocational colleges requested the full role of the government in its commitment to the integration of production and education for talents training regarding a clear-cut policy, funding, and outcome follow-ups. As stated earlier, the author would like to see the government providing effective institutional supply in three aspects: (i) improve the system design, (ii) formulate special laws for the integration of industry and education, and (iii) establish special departments for the integration of industry and education. These are what all parties concerned need to voice their urgency to the government for a specific action plan and concrete outcome indicators.

It should be noted that scholars and researchers involved in the trend of the production-education integration for talent training in vocational colleges, the role of AI has projected itself for attention of trainers involved in the curriculum design, process learning, internship specifications and outcome evaluation. With an optimistic viewpoint on China's economic competitiveness, the author expects that leaders in Chinese vocational education can reach out to target enterprises to make the production-education integration as a major agenda for the high quality of college talent training in this decade and beyond.

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RJCM Publication Policy

1. Policy

RICE Journal of Creative Entrepreneurship and Management (RJCM) has its focus on original contributions on research work or academic issues in the areas of creative entrepreneurship and management as practiced by academics or scholars in their fields of specializations in social sciences. It is a double-blind peer-reviewed journal and each volume is published online-plus-print thrice a year: No.1 in April, No.2 in August and No 3 in December. Original research articles, academic papers and brief professional viewpoints for sharing will be included in this journal. The details and views expressed in the published papers are entirely the responsibility of those authors.

2. Submission of Manuscripts

Authors should submit a non-formatted WORD file of their manuscript in single spacing (see Section 3: For Authors below) to Editor-in-Chief 2 Ruja Pholsward <rujajinda@gmail.com>.

- The Office of the Editors-in-Chief is at Science and Technology Building, Floor 4, Rattanakosin International College of Creative Entrepreneurship, Rajamangala University of Technology Rattanakosin, Thanon Putthamonthon Sai 5, Salaya, Nakhon Pathom 73170, Thailand.

- Telephone number (office): +66 2441 6000 ext 2790
  Mobile: +66 81-436-1303
  Website: https://ricejournal.rmutr.ac.th

- There will be no publication fee for both the online-plus-print versions for papers printed in *RICE Journal of Creative Entrepreneurship and Management (RJCM)* Volumes 1-4.

- Publication Fee and Payments are effective from Volume 5 onward.
  RICE, RMUTR Announcement on Publication Fees (Document dated 5.04.23)
  * General authors: 6,000 baht
  * RICE/RMUTR staff members: As specified in the Document dated 5.04.23.
  * Bank transfer to Krungthai Bank, Account number 459-0-58498-0 after the editor-in-chief's initial feedback to the author.
  *The author please send a copy of the transfer slip to the editor-in-chief so that the review stage can proceed.
  * Please address your inquiries to the editor-in-chief (rujajinda@gmail.com, Tel +66 81 436 1303).

- The latest date for submission of the first draft of the manuscript to be published in *RJCM* each year: (1) Number 1 in February, (2) Number 2 in June, and (3) Number 3 in October.

3. For Authors

Arrangement and Style of Manuscript

3.1 Paper and Page Setup:

Paper size: Standard A4

Top margin: 1 inch	Bottom margin: 1 inch
Left margin: 1.25 inches	Right margin: 1 inch
Header: 0.5 inch	Footer: 0.5 inch

3.2 Manuscripts of Original Articles, for both print and online versions, should be submitted in a WORD file of the A4-sized paper, using the Times New Roman (12-point font). Symbols used should be of a similar size and typed on the corresponding lines of text used in each section. Manuscripts of the original article should contain the following sections: title, author's name, author's workplace, abstract and keywords, the main text/ body text, acknowledgements, references, tables, figures, captions/legends and illustrations. Each page should be clearly numbered in the bottom center of each sheet. Authors should carefully edit and proofread their manuscripts before submission.

3.2.1 The title: The **title of the article** must not exceed 2 lines. A title itself has to be informative and indicates the main topic in the article. The title should be set in the center of the page, using upper and lower case letters of Times New Roman 12 points and printed bold. If there is any symbol, its size must be the same as the text in that line.

3.2.2 Author's name: The author's name and last name are in Times New Roman 11 points in upper and lower case letters in the center of the page below the title of the article. In the case of multi-authorship, identify each author by superscript numbers at the end of the author's last name.

3.2.3 Author's workplace: The workplace (address of the institution) of the author and/or the group of the authors, are in regular Times New Roman 10 points in upper and lower case letters in the center of the page. In case of multi-authorship, please superscript numbers in front of the entire author's name. The e-mail address and telephone number of the corresponding author should also be included here.

3.2.4 Abstract and Keywords: The abstract and key words are in Times New Roman 11 points. They must be single-spaced under the author's workplace and separated from the bottom line of the author's workplace.

3.2.4.1 Abstract should be informative and state what was done, obtained and concluded. It should be accurate, self-contained, concise and specific, coherent and readable, and reflect only what appears in the original paper. An abstract should contain the following basic components: (1) purpose/motivation/problem statement, (2) methods/design/procedure/approach, (3) results/findings/products, (4) conclusion/applications/research limitations/implications (if applicable), practical implications (if applicable), pedagogic or social implications (if applicable), and (5) originality/value. The length of the abstract should be about 150 words and not exceed 200 words. Type the word "**Abstract**," using Times New Roman 11 points and print bold, left-hand justified. The abstract should be written in one single-spaced paragraph under the heading.

3.2.4.2 Keywords: Type the word "Keywords," using Times New Roman 11 points and in italics, left-hand justified, separated by a colon (:) followed by keywords written in English not over five words, and separate words by a comma (,).

3.2.5 The main text: The main text of the manuscript must be typed in WORD using Times New Roman 12 points, under an abstract and keywords with single-spaced line and separated from the above section. The main text of your paper should be divided into eight sections (see below), each with a separate heading. Headings are in bold letters, left-hand justified in the column. The first line of each paragraph should indent 0.5 inch from the left margin (of the page/of the right-hand column). Scientific names are normally shown in italics, and symbols must be the same size as the text in that line. The body of the text includes: (1) Introduction, (2) Research Objectives, (3) Research Methodology, (4) Results and Discussion, (5) Conclusion, (6) Acknowledgement, (7) The Author, and (8) References.

3.2.6 In-text Citations: Authors are to give references to all the information obtained from books, papers in journals, websites, or other sources. The Author-Date System should be used to cite references within the paper by using the author's last name and date (year), separated by a comma in parentheses; for example, name(s), year.

3.2.7 Tables and Figures:

3.2.7.1 Tables: The large-sized table format should not be split into two columns but small-sized table can be fit into the column. Each table must be titled, numbered consecutively and complete with heading (title with a description that goes above the table). The word "**Tables**," including number should be typed using Times New Roman 11 points and bold, left-hand justified, and follow by regular 11 points Times New Roman for the heading.

3.2.7.2 Figures: Line-drawn graph or Figure (in black) is accepted. Also, in the case of photographs, glossy photographic prints, 3.5 x 5.0-inchs, should be submitted concurrently. Similar to tables, large-sized figure format should not be split into two columns but small-sized figure can be fit into the column. Each figure must be numbered consecutively and complete with caption under the figure. The word "**Figure**," including number should be typed using Times New Roman 11 points and bold, left-hand justified, and followed by regular 11 points Times New Roman for the caption.

3.2.8 Symbols and Units: Every used symbol must be defined in the text and written in the simplest possible way.

3.2.9 Numbering Pages: Manuscript pages must be consecutively numbered throughout the paper except the first page in the bottom center of the page, using bold Times New Roman 12 points.

3.2.10 Reference Lists: The final page contains a list of resources cited in the paper. The style of citations used in RJCM should conform to the American Psychological Association (APA). It is the author's responsibility to ensure the accuracy of all references cited in the paper. References should be listed in alphabetical order using regular Times New Roman 11 points.

3.3 Guideline to References

Abstract

Format:

Author.//(Year of publication).//Title of Abstract (abstract).//*Journal Title,/Year,/ Volume(*Number),/Page numbers.

Example:

Osti, L. & Cicero, L. (2018). Tourists' perception of landscape attributes in rural tourism (abstract). *Worldwide Hospitality and Tourism Themes, 2018, 10*(2), 211.

Books
Format:
Author.//(Year of publication).//*Title*.//Edition (if any).//Place of publication://Publisher.
Example:
Wallace, M. & Wray, A. (2016). *Critical Reading and Writing for Postgraduates*. Third edition. Thousand Oaks, California: Sage Publications Inc.

Book Articles
Format:
Author.//(Year of publication).//Article title.//Editor(s) (if any).//*Title of Book*.//Edition (if any).//Place of publication://Publisher,/Page numbers.
Example:
Hickman, G. R. (2010). Concepts of leadership in organizational change. In Preedy, M., Bennett, N. & Wise, C. (Eds). (2012). *Educational Leadership: Context, Strategy and Collaboration.* Thousand Oaks, CA: SAGE Publications Inc., 67-82.

Conference and Seminar Proceedings
Format:
Author.//(Year of publication).//Article title.//*Name of Conference,/Conference date.*//Place of publication (if any)://Publisher (if any).

Example:
Jareonsubphayanont, N. (2014). The international student policy in Thailand and its implication on the 2015 ASEAN Economic Community. *Southeast Asian Studies in Asia from Multidisciplinary Perspective International Conference, March 2014*, Kunming, China.

Dissertation or Thesis
Format:
Author.//(Year of publication).//Title of Dissertation or Thesis.//Type of Thesis.//Awarding Institution.
Example:
Ua-umakul, A. (2017). The Effects of the Counseling-Based Method on Physics Learning Achievements of Upper Secondary School Students: An Area Focus on Momentum. A Dissertation for the Degree of Doctor of Education in Educational Studies. The Graduate School, Rangsit University.

Editorial
Format:
Author.//(Year of publication).//Title of Editorial (editorial).//*Journal Title,/Year,/Volume (if any*)(Number),/Page numbers.
Example:
Fisher, R. I. (2003). Immunotherapy in Non-Hodgkin's lymphoma: Treatment advances (editorial). *Semin Oncol 30, 2003,* (2Suppl 4), 1-2.

Journal Articles
Format:
Author.//(Year of publication).//Article title.//*Journal Title,/Year,/Volume*(Number),/Page numbers.//Doi number (if any).

Example:
Srichandum, S. & Rujirayanyong, T. (2010). Production scheduling for dispatching ready mixed concrete trucks using bee colony optimization. *American Journal of Engineering and Applied Sciences, 2010, 3*(1), 823-830.

Trongratsameethong, A. & Woodtikarn, P. (2019). Thai QBE for ad hoc query. *Journal of Technology and Innovation in Tertiary Education, 2019, 2*(2), 1-24. doi 10.14456/jti.2019.7

Letter
Format:
Author.//(Year of publication).//Title of Letter (letter).//*Journal Title,/Year,/Volume (if any),*/Page numbers.
Example:
Enzensberger, W. & Fisher, P. A. (1996). Metronome in Parkinson's disease (letter). *Lancet, 1996, 347*, 1337.

Unpublished/In Press Article
Format:
Author.//(In press year).//Article title.//*Journal Title.//*(in press).
Example:
Veena, B. (2004). Economic pursuits and strategies of survival among Damor of Rajasthan. *J Hum Ecol*. (in press).

Websites
Format:
Author.//(Year of publication).//Title.//(Online).//the full address of the web page,/ accessed date.
Example:
Charlotte, B. (2016). Quotes about Action Learning. (Online). http://www.goodreads.com/quotes/tag/action-learning, January 18, 2017.

3.4 Manuscripts of Brief Professional Viewpoints for Sharing

The length of Brief Professional Viewpoints for Sharing is about 8-10 typed A4 pages. Its content should be arranged as follows: **title**, **name of the author, name and address of the institution**, **3-5 keywords**, **body text**, **the author's biography** of 50-80 words, and **references**. The format, font, and font size used in each section correspond to those in the section of **3.2. Manuscripts of Original Article**.

3.5 Reprints

During the years of publication (2020-present), authors will receive one free print copy of the journal.

RJCM Publication Ethics

RICE Journal of Creative Entrepreneurship and Management (RJCM) has policies on publication ethics after the guidelines given by Committee on Publication Ethics (COPE) <https://publication ethics.org>. Publication ethics policies mainly involve duties of (1) Authors, (2) Editors, and (3) Reviewers.

Authors:

Authors or paper contributors shall not submit simultaneous or duplicate manuscripts. It is imperative that authors submit work of original investigation and acknowledge concepts, research methodology and findings of preceding authors or researchers by giving proper references. If required, authors need to seek permission for the use of specific data or adaptation of research methodology as well as provide evidence on approval of professional ethics in the selected field of study. Plagiarism of all kinds is unacceptable and will result in paper rejection and permanent dismissal by *RJCM*. Authors shall be solely and fully liable for all viewpoints and research components used in published papers.

If required, under the guidelines given by the institutional/ national board of research ethics on the use of human subjects in social science research, authors are responsible for complying with the established criteria as well as securing a certified approval from the board for the purpose of protecting the human subjects in the study regarding their rights, security, health, privacy and confidentiality.

Editors:

The editors are to ensure transparency in the publication policies, communication with corresponding authors regarding submission, response on paper acceptance/ rejection, and notification of double-blinded review results for paper revision. In particular, the editors shall not consider multiple submission or redundant publication. The editors shall provide information on the *RJCM* website on ownership, editorial board, publication policies, publication schedule, data access and sharing, pre- and post-publication contacts—ranging from inquiries from paper contributors, correspondence, requests for clarification, comments for paper revision, to complaints or appeals, if any. The editors reserve the right not to deal with allegations of research misconduct from any party concerned under the condition that concrete evidence is found for the act of malpractice.

Reviewers:

Reviewers are in the double-blinded peer review process in evaluating submitted papers on the basis of criteria established by the editorial team. Reviewers shall remain anonymous to the authors whose papers are under review. It is imperative that reviewers' decision on paper revision or rejection be justified by constructive comments or suggestions, as guided by professional ethics in selecting scholarly work for publication. Given comments must be written in an objective and professional manner without sarcasm or severe criticism. Reviewers shall keep their reviews strictly confidential in all circumstances.

It is required that reviewers have no known competing financial interests or personal relationships that could have appeared to influence the work reported in the reviewed paper.

RJCM Research Ethics

Research Ethics on the Use of Human Subjects in Social Sciences

Thailand's Institutional/ National Board of Research Ethics on the Use of Human Subjects in Social Sciences requires as compulsory that researchers comply with the established criteria as well as secure a certified approval from the Board for the purpose of protecting the human subjects in the study from risks affecting their rights, security, health, privacy and confidentiality.

The Board specifies research that imposes *three levels of risks* on the human subjects under study: (1) nil or very low, (2) low, and (2) higher than low, and instructs researchers to obtain a certified approval from the Board's classified reviews:

(1) Exemption Review is for the research project that uses unidentifiable data that impose *nil or very low risks* to the human subjects under study. Researchers can request an exemption review approval from the Board.

(2) Expedited Review is for the research project that uses data that impose *low risks* to the human subjects under study. Researchers can obtain an expedited review approval from the Board via the consideration and recommendation of two Board members and an endorsement from the Board Chairperson.

(3) Full Board Review is for the research project that uses data that impose *higher than low risks* to the human subjects under study. Researchers can obtain a full review approval from the Board via the consideration and recommendation of two Board members (specialists in the area under study) and a representative from the public or community concerned, followed by an endorsement from the full Board.

RJCM Call for Papers

RICE Journal of Creative Entrepreneurship and Management (RJCM) is an international journal for academics and scholars at the higher education level to communicate and share their viewpoints and academic work with fellow professionals in the areas of creative entrepreneurship and management as practiced in their fields of specializations in social sciences. Currently, it is classified as Tier 2 in Thai-Journal Citation Index (TCI).

RJCM publishes three numbers per volume annually and welcomes contributors to submit their manuscript in January, May, and September of each year. We accept both academic and research papers in social sciences from contributors. The papers are double-blind three-peer-reviewed in each volume and published online-plus-print thrice a year.

The length of the unformatted manuscript in WORD can be 15-25 pages in length including references. The contents of the manuscript should include (1) a title with the author's name, affiliate, email address and telephone contact, (2) an abstract of 150 words with 3-5 keywords, (3) an introduction, (4) a rationale and background of the study, (5) research objectives, (6) research methodology, (7) data collection procedure, (8) data analysis, (9) results and discussion, (10) research limitation (if any), (11) conclusion, (12) acknowledgement(s) (if any), (13) the author's biography of about 50-80 words, (14) references, and (15) an appendix or appendices (if any).

All interested readers and paper contributors please contact Editor-in-Chief: Ruja Pholsward, Ph.D., Associate Professor, Rattanakosin International College of Creative Entrepreneurship (RICE), Rajamangala University of Technology Rattanakosin (RMUTR) <rujajinda@gmail.com>, <ruja.pho@rmutr.ac.th>. Please check *RJCM* Publication Policy as guidelines to paper submission. Website submission will be advised after the first editorial screening.

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