RICE Journal

of Creative Entrepreneurship and Management



RICE

Rattanakosin International College of Creative Entrepreneurship, RMUTR

VOLUME 6 NUMBER 1
JANUARY-APRIL 2025
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 6, Number 1, January-April 2025

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

---

Editorial Office: Academic Division
Rattanakosin International College of Creative Entrepreneurship (RICE)
Rajamangala University of Technology Rattanakosin (RMUTR), Thailand
96 Moo 3, Thanon Phutthamonthon Sai 5, Salaya, Nakhon Pathom 73170
Phone: +66 2441 6000 ext 2790
Website: https://so12.tci-thaijo.org/index.php/RJCM

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 under the supervision of 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 reviewed by three reviewers 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 2: 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 kindly note that website submission will be advised after the first editorial screening.

Consultants:

Siwa **Wasuntarapiwat**, M.P.P.M, Assistant Professor, Former President, Rajamangala University of Technology Rattanakosin, Salaya, Nakhon Pathom, Thailand

Udomvit **Chaisakulkiet**, Ph.D., Associate Professor, President, Rajamangala University of Technology Rattanakosin, Salaya, Nakhon Pathom, Thailand

Editors-in-Chief

Editor-in-Chief 1: Nuttapong **Jotikasthira**, Ph.D., Director, Rattanakosin International College of Creative Entrepreneurship, Rajamangala University of Technology Rattanakosin, Salaya, Nakhon Pathom, Thailand <jotikasthira@gmail.com>, <nuttapong.jot@rmutr.ac.th>

Editor-in-Chief 2: Ruja **Pholsward**, Ph.D., Associate Professor, Rajamangala University of Technology Rattanakosin, Salaya, Nakhon Pathom, Thailand <rujajinda@gmail.com>, <ruja.pho@rmutr.ac.th>

Editor-in-Chief 3: Richard **Grunwell**, English and TESOL Specialist, the University of the Thai Chamber of Commerce, Bangkok, Thailand <rgrunwell777@gmail.com>

Assistant Editors

Assistant Editor: Catthaleeya **Rerkpichai**, D.I.Ed., Academic Division, Bansomdejchaopraya Rajabhat University, Bangkok, Thailand <c.rekpichai@gmail.com>

Assistant Editor: Edward D. **Mulvagh**, English Communications and TEFL Specialist, Udomsuksa School, Bangkok, Thailand <edwardmulvagh@gmail.com>

Editorial Board

Kanchana **Chanprasert**, Ph.D., Associate Professor, Head, Department of Physics, Faculty of Science, Rangsit University, Pathum Thani, Thailand

Chunyan **Dai**, D.M. (Doctor of Management), Professor, School of Management, Chongqing Technology and Business University, China

Joan Neehall **Davidson**, Ed.D., Clinical Psychologist, Joan Neehall and Associates, Inc., Victoria, British Columbia, Canada

Modh **Faheem**, Ph.D., Head, Indian Studies Program, Pridi Banomyong International College, Thammasat University, Thailand

Zekai **He**, Ph.D., Associate Professor, School of Economics, South-Western University of Finance and Economics, China

Helen **Ijaz**, Ph.D., Specialist in Multicultural Studies, Unionville, Ontario, Canada

Mongkol **Jongsuphanphong**, Ph.D., Assistant Professor, Head of Department of Energy and Environment Management, Siam Technology College, Bangkok, Thailand

Rosemary **Khoo**, Ph.D., Chair of Association of Staff Alumni, the National University of Singapore, Republic of Singapore

Kamlai **Laohaphatanalert**, Ph.D., Associate Director for Academic Affairs, Research and Academic Services, Chair of Bachelor of Technology Program in Culinary Entrepreneurship Innovation, Rattanakosin International College of Creative Entrepreneurship, Rajamangala University of Technology Rattanakosin, Salaya, Nakhon Pathom, Thailand

Yipeng **Liu**, Ph.D., Professor, Henley Business School, University of Reading, United Kingdom

Michel-Louis **Martin**, Ph.D., Professor, Director of Doctoral School for Legal and Political Sciences, Toulouse 1 Capitole University, France

Sudsanguan **Ngamsuriyaroj**, Ph.D., Associate Professor, Faculty of Information and Communication Technology, Mahidol University, Bangkok, Thailand

Rujeepat **Pasukree**, M.B.A., Former Vice President, Rajamangala University of Technology Rattanakosin, Salaya, Nakhon Pathom, Thailand

Laddawan **Petchroj**, Ph.D., Associate Professor, Dean, Faculty of Liberal Arts, Rajapruk University, Nonthaburi, Thailand

Xiaoduo **Qian**, D.M. (Doctor of Management in Management Sciences), Professor, School of Economics and Management, Chongqing University, China

Xiaohong **Ren**, Ph.D. (Management Science and Engineering), Professor, Chongqing Jiaotong University, China

Joao **Romao**, Ph.D., Associate professor, Department of International Tourism and Business, Yasuda Women's University, Hiroshima, Japan

Carlos Alberto Silva Melo **Santos**, Ph.D. (Regional Science), Professor, University of Pennsylvania, Philadelphia, Pennsylvania, USA

Krichkanok **Sudasna Na Ayuthaya**, Ph.D., Assistant Professor, Former Vice President, Rajamangala University of Technology Rattanakosin, Salaya, Nakhon Pathom, Thailand

Supachai **Tangwongsan**, Ph.D., Professor Emeritus, Faculty of Information and Communication Technology, Mahidol University, Bangkok, Thailand

Chikao **Uranaka**, Ph.D., Associate Professor, the Graduate School, Division of Law, Interdisciplinary Studies in Law and Policy, Kyoto Sangyo University, Japan

Francois **Vellas**, Ph.D., Professor, Director of the Master (M2) "Management, Economy and Politics of International Tourism," Toulouse 1 Capitole University, France

Seree **Wangpaichitr**, Honorary D.A.T.H., Specialist in Tourism and Hospitality, Board Member, Rattanakosin International College of Creative Entrepreneurship, Rajamangala University of Technology Rattanakosin, Salaya, Nakhon Pathom, Thailand

Kanda **Wongwailikhit**, Ph.D., Associate Professor, Former Director of Research Center, Rangsit University, Pathum Thani, Thailand

Jianxia **Yang**, Ph.D. (Industrial Organization Theory), Associate Professor, East University of Science and Technology, China

Xiong **Yu**, Ph.D., Professor, Associate Dean of International Affairs, University of Surrey, United Kingdom

Xueyan **Zhan**, Ph.D. (Accounting), Associate Professor, Chongqing Technology and Business University, China

Jianwu **Zhou**, D.M. (Doctor of Management in Management Sciences), Professor, Liaoning Jine Talent Co. Ltd., China

Dan **Zhu**, Ph.D. (Corporate Finance and Accounting), Associate Professor, School of Economics and Business Administration, Chongqing University, China

Office of Chief Editors
Academic Division
Rattanakosin International College of Creative Entrepreneurship (RICE)
Rajamangala University of Technology Rattanakosin (RMUTR)

Contact Chief Editors
<nuttapong.jot@rmutr.ac.th>
<ruja.pho@rmutr.ac.th>, <rujajinda@gmail.com>
<rgrunwell777@gmail.com>

RJCM Formatter and Website Support
Pornwipha Singporn
<porwiphaa@gmail.com>
Academic Division
King Mongkut's University of Technology North Bangkok
Nonthaburi, Thailand

RJCM Webmaster
Bantheng Ritsak
<evosoftjojo@gmail.com>
Managing Director
CreationOne Co. Ltd.
Bangkok, Thailand

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

Volume 6, Number 1 (January-April 2025)

Table of Contents **Page**

About Us ……...……. i-vii

Note from the Editors of RJCM ……..… viii

Address from RICE Director ……..... ix

Determinant Factors of the Tourism Company on Employee Job Satisfaction for Employee Retention in China ……..……..... 1-29
Sibo Wang
Chompu Nuangjamnong
Master of Business Administration
Graduate School of Business and Advanced Technology Management
Assumption University of Thailand
Bangkok, Thailand

From Local to Global: Strategies for Manufacturing SMEs to Expand into International Markets ……..….. 30-52
Si Thu Maung Maung
Chompu Nuangjamnong
Master of Business Administration
Graduate School of Business and Advanced Technology Management
Assumption University of Thailand
Bangkok, Thailand

The Impact of AI-powered Services on Customer Satisfaction, Employee Performance, and Employee Work-life Balance Leading to Organizational Performance Growth …… 53-79
Zin Thu Thu Hlaing
Chompu Nuangjamnong
Master of Business Administration
Graduate School of Business and Advanced Technology Management
Assumption University of Thailand
Bangkok, Thailand

Development of Competency-Based Training Model on E-Commerce Business for Pre-Elderly Entrepreneurs in Thailand…… 80-92
Pimchanok Vimolsathit
Theerapong Wiriyanon
Department of Technical Education Technology
Faculty of Technical Education
King Mongkut's University of Technology North Bangkok
Nonthaburi, Thailand

Guidelines for Sustainable and Environmentally Friendly Management of Fresh Markets in Nonthaburi Province ……..……. 93-102
Sarakorn Pattanananchai
Master of Business Administration in Hospitality Business Management
Faculty of Hospitality Management
Dusit Thani College
Bangkok, Thailand

Siripong Rugmai
Research and Innovation Center
Dusit Thani College
Bangkok, Thailand

Empowering BCC Spirit Traits and Good Student Qualities by Using LINE Front-end Framework (LIFF) Application: A Case Study of Bangkok Christian College ……. 103-115
Wichai Srisud
Thaworn Intaraamorn
Department of Educational Policy, Management, and Leadership
Faculty of Education
Chulalongkorn University
Bangkok, Thailand

Eknarin Bangthamai
Department of Educational Technology
Faculty of Education
Silpakorn University
Bangkok, Thailand

Sharing Professional Viewpoint:
Entrepreneurial University ……..…….. 116-119
Wichai Siriteerawasu
Rattanakosin International College of Creative Entrepreneurship (RICE)
Rajamangala University of Technology Rattanakosin (RMUTR)
Nakhon Pathom, Thailand

Reviewers ……..……..…..... 120-121

***RJCM* Publication Policy** ….……..……..…….....122-126

***RJCM* Publication Ethics** …….……..……..... 127-128

***RJCM* Research Ethics** …….……..……..... 129

***RJCM* Call for Papers** …….……..……...… 130

Note from the Editors of *RJCM* Volume 6 Number 1

Dear *RJCM* Readers,

Training Model on E-Commerce Business for Pre-Elderly Entrepreneurs in Thailand.You are now with our first issue in Year 6 of *RICE Journal of Creative Entrepreneurship and Management* (*RJCM*). This issue contains six articles in the areas of tourism, SMEs, e-business, sustainability in business operations, and educational management.

In this issue, we have one paper on tourism management: *"Determinant Factors of the Tourism Company on Employee Job Satisfaction for Employee Retention in China"* (Article 1), and another on SMEs *"From Local to Global: Strategies for Manufacturing SMEs to Expand into International Markets"* (Article 2). Two papers report e-commerce operations: *"The Impact of AI-powered Services on Customer Satisfaction, Employee Performance, and Employee Work-life Balance Leading to Organization Performance Growth"* (Article 3), and *"Development of Competency-Based Training Model on E-Commerce Business for Pre-Elderly Entrepreneurs in Thailand"* (Article 4). The other two papers deal with current issues in sustainability, followed by educational management: *"Guidelines for Sustainable and Environmentally Friendly Management of Fresh Markets in Nonthaburi Province"* (Article 5), and *"Empowering BCC Spirit Traits and Good Student Qualities by Using LINE Front-end Framework (LIFF) Application: A Case Study of Bangkok Christian College"* (Article 6). We also have an essay on sharing professional viewpoints on the issue of *Entrepreneurial University*. These papers report interesting findings and current issues in the areas under study.

Our paper contributors in the first issue of 2025 are researchers from six higher education institutions in the central part of Thailand: (1) Assumption University of Thailand, (2) King Mongkut's University of Technology North Bangkok, (3) Dusit Thani College, (4) Chulalongkorn University, (5) Silpakorn University, and (6) Rajamangala University of Technology Rattanakosin (RMUTR), Thailand.

The editors 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.

Nuttapong Jotikasthira, Ph.D., Editor-in-Chief 1
Ruja Pholsward, Ph.D., Editor-in-Chief 2
Richard Grunwell, BA, TESOL, Editor-in-Chief 3
Catthaleeya Rerkpichai, D.I.Ed., Assistant Editor
Edward Daniel Mulvagh, BA, TEFL, Assistant Editor

Address from RICE Director

Nuttapong Jotikasthira, Ph.D.
Rattanakosin International College of Creative Entrepreneurship (RICE)
Rajamangala University of Technology Rattanakosin (RMUTR), Thailand

Dear *RJCM* Readers,

The current year 2025 has led us to encounter the high capacity of AI in helping students and scholars to think, write and produce academic work at different levels. We are also in need of a new definition of *plagiarism*—originally confined to copying human work. School teachers and university professors have to think urgently how they can convince their students and junior colleagues to use AI as an assistant, not as a master or a torch holder to show an easy path to them—ranging from handling assignments as required in the curriculum to delivering research proposals, final research reports, dissertations, or even the academic-rank qualifying papers. It is certain that scholars, educators, and practitioners rely more on AI as smart assistants to reach their targets in all fields of study and work. However, we cannot deny that professionals who rely on AI to execute their work need to discipline themselves for self-respect in using AI to help them produce documents or professional writing, and without shame claim the product of jump into a conclusion as their own.

Since the release of ChatGPT-4 in late 2023 and recently DeepSeek in early 2025, we have seen more pervasive effects of AI writing on the finished products of academic work that qualify for specific gains like a pass level, a degree, an award, a publication, and even qualifying work for academic ranking. At this point, we perhaps cannot jump into a conclusion that academic work with AI footprints should be classified as cybercrimes or fraud cases to reach the high level of the academic ladder. Our big concern, in fact, rests upon how we can reason with those who blindly rely on their AI assistant to do the work for them, to halt for self-esteem and particularly conscience in reminding themselves of how they can justify ownership of work that is not their brainchild. This might be too untimely academic/research to figure out possible solutions at this moment, simply because scholars, researchers, and educational practitioners would need time to experiment with possible strategies for learning development at the re-paradigm level. We can now only safeguard ourselves and our academic environment not to be too infested with human counterfeit effects as apparent in the finished writing products.

All of the above are my matters of concern for academic well-being of all stakeholders. Let me say again that I feel grateful to all the authors for contributing their work to our academic communities. Your academic/research papers within the framework of professional ethics in different fields of creative entrepreneurship and management certainly support the growth of *RJCM* and you as authors always have our journal team's appreciation along with you.

ISSN 2821-9074 (Online)
ISSN 2730-2601 (Print)
RICE Journal of Creative Entrepreneurship and Management, Vol. 6, No.1, pp. 1-29,
January-April 2025
© 2025 Rajamangala University of Technology Rattanakosin, Thailand
doi: 10.14456/rjcm.2025.1
Received 14.09.24/ Revised 23.03.25/ Accepted 31.03.25

Determinant Factors of the Tourism Company on Employee Job Satisfaction for Employee Retention in China

Sibo Wang[1]
Chompu Nuangjamnong[2*]

[1,2] Master of Business Administration
Graduate School of Business and Advanced Technology Management
Assumption University of Thailand
[*]Corresponding author
[1] Email: sibow1224@gmail.com
[2] Email: chompunng@au.edu

Abstract

This study aimed to identify and analyze the determinant factors influencing employee job satisfaction and their subsequent impact on employee retention within tourism companies in China. The research explored four key variables organizational culture, pay/salary, workplace environment, and workplace relationships, regarding their contribution to employee job satisfaction and retention. A structured questionnaire was distributed to 388 employees working in tourism companies across China. Multiple linear regression and simple linear regression analyses were conducted to test five hypotheses and determine the relationships between the independent variables and employee job satisfaction, as well as between job satisfaction and employee retention. The findings indicate that that organizational culture, workplace environment, and workplace relationships significantly impact employee job satisfaction. Employee job satisfaction, in turn, has a substantial effect on employee retention. Notably, the workplace environment and employee job satisfaction emerged as critical factors influencing retention. The findings offer practical recommendations for managers and policymakers in retaining employees through targeted interventions in organizational culture and workplace conditions.

Keywords*: Employee job satisfaction, employee retention, organizational culture, workplace environment, tourism industry, China*

1. Background of the Study

As the global tourism industry rebounds from the impacts of COVID-19, significant transformations are underway. The tourism sector is also undergoing a profound digital transformation. The rise of online booking platforms, virtual travel experiences, digital payments, and AI-driven customer service is revolutionizing how travelers engage with tourism services, providing them with more convenient and personalized options (Nuangjamnong, 2022). Concurrently, sustainability has become a critical concern, with companies and destinations

increasingly adopting eco-friendly practices aimed at promoting low-carbon travel and preserving natural and cultural heritage for future generations.

Domestic and short-distance travel have gained popularity due to ongoing international travel restrictions, prompting individuals to explore their own countries and engage in local tourism. This trend is fueling local tourism economies and demonstrating the industry's adaptability and resilience. China plays a pivotal role in both outbound and inbound tourism, significantly influencing the global tourism landscape. The recovery of China's outbound travel is contributing to the global tourism economy, as Chinese tourists are known for their considerable purchasing power. Conversely, the influx of international tourists into China is revitalizing the country's domestic tourism sector (Schein, 2010; Lin & Nuangjamnong, 2022). China's travel policies, health measures, and vaccination strategies impact global travel patterns, setting standards for safe travel and influencing other destinations.

China's commitment to sustainable tourism aligns with global trends, emphasizing ecotourism, cultural heritage preservation, and reducing the tourism industry's carbon footprint. Despite the progress, the industry faces ongoing challenges. The period of disruption over the past three years has resulted in significant talent loss, with many experienced employees leaving the industry and new hires facing difficulties due to a lack of experience (Kongkaew & Nuangjamnong, 2023). The tourism sector is now confronted with high employee turnover and job vacancies, making it crucial to understand the determinants of employee job satisfaction and retention in this evolving landscape.

This study aimed to investigate the key factors influencing job satisfaction and retention among employees in China's tourism industry, offering insights into how companies can better manage their workforce amidst these dynamic changes.

2. Research Objectives

The researchers aimed at five objectives:

(1) To examine the impact of organizational culture on employee job satisfaction.

(2) To evaluate the effect of pay/salary on employee job satisfaction.

(3) To investigate the influence of the work environment on employee job satisfaction.

(4) To analyze the role of workplace relationships in employee job satisfaction.

(5) To identify key determinants that affect overall employee job satisfaction and employee retention

It was expected that the key determinants of employee job satisfaction and retention in China's tourism industry could be identified to generate practical implications for companies to create a more supportive and engaging work environment, reduce turnover, attract top talent, and improve overall organizational performance. This can help stabilize the workforce and decrease recruitment and training costs. The obtained results could provide guidance on how to foster a more satisfied and committed workforce, as well as enhance service quality and overall customer experience in the industry.

3. Previous Studies and Hypotheses Development

This section reviews the variables used in the study: organizational culture, pay/salary, work environment, workplace relationships, job satisfaction, and employee retention.

3.1 Studies in Organizational Culture

Organizational culture is a broad and *complex concept* that encompasses the shared values, beliefs, norms, and practices that define the social and psychological environment of an organization. According to Schein (2010), organizational culture consists of the underlying assumptions and values that influence how employees interact and make decisions. It plays a critical role in shaping employees' attitudes, behaviors, and overall job satisfaction. The importance of organizational culture is emphasized by Edgar Schein, who argues that it affects every aspect of organizational life, including employee engagement, productivity, and retention.

Research indicates that organizational culture has a significant impact on *employee job satisfaction*. A strong organizational culture can enhance job satisfaction by creating a supportive work environment that aligns with employees' values and expectations (Deal & Kennedy, 1982; Lin & Nuangjamnong, 2022). For instance, a culture that fosters open communication, recognition, and professional growth can lead to higher levels of job satisfaction. Conversely, a toxic or misaligned culture can result in decreased job satisfaction and higher turnover rates (O'Reilly, Chatman, & Caldwell, 1991).

The relationship between organizational culture and *employee retention* has been well-documented in the literature. According to Nuangjamnong (2022), employees who identify with the organizational culture and perceive it as positive are more likely to stay with the company. A supportive culture that values employee contributions and promotes work-life balance contributes to higher retention rates. In contrast, a negative or unsupportive culture can drive employees to seek employment elsewhere, resulting in higher turnover (Kongkaew & Nuangjamnong, 2023).

The concept of "cultural fit" is central to understanding how organizational culture influences job satisfaction. According to Kristof-Brown, Zimmerman & Johnson (2005), employees who perceive a strong fit between their personal values and the organizational culture are more likely to experience job satisfaction and remain with the company. Cultural

fit not only enhances job satisfaction but also improves overall organizational performance by fostering alignment between individual and organizational goals.

Organizations often need to adapt their culture to meet changing business environments and employee expectations. Research by Giffords & Dina (2003) highlights that organizations can successfully manage cultural change by involving employees in the process, communicating effectively, and aligning cultural changes with organizational goals. Successful cultural change initiatives can lead to improved job satisfaction and retention by addressing issues that negatively impact the work environment.

Various tools and methods have been developed to *measure organizational culture*. The Organizational Culture Inventory (OCI), developed by Cooke et al. (1987), assesses cultural attributes such as leadership style, communication practices, and employee attitudes. Additionally, the Competing Values Framework (CVF) provides a comprehensive approach to understanding and analyzing organizational culture (McGrath, 1984; Walton & Dawson, 2001). These tools help organizations identify areas for improvement and implement strategies to enhance job satisfaction and retention.

3.2 Studies in Pay/Salary

According to Yousaf et al. (2014), pay/salary refers to the financial compensation provided to employees for their work, including base salary, bonuses, benefits, and other forms of remuneration. It is a fundamental aspect of employment that influences employees' perceptions of job value and their overall satisfaction with their roles. Pay/salary is often considered a primary motivator and a key factor in attracting, retaining, and motivating employees.

The relationship between pay/salary and *job satisfaction* is well-documented in the literature. Salary is a significant determinant of job satisfaction, with equitable compensation contributing to higher levels of employee satisfaction (Craig et al., 2020). Research by Craig et al. (2020) also indicates that while salary is a hygiene factor, it still plays a crucial role in job satisfaction when it meets employees' expectations and needs. Fair and competitive pay can enhance job satisfaction by providing employees with a sense of financial security and recognizing their contributions.

Pay/salary has a direct impact on *employee retention*. Studies show that competitive and equitable compensation packages are essential for retaining employees and reducing turnover rates (Hausknecht et al., 2009). According to Tziner et al. (2003), employees are more likely to stay with an organization that offers fair pay relative to their skills and experience. Compensation discrepancies can lead to dissatisfaction and increase the likelihood of employees seeking better opportunities elsewhere.

The concept of *pay equity*, or fairness in compensation, is critical to job satisfaction. Research by Adams (1965) on equity theory suggests that employees compare their pay with that of their peers, and perceived inequities can lead to dissatisfaction and decreased motivation. Employees who perceive that they are compensated fairly relative to their

colleagues are more likely to be satisfied with their jobs and remain with the organization (Greenberg, 1990).

The *structure of pay*, including base salary, performance-based bonuses, and benefits, affects employee motivation and satisfaction. Performance-based pay can enhance job satisfaction by linking compensation to individual and organizational performance (Widener, 2006). However, if not implemented effectively, performance-based pay can lead to unintended consequences, such as unhealthy competition and stress. A well-structured pay system that balances fixed and variable compensation can contribute to higher job satisfaction and retention.

Organizations often use pay satisfaction surveys and tools to gauge employees' perceptions of their compensation. The Pay Satisfaction Questionnaire (PSQ), developed by Heneman & Schwab (1985), assesses various dimensions of pay satisfaction, including salary, benefits, and pay structure. These tools help organizations identify areas for improvement and develop strategies to enhance pay satisfaction and retention. The literature on pay/salary highlights its significant impact on employee job satisfaction and retention. Competitive and equitable compensation is crucial for maintaining employee satisfaction and reducing turnover. Understanding the role of pay in motivation and retention, along with integrating non-monetary rewards, can help organizations effectively manage their compensation strategies and foster a committed workforce.

3.3 Studies in Workplace Environment

The workplace environment encompasses the physical and psychological conditions in which employees perform their job duties. This includes factors, such as office layout, ergonomics, lighting, noise levels, and overall ambiance, as well as the psychological climate, including stress levels, workload, and work-life balance. A positive work environment is crucial for enhancing employees' well-being, productivity, and overall job satisfaction (Ajala, 2012; Chandrasekar, 2011).

Research has consistently shown that the work environment significantly affects *job satisfaction.* According to Hackman & Oldham (1976), a well-designed work environment that supports job autonomy, skill variety, and task significance can lead to increased job satisfaction. Physical aspects, such as comfortable and safe working conditions, are fundamental to ensuring that employees feel valued and are able to perform their tasks efficiently (Oldham & Hackman, 2010). Additionally, a supportive psychological climate, including manageable stress levels and clear communication, contributes to higher job satisfaction (Kongkaew & Nuangjamnong, 2023).

The work environment has a direct impact on *employee retention*. Studies by Judge & Bono (2001) have demonstrated that employees are more likely to stay with organizations that provide a positive and supportive work environment. Factors, such as effective stress management, adequate resources, and a healthy work-life balance are associated with lower turnover rates (Ramlall, 2004). Conversely, a negative or stressful work environment can lead to higher turnover, as employees seek more favorable conditions elsewhere (Schaufeli & Bakker, 2004).

The *psychological climate* of the work environment, including aspects like organizational support, leadership style, and interpersonal relationships, plays a crucial role in *job satisfaction*. A positive psychological climate enhances job satisfaction by fostering a sense of security and support among employees. Leaders who promote open communication, provide feedback, and support employee development contribute to a positive psychological climate (Schyns et al., 2009).

The *physical conditions* of the work environment, including *ergonomics*, workspace design, and safety, are critical to employee satisfaction and performance. Research by Salas et al. (2010) indicates that ergonomically designed workspaces reduce physical discomfort and increase job satisfaction. Safe and well-maintained work environments contribute to employees' health and well-being, which in turn affects their overall satisfaction and retention.

A positive work environment not only enhances *job satisfaction* and *retention* but also contributes to overall *organizational performance*. According to a study by Harter et al. (2002), organizations with positive work environments experience higher levels of employee engagement, productivity, and profitability. Employees who are satisfied with their work environment are more likely to contribute to organizational success through increased motivation and performance (Locke & Latham, 2002).

The work environment highlights its significant impact on employee job satisfaction and retention. A positive work environment, characterized by supportive physical and psychological conditions, contributes to higher job satisfaction and lower turnover rates. By addressing factors, such as ergonomics, stress management, and psychological climate, organizations can create a conducive work environment that enhances employee well-being and organizational performance.

3.4 Studies in Workplace Relationships

Workplace relationships refer to the interactions and connections between employees, including relationships with supervisors, colleagues, and other stakeholders within an organization. These relationships encompass communication, collaboration, support, and interpersonal dynamics. According to Cropanzano & Wright (2001), positive workplace relationships are essential for creating a supportive work environment and fostering a sense of community and belonging among employees.

The quality of workplace relationships has a significant impact on *job satisfaction.* Positive interactions with supervisors and colleagues contribute to higher levels of job satisfaction by providing emotional support, recognition, and a sense of inclusion. Employees who perceive strong and supportive relationships in the workplace are more likely to feel satisfied with their jobs and engaged in their work. Conversely, negative workplace relationships, such as conflict or lack of support, can lead to dissatisfaction and disengagement.

Positive workplace relationships are closely linked to *employee retention.* According to a study by Harter et al. (2002), employees who experience supportive and collaborative

relationships are more likely to stay with the organization. Strong relationships with supervisors and peers contribute to a positive work environment that enhances job satisfaction and reduces turnover (Jaramillo et al., 2011). On the other hand, poor relationships and unresolved conflicts can drive employees to seek alternative employment opportunities (Jaramillo et al., 2011).

The relationship between employees and their *supervisors* plays a crucial role in shaping job satisfaction and retention. Research by LMX (Leader-Member Exchange) theory suggests that high-quality supervisory relationships characterized by trust, support, and mutual respect lead to higher job satisfaction and lower turnover. Supervisors who provide constructive feedback, recognize achievements, and support career development contribute to positive workplace relationships and employee satisfaction (Eisenberger et al., 2001).

Peer relationships, including interactions with colleagues, are also critical to job satisfaction and retention. Positive peer relationships foster collaboration, reduce workplace stress, and enhance job satisfaction. A supportive network of colleagues can provide emotional and practical support, which is essential for maintaining high levels of job satisfaction (Szutenbach, 2008).

The broader *organizational culture* influences the nature of workplace relationships. Research by Schein (2010) emphasizes that a culture that promotes open communication, mutual respect, and teamwork fosters positive workplace relationships. Organizations with a culture that values and supports interpersonal relationships tend to experience higher levels of employee satisfaction and retention.

Several tools and methods are available for *assessing* workplace relationships. Instruments, such as the Workplace Relationships Survey (WRS) by Gable et al. (2003) and the Organizational Climate Questionnaire (OCQ) provide insights into the quality of workplace relationships. These tools help organizations identify areas for improvement and implement strategies to enhance interpersonal dynamics and overall job satisfaction. The literature on workplace relationships underscores their critical role in influencing job satisfaction and employee retention. Positive relationships with supervisors and peers contribute to a supportive work environment, higher job satisfaction, and reduced turnover. By fostering strong interpersonal connections and effectively managing conflicts, organizations can enhance employee well-being and overall organizational performance.

3.5 Studies in Employee Job Satisfaction

Employee job satisfaction refers to the level of contentment employees feel regarding their job roles and work environment. It encompasses various facets of work, including job tasks, work conditions, compensation, and relationships with colleagues and supervisors. Job satisfaction is a crucial aspect of organizational behavior, as it influences employees' motivation, performance, and overall well-being (Judge & Bono, 2001). High job satisfaction is associated with positive outcomes such as increased productivity, lower absenteeism, and enhanced organizational commitment (Harter et al., 2002).

Several *theoretical frameworks* explain job satisfaction. Herzberg's Two-Factor Theory (1959*)* distinguishes between hygiene factors and motivators. Hygiene factors (e.g., salary, working conditions) prevent dissatisfaction but do not necessarily increase satisfaction, while motivators (e.g., achievement, recognition) contribute to higher levels of job satisfaction. Similarly, the Job Characteristics Model (Hackman & Oldham, 1976; Alshmemri et al., 2017) posits that job satisfaction is influenced by core job dimensions, such as skill variety, task identity, task significance, autonomy, and feedback. This model emphasizes that jobs that are inherently motivating lead to higher satisfaction.

Several *factors* influence employee job satisfaction. *Organizational culture* plays a significant role, as a supportive and positive culture enhances job satisfaction (Schein, 2010). *Pay and salary* are also crucial, as fair and competitive compensation contributes to job satisfaction (Rynes et al., 1989). *Workplace environment* factors, including physical conditions and psychological climate, affect employees' feelings about their jobs (Kahn, 1990). Additionally, *workplace relationships* with supervisors and colleagues are vital for job satisfaction, as supportive and positive interactions contribute to a more satisfying work experience (Cropanzano & Wright, 2001).

Job satisfaction is commonly *measured* using various tools and surveys. The *Job Satisfaction Survey (JSS)* by Spector (1985) assesses multiple dimensions of job satisfaction, including pay, promotion, supervision, and coworkers. The *Minnesota Satisfaction Questionnaire (MSQ),* developed by Weiss et al. (1967), evaluates intrinsic and extrinsic aspects of job satisfaction. These tools provide valuable insights into employees' satisfaction levels and identify areas for improvement.

Job satisfaction has a strong relationship with *employee retention*. Research indicates that higher levels of job satisfaction are associated with lower turnover rates. Employees who are satisfied with their jobs are more likely to stay with the organization and contribute positively to its success. Conversely, dissatisfaction can lead to increased turnover intentions and actual turnover (Terera & Ngirande, 2014). Factors, such as job enrichment, recognition, and career development opportunities are particularly influential in retaining satisfied employees (Hausknecht et al., 2009).

Job satisfaction not only affects individual employees but also has implications for *organizational performance.* Studies by Harter et al. (2002) demonstrate that organizations with higher employee job satisfaction experience better overall performance, including increased productivity, improved customer satisfaction, and greater profitability. Satisfied employees are more engaged, contribute to a positive work environment, and drive organizational success (Locke & Latham, 2002).

Organizations can implement various *interventive strategies* to improve job satisfaction. These include *providing opportunities for career advancement, recognizing and rewarding achievements, ensuring fair compensation, and creating a supportive work environment* (Pfeffer, 1998). *Employee feedback mechanisms* and regular surveys can help identify areas for improvement and tailor interventions to meet employees' needs and

expectations (Niskala et al., 2020). Employee job satisfaction highlights its critical role in influencing individual performance and organizational success. Understanding the factors that contribute to job satisfaction, such as organizational culture, pay, work environment, and workplace relationships, is essential for developing effective strategies to enhance employee satisfaction and retention. By addressing these factors, organizations can improve job satisfaction and foster a more engaged and committed workforce.

3.6 Studies in Employee Retention

Employee retention refers to the ability of an organization to keep its employees over time. It involves strategies and practices designed to maintain a stable workforce and reduce turnover rates. High employee retention is crucial for organizational stability, continuity, and performance. It helps minimize the costs associated with recruiting, training, and onboarding new employees, and ensures that experienced employees remain in key positions (Al Mamun & Hasan, 2017).

Several *theoretical frameworks* explain employee retention. Herzberg's Two-Factor Theory (1959) posits that job satisfaction and dissatisfaction are influenced by different factors. While hygiene factors (e.g., salary, working conditions) prevent dissatisfaction, motivators (e.g., achievement, recognition) drive satisfaction and retention. Social Exchange Theory (Blau, 1964) suggests that employees are more likely to remain with an organization that reciprocates their contributions with support, rewards, and fair treatment. *Organizational Commitment Theory* (Allen & Meyer, 1991) identifies three types of commitment—affective, continuance, and normative—that influence retention. Affective commitment, or emotional attachment to the organization, is particularly strong in predicting retention.

Several factors influence employee retention:

- *Compensation and Benefits:* Competitive salary and benefits are fundamental to retaining employees. Research by Rynes et al. (1989) indicates that fair and equitable compensation plays a significant role in retention. Employees who perceive their pay and benefits as competitive are more likely to stay with the organization.
- *Work Environment:* A positive and supportive work environment contributes to employee retention. Factors such as work-life balance, safe and comfortable working conditions, and a positive organizational climate enhance employees' likelihood of staying with the company.
- *Career Development Opportunities:* Providing opportunities for career growth and professional development is crucial for retaining employees. According to a study by Tews & Noe (2019), employees are more likely to remain with organizations that offer training, advancement opportunities, and clear career paths.
- *Leadership and Management:* Effective leadership and management practices significantly impact employee retention. Research by Judge & Piccolo (2004) highlights that supportive and transformational leadership styles foster a positive work environment and improve retention rates. Employees who feel supported and valued by their supervisors are more likely to stay with the organization.

- *Workplace Relationships:* Positive relationships with supervisors and colleagues contribute to retention. Studies by Cropanzano & Wright (2001) show that strong interpersonal relationships in the workplace create a supportive environment that encourages employees to stay.
- *Employee Engagement:* Employee engagement is closely linked to retention. Research by Harter et al. (2002) indicates that engaged employees are more committed and likely to remain with their organizations. Engagement involves employees' emotional investment in their work and alignment with organizational goals. High engagement levels lead to lower turnover and increased organizational performance.
- *Retention Measurement:* Employee retention is measured through various metrics, including turnover rates, retention rates, and employee tenure. Tools such as exit interviews, employee satisfaction surveys, and retention analytics provide insights into the reasons behind turnover and the effectiveness of retention strategies. These tools help organizations identify retention challenges and develop targeted interventions (Kashyap & Rangnekar, 2014).

High employee retention positively impacts *organizational performance.* Studies by Harter et al. (2002) reveal that organizations with high retention rates experience improved productivity, customer satisfaction, and overall performance. Retained employees bring valuable experience, knowledge, and continuity to the organization, contributing to its long-term success. Employee retention underscores its importance for organizational stability and performance. Factors such as compensation, work environment, career development, leadership, and workplace relationships play critical roles in influencing retention. By implementing effective retention strategies and addressing the factors that impact employee satisfaction, organizations can enhance their ability to retain a skilled and committed workforce.

As seen in the previous studies reviewed on four key factors that have impact on job satisfaction and employee retention, the researchers therefore formulated five hypotheses in accordance with the identified research objectives, as shown in the next section.

4. Hypotheses Development

The researchers selected most relevant literature to formulate five hypotheses as follows:

4.1 Hypothesis 1 (H1): Organizational culture impacts employee job satisfaction.

Hypothesis 1 is based on the concept of organizational culture as the shared values, beliefs, and practices within an organization that shape the behavior and attitudes of its employees (Schein, 2010). It influences various aspects of employee experience, including job satisfaction, by creating a supportive and engaging work environment. Cameron & Quinn (2006) emphasized that employees who perceive their organizational culture as supportive and aligned with their personal values are more likely to report higher levels of job satisfaction. This relationship is supported by the Job Characteristics Model, which posits

that a positive organizational culture enhances job satisfaction by providing meaningful work and supportive work conditions (Hackman & Oldham, 1976).

4.2 Hypothesis 2 (H2): Pay/salary affects employee job satisfaction.

Hypothesis 2 is based on the work of Rynes et al. (1989) that pay/salary influences employees' perceptions of their job value and satisfaction. Research by Locke & Latham (2002) emphasizes that equitable and competitive pay is a key determinant of job satisfaction. Herzberg's Two-Factor Theory (1959) further supports this by categorizing salary as a hygiene factor that prevents dissatisfaction but does not necessarily increase satisfaction unless it meets employees' expectations. Studies by Gerhart & Rynes (2003), and Judge & Bono (2001) confirm that fair and competitive compensation positively affects job satisfaction by providing financial security and acknowledging employees' contributions.

4.3 Hypothesis 3 (H3): Work environment influences employee job satisfaction.

Hypothesis 3 is based on the physical and psychological conditions under which employees work, such as office layout, ergonomics, and overall ambiance, in the study by Spector (1985). According to Kahn (1990), a supportive physical and psychological work environment contributes to higher job satisfaction by enhancing employees' comfort, safety, and sense of belonging. Hackman and Oldham's Job Characteristics Model (1976) also suggests that a well-designed work environment that offers autonomy and feedback increases job satisfaction. Salas et al. (2010) asserted that ergonomically designed workspaces and effective stress management practices positively impact job satisfaction.

4.4 Hypothesis 4 (H4): Workplace relationships affect employee job satisfaction.

Hypothesis 4 is based on the concept of workplace relationships as interactions and connections between employees, including relationships with supervisors, colleagues, and other stakeholders (Cropanzano & Wright, 2001). Kahn (1990) and Cropanzano & Wright (2001) revealed that supportive and positive relationships with supervisors and peers enhance job satisfaction by providing emotional support, recognition, and a sense of community. Schaubroeck et al. (2008) also emphasized that strong interpersonal relationships foster collaboration and reduce workplace stress, leading to increased job satisfaction.

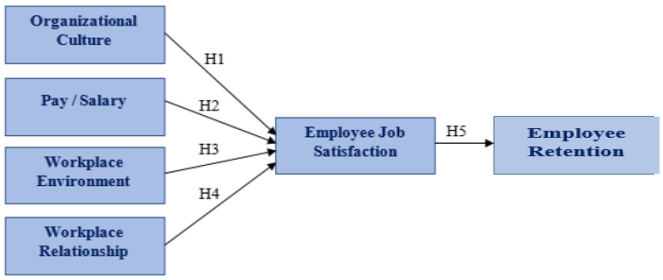
4.5 Hypothesis 5 (H5): Job satisfaction determines employee retention.

Hypothesis 5 is based on the work of Locke & Latham (2002) that employees' overall contentment with their job roles and work environment are crucial determinant of employees' intention to stay with or leave an organization. The relationship between job satisfaction and employee retention is supported by Harter et al. (2002) in that higher job satisfaction is associated with lower turnover rates. Studies by Tett et al. (1991) and Hausknecht et al. (2009) also support such findings, showing that satisfied employees are more committed and less likely to seek alternative employment opportunities.

5. Conceptual Framework

Based on the research objectives and corresponding hypotheses, the researchers condensed them into a conceptual framework for the study as shown in Figure 1.

Figure 1: Determinant Factors of the Tourism Company on Employee Job Satisfaction and Employee Retention in China



Source: Wang & Nuangjamnong (2025)

6. Research Methodology

6.1 Research Design

This study investigates the determinant factors of employee job satisfaction and retention within the tourism industry in China, focusing on the impact of four key independent variables: organizational culture (H1), pay/salary (H2), work environment (H3), and workplace relationships (H4). The dependent variables examined are job satisfaction (H5) and employee retention.

The research design incorporates quantitative approaches to thoroughly examine these relationships. The primary method of data collection is a structured questionnaire, divided into three parts, with 40 questions. These questions are designed to measure *six key variables* in the research model, along with additional items related to screening and demographic information. Specifically, the questionnaire includes:

- Three screening questions to ensure the relevance of respondents.
- Seven demographic questions to gather background information on respondents.
- Thirty measurement questions directly related to the research variables.

To ensure the reliability of the questionnaire, Cronbach's Alpha was utilized to assess the internal consistency of the measurement items. A pilot study involved 30 participants to further validate the questionnaire, identifying any unclear or confusing items.

For data analysis, both simple linear regression (SLR) and multiple linear regression (MLR). MLR were used to analyze the impact of the independent variables—organizational culture, pay/salary, work environment, and workplace relationships—on job satisfaction and employee retention. Following this, SLR was applied to examine the direct effect of job satisfaction on employee retention.

6.2 Sampling Plan

Population

Specifically, the study focused on full-time employees in the tourism industry who have been with their current employer for at least six months, as this duration is deemed sufficient for employees to develop an understanding of the organizational culture, pay structure, work environment, and workplace relationships. The target population also

included employees from different regions within China to ensure a comprehensive understanding of the factors influencing job satisfaction and retention across the country's tourism industry.

Sample

In this study, the sample size was determined based on several factors, including the population size, the desired confidence level, and the margin of error. Given the large and diverse nature of the tourism industry in China, a sample size that adequately represents the target population is necessary to generalize the findings. The size of approximately 385-390 respondents was considered optimal to achieve a balance between statistical power and practical considerations, such as time and resource constraints.

The chosen sample size allows for sufficient variability within the responses, providing the ability to detect meaningful relationships between the independent variables (organizational culture, pay/salary, work environment, workplace relationships) and the dependent variables (employee job satisfaction and employee retention). To ensure that the sample is representative of the entire population, a stratified sampling method is used. This approach involves dividing the population into strata based on key characteristics, such as job role, geographic location, and company type. Random samples are then drawn from each stratum to ensure that all relevant subgroups are adequately represented in the final sample.

A sample size of 385-390 was consistent with guidelines for conducting multiple regression analyses, as recommended by "*Sample size calculator from www.statskingdom.com*," which suggest a minimum of 385 for reliable results. In this study, with four independent variables, a larger sample size of 385-390 is chosen to increase the generalizability and robustness of the findings.

6.3 Validity and Reliability

Content Validity (IOC)

The content validity of the questionnaire items was assessed using the Item-Objective Congruence (IOC) index. Three experts in the field of tourism management were consulted to evaluate the relevance and clarity of the 30 questions included in the questionnaire. All 30 questions received IOC scores greater than 0.5, indicating satisfactory content validity. This evaluation process ensured that each question was carefully crafted and aligned with the specific variables being studied. As a result, the final questionnaire comprises 30 well-validated questions, enhancing the accuracy and relevance of the data collected for the study (see Table 1).

Table 1: The Item Objective Congruence (IOC) Index with Three Experts

Variables	Before number of items	After number of items	IOC weight score from three experts
Organization culture	5	5	0.67 – 1.00
Pay/salary	5	5	0.67 – 1.00
Workplace environment	5	5	0.67 – 1.00
Workplace relationship	5	5	0.67 – 1.00
Employee job satisfaction	5	5	0.67 – 1.00
Employee retention	5	5	0.67 – 1.00

Cronbach's Alpha Reliability with Pilot Test

To assess the reliability and consistency of the questionnaire's variables, a pilot test was conducted with 30 participants. Cronbach's Alpha, a widely accepted measure of internal consistency, was used to evaluate the accuracy of the measurement variables. As suggested by Taber (2018), pilot tests are instrumental in evaluating reliability, with Cronbach's Alpha serving as a standard measure, particularly suitable for research employing 5-point Likert scales (Erford et al., 2017).

The Cronbach's Alpha values obtained from the pilot test of the questionnaire, which included 30 participants. The alpha coefficients reflect the internal consistency of each variable and its associated items, providing insights into the reliability of the measurement instrument. Five items for organizational culture (OC) ($\alpha = 0.832$), five items for pay/salary (PS) ($\alpha = 0.893$), five items for workplace environments (WE) ($\alpha = 0.766$), five items for employee job satisfaction (JS) ($\alpha = 0.997$), employee retention (ER) for five items ($\alpha = 0.809$), and workplace relationships (WR) for five items ($\alpha = 0.814$).

The Cronbach's Alpha values demonstrate the reliability of the questionnaire, with most values falling within the "Good" to "Excellent" range. Items scoring below 0.7 are marked as "Questionable" or "Acceptable," indicating areas for potential improvement. Overall, the data confirms that the questionnaire is reliable for further research (see Table 2).

Table 2: Cronbach's Alpha for Pilot Test (*n=30*)

Variable	Cron bach's Alpha	Strength of Association
Organizational Culture (OC)	**0.832**	**Good**
OC1: I believe the company's organizational culture supports employee well-being.	0.780	Acceptable
OC2: My tourist company promotes a culture of fairness and equality.	0.800	Good
OC3: My tourist company is open and honest communication within the company.	0.832	Good
OC4: I feel that my tourist company values employees' opinions and suggestions	0.860	Good
OC5: I think my tourist company organizational culture fosters teamwork.	0.803	Good
Pay/Salary (PS)	**0.893**	**Good**
PS1: I am satisfied with my current compensation.	0.880	Good
PS2: I am satisfied with the benefits provided by my tourist company	0.914	excellent
PS3: My compensation level matches my work contribution	0.821	Good
PS4: I am satisfied with my tourist company bonus system.	0.929	Good
PS5: The benefits provided by my tourist company are helpful to me and my family.	0.843	Good
Workplace Environments (WE)	**0.766**	Acceptable
WE1: I am satisfied with my tourist company's work environment.	0.650	Questionable
WE2: I believe the work environment helps improve my work efficiency.	0.855	Good
WE3: My tourist company provides good work equipment and facilities.	0.815	Good
WE4: My work environment has a positive impact on my physical and mental health.	0.753	Acceptable
WE5: I feel my work environment promotes team collaboration.	0.612	Questionable
Employee Job Satisfaction (JS)	**0.997**	**Excellent**
JS1: I am satisfied with my job content.	0.919	Excellent
JS2: I find my work meaningful and challenging.	0.825	Good
JS3: I am satisfied with my work relationships.	0.978	Excellent
JS4: My work stress is within an acceptable range.	0.840	Good
JS5: I am satisfied with the overall work environment of my tourist company.	0.973	Excellent
Employee Retention (ER)	**0.809**	**Good**
ER1: I am willing to work for my tourist company for the long term.	0.806	Good
ER2: I feel my tourist company provides sufficient career development opportunities.	0.811	Good
ER3: I am satisfied with my tourist company's retention policies.	0.806	Good
ER4: I think my tourist company's recognition and rewards for employees are effective.	0.793	Acceptable
ER5: I feel my tourist company shows adequate care and support for its employees.	0.723	Acceptable
Workplace Relationships (WR)	**0.814**	**Good**
WR1: I have a positive working relationship with my immediate supervisor.	0.802	Good
WR2: I feel supported by my colleagues in my daily work activities.	0.817	Good
WR3: Communication within my team is open, transparent, and effective.	0.806	Good
WR4: I can rely on my colleagues when I need help or advice at work.	0.893	Good
WR5: The relationships I have with my coworkers positively affect my job satisfaction.	0.821	Good

7. Analysis of Results

7.1 Respondents

Out of the initial 402 respondents, 388 met the criteria for data analysis based on the screening questions, while 14 did not. This yields a total of 388 valid responses, representing 97.24% of the expected sample size of 390 respondents. The high response rate indicates a robust dataset for analyzing the impact of various factors on employee job satisfaction and retention (see Table 3).

Table 3: Number of Respondents

Respondents during data collect with the survey = 402	Respondents for data analysis
Screening questions - Yes = 388, No = 14	388
Expected sample size 390 respondents (100%)	388 (97.24%)

7.2 Respondents' Demographic Information

Table 4 provides a comprehensive overview of the demographic characteristics of the 388 respondents. The age distribution shows that 30.9% are under 25 years old, 25.3% are between 25 and 34 years old, 20.1% fall into the 35 to 44 age group, 20.6% are between 45 and 54 years old, and 3.1% are 55 years old and above. In terms of gender, 23.2% of respondents are male, 55.7% are female, and 21.1% prefer not to disclose their gender.

Regarding education, 16.2% have a high school diploma or equivalent, 18.6% hold an associate degree, 42.3% possess a bachelor's degree, 5.9% have a master's degree, and 17.0% have obtained a doctorate. The distribution of job roles indicates that 29.4% are in entry-level positions, 29.6% are mid-level, 26.3% are in senior-level roles, and 14.7% hold executive-level positions.

The years of experience in the tourism industry reveal that 4.6% have less than 1 year of experience, 6.2% have 1-3 years, 42.3% have 4-6 years, 21.9% have 7-10 years, and 25.0% have more than 10 years. In terms of the sector within the tourism industry, 32.7% work in travel agencies, 34.5% are employed in hotels or resorts, 9.5% work for airlines, and 23.2% are involved with tour operators.

Finally, the size of the current organization varies, with 34.8% having fewer than 50 employees, 32.5% having 50-199 employees, 3.9% in organizations with 200-499 employees, 5.2% with 500-999 employees, and 23.7% working for organizations with 1,000 or more employees.

Table 4: Demographic Information on Frequency and Percentage

Description	Frequency	Percentage
Age group	**388**	**100.0**
a) Under 25 years old	120	30.9
b) 25-34 years old	98	25.3
c) 35-44 years old	78	20.1

Description	Frequency	Percentage
d) 45-54 years old	80	20.6
e) 55 years old and above	12	3.1
Gender	**388**	**100.0**
a) Male	90	23.2
b) Female	216	55.7
c) Prefer not to say	82	21.1
Highest level of education	**388**	**100.0**
a) High school diploma or equivalent	63	16.2
b) Associate degree	72	18.6
c) Bachelor's degree	164	42.3
d) Master's degree	23	5.9
e) Doctorate	66	17.0
Current job role	**388**	**100.0**
a) Entry-level (e.g., receptionist, junior staff)	114	29.4
b) Mid-level (e.g., supervisor, manager)	115	29.6
c) Senior-level (e.g., director, senior manager)	102	26.3
d) Executive-level (e.g., CEO, VP)	57	14.7
Years of experience in the tourism industry	**388**	**100.0**
a) Less than 1 year	18	4.6
b) 1-3 years	24	6.2
c) 4-6 years	164	42.3
d) 7-10 years	85	21.9
e) More than 10 years	97	25.0
Sector of the tourism industry do you work in	**388**	**100.0**
a) Travel agency	127	32.7
b) Hotel or resort	134	34.5
c) Airline	37	9.5
d) Tour operator	90	23.2
Size of current organization	**388**	**100.0**
a) Fewer than 50 employees	135	34.8
b) 50-199 employees	126	32.5
c) 200-499 employees	15	3.9
d) 500-999 employees	20	5.2
e) 1,000 or more employees	92	23.7

7.3 Mean and Standard Deviation of Variables

According to Imsa-ard (2021), the criteria for interpreting mean scores are as follows

Mean score	Interpretation
4.21 - 5.00	Very high
3.21 - 4.20	High
2.61 - 3.20	Neutral
1.81 - 2.60	Low
1.00 - 1.80	Very low

Table 5 summarizes the descriptive statistics for various variables, including Organizational Culture, Pay/Salary, Workplace Environment, Employee Job Satisfaction, Employee Retention, and Workplace Relationships. Each variable's mean and standard deviation are presented, along with an interpretation based on established criteria.

The mean score for Organizational Culture (OC) is 3.88 with a standard deviation of 0.897, indicating a high level of perception. The sub-items of OC show high scores, with "I believe the company's organizational culture supports employee well-being" achieving the highest mean of 4.16, reflecting a high level of agreement.

For Pay/Salary (PS), the mean is 3.93 with a standard deviation of 0.762, which is categorized as high. The item "I am satisfied with my tourist company bonus system" has the highest mean score of 4.05, suggesting a strong positive perception of the bonus system.

Workplace Environment (WE) has a mean score of 4.18 and a standard deviation of 0.867, categorized as high. Notably,"I feel my work environment promotes team collaboration" and "My work environment has a positive impact on my physical and mental health" have mean scores of 4.31 and 4.25, respectively, both classified as very high.

Employee Job Satisfaction (JS) scores a mean of 4.08 with a standard deviation of 0.854, indicating high satisfaction levels. The item "I find my work meaningful and challenging" stands out with a mean score of 4.25, categorized as very high.

Retention (ER) shows a mean score of 4.09 and a standard deviation of 0.836, reflecting high levels of retention. The item "I am satisfied with my tourist company's retention policies" has the highest mean of 4.82, indicating very high satisfaction with retention policies.

Lastly, Workplace Relationships (WR) has a mean of 4.11 with a standard deviation of 0.873, categorized as high. The highest mean score in this category is 4.22 for the item "I have a positive working relationship with my immediate supervisor," which is classified as very high.

Overall, the data suggests strong positive evaluations across all variables, with several items rated as very high, particularly in the areas of workplace environment and employee retention.

Table 5: Mean and Standard Deviation

Variable	Mean	SD.	Interpretation
Organizational Culture (OC)	**3.88**	**0.897**	**High**
OC1: I believe the company's organizational culture supports employee well-being.	4.16	0.931	High
OC2: My tourist company promotes a culture of fairness and equality.	3.68	0.837	High
OC3: My tourist company is open and honest communication within the company.	3.88	0.901	High
OC4: I feel that my tourist company values employees' opinions and suggestions	3.83	0.917	High
OC5: I think my tourist company organizational culture fosters teamwork.	3.85	0.901	High

Pay/Salary (PS)	**3.93**	**0.762**	**High**
PS1: I am satisfied with my current compensation.	3.74	0.690	High
PS2: I am satisfied with the benefits provided by my tourist company	3.92	0.820	High
PS3: My compensation level matches my work contribution	4.00	0.790	High
PS4: I am satisfied with my tourist company bonus system.	4.05	0.780	High
PS5: The benefits provided by my tourist company are helpful to me and my family.	3.94	0.730	High
Workplace Environments (WE)	**4.18**	**0.867**	**High**
WE1: I am satisfied with my tourist company's work environment.	4.05	0.965	High
WE2: I believe the work environment helps improve my work efficiency.	4.25	0.764	Very High
WE3: My tourist company provides good work equipment and facilities.	4.05	0.965	High
WE4: My work environment has a positive impact on my physical and mental health.	4.25	0.764	Very High
WE5: I feel my work environment promotes team collaboration.	4.31	0.875	Very High
Employee Job Satisfaction (JS)	**4.08**	**0.854**	**High**
JS1: I am satisfied with my job content.	3.92	0.885	High
JS2: I find my work meaningful and challenging.	4.25	0.764	Very High
JS3: I am satisfied with my work relationships.	4.00	0.927	High
JS4: My work stress is within an acceptable range.	4.04	0.911	High
JS5: I am satisfied with the overall work environment of my tourist company.	4.17	0.782	High
Employee Retention (ER)	**4.09**	**0.836**	**High**
ER1: I am willing to work for my tourist company for the long term.	3.82	0.921	High
ER2: I feel my tourist company provides sufficient career development opportunities.	3.96	0.761	High
ER3: I am satisfied with my tourist company's retention policies.	4.82	0.921	Very High
ER4: I think my tourist company's recognition and rewards for employees are effective.	3.96	0.761	High
ER5: I feel my tourist company shows adequate care and support for its employees.	3.90	0.816	High
Workplace Relationships (WR)	**4.11**	**0.873**	**High**
WR1: I have a positive working relationship with my immediate supervisor.	4.22	0.885	Very High
WR2: I feel supported by my colleagues in my daily work activities.	4.11	0.927	High
WR3: Communication within my team is open, transparent, and effective.	4.04	0.911	High
WR4: I can rely on my colleagues when I need help or advice at work.	4.17	0.782	High
WR5: The relationships I have with my coworkers positively affect my job satisfaction.	4.02	0.861	High

7.4 Hypothesis Testing Results

7.4.1 Multiple Linear Regression for H1, H2, H3, and H4

Statistical Hypothesis

Ho: Organizational culture (H1), pay/salary (H2), workplace environment (H3), and workplace relationship (H4) have no significant effect on employee job satisfaction toward employee retention.

Ha: Organizational culture (H1), pay/salary (H2), workplace environment (H3), and workplace relationship (H4) have a significant effect on employee job satisfaction toward employee retention.

Table 6: Multiple Linear Regression Analysis for H1, H2, H3, and H4

Hypothesis	B	SE B	β	*t*	*p*	VIF	Decision Ho
H1: OC → JS	0.073	0.493	0.369	4.903	0.037*	2.20	Rejected
H2: PS → JS	0.327	0.493	0.364	0.890	0.474	2.27	Fail to Rejected
H3: WE → JS	0.528	0.349	0.206	4.415	< .001*	1.01	Rejected
H4: WR → JS	0.215	0.291	0.521	1.987	< .001*	3.85	Rejected
R^2	0.871						
Adjusted R^2	0.850						
F(4, 383)	5592			***p***		< .001*	

Note. *p < 0.05. Dependent Variable = employee job satisfaction (JS)

B = Unstandardized coefficients B | SE B = the standard error for the unstandardized beta | β = the standardized beta | t = t-value > 1.96

p-value = *p < .05 | VIF = Variance Inflation Factor (≤ 5)

The multiple linear regression analysis was conducted to test the hypotheses (H1, H2, H3, and H4) concerning the effects of organizational culture (H1), pay/salary (H2), workplace environment (H3), and workplace relationships (H4) on employee job satisfaction, which in turn impacts employee retention. The null hypothesis (Ho) posited that these factors have no significant effect on employee job satisfaction, while the alternative hypothesis (Ha) suggested a significant effect.

The results of the regression analysis are summarized in Table 6. The model shows that organizational culture (H1) has a significant positive effect on employee job satisfaction ($\beta = 0.369$, $p = 0.037$), leading to the rejection of the null hypothesis for H1. Similarly, the workplace environment (H3) also demonstrates a significant positive effect on job satisfaction ($\beta = 0.206$, $p < 0.001$), resulting in the rejection of the null hypothesis for H3. Workplace relationships (H4) were found to have a strong significant positive effect on employee job satisfaction as well ($\beta = 0.521$, $p < 0.001$), leading to the rejection of the null hypothesis for H4.

However, pay/salary (H2) did not show a significant effect on employee job satisfaction ($\beta = 0.364$, $p = 0.474$), and thus, the null hypothesis for H2 was not rejected.

The overall model was found to be statistically significant, with an R^2 value of 0.871, indicating that approximately 87.1% of the variance in employee job satisfaction

can be explained by the four independent variables. The adjusted R^2 of 0.850 suggests a strong model fit. The F-statistic was 5592, with a p-value of less than 0.001, further confirming the model's significance. The analysis reveals that organizational culture, workplace environment, and workplace relationships significantly impact employee job satisfaction, which in turn affects employee retention. However, pay/salary did not show a significant influence in this context.

7.4.2 Simple Linear Regression for H5

Statistical Hypothesis

Ho: Employee job satisfaction has no significant effect on employee retention.

Ha: Employee job satisfaction has a significant effect on employee retention.

Table 7: Simple Linear Regression Analysis for H5

Hypothesis	B	SE B	β	*t*	*p*	VIF	Decision Ho
H5: JS → ER	0.993	0.112	0.893	8.891	< .001*	1.00	Rejected
R^2	0.798						
Adjusted R^2	0.788						
F(1, 386)	7.07			***p***		< .001*	

Note. *p < 0.05. Dependent Variable = employee retention

B = Unstandardized coefficients B | SE B = the standard error for the unstandardized beta | β = the standardized beta | t = t-value > 1.96

p-value = *p < .05 | VIF = Variance Inflation Factor (≤ 5)

The simple linear regression analysis was conducted to test the hypothesis (H5) regarding the effect of employee job satisfaction on employee retention. The null hypothesis (Ho) stated that employee job satisfaction has no significant effect on employee retention, while the alternative hypothesis (Ha) suggested a significant effect.

The results of the regression analysis, as shown in Table 7, indicate that employee job satisfaction has a significant positive effect on employee retention ($\beta = 0.893$, $p < 0.001$). The unstandardized coefficient (B) of 0.993 and the t-value of 8.891 further support this finding. Consequently, the null hypothesis for H5 is rejected, confirming that employee job satisfaction significantly influences employee retention.

The model explains approximately 79.8% of the variance in employee retention, as indicated by the R^2 value of 0.798. The adjusted R^2 value of 0.788 suggests a strong model fit. The F-statistic of 7.07 with a p-value of less than 0.001 also confirms the significance of the model.

In summary, the analysis demonstrates that higher levels of employee job satisfaction lead to increased employee retention, highlighting the importance of job satisfaction in retaining employees within an organization.

8. Conclusion and Implications

8.1 Major Findings

The research aimed to investigate the influence of various organizational factors on employee job satisfaction and its subsequent effect on employee retention within the

tourism industry. The study focused on five main variables: Organizational Culture, Pay/Salary, Workplace Environment, Workplace Relationships, and Employee Job Satisfaction.

Demographic Overview*:* The sample consisted of 388 respondents, with a diverse age range predominantly under 35 years old. Most respondents were female, and a significant portion held at least a bachelor's degree. The majority were employed in mid-level positions with 4-6 years of experience in the tourism industry.

Reliability of Measures*:* Cronbach's Alpha values for the six variables ranged from 0.812 to 0.924, indicating good to excellent internal consistency and reliability across the scales used.

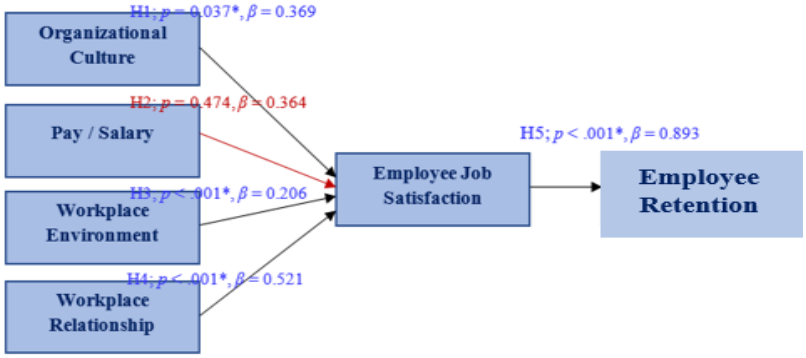
Descriptive Statistics: The descriptive analysis revealed that respondents generally perceived their organizational culture, pay/salary, workplace environment, and workplace relationships positively, with mean scores falling in the "high" category. Employee job satisfaction also scored high, indicating overall contentment among employees.

Multiple Linear Regression Analysis: The regression analysis for hypotheses H1, H3, and H4 showed that Organizational Culture, Workplace Environment, and Workplace Relationships have a significant positive effect on Employee Job Satisfaction. However, Pay/Salary (H2) did not have a significant impact. The model explained 85.0% of the variance in job satisfaction.

Simple Linear Regression Analysis: The analysis for H5 revealed that Employee Job Satisfaction has a significant positive effect on Employee Retention, with a high level of explained variance ($R^2 = 0.798$). This indicates that job satisfaction is a crucial predictor of whether employees choose to stay with their organization.

Overall, the findings emphasize the critical role of a supportive organizational culture, a conducive workplace environment, and strong workplace relationships in enhancing employee job satisfaction, which in turn significantly influences employee retention (see Figure 2). The lack of a significant impact of pay/salary suggests that while compensation is important, other factors may be more critical in determining job satisfaction and retention within the tourism industry.

Figure 2: Results of Structural Model



8.2 Implications

The study's findings provide valuable insights into the factors influencing employee job satisfaction and retention in the tourism industry, aligning closely with the research objectives. As shown in the previous studies on the four key variables under study, the results of the present study align with the earlier findings and underscore the importance of Organizational Culture (O'Reilly, Chatman & Caldwell, 1991; Lin & Nuangjamnong, 2022), Workplace Environment (Salas et al., 2010; Kongkaew & Nuangjamnong, 2023), and Workplace Relationships (Schein, 2010; Jaramillo et al., 2011) in fostering job satisfaction (Terera & Ngirande, 2014; Alshmemri et al., 2017), which subsequently drives employee retention (Allen & Meyer, 1991; Al Manum & Hasan 2017). These findings have significant implications for both management practices and policy development within the industry.

***Organizational Culture**:* The study found that a supportive organizational culture significantly impacts employee job satisfaction (H1). Employees who perceive their organization's culture as fair, inclusive, and supportive are more likely to be satisfied with their jobs. This aligns with the research objective of assessing the impact of organizational culture on job satisfaction. Therefore, tourism companies need to invest in building a positive and inclusive culture. This can be achieved through regular communication, employee involvement in decision-making, and fostering a sense of belonging among employees.

Workplace Environment: The positive effect of Workplace Environment on job satisfaction (H3) highlights the critical role that physical and psychological work conditions play in employee well-being. This finding corresponds to the research objective of evaluating how the workplace environment influences job satisfaction. Companies should ensure that the workplace is not only physically comfortable but also mentally supportive. Providing modern facilities, ergonomic workspaces, and resources for stress management can enhance employee satisfaction and productivity.

Workplace Relationships: The significant impact of Workplace Relationships on job satisfaction (H4) underscores the importance of interpersonal dynamics in the workplace. The research objective of examining the role of workplace relationships in job satisfaction is met through these findings. Management should encourage open communication, teamwork, and a supportive atmosphere among colleagues and

supervisors. Regular team-building activities and leadership training can help strengthen these relationships, contributing to higher job satisfaction and retention.

***Pay/Salary**:* Contrary to expectations, Pay/Salary did not have a significant impact on job satisfaction (H2). While competitive compensation is undoubtedly important, the findings suggest that intrinsic factors like organizational culture and workplace environment might have a more substantial influence on job satisfaction. This partially meets the research objective of determining the influence of compensation on job satisfaction. Companies should consider a more holistic approach, balancing financial rewards with non-monetary benefits such as professional development opportunities and work-life balance initiatives.

***Employee Retention**:* The research confirmed that Employee Job Satisfaction significantly affects Employee Retention (H5). This aligns with the objective of understanding the relationship between job satisfaction and retention. Companies should focus on the factors that enhance job satisfaction to retain talent. Regularly assessing employee satisfaction through surveys and feedback mechanisms can help organizations identify areas for improvement, ensuring long-term employee commitment.

The findings of this study reveal the critical role that organizational culture, workplace environment, relationships, and compensation play in shaping employee job satisfaction and retention. Drawing on *Herzberg's Two-Factor Theory*, the results suggest that while hygiene factors like pay and work conditions are essential, it is the motivators—such as recognition, meaningful work, and supportive relationships—that truly drive satisfaction and retention. The significant impact of these factors aligns with Maslow's Hierarchy of Needs, highlighting the importance of addressing both basic and psychological needs to foster a committed and engaged workforce. These insights imply that tourism companies must adopt a holistic approach, integrating both extrinsic and intrinsic rewards, to enhance employee well-being and organizational loyalty, ultimately improving performance and competitive advantage.

9. Limitations of the Study

This study has two limitations that should be considered when interpreting the results. First, the research was conducted within a specific sector of the tourism industry, which may limit the generalizability of the findings to other industries or regions. Additionally, the use of self-reported data could introduce bias, as participants may have provided socially desirable responses. The cross-sectional design of the study also restricts the ability to infer causality between the variables. Future research could address these limitations by including a more diverse sample, employing longitudinal designs, and using a mix of quantitative and qualitative methods to gain a deeper understanding of the factors influencing employee job satisfaction and retention.

10. The Authors

The two authors--Sibo Wang and Chompu Nuangjamnong--are in the Master of Business Administration, the Graduate School of Business and Advanced Technology Management, Assumption University of Thailand. They share research interest in the areas of

tourism management, determinant factors of employee job satisfaction, and current issues in employee retention in China.

11. References

Adams, J. S. (1965). Inequity in social exchange. *Advances in Experimental Social Psychology, 2*(1), 267–299. https://doi.org/10.1016/S0065-2601(08)60108-2

Ajala, E. M. (2012). The influence of workplace environment on workers' welfare, performance and productivity. *The African Symposium, 12*(1), 141–149.

Al Mamun, C. A., & Hasan, M. N. (2017). Factors affecting employee turnover and sound retention strategies in business organization: A conceptual view. *Problems and Perspectives in Management, 15*(1), 63–71. https://doi.org/10.21511/ppm.15(1).2017.06

Allen, N. J., & Meyer, J. P. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review, 1*(1), 61–89. https://doi.org/10.1016/1053-4822(91)90011-Z

Alshmemri, M., Shahwan-Akl, L., & Maude, P. (2017). Herzberg's two-factor theory. *Life Science Journal, 14*(5), 12–16.

Blau, P. M. (1964). Justice in social exchange. *Sociological Inquiry, 34*(2), 193–206. https://doi.org/10.1111/j.1475-682X.1964.tb00583.x

Cameron, K. S., & Quinn, R. E. (2006). *Diagnosing and changing organizational culture: Based on the competing values framework* (Rev. ed.). Jossey-Bass.

Chandrasekar, K. (2011). Workplace environment and its impact on organisational performance in public sector organisations. *International Journal of Enterprise Computing and Business Systems, 1*(1), 1–19.

Cooke, R. A., Rousseau, D. M., & Lafferty, J. C. (1987). Thinking and behavioral styles: Consistency between self-descriptions and descriptions by others. *Educational and Psychological Measurement, 47*(3), 815–823. https://doi.org/10.1177/0013164487473025

Craig, A. O., Job-Olatunji, K., Dairo, L. O., Adedamola, M. A., Peters, S. O., & Shorinmade, A. G. (2020). Employee remuneration and the financial performance of selected manufacturing companies in Nigeria. *Accounting and Taxation Review, 4*(3), 54–65.

Cropanzano, R., & Wright, T. A. (2001). When a "happy" worker is really a "productive" worker: A review and further refinement of the happy-productive worker thesis. *Consulting Psychology Journal: Practice and Research, 53*(3), 182–199. https://doi.org/10.1037/1061-4087.53.3.182

Deal, T. E., & Kennedy, A. A. (1982). *Corporate cultures: The rites and rituals of corporate life.* Addison-Wesley.

Eisenberger, R., Armeli, S., Rexwinkel, B., Lynch, P. D., & Rhoades, L. (2001). Reciprocation of perceived organizational support. *Journal of Applied Psychology, 86*(1), 42–51. https://doi.org/10.1037/0021-9010.86.1.42

Erford, B. T., Bardhoshi, G., Ross, M., Gunther, C., & Duncan, K. (2017). Meta-analysis of counseling outcomes for youth with conduct disorders. *Journal of Counseling & Development*, *95*(1), 35–44. https://doi.org/10.1002/jcad.12115

Gable, S. L., Reis, H. T., & Elliot, A. J. (2003). Evidence for bivariate systems: An empirical test of appetition and aversion across domains. *Journal of Research in Personality*, *37*(5), 349–372. https://doi.org/10.1016/S0092-6566(03)00034-7

Gerhart, B., & Rynes, S. L. (2003). *Compensation: Theory, evidence, and strategic implications.* Sage. https://doi.org/10.4135/9781452229256

Giffords, E. D., & Dina, R. P. (2003). Changing organizational cultures: The challenge in forging successful mergers. *Administration in Social Work*, *27*(1), 69–81. https://doi.org/10.1300/J147v27n01_05

Greenberg, J. (1990). Organizational justice: Yesterday, today, and tomorrow. *Journal of Management*, *16*(2), 399–432. https://doi.org/10.1177/014920639001600208

Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance*, *16*(2), 250–279. https://doi.org/10.1016/0030-5073(76)90016-7

Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *Journal of Applied Psychology*, *87*(2), 268–279. https://doi.org/10.1037/0021-9010.87.2.268

Hausknecht, J. P., Rodda, J., & Howard, M. J. (2009). Targeted employee retention: Performance-based and job-related differences in reported reasons for staying. *Human Resource Management*, *48*(2), 269–288. https://doi.org/10.1002/hrm.20279

Heneman III, H. G., & Schwab, D. P. (1985). Pay satisfaction: Its multidimensional nature and measurement. *International Journal of Psychology*, *20*(1), 129–141. https://doi.org/10.1080/00207598508247727

Herzberg, F. (1959). *The motivation to work* (2nd ed.). New York: John Wiley & Sons.

Imsa-ard, P. (2021). Choices of teaching practices: Does the English national examination cause Thai EFL teachers to teach to the test? *TESOL International Journal*, *16*(5), 56–86.

Jaramillo, F., Mulki, J. P., & Boles, J. S. (2011). Workplace stressors, job attitude, and job behaviors: Is interpersonal conflict the missing link? *Journal of Personal Selling & Sales Management*, *31*(3), 339–356. https://doi.org/10.2753/PSS0885-3134310310

Judge, T. A., & Bono, J. E. (2001). Relationship of core self-evaluations traits—self-esteem, generalized self-efficacy, locus of control, and emotional stability—with job satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology*, *86*(1), 80–92. https://doi.org/10.1037/0021-9010.86.1.80

Judge, T. A., & Piccolo, R. F. (2004). Transformational and transactional leadership: A meta-analytic test of their relative validity. *Journal of Applied Psychology*, *89*(5), 755–768. https://doi.org/10.1037/0021-9010.89.5.755

Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal*, *33*(4), 692–724. https://doi.org/10.5465/256287

Kashyap, V., & Rangnekar, S. (2014). A structural equation model for measuring the impact of employee retention practices on employee's turnover intentions: An Indian perspective. *South Asian Journal of Human Resources Management*, *1*(2), 221–247. https://doi.org/10.1177/2322093714549108

Kongkaew, W. W., & Nuangjamnong, C. (2023). A study of the effect of leadership style towards organizational culture on job satisfaction and employee performance in Bangkok. *The AU E-Journal of Interdisciplinary Research*, *8*(2), 21–34. http://www.assumptionjournal.au.edu/index.php/eJIR/article/view/7804

Kristof-Brown, A. L., Zimmerman, R. D., & Johnson, E. C. (2005). Consequences of individuals' fit at work: A meta-analysis of person-job, person–organization, person-group, and person-supervisor fit. *Personnel Psychology*, *58*(2), 281–342. https://doi.org/10.1111/j.1744-6570.2005.00672.x

Lin, Q., & Nuangjamnong, C. (2022). Exploring the role of influencers and customer engagement on purchase intention in TikTok live streaming shopping. *International Journal of Social Sciences and Humanities Invention*, *9*(12), 7469–7498. https://doi.org/10.18535/ijsshi/v9i012.04

Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. *American Psychologist*, *57*(9), 705–717. https://doi.org/10.1037/0003-066X.57.9.705

McGrath, M. (1984). An application of the competing values approach to organizational analysis as a diagnostic tool. *Academy of Management Proceedings*, *1984*(1), 254–258. https://doi.org/10.5465/AMBPP.1984.4976861

Niskala, J., Kanste, O., Tomietto, M., Miettunen, J., Tuomikoski, A. M., Kyngäs, H., & Mikkonen, K. (2020). Interventions to improve nurses' job satisfaction: A systematic review and meta-analysis. *Journal of Advanced Nursing*, *76*(7), 1498–1508. https://doi.org/10.1111/jan.14342

Nuangjamnong, C. (2022). The COVID-19 epidemic with employees' job satisfaction and performance on work from home during lockdown in Bangkok. *Psychology and Education Journal*, *59*(1), 416–436. http://psychologyandeducation.net/pae/index.php/pae/article/view/7194/5845

Oldham, G. R., & Hackman, J. R. (2010). Not what it was and not what it will be: The future of job design research. *Journal of Organizational Behavior*, *31*(2–3), 463–479. https://doi.org/10.1002/job.679

O'Reilly III, C. A., Chatman, J., & Caldwell, D. F. (1991). People and organizational culture: A profile comparison approach to assessing person-organization fit. *Academy of Management Journal*, *34*(3), 487–516. https://doi.org/10.5465/256404

Pfeffer, J. (1998). *The human equation: Building profits by putting people first.* Harvard Business School Press.

Ramlall, S. (2004). A review of employee motivation theories and their implications for employee retention within organizations. *Journal of American Academy of Business, 5*(1/2), 52–63.

Rynes, S. L., Weber, C. L., & Milkovich, G. T. (1989). Effects of market survey rates, job evaluation, and job gender on job pay. *Journal of Applied Psychology, 74*(1), 114–123. https://doi.org/10.1037/0021-9010.74.1.114

Salas, E., Rosen, M. A., & DiazGranados, D. (2010). Expertise-based intuition and decision making in organizations. *Journal of Management, 36*(4), 941–973. https://doi.org/10.1177/0149206309350084

Schaubroeck, J., Shaw, J. D., Duffy, M. K., & Mitra, A. (2008). An under-met and over-met expectations model of employee reactions to merit raises. *Journal of Applied Psychology, 93*(2), 424–434. https://doi.org/10.1037/0021-9010.93.2.424

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior, 25*(3), 293–315. https://doi.org/10.1002/job.248

Schein, E. H. (2010). *Organizational culture and leadership* (4th ed.). Jossey-Bass.

Schyns, B., van Veldhoven, M., & Wood, S. (2009). Organizational climate, relative psychological climate and job satisfaction: The example of supportive leadership climate. *Leadership & Organization Development Journal, 30*(7), 649–663. https://doi.org/10.1108/01437730910991643

Spector, P. E. (1985). Measurement of human service staff satisfaction: Development of the Job Satisfaction Survey. *American Journal of Community Psychology, 13*(6), 693–713. https://doi.org/10.1007/BF00929796

Szutenbach, M. P. (2008). *Staff nurses' report of bullying between peers and its effects on job satisfaction and retention* [Doctoral dissertation, Capella University].

Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education, 48*(6), 1273–1296. https://doi.org/10.1007/s11165-016-9602-2

Terera, S. R., & Ngirande, H. (2014). The impact of rewards on job satisfaction and employee retention. *Mediterranean Journal of Social Sciences, 5*(1), 481–487. https://doi.org/10.5901/mjss.2014.v5n1p481

Tett, R. P., Jackson, D. N., & Rothstein, M. (1991). Personality measures as predictors of job performance: A meta-analytic review. *Personnel Psychology, 44*(4), 703–742. https://doi.org/10.1111/j.1744-6570.1991.tb00696.x

Tews, M. J., & Noe, R. A. (2019). Does training have to be fun? A review and conceptual model of the role of fun in workplace training. *Human Resource Management Review, 29*(2), 226–238. https://doi.org/10.1016/j.hrmr.2018.04.003

Tziner, A., Murphy, K. R., & Cleveland, J. N. (2003). Personality moderates relationship between rating context factors and rating behavior. *Advances in Psychology Research, 22*, 107–123.

Walton, E. J., & Dawson, S. (2001). Managers' perceptions of criteria of organizational effectiveness. *Journal of Management Studies*, *38*(2), 173–200. https://doi.org/10.1111/1467-6486.00236

Widener, S. K. (2006). Human capital, pay structure, and the use of performance measures in bonus compensation. *Management Accounting Research*, *17*(2), 198–221. https://doi.org/10.1016/j.mar.2005.09.004

Yousaf, S., Latif, M., Aslam, S., & Saddiqui, A. (2014). Impact of financial and non-financial rewards on employee motivation. *Middle-East Journal of Scientific Research*, *21*(10), 1776–1786.

ISSN 2821-9074 (Online)
ISSN 2730-2601 (Print)
RICE Journal of Creative Entrepreneurship and Management, Vol. 6, No.1, pp. 30-52, January-April 2025
© 2025 Rajamangala University of Technology Rattanakosin, Thailand
doi: 10.14456/rjcm.2025.2
Received 14.09.24/ Revised 25.03.25/ Accepted 29.03.25

From Local to Global: Strategies for Manufacturing SMEs to Expand into International Markets

Si Thu Maung Maung[1]
Chompu Nuangjamnong[2*]

[1, 2] Master of Business Administration
Graduate School of Business and Advanced Technology Management
Assumption University of Thailand
[*] Corresponding author
[1] Email: stmm.sithumgmg@gmail.com
[2] Email: chompunng@au.edu

Abstract

This study explored how to strategize (1) logistics and distribution, (2) SME characteristics, (3) environmental characteristics, (4) network, (5) entry mode and (6) marketing to expand into international markets for manufacturing SMEs. The researchers conducted a quantitative survey of 377 individuals with experience in managing manufacturing SMEs in Myanmar and Thailand in international markets. The statistical tools for data analysis were based on four frameworks from earlier research to construct a new conceptual framework. The study revealed that firm characteristics and host-country characteristics positively influence the choice of entry mode, which in turn significantly affects the internationalization of manufacturing SMEs. The research also identified that effective entry mode selection is critical for successful international expansion, highlighting the importance of strategic alignment with both internal capabilities and external market conditions. The study acknowledged that the focus on manufacturing SMEs within a specific geographic region could affect the generalizability of the findings. The obtained findings are expected to contribute to a limited literature on internationalization strategies for manufacturing SMEs, as well as provide a comprehensive analysis of the most efficient approaches or best practices in the SME industry.

Keywords*: SME characteristics, environmental characteristics, network, entry mode, logistics and distribution, marketing strategy, internationalization*

1. Introduction

1.1 Background of the Study

Businesses of all sizes now have more opportunities than ever to expand their operations internationally because of globalization. International expansion is a critical route to growth, diversification, and long-term sustainability for small and medium-sized firms (Osano, 2019). As the firms try to look for opportunities in the international market, the competition has increased in terms of products, technologies, and strategies. Nevertheless, it is a challenge to move from the local market into international markets that requires thorough strategy planning and implementation.

The rapid globalization of markets has created new opportunities for SMEs to access international customers, suppliers, and partners (Wright & Etemad, 2001). SMEs encounter competition not only from local rivals but also from multinational corporations. Developing effective strategies to compete on a global scale is critical for survival and growth. SMEs play a crucial role in economic development of many developing countries, and they make up the majority of businesses globally and play a significant role in the creation of jobs (World Bank, 2019).

Additionally, cultural and language differences, as well as logistical complexities, further complicate the internationalization process for SMEs. To overcome these barriers,SMEs must adopt effective internationalization strategies.Successful approaches include understanding environmental and SMEs characteristics, adapting products and services to meet the standards and preferences of international markets, and choosing the right entry method to enter international market. Additionally, SMEs can benefit significantly from participation in international trade fairs and networks (Measson & Campbell-Hunt, 2015).

While extensive research has been carried out on the general principles of internationalization for SMEs, there is still a need to conduct more detailed studies that deal with strategies which apply according to individual sectors and market conditions. It is essential for SMEs to have access to market specific information and practical advice, given that each industry and market context presents its own unique opportunities and challenges. Additionally, for SMEs businesses to succeed in the global marketplace and maintain their competitiveness, industry and government cooperation is required to solve some of the challenges that small and medium-sized enterprises (SMEs) face (Osano, 2019).

In the context of the current conditions of SMEs, this study was to discover how to strategize effectively for manufacturing SMEs to expand internationally. The researchers expected to determine the effect of logistics and distribution, marketing strategy on firm characteristics, firm and host-country characteristics and network on the entry mode and to determine the effect of entry mode on internationalization.

1.2 Rationale of the Study

Manufacturing small and medium-sized firms (SMEs) are essential drivers of innovation, jobs, and economic stability in the increasingly globalized economy (Gherghina et al., 2020). Due to the rise of internationalization, which is seen as a crucial component of optimizing business prospects and giving companies access to a wide range of markets, new suppliers, new consumers, and collaborative opportunities. However, despite the vital role of SMEs, they often face substantial barriers when attempting to enter the international markets. These barriers include limited financial resources, insufficient knowledge of foreign markets, regulatory and intense competition from well-established multinational corporations (Al-Hyari et al., 2012). Additionally, the lack of access to networks and partnerships further complicates their ability to penetrate new markets. According to Akbar et al. (2018), many firms generally follow a traditional approach to nearest international markets through exports without considering several other strategies, such as FDI (Foreign Direct Investment) and JVs (Joint Ventures). As a result, there is a need for targeted strategies that address these unique

challenges, enabling manufacturing SMEs to leverage their strengths and capitalize on global opportunities. Therefore, it is critical to research barriers and devise strategies for SMEs in the manufacturing sector.

3. Research Objectives

The objective of the study was how to strategize entry mode to enter international market by utilizing marketing, logistics and distribution, firm and host-country characteristics and network in SMEs. The study specifically explored: (i) logistics and distribution on firm characteristics toward manufacturing SMEs, (ii) marketing strategy on firm characteristics toward manufacturing SMEs, (iii) firm characteristics on entry mode toward manufacturing SMEs, (iv) host-country characteristics on entry mode toward manufacturing SMEs, (v) network on entry mode toward manufacturing SMEs, and (vi) entry mode on internationalization toward manufacturing SMEs.

Research Questions

The research questions are based on the research objectives as follows:

- Do *logistics and distribution* have a significant effect on firm characteristics toward internationalization?
- Does *marketing strategy* have a significant effect on firm characteristics toward internationalization?
- Do *firm characteristics* have a significant effect on entry mode toward internationalization?
- Do *host-country characteristics* have a significant effect on entry mode toward internationalization?
- Does *network* have a significant effect on entry mode toward internationalization?
- Does *entry mode* have a significant effect on internationalization?

Significance of the Study

SMEs are essential to both job creation and economic growth. This study aimed to boost the international competitiveness of SMEs and promote broader economic development by identifying effective strategies for international expansion. In maintaining their competitiveness in the global market, SMEs can benefit from this research by learning how to best utilize their individual strengths and capabilities.

In this study, SMEs will be the primary benefactors. These companies will get insightful knowledge and useful tactics for growing into foreign markets, which will support their expansion, and improvement of global competitiveness. It will be advantageous to SMEs' owners and managers in their decision-making procedures. They will acquire the knowledge and skills to evaluate their strategies for global growth, pinpoint appropriate markets, and execute the best entry mode.

The study's conclusions can be used by experts who provide SMEs with consulting services to help them make better decisions about expanding into foreign markets. They can create specialized plans that complement the study's findings and make better-informed recommendations. The study can be helpful to academics and researchers who are interested in manufacturing SME development, and international business. The in-

depth analysis on manufacturing SMEs can contribute to academic research on SME internationalization.

4. Previous Studies and Hypotheses Development

4.1 Theories Related to Each Variable

4.1.1 Logistics and Distribution

Logistics and distribution are critical components of supply chain management, involving the efficient movement, storage, and delivery of goods from producers to consumers. Efficient logistics ensures that products are available at the right time and place, minimizing costs and maximizing customer satisfaction (Puri, 2022). Logistics connect to the strategic planning and execution of product transit, storage, and inventory control (Bempong, 2019). It involves activities, such as managing the flow of goods, transportation and warehousing. It ensures that products are moved efficiently from their point of origin to their destination. Distribution focuses specifically on streamlining the physical transportation of goods (Kapoor & Kansal, 2007). It bridges the gap between production and the end consumer. Distribution includes activities like delivering finished goods from manufacturers or suppliers directly to retailers or distribution centers.

4.1.2 Marketing Strategy

A marketing strategy is a comprehensive plan developed by a business to promote its products or services and achieve specific goals. It is a business's game plan for reaching potential consumers and turning them into customers of their products or services (Carpenter & Shankar, 2013). It involves identifying target markets, understanding customer needs, and creating value propositions that differentiate the business from competitors. Key components of a marketing strategy include market research, segmentation, positioning, and the marketing mix (product, price, place, and promotion). The goal of a marketing strategy is to achieve and communicate a sustainable competitive advantage over rival companies. By strategically positioning themselves in the market, businesses will be able to attract and retain customers effectively (Nadube & James, 2018). By analyzing market trends and consumer behavior, companies can tailor their approaches to meet the demands of their target audience. Additionally, a well-crafted marketing strategy aligns with the overall business objectives, ensuring that all marketing efforts contribute to the company's success and growth.

4.1.3 Firm Characteristics

A firm's characteristics involve the distinctive attributes that define its identity and influence its operations and performance. These characteristics include the firm's size, structure, industry and resources (Handoyo et al., 2023). Size refers to the scale of the firm which can range from small and medium-sized enterprises (SMEs) to large multinational corporations. Structure refers to the organization set up such as hierarchical or flat structures which affect decision-making processes and efficiency (Ahmady et al., 2016). The industry indicates the sector in which the firm operates, shaping its competitive environment, particularly food and beverage. Resources include both tangible assets, such as capital and technology, and intangible assets, such as brand reputation and intellectual property (Kamasak, 2017). These characteristics cooperatively determine a firm's capabilities,

strategies, and potential for growth, influencing how it navigates challenges and opportunities in the market.

4.1.4 Host-Country Characteristics

Host country characteristics refer to the specific attributes and conditions of a country that affect foreign businesses operating within its borders. Host-market size indicates the number of potential customers, since larger market sizes provide more latent partners and the opportunity for higher returns (Morschett et al., 2010). The success of a firm in a host country is greatly affected by its market environment, which includes elements like market size, competition intensity, economic stability and the government policies of the host country (Fazal et al., 2017). According to Correa da Cunha et al. (2023), the culture of the host country significantly affects the performance of its foreign subsidiary companies. Understanding these characteristics helps firms adapt their strategies to the local context, mitigate risks, and seize opportunities for successful operations in the host country.

4.1.5 Network

Network plays an important role in networks of interpersonal relationships, trust, and institutionalization in promoting businesses in specific regions to come together (Chen et al., 2021). The network approach to internationalization has become a prominent framework for understanding and explaining the internationalization process. This perspective considers a company's internationalization as a network phenomenon, where businesses are integrated into a web of interconnected relationships that provide essential resources for expanding into foreign markets (Johanson & Kao, 2010). A network refers to the interconnected relationships and collaborations between a firm's various stakeholders, including suppliers, distributors, partners, and customers across different countries. These networks facilitate the firm's entry into and expansion within international markets by providing market knowledge, distribution channels and resource access to gain a sustainable competitive advantage in internationalization (Tao et al., 2013).

4.1.6 Entry Mode

Entry mode is a strategy or a method that firms employ to enter international markets. It is one of the most crucial strategic decisions for a company in internationalization. Entry mode can be categorized into exporting which a firm exports its products to a host country, non-equity and equity modes. Non-equity modes include licensing and franchising, management-service contracts, whereas equity modes include joint ventures and wholly owned subsidiaries (Krishna Erramilli et al., 2002). The challenges of expanding internationally are intensified by the limited resources and characteristics of SMEs, amplifying the negative impacts of their expansion efforts. To mitigate these difficulties, selecting the right entry mode is crucial. For instance, in countries with high environmental uncertainty, SMEs might benefit from choosing a low-equity investment mode, like an international joint venture (IJV), to maintain flexibility, share costs and risks, and improve their chances of success (Nisar et al., 2018). Each mode of market entry has its own advantages and disadvantages. Firms need to evaluate their options to choose the entry mode that best suits their strategy and goals.

4.1.7 Internationalization

Internationalization refers to the process by which businesses extend their activities outside of their nation of origin to penetrate overseas markets is known as internationalization (Schmid, 2018). Seeking new markets, diversifying income sources, obtaining access to resources and technologies, and gaining a competitive edge are some of the main forces behind internationalization (Al-Hyari et al., 2012). Numerous advantages come with the internationalization process, such as expanded market penetration and possibility for improved profitability. But it also comes with difficulties including cultural differences, legal compliance, and logistical difficulties (Chen et al., 2021). Planning strategically before entering a new market is necessary for successful internationalization. By diversifying their operations internationally, companies can increase their market share, revenue, and competitive advantage.

4.2 Related Previous Studies

4.2.1 Logistics and Distribution, Marketing Strategy and Firm Characteristics

Understanding the relationship between logistics and distribution, marketing strategy, and firm characteristics is crucial for businesses to achieve competitive advantage and impacts on firms' performance. According to Christopher (2016), An efficient supply chain is a must for a firm. Improved delivery times, lower costs, and higher customer satisfaction are all possible with effective logistics in a firm (Bempong, 2019). Rushton et al. (2017) emphasize how crucial it is to select the right distribution channels for a firm in internationalization. Forming strategic partnerships with regional distributors can offer logistical help and insightful market information.

A well-formulated marketing strategy is vital for firms to successfully penetrate and grow in international markets within the framework of 4ps--Product, Price, Place, and Promotion of businesses in international markets. Douglas and Craig (2011) highlight the importance of brand positioning by a firm in international markets. Firms must position their brands to appeal to local consumers while maintaining global brand consistency. Firms must position their brands to appeal to local consumers while maintaining global brand consistency. Utilizing 4ps (Product, Price, Place, and Promotion) effectively can enhance a firm's competitive advantage and market presence.

Hypothesis 1 (H1): *Logistics and distribution have a significant effect on firm characteristics toward SMEs internationalization.*

Hypothesis 2 (H2): *Marketing strategy have a significant effect on firm characteristics toward SMEs internationalization.*

4.2.2 Firm Characteristics, Host-country Characteristics, Network and Entry Mode

Firm characteristics--size, resources, experience, and structure--significantly impact the choice of entry mode. SMEs often prefer lower-control entry modes like exporting or licensing due to resource constraints. Firms with extensive international experience tend to adopt high-commitment entry modes. Johanson & Vahlne (2009) suggested that more developed businesses are more at ease with greater levels of investment and management because they have acquired the skills and information needed to run overseas operations successfully. Higher levels of human capital and the presence of foreign shareholders in small and medium-sized enterprises (SMEs) have a beneficial impact on these businesses' internationalization, according to an Italian study (Cerrato & Piva, 2012).

Host-country characteristics, including economic, political, and cultural factors, influence the attractiveness and feasibility of different entry modes. In uncertain economies with a rapid rate of growth, businesses are more likely to invest in joint ventures in order to share risks and make it easier to withdraw from that market in the event that operating conditions worse (Álvarez, 2003). Potential investors who are aware of the associated uncertainties over regulations, policies and tax, are less willing to make a long-term equity investment (Henisz & Macher, 2004). Decisions of entry modes may be influenced by cultural differences between the home and host countries. Businesses tend to select partnerships or joint ventures when there is a culture distance from home country in order to take advantage of local expertise and handle cultural issues (Henisz & Macher, 2004).

Networks provide users access to important data, opportunities, and resources. Businesses that are part of robust networks can more successfully penetrate international markets by utilizing their social capital (Johanson & Kao, 2010). Networks can improve market knowledge, save transaction costs, and help find local partners. Creating partnerships with regional businesses can be a smart way to enter a market, particularly in a country with high uncertainty (Ozcan, 2018). Through alliances, businesses can share those risks and combine resources. The firm's choice of entry mode is influenced by its position within its network. Companies occupying key positions in international networks could have easier access to resources and information, allowing them to pursue more aggressive entrance strategies like acquisitions or fully owned subsidiaries (Meyer & Thu Tran, 2006).

Hypothesis 3 (H3): *Firm Characteristics have a significant effect on entry mode toward SMEs internationalization.*

Hypothesis 4 (H4): *Host-country characteristics have a significant effect on entry mode toward SMEs internationalization.*

Hypothesis 5 (H5): *Network have a significant effect on entry mode toward SMEs internationalization.*

4.2.3 Entry Mode and Internationalization

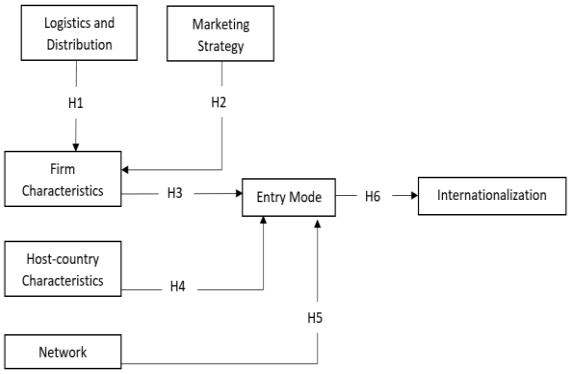
Entry modes refer to the methods that firms use to enter foreign markets, each offering different levels of control, risk, and resource commitment. The primary entry modes include exporting, licensing and franchising, joint ventures, and wholly owned subsidiaries. Selling domestically manufactured items to international markets is known as exporting, and it is frequently the first stage of internationalization. It lets businesses test international markets with comparatively little risk and costs little capital (Cavusgil & Knight, 2015). Licensing and franchising involve giving foreign companies the authority to manufacture and market goods under the home company's brand (Tao et al., 2013). In joint ventures, resources, risks, and benefits are shared with associated businesses. This entry strategy might lessen cultural and legal barriers while giving access to local market expertise (Álvarez, 2003). Wholly owned subsidiaries include full ownership and control of foreign operations. It offers maximum control and profit while it exposes the firm to higher risks (Álvarez, 2003).

Hypothesis 6 (H6): *Entry Mode have a significant effect on SMEs internationalization.*

4.3 Conceptual Framework

Four theoretical frameworks were adopted to construct the conceptual framework of this study. Firstly, from Global expansion of SMEs: role of global market strategy for Kenyan SMEs by Osano (2019). Secondly, from Entry Mode Choice: A Meta-Analysis of Antecedents and Outcomes by Wan et al. (2023). Thirdly, from Chinese Firms' Outward FDI Entry Mode Choice: The Role of Ownership and Network by Tao et al. (2013). Lastly, from Cluster Internationalization: Qualitative Review, Theoretical Direction, and the Rise of Emerging Markets' Themes by Chen et al. (2021). The conceptual framework is based on earlier research, theoretical ideas, and elements influencing entry mode, such as firm and host-country characteristics, and network. The determinants of firm characteristics, and entry mode toward internationalization in manufacturing SMEs are shown in Figure 1 conceptual framework.

Figure 1.
Determinants of Firm Characteristics, Entry Mode toward Internationalization in Manufacturing SMEs



Source: Maung Maung & Nuangjamnong (2025)

5. Research Methodology

5.1 Research Design

This study was designed to develop entry strategies for international markets, focusing on small and medium-sized manufacturing enterprises (SMEs). It examined the impact of various factors, including marketing, logistics and distribution, firm and host-country characteristics, and networking, on the choice of entry mode. The research aimed to assess the relative influence of each element on the entry mode decision.

A quantitative approach was adopted, utilizing four methods: Multiple Linear Regression (MLR), Cronbach's alpha, Simple Linear Regression (SLR), and Descriptive Statistics. The questionnaire was structured into three sections, containing 34 questions related to seven research model variables. There were three screening questions, seven demographic items, and 24 questions designed to measure the variables of interest. Cronbach's Alpha was to evaluate the reliability of the questionnaire and to identify any ambiguous or unclear items.

A pilot study with 60 participants was conducted to validate the reliability of the questionnaire and to identify any uncertainties in the survey items. MLR was then used to explore the effects of logistics and distribution and marketing strategy on firm characteristics. Additionally, the study examined how network, host-country characteristics,

and firm characteristics influence entry mode, and how entry mode affects internationalization using SLR.

5.2 Sampling Plan

This study secured data online from individuals with experience managing manufacturing SMEs in Myanmar and Thailand who engage in international business operations. The sample size was estimated using the Raosoft sample size calculator, with a confidence level of 95%. The study determined a sample size of 377 respondents working as either owners or managers of SMEs. Given that the actual population size is unknown, a figure of 20,000 was used as a reference, as recommended by Raosoft's guidelines, which suggest that beyond this threshold, the required sample size remains stable (Raosoft, 2004).

A non-probability sampling method, specifically purposive sampling, was utilized to gather data. This method was chosen for its effectiveness in collecting targeted information from respondents who meet specific criteria.

5.3 Validity and Reliability

5.3.1 Content Validity (IOC)

The Item Objective Congruence (IOC) Index was used to assess the quality of each questionnaire item. Content validity was established by consulting three experts. Questions with IOC scores exceeding 0.5 were retained for distribution to the respondents.

5.3.2 Reliability Test (Pilot Test)

A pilot test involving 60 participants was conducted to identify any inconsistencies or issues with the questionnaire's variables. Cronbach's alpha was used to measure the internal consistency of the items. As noted by Taber (2018), reliability is typically assessed through pilot tests, with Cronbach's Alpha serving as the standard measure for studies employing 5-point Likert scales, as used in this research.

The pilot test yielded Cronbach's alpha values for the following variables: logistics and distribution (LD) $\alpha = 0.749$ (4 items), marketing strategy (MS) $\alpha = 0.795$ (4 items), firm characteristics (FC) $\alpha = 0.802$ (3 items), host-country characteristics (HC) $\alpha = 0.795$ (3 items), network (NW) $\alpha = 0.740$ (4 items), entry mode (EM) $\alpha = 0.806$ (3 items), and internationalization (IN) $\alpha = 0.764$ (3 items).

All constructs demonstrated internal consistency, with alpha values exceeding the 0.6 threshold, confirming that the questionnaire is reliable for use in the main study.

6. Analysis of Results

6.1 The Respondents' Demographic Data

The researchers conducted a descriptive analysis of demographic data from respondents with experience as managers or owners of manufacturing SMEs located in Bangkok and Myanmar using the Jamovi software. The analysis covered various demographic aspects, including primary industry, number of employees, operating regions, market entry modes, existence of business strategies, ownership structures, and the roles of participants. The following summarizes the frequency distribution and percentage breakdown of 377 respondents.

Primary Industry: The majority of respondents (60.5%) were from the food and beverage industry. The chemicals sector accounted for 10.3%, while textiles and apparel

made up 10.1%. Both the electronics and machinery sectors represented 9% of respondents each. The construction industry had 0.5%, and the cosmetics and rattan furniture sectors each accounted for 0.3% of the respondents.

Number of Employees: SMEs with 51-100 employees comprised 26.8% of the respondents. Those with 101-250 employees represented 22.5%, and SMEs with 251-500 employees accounted for 20.7%. SMEs with more than 500 employees made up 18.8%, while those with 11-50 employees constituted 10.9%. Only 0.3% of respondents were from SMEs with 1-10 employees.

Regions of Operation: The majority of SMEs (48.3%) operated solely in Asia, with 182 respondents. Another 17.2% operated in both Asia and Australia, 7.4% in Australia, the Middle East, and Asia, and 27% operated across multiple regions.

Market Entry Modes: Exporting was the most common market entry mode, used by 59.7% of respondents. Licensing was chosen by 13.5%, joint ventures by 11.7%, wholly owned subsidiaries by 9.5%, and franchising by 5.6%. This distribution reflects the diverse strategies employed by SMEs when entering new markets.

Existence of Business Strategies: A significant majority (66.6%) of respondents reported having a business strategy in place, while 33.4% indicated they did not. This suggests that strategic planning is prevalent among the surveyed businesses.

Ownership Structures: Family-owned businesses were the most common, representing 35.3% of the respondents. Partnerships accounted for 23.3%, private limited companies made up 16.2%, and sole proprietorships constituted 21.2%. Public limited companies were the least common, at only 4.0%.

Roles of Participants: The largest group of respondents were owners, making up 43.5% of the total, followed by managers at 40.6%. Directors accounted for 14.3%, and CEOs and presidents were the smallest group, at 1.6%.

This analysis provides a comprehensive overview of the characteristics of the respondents and their businesses.

6.2 Descriptive Analysis with Mean and Standard Deviation

The mean and standard deviation for each group variable, such as logistics and distribution, marketing strategy, firm characteristics, host-country characteristics, network, entry mode and internationalization, are summarized in this section. The criteria for evaluating the mean scores are listed below and were taken from Imsa-ard et al. (2021). The criteria of the interpretation of mean scores:

Mean score	Interpretation
4.21 - 5.00	Strongly agree
3.21 - 4.20	Agree
2.61 - 3.20	Neutral
1.81 - 2.60	Disagree
1.00 - 1.80	Strongly disagree

Table 1 provides an overview of the mean scores for various statements related to logistics, distribution, marketing strategy, firm characteristics, host-country characteristics, networks, entry modes, and internationalization.

For logistics and distribution, the statement "Logistics and distribution should be considered in manufacturing SMEs when entering international markets" received a mean score of 4.89, indicating strong agreement among the respondents. Similarly, the statement "Our SMEs are satisfied with the current market's ability to support our SMEs" had a mean score of 4.68, also reflecting strong agreement. The statement "Our logistic operations are agile in responding to shifts in demand" had a mean score of 4.29, showing general agreement, while "Our logistics and distribution capabilities are perceived as a competitive advantage in international markets" scored 4.12, indicating agreement.

Regarding marketing strategy, the statement "Our international market segmentation strategy effectively reaches diverse customer groups" had a mean score of 4.24, indicating strong agreement. The statement "Our product, pricing, promotion, and place strategies are customized for international markets" scored 4.50, showing strong agreement, while "Our international marketing efforts have been successful in acquiring new customers" received a mean score of 4.40, also reflecting strong agreement. Lastly, "Our marketing strategy is perceived as playing a crucial role in gaining a competitive edge in international markets" had a mean score of 4.20, indicating agreement.

As for firm characteristics, the statement "Our firm's financial resources can support international expansion efforts" received a mean score of 3.93, indicating agreement. The statement "Our firm has a high level of experience in dealing with international markets and cross-border operations" had a mean score of 3.95, also indicating agreement, while "Our firm is agile in responding to changes in international market conditions and regulatory environments" scored 3.75, reflecting agreement. These findings suggest that the respondents generally view their firms as having adequate financial resources, experience, and agility to operate effectively in international markets.

Regarding host-country characteristics, the statement "The size of the target market in the host country is significant" had a mean score of 4.53, indicating strong agreement. The statement "The ease of doing business in the host country, in terms of regulatory and compliance, is favorable" scored 4.49, also indicating strong agreement, while "Our firm's products or services align well with the cultural preferences and values of the host country population" had a mean score of 4.34, reflecting strong agreement.

For network-related factors, the statement "Our firm's network of business contacts and partners in international markets is extensive" had a mean score of 4.25, indicating strong agreement. The statement "Our relationships with key stakeholders (e.g., suppliers, distributors, customers) in international markets are strong" scored 4.44, showing strong agreement, while "We frequently collaborate with international partners on joint ventures, product development, or innovation" had a mean score of 3.79, reflecting agreement. Lastly, "Our network strongly influences our strategic decisions regarding internationalization" received a mean score of 4.32, indicating strong agreement. These results suggest that the respondents generally view their firm's network as extensive, strong, and influential in international markets.

In terms of entry mode, the statement "The entry mode (exporting, joint ventures, franchising, and wholly owned subsidiaries) is important in achieving our international business objectives" had a mean score of 4.06, indicating agreement. The statement "We were able to enter the international market quickly using our chosen entry mode" scored 4.22, showing strong agreement, while "Our entry mode allows for effective adaptation to local market conditions and consumer preferences" also had a mean score of 4.06, reflecting agreement.

Finally, for internationalization, the statement "Our resources (financial, human, and technological) are suitable for internationalization" had a mean score of 4.01, indicating agreement. The statement "Our chosen entry mode (e.g., exporting, joint ventures, franchising) has been successful in achieving our international goals" scored 4.33, reflecting strong agreement. Lastly, the statement "Significant strategic adjustment was required to enter and succeed in international markets" had a mean score of 4.19, showing agreement among the respondents.

Table 1: Mean and Standard Deviation

	Mean	**Std. Deviation**	**Interpretation**
Logistics and distribution (LD)	**4.50**	**0.590**	Strongly agree
LD1: Logistics and distribution should be considered in manufacturing SMEs when entering international market.	4.89	0.333	Strongly agree
LD2: Our SMEs are satisfied to reach markets with the ability of the current logistic and distribution network.	4.68	0.536	Strongly agree
LD3: Our logistics operations are agile in responding to sudden shifts in demand.	4.29	0.732	Strongly agree
LD4: Our logistics and distribution capabilities are perceived as a competitive advantage in international markets.	4.12	0.759	Strongly agree
Marketing strategy (MS)	**4.34**	**0.725**	Strongly agree
MS1: Our international market segmentation strategy effectively reaches diverse customer groups.	4.24	0.758	Strongly agree
MS2: Our product, pricing, promotion, and place strategies are customized for international markets.	4.50	0.649	Strongly agree
MS3: Our international marketing efforts have been successful in acquiring new customers.	4.40	0.680	Strongly agree
MS4: Our marketing strategy is perceived as playing a crucial role in gaining a competitive edge in international markets.	4.20	0.811	Agree
Firm characteristics (FC)	**3.88**	**0.937**	Agree
FC1: Our firm's financial resources can support international expansion efforts.	3.93	0.917	Agree
FC2: Our firm has a high level of experience in dealing with international markets and cross-border operations.	3.95	0.941	Agree
FC3: Our firm is agile in responding to changes in international market conditions and regulatory environments.	3.75	0.952	Agree

Host-Country characteristics (HC)	**4.45**	**0.765**	Strongly agree
HC1: The size of the target market in the host country is significant.	4.53	0.736	Strongly agree
HC2: The ease of doing business in the host country, in terms of regulatory and compliance is favorable.	4.49	0.809	Strongly agree
HC3: Our firm's products or services align well with the cultural preferences and values of the host country population.	4.34	0.749	Strongly agree
Network (NW)	**4.20**	**0.888**	Agree
NW1: Our firm's network of business contacts and partners in international markets is extensive.	4.25	0.780	Strongly agree
NW2: Our relationships with key stakeholders (e.g., suppliers, distributors, customers) in international markets are strong.	4.44	0.874	Strongly agree
NW3: We frequently collaborate with international partners on joint ventures, product development, or innovation.	3.79	1.030	Agree
NW4: Our network strongly influences our strategic decisions regarding internationalization.	4.32	0.869	Strongly agree
Entry mode (EM)	**4.11**	**0.890**	Agree
EM1: The entry mode (exporting, joint ventures, franchising, wholly owned subsidiaries) is important in achieving our international business objectives.	4.06	0.931	Agree
EM2: We were able to enter the international market quickly using our chosen entry mode.	4.22	0.838	Strongly agree
EM3: Our entry mode allows for effective adaptation to local market conditions and consumer preferences.	4.06	0.900	Agree
Internationalization (IN)	**4.18**	**0.753**	Agree
IN1: Our resources (financial, human, technologies) are suitable for internationalization.	4.01	0.787	Agree
IN2: Our chosen entry mode (e.g., exporting, joint ventures, franchising) has been successful in achieving our international goals.	4.33	0.747	Strongly agree
IN3: Significant strategic adjustment was required to enter and succeed in international markets.	4.19	0.726	Agree

6.3 Hypothesis Testing Results

6.3.1 Results of Multiple Linear Regression for H1 and H2

Statistical Hypothesis:

H0: Logistics and distribution (H1) and marketing strategy (H2) have no significant effect on firm characteristics in manufacturing SMEs.

Ha: Logistics and distribution (H1) and marketing strategy (H2) have a significant effect on firm characteristics in manufacturing SMEs.

Table 2 presents the summary of the multiple linear regression analysis for Hypotheses 1 and 2, which examines the impact of logistics and distribution, and marketing strategy on firm characteristics. The results in Table 2 show that the significance levels for both logistics and distribution (H1) and marketing strategy (H2) were less than 0.05, leading to the rejection of the null hypotheses. The R^2 value was

0.161 at a 95% confidence level, indicating that the independent variables (logistics and distribution and marketing strategy) collectively explain approximately 16.1% of the variance in the dependent variable (firm characteristics).

When analyzing the individual contributions of each predictor, the results revealed that logistics and distribution (**β** = 0.189, p < .001) have a positive and significant impact on firm characteristics. Similarly, the marketing strategy (**β** = 0.288, p < .001) also shows a positive and significant effect on firm characteristics. The VIF values for both hypotheses were 1.17, demonstrating that there was no multicollinearity among these independent variables, as the VIF was well below the threshold of 5.

Table 2: Multiple Linear Regression Analysis Summary for H1 and H2

Hypothesis	B	SE B	β	t	p	VIF
H1: LD → FC	0.341	0.092	0.189	3.700	<0.001*	1.17
H2: MS → FC	0.364	0.065	0.288	5.630	<0.001*	1.17

Notes: $R^2 = 0.161$, Adjusted $R^2 = 0.156$, *p < 0.05. Dependent Variable = Firm Characteristics (FC) | Independent Variable = Logistics and distribution (LD) | Independent Variable = Marketing strategy (MS)
B = Unstandardized coefficients B | SE B = Standard error of the unstandardized coefficient | β = Standardized beta coefficient
t = t-value (> 1.96 is significant) | p = p-value (< 0.05 indicates significance) | VIF = Variance Inflation Factor (< 5 is acceptable)

6.3.2 Results of Multiple Linear Regression for H3, H4, and H5

Statistical Hypothesis

H0: Firm characteristics (H3), host-country characteristics (H4), and network (H5) have no significant effect on entry mode for manufacturing SMEs.

Ha: Firm characteristics (H3), host-country characteristics (H4), and network (H5) have a significant effect on entry mode for manufacturing SMEs.

Table 3 presents the results of the multiple linear regression analysis for Hypotheses 3, 4, and 5, focusing on the effects of firm characteristics, host-country characteristics, and network on entry mode. The analysis reveals that the significance levels for firm characteristics (H3) and host-country characteristics (H4) are below 0.05, leading to the rejection of the null hypotheses for these variables. This suggests that both firm and host-country characteristics significantly influence entry mode in manufacturing SMEs. Conversely, the significance level for network (H5) is above 0.05, indicating that the null hypothesis cannot be rejected for this variable, meaning the network does not have a significant impact on entry mode.

The R-square value is 0.219, meaning that approximately 21.9% of the variance in the dependent variable (entry mode) is explained by the independent variables (firm characteristics, host-country characteristics, and network). Specifically, the results indicate that firm characteristics (β = 0.257, p < 0.05) and host-country characteristics (β = 0.314, p < 0.05) have a positive and significant relationship with entry mode. However, network (β = 0.039, p > 0.05) does not significantly affect entry mode.

The VIF values for Hypotheses 3, 4, and 5 are 1.12, 1.09, and 1.06, respectively, indicating no issues with multicollinearity among the independent variables, as these VIF values are well below the threshold of 5

Table 3: Multiple Linear Regression Analysis Summary for H3, H4 and H5

Hypothesis	B	SE B	β	t	p	VIF
H3: FC → EM	0.248	0.047	0.257	5.308	0.001*	1.12
H4: HC → EM	0.353	0.054	0.314	6.556	0.001*	1.09
H5: NW → EM	0.038	0.046	0.039	0.818	0.414	1.06

Note: R^2= 0.219, Adjusted R^2= 0.213, *p < 0.05. Dependent Variable = Entry Mode (EM) | Independent Variable = Firm Characteristics (FC) | Independent Variable = Host-country characteristics (HC) | Independent Variable = Network (NW)
B = Unstandardized coefficients B | SE B = Standard error of the unstandardized coefficient | β = Standardized beta coefficient
t = t-value (> 1.96 is significant) | p = p-value (< 0.05 indicates significance) | VIF = Variance Inflation Factor (< 5 is acceptable)

6.3.3 Result of Simple Linear Regression of H6

Statistical Hypothesis

H0: Entry Mode(H6) has no significant effect on internationalization for manufacturing SMEs.

Ha: Entry Mode(H6)has a significant effect on internationalization for manufacturing SMEs.

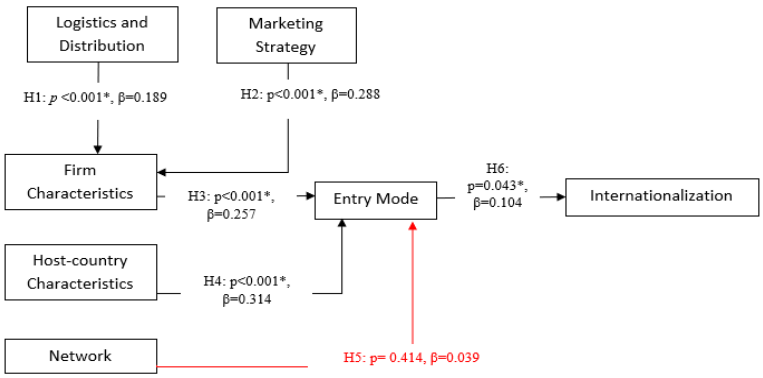
Simple linear regression was performed to determine whether entry mode (H6) significantly impacts internationalization, as detailed in Table 4. The results show a significance level of 0.043, which is below the 0.05 threshold, leading to the rejection of the null hypothesis. This indicates that entry mode has a significant effect on internationalization. The regression analysis revealed that the model is statistically significant ($p < 0.05$) and explains 10.9% of the variance in internationalization, with an R-square value of 0.109 at a 95% confidence level. This result confirms that entry mode significantly influences internationalization ($\beta = 0.104$, $p < 0.05$). Furthermore, the VIF value for entry mode is 1.000, indicating no issues with multicollinearity, as it is well below the threshold of 5.

Table 4: Simple Linear Regression Analysis Summary for H6

Variables	B	SE B	β	t	p	VIF
H6: EM → IN	0.09	0.044	0.104	2.03	0.043*	1.000

Note: R^2= 0.0109, Adjusted R^2= 0.008, *p < 0.05. Dependent Variable = Internationalization (IN) | Independent Variable = Entry Mode (EM)
B = Unstandardized coefficients B | SE B = Standard error of the unstandardized coefficient | β = Standardized beta coefficient
t = t-value (> 1.96 is significant) | p = p-value (< 0.05 indicates significance) | VIF = Variance Inflation Factor (< 5 is acceptable)

Figure 2: The Results of Structural Model



Source: Maung Maung & Nuangjamnong (2025)

7. Conclusion and Discussion

7.1 Research Intentions

The primary aim of this research was to develop effective strategies for the international expansion of small and medium-sized enterprises (SMEs) in the manufacturing sector. These SMEs are vital for innovation, job creation, and economic stability. Despite numerous opportunities, SMEs face significant challenges when entering global markets, including limited financial resources, inadequate knowledge of foreign markets, intense competition, and difficulties in forming networks and collaborations. This study addressed these challenges by examining the influence of logistics and distribution, marketing strategies, firm and host-country characteristics, and network factors on entry modes and their subsequent impact on the internationalization process.

7.2 Major Findings

This research explored strategies for the international expansion of manufacturing SMEs, focusing on how various factors impact entry modes and the internationalization process.Quantitative data were obtained from 377 managers and owners of manufacturing SMEs in Bangkok and Myanmar. The sample was selected through non-probability purposive sampling, and data were collected online using a structured questionnaire validated by a Cronbach alpha reliability test ($\alpha > 0.60$). The analysis involved descriptive statistics and regression techniques to evaluate the hypotheses.

The study found that the majority of respondents have experience in the food and beverage industry (60.5%), with most firms employing between 51-100 people (26.8%) and operating primarily within Asia (48.3%). Exporting emerged as the most common entry mode (59.7%), and a significant proportion of firms (66.6%) have formal strategies for internationalization. Additionally, 35.3% of the firms are family-owned, and 43.5% of respondents are the owners.

Descriptive analysis revealed that logistics and distribution had the highest mean score (4.89), followed by host-country characteristics (4.54), marketing strategy (4.50), internationalization (4.33), and entry mode (4.22). Firm characteristics had the lowest mean score (3.95). Regression analysis indicated that logistics and distribution,

marketing strategy, firm characteristics, and host-country characteristics significantly affect firm characteristics and entry modes. Specifically, logistics and distribution (β = 0.341, p< .001*) and marketing strategy (β = 0.364, p< .001*) positively influence firm characteristics. Firm characteristics (β =0.257, p p< .001*) and host-country characteristics (β = 0.314, p< .001*) significantly affect entry modes, while network factors (β = 0.039, p = 0.414) did not have a significant impact.

Simple linear regression demonstrated that entry mode significantly affects internationalization (β = 0.104, p< .001*), accounting for 10.9% of the variance. These findings suggest that manufacturing SMEs can enhance their international expansion efforts by focusing on effective logistics and distribution, strategic marketing, and understanding both firm-specific and host-country factors. However, network factors did not significantly influence entry modes in this study, indicating that other factors may be more critical in shaping internationalization strategies.

7.3 Discussion of Effect Factors

7.3.1 Firm Characteristics

The analysis reveals that logistics and distribution (β = 0.341, p< .001*) and marketing strategy (β = 0.364, p< .001*) are significant positive factors influencing firm characteristics. Among these, marketing strategy exhibits the strongest effect, suggesting that well-developed marketing plans are crucial for shaping firm characteristics. Logistics and distribution also play a vital role but with a slightly lesser impact compared to marketing strategy. This indicates that, while operational efficiency and distribution capabilities are important, strategic marketing is more influential in defining firm characteristics (Carpenter & Shankar, 2013; Nadube & James, 2018; Handoyo et al., 2023).

7.3.2 Entry Mode

Firm characteristics (β = 0.257, p < 0.001*) and host-country characteristics (β = 0.314, p < 0.001*) significantly affect entry modes, with host-country characteristics showing a stronger effect. This underscores the importance of aligning entry modes with the specific characteristics of the host country, such as regulatory environment and market conditions. Firm characteristics also play a significant role, but the stronger impact of host-country characteristics suggests that SMEs must adapt their entry strategies to the local context to achieve successful internationalization (Morschett et al., 2010; Fazal et al., 2017; Correa da Cunha et al., 2023).

7.3.3 Internationalization

Entry mode (β = 0.104, p< .001*) has a notable effect on internationalization, explaining 10.9% of the variance. Although the effect size is moderate, it confirms that the choice of entry mode is an important factor in the international expansion of SMEs. This indicates that selecting the appropriate entry strategy is critical for firms aiming to enhance their international presence and achieve successful global operations (Johanson & Kao, 2010; Al-Hyari et al., 2012; Tao et al., 2013; Nisar et al., 2018; Chen et al., 2021).

Overall, the research highlights that marketing strategy and host-country characteristics are the strongest factors affecting firm characteristics and entry modes, respectively. Entry mode, while having a moderate effect, is still a crucial element influencing the success of internationalization efforts.

8. Implications of the Study

The findings of this study offer several key implications for manufacturing SMEs aiming to expand internationally. Firstly, the strong influence of marketing strategies on firm characteristics highlights the critical need for SMEs to invest in comprehensive and tailored marketing approaches. Theoretical frameworks, particularly the Resource-Based View (RBV), suggest that leveraging unique internal resources, including marketing capabilities, can provide a competitive advantage in international markets. Secondly, the significant role of logistics and distribution underscores the importance of optimizing supply chain operations to enhance market entry and sustain international growth. This aligns with the Transaction Cost Economics (TCE) theory, which emphasizes the need for efficient logistics to minimize transaction costs and ensure effective market penetration.

The impact of host-country characteristics on entry modes suggests that SMEs must adapt their strategies to fit local conditions, supporting the Institutional Theory, which stresses the importance of aligning with local norms and regulations to achieve successful internationalization.

Lastly, while network factors did not show a significant effect on entry mode decisions, they remain important for overall international business success. The findings imply that SMEs should integrate network strategies with other operational and strategic elements, aligning with the Network Theory, which emphasizes the role of relationships in gaining access to resources and market opportunities.

These implications suggest that manufacturing SMEs need a holistic approach to internationalization, combining strong marketing strategies, optimized logistics, adaptive entry modes, and strategic network management to successfully navigate global markets.

9. Recommendations

Strengthen Marketing Strategies

Given that marketing strategy has the strongest effect on firm characteristics, manufacturing SMEs should focus on developing comprehensive, tailored marketing strategies to enhance their international presence. This involves conducting thorough market research to understand local consumer preferences, cultural nuances, and competitive landscapes in target markets. Investing in brand development, digital marketing, and localized advertising campaigns can help SMEs differentiate themselves and establish a strong foothold in new international markets.

Optimize Logistics and Distribution

While logistics and distribution also significantly impact firm characteristics, their effect is slightly less pronounced compared to marketing strategies. SMEs should prioritize optimizing their logistics and distribution networks to ensure efficient operations and timely delivery in international markets. This includes investing in robust supply chain management systems, forming partnerships with reliable logistics providers, and implementing agile practices to respond swiftly to changes in demand and market conditions.

Adapt to Host-Country Characteristics

Host-country characteristics have a notable impact on entry mode decisions. Therefore, SMEs must adapt their strategies to align with the specific regulatory, economic, and cultural conditions of the host countries. Conducting detailed market analyses and engaging with local experts or consultants can provide valuable insights into local business practices and regulatory requirements. This will enable SMEs to select the most suitable entry modes, such as joint ventures or franchising, that are best suited to the host country's environment.

Leverage Firm Characteristics in Strategic Planning

Firm characteristics also influence entry modes, though less so than host-country characteristics. SMEs should leverage their internal strengths, such as technological capabilities, managerial expertise, and financial resources, to develop effective internationalization strategies. This includes assessing their internal resources and capabilities to ensure they align with their international expansion goals and selecting entry modes that best utilize these strengths.

Re-evaluate Network Strategies

Although networks did not show a significant impact on entry mode decisions, they still play a role in the broader context of international expansion. SMEs should continue to build and maintain strong networks of business contacts, including suppliers, distributors, and partners, to support their international operations. Networking can facilitate market entry through partnerships, provide valuable market intelligence, and enhance business relationships. However, it may be beneficial to focus more on aligning network strategies with operational and marketing goals rather than relying solely on networks to influence entry mode decisions.

Focus on Effective Entry Modes

Entry mode decisions are critical for successful internationalization, with the choice of entry mode affecting the internationalization process. SMEs should carefully evaluate different entry modes, considering factors, such as market size, regulatory environment, and competitive dynamics. Tailoring entry strategies to match these factors can help SMEs achieve their international expansion objectives more effectively. Using a combination of entry modes, such as exporting and joint ventures, may also offer flexibility and risk management benefits in diverse international markets.

By implementing these recommendations, manufacturing SMEs can enhance their internationalization strategies, address key challenges, and capitalize on opportunities in global markets.

10. Limitations of the Study

This study acknowledges limitations that may affect the generalizability of the findings. First, the research is geographically limited to SMEs in Bangkok and Myanmar, which may not fully represent the broader context of international manufacturing SMEs. Second, the reliance on self-reported data from surveys could introduce bias, as responses may reflect subjective perceptions rather than objective realities. It should be noted that the study's cross-sectional design captures a snapshot in time, potentially missing dynamic changes in market conditions or firm strategies. These

perceived limitations should be considered when interpreting the findings and applying them to broader contexts.

11. Future Research

Future research could build on these findings by expanding the geographical scope to include SMEs from diverse regions and industries to enhance the generalizability of the results. Longitudinal studies could offer insights into how strategies for internationalization evolve over time and adapt to changing market conditions. Additionally, incorporating qualitative methods, such as interviews or case studies, could provide a deeper understanding of the nuanced experiences of SMEs in global markets. Investigating the impact of emerging technologies and geopolitical factors on internationalization could also offer valuable perspectives for developing more comprehensive strategies for global expansion

12. The Authors

The two authors--Si Thu Maung Maung and Chompu Nuangjamnong—are in the Master of Business Administration Program, Graduate School of Business and Advanced Technology Management, Assumption University of Thailand. They share research interest in strategies for manufacturing SMEs, international market expansion, and current issues in international marketing management.

13. References

Ahmady, G. A., Mehrpour, M., & Nikooravesh, A. (2016). Organizational structure. *ResearchGate*. https://www.researchgate.net/publication/308736877_Organizational_Structure

Al-Hyari, K., Al-Weshah, G., & Alnsour, M. (2012). Barriers to internationalisation in SMEs: Evidence from Jordan. *Marketing Intelligence & Planning*, 30(2), 188-211. https://doi.org/10.1108/02634501211211975

Álvarez, M. (2003). Wholly-owned subsidiaries versus joint ventures: The determinant factors in the Catalan multinational manufacturing case. *Working Papers of Institut d'Economia de Barcelona (IEB)*.

Akbar, Y., Balboni, B., Bortoluzzi, G., Dikova, D., & Tracogna, A. (2018). Disentangling resource and mode escalation in the context of emerging markets: Evidence from a sample of manufacturing SMEs. *Journal of International Management*, 24(3), 257–270. https://doi.org/10.1016/j.intman.2018.01.003

Bempong, A. E. (2019). The role of transportation in logistics chain. *Texila International Journal of Management*, 5(1), 147-161. https://doi.org/10.21522/tijmg.2015.05.01.art015

Carpenter, G. S., & Shankar, V. (2013). *Handbook of marketing strategy*. Edward Elgar.

Cavusgil, S. T., & Knight, G. (2015). The born global firm: An entrepreneurial and capabilities perspective on early and rapid internationalization. *Journal of International Business Studies*, 46(1), 3-16. https://doi.org/10.1057/jibs.2014.62

Cerrato, D., & Piva, M. (2012). The internationalization of small and medium-sized enterprises: The effect of family management, human capital and foreign ownership. *Journal of Management & Governance*, 16(4), 617-644. https://doi.org/10.1007/s10997-010-9166-x

Chen, Y., Li, J., & Li, R. (2021). Cluster internationalization: Qualitative review, theoretical direction, and the rise of emerging markets' themes. *Sustainability*, 13(19), 10514. https://doi.org/10.3390/su131910514

Christopher, M. (2016). *Logistics and supply chain management* (5th ed.). Pearson Education.

Correa da Cunha, H., Singh, V., & Farrell, C. (2023). Host country cultural profile and the performance of foreign subsidiaries in Latin America. *International Journal of Cross Cultural Management*, 23(3), 531-555. https://doi.org/10.1177/14705958231204728

Douglas, S. P., & Craig, C. S. (2011). *Global marketing strategy*. McGraw-Hill Education.

Fazal, S. A., Al Mamun, A., Wahab, S. A., & Mohiuddin, M. (2017). Host-country characteristics, corporate sustainability, and the mediating effect of improved knowledge. *Multinational Business Review*, 25(4), 328-349. https://doi.org/10.1108/mbr-07-2017-0042

Gherghina, S. C., Botezatu, M. A., Hosszu, A., & Simionescu, L. N. (2020). Small and medium-sized enterprises (SMEs): The engine of economic growth through investments and innovation. *Sustainability*, 12(1), 347. https://doi.org/10.3390/su12010347

Hair, J., Anderson, R., Black, B., & Babin, B. (2016). *Multivariate data analysis* (7th ed.). Pearson Higher Education. https://www.drnishikantjha.com/papersCollection/Multivariate%20Data%20Analysis.pdf

Handoyo, S., Mulyani, S., Ghani, E. K., & Soedarsono, S. (2023). Firm characteristics, business environment, strategic orientation, and performance. *Administrative Sciences*, 13(3), 74. https://doi.org/10.3390/admsci13030074

Henisz, W. J., & Macher, J. T. (2004). Firm- and country-level trade-offs and contingencies in the evaluation of foreign investment: The semiconductor industry, 1994–2002. *Organization Science*, 15(5), 537–554. https://doi.org/10.1287/orsc.1040.0091

Imsa-ard, P., Wichamuk, P., & Chuanchom, C. (2021). Muffled voices from Thai pre-service teachers: Challenges and difficulties during teaching practicum. *Shanlax International Journal of Education*, 9(3), 246–260. https://doi.org/10.34293/education.v9i3.3989

Johanson, J., & Vahlne, J.-E. (2009). The Uppsala internationalization process model revisited: From liability of foreignness to liability of outsidership. *Journal of International Business Studies*, 40(9), 1411–1431. https://doi.org/10.1057/jibs.2009.24

Johanson, M., & Kao, P. T. (2010). Networks in internationalisation. *Research in Global Strategic Management*, 5, 119–142. https://doi.org/10.1108/S1745-8862(2010)0000005010

Kamasak, R. (2017). The contribution of tangible and intangible resources, and capabilities to a firm's profitability and market performance. *European Journal of Management and Business Economics*, 26(2), 252–275. https://doi.org/10.1108/EJMBE-07-2017-015

Kapoor, S. K., & Kansal, P. (2007). *Basics of distribution management: A logistical approach*. Prentice-Hall of India.

Krishna Erramilli, M., Agarwal, S., & Dev, C. S. (2002). Choice between non-equity entry modes: An organizational capability perspective. *Journal of International Business Studies*, 33(2), 223–242. https://doi.org/10.1057/palgrave.jibs.8491014

Measson, N., & Campbell-Hunt, C. (2015). How SMEs use trade shows to enter global value chains. *Journal of Small Business and Enterprise Development*, 22(1), 99–126. https://doi.org/10.1108/jsbed-09-2011-0025

Meyer, K. E., & Thu Tran, Y. T. (2006). Market penetration and acquisition strategies for emerging economies. *Long Range Planning*, 39(2), 177–197. https://doi.org/10.1016/j.lrp.2006.04.004

Morschett, D., Schramm-Klein, H., & Swoboda, B. (2010). Decades of research on market entry modes: What do we really know about external antecedents of entry mode choice? *Journal of International Management*, 16(1), 60–77. https://doi.org/10.1016/j.intman.2009.09.002

Nadube, P. M., & James, D. (2018). Market targeting and strategic positioning. *International Journal of Marketing Research and Management*, 8(1), 32–45.

Nisar, S., Boateng, A., & Wu, J. (2018). The entry mode strategy and performance of SMEs: Evidence from Norway. *Research in International Business and Finance*, 45, 323–333. https://doi.org/10.1016/j.ribaf.2017.07.164

Novais, A. L., & João, B. do N. (2016). Cultural influences on entry mode choice in international business: An assessment and review. *Revista de Gestão e Projetos*, 7(1), 1–14. https://doi.org/10.5585/gep.v7i1.399

Osano, H. M. (2019). Global expansion of SMEs: Role of global market strategy for Kenyan SMEs. *Journal of Innovation and Entrepreneurship*, 8(1), 1–31. https://doi.org/10.1186/s13731-019-0109-8

Ozcan, P. (2018). Growing with the market: How changing conditions during market growth affect formation and evolution of interfirm ties. *Strategic Management Journal*, 39(2), 295–328. https://doi.org/10.1002/smj.2710

Puri, K. (2022). What is logistics management? Effective logistics management. *FarEye*. https://fareye.com/resources/blogs/what-is-logistics-management

Raosoft. (2004). *Sample size calculator*. http://www.raosoft.com/samplesize.html

Rushton, A., Croucher, P., & Baker, P. (2017). *The handbook of logistics and distribution management* (6th ed.). Kogan Page Publishers.

Schmid, S. (2018). Strategies of internationalization: An overview: Cases on strategy formulation and implementation. *Springer International Publishing*. https://doi.org/10.1007/9783319740898_1

Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education*, 48(6), 1273–1296. https://doi.org/10.1007/s11165-016-9602-2

Tao, B., Zhanming, J., & Qi, X. (2013). Chinese firms' outward FDI entry mode choice: The role of ownership and network. *Journal of Innovation Management*, 1(1), 108–124. https://doi.org/10.24840/2183-0606_001.001_0008

Wan, C., Sousa, C. M. P., Lengler, J., & Tan, Q. (2023). Entry mode choice: A meta-analysis of antecedents and outcomes. *Management International Review*, 63(2), 193–246. https://doi.org/10.1007/s11575-022-00499-6

World Bank. (2019). *Small and medium enterprises (SMEs) finance*. https://www.worldbank.org/en/topic/smefinance

Wright, R. W., & Etemad, H. (2001). SMEs and the global economy. *Journal of International Management*, 7(3), 151–154. https://doi.org/10.1016/S1075-4253(01)00041-2

ISSN 2821-9074 (Online)
ISSN 2730-2601 (Print)
RICE Journal of Creative Entrepreneurship and Management, Vol. 6, No.1, pp. 53-79, January-April 2025
© 2025 Rajamangala University of Technology Rattanakosin, Thailand
doi: 10.14456/rjcm.2025.3
Received 14.09.24/ Revised 25.02.25/ Accepted 31.03.25

The Impact of AI-powered Services on Customer Satisfaction, Employee Performance, and Employee Work-life Balance Leading to Organizational Performance Growth

Zin Thu Thu Hlaing[1*]
Chompu Nuangjamnong[2]

[1] Master of Business Administration
[1,2] Graduate School of Business and Advanced Technology Management
Assumption University of Thailand
[*] Corresponding author
[1] Email: zinthuhlaing@gmail.com
[2] Email: chompunng@au.edu

Abstract

The purpose of this research was to investigate the impact of AI-powered services on customer satisfaction, employee performance, employee work-life balance, leading to organizational performance growth in Bangkok. Four variables--customer satisfaction, employee performance, employee work-life balance and organizational performance--were obtained from secondary data analysis and an archive study method. 450 voluntary respondents provided the data by using the online survey form on four variables under study. The research findings revealed that employee work-life balance has an impact on employee performance; and customer satisfaction has impact on organizational performance. These results can definitely generate practical implications for AI-powered service operators in the sectors of education, retailing and healthcare. This research also acknowledges that the focus on Bangkok residents who interact with AI-powered services, would result in limited generalization to other contexts of AI-powered services.

Keywords*: AI-powered services, customer satisfaction, employee performance, employee work-life balance, organization performance*

1. Introduction

1.1 Background of the Study

In today's digital age, AI technology has become an integral part of daily life, influencing how society communicates, interacts, and conducts business. The growing adoption of AI across industries is transforming processes and systems, enhancing their ability to analyze and predict data with speed and precision. AI integration, as emphasized by Kineber et al. (2021), involves using AI technologies to improve existing systems and workflows. This technology empowers businesses to handle vast amounts of data quickly and accurately, as highlighted by Al-Jedibi (2022), Al-Shoteri (2022), and

Najmi et al. (2020). However, implementing AI requires careful consideration of data security, privacy, and maintaining high-quality data, as well as proper planning and training to ensure successful integration (Hitoshi et al., 2021). Customer satisfaction remains a cornerstone of business success, and AI-powered services are enhancing how businesses meet customer needs. By utilizing AI tools like chatbots and data analysis, companies can provide personalized, responsive, and real-time customer support (Huang & Rust, 2018). When customer needs are addressed promptly and effectively, it leads to higher satisfaction, increased loyalty, and a greater likelihood of repeat business and recommendations (Juwaini et al., 2022). This heightened customer satisfaction strengthens an organization's market competitiveness.

In addition to improving customer experiences, AI technology has caught the attention of businesses, both public and private, due to its ability to enhance organizational efficiency. AI contributes to business development by supporting continuous learning, adaptability, and cost reduction. AI can reduce reliance on human labor for routine tasks, leading to cost savings and positively impacting the organization’s financial health. These advancements allow companies to allocate resources more effectively, resulting in better financial outcomes and a more competitive position in the market. AI is also transforming workplaces by enhancing employee performance and productivity. Automation of routine tasks allows employees to focus on more strategic, creative endeavors, leading to greater job satisfaction and performance (Jarrahi, 2018). Employees benefit from the additional time and resources AI offers, enabling them to explore new business areas, expand their skills, and drive higher productivity in dynamic roles (Chang, 2020).

While AI offers numerous benefits, the overall impact of AI-powered services on organizational performance growth, particularly in relation to work-life balance, employee performance, and customer satisfaction, warrants further investigation. This study aims to explore how AI technology influences these factors and how they interact to affect organizational performance. By understanding these dynamics, companies can leverage AI to drive long-term success and maintain a competitive edge in the modern marketplace.

1.2 Research Issue

As AI technology becomes increasingly integrated into business operations, its potential to enhance customer satisfaction, employee performance, and work-life balance is widely recognized. These improvements are expected to contribute to organizational performance growth. However, there is a lack of comprehensive research that examines the specific impact of AI-powered services on these critical variables. While AI has shown promise in areas, such as improving customer experiences and automating repetitive tasks to boost employee productivity, businesses often struggle to measure its direct effects on customer satisfaction and how these, in turn, affect key performance indicators like revenue and market share (Davenport & Ronanki, 2018). Moreover, despite evidence that AI can enhance employee productivity and job satisfaction, little research has been conducted on its influence on work-life balance and overall organizational growth (Jarrahi, 2018). In this regard, this study aims to fill this gap by investigating how AI-powered services impact customer satisfaction, employee performance, and work-life balance, and how these factors collectively drive

organizational performance growth. By exploring both the benefits and challenges of AI integration, the research seeks to provide valuable insights that can help organizations effectively leverage AI to gain a competitive advantage and sustain long-term growth in the modern marketplace.

1.3 Research Objectives

The purpose of this research is to investigate the impact of AI-powered services on customer satisfaction, employee performance, employee work-life balance, leading to organizational performance growth in Bangkok.

The specific objectives of the study are as follows:

(1) To analyze the impact of AI-powered services on customer satisfaction in relation to organizational performance growth.

(2) To examine the impact of AI-powered services on employee performance in relation to organizational performance growth.

(3) To assess employee work-life balance on employee performance in relation to organizational performance growth.

(4) To evaluate customer satisfaction significantly affect organizational performance growth.

(5) To investigate whether employee performance significantly impacts organizational performance growth.

(6) To assess employee work-life balance significantly influence organizational performance growth.

1.4 Research Questions

The following research questions are based on the specific research objectives:

(1) Do AI-powered services have a significant impact on customer satisfaction in relation to organizational performance growth?

(2) Do AI-powered services significantly impact employee performance in relation to organizational performance growth?

(3) Does employee work-life balance have a significant impact on employee performance in relation to organizational performance growth?

(4) Does customer satisfaction significantly affect organizational performance growth?

(5) Does employee performance have a significant impact on organizational performance growth?

(6) Does employee work-life balance significantly influence organizational performance growth?

1.5 Significance of the Study

Overall, the research aims to bridge gaps in the existing literature by examining how customer satisfaction, employee performance, and work-life balance collectively impact organizational performance. By exploring the impact of AI on customer satisfaction, the research will offer insights into how AI enhances customer interactions, personalization, and responsiveness, leading to increased customer loyalty, retention, and revenue growth (Huang & Rust, 2018). These findings will be valuable to organizations aiming to strengthen their market competitiveness by improving customer experiences through AI integration.

In addition, the study will highlight how AI-powered services impact employee performance by automating repetitive tasks and providing decision-making support,

which can lead to higher productivity and job satisfaction (Jarrahi, 2018). The results will help organizations leverage AI to boost employee productivity, foster creativity, and cultivate a more motivated workforce. Understanding the role of AI in improving work-life balance will also provide valuable insights into creating more flexible and manageable workloads, thus reducing employee burnout and promoting well-being (Gurbaxani & Dunkle, 2019). This will guide businesses in developing strategies to enhance employee satisfaction and create a sustainable, engaged workforce.

2. Previous Studies and Hypotheses Development

2.1 Theories Related to Each Variable

2.1.1 AI-powered Services

AI-powered services are increasingly adopted across various industries, providing numerous advantages, particularly in customer service. These tools enhance the customer experience by reducing waiting times, improving issue resolution, and delivering more personalized interactions (Bughin et al., 2018). By rapidly analyzing large volumes of data, AI services increase efficiency and productivity, enabling organizations to make more accurate decisions (Astuti & Pratika, 2019). This adoption of AI not only boosts operational performance but also complements human efforts, making their work more efficient and effective rather than replacing them entirely (Wijayati et al., 2021). The impact of AI spans diverse sectors, such as manufacturing, retail, and healthcare, where it automates repetitive tasks, enhances data analytics, and fosters innovation in product development (Bughin et al., 2018). However, the successful implementation of AI-powered services depends not only on the technology itself but also on aligning it with employee performance and cultivating an organizational culture that embraces technological advancements. Organizations must focus on integrating AI tools in ways that support and augment their workforce to fully realize the benefits AI can bring to overall performance and productivity.

2.1.2 Customer Satisfaction

In today's competitive market, customer satisfaction has become a top priority for organizations, and many are leveraging AI-powered services to improve customer experiences. AI can enhance satisfaction by meeting customer expectations through efficient and reliable interactions, and providing quick and accurate responses (Huang & Rust, 2018). The ease of use and helpfulness of AI applications also play a key role in boosting customer satisfaction, as users are more likely to have a positive experience if AI systems address their needs effectively (Lu et al., 2019). Integrating AI into customer service operations can significantly enhance organizational performance by increasing customer satisfaction. For instance, AI-driven personalization and efficiency can lead to higher sales and improved customer retention (Rust & Huang, 2012). By understanding the impact of AI-powered services on customer satisfaction, organizations can foster stronger customer loyalty and drive revenue growth, making customer satisfaction a critical factor in achieving organizational success.

2.1.3 Employee Performance

Employee performance refers to the actions and behaviors that contribute to achieving organizational outcomes, typically measured in terms of job quantity, quality, and timeliness (Na-Nan et al., 2018). Job quality encompasses outputs like product quantity and sales, while job time refers to the duration required to complete tasks. Employees are considered to have performed well when tasks are completed accurately, within deadlines, and products or services are delivered on time (Wijayati et al., 2021). AI has the potential to significantly enhance employee performance by automating tedious and repetitive tasks, allowing employees to focus on more meaningful and engaging work. This, in turn, can lead to higher job satisfaction and increased employee engagement (Bughin et al., 2018). Employees who use AI in their roles often report greater satisfaction as they are freed from routine tasks and can contribute to more impactful work. Additionally, organizational goals play a critical role in influencing employee performance. To achieve these goals, organizations must motivate employees by providing support, fostering coordination between staff and the company, and aligning individual tasks with the broader organizational objectives (Rosmi & Syamsir, 2021). This alignment, enhanced by AI, can lead to improved overall performance and goal achievement.

2.1.4 Employee Work-Life Balance

Employee work-life balance refers to the ability of individuals to manage both personal and professional responsibilities while maintaining time and care for their families (Boiarintseva et al., 2022). When employees achieve a better balance, they tend to be more engaged in their work and are less likely to consider leaving their jobs. Workplace enjoyment generates energy that employees' channel into their work, and higher levels of enjoyment often result in increased job retention (Plester & Hutchison, 2016). Additionally, employee satisfaction plays a crucial role in shaping their attitudes toward the organization (Tetteh et al., 2022). The integration of AI in the workplace has the potential to enhance work-life balance by offering greater flexibility. AI allows organizations to provide flexible working hours, prioritize productivity, and review workloads, all of which contribute to helping employees manage their personal and professional lives more effectively (Chatterjee et al., 2023). These measures can improve employee well-being, leading to a more satisfied and productive workforce.

2.1.5 Organizational Performance

Organizational performance is crucial for long-term success and encompasses various dimensions, including operational efficiency, market position, employee satisfaction, and financial outcomes. According to Richard et al. (2009), improved organizational performance leads to higher profits, revenue growth, and shareholder value. They argue that assessing an organization's long-term sustainability and financial viability requires focusing on performance growth. In today's competitive business environment, organizations continuously refine their practices to outperform competitors, making the adoption of digital technologies, including AI, essential for adapting to changes and remaining competitive. A study by Microsoft Pulse (2021) found that many organizations view AI as a key digital priority for driving efficiency and innovation. Additionally, improved customer loyalty and satisfaction are linked to high organizational

performance, as high-performing companies typically deliver superior products and services that elevate customer satisfaction (Anderson et al., 2004). For these reasons, organizations must prioritize operational excellence, engage effectively in competitive markets, and adapt swiftly to technological and market shifts to maintain strong performance.

2.2 Related Previous Studies

2.2.1 AI-powered Services, Customer Satisfaction and Employee Performance

AI-powered services are increasingly recognized for their ability to enhance response times, personalization, and service quality, all of which significantly improve customer satisfaction. Tools, such as AI-driven chatbots and recommendation systems enable more efficient and personalized customer interactions by analyzing vast amounts of data to forecast customer needs and preferences (Huang & Rust, 2018). AI enhances customer service by handling queries accurately and promptly, which leads to increased customer satisfaction and loyalty (Paschen et al., 2020). Moreover, AI-powered services allow organizations to analyze customer feedback and reactions, enabling swift resolution of issues and continuous improvement of products and services. This contributes to organizational growth by fostering customer loyalty, generating positive word-of-mouth, and establishing a competitive edge in the market (Matzler et al., 2015).

In addition to customer satisfaction, AI-powered services play a pivotal role in improving employee performance. By automating repetitive tasks, AI technologies free up employees to focus on more complex, strategic work, boosting both productivity and job satisfaction (Brynjolfsson & McAfee, 2018). AI tools, such as predictive analytics and decision support systems, provide employees with valuable insights that enhance decision-making processes (Jarrahi, 2018). The adoption of AI has been shown to significantly impact employee performance, with employee willingness to embrace AI technology being a critical factor (Koufaris, 2002). Establishing an AI-friendly organizational culture, where employees are guided by AI-driven behavioral norms, can accelerate the achievement of corporate digital transformation goals (Behl et al., 2022). To explore the influence of AI-powered services on customer satisfaction and employee performance, the following hypotheses are proposed:

Hypothesis 1 (H1)*: AI-powered services have a significant impact on customer satisfaction toward organizational performance growth.*

Hypothesis 2 (H2)*: AI-powered services have a significant impact on employee performance toward organizational performance growth.*

2.2.2 Employee Work-Life Balance and Employee Performance

Enhancing work-life balance is crucial for improving employee performance. Work-life balance refers to the extent to which employees can effectively manage and satisfy both their work and personal lives. Research indicates that achieving a healthy work-life balance leads to better job performance and higher job satisfaction. Employees who maintain a balance between their professional and personal responsibilities tend to be more motivated, productive, and engaged in their roles (Greenhaus et al., 2003). Effective work-life balance also helps to reduce stress and burnout—two significant factors that negatively impact employee performance. High levels of stress and burnout are associated with decreased productivity and increased absenteeism. Conversely, a well-balanced

work-life situation enables employees to manage their stress levels more effectively, thereby enhancing their overall performance and well-being (Haar et al., 2014).

Organizations that promote work-life balance through initiatives, such as telecommuting and flexible scheduling often see increased employee loyalty and retention (Beauregard & Henry, 2009). These practices not only support employees' personal needs but also contribute to their professional success. Based on this understanding, the following hypothesis is proposed:

Hypothesis 3 (H3)*: Employee work-life balance has a significant impact on employee performance toward organizational performance growth.*

2.2.3 Customer Satisfaction and Organizational Performance

Customer satisfaction is a critical determinant of organizational performance, reflecting the quality of the customer experience with a company's products or services. Research has consistently shown that higher customer satisfaction leads to increased customer loyalty and greater revenue stability. Satisfied customers are more likely to make repeat purchases and recommend the organization to others, contributing to higher sales and profitability (Fornell et al., 2006). Customer satisfaction also plays a pivotal role in driving market share. It attracts new customers while retaining existing ones, allowing organizations to differentiate themselves from competitors and establish a unique value proposition that is difficult to replicate. This competitive edge is essential for sustaining long-term growth (Rust et al., 2002). Additionally, studies have confirmed a strong link between organizational performance metrics—such as profitability, market share, and employee performance—and customer satisfaction (Gelade & Young, 2005). Thus, organizations that effectively enhance customer satisfaction are likely to see improvements in their overall performance, including increased profitability and market position. Based on these findings, the following hypothesis is proposed:

Hypothesis 4 (H4)*: Customer satisfaction has a significant impact on organizational performance growth.*

2.2.4 Employee Performance and Organizational Performance

High employee performance is crucial for achieving an organization’s strategic goals and sustaining growth. Employees who demonstrate high productivity, efficiency, and the ability to produce high-quality work significantly enhance organizational performance (Bakker & Bal, 2010). Investments in employee training and development are shown to lead to improved financial outcomes for organizations, including increased profitability and sales (Collins & Clark, 2003). Furthermore, strategic human resource management practices that focus on enhancing employee performance contribute positively to organizational performance. Effective management techniques that foster employee development and engagement lead to better overall organizational results (Becker & Huselid, 2006). These findings underscore the strong link between employee performance and organizational success, illustrating how high-performing employees are vital to achieving superior organizational outcomes. Based on this understanding, the following hypothesis is proposed:

Hypothesis 5 (H5)*: Employee performance has a significant impact on organizational performance growth.*

2.2.5 Employee Work-Life Balance and Organizational Performance

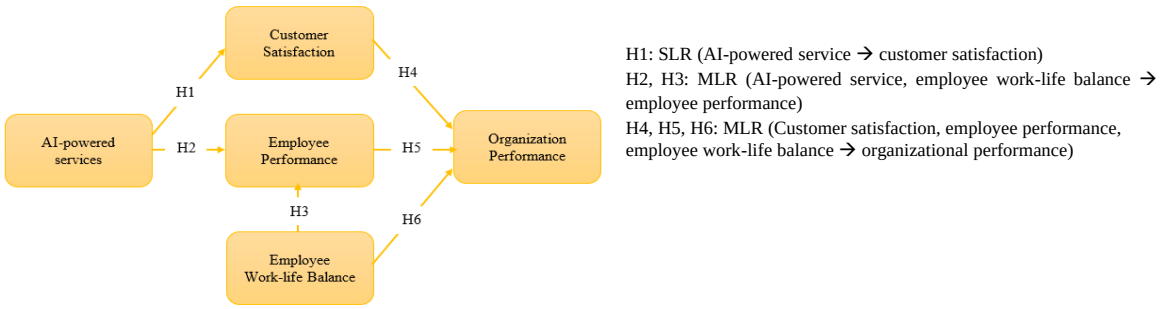
The role of employee work-life balance in shaping organizational performance is increasingly recognized as crucial. Work-life balance refers to the equilibrium employees achieve between their professional responsibilities and personal lives. Research indicates that employees who successfully manage both areas are more motivated and productive, which can directly enhance organizational performance (Haar et al., 2014). Employees who perceive a good work-life balance are generally more engaged and satisfied with their jobs, leading to improved overall performance (Allen et al., 2012). AI technologies further contribute to better work-life balance by automating repetitive and time-consuming tasks, thereby reducing employee workloads and allowing for more flexible schedules (Brynjolfsson & McAfee, 2018). This improved control over work schedules positively impacts employee satisfaction and productivity, which in turn benefits organizational performance. The positive relationship between employee work-life balance and organizational performance underscores the importance of maintaining this balance to drive growth and success. Based on these insights, the following hypothesis is proposed:

Hypothesis 6 (H6)*: Employee work-life balance has a significant impact on organizational performance growth.*

2.3 Conceptual Framework

Four main theoretical frameworks have been assembled to construct the conceptual framework of this study. The first theoretical framework is from the impact of artificial intelligence on marketing in India by Vijayakumar & Marimuthu (2024). A study of artificial intelligence on employee performance and work engagement: The moderating role of change leadership by Wijayati et al. (2021) forms a second theoretical framework. The third theoretical frame work is a study of artificial intelligence on employee performance and work engagement: The moderating role of change leadership by Otto et al. (2019), followed by a study on digital workplace and organization performance: Moderating role of Digital Leadership Capability by Chatterjee et al. (2023). The conceptual framework explores the impact of AI-powered services on customer satisfaction, employee performance, and work-life balance, and how these factors collectively influence organizational performance growth. The framework posits that AI-powered services act as a catalyst for improvements across customer satisfaction and employee metrics, which collectively drive organizational performance growth. This integrated approach highlights the interconnections between technology, employee well-being, and organizational success. The conceptual framework is shown in Figure 1.

Figure 1: The Impact of AI-powered Services on Customer Satisfaction, Employee Performance and Employee Work-life Balance Leading to Organizational Performance Growth



Source: Thu Hlaing & Nuangjamnong (2025)

3. Research Methodology

3.1 Research Design

This research aims to evaluate how AI-powered services influence customer satisfaction, employee performance, and work-life balance, and how these factors contribute to organizational performance growth. Adopting a quantitative approach, the study will utilize Multiple Linear Regression (MLR), Simple Linear Regression (SLR), Cronbach's Alpha, and Descriptive Statistics to analyze the data. The research uses a structured questionnaire divided into three sections, totaling 29 questions. These sections include 2 screening questions to determine respondent eligibility, 8 demographic questions to gather background information, and 19 measurement questions related to the study's core variables. Initially, the reliability of the questionnaire was assessed using Cronbach's Alpha, and a pilot study involving 60 participants was conducted to address any ambiguities and ensure the clarity of the questions.

The analysis proceeded with MLR to investigate the impact of AI-powered services on employee performance, followed by examining how employee work-life balance, customer satisfaction, and employee performance collectively affect organizational performance. SLR was used to specifically analyze the effect of AI-powered services on customer satisfaction. Additionally, secondary data from reliable sources, including academic journals, articles, and previous research, were secured to complement the primary findings. This comprehensive design was meant to provide a detailed understanding of the interplay between AI-powered services, customer satisfaction, employee performance, work-life balance, and their overall impact on organizational performance.

3.2 Sampling and Data Collection

The target population for this study consists of individuals residing in Bangkok who have used AI-powered services. Bangkok, with a population of 11,233,869, is Thailand's most populous city and a major hub for politics, economy, trade, culture, and technology (World Population Review, 2024). Given its prominence and high level of foreign investment, Bangkok provides a relevant context for this research. To determine the sample size, the study referred to Krejcie & Morgan's (1970) sample size table, which suggests that for a population of approximately 11 million, a sample size of around 390 respondents is

adequate. To ensure robustness, this study collected data online in 2024 from 450 Thai respondents who meet the criteria of residing in Bangkok and having used AI-powered services. A non-probability sampling method, specifically convenience sampling, was used to gather data. The survey was initially distributed to acquaintances of the researchers, who were then asked to forward it to their friends and family, thus extending the reach of the sample. Data for this study were collected from both primary and secondary sources. Primary data were obtained through a structured questionnaire distributed online. The participating respondents were asked to rate their experiences using a five-point Likert scale, focusing on the impact of AI-powered services on customer satisfaction, employee performance, and work-life balance, and how these factors contribute to organizational performance growth. Secondary data were secured from academic papers and reliable sources to build the conceptual framework, develop hypotheses, estimate sample size, and inform data analysis. This combination of primary and secondary data ensures a comprehensive understanding of the research topic.

3.3 Validity and Reliability

The content validity of the questionnaire was evaluated using the Index of Item-Objective Congruence (IOC). Out of the 25 questions assessed, 19 received IOC scores greater than 0.5 from a panel of three experts, indicating satisfactory validity. Consequently, these 19 questions were selected for inclusion, as they were deemed well-suited to the study's variables. This rigorous validation process ensured that the questionnaire was both accurate and relevant, thereby facilitating the collection of reliable data for the research. To ensure the reliability and consistency of the questionnaire, a pilot test was conducted with 60 voluntary participants. Cronbach's Alpha was used to measure internal consistency, a standard method for evaluating the reliability of questionnaire items. Cronbach's Alpha is a widely accepted measure for assessing reliability, especially for surveys using 5-point Likert scales.

The Cronbach's Alpha values obtained from the pilot test are as follows: Social Media Marketing (SMM) showed an alpha (α) of 0.831 with 4 items, Brand Trust (BT) had an alpha (α) of 0.793 with 5 items, Brand Loyalty (BL) had an alpha (α) of 0.833 with 3 items, Relationship Equity (RE) had an alpha (α) of 0.831 with 4 items, and Purchase Intention (PI) had an alpha (α) of 0.897 with 3 items. These values indicate that all constructs have good internal consistency, as they are well above the acceptable threshold of 0.6. This confirms that the questionnaire is reliable and suitable for use in the main study, as shown in Table 1.

Table 1: The Value of Reliability Analysis of Each Item and Variable in the Study (n=60)

Item No.	Measurement items	Cronbach's Alpha	Strength of association
AI-powered services		**0.890**	**Good**
APS1	I find AI-powered services are effective in fulfilling the functions such as customer support and task automation.	0.890	Good
APS2	AI-powered services are easy to use for me.	0.849	Good
APS3	AI-powered services are reliable in providing the consistent performance.	0.867	Good
APS4	The response time of AI-powered services is fast.	0.849	Good
APS5	I am satisfied the answering using AI-powered services.	0.868	Good
Customer satisfaction		**0.829**	**Good**
CS1	I am satisfied with the recommendation or solution provided by AI-powered services.	0.814	Good
CS2	I find AI-powered platforms or interfaces are easy to access services.	0.807	Good
CS3	I receive response quickly while using AI-powered services.	0.740	Acceptable
CS4	I am satisfied with the feedback and recommendation providing by AI-powered services.	0.778	Acceptable
Employee performance		**0.802**	**Good**
EP1	Due to AI-powered services, the quality of my work has improved.	0.670	Questionable
EP2	AI-powered services have simplified my work.	0.707	Acceptable
EP3	My performance has improved since AI-powered services were implemented.	0.822	Good
Employee work-life balance		**0.776**	**Acceptable**
EWB1	I have more time for my personal life due to AI-powered services.	0.814	Good
EWB2	My working schedule is more flexible by using AI-powered services.	0.650	Questionable
EWB3	I am satisfied with the accessibility of AI-powered services that help a better work-life balance.	0.719	Acceptable
EWB4	AI-powered services improve communication and collaboration among team members, making it easier to manage work.	0.665	Questionable
Organizational performance		**0.813**	**Good**
OP1	Our organization's profit has increased with AI-powered services.	0.769	Acceptable
OP2	I have seen higher rates of customer retention since using AI-powered services.	0.682	Questionable
OP3	Our organizational performance has been reached the target goals by AI-powered services.	0.778	Acceptable

4. Analysis of Results

4.1 The Respondents' Demographic Data

The demographic analysis of the 450 respondents in Table 2 reveals several key characteristics:

Age Distribution: The majority of respondents fall within the 31-40 age group, comprising 68.7% of the sample. This is followed by the 21-30 age group at 22.4%. Individuals aged 41-50 represent 8.9% of the sample.

Role Interaction with AI-powered Services: Of the respondents, 64.4% are employees who interact with AI-powered services, while 35.6% are customers.

Duration of AI-powered Service Usage: A substantial portion of the respondents, 52%, have used AI-powered services for 1-2 years. The remaining users are divided between those who have used the services for 6-11 months (28%), less than 6 months (10%), and more than 2 years (10%).

Frequency of Interaction with AI-powered Services: Most respondents interact with AI-powered services weekly (48%) or monthly (41%). Daily interactions are reported by 12% of the sample.

Working Sectors: The respondents are primarily from the education sector (30%) and retail sector (29%), with the healthcare sector representing 22%. Smaller proportions work in telecommunications or technology (16%) and other sectors (2%).

Level of Understanding of AI-powered Services: The majority of respondents (57.3%) reported a "quite understanding" of AI-powered services, while 26.7% are "very understanding." Fewer respondents are "slightly understanding" (15.6%) or "not understanding" (0.4%).

Purpose of Using AI-powered Services: The primary purpose for using AI-powered services is personal assistance (46.2%), followed by information retrieval (31.3%) and customer support (22.0%). Only 0.4% use AI-powered services for other purposes.

Comfort with Using AI-powered Services: A significant majority of respondents are comfortable (65.6%) or very comfortable (29.1%) using AI-powered services. A small minority feels uncomfortable (4.9%) or very uncomfortable (0.4%).

These demographic variables provide a comprehensive overview of the sample population, highlighting key trends and patterns in their interaction with AI-powered services.

Table 2: Demographic Variables by Frequency and Percentage

Demographic variables (n=450)	**Frequency**	**Percentage**
Age		
21-30 years old	101	22.4
31-40 years old	309	68.7
41-50 years old	40	8.9
Total	**450**	**100**
Employee or customer who interacts with AI-powered services		
Customer	160	35.6
Employee	290	64.4

Total	**450**	**100**
Duration of usages of AI-powered services		
Less than 6 months	43	10
6-11 months	128	28
1-2 years	235	52
More than 2 years	44	10
Total	**450**	**100**
Frequency of interaction with AI-powered services		
Daily	52	12
Monthly	183	41
Weekly	215	48
Total	**450**	**100**
Working sectors		
Education	134	30
Healthcare	101	22
Others	11	2
Retail shop	132	29
Telecommunication or Technology	72	16
Total	**450**	**100**
Level of understanding of AI-powered services		
No understanding	2	0.4
Slight understanding	258	57.3
Fair understanding	70	15.6
Good understanding	120	26.7
Total	**450**	**100**
Purpose of using AI-powered services		
Customer support	99	22.0
Information retrieval	141	31.3
Others	2	0.4
Personal assistance	208	46.2
Total	**450**	**100**
Comfortable with using AI-powered services		
Comfortable	295	65.6
Uncomfortable	22	4.9
Very comfortable	131	29.1
Very uncomfortable	2	0.4
Total	**450**	**100**

4.2 The Results of Mean and Standard Deviation

The descriptive analysis of the variables--AI-powered services, customer satisfaction, employee performance, employee work-life balance, and organizational performance--reveals key insights into their mean scores and standard deviations, helping to interpret the respondents' agreement levels on various aspects in Table 3. The criteria used to interpret mean scores are based on a scale where scores between 4.21 and 5.00 indicate "Strongly Agree," 3.21 to 4.20 indicate "Agree," 2.61 to 3.20 indicate "Neutral,"

1.81 to 2.60 indicate "Disagree," and 1.00 to 1.80 indicate "Strongly Disagree" (Imsa-ard et al., 2021).

For *AI-powered services*, the highest mean score is 4.05, for the statement "The response time of AI-powered services is fast," showing that respondents generally agree with the efficiency of AI in responding quickly. The lowest mean score, 3.74, was for the statement "I find AI-powered services effective in fulfilling functions, such as customer support and task automation." The highest standard deviation was 0.82 for the statement "AI-powered services are easy to use for me," indicating more variability in responses. The lowest standard deviation was 0.69 for "AI-powered services are effective in fulfilling functions like customer support and task automation."

For *customer satisfaction*, the highest mean score was 4.16, associated with "I am satisfied with the recommendation or solution provided by AI-powered services," showing strong agreement. However, the lowest mean score of 3.68 was for "I find AI-powered platforms or interfaces easy to access." The standard deviation for this item was also the highest at 1.237, reflecting a wide range of opinions. The lowest standard deviation was 0.931 for "I am satisfied with the recommendation or solution provided by AI-powered services."

Regarding *employee performance*, the highest mean was 4.31 for "My performance has improved since AI-powered services were implemented," suggesting strong agreement with AI's positive impact on performance. The lowest mean, 4.05, was for "Due to AI-powered services, the quality of my work has improved." The highest standard deviation was 0.965 for this item, and the lowest standard deviation was 0.764 for "AI-powered services have simplified my work."

For *employee work-life balance*, the highest mean score was 4.17 for "AI-powered services improve communication and collaboration among team members, making it easier to manage work," indicating a strong positive perception. The lowest mean score was 3.92 for "I have more time for my personal life due to AI-powered services." The highest standard deviation was 0.927 for "My working schedule is more flexible by using AI-powered services," while the lowest was 0.782 for "AI-powered services improve communication and collaboration."

Finally, for *organizational performance*, the highest mean score was 3.96 for "I have seen higher rates of customer retention since using AI-powered services," showing a general agreement on AI's positive influence. The lowest mean was 3.82 for "Our organization's profit has increased with AI-powered services." The highest standard deviation was 0.921 for the latter, indicating some variability in opinions, while the lowest standard deviation was 0.761 for "I have seen higher rates of customer retention since using AI-powered services."

Overall, the analysis shows that respondents generally agreed on the positive impact of AI-powered services on customer satisfaction, employee performance, work-life balance, and organizational performance, with only slight variations across specific items.

Table 3: The Results of Mean and Standard Deviation

	Mean	Std. Deviation	Interpretation
AI-powered services	**3.93**	**0.762**	**Agree**
APS1: I find AI-powered services are effective in fulfilling the functions such as customer support and task automation.	3.74	0.69	Agree
APS2: AI-powered services are easy to use for me.	3.92	0.82	Agree
APS3: AI-powered services are reliable in providing the consistent performance.	4.00	0.79	Agree
APS4: The response time of AI-powered services is fast.	4.05	0.78	Agree
APS5: I am satisfied the answering using AI-powered services.	3.94	0.73	Agree
Customer satisfaction	**3.89**	**1.072**	**Agree**
CS1: I am satisfied with the recommendation or solution provided by AI-powered services.	4.16	0.931	Agree
CS2: I find AI-powered platforms or interfaces are easy to access services.	3.68	1.237	Agree
CS3: I receive response quickly while using AI-powered services.	3.88	1.101	Agree
CS4: I am satisfied with the feedback and recommendation providing by AI-powered services.	3.83	1.017	Agree
Employee performance	**4.20**	**0.868**	**Agree**
EP1: Due to AI-powered services, the quality of my work has improved.	4.05	0.965	Agree
EP2: AI-powered services have simplified my work.	4.25	0.764	Strongly Agree
EP3: My performance has improved since AI-powered services were implemented.	4.31	0.875	Strongly Agree
Employee work-life balance	**4.03**	**0.876**	**Agree**
EWB1: I have more time for my personal life due to AI-powered services.	3.92	0.885	Agree
EWB2: My working schedule is more flexible by using AI-powered services.	4.00	0.927	Agree
EWB3: I am satisfied with the accessibility of AI-powered services that help a better work-life balance.	4.04	0.911	Agree
EWB4: AI-powered services improve communication and collaboration among team members, making it easier to manage work.	4.17	0.782	Agree
Organizational performance	**3.89**	**0.833**	**Agree**
OP1: Our organization's profit has increased with AI-powered services.	3.82	0.921	Agree
OP2: I have seen higher rates of customer retention since using AI-powered services.	3.96	0.761	Agree
OP3: Our organizational performance has reached the target goals by AI-powered services.	3.9	0.816	Agree

4.3 Hypothesis Testing Results

The researcher used simple linear regression (SLR) and multiple linear regression (MLR) to analyze the impact of AI-powered services on customer satisfaction, employee performance, and work-life balance, leading to organizational performance growth. The R-squared (R^2) value was used to indicate the percentage of variance in the dependent variable explained by the independent variable. SLR helped evaluate the direct influence of AI-powered services on customer satisfaction, while MLR was applied to assess the combined effects of multiple factors on organizational performance growth. Additionally, to check for multicollinearity among independent variables, the variance inflation factor (VIF) was used. According to Hair et al. (2016), a VIF value below 10 is acceptable, indicating no significant multicollinearity. The R^2 value was also utilized to explain the proportion of variance in the dependent variable that could be attributed to the independent variable.

4.4.1 The Result of Simple Linear Regression of H1

Statistical Hypothesis:

Ho: AI-powered services have no significant impact on customer satisfaction toward organizational performance growth.

Ha: AI-powered services have a significant impact on customer satisfaction toward organizational performance growth.

The simple linear regression analysis for hypothesis 1 (H1) in Table 4 examined whether AI-powered services significantly impacted customer satisfaction. As indicated in Table 4, the significance level was 0.049, which is below the threshold of 0.05, leading to the rejection of the null hypothesis (H_0). This result confirms that AI-powered services have a significant impact on customer satisfaction, contributing to organizational performance growth. The regression analysis produced an R^2 value of 0.203, meaning 20.3% of the variance in customer satisfaction could be explained by AI-powered services, with an adjusted R^2 of 0.118 at a 95% confidence level. The standardized coefficient (β) for AI-powered services was 0.320, indicating a moderate positive relationship. Additionally, the VIF value for AI-powered services was 1.00, suggesting no multicollinearity concerns since it is below the threshold of 10.

Table 4: Simple Linear Regression Analysis Summary for H1

Variables	B	SE B	β	t	p	VIF
H1: AI-powered services	0.194	0.286	0.320	2.678	0.049*	1.00

*Note: R^2=0.203, Adjusted R^2=0.118, *p < 0.05. Dependent Variable = Customer satisfaction*

4.4.2 The Result of Multiple Linear Regression for H2 and H3

Statistical Hypothesis:

Ho: AI-powered services (H2) and employee work-life balance (H3) have no significant impact on employee performance toward organizational performance growth.

Ha: AI-powered services (H2) and employee work-life balance (H3) have a significant impact on employee performance toward organizational performance growth.

Table 5 presents the results of a multiple linear regression analysis used to assess the impact of AI-powered services and employee work-life balance on employee performance. The findings indicate that both factors significantly influenced employee performance. For employee work-life balance (H3), the significance level was $p < 0.001$, which is less than 0.05, leading to the rejection of the null hypothesis (H_0). Similarly, AI-powered services (H2) also had a significant impact, with a significance level of $p = 0.008$, also below the 0.05 threshold, resulting in the rejection of the null hypothesis.

The R^2 value of 0.696 suggests that 69.6% of the variance in employee performance can be explained by AI-powered services and employee work-life balance. Analyzing the individual contributions of these predictors, the study revealed that employee work-life balance ($\beta = 0.346$) had a significant positive relationship with employee performance, whereas AI-powered services ($\beta = 0.477$) did not show a strong positive significance.

The results also indicated no multicollinearity between these independent variables, as the VIF values for both AI-powered services and employee work-life balance were 1.03, well below the threshold of 10. This means that the two variables did not overlap in their contribution to predicting employee performance.

Table 5: Multiple Linear Regression Analysis Summary for H2 and H3

Variables	B	SE B	β	t	p	VIF
H2: AI-powered services	0.695	0.386	0.477	2.18	0.008*	1.03
H3: Employee work-life balance	0.908	0.289	0.346	31.476	<.001*	1.03

*Note: R^2=0.696 =, Adjusted R^2=0.696, *p < 0.05. Dependent Variable = Employee performance*

4.4.3 The Result of Multiple Linear Regression of H4, H5, and H6

Statistical Hypothesis

Ho: Customer satisfaction (H4), employee performance (H5) and employee work-life balance (H6) have no significant impact on organizational performance growth.

Ha: Customer satisfaction (H4), employee performance (H5) and employee work-life balance (H6) have a significant impact on organization performance growth.

Table 6 presents the results of a multiple linear regression analysis used to evaluate the impact of customer satisfaction (H4), employee performance (H5), and employee work-life balance (H6) on organizational performance. The results indicate that customer satisfaction (H4, $p < 0.001$) and employee work-life balance (H6, $p = 0.004$) had significant impacts on organizational performance, as their p-values were less than the 0.05 threshold. Therefore, the null hypotheses for H4 and H6 were rejected. However, employee performance (H5, $p = 0.922$) did not show a significant effect on organizational performance, leading to the retention of the null hypothesis for H5.

The R^2 value of 0.604 indicates that the independent variables (customer satisfaction, employee performance, and employee work-life balance) account for approximately 60.4% of the variation in organizational performance. Upon examining the individual contributions, the analysis revealed that customer satisfaction ($\beta = 0.237$) and employee work-life balance ($\beta = 0.564$) had positive and significant impacts on organizational performance.

Furthermore, the analysis confirmed no multicollinearity among the independent variables, as the VIF values were all below 10. This indicates that customer satisfaction, employee performance, and employee work-life balance did not overlap in their impact on organizational performance. Specifically, the VIF values for customer satisfaction, employee performance, and employee work-life balance were 1.01, 3.31, and 3.32, respectively.

Table 6: Multiple Linear Regression Analysis Summary for H4, H5 and H6

Variables	B	SE B	β	t	p	VIF
H4: Customer satisfaction	0.201	0.039	0.237	5.147	<0.001*	1.01
H5: Employee performance	-0.009	0.080	-0.008	-0.098	0.922	3.31
H6: Employee work-life balance	0.591	0.876	0.564	2.674	0.004*	3.32

*Note: R^2=0.604, Adjusted R^2= 0.541, *p < 0.05. Dependent Variable = Organization performance*

5. Conclusion, Discussion and Recommendations

5.1 Conclusion of Findings

Of the 450 respondents, the majority were aged between 31 and 40 years old (309, 68.7%), employed (290, 64.4%), had used AI-powered services for 1-2 years (235, 52%), and interacted with AI-powered services weekly (215, 48%). About one-third of the respondents came from the education sector (134, 30%), had a fair understanding of AI-powered services (258, 57.3%), used AI-powered services for personal assistance (208, 46.2%), and felt comfortable using them (295, 65.6%).

The analysis revealed the mean and standard deviation for the key variables. Employee performance had the highest mean ($\overline{x}$ = 4.14, SD = .762), followed by employee work-life balance ($\overline{x}$ = 4.04, SD = .699), AI-powered services ($\overline{x}$ = 3.93, SD = .523), customer satisfaction ($\overline{x}$ = 3.89, SD = .864), and organizational performance ($\overline{x}$ = 3.89, SD = .732).

To test the hypotheses, both multiple and simple linear regression analyses were conducted. Simple linear regression (SLR) was used to assess the impact of AI-powered services on customer satisfaction, while multiple linear regression (MLR) evaluated the effects of AI-powered services and employee work-life balance on employee performance, and customer satisfaction, employee performance, and work-life balance on organizational performance.

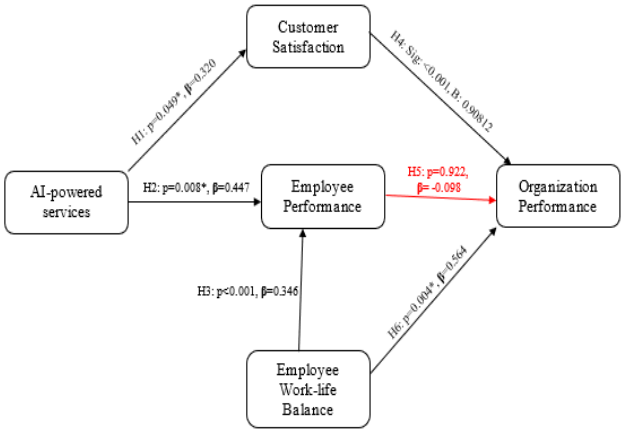
The results indicated that hypothesis 3 (employee work-life balance significantly impacts employee performance) and hypothesis 4 (customer satisfaction significantly impacts organizational performance) were supported. However, hypotheses 1 (AI-powered services do not significantly impact customer satisfaction), 2 (AI-powered services do not significantly impact employee performance), 5 (employee performance does not significantly impact organizational performance), and 6 (employee work-life balance does not significantly impact organizational performance) were not supported as shown in Table 7.

Table 7: Summary of the Hypotheses Testing Results

Statement of hypothesis	p-value	Decision results
H1: AI-powered services have no significant impact on customer satisfaction toward organizational performance growth.	0.049*	Rejected
H2: AI-powered services have no significant impact on employee performance toward organizational performance growth.	0.008*	Rejected
H3: Employee work-life balance has no significant impact on employee performance toward organizational performance growth.	<.001*	Rejected
H4: Customer satisfaction has no significant impact on organizational performance growth.	<0.001*	Rejected
H5: Employee performance has no significant impact on organizational performance growth.	0.922	Fail to Reject
H6: Employee work-life balance has no significant impact on organizational performance growth.	0.004*	Rejected

A simple linear regression analysis reveals that AI-powered services have a positive impact on customer satisfaction, as indicated by a standardized beta (β) of 0.320. This finding suggests that the adoption of AI in services plays a crucial role in enhancing customer satisfaction, although it is not the only contributing factor (see Table 8 and Figure 2).

Figure 2: The Result of Structural Model



Source: Thu Hlaing & Nuangjamnong (2025)

For employee performance, a multiple linear regression analysis shows that both AI-powered services (Standardized Beta (β) = 0.477) and employee work-life balance (Standardized Beta (β) = 0.346) significantly influence performance. Among these, AI-powered services have a stronger impact, highlighting the importance of technology-driven tools and services in boosting employee productivity (see Table 8).

When examining organizational performance, the analysis reveals that employee work-life balance (Standardized Beta (β) = 0.564) is the most significant factor, with a strong positive influence. Customer satisfaction (Standardized Beta (β) = 0.237) also

contributes positively, though to a lesser degree. These results suggest that prioritizing employee well-being is essential for driving overall organizational performance growth (see Table 8).

Overall, the analysis underscores the significant role that AI-powered services play in enhancing both customer satisfaction and employee performance, making them valuable tools for organizational success. However, employee work-life balance emerges as the most critical driver of organizational performance, emphasizing the need for organizations to focus on employee well-being to achieve sustainable growth. By integrating AI-powered services with a strong commitment to employee well-being, organizations can create a synergistic effect that enhances customer satisfaction, boosts employee performance, and ultimately drives organizational performance growth.

Table 8: Strengths of Impact Factor of Each Dependent Variable

Dependent variable	Rank	Independent variable	The Standardized Beta β
Simple Linear Regression			
Customer satisfaction (CS)	-	AI-powered services	0.320
Multiple Linear Regression			
Employee performance (EP)	1st	AI-powered services	0.477
	2nd	Employee work-life balance	0.346
Multiple Linear Regression			
Organizational performance (PI)	1st	Employee work-life balance (EWB)	0.564
	2nd	Customer satisfaction (CS)	0.237

5.2 Discussion of Major Findings

This research aimed to explore the complex relationships between AI-powered services, employee work-life balance, customer satisfaction, and their collective influence on organizational performance. The analysis conducted through hypothesis testing has yielded several significant findings, as discussed below.

H1: The rejection of H1 suggests that AI-powered services do have a significant impact on customer satisfaction, contributing to organizational performance growth. This finding supports the notion that AI integration into services is crucial for enhancing customer satisfaction, which in turn can drive organizational success.

H2: The rejection of H2 indicates that AI-powered services significantly influence employee performance, which is a critical factor for organizational performance growth. This finding highlights the importance of leveraging AI technology to improve employee productivity and effectiveness, ultimately contributing to the organization's overall success.

H3: The strong rejection of H3 reveals that employee work-life balance is a significant determinant of employee performance, which plays a vital role in organizational performance growth. This underscores the importance of maintaining a healthy work-life balance for employees, as it directly impacts their performance and, consequently, the organization's success.

H4: The rejection of H4 confirms that customer satisfaction is a significant driver of organizational performance growth. Satisfied customers are likely to contribute to the organization's success through repeat business and positive word-of-mouth, making customer satisfaction a critical area of focus for organizations aiming for growth.

H5: Unlike the other hypotheses, H5 could not be rejected, suggesting that employee performance, as measured in this study, does not have a statistically significant direct impact on organizational performance growth. This finding may indicate that while employee performance is essential, other factors, such as employee well-being and customer satisfaction, may play more pivotal roles in driving organizational success.

H6: The rejection of H6 highlights that employee work-life balance significantly impacts organizational performance growth. This finding reinforces the critical role of employee well-being in achieving organizational success, suggesting that organizations should prioritize work-life balance initiatives to foster a productive and satisfied workforce.

The overall findings from the hypothesis testing reveal that AI-powered services, customer satisfaction, and employee work-life balance are significant contributors to organizational performance growth (Huang & Rust, 2018; Jarrahi, 2018; Chang, 2020; Paschen et al., 2020; Behl et al., 2022; Juwaini et al., 2022). The rejection of multiple null hypotheses underscores the importance of these factors in driving organizational success. However, the failure to reject the null hypothesis related to employee performance suggests that while employee performance is crucial, it may not directly translate into organizational growth without the support of factors like customer satisfaction and employee well-being (Bughin et al., 2018; Davenport & Ronanki, 2018; Lu et al., 2019; Rosmi & Syamsir, 2021; Wijayati et al., 2021). Organizations looking to leverage AI-powered services must also pay attention to the broader ecosystem, including employee work-life balance and customer satisfaction, to achieve sustainable growth (Bughin et al., 2018; Astuti & Pratika, 2019; Wijayati et al., 2021; Boiarintseva et al., 2022; Chatterjee et al., 2023).

This research provides valuable insights for managers and decision-makers, emphasizing the need to integrate technological advancements with human-centric approaches to maximize organizational performance (Najmi et al., 2020; Hitoshi et al., 2021; Kineber et al., 2021; Al-Jedibi, 2022; Al-Shoteri, 2022).

5.3 Recommendations

Based on the research findings regarding the impact of AI-powered services, employee work-life balance, and customer satisfaction on organizational performance growth, several recommendations can be made. Firstly, organizations should invest in AI-powered services to enhance customer satisfaction. For example, a retail company can implement AI-driven chatbots on its website to provide instant customer support, answering common questions and helping customers navigate their purchase options. Additionally, the company could use AI to analyze customer data and provide personalized product recommendations, which enhances the shopping experience.

Secondly, to improve employee performance, organizations should leverage AI-powered tools and services. For instance, a financial services firm might introduce AI-driven software to automate routine tasks such as data entry or report generation, freeing

up employees to focus on more complex, value-added activities. Thirdly, given the significant impact of work-life balance on both employee performance and organizational outcomes, organizations should prioritize initiatives that promote a healthy work-life balance. The company could foster a culture that respects work-life boundaries by discouraging after-hours emails or meetings, thereby reducing burnout.

Fourthly, customer satisfaction should remain a central focus for organizations aiming for growth. By developing loyalty programs that reward repeat customers, like offering discounts or exclusive perks, the business can build stronger, long-term relationships. Fifthly, to maximize organizational performance, companies should integrate AI-powered services with human-centric approaches. Maintaining a feedback loop where both employees and customers can provide input on AI-driven changes helps the company continuously improve both its technology and its human resources practices. It should be noted that the broader impact of performance metrics on employee morale and organizational culture, and the use of AI tools to gather more detailed data on these aspects can ensure that its performance evaluation processes be aligned with both organizational goals and employee well-being.

5.4 Implications Based on Findings and Theories

The implications of the research findings, grounded in established theories, offer valuable insights for organizations aiming to enhance their performance through strategic use of AI-powered services, employee work-life balance, and customer satisfaction. Firstly, the positive impact of AI on both customer satisfaction and employee performance supports the Technology Acceptance Model (TAM), which suggests that perceived usefulness and ease of use drive the adoption of new technologies. The significant influence of AI on these factors implies that organizations adopting AI can expect improvements in both customer and employee experiences, leading to better overall performance. This underscores the need for businesses to prioritize AI integration in customer-facing operations and internal processes, ensuring that AI tools are not only effective but also user-friendly and well-supported.

Secondly, the finding that employee work-life balance significantly impacts both employee performance and organizational outcomes aligns with the Job Demands-Resources (JD-R) model. This model posits that maintaining a balance between job demands and available resources is crucial for preventing burnout and promoting engagement. The research indicates that organizations must invest in initiatives that support employee well-being, such as flexible work arrangements and wellness programs. By doing so, companies can enhance employee performance, reduce turnover, and ultimately drive sustainable organizational growth.

Furthermore, the significant role of customer satisfaction in driving organizational performance growth is consistent with the Service-Profit Chain theory, which highlights the direct link between customer satisfaction, loyalty, and profitability. The research reinforces the idea that satisfied customers are more likely to remain loyal and contribute to the organization’s long-term success. Therefore, businesses should continuously seek to improve customer experiences and build strong relationships, recognizing that customer satisfaction is not merely an outcome but a critical driver of organizational performance.

Lastly, the less significant impact of employee performance on organizational growth suggests that while performance metrics are important, they should be carefully aligned with broader organizational goals and employee well-being. These finding challenges traditional performance management theories that focus heavily on productivity metrics, suggesting a need for a more holistic approach that considers both quantitative and qualitative factors. Integrating AI tools to provide deeper insights into these metrics can help organizations better understand the nuances of employee contributions and their impact on overall success.

5.5 Limitations of the Study

The study, while providing valuable insights into the impact of AI-powered services, employee work-life balance, and customer satisfaction on organizational performance growth, may be limited by its reliance on specific industry contexts or geographic regions, which may not fully capture the diverse impacts of AI and work-life balance across different sectors or global markets. This limitation could affect the generalizability of the findings. The second limitation could lie in the use of standardized beta coefficients in regression analysis, while useful, does not account for potential interactions between variables or the influence of external factors that might affect organizational performance. As such, the results may not reflect all the complexities of real-world scenarios. These identified limitations suggest that future research should explore diverse industry contexts, consider interaction effects and external variables, and employ longitudinal designs to provide a more comprehensive understanding of the factors influencing organizational performance.

5.6 Further Studies

Further studies could enhance understanding of the impact of AI-powered services, employee work-life balance, and customer satisfaction on organizational performance by addressing several areas. Researchers could explore these dynamics across different industries and geographic regions to assess the generalizability of the findings. This would provide a broader perspective on how various sectors experience the influence of AI and work-life balance. In addition, future studies could investigate the interactions between AI-driven tools, employee performance, and organizational outcomes to uncover more complex relationships and potential moderating factors. This could involve examining how different types of AI technologies impact various aspects of employee and customer experiences. Longitudinal research would be valuable in capturing the long-term effects of AI adoption and work-life balance initiatives on organizational performance. These considerations could contribute to a deeper and more nuanced understanding of how AI and employee well-being influence organizational success.

6. The Authors

The two authors--Zin Thu Thu Hlaing and Chompu Nuangjamnong are in the Master of Business Administration Program, Graduate School of Business and Advanced Technology Management, Assumption University of Thailand. Both share their research interest in the areas of digital marketing, AI-powered services, customer satisfaction, employee performance, employee work-life balance, and organizational performance.

7. References

Al-Jedibi, W. (2022). The strategic plan of the information technology deanship--King Abdulaziz University--Saudi Arabia. *International Journal for Applied Information Management, 2022, 2*(4), 84-94. https://doi.org/10.47738/ijaim.v2i4.40

Allen, T. D., Johnson, R. C., Kiburz K. M. & Shockley, K. M. (2012). Work-family conflict and flexible work arrangements: Deconstructing flexibility. *Personnel Psychology, 2012*, *66*(2), 345-376. https://doi.org/10.1111/peps.12012

Al-Shoteri, A. (2022). The role of methods and applications of artificial intelligence tools in the field of medicine to diagnose and discover various diseases. *Journal of Applied Data Sciences, 2022, 3*(1), 1-14. https://doi.org/10.47738/jads.v3i1.48

Anderson, E.W., Fornell, C. & Mazvancheryl, S.K. (2004). Customer satisfaction and shareholder value. *Journal of Marketing, 2004, 68*(4), 172-185. https://doi.org/10.1509/jmkg.68.4.172.42723

Astuti, T. & Pratika, I. (2019). Product review sentiment analysis by artificial neural network algorithm. *IJIIS: International Journal of Informatics and Information Systems, 2019, 2*(2), 61-66. https://doi.org/10.47738/ijiis.v2i2.15

Bakker, A. B. & Bal, M. P. (2010). Weekly work engagement and performance: A study among starting teachers. *Journal of Occupational and Organizational Psychology, 2010, 83*(1), 189-206. https://doi.org/10.1348/096317909x402596

Beauregard, T. A. & Henry, L. C. (2009). Making the link between work-life balance practices and organizational performance. *Human Resource Management Review, 2009, 19*(1), 9-22. https://doi.org/10.1016/j.hrmr.2008.09.001

Becker, B. E. & Huselid, M. A. (2006). Strategic human resources management: Where do we go from here? *Journal of Management, 2006, 32*(6), 898-925. https://doi.org/10.1177/0149206306293668

Behl, A., Chavan, M., Jain, K., Sharma, I., Pereira, V. E. & Zhang, J. Z. (2022). The role of organizational culture and voluntariness in the adoption of artificial intelligence for disaster relief operations. *International Journal of Manpower, 2022, 43*(2), 569-586. https://doi.org/10.1108/IJM-03-2021-0178

Boiarintseva, G., Ezzedeen, S. R. & Wilkin, C. (2022). Definitions of work-life balance in childfree dual-career couples: An inductive typology. *Equality, Diversity, and Inclusion, 2022, 41*(4), 525-548. https://doi.org/10.1108/EDI-12-2020-0368

Brynjolfsson, E. & McAfee, A. (2018). *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*. https://edisciplinas.usp.br/pluginfile.php/4312922/mod_resource/content/2/Erik%20-%20The%20Second%20Machine%20Age.pdf

Bughin, J., Seong, J., Manyika, J., Chui, M. & Joshi, R. (2018). *Notes from the AI Frontier: Modeling the Impact of AI on the World Economy*. Bengalaluru, Karnataka, India: McKinsey & Company. https://www.mckinsey.com/featured-insights/artificial-intelligence/notes-from-the-AI-frontier-modeling-the-impact-of-ai-on-the-world-economy

Chang, K. (2020). Artificial Intelligence in personnel management: The development of APM Model. *The Bottom Line, 2020, 33*(4), 377-388. https://doi.org/10.1108/bl-08-2020-0055

Chatterjee, S., Chaudhuri, R., Vrontis, D. & Giovando, G. (2023). Digital workplace and organization performance: Moderating role of digital leadership capability. *Journal of Innovation & Knowledge, 2023, 8*(1), 100334. https://doi.org/10.1016/j.jik.2023.100334

Collins, C. J. & Clark, K. D. (2003). Strategic human resource practices, top management team social networks, and firm performance: The role of human resource practices in creating organizational competitive advantage. *Academy of Management Journal, 2003, 46(6),* 740-751. https://www.researchgate.net/publication/234021443

Davenport, T. H. & Ronanki, R. (2018). Artificial intelligence for the real world. *Harvard Business Review, 2018, 96*(1), 108-116. https://blockqai.com/wp-content/uploads/2021/01/analytics-hbr-ai-for-the-real-world.pdf

Fornell, C., Mithas, S., Morgeson, F. V. & Krishnan, M. S. (2006). Customer satisfaction and stock prices: High returns, low risk. *Journal of Marketing, 2006, 70*(1), 3-14. https://doi.org/10.1509/jmkg.70.1.003.qxd

Gelade, G. A. & Young, S. (2005). Test of a service profit chain model in the retail banking sector. *Journal of Occupational and Organizational Psychology, 2005, 78*(1), 1-22. https://doi.org/10.1348/096317904x22926

Greenhaus, J.H., Collins, K.M. & Shaw, J.D. (2003). The relation between work–family balance and quality of life. *Journal of Vocational Behavior, 2003, 63*(3), 510-531. https://doi.org/10.1016/s0001-8791(02)00042-8

Gurbaxani, V. & Dunkle, D. (2019). Gearing up for Successful Digital Transformation. *MIS Quarterly Executive, 2019, 18*(3), 209-220. https://doi.org/10.17705/2msqe.00017

Haar, J. M., Russo, M., Suñe, A. & Ollier-Malaterre, A. (2014). Outcomes of work-life balance on job satisfaction, life satisfaction and mental health: A study across seven cultures. *Journal of Vocational Behavior, 2014, 85*(3), 361-373. https://doi.org/10.1016/j.jvb.2014.08.010

Hair, J., Anderson, R., Black, B. & Babin, B. (2016). *Multivariate Data Analysis*. Hoboken, New Jersey: Pearson Higher Education. https://www.drnishikantjha.com/papersCollection/Multivariate%20Data%20Analysis.pdf

Hitoshi, H., Kamei, S. & Ohashi, M. (2021). The effectiveness of the body of knowledge process in the startup analysis of efficiency by applying startup management body of knowledge (SUBOK) guide. *International Journal for Applied Information Management, 2021, 1*(2), 70-80. https://doi.org/10.47738/ijaim.v1i2.11

Huang, M.-H. & Rust, R. T. (2018). Artificial intelligence in service. *Journal of Service Research, 2018, 21*(2), 155-172. https://doi.org/10.1177/1094670517752459

Imsa-ard, P., Wichamuk, P. & Chuanchom, C. (2021). Muffled voices from Thai pre-service teachers: Challenges and difficulties during teaching practicum. *Shanlax International Journal of Education, 2021, 9*(3), 246-260. https://doi.org/10.34293/education.v9i3.3989

Jarrahi, M. H. (2018). Artificial intelligence and the future of work: Human-AI symbiosis in organizational decision making. *Business Horizons, 2018, 61*(4), 577-586. https://doi.org/10.1016/j.bushor.2018.03.007

Juwaini, A., Chidir, G., Novitasari, D., Iskandar, J., Hutagalung, D., Pramono, T., Maulana, A., Safitri, K., Fahlevi, M., Sulistyo, A. B. & Purwanto, A. (2022). The role of customer e-trust, customer e-service quality and customer e-satisfaction on customer e-loyalty. *International Journal of Data and Network Science, 2022, 6*(2), 477-486. https://doi.org/10.5267/j.ijdns.2021.12.006

Kineber, A. F., Othman, I., Oke, A. E., Chileshe, N. & Zayed, T. (2021). Value management implementation barriers for sustainable building: A bibliometric analysis and partial least square structural equation modeling. *Construction Innovation, 2021, 23*(1), 38-73. https://doi.org/10.1108/CI-05-2021-0103

Koufaris, M. (2002). Applying the technology acceptance model and flow theory to online consumer behavior. *Information Systems Research, 2002, 13*(2), 205-223. https://doi.org/10.1287/isre.13.2.205.83

Krejcie, R. V. & Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement, 1970, 30,* 607-610. https://doi.org/10.1177/001316447003000308

Lu, L., Cai, R. & Gursoy, D. (2019). Developing and validating a service robot integration willingness scale. *International Journal of Hospitality Management, 2019, 80,* 36-51. https://doi.org/10.1016/j.ijhm.2019.01.005.

MacroTrends. (2024). *Bangkok, Thailand Metro Area Population 1950-2024*. https://www.macrotrends.net/global-metrics/cities/22617/bangkok/population

Matzler, K., Strobl, A., Thurner, N. & Füller, J. (2015). Switching experience, customer satisfaction, and switching costs in the ICT industry. *Journal of Service Management, 2015, 26*(1), 117-136. https://doi.org/10.1108/JOSM-04-2014-0101

Microsoft Pulse. (2021). *AI Is Driving Value across Businesses in Europe – So Why Is Only 4% of the Public Sector Seeing Real Impact?* https://pulse.microsoft.com/en/transform-en/government-en/fa2-ai-is-driving-value-across-businesses-in-europe-so-why-is-only-4-of-the-public-sector-seeing-real-impact/

Najmi, A., Kanapathy, K. & Aziz, A. A. (2020). Understanding consumer participation in managing ICT waste: Findings from two-staged structural equation modeling–artificial neural network approach. *Environmental Science and Pollution Research, 2020, 28*(12), 14782-14796. https://doi.org/10.1007/s11356-020-11675-2

Na-Nan, K., Chaiprasit, K. & Pukkeeree, P. (2018). Factor analysis-validated comprehensive employee job performance scale. *International Journal of Quality & Reliability Management, 2018, 35*(10), 2436-2449. https://doi.org/10.1108/ijqrm-06-2017-0117.

Otto, A. S., Szymanski, D. M. & Varadarajan, R. (2019). Customer satisfaction and firm performance: Insights from over a quarter century of empirical research. *Journal of the Academy of Marketing Science, 2019, 48*(3), 543-564. https://doi.org/10.1007/s11747-019-00657-7

Paschen, U., Pitt, C. & Kietzmann, J. (2020). Artificial intelligence: Building blocks and an innovation typology. *Business Horizons, 2020, 63*(2), 147-155. https://doi.org/10.1016/j.bushor.2019.10.004

Plester, B. & Hutchison, A. (2016). Fun times: The relationship between fun and workplace engagement. *Employee Relations, 2016, 38*(3), 332-350. https://doi.org/10.1108/ER-03-2014-0027

Richard, P.J., Deviney, T. M., Yip, G. S. & Johnson, G. (2009). Measuring organizational performance: Towards methodological best practice. *Journal of Management, 2009, 35*(3), 718-804. https://doi.org/10.1177/0149206308330560

Rosmi, R. & Syamsir, S. (2021). The effect of integrity and professionalism on employee performance in Digital Era. *Proceedings of the 1st Tidar International Conference on Advancing Local Wisdom towards Global Megatrends.* https://doi.org/10.4108/eai.21-10-2020.2311846

Rust, R. T. & Huang, M. H. (2012). Optimizing service productivity. *Journal of Marketing, 2012, 76*(2), 47-66. https://doi.org/10.1509/jm.10.0441

Rust, R. T., Moorman, C. & Dickson, P. R. (2002). Getting return on quality: Revenue expansion, cost reduction, or both? *Journal of Marketing, 2002, 66*(4), 7-24. https://doi.org/10.1509/jmkg.66.4.7.18515

Tetteh, S., Dei Mensah, R., Opata, C. N. & Mensah, C. N. (2022). Service employees' workplace fun and turnover intention: The influence of psychological capital and work engagement. *Management Research Review, 2022, 45*(3), 363-380. https://doi.org/10.1108/MRR-12-2020-0768

Vijayakumar, M. & Marimuthu, R. (2024). Impact of artificial intelligence on marketing in India. *Mahsa International Technology and Engineering Conference.* https://www.researchgate.net/publication/378590226_Impact_of_Artificial_Intelligence_on_Marketing_in_India

West, D.M, Darrell M. West, R. M., Korinek A. & Valeire Wirtschaa D. B. (2018). *The Future of Work: Robots, AI, and Automation.* Washington, D.C., U.S.: Brookings. https://www.brookings.edu/events/the-future-of-work-robots-ai-and-automation/

Wijayati, D. T., Rahman, Z., Fahrullah, A., Rahman, M. F., Arifah, I. D. & Kautsar, A. (2021). A study of artificial intelligence on employee performance and work engagement: The moderating role of change leadership. *International Journal of Manpower, 2021, 43*(2), 486-512. https://doi.org/10.1108/ijm-07-2021-0423

World Population Review. (2024). *Bangkok Population 2024 (Demographics, Maps, Graphs).* Worldpopulationreview.com. https://worldpopulationreview.com/world-cities/bangkok-population

Zeithaml, V.A., Bitner, M.J. & Gremler, D.D. (2010). *Services Marketing Strategy*. Hoboken, New Jersey: Wiley International Encyclopedia of Marketing. https://doi.org/10.1002/9781444316568.wiem01055

ISSN 2821-9074 (Online)
ISSN 2730-2601 (Print)
RICE Journal of Creative Entrepreneurship and Management, Vol. 6, No.1, pp. 80-92, January-April 2025
© 2025 Rajamangala University of Technology Rattanakosin, Thailand
doi: 10.14456/rjcm.2025.4
Received 17.09.24/ Revised 26.03.25/ Accepted 31.03.25

Development of Competency-Based Training Model on E-Commerce Business for Pre-Elderly Entrepreneurs in Thailand

Pimchanok Vimolsathit[1*]
Theerapong Wiriyanon[2]

[1,2] Department of Technical Education Technology
Faculty of Technical Education
King Mongkut's University of Technology North Bangkok,
Thailand
[*] Corresponding author
[1] Email: pimchanok.vi@gmail.com
[2] Email: Trpwyn@gmail.com

Abstract

The objectives of this research were to: (1) to synthesize occupational competencies in the e-commerce business for the pre-elderly, (2) to develop a curriculum based on these competencies, (3) to develop a targeted training model for this specific group, and (4) to investigate the impact of implementing the training model. The researchers conducted the study in five phases: (i) competency synthesis, (ii) competency-based curriculum development, (iii) training model development, (iv) training tool development, and (v) training model implementation. The sample in the study consisted of 25 formal workers aged 40 to 59, selected through voluntary sampling. The results of the study were as follows: (1) The e-commerce business competency for pre-elderly comprised one key role, three key functions, seven units of competence, and twenty elements of competence. (2) The competency-based curriculum consisted of seven training modules and twenty learning outcomes. (3) The designed training model was rated as highly appropriate ($\overline{X}$ = 4.68, S.D. = .52). (4) The implementation of the training model with the sample revealed that (4.1) post-training knowledge in the e-commerce business was significantly improved, when compared to pre-training knowledge at the significance level of .05. (4.2) The participants' overall satisfaction reached the highest level ($\overline{X}$ = 4.60, S.D. = .44). And (4.3) one month after training, 23 participants (92% of the total) met all the performance criteria.

Keywords: *Model development, competency-based training, occupational competencies, e-commerce business, pre-elderly*

1. Background and Research Viability

Thailand is experiencing a rapid demographic shift, characterized by a declining working-age population and a continuously increasing elderly population. This transition presents challenges in elderly care and the promotion of quality of life across economic, social, health, housing, and environmental domains (Ratchavieng, 2020; Pengchuay & Whattananarong, 2023). The goal is to enable the elderly to be self-reliant and contribute effectively to their families, communities, and society. The 20-year

National Strategy (2018-2037) and the 5-year Government Action Plan (2023-2027) emphasize the development of potential and preparation for aging among the population aged 25–59 years, which represents the working-age group crucial to driving the economy and society (National Statistical Office, Thailand. (n.d.).

Concurrently, Thailand has fully entered the digital era, with online activities and transactions playing a pivotal role in daily life (Nuangjamnong, Suesaowaluk & Shinasharkey, 2024) and contributing to rapid economic growth. In 2022, Thais spent an average of 10 hours and 36 minutes per day online, with e-commerce and financial transactions showing the most significant growth among online activities (Power BI Report, n.d.). E-commerce has created opportunities for small and medium-sized enterprises (SMEs) and individuals interested in retail to access global consumer markets easily (An, 2023).

However, Thailand's transition to a complete-aged society, with projections indicating a super-aged society status within 15 years, presents challenges, particularly severe labor shortages. The increasing number of low-income elderly individuals leads to limited spending, potentially slowing domestic consumption and impacting the country's overall economic performance.

Consequently, integrating the growing elderly population with the expanding e-commerce sector presents a strategy to encourage the pre-elderly group to prepare for their senior years. Enhancing capabilities and reinforcing crucial digital-age skills through e-commerce competency training can help the pre-elderly adapt effectively to technological changes and evolving labor markets (Wetsanarat, 2021; Pholsward, Phakamach & Panjarattanakorn, 2024). This approach can equip the pre-elderly with essential skills for post-retirement careers, fostering a sense of value and contributing to the country's economic stimulation.

Therefore, developing an e-commerce business competency training model for the pre-elderly is of paramount importance. This proactive approach can guide the governmental and private sectors, as well as relevant agencies, in preparing and developing the elderly population to maintain a high quality of life as Thailand transitions into a super-aged society.

2. Research Assumption

The research assumption was that pre-elderly individuals would develop e-commerce business competencies after participating in a training model specifically designed to enhance these competencies.

3. Scope of Research

This research involved 25 formal workers aged 40 to 59, selected through voluntary sampling in Bangkok Metropolitan Region of Thailand.

The independent variable was the training model designed to develop e-commerce business competencies for the pre-elderly population. The dependent variable was the participants' performance in e-commerce business competencies following their engagement with the developed training model.

The content utilized in the training model to enhance e-commerce business competencies for the pre-elderly encompassed:

(1) E-commerce business management
(2) E-commerce laws and regulations
(3) Digital marketing strategies
(4) E-commerce platform utilization
(5) Online sales operations
(6) Online transactions and financial management
(7) Customer service in e-commerce

4. Research Objectives

The objectives of this study were to:

(1) Synthesize occupational competencies in the e-commerce business for the pre-elderly,
(2) Develop a curriculum based on these competencies,
(3) Develop a targeted training model for this specific group, and
(4) Investigate the impact of implementing the training model.

5. Research Methodology

The researchers studied the concepts and relevant information on e-commerce business competencies for the pre-elderly, and then analyzed and synthesized the roles, duties, and essential competencies. After that, the researchers developed a competency-based training model to enhance e-commerce business competencies. The researchers conducted the study in five phases as follows:

Phase 1: Synthesis of e-commerce business competencies for the pre-elderly. The researchers used functional analysis techniques to create a functional map, defining key purpose, key role, key functions, units of competence, and elements of competence for e-commerce business.

Phase 2: Development of a competency-based curriculum for e-commerce business. The researchers transformed the synthesized competencies into learning modules, creating a draft curriculum for e-commerce business competencies targeted at the pre-elderly.

Phase 3: Development of a training model for enhancing e-commerce business competencies. The researchers designed a training model incorporating principles, objectives, content, process, and evaluation components suitable for pre-elderly learners.

Phase 4: Development of training tools and materials. The researchers created training plans, supporting media, and assessment tools aligned with the developed curriculum and training model.

Phase 5: Implementation and evaluation of the e-commerce business competency training model.

The researchers conducted the training, assessed participants' knowledge and competencies, and evaluated the effectiveness of the training model.

Research Tools

Phases 1-4: The researchers used assessment forms to analyze the development of competencies, curriculum, training model, and training tools. These forms adopted a 5-level Likert scale with the following interpretations:

4.51-5.00: Highest agreement/quality
3.51-4.50: High agreement/quality
2.51-3.50: Moderate agreement/quality
1.51-2.50: Low agreement/quality
1.00-1.50: Lowest agreement/quality

For content validity, the researchers used the Content Validity Ratio (CVR) with a criterion of 0.99, as determined by 5 experts in e-commerce business competencies.

For item-objective congruence, the researchers used the Index of Item-Objective Congruence (IOC) with a criterion of 0.5.

Phase 5: Data collection involved four stages:
(1) Pre-test and post-test knowledge assessments,
(2) Competency evaluation using standardized assessment tools,
(3) Satisfaction survey using a 5-level Likert scale, and
(4) Follow-up competency assessment in one month after training completion.

The sample comprised 25 pre-elderly formal workers aged 40–59 years, selected through voluntary sampling. Data analysis included percentage, mean, standard deviation, dependent samples t-test, and content analysis for qualitative data.

6. Data Collection and Data Analysis

Phases 1-4: The researchers collected data using various assessment forms for competency synthesis, curriculum development, training model development, and training tools development. These tools were content validated by 5-14 experts in e-commerce business, digital technology, and education. The obtained data were analyzed for Content Validity Ratio (CVR) with a criterion of 0.99 obtained from 5 experts, Index of Item-Objective Congruence (IOC) with a criterion of 0.5, mean, and standard deviation. For the appropriateness and quality of the developed components, a 5-point Likert scale was used, with a criterion of 3.51 out of 5.00 to be considered appropriate in quality.

Phase 5: The researchers collected data from pre-test and post-test knowledge assessments, competency evaluation forms, and satisfaction surveys. The effectiveness of the training model was determined by comparing pre-test and post-test scores using a dependent samples t-test. The competency achievement was evaluated using standardized assessment tools, with results categorized as "Pass" or "Fail" based on predetermined criteria. The number of trainees who passed the competency assessment was compared to the total number of trainees in terms of percentage. The satisfaction level was analyzed

using mean and standard deviation, with a criterion of 3.51 out of 5.00 to be considered satisfactory.

7. Research Results

The Synthesis of E-commerce Business Competencies for the Pre-Elderly

The e-commerce business competencies for the pre-elderly were synthesized and assessed by 14 experts. It was found that the e-commerce business professional competency for the pre-elderly consists of 1 key purpose, 1 key role, 3 key functions, 7 Units of Competence and 20 Element of Competence.

The components of the function diagram and performance list are shown in Tables 1-3 (reference to actual tables in the research). These components were meant to develop the potential of the pre-elderly to conduct e-commerce business effectively.

Key Role: Conducting E-commerce Business Operations

Key Functions: A. E-commerce Business Management

B. E-commerce Sales Operations

C. Customer Service

The competencies were further broken down into 7 units of competence and 20 elements of competence, which formed the basis for the development of the training curriculum and model. The curriculum consisted of 7 training modules, each corresponding to a unit of competence.

Table 1: Key Functions A: E-commerce Business Management

Unit of competence	Element of competence
A1 Manage e-commerce business planning	A11 Plan e-commerce business
	A12 Plan product or service procurement
	A13 Plan online sales channels
	A14 Plan payment channels
	A15 Plan product delivery channels
A2 Comply with laws and ethics related to e-commerce business	A21 Comply with laws related to e-commerce business
	A22 Adhere to ethics in e-commerce business

Table 2: Key Functions B: E-commerce Sales Operations

Unit of competence	Element of competence
B1 Prepare for product sales	B11 Create seller accounts on online channels
	B12 Prepare product content for sales
	B13 Create product still images for sales
	B14 Create product video content for sales
B2 Conduct product sales	B21 Manage online sales channels
	B22 Manage payment channels
B3. Conduct packaging and product tracking	B31 Choose packaging methods for shipping
	B32 Choose shipping methods and track products
	B33 Choose channels for returns or exchanges

Table 3: Key Functions C: Customer Service

Unit of competence	Element of competence
C1 Build customer relationships	C11 Provide consultation to customers in making purchase decisions differences of opinion
	C12 Interact with customers rationally
C2 Manage complaints	C21 Identify and analyze complaints
	C22 Respond to complaints

The Development of a Training Model to Enhance E-Commerce Business Competencies for Pre-Elderly Individuals

The training model was developed and evaluated by 5 experts in e-commerce business competencies, who found it to be highly appropriate for enhancing e-commerce business competencies among the pre-elderly. The model incorporated principles, objectives, content, process, and evaluation components tailored to the learning needs of pre-elderly individuals. The model consists of three key components:

Input Factors:

- E-commerce business competencies for pre-elderly individuals.
- A competency-based training curriculum for e-commerce business for pre-elderly individuals.

- Learning steps: Based on modular competencies, which include:
  (i) Business preparation: 2 modules.
  (ii) Sales and delivery operations: 3 modules.
  (iii) Customer interaction procedures: 2 modules.

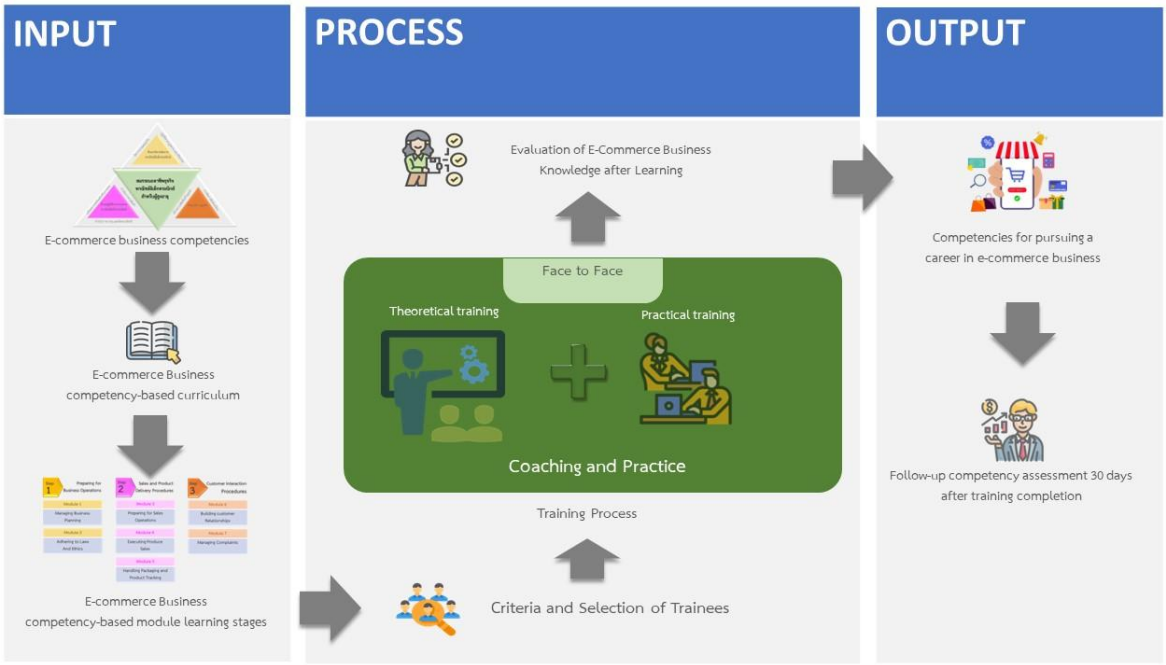
Learning Process:

- Selecting and enrolling trainees.
- Theoretical and practical training sessions.
- Competency evaluation post-training for pre-elderly individuals.

Outputs:

- Competency evaluation during the training by assessors.
- Competency evaluation of e-commerce business for pre-elderly individuals one month after the training.

Figure 1: Learning Modules Based on Competencies in E-Commerce Business Careers



Training and Evaluation of the E-Commerce Business Competencies for Pre-Elderly Individuals

The effectiveness of the training model was demonstrated through a significant increase in their understanding of e-commerce business operations, is presented in Table 4. The results of the t-test comparing the mean scores before and after the training yielded a t-value of 6.27 and a significance (Sig) value of 0.0000018, which is less than the predetermined statistical significance level of 0.05. This indicates that there is a statistically significant difference at the 0.05 level between the participants' knowledge of e-commerce business operations before and after the training. The average post-training score was 91.47 (S.D. = 7.08), which is higher than the pre-training average score of 73.33 (S.D. = 18.36).

Table 4: Analysis of Pre-Training and Post-Training Knowledge Test Scores

	Total number of trainees	Percentage of total score (%)	Percentage of average score (%)	S.D.	t	Sig.
Pre-Test	25	100	73.33	18.36	6.27	0.0000018
Post-Test	25	100	91.47	7.08		

**p-value <0.05*

During the training period, the participants were assessed on their competencies and practical skills by a panel of three evaluators. The assessment methods included oral questioning, observation of techniques and skills, and evaluation of participants' work. The assessment covered all seven training modules. The results revealed that all 25 participants met the required standards in every training module, representing 100% of the total participants, as shown in Table 5.

Table 5: Assessment Results of Participants' Competencies during Training

Module	Number of trainees		Percentage of trainees (%)	
	Passed	Fault	Passed	Fault
A1 Manage e-commerce business planning	25	0	100.00	0.00
A2 Comply with laws and ethics related to e-commerce business	25	0	100.00	0.00
B1 Prepare for product sales	25	0	100.00	0.00
B2 Conduct product sales	25	0	100.00	0.00
B3 Conduct packaging and product tracking	25	0	100.00	0.00
C1 Build customer relationships	25	0	100.00	0.00
C2 Manage complaints	25	0	100.00	0.00
Passed evaluation criteria			25 trainees	
Passed percentage			100.00%	

The results of the satisfaction assessment for the e-commerce business competency training for pre-elderly individuals indicated that overall, the participants' satisfaction in all aspects was at the highest level, with a mean score of 4.60 (S.D. = 0.44). The highest-rated aspect was content, which was also at the highest level, with a mean score of 4.80 (S.D. = 0.41). The second highest aspect was the application of knowledge, at the highest level, with a mean score of 4.73 (S.D. = 0.45), followed by the training process, also at the highest level, with a mean score of 4.73 (S.D. = 0.43). The trainer aspect was rated at the highest level, with a mean score of 4.71 (S.D. = 0.45), while the knowledge and understanding gained from the training program was rated at a high level, with a mean score of 4.02 (S.D. = 0.44), as presented in Table 6.

Table 6: Assessment of Participants' Satisfaction with Training

No.	Satisfaction evaluation criteria	Mean ($\bar{X}$)	S.D.	Result
1	Satisfaction with the training content	4.71	0.45	Highest
2	Satisfaction with the application of knowledge	4.73	0.43	Highest
3	Satisfaction with the training process	4.80	0.41	Highest
4	Satisfaction with the trainer	4.02	0.44	Highest
5	Satisfaction with the gained knowledge and understanding	4.73	0.45	Highest

After one month of training, the researchers evaluated the e-commerce business operational competencies of the participants. The evaluation covered 7 competence units using oral questioning and a competency-based assessment, where the participants were required to provide evidence of their e-commerce business operations. Out of the 25 participants, 23 met the competency criteria in all units, while 2 did not pass due to insufficient performance based on the evaluation standards. The result on 92% of the participants passing the competency assessment, is presented in Table 7.

Table 7**:** Evaluation of Participants after One-Month Training

Module	Number of trainees		Percentage of trainees (%)	
	Passed	Fault	Passed	Fault
A1 Manage e-commerce business planning	23	2	92.00	8.00
A2 Comply with laws and ethics related to e-commerce business	23	2	92.00	8.00
B1 Prepare for product sales	23	2	92.00	8.00
B2 Conduct product sales	23	2	92.00	8.00
B3 Conduct packaging and product tracking	23	2	92.00	8.00
C1 Build customer relationships	23	2	92.00	8.00
C2 Manage complaints	23	2	92.00	8.00
Passed evaluation criteria			25 trainees	
Passed percentage			92.00%	

8. Conclusion and Discussion of Results

This research aimed to develop a training model to enhance e-commerce business competencies for pre-elderly entrepreneurs in Thailand. The model was developed by synthesizing e-commerce business competencies obtained from related literature and evaluated by 14 experts in e-commerce, digital technology, and education. The researchers converted the synthesized competencies into a competency-based training curriculum and training plans for e-commerce business for the pre-elderly, comprising 7 learning modules. The following points are discussed in the sequence of the research objectives:

8.1 Development of E-commerce Business Competencies

The development of e-commerce business competencies for the pre-elderly used the Functional Analysis technique to create a Functional Map. This systematic approach, which included defining Key Purpose, Key Role, Key Functions, Units of Competence, and Elements of Competence, resulted in a comprehensive competency framework. The process involved synthesizing data from diverse academic sources and gathering empirical data from experienced practitioners, ensuring that the developed competencies accurately reflected the real-world requirements of the e-commerce industry. The selection of experts with extensive experience in e-commerce and related fields for competency evaluation further enhanced the validity and relevance of the developed competencies.

This approach supports other research in competency development, particularly studies by Roopngamm & Wiriyanon (2023), Kiewthong & Wiriyanon (2022), and Chalermphol (2019), who used similar functional analysis techniques to develop competencies in various occupations.

8.2 Development of Competency-Based Curriculum

The competency-based curriculum for e-commerce business was developed by translating occupational competency requirements into a training curriculum. The curriculum development process involved a systematic approach, including competency analysis, learning objective definition, content design, and clear assessment criteria. This approach resulted in a curriculum that effectively integrated theory and practice, tailored to the learning needs of the pre-elderly group.

The curriculum design aligns with research by Kumsuth (2023) on competency-based curricula for 21st-century skills development, emphasizing the importance of structured competency standards and learning objectives. It also corresponds with Thana-Amornkan, Rakkusol & Ramwarungkura (2023)'s research on developing competency-based curricula for construction foremen, highlighting the need for curricula that align with industry requirements.

8.3 Development of Training Model

The training model for e-commerce business competencies was developed using a systemic approach, incorporating input, process, and output components. The model emphasized creating occupational competencies specifically for the pre-elderly context. The learning process in both theoretical and practical training considered activities that promote participant engagement and experience sharing.

This approach is consistent with research by Laparojkit & Ek-uru (2022) on motivation factors for pre-retirement skill enhancement, and Sinchindawong & Klinkaesorn (2020)'s study on lifelong learning for the elderly, which emphasize the importance of experiential learning and self-directed activities for older adult learners.

8.4 Implementation and Effectiveness of the Training Model

The implementation of the training model resulted in all participants meeting the competency assessment criteria. This success is attributed to the systematic learning

management based on the developed e-commerce business competencies, the translation of competency units into learning modules, and the use of behavioral objectives for assessment criteria. The training model promoted activities that encouraged participants to express their thoughts and skills, utilizing experiences gained from practical learning.

The effectiveness of training was demonstrated by significantly higher post-training achievement scores compared to pre-training scores ($p < .05$). This result aligns with research by Numpradit (2022) on developing a competency-based training curriculum for digital technology project writing, which found that participant-centered group activities and project-based learning led to significantly improved post-training achievement scores.

Furthermore, the provision of comprehensive training materials, including theoretical content and practical steps, allowed participants to review and practice independently, contributing to their successful competency development. This finding is consistent with Sawangkit (2019)'s research on developing information technology competencies for the elderly, which found that self-paced learning materials helped reduce memory issues and increased motivation for practice among older learners.

9. Suggestions

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

- Government and private organizations should implement practical training programs that integrate technology and innovation into daily life, facilitating continuous preparation for the transition to elderly.
- Relevant agencies supporting pre-elderly preparation should adopt this training model to expand career opportunities and promote financial stability for the aging population.
- Future research should explore integrating AI technologies into e-commerce business competencies for the pre-elderly, including AI-powered live streaming, chatbots, and content creation.
- Researchers should broaden the scope of inquiry to develop training models for pre-elderly populations in diverse contexts, thereby ensuring more comprehensive preparation for aging across various demographic groups.

10. The Authors

Pimchanok Vimolsathit is the Product and Digital Vice president at Dees Supreme Co., Ltd., and the Project Director of Service as a Robot Innovation Development at Obodroid Corporation Co., Ltd., both subsidiaries of DTGO Corporation Limited, Thailand. The second author--Theerapong Wiriyanon--is a lecturer in the Department of Technical Education Technology, Faculty of Technical Education, King Mongkut's University of Technology North Bangkok, Thailand. Both authors have research interests in e-commerce business competencies, pre-elderly workforce development, and

the integration of technology and innovation in business and education.

11. References

An, C. (2023). The influence of interactive marketing of webcast platform on users' purchase intention mediated by perceived information quality. *RICE Journal of Creative Entrepreneurship and Management, 4*(3), 1–18. https://doi.org/10.14456/rjcm.2023.13

Chalermphol, B. (2019). *Development of training model for occupational competency of jig & fixture technician* [Doctoral dissertation, King Mongkut's University of Technology North Bangkok].

Kiewthong, K., & Wiriyanon, T. (2022). *Development of nutritional food cooking process model for readiness of pre-aging population* [Doctoral dissertation, King Mongkut's University of Technology North Bangkok].

Kumsuth, S. (2023). Competency-based curriculum to develop skills in the 21st century. *Dhonburi Rajabhat University Journal, 17*, 239–258.

Laparojkit, S., & Ek-uru, S. (2022). Motivation and reinforcements in the development of skills for career enhancement of pre-retirement seniors. *Burapha Journal of Business Management, 12*(1), 140–161.

National Statistical Office, Thailand. (n.d.). *Plan policy*. Retrieved April 26, 2025, from https://www.nso.go.th/nsoweb/category/t?set_lang=en

Nuangjamnong, C., Suesaowaluk, P., & Shinasharkey, T. (2024). Consumers' perception of e-service quality by internet service providers: A focus on satisfaction and loyalty. *RICE Journal of Creative Entrepreneurship and Management, 5*(3), 43–63. https://doi.org/10.14456/rjcm.2024.16

Numpradit, J. (2022). *A competency-based training curriculum development on application of enterprise architecture for digital technology project writing through project-based learning and cooperative learning* [Doctoral dissertation, King Mongkut's University of Technology North Bangkok].

Pengchuay, W., & Whattananarong, K. (2023). Development of learning model to enhance the elderly's digital competencies of media and information. *RICE Journal of Creative Entrepreneurship and Management, 4*(3), 19–36. https://doi.org/10.14456/rjcm.2023.14

Pholsward, R., Phakamach, P., & Panjarattanakorn, D. (2024). Technical and soft skills of university graduates in Thailand. *RICE Journal of Creative Entrepreneurship and Management, 5*(2), 38–55. https://doi.org/10.14456/rjcm.2024.9

Power BI Report. (n.d.). *Power BI dashboard report*. Retrieved April 26, 2025, from https://app.powerbi.com/view?r=eyJrIjoiYWYxNDUzOWEtOWMyOS00MjMzLWFiY2QtYjQzYzQ2OTZkNTJjIiwidCI6Ijk5MjczNGE0LWRmZmEtNGZjMC1iNjc1LTY2ZWNmZTNhZmUwYyIsImMiOjEwfQ%3D%3D

Ratchavieng, A. (2020). Integrated marketing communication model of elderly care business in Thailand. *RICE Journal of Creative Entrepreneurship and Management, 1*(2), 26–36. https://doi.org/10.14456/rjcm.2020.8

Roopngamm, J., & Wiriyanon, T. (2023). *The development of a training model for enhancing the competency of garland maker* [Doctoral dissertation, King Mongkut's University of Technology North Bangkok].

Sinchindawong, S., & Klinkaesorn, P. (2020). Lifelong learning for the elderly. In *National Academic Conference and Selected Research Dissemination in the Field of Education: 'Digital Disruption in Education' (pp. 70–83)*. Chateau de Khaoyai Hotel.

Sawangkit, W. (2019). Development of elderly people’s information technology competency in Chiang Rai Province by competency-based training. *Journal of Chandrakasemsarn, 25*(2), 80–94.

Thana-Amornkan, A., Rakkusol, N., & Ramwarungkura, A. (2023). Guidelines on the development of construction foreman’s competency-based curriculum in the high-rise building industries. *Journal of Arts Management, 7*(3), 922–940.

Wetsanarat, N. (2021). Soft skill competency development to enhance competitiveness of Thai incentive travel industry. *RICE Journal of Creative Entrepreneurship and Management, 2*(1), 53–65. https://doi.org/10.14456/rjcm.2021.24

ISSN 2821-9074 (Online)
ISSN 2730-2601 (Print)
RICE Journal of Creative Entrepreneurship and Management, Vol. 6, No.1, pp. 93-102, January-April 2025
© 2025 Rajamangala University of Technology Rattanakosin, Thailand
doi: 10.14456/rjcm.2025.5
Received 2.10.24/ Revised 28.03.25/ Accepted 5.04.25

Guidelines for Sustainable and Environmentally Friendly Management of Fresh Markets in Nonthaburi Province

Sarakorn Pattanananchai[1*]
Siripong Rugmai[2]

[1] Master of Business Administration in Hospitality Business Management
Faculty of Hospitality Management
[2] Research and Innovation Center
[1, 2] Dusit Thani College
Bangkok, Thailand
[*] Corresponding author
[1] Email: 2201208511002@dtc.ac.th
[2] Email: siripong.ru@dtc.ac.th

Abstract

The objectives of this research are to (1) explore the concept of environmentally friendly and sustainable management of fresh markets in Nonthaburi province, (2) examine the current conditions, problems, and obstacles in managing fresh markets with an environmentally friendly approach in the province, and (3) propose guidelines for managing fresh markets in an environmentally friendly manner to ensure sustainability in the province. This qualitative research collected data from documents and in-depth interviews with 15 key informants, including market managers, vendors, and consumers in three fresh markets in Nonthaburi province. The research utilized observation records and semi-structured interview guides as tools, with data analyzed through content analysis. The findings revealed the *concept* of sustainable fresh market management in three main aspects: (i) waste management through waste separation and recycling, organic waste composting, and biogas energy production, (ii) wastewater treatment through a two-stage treatment process, and (iii) the use of clean energy, particularly solar power. (2) The *challenges and obstacles* faced by markets include a lack of resources and technology for waste management and a lack of prioritization of environmental measures during peak times. (3) The proposed *guidelines* for fresh market management include source-level waste management, wastewater treatment, and the utilization of clean energy.

Keywords: Fresh market, environmentally friendly, sustainability, wastewater treatment, recycling

1. Introduction

Environmental issues are increasingly close to home and have become a significant cause of various contagious diseases that adversely affect both short-term and long-term health (Gao & Zhan, 2024). These problems stem from a lack of knowledge and understanding of waste or sewage management (Phethastrakul, Khantanapha & Piriyakul, 2023; Phuriruengkit, Khantanapha & Piriyakul, 2023). The Environmental Office Region 6 has implemented a project to reduce waste in critical water bodies and manage water quality by conducting a pilot area survey in Nonthaburi province. The first water quality sample collection and analysis were conducted on

January 7-8, 2020, covering 11 canals, including Khlong Bang Yai and Khlong Wat Saothong Hin. The results revealed that the Water Quality Index (WQI) in surface water bodies ranged from 12 to 60 points, indicating that the overall water quality was in poor to very poor condition. The water quality was compared to Class 3 surface water standards, revealing problems with dissolved oxygen at 85%, organic pollution at 90%, total coliform bacteria at 85%, fecal coliform bacteria at 80%, and ammonia at 70% (Environmental Office Region 6, Nonthaburi, 2020).

One of the environmental issues is the improper waste disposal from wet markets and residential areas (Phonlawut, 2020; Janthawiboon, 2021). The problems encountered include the lack of proper sewage disposal systems, unsanitary waste management practices, and inadequate energy use in buildings or food-selling areas. Most vendors lack the knowledge to properly handle wastewater and separate waste. Recognizing these issues, the Department of Natural Resources and Environment in Nonthaburi noted that urban expansion, dense populations, and waste from daily activities, industries, and agriculture contributed to the deterioration of water quality in the Chao Phraya River and the canals in Nonthaburi. Water quality assessments in 2020 indicated that most water bodies were in a state of poor to very poor quality, especially in densely populated urban areas where water quality is likely to worsen during the dry season, potentially affecting the community's water usage and aesthetics (Provincial Administration Organization of Nonthaburi, 2020).

The concentration of commerce in urban areas plays a key role in turning cities into trade hubs. These areas become sources of diverse raw materials and food, which attract populations and lead to the emergence of neighborhoods and small markets (Suwansaard & Saengaran, 2022). Wet markets in cities are not only important sources of food but also foster community interaction (Jaiphawang, 2022; Paiboonfukung, 2022). Wet markets are vital for maintaining social relationships in urban areas. Today, most markets continue to focus on selling fresh produce, particularly meat such as chicken, pork, fish, and beef. Some markets also sell dried food, vegetables, fruits, condiments, and spices, leading to the common reference as “wet markets.”

In 2015, the Sustainable Development Goals (SDGs), endorsed by 193 member states of the United Nations on September 25, 2015, set a global development framework with a 15-year timeline, running from 2016 to 2030. SDG 6, under the Planet dimension (environmental sustainability), aims to ensure the availability and sustainable management of water and sanitation for all, with six sub-targets for sustainable management (Thammasat University Sustainable Development Research Center, 2023). In 2021, the holistic economic development approach known as the Bio-Circular-Green (BCG) Model was introduced to address environmental challenges (Meepradit, 2022). The BCG Model emphasizes three interconnected areas: bioeconomy, circular economy, and green economy, aiming to maximize resource efficiency, ensure long-term sustainability, and promote environmental responsibility. The BCG Model plays a crucial role in fostering sustainable communities and societies (National Science and Technology Development Agency, 2021).

By integrating the BCG Model and the Sustainable Development Goals (SDGs) into the management of environmentally friendly wet markets, resource, energy, and

economic cycles can be created to mitigate the environmental impacts caused by inefficient market operations, paving the way for long-term sustainability. The continuous development of Nonthaburi has led to a growing hidden population, with statistics from the National Statistical Office in 2017 indicating over 8.07 million hidden residents across Thailand, of which 11.9% reside outside Bangkok. Nonthaburi has the largest daytime hidden population, with 214,000 workers and 42,500 students, contributing to 947,705 employment opportunities annually. Over the past five years, small and medium enterprises (SMEs) investing less than 2 million baht in Nonthaburi have increased from 1,607 to 1,900, driving economic activity in the area (Real Estate Nonthaburi, 2020).

The expansion of the population and businesses, along with increased commercial activity in markets, such as Bang Yai Fresh Market, has made Nonthaburi a vital area for economic growth. Bang Yai Fresh Market, one of the largest wet markets in the western region of Bangkok, serves as a major source of food and raw materials for both retail and wholesale. The market includes various sections, such as a day market, fruit market, meat market, and seafood zone, making it a key supplier of fresh food to the local community and beyond. The ongoing development of wet markets should therefore focus on environmental sustainability, waste reduction, efficient waste management, the use of clean energy, and resource conservation in accordance with the SDGs and the BCG Model. Success in these areas will not only serve as a national model but also contribute to global sustainable development efforts (Thammasat University Sustainable Development Research Center, 2023). Wet markets that adopt these practices will help preserve traditional markets as part of the sustainable future of local communities (Atcharhan, 2022; Paiboonkufung, 2022).

2. Research Objectives

The objectives of this research are to:

(1) Study the concept of environmentally friendly fresh market management for sustainability,

(2) Examine the current conditions, challenges, and obstacles in managing environmentally friendly fresh markets in Nonthaburi Province, and

(3) Propose guidelines for sustainable environmentally friendly fresh market management in Nonthaburi Province.

3. Research Methodology

This research is a qualitative study. Data was collected through both document research and in-depth interviews with 15 key informants, including 3 market managers, 6 market vendors, and 6 market customers. A semi-structured interview was used as the primary research tool to collect data on (i) market characteristics, (ii) structure, (iii) space allocation, (iv) environment, hygiene, (v) cleanliness, and (vi) waste management practices. The data was analyzed from documents to gather concepts related to environmentally friendly market management for sustainability. Additionally, non-participant observation records were used by the researchers to collect the types of data as gathered earlier in the interview framework.

4. Results

The obtained results are reported in relation to three research objectives under study.

Results in Relation to Objective 1: To study the concepts and theories related to the guidelines for sustainable environmentally friendly fresh market management in Nonthaburi Province. The research found that developing fresh markets to be environmentally friendly and sustainable in today's era requires adaptation to changing consumer behaviors, emphasizing environmental conservation, such as reducing plastic usage, promoting biodegradable packaging, and systematically managing waste and recycling. The study highlights the adoption of concepts from SDG 6 and SDG 7, as well as the BCG (Bio-Circular-Green) Model, as follows:

Water Management and Sanitation *(SDG 6):* Ensuring availability and sustainable management of water and sanitation for all. Fresh markets often use large amounts of water for cleaning and handling fresh produce. Implementing SDG 6 helps reduce water waste by installing water recycling systems or wastewater treatment systems, allowing water to be reused. Proper wastewater treatment from cleaning activities can reduce pollutants discharged into the environment, ensuring that water released from the market does not harm public health or the environment. A well-managed fresh market sanitation should have proper facilities, such as clean public restrooms and an efficient drainage system to prevent the spread of disease and water pollution.

Clean Energy Usage *(SDG 7):* Ensuring access to affordable, reliable, sustainable, and modern energy for all. Incorporating renewable energy sources, such as solar energy, can reduce reliance on fossil fuels. Solar panels can be installed on market rooftops or areas with sufficient sunlight, reducing electricity costs and environmental impact. Additionally, improving energy efficiency through LED lighting and efficient refrigeration systems can help lower energy consumption. Energy-saving sensors, like motion detectors, can be used to turn off lights in less frequently used areas, enhancing electricity efficiency.

BCG Model Application: *the BCG model* can also be applied to waste management in fresh markets through the following: (1) Bio Economy: Utilizing organic waste, such as leftover vegetables and fruits to produce compost or biogas and bio-fermentation liquids for cleaning market spaces. (2) Circular Economy: Emphasizing recycling and reuse principles, like sorting recyclable waste and promoting reusable packaging. (3) Green Economy: Reducing resource usage that generates pollution, promoting waste segregation at the source, and managing waste in eco-friendly ways.

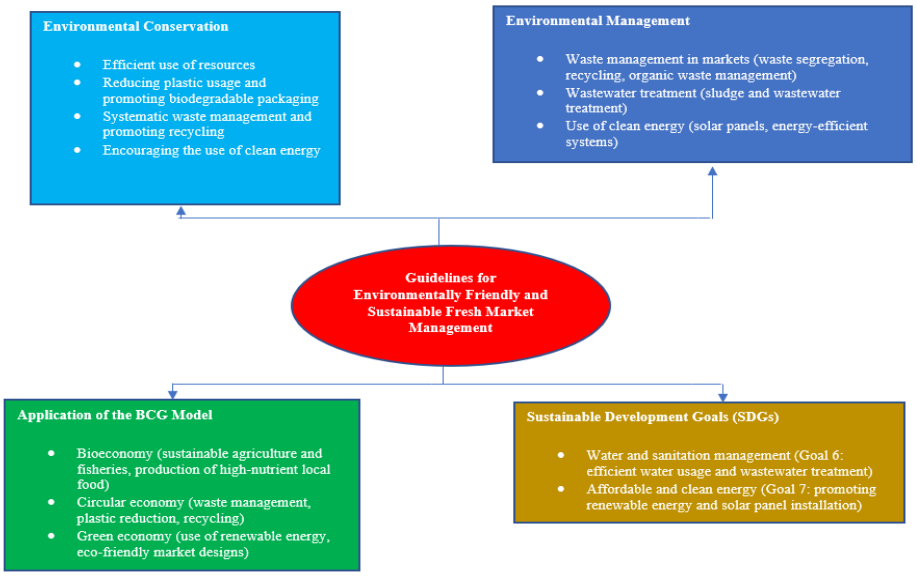
Results in Relation to Objective 2: To examine the current conditions, challenges, and obstacles in managing environmentally friendly fresh markets in Nonthaburi Province.

From interviews with three market managers, the researchers found negligence in environmental management measures during rush hours, leading to an increase in non-biodegradable waste like plastic and foam. The local municipality lacks resources and technology to handle such waste efficiently. Although there are policies supporting waste sorting, wastewater management, and clean energy use, the market operators lack knowledge and understanding, especially during busy times. Consumers expect cleanliness and proper waste management in markets, but existing issues with sanitation, waste

management, and pest control have led to dissatisfaction with the implemented measures. The development of fresh markets should focus on improving environmental standards to meet with consumer expectations and ensure confidence in cleanliness, hygiene, and sustainability. Key issues observed include (1) Physical Challenges from unsystematic waste management affecting market cleanliness and hygiene; and poor air circulation and unpleasant odors due to inadequate ventilation in some market areas. (2) Waste and Environmental Management Measures lack clear communication and insufficient resources for spreading environmental management policies, resulting in insufficient compliance from both vendors and customers. (3) Cooperation is required during rush hours; vendors and customers often neglect environmental measures, prioritizing speed and convenience over basic environmental care.

Results in Relation to Objective 3: To propose guidelines for sustainable eco-friendly fresh market management in Nonthaburi Province. Three key guidelines for environmental management in fresh markets are proposed: (1) Waste management sorting waste from the source into recyclable, organic, and general waste. The main issue is the lack of cooperation in waste sorting and insufficient bins. A solution could involve incentives, particularly a barcode system for employees who successfully sort waste. (2) Wastewater Treatment implementing floating or grease trap wastewater treatment systems to reduce odors and properly treat wastewater. Clean or Renewable Energy using solar energy for market lighting, can reduce reliance on unsustainable energy sources and support market sustainability. These guidelines not only reduce environmental impact but also increase community awareness and cooperation in environmental preservation. (See the diagram below.)

Diagram 1: Summary of Research Results



5. Discussion

The findings can be discussed according to the research objectives as follows:

Objective 1: To study the concepts of eco-friendly fresh market management for sustainability. From the study on environmentally friendly fresh market management

concepts, it was found that developing fresh markets to be environmentally friendly and sustainable is both necessary and challenging in the modern era due to changing consumer behaviors and increasingly persistent environmental issues, which were reported in two earlier studies by Phonlawut (2020) and Atcharhan (2022). Adaptation in various aspects is essential for fresh markets. The key concepts of sustainable environmental management focus on three main areas: waste management, wastewater treatment, and clean energy usage.

Waste Management: Waste sorting from the source and promoting recycling are critical. Fresh markets should have a clear waste management system, such as separating organic and inorganic waste. Organic waste can be used to produce compost or biogas, while inorganic waste can be reused or recycled. Encouraging the use of biodegradable packaging and reducing plastic usage can help lower the amount of waste and pollution.

Wastewater Treatment: A two-stage wastewater treatment system that separates heavy sediment and grease is necessary. Treating wastewater to meet standards before releasing it into natural water sources will help reduce environmental impact. Additionally, using modern technology in wastewater treatment can increase efficiency and cost-effectiveness.

Clean Energy Usage: Installing solar panels on market rooftops to reduce reliance on the main electricity grid and promoting solar energy use for lighting and energy management can help lower greenhouse gas emissions. Using renewable energy sources instead of fossil fuels will reduce air pollution. This aligns with the ideas of Meepradit (2022), who discussed the circular economy as a way to minimize the use of new resources and maximize the reuse of old ones, focusing on waste management, production, and consumption. Furthermore, the study by Supachatturat (2014) noted that each local fresh market has unique characteristics shaped by the lifestyle and commerce of the area. The emphasis on environmental conservation is becoming increasingly important, and future market development trends point toward community involvement and environmental sustainability (Yukerd, Srisorn & Bhaksuwan, 2021).

The study of the application of the BCG (Bio-Circular-Green) model and sustainable development principles (SDGs) will help establish globally recognized standards and practices for fresh markets in Thailand. Promoting the bio-economy, circular economy, and green economy is essential (Meepradit, 2022). The bio-economy supports sustainable agriculture and fisheries, producing nutritious food from local plants and animals. The circular economy emphasizes waste management and recycling, while the green economy promotes renewable energy usage and environmentally friendly market design. Furthermore, applying the SDGs, particularly Goal 6 (Water and Sanitation) and Goal 7 (Clean Energy), will contribute to the creation of eco-friendly and sustainable fresh markets in the long term.

The development of environmentally friendly and sustainable fresh markets requires adaptation in several areas, including waste management, wastewater treatment, and clean energy usage (Phethastrakul, Khantanapha, & Piriyakul, 2023; Phuriruengkit, Khantanapha & Piriyakul, 2023). The integration of the BCG model and

SDGs will help fresh markets in Thailand evolve into truly eco-friendly and sustainable markets in the future. This is consistent with the ideas of Jaiphawang (2022), who noted that implementing the BCG model in business development can drive rapid economic growth, distribute income and opportunities, and provide stability to local communities, helping Thailand to make a transition into a high-income nation, ensuring national sustainability for the future.

Objective 2: To examine the current conditions, challenges, and obstacles in managing environmentally friendly fresh markets in Nonthaburi Province.

From the interviews with fresh market managers in Nonthaburi Province, the researchers found that environmental measures have been neglected during peak hours. The use of plastic waste and foam containers increases significantly, and managing such waste becomes difficult due to a lack of resources and technology. The municipality is unable to handle the waste effectively, so all three markets have implemented policies to raise awareness and support waste sorting, wastewater management, and clean energy usage. These include installing wastewater treatment systems and energy-saving lights, in collaboration with the municipality and private sector. *Market operators* are aware of the importance of environmental preservation but often fail to adhere to environmental policies during busy times. *Most vendors* have basic knowledge of waste sorting and wastewater management and are interested in participating in training programs. However, there is still a lack of communication and public announcements regarding these initiatives. *Consumers* expect cleanliness, good lighting, dry and airy conditions, and effective waste management. However, current conditions in the fresh markets still include scattered waste, stagnant water, and unpleasant odors, which negatively impact the shopping experience.

It can be concluded that fresh markets in Nonthaburi Province need to elevate their environmental management standards to meet customer expectations and create a safer, more pleasant environment, thereby increasing their appeal. This aligns with the ideas of Rattanaphuangtong, Thongchai & Oboun (2020), who reported that customers at Ying Charoen Market in Bangkok prioritize the appearance of the market, as maintaining a clean, attractive atmosphere is a key factor in their decision to return. Similarly, the study by Phonlawut (2020) found that the environment and problems in fresh markets, particularly in areas selling prepared food, vegetables, and fresh meats, such as pork, chicken, and fish, affect customer foot traffic. Stagnant water and unpleasant odors discourage younger customers from visiting, impacting the market's image of cleanliness.

Objective 3: To propose guidelines for sustainable eco-friendly fresh market management in Nonthaburi Province

Environmental management in fresh markets is highly significant due to the intensive use of resources and the dynamic activities within these community spaces (Phonlawut, 2020; Janthawiboon, 2021). This study presents three key approaches for environmental management in fresh markets: waste management, wastewater treatment, and clean energy usage. These approaches offer effective solutions to improve the environmental quality of fresh markets.

Waste Management: Waste sorting from the source to the final destination is an efficient process to reduce the amount of waste requiring disposal. Dividing waste into

recyclable, organic, and general waste helps streamline waste management. The main challenge identified is *the lack of cooperation* in waste sorting and insufficient waste bins, leading to disorderly waste disposal. A proposed solution is to introduce incentives, such as *a barcode point system* for employees who successfully sort waste. This approach has the potential to increase cooperation and participation from all stakeholders in the market, leading to more efficient waste management (Rattanaphuangthong, Thongchai & Oboun, 2020; Jaiphawang, 2022).

Wastewater Treatment: Installing *floating wastewater treatment systems* or *grease traps* in accordance with environmental office regulations helps reduce odors and ensures wastewater treatment to a satisfactory level. The problem of incomplete wastewater treatment in some markets leads to the release of untreated water into the environment. A solution could involve installing additional treatment systems and conducting regular maintenance. Providing training on the operation and maintenance of wastewater treatment systems for vendors and users in the market is also essential.

Clean or Renewable Energy Usage: The use of *solar energy* in fresh markets, such as solar-powered streetlights and stall lighting, can reduce dependence on non-renewable energy sources and support sustainable market development. However, challenges include the high initial cost of installing solar equipment and the need for specialized knowledge for maintenance. A solution is to provide training on the maintenance and use of solar equipment to vendors and users in the market, as well as financial support from government and private sectors.

These three approaches not only help reduce environmental impacts but also raise community awareness and cooperation in environmental preservation. Having clear measures and incentive programs will ensure continuous and sustainable operations. Additionally, developing fresh markets with strong environmental management will enhance the market's image, attract more customers, and create a safer and more livable environment for the community.

6. Conclusion and Recommendations

The study on sustainable and environmentally friendly fresh market management in Nonthaburi Province highlights the importance of adopting environmental management practices in fresh markets. As community hubs with intensive resource usage, fresh markets must implement effective strategies to minimize their environmental impact. The research identified three key approaches—*waste management, wastewater treatment, and the use of clean energy*—which are essential for improving environmental quality in fresh markets. Waste sorting from the source, wastewater treatment systems, and solar energy usage are viable solutions for addressing the environmental challenges fresh markets have to cope with.

However, such issues as a lack of cooperation, inadequate waste management infrastructure, and high initial costs of renewable energy systems could pose obstacles. To the researchers, these challenges can be mitigated through *better communication*, *training*, and *financial support from government and private sectors*. The findings emphasize the need for clear environmental policies, enhanced public awareness, and active community participation to ensure the sustainable management of fresh markets. By implementing these recommendations, fresh markets can enhance their image,

attract more customers, and contribute to the well-being of the local community while promoting long-term environmental sustainability.

7. Acknowledgements

This research has been successfully completed with the invaluable support and assistance of many individuals. The first author would like to express his grateful thanks to Dr. Siripong Rukmai for his invaluable guidance throughout the research process. Both authors truly appreciate kind assistance in data collection from the Director of Bang Yai Market, the Manager of Rama 5 Market, the Manager of Duangkaew Market, and especially the vendors and customers in the fresh markets.

8. The Authors

Sarakorn Pattanananchai is a graduate of the Master of Business Administration Program in Hospitality Business Management, Faculty of Hospitality Management, Dusit Thani College, Bangkok, Thailand. The co-author Siripong Rugmai, Ph.D., is the Director of Research and Innovation Center at Dusit Thani College, and research supervisor of the first author. Both authors share their research interest in the areas of business sustainability, environmentally friendly management, local fresh market operations, and current issues in retail business management.

9. References

Atcharhan, D. (2022). Development of food tourism under the BCG economic concept. *Valaya Alongkorn Review (Humanities and Social Sciences)*, *12*(2), 276–291.

Environmental Office Region 6 Nonthaburi. (2020). *Environmental management information*. Retrieved August 15, 2024, from https://epo06.pcd.go.th/th/information/list/2487

Gao, F., & Zhan, X. (2024). The influence of environmental, social and governance (ESG) ratings on credit ratings: A case study of Chinese listed companies. *RICE Journal of Creative Entrepreneurship and Management*, *5*(2), 81–106. https://doi.org/10.14456/rjcm.2024.12

Jaiphawang, K. (2022). The relationship between business resources, strategies for creating competitive advantages, and operations according to the BCG economic model of community enterprises in Chiang Rai Province. *Journal of Social Sciences and Buddhist Anthropology*, *7*(12), 1091–1106.

Janthawiboon, A. (2021). Development of fresh market (type 1) model based on new normal. *Journal of Health Promotion and Environmental Health*, *44*(3), 90–102.

Meepradit, K. (2022). *The use of circular economy for national and Thai social development* [Unpublished manuscript]. Silpakorn University.

National Science and Technology Development Agency. (2021). *BCG by NSTDA*. Retrieved July 25, 2024, from https://www.nstda.or.th/home/knowledge_post/bcg-by-nstda/

Paiboonfukung, C. (2022). Development of Sampran Old Market as a Thailand 4.0 model market. *Journal of Innovation in Management and Management*, *10*(2), 13–22.

Phethastrakul, R., Khantanapha, N., & Piriyakul, R. (2023). Management model for green corporate image. *RICE Journal of Creative Entrepreneurship and Management*, *4*(1), 1–13. https://doi.org/10.14456/rjcm.2023.1

Phonlawut, C. (2020). Guidelines for quality management of services in fresh markets. *Journal of Humanities and Social Sciences, Bansomdejchaopraya Rajabhat University*, *14*(1), 129–146.

Phuriruengkit, D., Khantanapha, N., & Piriyakul, R. (2023). Management model for environmentally friendly business operations of industrial factories in Nakhon Ratchasima Province. *RICE Journal of Creative Entrepreneurship and Management*, *4*(1), 79–94. https://doi.org/10.14456/rjcm.2023.6

Provincial Administration Organization of Nonthaburi. (2020). *Environmental management information*. Retrieved July 12, 2024, from https://nonthaburi.mnre.go.th/th/information/list/150

Rattanaphuangthong, N., Thongchai, N., & Oboun, N. (2020). The buyer satisfaction at Ying Charoen Market, Saphanmai, Bangkok. In *The 15th Sripatum University National and International Conference 2020 Proceedings* (pp. 618–626). Bangkok, Thailand. Retrieved August 15, 2024, from https://dspace.spu.ac.th/items/0e55ba5b-e743-4bcd-8f79-5a1e7101b78f

Real Estate Nonthaburi. (2020). *Nonthaburi is now more than a city that grows in tandem with Bangkok*. Retrieved June 15, 2024, from http://realestatenonthaburi.or.th/articles/27

Supachatturat, R. (2014). *Fresh markets in Suphanburi Province: Patterns, developments and their present uses* [Master's thesis, Silpakorn University]. SURE Silpakorn University Repository. https://sure.su.ac.th/xmlui/handle/123456789/11236

Suwansaard, S., & Saengaran, N. (2022). Three factors affecting consumers' decision-making on buying food materials: A case of the fresh market in Putthamonthon District. *RICE Journal of Creative Entrepreneurship and Management*, *3*(2), 16–26. https://doi.org/10.14456/rjcm.2022.8

Thammasat University Sustainable Development Research Center. (2023). *Sustainability Report 2023*. Retrieved August 3, 2024, from https://sdgs.tu.ac.th/2024/11/10/tusdr2023/

Yukerd, C., Srisorn, W., & Bhaksuwan, S. (2021). Community involvement in sustainable management: Case studies of fresh market waste management model New Happyland, Bueng Kum District, Bangkok. *Journal of Multidisciplinary in Humanities and Social Sciences*, *4*(2), 713–726.

ISSN 2821-9074 (Online)
ISSN 2730-2601 (Print)
RICE Journal of Creative Entrepreneurship and Management, Vol. 6, No.1, pp. 103-115, January-April 2025
© 2025 Rajamangala University of Technology Rattanakosin, Thailand
doi: 10.14456/rjcm.2025.6
Received 2.10.24/ Revised 27.03.25/ Accepted 31.03.25

Empowering BCC Spirit Traits and Good Student Qualities by Using LINE Front-end Framework (LIFF) Application: A Case Study of Bangkok Christian College

Wichai Srisud[1]
Thaworn Intaraamorn[2*]
Eknarin Bangthamai [3]

[1]Deputy Director of Bangkok Christian College, Bangkok, Thailand
[2]Department of Educational Policy, Management, and Leadership
Faculty of Education
Chulalongkorn University, Bangkok, Thailand
[3]Department of Educational Technology
Faculty of Education
Silpakorn University, Bangkok, Thailand
[*]Corresponding author
[2]Email: thawornmds@gmail.com

Abstract

This study explores the empowerment of four BCC spirit traits—Loyalty, Honesty, Responsibility, and Unity—and six good student qualities, including Public-mindedness, Discipline, Politeness, Love of Learning, Appreciation of Thai Culture, and Environmental Awareness, through the application of the LINE Front-end Framework (LIFF) at Bangkok Christian College. The research aims to evaluate users' satisfaction with the application of LIFF to enhance the BCC spirit traits and good student qualities at Bangkok Christian College. The study used a mixed-methods approach to gather quantitative and qualitative data on user satisfaction and the impact of the application on primary students' characteristic development. The obtained results indicate a significant enhancement in the targeted spirit traits and student qualities, as reported by students, teachers, and parents. The findings underscore the application's effectiveness in promoting engagement, communication, and values-based learning. This research concludes that the integration of the LIFF application serves as a valuable resource in cultivating a positive school culture and nurturing future leaders with strong moral and ethical foundations. Recommendations for future research and potential expansions of this technological initiative in educational settings are also provided.

Keyword: *BCC spirit traits, good student qualities, LINE Front-end Framework (LIFF), Bangkok Christian College*

1. Introduction

The outbreak of the COVID-19 virus has significantly impacted classroom learning, prompting educational reform (Marketing Oops, 2020). UNESCO has estimated that over 363 million learners worldwide are affected by the COVID-19 crisis, with educational institutions in 15 countries across the Middle East, Europe, and North America closing their doors. In response, many schools and universities have adopted various technologies to facilitate online learning, with China being the first country to announce a halt to in-person classes. This shift forced both teachers and students to transition to online curricula. In the United States, schools began closing to prevent the spread of the virus, with top institutions like Harvard University

announcing a move to virtual education on March 23, 2020. Similarly, Princeton, Stanford, and many other leading universities in the U.S. were prepared to implement online learning to allow students to study remotely.

In Thailand, many schools quickly announced online learning methods once the COVID-19 crisis emerged, impacting all sectors, particularly education. While the pandemic has posed challenges, it has also accelerated the global educational reform movement, particularly in integrating technology into the learning system, allowing education to continue seamlessly regardless of location (Panpeng, 2022; Ratchavieng & Phakamach, 2024; Santhuenkaew, Jaikaew & Athikiat, 2024). Using chatbots for online teaching has emerged as an effective alternative, enabling various interactive learning formats. Teachers can use chatbots to respond directly to student inquiries, send questions or quizzes, and monitor student progress. An illustrative application is LINE, a messaging platform that facilitates chatbot development to enhance communication (LINE Developer, n.d.). In 2021, statistics showed that Thais spend approximately 216 minutes daily on social media, with LINE users dedicating an average of 67 minutes. The significant number of LINE users underscores its potential as an educational tool, making it an attractive platform for implementing chatbots, which strengthen connections between teachers, students, and parents (Ruttanapan & Saiyaitong, 2023).

In creating "Brand Loyalty," businesses in Thailand today recognize that simply meeting customers' needs in terms of “Place,” “Price,” and “Product” is no longer sufficient. They must also emphasize "Promotion" or "sales promotion," which plays a crucial role in building brand attachment. Many businesses currently utilize various sales promotion techniques, such as discounts and giveaways; however, these strategies may only satisfy customer demands temporarily and are not effective in fostering strong “Brand Loyalty.” Establishing a membership system through applications or LINE Official Accounts on LINE has emerged as an excellent alternative, allowing customers to register and access services easily and conveniently without redundant data entry. The LINE Front-end Framework (LIFF) is a key tool in creating "Brand Loyalty" through its In-App Website format, which enables customers to access the brand's webpage without the need to open a web browser, thereby reducing the gap between chatting in the app and accessing website information (Wong, Srisombat & Limpan, 2019). Furthermore, LINE LIFF allows for the seamless integration of existing LINE data, enabling brands to connect with customers easily and analyze data for further business development. Additionally, LINE LIFF supports the creation of a point accumulation and rewards redemption system within LINE Official Accounts, helping to build strong customer relationships and enhance sales promotions. LINE is also poised to play a key role in marketing communication, brand building, and driving various activities in the future (Ruttanapan & Saiyaitong, 2023).

Bangkok Christian College as the context of this research emphasizes the integration of technology to support education and the development of male students' characteristics to become gentlemen with the BCC spirit (Bangkok Christian College (2021). Its status as a private all-boys school crucially fosters positive traits and ethical behavior for the growth of its students. In addition to personal characteristics, Bangkok Christian College focuses on developing students' learning and athletic skills. The curriculum aligns closely with that of the Thai Ministry of Education, emphasizing the development of language, science, mathematics, and general cultural knowledge through practical teaching methods and experiential learning activities for students’ development (Ministry of Education, 2011). Moreover, the identity of learners, embodied in the BCC Spirit, is a key characteristic valued by Bangkok Christian College. The school has implemented programs to promote the educational development of its students, particularly through the use of technology and communication to create modern and engaging learning experiences.

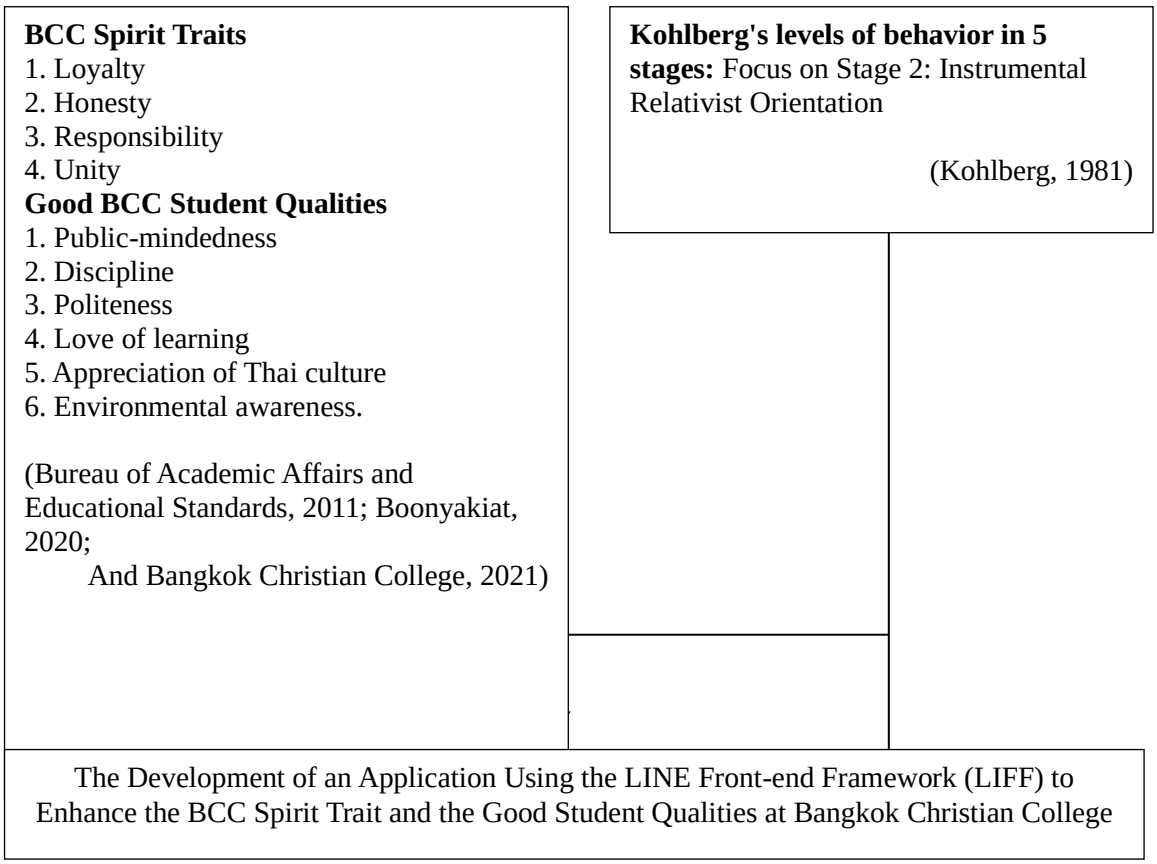
This technology- and communication-based program operates within the framework of

the Ministry of Education's curriculum and co-operative education, emphasizing self-understanding of content, leadership, and creativity among students. Importantly, the initiative prioritizes the development of integrated learning skills, utilizing technology to support and enhance students' capabilities across various areas. This program is one of many that Bangkok Christian College has implemented to ensure that students' learning experiences are relevant and effective in meeting the needs of contemporary learners. Given these considerations, there is an urgent need for research-based studies to develop and evaluate the application of the LINE Front-end Framework (LIFF) that aims to promote the BCC spirit attributes among primary students of Bangkok Christian College, particularly starting from the time of the COVID-19 pandemic.

2. Research Conceptual Framework

The researchers established a conceptual framework for the research by adopting BCC spirit traits (Loyalty, Honesty, Responsibility, and Unity) and good BCC student qualities (Public-mindedness, Discipline, Politeness, Love of learning, Appreciation of Thai culture, and Environmental awareness) according to the guidelines of Bureau of Academic Affairs and Educational Standards (2011); Boonyakiat, (2020); and Bangkok Christian College (2021). By these principles, the researchers aimed at Kohlberg's levels of behavior in five stages, particularly with a focus on Stage 2: instrumental relativist orientation (Kohlberg, 1981). The conceptual research framework is shown in Figure 1.

Figure 1: Conceptual Research Framework



3. Research Objectives

There were two objectives in this research:

(1) To develop an application using the LINE Front-end Framework (LIFF) to enhance the BCC spirit traits and good student qualities at Bangkok Christian College.

(2) To evaluate primary-student users' satisfaction with the application of the LINE Front-end Framework (LIFF) to enhance the BCC spirit traits and good student qualities at Bangkok Christian College.

4. Research Methodology

This study was quantitative in nature with descriptive research methods. The researchers developed an application using the LINE Front-end Framework (LIFF) to enhance the BCC spirit traits and good student qualities at Bangkok Christian College. Users' satisfaction with the application of the LINE Front-end Framework (LIFF) was evaluated regarding the extent to which the platform could enhance the BCC spirit traits and good student qualities at the college under study.

4.1 The Respondents

The population of this study was 2,611 primary students at Bangkok Christian College. At least 335 primary students were needed to be a part of the study, using Krejcie and Morgan Table (1970) with an error of 5 percent. A sample of 335 primary students were selected with their parents on a voluntary basis. The researchers also obtained feedback from administrators, teachers, and parents.

4.2 Research Instrument

The researchers used two questionnaires addressing (i) the factors affecting the respondents' use of the application and (ii) their satisfaction with the use of the Line Front-end Framework (LIFF) to enhance the BCC spirit traits and good student qualities.

The first questionnaire was in 2 sections: Section 1: demographic information of the respondents with 4 checklist items. The respondents were asked for gender, age, education level, current position; Section 2: the factors affecting the use of the LINE Front-End Framework (LIFF) to enhance the BCC spirit traits and good student qualities in 11 multiple choice items.

The second questionnaire was also in two parts evaluating the respondents' satisfaction with the use of the LINE Front-End Framework (LIFF) to enhance the BCC-spirit traits and good student qualities. Similarly, in Section 1, the respondents were asked for data on gender, age, education level, and current position. In Section 2, the respondents were to respond to 21 items on a 5-point rating scale regarding their satisfaction with the extent to which the LINE Front-End Framework (LIFF) could enhance the BCC spirit traits and good student qualities.

As for the instruments' validity and reliability, three content LIFF experts checked the questionnaire items for Item Objective Congruence (IOC) Index for content validity. Items with the IOC index above 0.5 were regarded as good and valid. Cronbach's alpha co-efficient equal to 0.966 was used for the reliability of the questionnaires at a very good level.

4.3 Data Collection and Analysis

The researchers informed the participating students under study and asked them to bring letters of consent to their parents for both permission and participation of requested data providers. The data collection period in 2024 was arranged for all participants—students, parents, teachers, and administrators.

All collected data from both questionnaires were analyzed for frequency, percentage, mean, and standard deviation.

5. Research Results

The demographic analysis revealed that 457 individuals participated (335 students and 122 parents/ teachers/ administrators), including 376 males (82.28%), 75 females

(16.41%), and 6 individuals who did not specify their gender (1.31%). Most respondents, 360 (78.77%), were students, with 145 (40.28%) in primary 5. Additionally, 61 participants (73.49%) were mothers.

The analysis also highlighted the factors, the application development, and users' satisfaction with the LINE Front-end Framework (LIFF) to enhance BCC spirit traits and good student qualities.

5.1 The Factors Affecting the Use of the LINE Front-end Framework (LIFF) to Enhance the BCC Spirit Traits and Good Student Qualities

Table 1: Factors Affecting the Use of the LINE Front-end Framework (LIFF) to Enhance BCC Spirit Traits and Good Student Qualities

Factor	M	SD	Level
1. The reliability of the LINE application	**4.06**	**0.94**	**High**
2. The appealing design of the LINE application	3.83	0.97	High
3. Convenience and speed of use	**4.27**	**0.93**	**High**
4. Recommendations from teachers/parents to try it	3.86	1.16	High
5. Recommendations from friends to try it	3.67	1.21	High
6. Personal belief in promoting BCC spirit traits by awarding points through the LINE application	3.66	1.16	High
7. Personal belief in promoting BCC spirit traits by redeeming rewards through the LINE application	3.66	1.16	High
8. Personal belief in the ability to communicate and express opinions with classmates/teachers through the LINE application	**4.07**	**1.05**	**High**
9. Personal belief in the ability to share information, scores, or results with friends, acquaintances, or the public through the LINE application	3.82	1.12	High
10. The LINE application having a point accumulation function for redeeming rewards	3.67	1.15	High
11. The LINE application having a reward redemption function	3.65	1.19	High
Total	**3.84**	**1.12**	**High**

Table 1 shows that the factors affecting the use of the LINE Front-end Framework (LIFF) to enhance BCC spirit traits and good student qualities were generally at a high level (M = 3.84, S.D. = 1.12). As for the individual aspects, the *convenience and speed* of using the LINE Front-end Framework (LIFF) was the factor with the highest average (M = 4.27, S.D. = 0.93), followed by

- *the personal belief* in the ability to *communicate* and express opinions with classmates/teachers through the LINE application (M = 4.07, S.D. = 1.05),
- *the reliability* of the LINE application (M = 4.06, S.D. = 0.94),
- *recommendations* from *teachers/parents* to try it (M = 3.86, S.D. = 1.16),
- *the appealing design* of the LINE application (M = 3.86, S.D. = 0.97),
- *personal belief* in the ability to *share* information, scores, or results with friends, acquaintances, or the public through the LINE application (M = 3.82, S.D. = 1.12),
- *recommendations* from *friends* to try it (M = 3.67, S.D. = 1.21),
- the LINE application having *a point accumulation* function for redeeming rewards (M = 3.67, S.D. = 1.15),
- *personal belief in promoting* BCC spirit traits *by awarding points* through the LINE application (M = 3.66, S.D. = 1.16),
- *personal belief in promoting* BCC spirit traits *by redeeming rewards* through the LINE application (M = 3.66, S.D. = 1.16), and

- the LINE application having *a reward redemption function* (M = 3.65, S.D. = 1.19).

5.2 Components of the LINE Front-end Framework (LIFF) to Enhance the BCC Spirit Traits and Good Student Qualities at Bangkok Christian College.

5.2.1 LINE Front-end Framework (LIFF) to Enhance the BCC Spirit Traits and the Good Student Qualities at Bangkok Christian College

LIFF consists of three main components:

1. LINE Front-end Framework (LIFF) includes a membership system, which features both automatic sign-up and sign-in through the LINE application, along with manual entry of membership information. The scoring system comprises four BCC Spirit traits: (i) Loyalty, (ii) Honesty, (iii) Responsibility, and (iv) Unity, and six qualities of a good BCC student qualities: (i) Public-mindedness, (ii) Discipline, (iii) Politeness, (iv) Love of learning, (v) Appreciation of Thai culture, and (vi) Environmental awareness. It includes an interface connecting administrators, teachers, students, and parents, allowing them to use the LINE application with the LIFF function to check evaluations, accumulate points, and redeem rewards.

2. The management system is used for handling evaluations, allowing for scoring individuals, entire classrooms, or grade levels, and keeping user history in the form of computer traffic data (Logfile).

3. The database system stores all information of the LINE Front-end Framework (LIFF) on the cloud. When updates are made in the admin backend management system, all users receive the latest information via the internet.

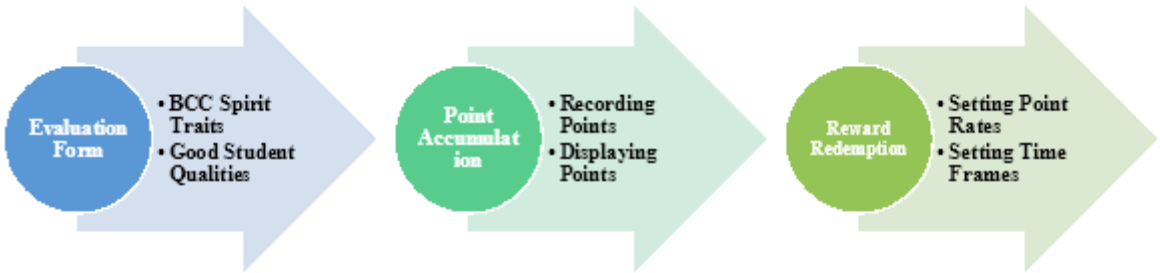
5.2.2 The Assessment of the BCC Spirit Traits and the Good Student Qualities at Bangkok Christian College

The assessment is divided into two parts:

1. In-class: This involves evaluating and scoring students based on specified attributes and qualities. Homeroom and subject teachers can evaluate and score every student in every class session. The scores obtained by the students can be used to enhance their attitude scores toward that subject.

2. Outside the classroom: This involves evaluating and scoring students based on observable behavior. All teachers can assess the students according to the specified attributes and qualities.

Figure 2: Prototype of the LINE Front-end Framework (LIFF) to Enhance BCC Spirit Traits and Good Student Qualities



The evaluation results from three experts of the LINE Front-end Framework (LIFF) application, on enhancing BCC spirit traits and good student qualities, revealed that overall, it was at a very good level (M = 4.69, S.D. = 0.35). When considering individual aspects, each had scored 4.00 or above, which met the criteria for a good level of

evaluation and above. This means that the LINE Front-end Framework (LIFF) application was able to enhance BCC spirit traits and good student qualities.

Figure 3: LINE Front-end Framework (LIFF) Member System Page

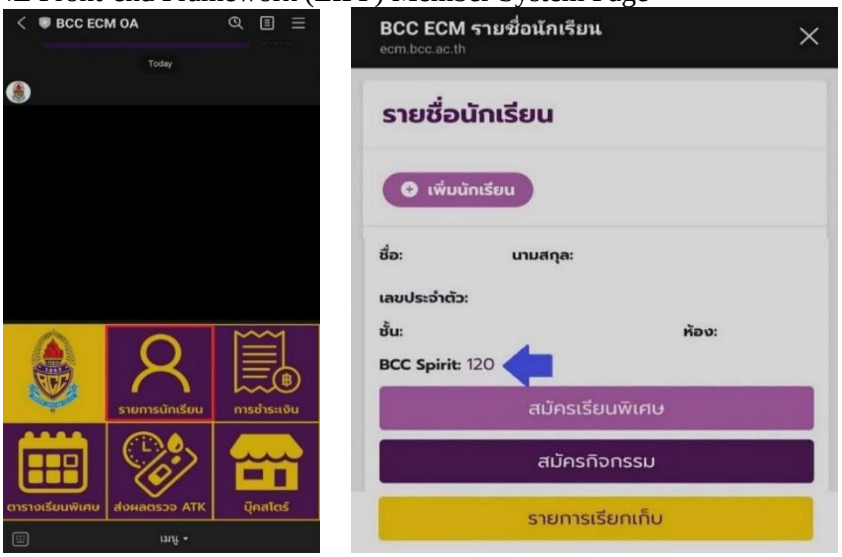
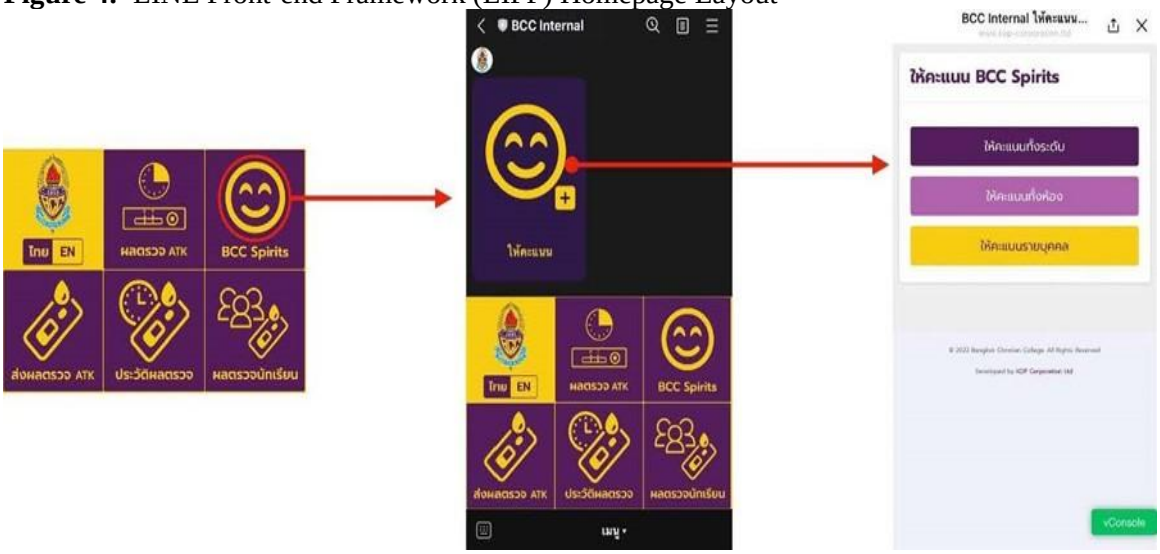
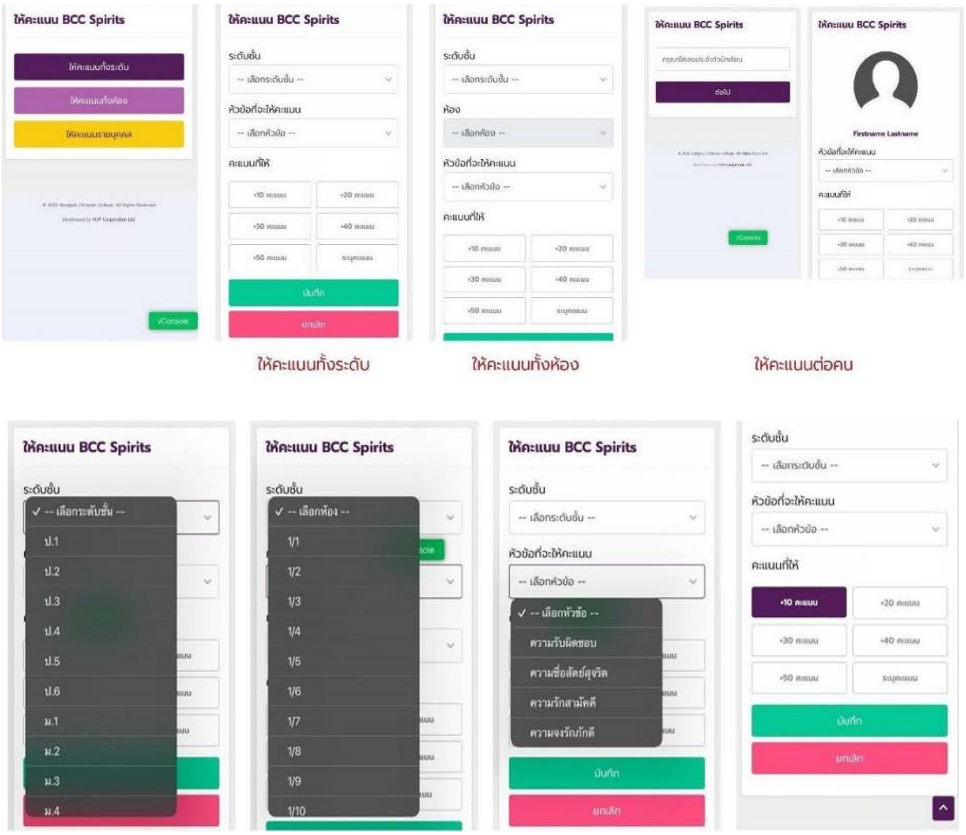


Figure 4: LINE Front-end Framework (LIFF) Homepage Layout



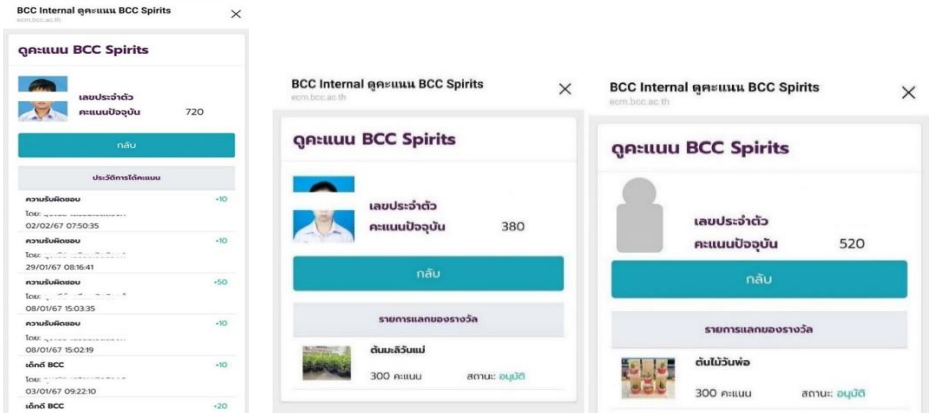
From this page, teachers can evaluate students and give scores to individuals, classes, and levels. Teachers can evaluate and give scores to everyone in every period based on their empirical behavior, BCC spirit traits and good student qualities.

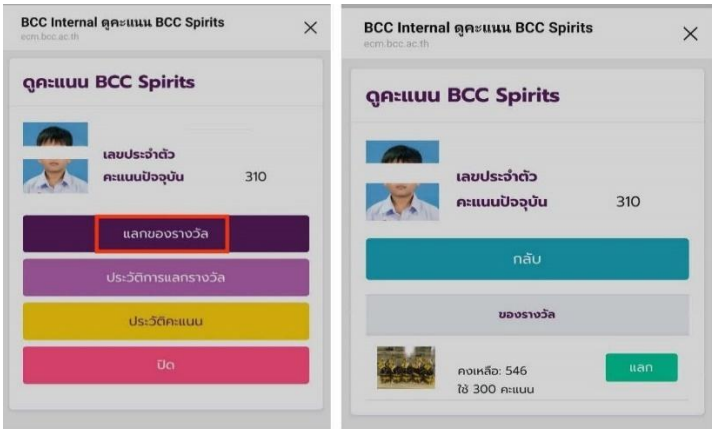
Figure 5: LINE Front-end Framework (LIFF) Scoring Page Layout



The students, parents, teachers, and administrators can view the score history through the LINE Front-end Framework (LIFF) application.

Figure 6: Outline of the LINE Front-end Framework (LIFF) – Score Viewing and Reward Redemption Page





5.3 The Satisfaction of the Respondents with the Use of the LINE Front-End Framework (LIFF) to Enhance the BCC Spirit Traits and Good Student Qualities

The second questionnaire yielded the results on the respondents' evaluation of their satisfaction with the use of LIFF, as shown in Tables 2 and 3.

Table 2: The Satisfaction of the Respondents with the Use of the LINE Front-end Framework (LIFF) to Enhance the BCC Spirit Traits and Good Student Qualities in Terms of Media

Satisfaction	*M*	SD	Level
1. The modernity and novelty of the technology	4.19	0.90	High
2. The appropriateness of the technology used for scoring	4.12	0.91	High
3. The appropriateness of the technology used for accumulating points	4.09	0.98	High
4. The appropriateness of the technology used for redeeming rewards	4.02	1.00	High
5. Convenience and ease of use	4.15	0.99	High
6. The appropriateness of the evaluation topics	4.00	0.94	High
Total	**4.09**	**0.96**	**High**

Table 2 reveals the overall satisfaction of the respondents with the use of the LINE Front-end Framework (LIFF) to enhance the BCC spirit traits and good student qualities in term of Media as high (*M* = 4.09, S.D. = 0.96). As for each aspect, the *modernity and novelty* of the technology received the highest satisfaction (*M* = 4.19, S.D. = 0.90), followed by *convenience* and ease of use (*M* = 4.15, S.D. = 0.99), the appropriateness of the technology used for *scoring* (*M* = 4.12, S.D. = 0.91), the appropriateness of the technology used for *accumulating points* (*M* = 4.09, S.D. = 0.98), the appropriateness of the technology used for *redeeming rewards* (*M* = 4.02, S.D. = 1.00), and the appropriateness of the *evaluation topics* (*M* = 4.00, S.D. = 0.94), respectively.

Table 3: The Satisfaction of the Respondents with the Evaluation of BCC Spirit Traits and Good Student Qualities by Using the LINE Front-end Framework (LIFF)

Using LINE Front-end Framework (LIFF)	M	SD	Level
1. Help students perform tasks automatically.	3.96	1.02	High
2. Make assessments easier.	4.01	0.98	High
3. Simplify score entry.	3.98	0.98	High
4. Encourage greater loyalty in students.	3.83	1.05	High
5. Promote greater honesty among students.	3.90	1.01	High
6. Foster increased responsibility in students.	3.95	1.03	High

Using LINE Front-end Framework (LIFF)	M	SD	Level
7. Encourage greater unity among students.	3.89	1.08	High
8. Promote greater public-mindedness in students.	3.90	1.07	High
9. Enhance students' discipline.	3.98	1.05	High
10. Encourage greater politeness in students.	3.82	1.09	High
11. Encourage a greater love of learning in students.	3.89	1.06	High
12. Encourage students to appreciate Thai culture more.	3.79	1.13	High
13. Promote greater environmental awareness in students.	3.85	1.11	High
14. Simplify point accumulation.	4.07	0.99	High
15. Make redeeming rewards easier.	4.00	0.98	High
Total	**3.92**	**1.04**	**High**

Table 3 indicates the overall satisfaction of the respondents with the evaluation of BCC spirit traits and good student qualities by using the LINE Front-end Framework (LIFF) as high (M = 3.92, S.D. = 1.04). As for each aspect,

- Simplifying *point accumulation* (M = 4.07, S.D. = 0.99) ranked highest, followed by making *assessments* easier (M = 4.01, S.D. = 0.98),
- Making *redeeming rewards* easier (M = 4.00, S.D. = 0.98), enhancing students' *discipline* (M = 3.98, S.D. = 0.98),
- Simplifying *score entry* (M = 3.98, S.D. = 0.98), helping students *perform tasks* automatically (M = 3.96, S.D. = 1.02),
- Fostering increased *responsibility* in students (M = 3.95, S.D. = 1.03), promoting greater *honesty* among students (M = 3.90, S.D. = 1.01),
- Promoting greater *public-mindedness* in students (M = 3.90, S.D. = 1.07), encouraging *greater unity* among students (M = 3.89, S.D. = 1.08),
- Encouraging a greater *love of learning* in students (M = 3.89, S.D. = 1.06),
- Promoting greater *environmental awareness* in students (M = 3.85, S.D. = 1.11), encouraging greater *loyalty* in students (M = 3.83, S.D. = 1.05),
- Encouraging greater *politeness* in students (M = 3.82, S.D. = 1.09), and
- Encouraging students to appreciate *Thai culture* more (M = 3.79, S.D. = 1.13), respectively.

6. Conclusion and Discussion

6.1 Conclusion

The study developed the application using LINE Front-end Framework (LIFF) to enhance four BCC spirit traits and six good qualities of Bangkok Christian College students. The application of LIFF to promote BCC spirit traits and good student qualities of Bangkok Christian College students was evaluated at a high level. The factors of BCC spirit traits and the evaluation of the good qualities of students were also at a high level, making it suitable for actual data collection during trials and actual use by the respondents under study.

As for the effects of using LINE Front-end Framework (LIFF) on enhancing BCC spirit traits and the good qualities of students, the respondents--students, parents, teachers, and administrators using LIFF--reported a significantly higher level of satisfaction compared to pre-use at the .05 level. The results evidently support LIFF as shown in the students' high satisfaction with BCC spirit traits and the good student qualities of at the .05 significance level.

6.2 Discussion

In discussing the obtained results, the researchers addressed two research questions on (i) developing an application using the LINE Front-end Framework (LIFF) to enhance the BCC spirit traits and good student qualities at Bangkok Christian College, and (ii) evaluating users' satisfaction with LIFF to enhance the BCC spirit traits and good student qualities at Bangkok Christian College.

The components and processes of the application using the LINE Front-end Framework (LIFF) to promote the BCC spirit traits and good student qualities at Bangkok Christian College successfully met the evaluation criteria at a high level. This is consistent with the findings of the Bureau of Human Resources Management, Royal Irrigation Department (2022), which appraised the use of the Line Official Account: HR Rid as effectively supporting personnel evaluations within organizations, enhancing required qualities set by the organization, and providing evaluators with convenience, accurate information, and accessibility anytime, anywhere.

The obtained results reveal that students, parents, teachers, and administrators showed a statistically significant increase in satisfaction at the .05 level. This indicates that LINE can reduce communication barriers in organizations, support work, and improve communication effectiveness. Additionally, the findings of Mitsophonsiri, Thangsathityangkui & Ongsuwan (2020) showed that the use of the LINE application aids in management tasks by collecting data, disseminating information, and receiving reports of issues. As shown in the obtained findings, the LINE application is suitable for work according to the Task-Technology Fit (TIF) theory, which includes eight factors: (i) quality of information, (ii) access rights to information, (iii) ease of information search, (iv) information compatibility, (v) ease of use, (vi) user acceptance, (vii) system reliability, and (viii) user relationships.

7. Implications and Suggestions

The findings can suggest and generate some practical implications for other educational institutions, depending on the needs of their context.

In promoting *positive behaviors*, educational institutions should prioritize utilizing information technology to be accessible to both students and parents. The research found that 67.65% of the respondents or stakeholders at Bangkok Christian College use mobile phones with the IOS operating system to access various information. This enables the school to develop appropriate assessment details and choose channels for accumulating and exchanging rewards that align with the information technology usage of students, teachers, and parents at the school. Based on such information, using the LINE Front-end Framework (LIFF) is another channel that allows teachers to better connect with students and fellow teachers in promoting BCC spirit traits. According to the obtained results, love of learning and preservation of Thai culture had the highest priority index. Therefore, in promoting BCC spirit traits in and out of the classroom through information technology, *teachers should emphasize assessments* using the LINE Front-end Framework (LIFF) to encourage students to be responsible, love learning, and preserve Thainess, providing a path to develop BCC spirit traits further.

When using the LINE Front-end Framework (LIFF) to promote BCC spirit traits and the good qualities of Bangkok Christian College students, it is important to study *assessments* clearly, and survey the readiness of students and parents. This includes

preparing their technology, such as smartphones and internet access, to fully engage in evaluations. Additionally, teachers should monitor and guide students and parents to prevent potential risk issues.

For future research, educational institutions should study the challenges and obstacles in using information technology to promote the characteristics and qualities of their students. This will help identify and address specific problems more accurately. As shown in this study, the level of students should be taken into consideration as the target group for student development. Future studies may consider examining different educational levels in secondary schools and higher education institutions.

8. Funding

This research was funded by Bangkok Christian College, Bangkok, Thailand, Fiscal Year 2023.

9. The Authors

The three authors are on the staff of educational institutions in Bangkok, Thailand. The first author Wichai Srisud is Deputy Director of Bangkok Christian College; the second author Thaworn Intaraamorn is a full-time lecturer in the Department of Educational Policy, Management, and Leadership, Faculty of Education Chulalongkorn University; and Eknarin Bangthamai is working for the Department of Educational Technology, Faculty of Education, Silpakorn University. The authors share their research interest in the areas of educational administration, student development and empowerment models, and digital applications to curriculum and instruction.

10. References

Bangkok Christian College. (2021). *Self-assessment report: SAR academic year 2021*. Bangkok: Bangkok Christian College.

Boonyakiat, S. (2020). *A Thai Christian theology*. Bangkok: Kanokbannasan Printing House.

Bureau of Academic Affairs and Educational Standards. (2011). *Guidelines to good student quality development*. Bangkok: Office of the Basic Education Commission, Thailand.

Bureau of Human Resource Management, Royal Irrigation Department, Ministry of Agriculture and Cooperatives. (2022). *Report on the evaluation of satisfaction with the use of Line Official Account: HR Rid for the fiscal year 2022*. Bangkok: Royal Irrigation Printing House.

Kohlberg, L. (1981). *The philosophy of moral development: Moral stages and the idea of justice (Essays on moral development, Vol. 1)*. New York: Harper & Row.

LINE Developer. (n.d.). *LINE Front-end Framework (LIFF)*. Retrieved July 12, 2024, from https://developers.line.biz/en/docs/liff/

Marketing Oops! (2020). *Marketing Oops! Summit 2020 is the largest MarTech conference of the year, bringing marketers to the next level of utilizing marketing technology and creating customer experiences*. Retrieved August 21, 2024, from https://www.marketingoops.com/news/biz-news/marketing-oops-summit-2020/

Ministry of Education. (2011). *Guidelines for the development of assessment and evaluation of desired characteristics according to the 2008 Basic Education Core Curriculum* (3rd ed.). Bangkok: Agricultural Cooperatives Printing House.

Mitsophonsiri, K., Thangsathityangkui, S., & Ongsuwan, S. (2020). Smart village management system via smartphone with Line API. *Kasem Bundit Engineering Journal*, 10(2), 165–194.

Panpeng, Y. (2022). Private universities staff communication using Line application program during the situation of COVID-19. *Journal of Social Innovation and Mass Communication Technology*, 5(2), 43–50.

Ratchavieng, A., & Phakamach, P. (2024). The development of a learning management system platform on historical Buddhist plant species in school botanical gardens in Thailand. *RICE Journal of Creative Entrepreneurship and Management*, 5(1), 47–64. https://doi.org/10.14456/rjcm.2024.4

Ruttanapan, M., & Saiyaitong, C. (2023). Development of Line chatbot for research services: A case study of Institute of Research and Development, Rajamangala University of Technology Thanyaburi. *Journal of Applied Research on Science and Technology (JARST)*, 22(1), 78–89.

Santhuenkaew, T., Jaikaew, S., & Athikiat, K. (2024). Information technology for school guidance. *RICE Journal of Creative Entrepreneurship and Management*, 5(1), 74–82. https://doi.org/10.14456/rjcm.2024.6

UNESCO. (2020). *COVID-19 educational disruption and response*. Retrieved August 20, 2024, from https://en.unesco.org/covid19/educationresponse

Wong, S., Srisombat, P., & Limpan, T. (2019). E-commerce in Thailand: Challenges and opportunities. *Journal of Southeast Asian Business Studies*, 25(3), 112–130.

Sharing Professional Viewpoint: **Entrepreneurial University**

Wichai Siriteerawasu
Rattanakosin International College of Creative Entrepreneurship (RICE)
Rajamangala University of Technology Rattanakosin (RMUTR), Thailand
Email: wichai.sir@rmutr.ac.th

1. Introduction

Entrepreneurial universities are currently reshaping the conventional university paradigm by fostering interactions to stimulate innovation within a knowledge-driven society. As known, universities globally are mandated to engage in pedagogy, scholarly inquiry, and contribution to regional economic development within the framework of the triple helix model, which encompasses the interactions among the state, academia, and industry, and is particularly advantageous for fostering innovation (Etzkowitz, Andrew, Christian & Branca, 2000). Regardless of whether they are classified as public or private institutions, the triple helix model has consistently demonstrated its effectiveness in driving entrepreneurial success and accomplishments across various higher education institutions (Etzkowitz, Andrew, Christian & Branca, 2000).

From this viewpoint, such institutions actively promote the commercialization and utilization of knowledge through entrepreneurial initiatives. These entities are often referred to as entrepreneurial universities (Premus, Nada & Ravi, 2003), which emphasizes such aspects as leadership, governance structures, organizational capabilities, human resources and motivational strategies, pedagogical approaches, entrepreneurial pathways, external partnerships, international collaboration, and impact assessment (EDI, 2017; Karen, 2015).

Furthermore, the United Nations (2017) has observed that entrepreneurial universities are revolutionizing the conventional university model by fostering synergies among higher education, industry, and government, a crucial element for innovation within a knowledge-driven society.

2. Entrepreneurial University

The concept of the "entrepreneurial university" was initially articulated by Etzkowitz (2003). Its implementation has been extensively adopted in various countries (Etzkowitz, 2014). To enhance the transfer of academic knowledge, premier entrepreneurial universities emerged as the pioneering generation advocating for new ventures, elucidating a comprehensive entrepreneurial framework, establishing forward-looking technology policies, and fostering collaborations between academia and industry.

Subsequently, a second generation emerged in Western Europe. Traditional universities evolved into entrepreneurial institutions, promoting the engagement of academic leaders. With the rise of nascent economies, a pronounced level of academic entrepreneurship was observed in this third generation (Dalmarcoa, Hulsinkb & Bloisa, 2018). Furthermore, the entrepreneurial university engages in social interactions, exercises autonomy, and navigates the dynamics between the state and industry (Kakouris & Liargovas, 2018). To accentuate the entrepreneurial mindset aligned with global transformations and the challenges

of the 21st century, it is imperative for universities to cultivate and adapt the notion of entrepreneurial universities and their associated practices (United Nations, 2017).

Numerous entrepreneurial universities have emerged from the initial to the third wave, reflecting the mechanisms of social transformation and economic progress. Entrepreneurial universities have acted as catalysts for social and economic development, particularly in the realms of entrepreneurship education, the transfer of entrepreneurial knowledge, the formation of new spin-off enterprises, and addressing both financial and cultural dimensions (Klofsten, Fayolle, Guerrero, Mian Urbano & Wright, 2019).

They also serve as pivotal forces in advancing technological innovation within an ambitious society, supported by both governmental and business sectors. They have generated new knowledge, fostered partnerships, and established strategic research frameworks (Guerrero, Cunningham & Urbano, 2015).

3. Entrepreneurial University and Triple Helix Model

The concept of the entrepreneurial university is intrinsically linked to the Triple Helix framework. A fundamental condition of the Triple Helix model is that *the university's augmented significance* in technology transfer, business creation and regional rejuvenation, situates itself in a *pivotal role within a knowledge-driven society*, in contrast with its subordinate function in an industrial society (Cai & Etzkowitz, 2020).

Etzkowitz's reflections on the Triple Helix model originated from his formulation of the entrepreneurial university, which he initially termed entrepreneurial science (Etzkowitz, 1983). The notion of the entrepreneurial university was subsequently refined alongside the development of the Triple Helix model by Etzkowitz and Leydesdorff. In 2004, Etzkowitz articulated *five principles* or propositions of the entrepreneurial university, encompassing: capitalisation, interdependency, independence, hybridisation, and reflexivity.

Subsequently, Etzkowitz and Zhou (2017) updated these propositions to delineate *five normative aspects* of the entrepreneurial university model, specifically: knowledge spillover, hybridisation, units operating as quasi-firms, entrepreneurial culture, and reflexivity. It is noteworthy that Clark (1998) and Röpke (1998) also introduced the entrepreneurial university concept during this timeframe, presenting perspectives that align closely with Etzkowitz's delineation of the principal attributes of an entrepreneurial university (Etzkowitz, 2017).

4. Conclusion and Reflection

This professional viewpoint shares the notion of entrepreneurial universities and their significance in promoting innovation and economic progress through the triple helix model, which underscores the importance of collaboration among universities, industry sectors, and governmental entities. Such transformation has evidently reshaped the conventional university paradigm and fostered interactions in stimulating innovation within a knowledge-driven society.

Particularly, the triple helix model contributes to entrepreneurial success in numerous universities worldwide. This framework facilitates the commercialization of academic research and promotes entrepreneurial initiatives within higher education

institutions. It bridges the newly designed curricula with prioritized community enterprises, which in turn determine innovative teaching methods, scholarly research, and the cultivation of university-industry synergies. Such development is critical for augmenting the entrepreneurial capabilities of these institutions, including effective leadership and governance, motivational incentives for personnel, educational pathways, external partnerships, international outreach, and metrics for assessing impact. Undeniably, the role of universities as facilitators for the so-called *commercialization research* via entrepreneurial endeavors, has led academia toward practical solutions that serve societal and economic needs.

5. The Author

Wichai Siriteerawasu, Ph.D. is a full-time lecturer at Rattanakosin International College of Creative Entrepreneurship (RICE), Rajamangala University of Technology Rattanakosin (RMUTR), Thailand. His research areas include educational management, English as a foreign language, English language teaching and learning.

6. References

Cai, Y., & Etzkowitz, H. (2020). Theorising the Triple Helix model: Past, present, and future. *Triple Helix,* 7(2–3), 189–226. https://doi.org/10.1163/21971927-bja10003

Clark, B. R. (1998). *Creating entrepreneurial universities: Organisational pathways of transformation.* New York: Pergamon.

Dalmarco, G., Hulsink, W., & Blois, V. G. (2018). Creating entrepreneurial universities in an emerging economy: Evidence from Brazil. *Technological Forecasting and Social Change,* 135, 99–111. https://doi.org/10.1016/j.techfore.2018.04.015

EDI. (2017). *EDII-TN entrepreneur news AICTE startup policy (newsletter).* http://www.editn.in/app/webroot/img/document/News_Letter_2017.pdf

Etzkowitz, H. (1983). Entrepreneurial scientists and entrepreneurial universities in American academic science. *Minerva,* 21(2–3), 198–233.

Etzkowitz, H. (2003). Research groups as "quasi-firms": The invention of the entrepreneurial university. *Research Policy,* 32(1), 109–121. https://doi.org/10.1016/S0048-7333(02)00009-4

Etzkowitz, H. (2004). The evolution of the entrepreneurial university. *International Journal of Technology and Globalisation,* 1(1), 64–77. http://inder-science.metapress.com/content/VFP58MEACN34AXNM

Etzkowitz, H. (2014). The entrepreneurial university wave: From ivory tower to global economic engine. *Industry and Higher Education,* 28(4), 223–232. https://doi.org/10.5367/ihe.2014.0211

Etzkowitz, H. (2017). Innovation lodestar: The entrepreneurial university in a stellar knowledge firmament. *Technological Forecasting and Social Change,* 123, 122–129. https://doi.org/10.1016/j.techfore.2016.04.026

Etzkowitz, H., & Zhou, C. (2017). *The Triple Helix: University–Industry–Government Innovation and Entrepreneurship* (2nd ed.). Abingdon: Routledge.

Etzkowitz, H., Webster, A., Gebhardt, C., & Terra, B. R. C. (2000). The future of the university and the university of the future: Evolution of ivory tower to entrepreneurial paradigm. *Research Policy,* 29, 313–330. https://doi.org/10.1016/S0048-7333(99)00069-4

Guerrero, M., Cunningham, J. A., & Urbano, D. (2015). Economic impact of entrepreneurial universities' activities: An exploratory study of the United Kingdom. *Research Policy,* 44(3), 748–764. https://doi.org/10.1016/j.respol.2014.10.008

Kakouris, A., & Liargovas, P. (2018). Editorial. *International Journal of Innovation and Regional Development,* 8(4), 281–287. https://www.researchgate.net/profile/Alexandros-Kakouris/publication/332414247_Editorial_The_entrepreneurial_university_across_regions/links/5cb43d2e4585156cd799313d/Editorial-The-entrepreneurial-university-across-regions.pdf

Karen, M. (2015). Six key elements of an entrepreneurial university. *(Online).* http://www.universityworldnews.com/article.php, February 3, 2025.

Klofsten, M., Fayolle, A., Guerrero, M., Mian, S., Urbano, D., & Wright, M. (2019). The entrepreneurial university as driver for economic growth and social change–Key strategic challenges. *Technological Forecasting and Social Change*, 141, 149–158. https://doi.org/10.1016/j.techfore.2018.12.004

Premus, R., Nada, S., & Ravi, J. (2003). Role of the university in regional economic development: The U.S. experience. *International Journal of Technology Transfer and Commercialization,* 2(4), 369–383. https://doi.org/10.1504/IJTTC.2003.003177

Röpke, J. (1998). *The entrepreneurial university: Innovation, academic knowledge creation and regional development in a globalised economy.* Marburg, Germany: Marburg Books.

United Nations. (2017). Entrepreneurial universities: Marrying scholarly research with business acumen—New trend releases the power of entrepreneurship from Africa. *(Online).*https://www.un.org/africarenewal/magazine/special-edition-youth-2017/entrepreneurial-universities-marrying-scholarly-research, February 15, 2025.

Peer Reviewers for RJCM Volume 6 Number 1

RJCM appreciation for our peer reviewers:

External Peer Reviewers:

Associate Professor Dr Kanchana **Chanprasert**
Specialist in Physics and Science Education
Chair of Physics Department
Faculty of Science
Rangsit University
Pathum Thani, Thailand

Associate Professor Dr Ranee **Esichaikul**
Specialist in Management Science
Department of Management Science
Sukhothai Thammathirat Open University
Nonthaburi, Thailand

Assistant Professor Dr Nattapong **Jantachalobon**
Specialist in Logistics, Tourism and Hospitality
Head of Aviation Business Department
Faculty of Business Administration
Rajamangala University of Technology Krungthep
Bangkok, Thailand

Assistant Professor Dr Suttisak **Jantavongso**
Specialist in Information Systems and Business Informatics
Director of Master of Science Program in International Digital Business (International Program)
Rangsit International College (RIC)
Rangsit University
Pathum Thani, Thailand

Associate Professor Dr Laddawan **Petchroj**
Specialist in Educational Management
Dean of Faculty of Liberal Arts
Rajapruk University
Nonthaburi, Thailand

Associate Professor Dr Aat **Pisanwanich**
Specialist in Econometrics, International Economy and Trade, and ASEAN Trade and Investment
Director of Center for International Trade Studies (CITS)
University of the Thai Chamber of Commerce
Bangkok, Thailand

Dr Purimprach **Sangkaew**
Specialist in Hospitality and Tourism Management
College of Innovation
Thammasat University
Pathum Thani, Thailand

Associate Professor Dr Sita **Yiemkuntitavorn**
Specialist in Language Communication,
Curriculum and Instruction
School of Educational Studies, Curriculum and Instruction
Sukhothai Thammathirat Open University
Nonthaburi, Thailand

Associate Professor Dr Chanin **Yoopetch**
Specialist in Tourism and Hospitality Management
College of Management
Mahidol University
Bangkok, Thailand

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 three-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-inches, 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 *after the guidelines given by Committee* 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://publicationethics.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*. The use of AI for mechanical error check is advisable, but for copyrighted text creation is unacceptable. 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 the 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 (3) 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 under the supervision of Thai-Journal Citation Index (TCI).

RJCM publishes three numbers per volume annually and welcomes contributors to submit their manuscripts 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 reviewed by three reviewers in each volume and published online-plus-print three times 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.



Rajamangala University of Technology Rattanakosin

RMUTR

RICE

Where Passions Turn Professions