

แบบฟอร์มการขอเสนอวาระเข้าที่ประชุม
คณะกรรมการประจำคณะกรรมการบริการและการท่องเที่ยว
เรื่อง รายงานผลการสำเร็จการศึกษาของ ผศ. คณพศ กาลเนาวกุล ภายใต้โครงการพัฒนาศักยภาพ
นักวิจัยเพื่อการศึกษาและวิจัยระดับปริญญาเอก ปี 2564-2566

ความเป็นมา

ตามที่ ผศ. ดร.คณพศ กาลเนาวกุล ได้รับอนุมัติทุนศึกษาต่อระดับปริญญาเอก ณ Taylor's University ประเทศมาเลเซีย จำนวน 564,472.00 บาท (ห้าแสนหกหมื่นสี่พันสี่ร้อยเจ็ดสิบสองบาทถ้วน) ตามสัญญาเลขที่ 64004 ลงวันที่ 15 กันยายน 2564 ภายใต้โครงการพัฒนาศักยภาพนักวิจัยเพื่อการศึกษาและวิจัยระดับปริญญาเอก ปี 2564-2566 จากกองทุนวิจัยคณะกรรมการบริการและการท่องเที่ยว

บัดนี้ ผศ.ดร.คณพศ กาลเนาวกุล สำเร็จการศึกษาระดับ Doctor of Philosophy (Ph.D.) (Hospitality and Tourism) จาก Taylor's University เมื่อวันที่ 17 มิถุนายน 2568 โดยมีค่าใช้จ่ายในการดำเนินโครงการทั้งสิ้น 489,248.88 บาท

ขั้นตอนที่ได้ดำเนินการไปแล้ว

ผลการดำเนินงานและการปิดทุนโครงการฯ ได้นำเสนอที่ประชุมคณะกรรมการวิจัยคณะกรรมการบริการและการท่องเที่ยว ในคราวการประชุมครั้งที่ 4/2569 เมื่อวันที่ 13 สิงหาคม 2569 และที่ประชุมมีมติเห็นชอบการปิดทุนโครงการฯ โดย ผศ.ดร.คณพศ กาลเนาวกุล ได้ดำเนินการตามเงื่อนไขการรับทุนครบถ้วนแล้ว

ประเด็นพิจารณา

จึงเสนอที่ประชุมคณะกรรมการประจำคณะกรรมการบริการและการท่องเที่ยว เพื่อพิจารณารับทราบการสำเร็จการศึกษาและการดำเนินงานตามเงื่อนไขการรับทุนของ ผศ. ดร.คณพศ กาลเนาวกุล



บันทึกข้อความ

ส่วนงาน สำนักงานบริหารคณะ คณะการบริการและการท่องเที่ยว โทร 6820

ที่ มอ 302.1/69-3842

วันที่ 19 สิงหาคม 2569

เรื่อง แจ้งมติที่ประชุมคณะกรรมการวิจัยเรื่องขออนุมัติปิดทุนโครงการพัฒนาศักยภาพนักวิจัยเพื่อการศึกษาและวิจัยระดับปริญญาเอก ปี 2564-2566 ราย ผศ.ดร.คณพศ กาลเนากุล

เรียน คณบดีคณะการบริการและการท่องเที่ยว

ตามที่ ผศ.ดร.คณพศ กาลเนากุล ได้รับอนุมัติสนับสนุนทุนศึกษาต่อระดับปริญญาเอก ณ Taylor's University Lakeside Campus ประเทศมาเลเซีย จำนวน 564,472 บาท (ห้าแสนหกหมื่นสี่พันสี่ร้อยเจ็ดสิบสองบาทถ้วน) ภายใต้โครงการพัฒนาศักยภาพนักวิจัยเพื่อการศึกษาและวิจัยระดับปริญญาเอก ปี 2564-2566 จากกองทุนวิจัยคณะกรรมการบริการและการท่องเที่ยว และได้รับหนังสือรับรองการสำเร็จการศึกษาเมื่อวันที่ 17 มิถุนายน 2568 โดยมีค่าใช้จ่ายทั้งสิ้น 489,248.88 บาท นั้น

ในการนี้ ที่ประชุมคณะกรรมการวิจัยประจำคณะกรรมการบริการและการท่องเที่ยว ในคราวประชุมครั้งที่ 4/2569 เมื่อวันที่ 13 สิงหาคม 2569 ได้พิจารณาแล้ว มีมติเห็นชอบ การขออนุมัติปิดทุน ราย ผศ.ดร.คณพศ กาลเนากุล ซึ่งเป็นไปตามเงื่อนไขของประกาศคณะกรรมการบริการและการท่องเที่ยว เรื่อง ทุนตามโครงการพัฒนาศักยภาพนักวิจัยเพื่อการศึกษาและวิจัยระดับปริญญาเอก ปี 2564-2566 สำหรับอาจารย์คณะกรรมการบริการและการท่องเที่ยว ฉบับลงนามวันที่ 8 ธันวาคม 2564 ทั้งนี้ จะแจ้งผลดังกล่าวต่อที่ประชุมคณะกรรมการประจำคณะเพื่อพิจารณาต่อไป

จึงเรียนมาเพื่อโปรดพิจารณา จะเป็นพระคุณยิ่ง


(รองศาสตราจารย์ ดร.ชยานนท์ ภูเจริญ)
รองคณบดีฝ่ายวิจัยและบัณฑิตศึกษา

เรียน คณบดี

เพื่อไม่ตกใจตก

- เน้นคณบดีให้หาที่ไม่ยอมคณะกรรมการประจำคณะ


19/8/69


19 สด 69

แบบฟอร์มการแจ้งการจบการศึกษาและการส่งผลงานวิจัย
โครงการพัฒนาศักยภาพนักวิจัยเพื่อการศึกษาและวิจัยระดับปริญญาเอก
(Form for Notification of Graduation and Submission of Research Outputs
Researcher Capacity Development Project for Doctoral Study and Research)

1. ประวัติส่วนตัว (Personal Information)

ชื่ออาจารย์ (Name) : คณพศ กาลเนาวกุล

ตำแหน่ง (Position) : ผู้ช่วยศาสตราจารย์

คณะ: คณะการบริการและการท่องเที่ยว (Faculty: Faculty of Hospitality and Tourism)

มหาวิทยาลัย: มหาวิทยาลัยสงขลานครินทร์ (University: Prince of Songkla University)

หมายเลขโทรศัพท์ (Phone Number): 095 2541416

อีเมล (Email) : kanapot.k@phuket.psu.ac.th

2. ข้อมูลการจบการศึกษา (Graduation Information)

ข้อมูลการศึกษา (Education Information)	รายละเอียด (Details)
ชื่อปริญญาเอก (Doctoral Degree Name)	Doctor of Philosophy (Ph.D) (Hospitality and Tourism)
สถาบันการศึกษา (Educational Institution)	Taylor's University, Malaysia
วันที่จบการศึกษา (Date of Graduation)	17 June 2025

3. รายละเอียดผลงานวิจัยที่ตีพิมพ์ในวารสารระดับนานาชาติ (Details of Research Published in International Journals)

3.1 ชื่อผลงานวิจัย (Research Title) Service quality, customer sentiment and online ratings of beach hotels: an analysis of moderating factors

3.2 ชื่อวารสาร (Journal Name) Journal of Hospitality and Tourism Insights

3.3 วันเดือนปีที่ตีพิมพ์ เลขที่เล่ม/ฉบับ/หน้า (Date of Publication, Volume/Issue/Pages)

Accepted 24 August 2024 / Vol. 8 / No. 3, 2025 / pp. 988-1009

DOI 10.1108/JHTI-06-2024-0591

4. รายละเอียด Manuscript ที่พร้อมส่งวารสารนานาชาติ (Details of Manuscripts Ready for Submission to International Journals)

4.1 ชื่อผลงานวิจัย (Research Title) A multi-method analysis of customer heterogeneity in hotel service quality dimensions

4.2 ชื่อวารสาร (Journal Name) Journal of Vacation Marketing

สถานะปัจจุบัน (Current Status) Awaiting Admin Processing

5. สรุปค่าใช้จ่าย (Summary of Expenses)

กรุณารายละเอียดค่าใช้จ่ายที่เกี่ยวข้องกับการรับทุน (Please provide details of the expenses related to the grant)

รายการค่าใช้จ่าย (Expense Item)	จำนวนเงิน (Amount)	หมายเหตุ (Remarks)
ค่าธรรมเนียมการศึกษา (Tuition Fees)	247,172.45	
ค่าใช้จ่ายในการทำงานวิจัย (Research Expenses)	64,731.20	Data collection
ค่าใช้จ่ายอันเกี่ยวกับการเรียน (Education-related Expenses)	196,733.24 - 21,337.02 = 175,396.22	International student charge, Enrolment fee, Annual fee, insurance, Visa application fee, E-Val, <i>International security deposit</i> , Thesis submission fee, Data analysis software
ค่าใช้จ่ายอื่นๆ (Other Expenses)	1,949.00	Bank fee
รวมค่าใช้จ่าย (Total Expenses)	489,248.88	หลังหักกลับเงินคืนค่ามัดจำ
งบประมาณที่เสนอขอรับทุน	564,472.00	สัญญาเลขที่ 64002 ลงวันที่ 15 กันยายน 2564
คงเหลือคืนคณะ	75,223.12 บาท	

6. เอกสารแนบ (Attachments)

กรุณแนบเอกสารสำคัญดังต่อไปนี้ (Please attach the following important documents:):

- สำเนาใบจบการศึกษา (Copy of the graduation certificate)
- สำเนาผลงานวิจัยที่ตีพิมพ์ (Copy of the published research paper)
- สำเนา Manuscript ที่พร้อมส่งวารสารนานาชาติ (Copy of the manuscript ready for submission to an international journal)



TAYLOR'S UNIVERSITY

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This is to certify that

KANAPOT KALNAOVAKUL

having satisfactorily completed the prescribed curriculum
and satisfied all the requirements of the award
has on the 17th day of June 2025
been conferred the

Doctor of Philosophy (Ph.D) (Hospitality and Tourism)

VICE-CHANCELLOR
AND PRESIDENT



REGISTRAR

Service quality, customer sentiment and online ratings of beach hotels: an analysis of moderating factors

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Abstract

Purpose – This study investigates the service quality dimensions of hotel resorts in renowned beach destinations of Thailand. It also explores the relationship between review text sentiment expressed in online platforms and the satisfaction ratings provided for those reviews.

Design/methodology/approach – The study employs a two-step analysis approach: first, supervised and unsupervised machine learning via support vector machine (SVM) and latent Dirichlet allocation (LDA) are used to identify service quality dimensions, and second, SmartPLS with PROCESS macro is applied to analyze the moderating roles of quality signals and reviewer's experience on the relationship between sentiment and satisfaction rating. The dataset comprises 102,179 online reviews from TripAdvisor, focusing on 187 selected hotels rated from 3 to 5 stars.

Findings – Eight service quality dimensions were identified, including leisure activities, tangibles and surroundings, reliability, responsiveness, service process, food, empathy and ambience. The study underscores that the service process stands as the sole dimension exhibiting negative sentiment. Furthermore, the analysis revealed a robust positive association between sentiment of review texts and satisfaction, and reviewers' experience and brand affiliation influenced the relationship between customer sentiment and satisfaction.

Practical implications – Hotel managers should focus efforts on maintaining tangible aspects while enhancing existing service quality level of other dimensions, particularly those related to intangible elements. Independent hotels might implement quality audit to ensure that service quality gaps are monitored.

Originality/value – This study contributes an examination of the moderating roles of quality signals and reviewer's experience on the relationship between review sentiment and satisfaction rating in online reviews.

Keywords Online reviews, Resort hotels, Service quality, Customer sentiment, Reviewer's experience, Star and affiliated hotel

Paper type Research paper

1. Introduction

Online reviews serve as crucial sources of information for prospective customers across various service sectors (Banerjee and Chai, 2019). They play a significant role in evaluating



service quality, especially in industries like banking, retailing, hotels and restaurants. Customers increasingly rely on electronic word-of-mouth when making decisions about products and services. As many as 70% of consumers consider suggestions and reviews in professionally created content (Banerjee and Chai, 2019; Turton, 2015). The widespread accessibility of the Internet and mobile devices has further fueled reliance on online guest reviews globally (Harris and Prideaux, 2017).

In the realm of travel services, online consumer reviews hold particular importance (Liu *et al.*, 2018). Travel and tourism, contributing in Thailand a significant approximately 5.8 billion US dollars to the GDP in 2021 and 7.7 billion US dollars in 2022 (Statista, 2022), are characterized by experience-based products with inherent uncertainties and consumption risks (Banerjee and Chai, 2019; Promsivapallop and Kannaovakun, 2017, 2018). Hence, travelers increasingly turn to online reviews to mitigate risks and uncertainties associated with travel experiences (Su *et al.*, 2022). According to a survey and statistics by TripAdvisor.com, a substantial percentage of travelers rely on online guest reviews to make booking decisions (Bridges, 2022), with over 90% of travel and hospitality business owners acknowledging their influence (Bridges, 2022; Gunasekar *et al.*, 2021).

Moreover, statistics from Google and Expedia indicate that travelers spend a considerable portion of their trip planning time online, with guest ratings often prioritized over a hotel's brand name (Bridges, 2022; Clarke, 2021; Temblador, 2019). Clearly the guest ratings play an important role in hotel selection. For instance, guests are willing to pay 35% more for a hotel with a 4.4 rating compared to one with a 3.9 rating, indicating a general willingness to pay more based on positive guest reviews. Participants in the study specified they would pay 24% more for a hotel rated 3.9 versus one rated 2.4, and 35% more for a hotel with a 4.4 rating compared to one with a 3.9 rating (Bridges, 2022; Temblador, 2019).

Various online travel platforms such as TripAdvisor, Booking.com, Agoda.com and Expedia, each with distinct purposes and review procedures, contribute to the wealth of online reviews. Notably, these platforms employ different rating scales, leading to potential confusion among reviewers (Martin-Fuentes *et al.*, 2021). Despite concerns about fake reviews, platforms like TripAdvisor (b2bhotels, 2021) stand out as essential resources for travelers, hosting millions of reviews across various hospitality sectors (Xiang *et al.*, 2017). As a result, online reviews within the hospitality sector have proliferated, with customers viewing customer ratings and textual reviews as more reliable than advertisements from service providers (Gunasekar *et al.*, 2021).

While many studies explore factors affecting customer satisfaction, recent research has also focused on using novel techniques (e.g. Guo *et al.*, 2017; He *et al.*, 2017; Kalnaovakul and Promsivapallop, 2023) to analyze online reviews in specific contexts like the hotel industry. For example, Khorsand *et al.* (2020) analyze TripAdvisor's online review data of hotels in Tehran by using eight different supervised machine learning models, including K-nearest neighbors (KNN), Naïve Bayes, decision tree, logistic regression, support vector machine (SVM), neural network, random forest and gradient boosting, to select the best method of predicting the future review ratings for a specific hotel, while Padma and Ahn (2020), use word frequency analysis to identify service quality related attributes of luxury hotels in Malaysia.

While previous studies have explored conceptual factors defining guest satisfaction from online reviews, recent research has delved into analyzing specific service quality dimensions and attributes (Kalnaovakul and Promsivapallop, 2023; Padma and Ahn, 2020). However, variations in observed service quality dimensions across different contexts pose a challenge, with a need for consistent identification. In the hospitality and tourism sector, analyzing online reviews has involved various analytical techniques, including text mining and sentiment analysis (Philander and Zhong, 2016). Leveraging these techniques can provide insights into both service quality dimensions and customer sentiment expressed in review text, beyond just the review ratings.

Recent technological advancements have made sentiment analysis, a technique utilizing algorithms to evaluate opinions in online review texts, practical (Ma *et al.*, 2018; Pang and Lee, 2008). This approach has become an essential tool for detecting positive or negative sentiments (Ma *et al.*, 2018). Increasingly, sentiment analysis, particularly through machine learning for text mining, is employed to assess service quality dimensions (Kalnaovakul and Promsivapallop, 2023; Taecharungroj and Mathayomchan, 2019), and to analyze guest experiences from online feedback (Schmunk *et al.*, 2014; Zhang *et al.*, 2016). However, performing sentiment analysis on online reviews requires preprocessing to convert unstructured text data (Lackermair *et al.*, 2013; Ma *et al.*, 2018) into structured numerical data, suitable for machine learning analysis (Cahyani and Patasik, 2021; Feldman and Sanger, 2007).

Despite the available data the relationship between overall satisfaction, as indicated by satisfaction rating, and sentiment expressed in the review text remains unclear (Zhu *et al.*, 2020). Moreover, factors like reviewer's experience and hotel attributes may influence this relationship, highlighting the need for further exploration. The hospitality and tourism industry faces unprecedented challenges, especially in wake of the global crisis due to the COVID-19 pandemic, prompting the need to reassess service quality dimensions (Jiang and Wen, 2020). Phase 1 of this study aims to investigate this by reevaluating these dimensions using online hotel guest reviews.

Furthermore, inconsistencies between review text sentiment and satisfaction ratings, coupled with concerns about reviewer bias, create challenges for hotel operators in managing online evaluations (Skotis *et al.*, 2023). Phase 2 of this study seeks to reinvestigate the poorly understood relationship between review text sentiment and satisfaction rating, specifically within the beach resort hotels category, including the role of factors like reviewer's experience and hotel attributes, such as star rating and brand affiliation, in influencing this relationship. Understanding roles of these factors could provide valuable insights for hoteliers in enhancing service performance.

2. Literature review

2.1 Evolution of online reviews

User-generated content, or online reviews, holds immense importance for marketers and managers, serving as electronic word-of-mouth that significantly impacts the purchasing decisions of other customers (Yang *et al.*, 2017). Hence, online reviews are a valuable resource for customers to save time and gather information from previous experiences (Chittiprolu *et al.*, 2021).

In studies of hotel service quality, various online review platforms have been prominently featured, including Agoda, Booking, Expedia and TripAdvisor. Researchers have utilized the platforms Agoda (Zhou *et al.*, 2014), TripAdvisor (Padma and Ahn, 2020) and Booking.com (Suvachart, 2021), all of which enable customers to contribute content conveniently at any time. This content ranges from textual reviews expressing opinions to satisfaction ratings and personal photographs, collectively providing valuable insights for other potential customers within the platform community (Chittiprolu *et al.*, 2021).

2.2 Service quality dimensions and hotel attributes

Consumer behavior theories, as proposed by Oliver (1980), underline the significance of comparing expected performance with actual performance, forming the confirmation/disconfirmation paradigm (Kandampully and Solnet, 2019). This comparison elicits emotional reactions from customers, shaping their satisfaction or dissatisfaction based on service experiences. Parasuraman *et al.* (1985) introduced the gap-based approach to measure the variance between customers' service expectations and perceived actual service, leading

to the creation of the SERVQUAL model. While many scholars highlight the outcomes of service quality measurement, such as customer satisfaction, loyalty, positive word of mouth and repeat business (Kandampully and Solnet, 2019), this study focuses solely on the impact of the service quality gap on satisfaction, excluding other consequences like loyalty and repeat patronage.

Numerous service quality dimension models have been proposed in prior research, for example, SERVQUAL, DINESERV and HOLSERV. These models, rooted in various contexts, offer diverse methods for evaluating guest experiences. The SERVQUAL model, with its five dimensions (tangibles, reliability, responsiveness, assurance and empathy), serves as the basis for evaluating service quality (Luo and Qu, 2016). In this study, focusing on online guest reviews regarding specific hotel destinations, the aim is to ascertain guest experience dimensions and their alignment with existing models. Thus, validating and proposing a new study utilizing a more recent dataset of online reviews becomes imperative to glean insights into guest experiences and sentiments.

2.3 *TripAdvisor and sentiment analysis of online reviews*

TripAdvisor is a rich source of hotel data, providing review details, ratings and contributor information (Chang *et al.*, 2019). Researchers often use TripAdvisor data for diverse studies in hospitality and tourism (Banerjee and Chua, 2016). The “Reviewer Badges” program on TripAdvisor recognizes and rewards active contributors (TripCollective *faqs*, 2023). Badges signify expertise, while helpful votes enhance review credibility (Liu *et al.*, 2018).

Recent technological advances have made sentiment analysis of online reviews feasible (Ma *et al.*, 2018). It is a valuable tool for evaluating service quality dimensions and guest experiences (Kalnaovakul and Promsivapallop, 2023). Sentiment analysis involves preprocessing and classification steps, which can be done through programming or commercial software (Ma *et al.*, 2018). KNIME software was chosen, in this study, for its flexibility and user-friendly interface.

TripAdvisor, due to its reliability, is selected for online review analysis in this study, and it has also been previously used in many studies (Peres and Paladini, 2021; Taecharungroj and Mathayomchan, 2019). Machine learning techniques will be employed for data analysis (Kalnaovakul and Promsivapallop, 2023). This study aims to identify service quality dimensions (Kalnaovakul and Promsivapallop, 2023) and conduct sentiment analysis. Phase 1 will focus on data dimensionality reduction, while Phase 2 will involve sentiment analysis of review text.

2.4 *Theoretical framework*

2.4.1 Confirmation/disconfirmation. The confirmation/disconfirmation paradigm, rooted in the expectancy/disconfirmation theory (Swan and Comb, 1976), is fundamental for evaluating service quality. According to this theory, customer satisfaction hinges on the confirmation or disconfirmation of their expectations during the service encounter. Positive or negative disconfirmation, along with confirmation, determines customer satisfaction levels (Luo and Qu, 2016; Kandampully and Solnet, 2019). Derived from the expectancy/disconfirmation theory, several models assess service quality, adapted to specific contexts or industries and resulting in variations in dimensions and attributes. Examples include DINESERV for restaurant service (Stevens *et al.*, 1995), and HOLSAT for holiday satisfaction (Tribe and Snaith, 1998). These models share the customer-oriented quality concept but vary in contextual adaptation.

Despite its widespread use in service quality research (Oliver, 1980), this paradigm presents challenges in interpreting online reviews due to the absence of prior expectations. To overcome this challenge, the SERVPERF model (Cronin and Taylor, 1992) offers a performance-based approach that does not rely on comparing perceived performance to prior

expectations (Luo and Qu, 2016). SERVPERF employs the same five dimensions as SERVQUAL and aligns with the expectancy/disconfirmation theory, making it suitable for analyzing online review data (Luo and Qu, 2016; Swan and Comb, 1976).

2.4.2 Sentiment analysis. Sentiment analysis, a methodology employed here, scrutinizes customer satisfaction and dissatisfaction via online reviews. Scholars have traditionally utilized either review text or satisfaction rating data for this purpose (Sparks *et al.*, 2016). However, due to incongruities in results obtained solely through review text analysis, Han (2021) advocates an approach integrating both review text and satisfaction ratings as variables representing reviewer satisfaction. The satisfaction rating, an overall evaluation given by reviewer, assesses a hotel, while the review text provides a platform for reviewer to articulate feelings and experiences in detail (Han, 2021).

These expressions in review text may span various service quality dimensions and perceptions regarding diverse aspects of the hotel's services. Positive words are likely to characterize satisfied dimensions, whereas negative words typically emerge in discussions of negative dimensions. Consequently, the sentiment derived from the review text may diverge from the overall satisfaction judgment represented by the satisfaction ratings. Zhu *et al.* (2020) highlighted the positive correlation between review text sentiment and satisfaction with peer-to-peer accommodation, while Geetha *et al.* (2017) investigated the relationship between review text sentiment and satisfaction with budget and premium hotels, indicating that review text sentiment can explain satisfaction but its relationship is not consistent across the hotel categories premium and budget.

Skotis *et al.* (2023) suggested that inconsistencies between review text sentiment and satisfaction can create confusion, and recent studies have recognized this as an issue requiring further research and new methodologies (Shan *et al.*, 2018). Thus, Phase 2 of this study aims to reinvestigate the relationship between review text sentiment and satisfaction under the beach resort hotels category. Therefore, the following hypothesis was developed:

H1. The sentiment of review text is positively associated with the satisfaction rating.

2.4.3 Reviewer's experience as a moderating variable. Regarding the above discussion about the gap and inconsistency between review text and satisfaction rating, this gap has also been highlighted and studied in product reviews by Lackermair *et al.* (2013). Meanwhile, the gap has also been studied by Geetha *et al.* (2017) in the service industry, including the hotel context. However, this present study aims to further investigate the factors influencing the magnitude of the gap between review text sentiment and satisfaction ratings, a topic that no previous study has addressed. These factors may include signals from reviewer characteristics (e.g. experience) and/or hotel attributes such as star rating and brand affiliation.

In reviewer characteristics regarding online reviews, the terms "experience" and "expertise" are commonly used. "Experience" denotes familiarity with a specific subject, often gained through repeated exposure, while "expertise" signifies proficiency and knowledge within a subject area (Braunsberger and Munch, 1998). Additionally, reviewer experience, as defined by Huang *et al.* (2015), quantifies the time and involvement, representing the total number of reviews contributed. In online reviews, "reviewer experience" and "reviewer expertise" are often used interchangeably due to the correlation between experience and review quality (Huang *et al.*, 2015). Han (2021) suggested that reviewer expertise significantly influences satisfaction, with highly skilled reviewers often expressing negative sentiments to maintain online reputation (Guo and Zhou, 2016).

Consequently, they assign lower satisfaction and include more negative content in their reviews (Dezhi *et al.*, 2014). Moreover, high-expertise reviewers establish stringent assessment criteria due to extensive consumption experience, making them more likely to express dissatisfaction (Lawrence and Perrigot, 2015). As discussed, reviewer experience on TripAdvisor is reflected in contributions, evidenced by the reviewer badges program. These

badges indicate travel frequency and experience, aligning with the reviewers' level of expertise, thus serving as crucial data for analysis in this study. Therefore, the following hypothesis was developed:

H2. The relationship between the sentiment of review text and the satisfaction rating is moderated by the reviewer's experience.

2.4.4 Quality signaling theory. Spence (1973) introduced signaling theory in economics, emphasizing the supplier's need to convince consumers of product quality. Suppliers often use quality certifications as signals to address information asymmetry (Chen and Xie, 2017), with consumers relying on these observable signals to mitigate risks (Yang et al., 2016), while Sparks et al. (2016) highlight third-party signals as more credible. Customers' perceptions of quality signals significantly shape their expectations of service or product quality. In the hotel industry, unobservable service quality is indicated by quality signals like star ratings and brand affiliation (Belter-Delgado et al., 2020; Castro-Lopez et al., 2022).

Hotel star rating systems, jointly identified by United Nations World Tourism Organization (UNWTO) and International Hotel and Restaurant Association (IHRA), classify accommodation establishments based on common characteristics (Rajaguru and Hassanli, 2018). While the star rating influences perceptions of service quality (Ye et al., 2014), a higher rating does not always guarantee superior service quality (Fernández and Bedia, 2004).

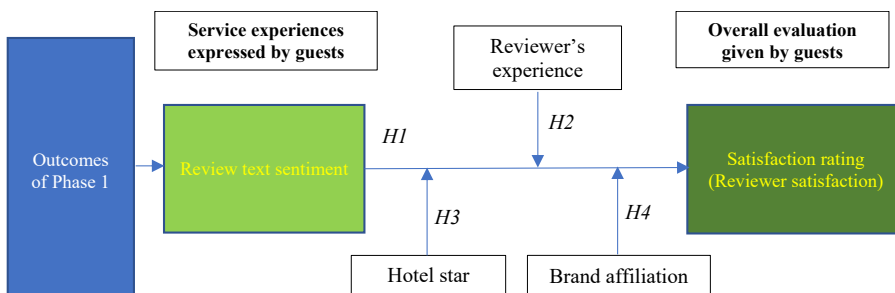
There is limited research regarding the moderating role of hotel chain, hotel affiliation or hotel brand in the literature. One study focused on how hotel chain brands moderate the relationship between the power distance of customers and hotel online rating (Gao et al., 2018), while another study by Maghzi et al. (2011) focused on brand trust in the hotel industry. Maghzi et al. (2011) argued that the role of the brand, as an external cue to quality, is highly significant in selecting a hotel. Given the lack of research on the role of the brand in initial or subsequent hotel accommodation purchases, Maghzi et al. (2011) proposed that their study provides valuable knowledge for hotel chain managers.

Therefore, the following hypotheses were developed:

H3. The relationship between the sentiment of review text and the satisfaction rating is moderated by the hotel's star rating.

H4. The relationship between the sentiment of review text and the satisfaction rating is moderated by brand affiliation.

The framework of this study will investigate the relationship between the sentiment of the review text and the satisfaction rating, considering the moderating effects of several factors such as reviewer's experience, hotel star rating and brand affiliation, as illustrated in Figure 1.



Source(s): Authors' own creation/work

Figure 1.
The conceptual
framework of phase 2

3. Methodology

3.1 Phase 1

This study employs quantitative analysis, utilizing text mining and machine learning techniques to analyze underlying service quality dimensions (topics) perceived by customers through online reviews. It also aims to identify the sentiment of each service quality dimension, whether it reveals positive or negative sentiment. The research framework for Phase 1 is directly pertinent to [Hypothesis 1](#), and execution will utilize the KNIME analytics platform. KNIME has been previously employed in similar studies ([Kalnaovakul and Promsivapallop, 2023](#); [Taecharungroj and Mathayomchan, 2019](#)) for analyzing online review data. Unsupervised machine learning using latent Dirichlet allocation (LDA) is applied to determine the number of dimensions.

3.1.1 Data collection in phase 1. The authors collected online hotel guest reviews from beachfront locations as defined by TripAdvisor. These locations include prominent regions in Thailand: Phuket, Phangnga, Krabi, Surathani (Samui) and Chonburi (Pattaya) provinces, encompassing both brand affiliated and independent establishments. The study selected samples exclusively from 3 to 5-star hotels located directly on or near the beach, ensuring easy access within a few minutes' walk. A minimum of 500 reviews per hotel listed on TripAdvisor was set as a criterion for inclusion, facilitating data collection across different star ratings (3–5 stars), with 5-star hotels typically garnering the most reviews and 3-star hotels fewer.

This study included reviews provided by international tourists who experienced the hotel services between 2018 and 2023 (up to the date of data collection). This time frame allowed us to incorporate recent operational insights spanning approximately 4–5 years in the past. To ensure the accuracy of the sentiment expressed by reviewers, we considered reviews originally composed in English, without the use of translation devices. If online reviews presented any word of other languages in the review text, those reviews were removed from data sets.

Based on these criteria, reviews were collected for 187 selected 3–5 star rated hotels in Thailand's most famous beach destinations. Data from the TripAdvisor website included reviewer details such as name, origin, review content, date, hotel name, ratings, helpfulness and contribution. Consistent with prior studies ([Kalnaovakul and Promsivapallop, 2021, 2023](#); [Taecharungroj and Mathayomchan, 2019](#)), reviews with ratings of 1–3 were categorized as negative, while those rated 4–5 were classified as positive. To ensure analytical reliability and avoid minimalistic texts, reviews containing fewer than 50 words were excluded, following recommendation by [Han \(2021\)](#).

3.1.2 Data preparation and analysis. *3.1.2.1 Data pre-processing and vector creation.* Textual data analysis using machine learning techniques necessitates transforming qualitative data into quantitative data. A KNIME workflow was constructed for this purpose, beginning with document conversion where each review was lemmatized to its root form, followed by N Char function application to remove words with fewer than three characters. Irrelevant words (stop words and custom terms such as hotel names) were removed, and text was standardized to lowercase. Non-alphabetic characters and numbers were also removed, leading to creation of a bag-of-words (BoW). Term Frequency - Inverse Document Frequency (TF/IDF) techniques were subsequently applied to filter out insignificant terms, using a threshold that excluded any words with frequencies lower than 550 in the corpus. Document vectors were generated from remaining significant terms, converting them into quantitative data.

Accuracy and reliability of the model were measured after pre-processing and feature creation using TF/IDF techniques, the program generates document vectors for the remaining significant terms, converting them into quantitative data. These document vectors are then used to train and predict outcomes (positive or negative rating) by supervised machine learning with a SVM classifier, which has been used previously by

Kalnaovakul and Promsivapallop (2023). This study measures accuracy of the model including F-measure which is a metric employed to assess the performance of a machine learning model; and another statistic, Cohen's Kappa coefficient, is also calculated to evaluate the inter-rater reliability of agreement in the model, where the F-measure and Cohen's Kappa range from 0 to 1, with higher values indicating better performance.

3.1.2.2 Identification of dimensions in service quality. Principal component analysis (PCA) was used to reduce term dimensionality after pre-processing. K-means clustering analysis indicated the underlying service quality dimensions, with assistance from the elbow method to optimize dimension count. The number of dimensions determined by the K-means plus elbow method was input into the LDA algorithm to extract 10 relevant terms for each dimension. LDA, widely used in topic modeling (Mariani and Baggio, 2022; Taecharungroj and Mathayomchan, 2019), facilitated grouping of top terms, aiding interpretation of service quality dimensions from guest review.

3.1.2.3 Dimensional salience – valence analysis. To assess sentiment polarity of each dimension, dimensional salience-valence analysis was applied using cross-tabulation in the KNIME workflow. This analysis, as suggested by Taecharungroj and Mathayomchan (2019), calculated dimensional salience as the proportion of reviews within a dimension to total reviews, and dimensional valence as the difference between observed and expected positive reviews divided by total dimension reviews:

$$\begin{aligned}\text{Dimensional salience} &= \text{Number of Reviews} / \text{Total Number of Reviews} \\ \text{Dimensional Valence} &= (\text{Observed No of Positive Reviews} - \\ &\quad \text{Expected No of Positive Reviews}) / (\text{Total reviews of the dimension})\end{aligned}$$

3.2 Phase 2

Phase 2 in the conceptual framework (Figure 1) incorporates interaction effects for moderation to examine the relationship between review text sentiment and satisfaction rating (reviewer satisfaction). It investigates moderating roles of reviewer's experience, hotel star rating and brand affiliation on this relationship.

3.2.1 Data collection in phase 2 and analysis. Phase 2 focuses on testing Hypotheses 2–4. Each online review's sentiment (positive or negative) was analyzed using the VADER algorithm in RapidMiner version 9.10. Reviews with sentiment scores (positivity value subtracted from negativity value) less than -0.05 are categorized as negative and those greater than $+0.05$ as positive (Kusawat and Teerakapibal, 2021). SmartPLS-4 with PROCESS macro was used to evaluate relationships between review text sentiment and overall reviewer satisfaction, exploring moderation effects of hotel star rating, reviewer's experience and hotel type. The PROCESS module (Hayes, 2018) facilitates comprehensive moderation analysis in social, business and health sciences.

4. Results

4.1 Phase 1

The study collected a total of 102,179 online reviews from 187 selected 3–5 star rated hotels in Thailand's renowned beach destinations. After cleansing, the reviews were categorized by location: Phuket (57,889), Samui (16,811), Krabi (10,624), Pang-Nga (9,669) and Pattaya (7,186). The number of reviews was also separated by year: 27,881 reviews in 2018, 29,850 reviews in 2019, 8,392 reviews in 2020, 3,634 reviews in 2021, 13,563 reviews in 2022 and 18,859 reviews in 2023.

K-means clustering and the elbow method identified eight dimensions: leisure activities (6,054 reviews), empathy (15,234 reviews), service process (13,307 reviews), ambiance (13,243

reviews), food (5,680 reviews), reliability (13,717 reviews), tangibles and surroundings (11,911 reviews) and responsiveness (23,033 reviews). LDA was used for topic modeling, extracting 10 terms for each dimension. Each dimension was labeled within the context of hotel service quality, as detailed in [Table 1](#).

According to dimensional salience valence analysis (DSVA), the “responsiveness” dimension emerged as the most salient (22.54%), whereas “food” was among the less frequently mentioned dimensions (5.56%), as shown in [Table 2](#). DSVa indicated that the “service process” dimension exhibited negative sentiment (−48.32%), while the remaining dimensions showed positive sentiments.

The predicted results of the feature model indicate an accuracy of 94.21%, exceeding the 65% threshold for acceptable machine learning predictions ([Kalnaovakul and Promsivapallop, 2023](#); [Taecharungroj and Mathayomchan, 2019](#)). The F-measure for the majority/minority class is 0.96/0.70, and Cohen’s Kappa is 0.67. According to [Madhukar \(2022\)](#), Cohen’s Kappa coefficient assesses the reliability of agreement in the training data, with values interpreted as follows: 0.81–1.00 for almost perfect agreement, 0.61–0.80 for substantial agreement, 0.41–0.60 for moderate agreement, 0.21–0.40 for fair agreement and 0.01–0.20 for slight to no agreement ([McHugh, 2012](#)). Thus, this model’s prediction of the positive and negative classification is considered substantially accurate.

4.2 Phase 2

4.2.1 Structural statistics. [Table 3](#) presents details of structural statistics for the online reviews and descriptive statistics for three moderators: hotel star rating, hotel type and reviewer experience. Out of 101,832 reviews (excluding “neutral” sentiment by VADER), over 70% reported “excellent” satisfaction, and more than 96% expressed positive sentiment in their review texts. This distribution underscores the favorable nature of online reviews in the hospitality industry, reflecting hotels’ strong service provision. Approximately 48.88% of reviews were for 5-star hotels, and 69.66% for independent hotels. Regarding reviewer experience, 51.76% were categorized as new reviewers.

In this study, independent and dependent variables, along with three moderators, were measured on metric and quasi-metric scales. [Figure 2](#) depicts the conceptual framework, integrating hotel star rating, reviewer experience and hotel type as moderators affecting the relationship between sentiment (review text sentiment) and satisfaction (ratings).

4.2.2 Collinearity diagnostics. The findings demonstrate that the variance inflation factor (VIF) was within the range from 1.001 to 1.136. These values were much lower than the threshold 3 ([Sarstedt et al., 2021](#)), suggesting the absence of collinearity issues.

4.2.3 Coefficient of determination (R^2). The study model’s robustness was assessed using R^2 , which measures predictive accuracy ([Hair et al., 2021](#)). The coefficient of determination (R^2) is employed to evaluate the degree of accuracy in predicting an endogenous variable. This study focuses on satisfaction (ratings) as the sole endogenous variable. The model yielded an adjusted R^2 of 0.279 for satisfaction, suggesting that approximately 27.9% of satisfaction variability is explained by the four exogenous latent variables sentiment (independent variable), hotel star rating, reviewer experience and hotel type.

4.2.4 Path analysis. Path analysis was used to investigate direct relationships between variables and satisfaction within the hotel business context. The results ([Table 4](#)) indicate a statistically significant relationship between experience and satisfaction ($\beta = 0.051$, $p < 0.05$). However, hotel star rating ($\beta = 0.04$, $p > 0.05$) and hotel type ($\beta = 0.06$, $p > 0.05$) did not significantly influence satisfaction. Notably, sentiment exhibited a robust positive correlation with satisfaction ($\beta = 2.838$, $p < 0.05$), indicating sentiment as a primary predictor of satisfaction in hotels. In general, it appears that experience level has a direct affect, while

Topic id_0	Term	Topic id_1	Term	Topic id_2	Term	Topic id_3	Term
Leisure and activities	kid family activity child club love time stay holiday adult	Empathy	staff stay service special amazing thank make always team experience	Service process	room stay staff check book time day service need night	Ambience	stay beautiful amazing villa view staff place private perfect wonderful
Topic id_4 Food	Term food restaurant breakfast Thai dinner drink buffet service bar eat	Topic id_5 Reliability	Term room stay clean breakfast bed view nice staff lovely area	Topic id_6 Tangibles and surroundings	Term walk location stay restaurant room staff nice breakfast place road	Topic id_7 Responsiveness	Term staff nice stay service friendly room place recommend food amazing

Source(s): Authors' own creation/work

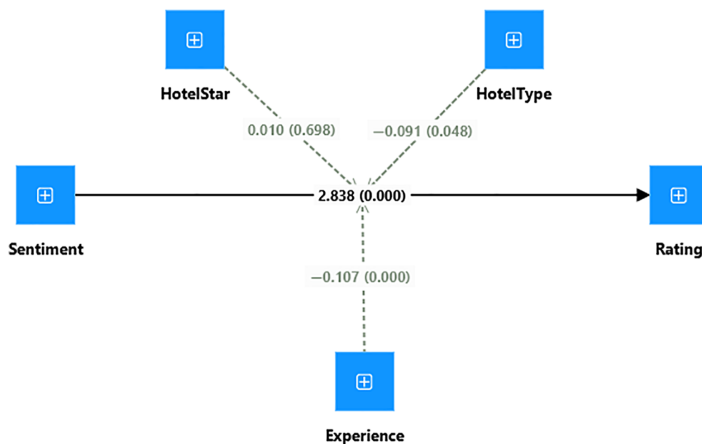
Table 1.
Eight dimensions and
10 words of each
dimension by LDA

Dimension	Leisure activities (%)	Empathy (%)	Service process (%)	Ambience (%)	Food (%)	Reliability (%)	Tangibles and surroundings (%)	Responsiveness (%)
Salience	5.92	14.91	13.02	12.96	5.56	13.42	11.66	22.54
Valence	8.55	9.76	−48.32	8.80	3.22	2.01	4.51	9.82
Source(s): Authors' own creation/work								

Table 2.
Dimensional salience-
valence analysis

Table 3.
Structural statistics of
online reviews

<i>N</i> = 101,832	Frequency	Percentage
<i>Overall satisfaction</i>		
Terrible	2,751	2.70
Poor	2,325	2.28
Average	5,566	5.47
Good	16,071	15.78
Excellent	75,119	73.77
<i>Review text sentiment</i>		
Negative	3,223	3.17
Positive	98,609	96.83
<i>Hotel classification</i>		
3-star	20,840	20.47
4-star	31,216	30.65
5-star	49,776	48.88
<i>Hotel type</i>		
International brand affiliation	30,898	30.34
Independent	70,934	69.66
<i>Reviewer's experience</i>		
New reviewer	52,707	51.76
Reviewer	10,769	10.58
Senior reviewer	7,935	7.79
Contributor	7,653	7.52
Senior contributor	9,534	9.36
Top contributor	13,234	13.00

Source(s): Authors' own creation/work**Source(s):** Authors' own creation/work**Figure 2.**
Conceptual framework
with three moderators

neither hotel star rating nor hotel type influence satisfaction. Sentiment is the primary factor that significantly predicts satisfaction in the hotel industry.

4.2.5 Moderation analysis. The study that follows shows the outcomes of a thorough bootstrapping process that used 5,000 new samples in SmartPLS software. By establishing

stable estimates and validating statistical inferences, this strong approach makes sure that the results are reliable and valid. Using this method, the effects of hotel type, hotel star rating and experience on the relationship between sentiment and satisfaction were looked into, and the results are summarized in [Table 4](#).

Hotel type significantly moderated the relationship between sentiment and satisfaction ($\beta = -0.091, p < 0.05$), suggesting varied impacts of sentiment on satisfaction across different hotel types. In contrast, hotel star rating showed a non-significant moderating effect ($\beta = 0.010, p > 0.05$) on the sentiment-satisfaction relationship. Experience exhibited a significant negative moderating effect ($\beta = -0.107, p < 0.05$), indicating that sentiment's impact on satisfaction diminishes with increasing reviewer experience.

Slope analysis provided insights into the relationship between sentiment and satisfaction across reviewers' experience and different types of hotels, as shown in [Figures 3 and 4](#), respectively.

4.2.6 Analysis of moderation effect on each dimension. The results showed that some of the service quality dimensions could not be tested due to inadequate discrepancy (i.e. "0" = 0.1%, "1" = 99.99% in topic_7) of the review text sentiment variable in its dimension, highlighted in [Table 5](#), causing a singular matrix problem while running bootstrapping on SmartPLS.

However, the service process dimension (topic_2) indicated an adequate discrepancy distribution ("0" = 21.9%, "1" = 78.1%) of this variable, which supports testing the model. The test result showed similarity of moderating effect to that seen with the entire dataset. This suggests the service process is a dominant dimension in predicting for the whole dataset.

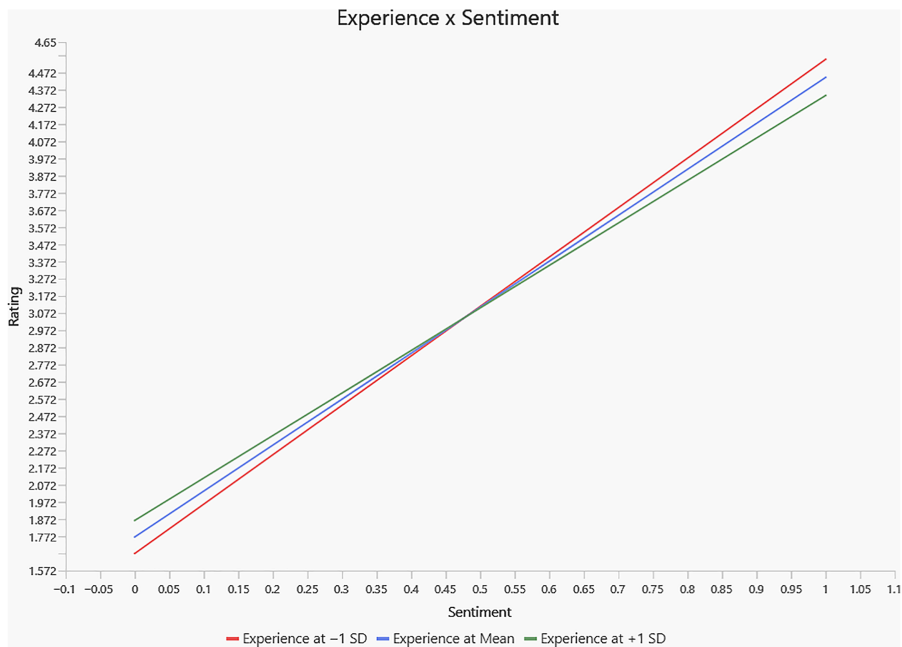
5. Discussion and conclusions

This study served a dual purpose: first, to investigate the dimensions of service quality influencing guest satisfaction in Thailand's hotel industry, specifically at prominent beach destinations (Phase 1); and second, to explore how the sentiment expressed in guest reviews relates to overall satisfaction, with a focus on the moderating effects of hotel star rating, hotel type and reviewer experience (Phase 2).

In Phase 1, the study identified eight overarching service quality dimensions within the hotel industry, building upon previous research findings by [Kalnaovakul and Promsivapallop \(2023\)](#). These dimensions – leisure activities, empathy, service process, ambiance, food, reliability, tangibles and surroundings and responsiveness – were derived from both attribute interpretations (10 words per dimension) and insights from service quality experts within the hotel context. These eight dimensions did not reveal any unique or prominent dimension associated with or caused by the COVID-19 pandemic, even though the data collected for this study covered the period of that pandemic. However, it is worth noting

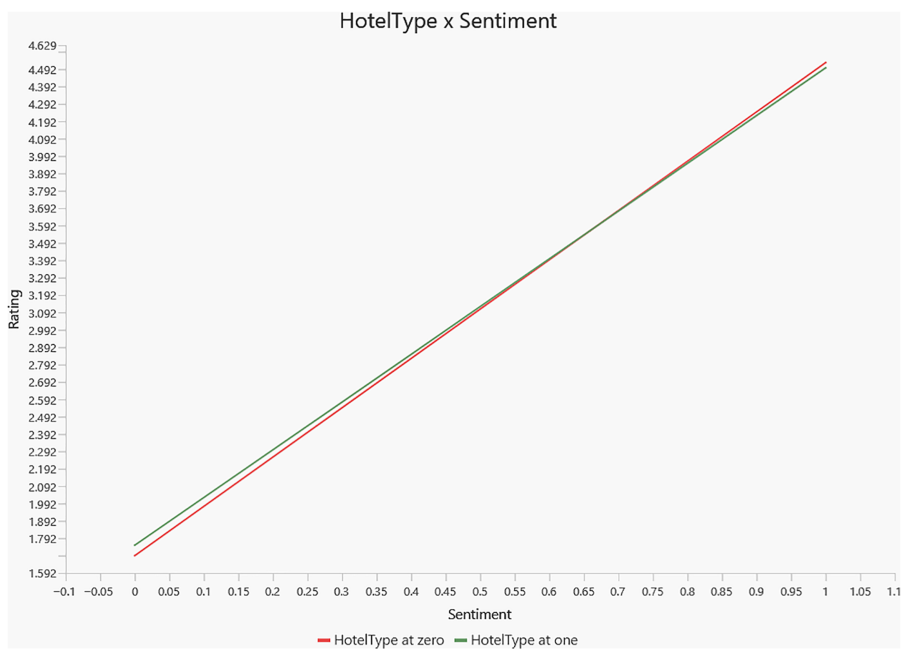
Table 4.
Results of path and
moderation analysis
versus hypothesis

Direct effect and moderating effect	Hypothesis	β	<i>t</i> -value	<i>p</i> -values	Result
Experience → Satisfaction	N/A	0.051	4.67	<0.05	Supported
Hotel star → Satisfaction	N/A	0.04	1.582	>0.05	Not supported
Hotel type → Satisfaction	N/A	0.06	1.318	>0.05	Not supported
Sentiment → Satisfaction	H1	2.838	23.212	<0.05	Supported
Experience × Sentiment → Satisfaction	H2	−0.091	9.705	<0.05	Supported
Hotel star × Sentiment → Satisfaction	H3	0.01	0.388	>0.05	Not supported
Hotel type × Sentiment → Satisfaction	H4	−0.224	1.976	<0.05	Supported
Source(s): Authors' own creation/work					



Source(s): Authors' own creation/work

Figure 3.
Slope analysis for
moderation effect of
reviewer's experience
on relationship
between sentiment and
satisfaction



Source(s): Authors' own creation/work

Figure 4.
Slope analysis for
moderation effect of
hotel type on
relationship between
sentiment and
satisfaction

Table 5.
Frequency of the
review text sentiment
variable across all
dimensions

Assigned topic * sentiment Crosstabulation						
			Sentiment			
			0	1	Total	
Assigned topic	topic_0	Count	14	6,024	6,038	
		% within assigned topic	0.2%	99.8%	100.0%	
	topic_1	Count	20	15,199	15,219	
		% within assigned topic	0.1%	99.9%	100.0%	
	topic_2	Count	2,873	10,224	13,097	
		% within assigned topic	21.9%	78.1%	100.0%	
	topic_3	Count	29	13,203	13,232	
		% within assigned topic	0.2%	99.8%	100.0%	
	topic_4	Count	86	5,575	5,661	
		% within assigned topic	1.5%	98.5%	100.0%	
	topic_5	Count	111	13,571	13,682	
		% within assigned topic	0.8%	99.2%	100.0%	
	topic_6	Count	68	11,809	11,877	
		% within assigned topic	0.6%	99.4%	100.0%	
	topic_7	Count	22	23,004	23,026	
		% within assigned topic	0.1%	99.9%	100.0%	
	Total		Count	3,223	98,609	101,832
			% within assigned topic	3.2%	96.8%	100.0%
Source(s): Authors' own creation/work						

that the number of reviews during the COVID-19 pandemic (years 2020 and 2021) is far less than the annual counts during normal times.

The “empathy” dimension aligns with findings of [Ban *et al.* \(2019\)](#), who collected data across various countries via Google Maps; [google.com/maps](#). Similarly, the “ambiance” dimension correlates with research by [Chittiprolu *et al.* \(2021\)](#) and [Peres and Paladini \(2021\)](#), focusing on physical elements such as décor and architectural style gathered from TripAdvisor datasets. The service process dimension revealed negative sentiment indicating the feeling of hotel guest reviews toward overall dissatisfaction with the dimension, which suggests that key factors contributing to guest dissatisfaction ([Hu *et al.*, 2019](#)) in hotel guest reviews stem from elements observed in the service process dimension of this study.

In Phase 2, [Hayes’ \(2018\)](#) PROCESS macro in SmartPLS version 4.1.0.2 facilitated hypothesis testing, supporting three out of four hypotheses (H1, H2, H4, but not H3). Firstly, the study confirmed a positive relationship between review text sentiment (Sentiment) and satisfaction ratings (Satisfaction), supporting [Hypothesis 1](#), suggesting that high-experience reviewers often articulate stricter evaluation criteria, leading to more negative sentiments and lower satisfaction levels. Thus, sentiment in review texts positively influences overall satisfaction. Secondly, reviewer experience levels moderated the relationship between review text sentiment and satisfaction ratings, supporting [Hypotheses 2](#). [Figure 3](#) illustrates varying patterns in sentiment–satisfaction associations across different experience levels, indicating stronger and more positive associations with lower experience levels. This underscores the role of reviewer experience in shaping satisfaction perceptions.

Thirdly, while hypothesizing that hotel star rating would moderate this relationship as a quality signal ([Belver-Delgado *et al.*, 2020](#); [Castro-Lopez *et al.*, 2022](#)), the study found no significant influence (H3). Similarly, hotel type, as another quality signal, did not affect satisfaction ratings ([Table 4](#)). These results imply that while quality signals may influence service expectations, they do not consistently predict satisfaction levels. However, different

hotel types – specifically independent versus brand affiliation – significantly moderated the relationship between review text sentiment and satisfaction rating, supporting [Hypothesis 4](#). [Figure 4](#) demonstrates distinct sentiment–satisfaction associations between independent and brand affiliation hotels, with a notably stronger impact observed in brand affiliation hotels.

5.1 Conclusions

This study introduced a novel approach to extracting latent dimensions of consumer satisfaction from extensive online customer reviews. The study evaluated accuracy and reliability using a supervised machine learning algorithm (SVM) after the data had been processed with TF-IDF techniques. For dimension extraction, LDA analysis with DSVa of hotel guest reviews uncovered meaningful sentiment dimensions not identified by traditional methods. The service process dimension was identified as a key factor contributing to guest dissatisfaction in hotels. Among the eight dimensions identified from hotel guest reviews, two – food, and leisure and activity – are unique to resort-type hotels. However, no specific dimension related to the impact of COVID-19 on online guest reviews was prominent in these data. The study also revealed that the moderating roles of reviewer characteristics and hotel attributes between review text sentiment and satisfaction show that reviewers' experience and hotel brand affiliation significantly influence the gap between review text sentiment and satisfaction in online guest reviews.

5.2 Theoretical implications

This study expands existing dimensions of hotel service quality, particularly within resort-type beach destinations, in a way potentially applicable to similar settings globally. The introduction of “empathy” and “ambiance” dimensions, alongside previously identified dimensions, enriches the service quality framework compared to prior studies by [Kalnaovakul and Promsivapallop \(2023\)](#). The prominence of “leisure activities” and “food” as specific dimensions for resort-type hotels highlights their unique contributions within the hospitality sector, although they are frequently less salient when compared with other service quality dimensions found in these data. The present study ensured that both the sentiment of review text and satisfaction rating come from one and the same reviewer, who assessed the actual perceived service quality relative to their prior expectations, yet a gap between them was still revealed. This contributes to the body of knowledge by showing that while guests' reviews are based on perceived services covering diverse aspects, their final judgment in ratings is often motivated by a single impressive service or influenced by other factors.

Phase 2 of this study also contributed to another body of knowledge by showing that the magnitude of this gap could be influenced by reviewer characteristics, such as their experience, and the quality signals of hotel, such as brand affiliation. Additionally, the positive correlation between review text sentiment and satisfaction challenges previous findings by [Geetha et al. \(2017\)](#), underscoring context-specific influences across budget and premium hotel categories. Moreover, incorporating quality signals (hotel star rating, hotel type) and reviewer experience as moderators enhances the understanding of how sentiment influences satisfaction, explaining 27.9% of satisfaction variability in the model. These findings can be beneficial to the readership of online hotel guest reviews.

5.3 Practical implications

Since the present study focused on guests' perceptions of perceived service during their stay, guests experienced diverse services offered by the hotel. As a result, online hotel guest

reviews were broadly expressed instead of deeply delving into specific services, and they spanned over five years. In this context, no unique dimension was observed to indicate the impact of COVID-19. However, practical implications suggest prioritizing maintenance of “responsiveness” and “empathy” dimensions, identified as most salient and positively valenced. Immediate improvements in the service process are crucial, given its negative sentiment among guests, necessitating revisions in operational procedures such as check-in, check-out and booking processes to improve on guest experiences. Given the significance of “ambiance” and “tangibles and surroundings,” which account for approximately 24.62% of reviews with positive valence, hotel managers should focus efforts on maintaining these tangible aspects while enhancing existing quality levels of other dimensions, particularly those related to intangible service elements with low level of valences like service process, reliability and food dimensions.

The study’s finding that hotel star ratings do not significantly influence satisfaction suggests a need for hotels to shift from operation-centric to customer-centric service quality perceptions. This approach could help bridge perceived service quality gaps, particularly in intangible service dimensions. Moreover, the significant moderating effect of reviewer experience on the sentiment–satisfaction relationship suggests strategic engagement of experienced individuals as hotel ambassadors, leveraging their insights to enhance service delivery and guest satisfaction levels, especially in brand affiliated hotels.

As suggested in the findings of this study, the data show that the sentiment has a stronger and more significant impact on satisfaction rating levels in brand affiliated hotels. Therefore, independent hotels might find a way to maintain their service quality level regularly, and implementing quality audit activities might help ensure that perceived service quality gaps are monitored and improved in a timely manner.

5.4 Limitations and future research

Despite contributing to both theory and practice, the study has limitations that warrant consideration. Firstly, the sample was drawn exclusively from online platforms for beach destination hotels in Thailand, potentially limiting generalization to other hotel types (e.g. urban hotels). However, given similar leisure-driven purposes of hotel stays, findings may extend across different geographical sectors and online platforms.

Secondly, Phase 2 focused solely on sentiment–satisfaction associations with quality signal perspectives and reviewer experience. Future studies could explore additional variables such as demographic factors (age, gender) and include reviews in other languages to enhance cross-cultural insights. Lastly, the imbalance in sentiment distribution within review texts (number of positive and negative reviews) limited comprehensive dimension testing. Future research could address this by including neutral sentiment categories, thereby overcoming data distribution challenges and enabling more robust dimension analysis.

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Journal of Vacation Marketing

A multi-method analysis of customer heterogeneity in hotel service quality dimensions

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Abstract:	The study presents a framework that extracts hotel service quality dimensions and customer requirements through large-scale online reviews. Drawing on 59,623 English-language reviews from TripAdvisor across 159 hotels in Thailand's beach destinations, this study explores service quality dimensions through the integration of topic modeling, sentiment analysis, and the Kano model. Eight service quality dimensions—namely ambiance, empathy, food, leisure/activities, reliability, responsiveness, service, and tangibles—were identified using Latent Dirichlet Allocation. Sentiment analysis using VADER identified positive, negative, and neutral sentiments, while regression analysis was employed to examine their effects on customer satisfaction. Finally, the Kano model is used to classify service attributes based on asymmetric impacts. The findings indicate that dimension-specific sentiment is a significant predictor of satisfaction, with neutral sentiment being a key predictor. The findings also highlight segment differences, with most attributes being must-be attributes, while some are one-dimensional or attractive. The study presents a scalable service quality analysis tool for hotel management.



A multi-method analysis of customer heterogeneity in hotel service quality dimensions

Abstract

The study presents a framework that extracts hotel service quality dimensions and customer requirements through large-scale online reviews. Drawing on 59,623 English-language reviews from TripAdvisor across 159 hotels in Thailand’s beach destinations, this study explores service quality dimensions through the integration of topic modeling, sentiment analysis, and the Kano model. Eight service quality dimensions—namely ambiance, empathy, food, leisure/activities, reliability, responsiveness, service, and tangibles—were identified using Latent Dirichlet Allocation. Sentiment analysis using VADER identified positive, negative, and neutral sentiments, while regression analysis was employed to examine their effects on customer satisfaction. Finally, the Kano model is used to classify service attributes based on asymmetric impacts. The findings indicate that dimension-specific sentiment is a significant predictor of satisfaction, with neutral sentiment being a key predictor. The findings also highlight segment differences, with most attributes being must-be attributes, while some are one-dimensional or attractive. The study presents a scalable service quality analysis tool for hotel management.

Keywords: Modified Kano model, beach hotel, neutral sentiment, topic modeling, Thailand

Introduction

Service quality management is a key factor for success in the hotel industry. Awareness of how customers prioritize service quality dimensions, or of the service quality model, is essential for hotel managers to maximize customer satisfaction and foster customer loyalty (Bui and Quyen, 2025; Chen et al., 2025). Hotel service quality has traditionally been measured using quantitative methods (e.g., Ali et al., 2021; Padlee et al., 2019). However, with the proliferation of user-generated content across various online platforms, researchers have sought to assess service quality using online reviews as an alternative measure (Adiningtyas and Millanyani, 2026; De Oliveira-Cardoso et al., 2025; Gunasekar et al., 2021; Kalnaovakul et al., 2025).

Online reviews or electronic word-of-mouth (eWOM) have emerged as an important information source that affects consumer decision-making in the hospitality industry (An et al., 2025; Chen et

al., 2024). Prior studies have drawn on various online platforms for data collection. For instance, Adiningtyas and Millanyani (2026) utilized Traveloka, Tiket.com, and Agoda to evaluate hotel service quality; Liu et al. (2024) analyzed restaurant reviews from Dianping.com; and Kim et al. (2023) examined Booking.com reviews to explore differences in how business and leisure travelers assess hotel services. These online platforms enable customers to share their reviews, ratings, and opinions about the services provided by the hotels, thus giving genuine feedback about the services and customer experiences (De Oliveira-Cardoso et al., 2025). Hospitality services are intangible in nature and are not easily evaluable before consumption. Therefore, customers increasingly rely on eWOM to reduce uncertainty and perceived risk when selecting the most appropriate accommodation (Promsivapallop and Kannaovakun, 2018; Yang et al., 2017).

The proliferation of online review data has prompted the development of text mining and machine learning methods to uncover valuable information from large volumes of data (Kalnaovakul and Promsivapallop, 2023; Liu et al., 2024). Topic modeling methods, such as Latent Dirichlet Allocation (LDA), have been employed to uncover underlying service quality dimensions embedded in the customer reviews (Kalnaovakul et al., 2025; Tang et al., 2026). Prior studies have employed the LDA model to uncover hotel service quality dimensions, including room quality, hotel facilities, staff behavior, and location (Kalnaovakul et al., 2025; Ying, 2024).

While identifying service quality dimensions from online reviews is an emerging area of study, relatively less attention has been paid to examining their relative importance for customer requirement, especially across different customer segments. Indeed, Heung and Wong (1997) found that business travelers tend to have higher expectations than leisure travelers regarding hotel service quality, particularly in terms of responsiveness and empathy. Without understanding customer requirements across different segments, hoteliers risk misallocating resources and failing to meet the distinct expectations of their target markets. Moreover, customer requirements are conventionally identified through surveys, interviews, or focus groups. These techniques are often costly, time-consuming, and resource-intensive (Matzler et al., 2004; Zhang et al., 2022). On the other hand, electronic word-of-mouth (eWOM) provides a valuable alternative for understanding customers' real-life service experiences in a more timely and context-rich manner. Unlike traditional methods, eWOM data, such as online reviews, are continuously generated by customers

and reflect spontaneous, experience-based feedback. This allows researchers and practitioners to capture up-to-date insights into customer preferences and satisfaction, thereby enhancing the relevance and immediacy of service evaluation (Liu et al., 2024).

Because service quality dimensions may not carry equal weight in meeting customer needs, identifying the key components responsible for satisfaction is essential for the long-term success of any organization (Violante and Vezzetti, 2017). There may be multiple touchpoints in the service delivery chain where nonlinear relationships between quality and satisfaction exist. Therefore, the use of the Kano model helps distinguish among the various relationships between the fulfillment of customer requirements and their satisfaction, particularly those that are nonlinear, as different types of requirements influence satisfaction in different ways.

According to the Kano model, service quality can be classified into five categories: must-be, one-dimensional, attractive, indifferent, and reverse (Kano, 1984). Despite its importance and applicability, the Kano model has not been widely integrated into large-scale analyses of online reviews in the hospitality field. As such, the current study suggests a framework that integrates topic modeling, sentiment analysis, and the Kano model to extract customer requirements from online reviews. First, the key service quality dimension is extracted from online reviews using topic modeling techniques. Second, sentiment analysis is employed to evaluate the sentiment of customers in a review related to a specific dimension of service quality. Finally, the Kano model is used to classify the extracted service attributes related to their impact on customer satisfaction.

This study contributes to the hospitality literature by proposing an integrated framework that systematically extracts service quality dimensions and customer requirements from online user-generated reviews, thereby addressing a significant gap in prior research that has largely examined these aspects in isolation. By adopting advanced text analysis techniques and a customer-centric perspective, the study extends existing service quality and electronic word-of-mouth (eWOM) literature (Blei et al., 2003; Parasuraman et al., 1988) and offers a more nuanced understanding of the service quality evaluation construct. Specifically, the study aims to develop and apply a framework that combines topic modeling, sentiment analysis, and the Kano model to identify service quality dimensions, examine their impact on customer satisfaction, and classify customer

requirements across different traveler segments using online review data. From a practical standpoint, the findings provide valuable insights for hotel managers, supporting informed decision-making and enabling the precise identification of service areas that require improvement in alignment with customer needs and expectations.

Literature Review

Electronic Word-of-Mouth (eWOM) and Online Reviews

Electronic word-of-mouth (eWOM) has been identified as a major source of information affecting consumer behavior in the hospitality industry (Liu et al., 2024). Online review sites such as TripAdvisor enable customers to voice their opinions, views, and ratings on their experiences concerning hotels, restaurants, and other tourism services (De Oliveira-Cardoso et al., 2025; Liu et al., 2024). These online review sites offer important information on customers' perceptions and experiences, which are important to customers in the decision-making process.

Since hospitality services are intangible in nature, customers cannot form an opinion about the quality of the services before consuming them. Hence, customers rely on online review sites to reduce the uncertainty and perceived risk involved in choosing the hotel for their stay (Promsivapallop and Kannaovakun, 2017; Yang et al., 2017). Previous studies have proven the impact of eWOM on hotel popularity, bookings, and customers' trust (Tang et al., 2026).

With the rise of user-generated content, online review analysis has emerged as a significant research methodology to understand the customer experience and service performance in the hospitality industry (Ismagilova et al., 2021; Sharma and Aggarwal, 2021). Nevertheless, the vast and unstructured nature of textual data necessitates the application of advanced techniques, such as text mining, to transform raw data into actionable insights that enhance the rigor and validity of research findings.

Hotel service quality dimensions

Service quality has been recognized as a major determinant of customer satisfaction and hotel performance (Ali et al., 2021). The most commonly used model for service quality measurement is the SERVQUAL model proposed by Parasuraman et al. (1985). This model has five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. Recent studies based on online review analysis have identified service quality dimensions that are consistent with traditional service quality models. For example, service dimensions identified through online review analysis are hotel service dimensions, such as room quality, hotel facilities, staff behavior, hotel amenities, and hotel location (De Oliveira-Cardoso et al., 2025). This is consistent with the HOLSERV Plus model proposed by Mei et al. 1999, which consists of room, facilities, surroundings, employees, reliability, etc. (Boon et al., 2014).

While the results of these studies are beneficial to understanding the concept of hotel service quality, most of the studies only rely on the results of small-scale quantitative content analysis. On the other hand, topic modeling techniques enable the analysis of large-scale data sets to uncover the underlying dimensions of service quality within the content of customer reviews. Latent Dirichlet Allocation (LDA) has emerged as the most popular topic modeling technique to uncover the underlying dimensions of large-scale text data sets, also referred to as hidden topics or dimensions (Tang et al., 2026). In the current study, topic modeling techniques are employed to uncover the underlying dimensions of service quality within the content of online hotel reviews. Topic modeling techniques, particularly LDA, enable the extraction of underlying topics of service dimensions, which customers often mention during the course of expressing their opinions.

Sentiment analysis

Identifying service quality dimensions alone is insufficient to fully capture their influence on customer satisfaction. Customers often express varying sentiments toward different service attributes within these dimensions, and such sentiments can shape their overall satisfaction ratings. Sentiment analysis offers a means to assess customers’ emotional responses to specific service attributes as reflected in online reviews. Positive sentiment toward a particular attribute indicates its contribution to customer satisfaction, whereas negative sentiment reflects dissatisfaction with that aspect of the service.

If a customer has expressed a positive sentiment towards a specific service attribute, it is reasonable to assume that the service attribute has a positive impact on the overall evaluation of the hotel by the customer. Similarly, if the customer has expressed a negative sentiment towards a service attribute, it is reasonable to assume that the service attribute has a negative impact on the overall evaluation of the hotel by the customer. Past studies have found a strong relationship between the perception of customers regarding the quality of the service and satisfaction ratings, particularly in the hospitality industry (Ali et al., 2021; Kalnaovakul et al., 2025; Sharma and Srivastava, 2018). Nevertheless, based on the best knowledge of the authors, there is no such research incorporating neutral sentiment in evaluating the relationship between service quality and overall satisfaction ratings. Based on the above, the following hypothesis is proposed:

H₁: Dimension-specific sentiment (including positive, neutral, and negative sentiment) extracted from online reviews has a significant effect on overall customer satisfaction ratings.

Types of hotel customers and service quality perceptions

Generally, customers staying in hotels vary in terms of their characteristics and travel motivation, which might affect their perception and evaluation of service quality. Several studies have confirmed that differences in customer characteristics, such as travel purpose, demographic background, travel experience, and cultural orientation, might affect customers' perception and evaluation of service encounters and service quality (Padlee et al., 2019; Sharma and Srivastava, 2018). Therefore, different types of customers staying in hotels might focus on different aspects of service quality when evaluating their service experience. One major classification of customers staying in hotels is travel purpose, which mainly divides customers into business travelers and leisure travelers. Business travelers might focus on efficiency and functional aspects of service when staying in hotels, such as fast check-in and check-out services, internet facilities, and convenient locations of hotels in terms of business centers and transportation (Ali et al., 2021). Contrary to business travelers, leisure travelers might focus on the experiential aspects of service when staying in hotels and might be motivated by their experience and enjoyment of staying in hotels and using their recreational facilities.

Customer travel experience is another critical factor that is considered to influence service quality. It is believed that travelers who have a higher experience may have a greater expectation and may

be more critical when assessing hotel service. In contrast, first-time travelers may be more focused on the overall hotel experience instead of service features. Additionally, it is also considered that cultural background is another critical factor that can influence customer service quality. It is believed that cultural differences may influence customer expectations towards service interaction, service staff behavior, and hospitality (Promsivapallop and Kannaovakun, 2018). For example, customers who come from a collectivist background may be more focused on relationships and service staff friendliness, whereas customers who come from an individualistic background may be more focused on service reliability.

With the increasing popularity of using online review sites, customer heterogeneity is becoming more visible through electronic word-of-mouth (eWOM). There are various types of customers who may focus on various aspects of their hotel experience. For example, one type of customer may focus more on their hotel room experience, while another type of customer may focus more on their experience with hotel staff, hotel facilities, and hotel location. Therefore, through online review sites, researchers can gain a deeper understanding of various customer service expectations and experiences. This is important because hotel service providers may not be able to satisfy all their customers through service improvements. Moreover, service improvements that are suitable for one type of customer may not be suitable for another type of customer. Therefore, through online review sites, researchers can understand various customer service expectations and experiences. Further, through online review sites, researchers can understand various dimensions of service quality that are important to different types of customers. Therefore, the following hypothesis is proposed:

H₂: Classification of hotel customer requirements versus service quality dimension varies with the types of hotel customers.

Customer requirements and the Kano model

Understanding customer requirements is vital in designing services that fulfill customer expectations and maximize customer satisfaction levels. Traditionally, customer requirements are collected through surveys, interviews, and focus groups (Matzler et al., 2004). However, such methods may not effectively capture the varied and ever-changing expectations of customers.

The Kano model is a framework for grouping service attributes on the basis of their impact on customer satisfaction (Kano et al., 1984). Service attributes can be classified into five categories based on their impact on customer satisfaction as per the Kano model (Figure 1):

• Must be attributes, • One-dimensional attributes, • Attractive attributes, • Indifferent attributes, • Reverse attributes

[INSERT FIGURE 1 HERE]

Must be attributes are the basic attributes that customers expect as a standard from a service provider. As must be attributes are considered basic requirements, customers do not specifically identify them when they are present in a service. However, their absence causes a high level of dissatisfaction.

One-dimensional attributes show a direct and proportional relationship between customer satisfaction and the attributes offered by a service provider. As the level of one-dimensional attributes increases, customer satisfaction also increases proportionally.

Attractive attributes are those attributes that customers normally do not anticipate. Therefore, if attractive attributes are provided to customers, they are likely to experience a high level of satisfaction. However, if attractive attributes are not provided to customers, they normally do not experience dissatisfaction because they did not anticipate them in the first place.

Reverse attributes have an inverse relationship with customer satisfaction. This is because reverse attributes are normally perceived negatively by customers. Therefore, if reverse attributes are provided to customers, they are likely to experience dissatisfaction. On the contrary, if reverse attributes are not provided to customers, they are likely to experience a positive customer experience.

Indifferent attributes are those attributes that have little or no effect on customer satisfaction. This is because customers normally react the same way regardless of whether indifferent attributes are provided or not.

Some of these dimensions are must-be attributes, meaning that customers expect to see these attributes. The presence of these attributes does not contribute to customer satisfaction, but the absence of these attributes causes customer dissatisfaction. The other set of attributes is one-

dimensional attributes, in which customer satisfaction is directly proportional to the performance of the attributes. Attractive attributes are those attributes in which customers are delighted when the attributes are present, and the absence of the attributes does not result in customer dissatisfaction.

In the context of this research study, the concept of regression analysis is used to evaluate the link between dimension-specific sentiment and customer satisfaction ratings. Based on the above explanations, the following hypothesis is proposed:

H₃: The service quality dimensions identified through topic modeling can be classified into various Kano attributes based on their effect on customer satisfaction.

Research framework and conceptual model

The present research proposes a holistic analytical framework based on the integration of topic modeling, sentiment analysis, and the Kano model to analyze the customer requirements of hotels based on online customer reviews. The proposed framework would enable the researcher to first identify the major dimensions of service quality based on the discussions of the customers and then measure the relative importance of the identified dimensions in influencing the customer satisfaction. The research framework proposed in the present research comprises four major stages of data collection and preprocessing, topic extraction, sentiment analysis, and customer requirement classification.

In the first stage of the research framework, the online reviews are collected from a major online travel review platform. The online reviews have been identified as a major source of data to understand the customers' actual service experiences and their perceptions about the performance of the hotels (Ismagilova et al., 2021; Sharma and Aggarwal, 2021). Compared to the traditional research methods based on surveys, the online review method would enable the researcher to analyze the large volume of customer data, which would enrich the research data. Preprocessing is performed to prepare for further topic extraction analysis.

In the second stage, the topic modelling technique is employed to determine the major service quality dimensions discussed by the review texts. The Latent Dirichlet Allocation (LDA) model is

employed to uncover the underlying thematic structure of the given dataset (Tang et al., 2026). The service quality dimensions obtained through the topic modelling technique represent the service attributes discussed by the customers during their hotel experience. The service attributes obtained through the topic modelling technique may comprise hotel room, hotel facilities, staff behavior, location, and hotel cleanliness, which are major service quality dimensions discussed by researchers (Peres and Paladini, 2021; Tang et al., 2026). At this stage, the model's performance is evaluated in terms of its accuracy and reliability.

In the third stage, sentiment analysis (using VADER algorithm) is employed to determine the emotional responses of the customers associated with the service quality dimensions discussed above. The sentiment analysis model employed by the researchers helps determine the emotional responses of the customers, whether the responses are positive, negative, or neutral, associated with the service attributes discussed by the customers during their hotel experience.

Lastly, in the fourth stage, the Kano model is used to classify the identified service attributes on the basis of their impact on customer satisfaction (Kano et al., 1984). The Kano model classifies service attributes into five types: must be attributes, one-dimensional attributes, attractive attributes, indifferent attributes, and reverse attributes. In the current study, the relationship between dimension-specific sentiment score and customer satisfaction rating is analyzed using regression analysis. This enables the classification of service attributes on the basis of their impact on customer satisfaction.

By using a combination of topic modeling and the Kano model (Zhao et al., 2024), the suggested framework enables a more comprehensive understanding of customer requirements as identified through online reviews. Topic modeling helps identify the dimension of what customers are saying, and the Kano model helps identify the dimension of how customer attributes impact customer satisfaction. Hence, the suggested framework enables both strategic and diagnostic insights to be generated for service quality improvement.

The conceptual model of this research is presented in Figure 2. This figure depicts how data collected online is mined to identify service quality dimensions, which are then used to classify

customer requirements based on the Kano model. The proposed framework is significant to hospitality research because it offers a framework for extracting service quality dimensions from online data. Moreover, it offers a framework for applying the Kano model to text mining to identify service attributes that are significant to customer satisfaction. The research is significant to hotel management because it offers a framework for managing hotel services more effectively by identifying service attributes that are significant to customer satisfaction.

[INSERT FIGURE 2 HERE]

Methodology

Data collection

The online reviews were obtained from TripAdvisor, which is highly popular, reliable, and has been used extensively for previous hospitality studies (Kalnaovakul et al., 2025; Liu et al., 2024). The current study is based on hotels located at a popular beach resort location in Thailand. The five provinces of Phuket, Chonburi-Pattaya, Phang-Nga, Krabi, Surathani-Samui, were included in the current study. Mid-range to luxury hotels with three to five stars were selected to ensure the availability of comprehensive service offerings.

The online reviews posted between 2023 and 2025 were obtained by using robotic process automation tools. Only the English language online reviews with textual comments were included to ensure the accuracy of the text. Following the data cleaning process, the dataset was composed of thousands of online reviews of the customers’ experiences at various hotels.

Data preprocessing

KNIME analytic platform was utilized to analyze online reviews. For text preprocessing, text mining techniques were used to preprocess the review data. In text preprocessing, tokenization, lemmatization, punctuation removal, and stop words removal are performed. In addition, a bag-of-words approach is used. In a bag-of-words approach, TF-IDF is used to filter less significant words and retain meaningful words. This approach is used to preprocess review data (Kalnaovakul and Promsivapallop, 2023).

Topic modeling for service quality dimension extraction

In this study, Latent Dirichlet Allocation (LDA) was used for the extraction of latent topics in the online reviews data set (Kalnaovakul et al., 2025; Ying, 2024). Clustering techniques were used prior to the application of LDA for the determination of the optimal number of topics that can be derived from the data set. The derived topics were comprehended for the determination of the exact nature of the topics derived from the data set. The derived topics were related to the service quality dimension discussed by the customers in the data set. This study assesses the efficiency of the proposed model using various accuracy metrics. One such metric is the calculation of the F-measure, which is commonly used for the assessment of the efficiency of machine learning models, such as the proposed SVM classifier (Kalnaovakul et al., 2025). Additionally, the efficiency of the proposed model is determined using the value of the Cohen Kappa coefficient, which assesses the level of agreement between the predicted and actual classification results. The value of the derived results lies between 0 and 1, indicating the efficiency of the proposed machine learning classifier.

Dimension-specific sentiment analysis

Sentiment analysis was employed for the determination of the sentiments of the customers based on the service quality dimensions. The VADER sentiment analyzer was employed for this analysis because of its ability to analyze the sentiments (Kalnaovakul et al., 2025) in the social media data; It also accounts for linguistic modifiers such as intensifiers (e.g., very in “very happy”) and negations (e.g., not in “not happy”) when calculating sentiment scores (Bonta and Kumares, 2019). The VADER sentiment analyzer can generate four types of sentiment scores for the reviews: positive, negative, neutral, and compound sentiment scores that fall in the range -1 to 1. These scores can be employed for the evaluation of the perceptions of the customers regarding the service attributes.

Customer requirement identification using the Kano model

To identify the customer requirements, a modified Kano model was followed. To measure the customer satisfaction, the overall rating scores provided by the customers on the review platform were taken into consideration. A regression model was created to understand the relationship between the dimension-specific sentiment scores and the overall customer satisfaction, this study

proposes three categories of sentiment from review text, as shown in equation 1. The estimated coefficients were then used to classify the service attributes into Kano attributes such as must-be attributes, one-dimensional attributes, attractive attributes, indifferent attributes, and reverse attributes, as proposed by Zhang et al. (2022), shown in Figure 3. This would help identify the service attributes that have a significant impact on the customer satisfaction of the guests.

$$y = \beta_0 + \sum_{i=1}^n (\beta_i^{pos} X_i^{pos} + \beta_i^{neu} X_i^{neu} + \beta_i^{neg} X_i^{neg}) + \varepsilon \tag{1}$$

Where y is the overall customer satisfaction, indicated through ratings given by customers to a hotel. Positive, neutral, and negative sentiment are represented by X_i^{pos} , X_i^{neu} , and X_i^{neg} , respectively, where the sentiment value of each review was calculated by the VADER algorithm. $i = 1, 2, 3, \dots, n$ represents the set of dimensions, X_i^{pos} is customer preference for positive sentiment, X_i^{neu} is customer preference for neutral, X_i^{neg} is customer preference for negative sentiment, and β_0 is a constant term. These parameters are calculated by using SPSS.

The category of each attribute is determined by the curve characteristics indicated by the values of β (Qi et al., 2016). Following Zhang et al. (2022), we calculate the average values of β_i^{pos} , β_i^{neu} , and β_i^{neg} (Lee et al., 2012) to obtain the parameter λ , which helps differentiate attributes in addition to the curve characteristics method. To achieve distinctive separation among attributes, we will pay attention to $\beta_i^{pos} - \beta_i^{neu}$ and $\beta_i^{neu} - \beta_i^{neg}$. If the differences between β_i^{pos} , β_i^{neu} , and β_i^{neg} are not significant, which means $|\beta_i^{pos} - \beta_i^{neu}| \leq \lambda$ and $|\beta_i^{neu} - \beta_i^{neg}| \leq \lambda$. It can be interpreted that there is not much difference between the neutral and negative, positive sentiment values, which makes this an indifferent attribute, as shown in Figure 3. If an attribute exhibits the following curve characteristics $\beta_i^{neg} > \beta_i^{neu} > \beta_i^{pos}$, which negative sentiment is the highest for an attribute, and the difference between the three sentiment scores is significant, which means the presence of a reverse attribute that is causing dissatisfaction among customers, and it should be improved.

The remaining attribute types, namely attractive, one-dimensional, and must-be attributes, are identified according to the parameter γ and the shape of the curve presented in Figure 1. This parameter γ is used to distinguish different desirable attributes, including must-be attributes

(represented by an A-shaped β_i curve), one-dimensional attributes (represented by a linear β_i curve), and attractive attributes (represented by a V-shaped β_i curve).

If $\frac{\beta_i^{pos} + \beta_i^{neg}}{2} > \beta_i^{neu}$ and $\frac{\beta_i^{pos} - \beta_i^{neu}}{\beta_i^{neu} - \beta_i^{neg}} > \gamma$, the attribute is categorized as an attractive attribute which forms a V-shaped curve on the graph. If $\frac{\beta_i^{pos} + \beta_i^{neg}}{2} \leq \beta_i^{neu}$ and $\frac{\beta_i^{neu} - \beta_i^{neg}}{\beta_i^{pos} - \beta_i^{neu}} > \gamma$, the curve is A-shaped on the graph. For one-dimensional attribute is evaluated by the condition of $\frac{\beta_i^{pos} + \beta_i^{neg}}{2} > \beta_i^{neu}$ and $\frac{\beta_i^{pos} - \beta_i^{neu}}{\beta_i^{neu} - \beta_i^{neg}} \leq \gamma$ or if $\frac{\beta_i^{pos} + \beta_i^{neg}}{2} \leq \beta_i^{neu}$ and $\frac{\beta_i^{neu} - \beta_i^{neg}}{\beta_i^{pos} - \beta_i^{neu}} \leq \gamma$, the curve is linear.

[INSERT FIGURE 3 HERE]

Result

The present study gathered 59,623 online reviews from 159 selected 3-5 star-rated hotels in Thailand's famous beach destinations in 2023-2025. After the cleansing process, the reviews were distributed as follows: Phuket (15,106), Samui (16,811), Krabi (10,624), Phang-Nga (9,669), and Pattaya (7,413). K-means clustering and topic modeling (LDA) techniques found eight dimensions: the number of reviews in each dimension was distributed as follows: ambiance (1,987 reviews), empathy (2,282 reviews), food (3,304 reviews), leisure and activities (2,500 reviews), reliability (4,948 reviews), responsiveness (1,223 reviews), service process (1,445 reviews), and tangibles and surroundings (2,015 reviews), which remains only 19,704 reviews in total for further analysis. Each dimension was given a name according to the concept of hotel service quality, as indicated in the study of Kalnaovakul et al. (2025), as shown in Table 1.

[INSERT TABLE 1 HERE]

The performance of the SVM classifier indicated that the accuracy level was at 91.41%. The F-measure values for the majority and minority classes were found to be 0.95 and 0.62, respectively. The value of Cohen's kappa coefficient was also reported at 0.56. As indicated by Madhukar (2022), the evaluation of the level of agreement within the training data can be done using the Cohen kappa coefficient. The interpretation of the Cohen kappa coefficient is as follows: values

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2
3 ranging from 0.81 to 1.00 indicate almost perfect agreement, values ranging from 0.61 to 0.80
4 indicate substantial agreement, values ranging from 0.41 to 0.60 indicate moderate agreement,
5 values ranging from 0.21 to 0.40 indicate fair agreement, and values ranging from 0.01 to 0.20
6 indicate slight or minimal agreement (McHugh, 2012). Therefore, the reliability of the
7 classification between the positive and negative instances can be considered to be moderate to
8 substantial.
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15 In the online review dataset, not all reviewers on TripAdvisor indicated their types of travelers;
16 this study would select customer reviews that provided types of travelers in each dimension for
17 further sentiment analysis. Each dimension was also broken down into five categories of travelers,
18 as shown in Table 2. The largest number of reviews was from the couple and family categories,
19 which together reflect the majority of travelers to beach destinations.
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25 [INSERT TABLE 2 HERE]
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29 At this stage, sentiment analysis was conducted using VADER through a Python script, which
30 generated sentiment scores: positive, neutral, and negative for each review. These scores, together
31 with overall customer ratings, were then analyzed using regression models across different traveler
32 segments and service dimensions. The estimated parameters (β_i) from Equation (1) are presented
33 in Tables 3 and 4, covering all traveler types and dimensions. Notably, beyond positive and
34 negative sentiments, neutral sentiment variables were also found to have a statistically significant
35 effect on overall customer satisfaction, as reported in Table 5.
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43 The findings indicate that both family and friend traveler segments exhibited six out of eight
44 neutral sentiment variables as having the strongest influence on overall customer satisfaction. This
45 was followed by couples, with five out of eight variables, solo travelers with three, and business
46 travelers with two, respectively.
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51 [INSERT TABLE 3 HERE]
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[INSERT TABLE 5 HERE]

The classification of attributes within the Kano model is determined by the curve pattern associated with each traveler segment and service dimension. The mean value of the regression coefficients (β_i) for variables X_i , denoted as λ , was computed for each traveler type and dimension following the approach of Lee et al. (2012), as presented in Table 6. In addition, Zhang et al. (2022) recommended adopting a threshold value of $\gamma = 2$ to differentiate among curve forms, such as linear, A-shaped, and V-shaped relationships. These threshold criteria were applied to maintain consistency and comparability across different traveler groups and dimensions.

[INSERT TABLE 6 HERE]

In the hotel service industry, all types of travelers identified the Must be attributes, although the service quality dimensions differ from one group to another.

- Business travelers identified ambiance, empathy, food, responsiveness, and service as must-be attributes.
- Couple travelers identified empathy, food, leisure and activities, reliability, responsiveness, and service as must-be attributes.
- Family travelers identified ambiance, empathy, food, leisure and activities, reliability, and service as must-be attributes.
- Friend travelers identified empathy, food, leisure and activities, reliability, and service as must-be attributes.
- Solo travelers identified leisure and activities and reliability as must-be attributes.

Attractive attributes were identified by some types of travelers. For business travelers, leisure and activities were identified as attractive attributes, while food, service, and tangibles and surroundings were identified as attractive attributes by solo travelers. One-dimensional attributes were mainly related to tangibles and surroundings for all traveler types, except for the solo travelers. On the other hand, indifferent attributes were found only in the solo segment in terms of responsiveness. It may be concluded that, in terms of service quality perception for all traveler

types, must-be attributes are dominated by six dimensions: ambiance, empathy, food, leisure and activities, reliability, and service. Responsiveness was found to be an attractive attribute, whereas tangibles and surroundings were found to be one-dimensional attributes in general. A summary of the findings is given in Table 7.

[INSERT TABLE 7 HERE]

[INSERT FIGURE 4 HERE]

β_1
Findings and discussions

The present study offers a holistic understanding of hotel service quality with the integration of topic modeling, sentiment analysis, and the Kano Model in extracting customer requirements from online reviews. The study’s findings are consistent with and extend previous research in several significant aspects.

Firstly, the hotel service quality dimensions derived using Latent Dirichlet Allocation, such as ambiance, empathy, food, leisure and activities, reliability, responsiveness, service, and tangibles and surroundings, are consistent with traditional conceptualizations of service quality such as SERVQUAL (Parasuraman et al., 1985) and HOLSERV PLUS (Mei et al., 1999). Moreover, the derived hotel service quality dimensions are consistent with previous online reviews on hotel quality, which have also reported dimensions such as room quality, staff behavior, and hotel location (De Oliveira-Cardoso et al., 2025; Tang et al., 2026). However, the present study extends previous findings on hotel service quality in that it emphasizes dimensions related to experiences, such as leisure and activities. This is significant in the context of beach resort hotels. This is in line with the argument that approaches based on electronic word-of-mouth provide deeper insights than traditional approaches (Alrawadieh and Law, 2019; Ismagilova et al., 2021).

Secondly, the study’s findings validate the relationship between dimension-specific sentiment and customer satisfaction, supporting prior research that shows customer satisfaction is significantly

influenced by customers' perceptions of service quality (Ali et al., 2021; Kalnaovakul et al., 2025). One intriguing finding of this study is that neutral sentiment has emerged as a significant predictor of customer satisfaction. Prior studies have predominantly focused on both positive and negative sentiment polarity. The study findings also showed that neutral sentiment is particularly significant in terms of predicting customer satisfaction with family and friend travelers. The study has extended prior sentiment analysis studies by finding that neutral sentiment may be seen as a reflection of underlying customer expectations or service standards, as proposed by Kano's model under must-be quality attributes. The study has therefore extended prior sentiment analysis studies by proposing a three-dimensional construct of sentiment, namely, positive, neutral, and negative.

Thirdly, the findings verify the impact of customer heterogeneity on service quality perception, as supported by previous studies highlighting the impact of travel purpose, experience, and demographic characteristics on service evaluation (Padlee et al., 2019; Sharma and Srivastava, 2018). Consistent with Ali et al. (2021), business travelers in this study prioritize functional attributes such as responsiveness and service efficiency, while leisure travelers (e.g., couples, families, and friends) prioritize experiential attributes such as food, empathy, and leisure activities. In addition, the findings reveal unique characteristics of solo travelers, including the identification of certain attributes as indifferent.

Fourth, the study uncovers asymmetric relationships between service attributes and customer satisfaction using the Kano model. The preponderance of must-be attributes across the various dimensions of service attributes is consistent with the Kano model (Kano et al., 1984) and previous hospitality studies that highlighted the importance of basic service attributes in avoiding customer dissatisfaction (Matzler et al., 2004). Furthermore, the identification of tangibles and surroundings as one-dimensional attributes is consistent with the proposition of a linear relationship between the physical attributes of service and satisfaction. Finally, the presence of attractive attributes such as leisure and activities for business travelers and food or service for solo travelers also confirms previous studies that highlighted the importance of unexpected service attributes in delivering customer delight. This study is significant as it extends the previous applications of the Kano model by using eWOM data to classify the attributes instead of the more conventional survey-based approach.

Lastly, the study makes a contribution in terms of methodology, as it proves the efficiency of the integration of topic modeling, sentiment analysis, and Kano classification. Though these methods have been successfully applied in the past (Zhang et al., 2022; Zhao et al., 2024), this study integrates the methods in a single framework that connects customer statements with the impact on customer satisfaction outcomes, thus enhancing the methodology in hospitality research.

Conclusion and implications

This study demonstrates that integrating topic modeling, sentiment analysis, and the Kano model provides a robust framework for understanding hotel service quality and customer requirements through electronic word-of-mouth (eWOM) data. By leveraging large-scale online reviews, the study offers a more dynamic and experience-based perspective than traditional methods (Ismagilova et al., 2021; Liu et al., 2024). The findings confirm that service quality is multidimensional and aligned with established models such as SERVQUAL, while extending prior research by incorporating experiential attributes (Parasuraman et al., 1985; Tang et al., 2026). Importantly, service attributes exhibit asymmetric effects on satisfaction, with many functioning as must-be requirements (Kano et al., 1984). Notably, neutral sentiment significantly predicts satisfaction, reflecting baseline expectations (Ali et al., 2021). The results also highlight customer heterogeneity, emphasizing the need for targeted service strategies (Padlee et al., 2019).

Theoretical Implications

This study offers several theoretical contributions to service quality and hospitality research. First, it extends traditional frameworks such as SERVQUAL and HOLSERV by demonstrating that data-driven dimensions derived from eWOM can both validate and enrich existing models. The emergence of experience-related dimensions, such as leisure and activities, highlights that service quality is context-dependent and evolves with customer expectations, particularly in experiential settings. Second, the study advances sentiment analysis by moving beyond a binary perspective to a tri-dimensional construct that includes neutral sentiment. The finding that neutral sentiment significantly influences satisfaction challenges conventional assumptions and, through its linkage to “must-be” attributes in the Kano Model, provides a novel theoretical bridge between sentiment

analysis and expectation theory. This suggests that neutrality reflects the fulfillment of expected standards rather than the absence of evaluation.

Third, the findings reinforce the importance of customer heterogeneity, showing that different traveler segments (e.g., business, leisure, and solo) evaluate service attributes differently, with some attributes even perceived as indifferent by certain groups. Additionally, the application of the Kano Model to eWOM data supports the existence of non-linear and asymmetric relationships between service attributes and satisfaction, while extending Kano's applicability beyond traditional survey methods. Finally, the integration of topic modeling, sentiment analysis, and Kano classification represents a methodological contribution by offering a scalable and replicable framework for extracting customer insights from unstructured data. This approach helps bridge text mining techniques with established theories of service quality and satisfaction, supporting the advancement of data-driven theory development in hospitality research.

Lastly, the study makes a methodological contribution by demonstrating the effectiveness of integrating topic modeling, sentiment analysis, and Kano classification. Although these methods have been successfully applied in prior studies (Zhao et al., 2024; Zhang et al., 2022), this study integrates them within a single framework that links customer statements to customer satisfaction outcomes, thereby advancing methodological approaches in hospitality research.

Practical Implications

The findings provide clear managerial guidance: Must-be attributes (e.g., cleanliness, reliability): ensure consistent delivery to avoid dissatisfaction. One-dimensional attributes (e.g., tangibles): invest proportionally to improve satisfaction. Attractive attributes (e.g., leisure activities, personalized service): use as differentiation strategies. This allows managers to optimize resource allocation and maximize return on service investments. Managers should not ignore neutral reviews. Neutral sentiment should be interpreted as a signal of unmet opportunities rather than satisfaction. It reflects baseline expectations being met but not exceeded. Especially important for segments like families and groups. This insight enables hotels to convert neutral experiences into positive ones, enhancing competitive advantage. Furthermore, the study underscores the importance of adopting targeted market segmentation strategies. For business travelers, service

delivery should emphasize efficiency, responsiveness, and reliability. In contrast, leisure travelers are more likely to value experiential elements, empathy, and recreational offerings. For solo travelers, simplified services that focus on core needs may be more appropriate. These insights support the development of tailored service strategies that better align with the expectations of different customer groups.

Limitation and future research direction

Despite its contributions, this study has several limitations that should be acknowledged. Firstly, the data is restricted to English-speaking customers, which may not account for the viewpoints of other customers who may not speak English. This may cause linguistic bias in the analysis of service quality perceptions. Secondly, the study is restricted to hotels in beach destinations in Thailand, which may not account for the perceptions of service quality in other types of hotels, like hotels in cities, cultural spots, business spots, etc. Thirdly, the study has used the VADER sentiment analyzer, which may not work well with certain types of texts, though it is applicable to social media texts. Lastly, the study is based on secondary data, which may not account for self-selection bias, as people who write reviews may not necessarily represent the entire population of people who stay in hotels. Furthermore, though the modified Kano model is a novel method of classifying service attributes, the parameters like λ and γ may not be objective, as they may cause bias in the classification of service attributes.

Building on these limitations, several avenues for future research are suggested. Firstly, future studies can use multiple language sets of data in their analysis in order to have a wider variety of customer opinions and be more generalizable. Secondly, comparative studies can be carried out on different types of destinations. For example, one can compare urban and rural areas and luxury and budget hotels. This may provide deeper insights into the different aspects of variations in service quality dimensions. Thirdly, future studies can use more advanced deep learning algorithms in sentiment analysis in order to improve the accuracy of sentiment detection and better understand the meanings behind the text. Fourthly, future studies can be carried out over a period of time in order to understand the change in customer expectations and perceptions of service quality in response to other factors such as technology and global crises. Fifthly, future studies can be carried out on other factors that may influence the heterogeneity in service quality perceptions.

These factors may include customer demographics, culture, and travel frequency. Finally, other approaches such as aspect-based sentiment analysis and causality can be included in the analysis in order to enhance the explanatory power of the proposed framework.

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Table 1. Service quality dimensions extracted from customer reviews using LDA

X_i	Service Quality Dimensions	Dimension Key Words	# Reviews
X_1 :	Ambiance	stay, beautiful, villa, view, place, private, wonderful	1987
X_2 :	Empathy	staff, service, special, thank, make, always, experience	2282
X_3 :	Food	food, restaurant, breakfast, dinner, drink, buffet, bar, thai	3304
X_4 :	Leisure & Activities	kid, family, activity, club, holiday, child, love, time	2500
X_5 :	Reliability	room, stay, clean, bed, view, nice, staff, lovely, area	4948
X_6 :	Responsiveness	staff, friendly, recommend, service, stay, room, place, amazing	1223
X_7 :	Service	check-in, check-out, book, time, day, need, night, service	1445
X_8 :	Tangibles & Surroundings	location, location, walk, room, staff, place, road	2015

Table 2. Number of reviews on each service quality dimension extracted from online reviews by types of travelers

Service Quality Dimensions	# Reviews	Business	Couple	Family	Friend	Solo
Ambiance	1987	50	832	736	252	117
Empathy	2282	40	898	971	248	125
Food	3304	80	1464	1066	547	147
Leisure & Activities	2500	51	1211	883	251	104
Reliability	4948	84	2004	1845	828	187
Responsiveness	1223	162	121	874	52	14
Service	1445	22	517	365	470	71
Tangibles & Surroundings	2015	42	872	771	232	98
Total	19704	531	7919	7511	2880	863

Table 3. Results of the parameter estimation for β_i in Equation (1) for traveler types “business”, “couple”, “family”

Business				Couple				Family			
Variable	Estimate	Std. error	p-value	Variable	Estimate	Std. error	p-value	Variable	Estimate	Std. error	p-value
X_1^{neg}	-10.392	3.887	0.01*	X_1^{neg}	-7.127	0.864	0.001***	X_1^{neg}	-9.015	0.932	0.001***
X_1^{neu}	-0.593	1.031	0.568	X_1^{neu}	-2.148	0.255	0.001***	X_1^{neu}	-1.572	0.286	0.062
X_1^{pos}	1.042	0.426	0.018*	X_1^{pos}	0.904	0.09	0.001***	X_1^{pos}	1.018	0.09	0.001***
X_2^{neg}	-10.478	2.828	0.001***	X_2^{neg}	-7.295	0.752	0.001***	X_2^{neg}	-9.187	0.796	0.001***
X_2^{neu}	-1.809	1.176	0.133	X_2^{neu}	-0.891	0.228	0.001***	X_2^{neu}	-1.88	0.238	0.001***
X_2^{pos}	-0.077	0.459	0.867	X_2^{pos}	1.074	0.081	0.001***	X_2^{pos}	0.865	0.076	0.001***
X_3^{neg}	-3.934	1.157	0.001***	X_3^{neg}	-2.735	0.423	0.001***	X_3^{neg}	-3.624	0.552	0.001***
X_3^{neu}	-0.194	0.283	0.496	X_3^{neu}	-0.152	0.097	0.117	X_3^{neu}	0.044	0.131	0.734
X_3^{pos}	-0.542	0.45	0.232	X_3^{pos}	0.336	0.092	0.001***	X_3^{pos}	0.877	0.112	0.001***
X_4^{neg}	-2.187	4.153	0.601	X_4^{neg}	-8.812	0.763	0.001***	X_4^{neg}	-8.187	0.875	0.001***
X_4^{neu}	-1.325	1.152	0.256	X_4^{neu}	-1.991	0.269	0.002**	X_4^{neu}	-1.333	0.304	0.001***
X_4^{pos}	2.16	0.736	0.005**	X_4^{pos}	0.295	0.098	0.003**	X_4^{pos}	0.129	0.123	0.294
X_5^{neg}	-3.669	2.52	0.149	X_5^{neg}	-4.467	0.513	0.001***	X_5^{neg}	-4.517	0.546	0.001***
X_5^{neu}	-1.796	0.697	0.012*	X_5^{neu}	-0.843	0.123	0.001***	X_5^{neu}	-0.803	0.304	0.008**
X_5^{pos}	0.676	0.43	0.12	X_5^{pos}	0.224	0.086	0.01*	X_5^{pos}	0.019	0.081	0.001***
X_6^{neg}	-9.163	2.057	0.001***	X_6^{neg}	-4.842	1.408	0.001***	X_6^{neg}	-2.055	0.775	0.008**
X_6^{neu}	-1.156	0.632	0.069	X_6^{neu}	-0.8	0.423	0.061	X_6^{neu}	-0.98	1.94	0.001***
X_6^{pos}	0.815	0.235	0.001***	X_6^{pos}	0.129	0.438	0.77	X_6^{pos}	0.923	0.15	0.001***
X_7^{neg}	-36.539	13.335	0.014*	X_7^{neg}	-8.564	1.85	0.001***	X_7^{neg}	-8.713	1.106	0.001***
X_7^{neu}	1.207	2.071	0.568	X_7^{neu}	0.228	1.764	0.897	X_7^{neu}	-0.954	0.252	0.001***
X_7^{pos}	4.497	1.282	0.003**	X_7^{pos}	0.841	0.109	0.001***	X_7^{pos}	1.17	0.139	0.001***
X_8^{neg}	-16.207	6.325	0.014*	X_8^{neg}	-12.761	1.182	0.001***	X_8^{neg}	-12.625	1.256	0.001***
X_8^{neu}	-9.386	3.048	0.004**	X_8^{neu}	-6.775	0.599	0.001***	X_8^{neu}	-5.871	0.667	0.001***
X_8^{pos}	0.044	0.452	0.923	X_8^{pos}	0.172	0.085	0.043*	X_8^{pos}	0.266	0.09	0.003**

Note: Significance levels: ***, **, * are statistically significant at the 0.001, 0.01, 0.05 level, respectively.

Table 4. Results of the parameter estimation for β_i in Equation (1) for traveler types “friend”, “solo”, and “all types”

Friend				Solo				All types			
Variable	Estimate	Std. error	p-value	Variable	Estimate	Std. error	p-value	Variable	Estimate	Std. error	p-value
X_1^{neg}	-7.186	1.803	0.001***	X_1^{neg}	-5.793	2.331	0.001***	X_1^{neg}	-78.132	5.713	0.001***
X_1^{neu}	-2.209	0.425	0.001***	X_1^{neu}	-1.15	0.703	0.105	X_1^{neu}	-18.338	1.663	0.001***
X_1^{pos}	0.75	0.193	0.001***	X_1^{pos}	1.598	0.536	0.001***	X_1^{pos}	9.915	0.582	0.001***
X_2^{neg}	-10.454	1.602	0.001***	X_2^{neg}	-5.229	2.046	0.012*	X_2^{neg}	-85.225	4.966	0.001***
X_2^{neu}	-1.238	0.491	0.012*	X_2^{neu}	-1.47	0.576	0.012*	X_2^{neu}	-14.18	1.504	0.001***
X_2^{pos}	0.685	0.186	0.001***	X_2^{pos}	1.401	0.216	0.001***	X_2^{pos}	9.417	0.512	0.001***
X_3^{neg}	-1.861	0.644	0.004**	X_3^{neg}	-0.37	1.357	0.786	X_3^{neg}	-28.861	2.95	0.001***
X_3^{neu}	-0.024	0.148	0.871	X_3^{neu}	-0.286	0.257	0.273	X_3^{neu}	-0.467	0.677	0.49
X_3^{pos}	0.078	0.175	0.656	X_3^{pos}	0.356	0.339	0.297	X_3^{pos}	5.49	0.649	0.001***
X_4^{neg}	-8.514	1.403	0.001***	X_4^{neg}	-6.44	1.286	0.001***	X_4^{neg}	-83.468	5.121	0.001***
X_4^{neu}	-1.881	0.455	0.001***	X_4^{neu}	-0.968	0.422	0.023*	X_4^{neu}	-16.646	1.773	0.001***
X_4^{pos}	0.242	0.189	0.201	X_4^{pos}	0.154	0.222	0.489	X_4^{pos}	2.653	0.687	0.001***
X_5^{neg}	-3.514	0.756	0.001***	X_5^{neg}	-4.524	1.956	0.022*	X_5^{neg}	-43.864	4.155	0.001***
X_5^{neu}	-0.495	0.173	0.004**	X_5^{neu}	-0.404	0.472	0.393	X_5^{neu}	-8.076	2.983	0.007**
X_5^{pos}	0.431	0.143	0.003**	X_5^{pos}	0.828	0.257	0.001***	X_5^{pos}	3.483	0.524	0.001***
X_6^{neg}	-3.076	2.541	0.117	X_6^{neg}	2.365	20.539	0.611	X_6^{neg}	-13.431	6.71	0.001***
X_6^{neu}	0.447	0.658	0.979	X_6^{neu}	2.286	3.038	0.409	X_6^{neu}	-8.9	1.17	0.001***
X_6^{pos}	3.572	1.11	0.007**	X_6^{pos}	4.591	5.819	0.856	X_6^{pos}	8.9	1.377	0.001***
X_7^{neg}	-5.543	1.007	0.001***	X_7^{neg}	-1.152	2.633	0.663	X_7^{neg}	-89.335	5.928	0.001***
X_7^{neu}	-0.407	0.193	0.036*	X_7^{neu}	-0.672	0.587	0.256	X_7^{neu}	-10.572	1.361	0.001***
X_7^{pos}	1.674	0.138	0.001***	X_7^{pos}	1.151	0.306	0.001***	X_7^{pos}	10.664	0.712	0.001***
X_8^{neg}	-10.576	2.436	0.001***	X_8^{neg}	-9.552	4.43	0.034	X_8^{neg}	-12.366	0.787	0.001***
X_8^{neu}	-6.071	1.09	0.001***	X_8^{neu}	-7.045	2.194	0.002**	X_8^{neu}	-6.33	0.4	0.001***
X_8^{pos}	0.225	0.193	0.243	X_8^{pos}	0.43	0.321	0.184	X_8^{pos}	0.23	0.57	0.001***

Note: Significance levels: ***, **, * are statistically significant at the 0.001, 0.01, 0.05 level, respectively.

Table 5. Summary of neutral sentiment variables that significantly impact satisfaction across traveler types and dimensions

Service Quality Dimensions	# of neutral sentiment variables significantly impacts satisfaction				
	Business	Couple	Family	Friend	Solo
Ambiance		x		x	
Empathy		x	x	x	x
Food					
Leisure & Activities	x	x	x	x	x
Reliability		x	x	x	
Responsiveness			x		
Service			x	x	
Tangibles & Surroundings	x	x	x	x	x

Table 6. Mean values of regression coefficients for variables X_i

Service Quality Dimensions	The average values of β_i^{pos} , β_i^{neu} , and β_i^{neg}				
	Business	Couple	Family	Friend	Solo
Ambiance	-3.31	-2.79	-3.19	-2.88	-1.78
Empathy	-4.12	-2.37	-3.40	-3.67	-1.77
Food	-1.56	-0.85	-0.90	-0.60	-0.10
Leisure & Activities	-0.45	-3.50	-3.13	-3.38	-2.42
Reliability	-1.60	-1.70	-1.77	-1.19	-1.37
Responsiveness	-3.17	-1.84	-0.70	0.31	3.08
Service	-10.28	-2.50	-2.83	-1.43	-0.22
Tangibles & Surroundings	-8.52	-6.45	-6.08	-5.47	-5.39

From Figures 4 and 5, the curves of the service quality dimensions of β_i from X_1 to X_8 for different types of travelers are shown. Kano attributes, such as Must be, One-dimensional, Attractive, Indifferent, and Reverse, were plotted based on the curve.

Table 7. Classification of attributes in different types of travelers and service quality dimensions

Service Quality Dimensions	Traveler Type Dataset					
	Business	Couple	Family	Friend	Solo	all types
X_1 : <i>Ambiance</i>	must-be	one-dimensional	must-be	one-dimensional	one-dimensional	must-be
X_2 : <i>Empathy</i>	must-be	must-be	must-be	must-be	one-dimensional	must-be
X_3 : <i>Food</i>	must-be	must-be	must-be	must-be	attractive	must-be
X_4 : <i>Leisure & Activities</i>	attractive	must-be	must-be	must-be	must-be	must-be
X_5 : <i>Reliability</i>	one-dimensional	must-be	must-be	must-be	must-be	must-be
X_6 : <i>Responsiveness</i>	must-be	must-be	one-dimensional	one-dimensional	indifferent	attractive
X_7 : <i>Service</i>	must-be	must-be	must-be	must-be	attractive	must-be
X_8 : <i>Tangibles & Surroundings</i>	one-dimensional	one-dimensional	one-dimensional	one-dimensional	attractive	one-dimensional

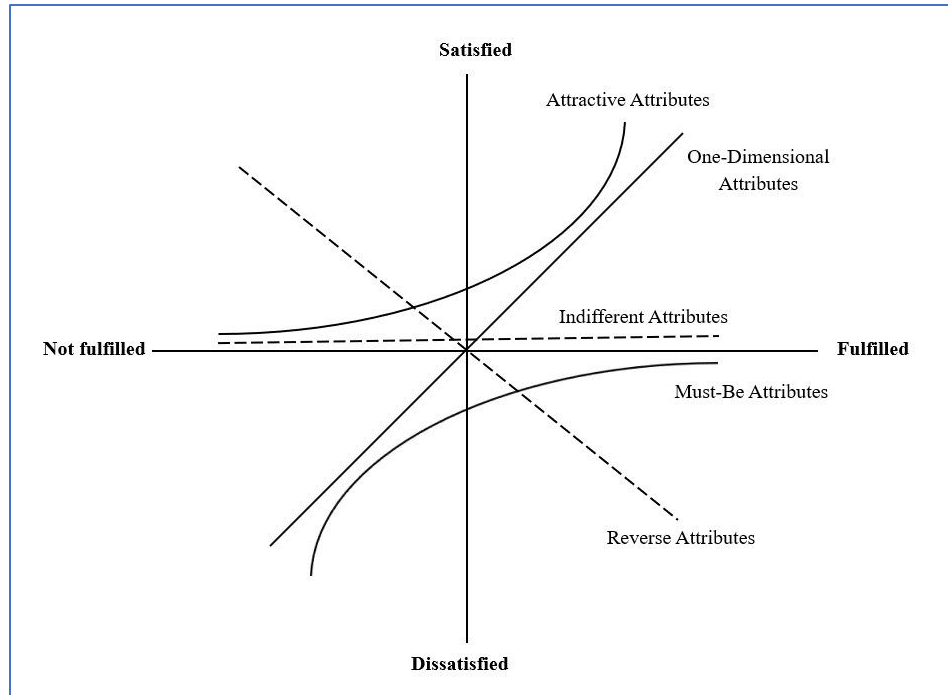


Figure 1. Classification of attributes in KANO model (Kano et al., 1984)

Conceptual Framework to Identify Customer Requirements by Types of Traveler

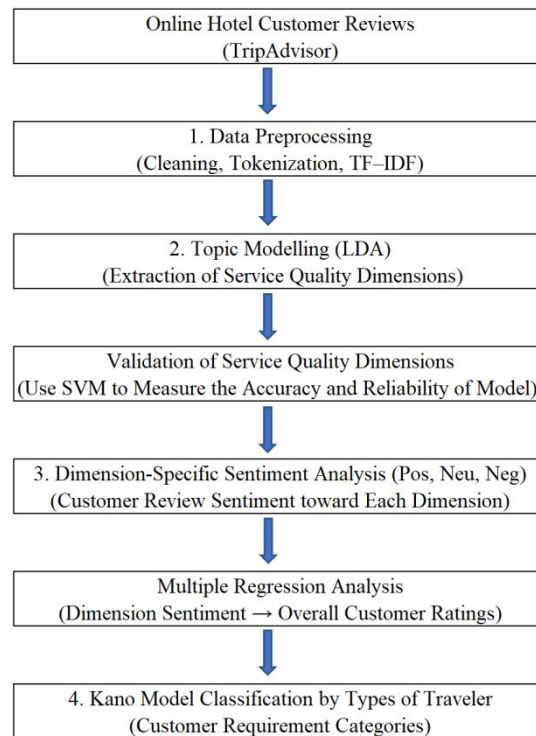


Figure 2. Conceptual framework

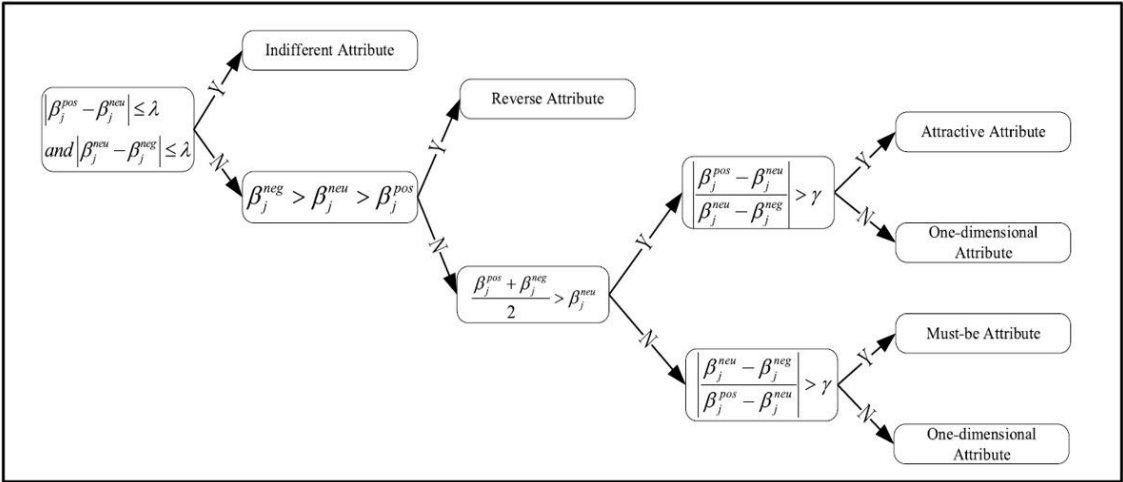


Figure 3. Modified KANO model proposed by Zhang et al. (2022).

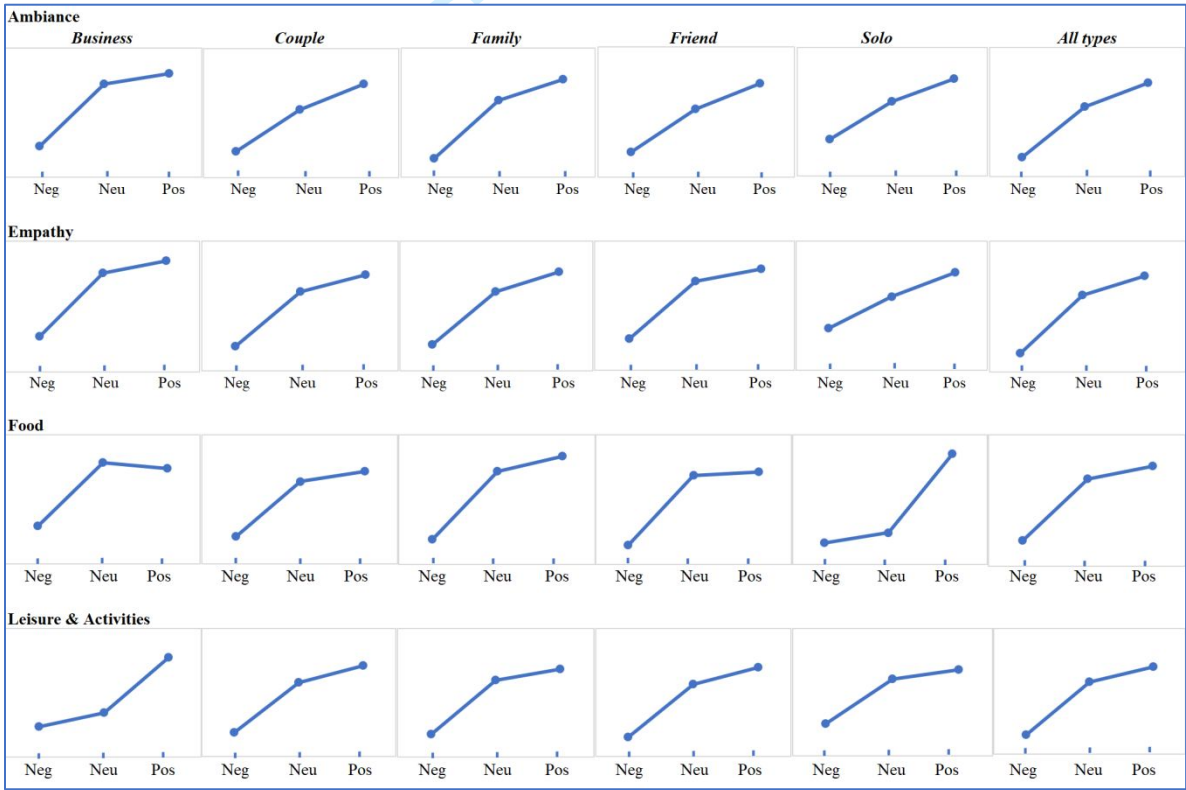


Figure 4. β_i curves of service quality dimensions from X_1 to X_4 on different types of travelers.

β_5

β_6

สัญญาเงินทุนอุดหนุนของกองทุนวิจัยคณะกรรมการบริการและการท่องเที่ยว

โครงการพัฒนาศักยภาพนักวิจัยโดยการศึกษาและวิจัยระดับปริญญาเอก ประจำปี 2564-2566

ทำที่ มหาวิทยาลัยสงขลานครินทร์ วิทยาเขตภูเก็ต

วันที่...15...เดือน...กันยายน...พ.ศ..2564..

โดยที่คณะกรรมการบริการและการท่องเที่ยว ได้จัดสรรงบประมาณจากกองทุนวิจัยคณะกรรมการบริการและการท่องเที่ยว ตามโครงการพัฒนาศักยภาพนักวิจัยโดยการศึกษาและวิจัยระดับปริญญาเอก ประจำปี 2564-2566 สำหรับเป็นเงินอุดหนุนให้แก่อาจารย์ประจำคณะฯ ในการเข้าศึกษาต่อระดับปริญญาเอก เพื่อเพิ่มพูนความรู้และประสบการณ์ในการวิจัย ทำให้สามารถผลิตงานวิจัยที่มีคุณภาพและได้รับการตีพิมพ์ในระดับนานาชาติ ซึ่งเมื่อสำเร็จการศึกษาในระดับปริญญาเอกแล้ว สามารถปฏิบัติงานที่เป็นประโยชน์อย่างยิ่งให้แก่คณะฯ สืบไป

ในสัญญานี้ โดยผู้ช่วยศาสตราจารย์พรพิษณุ พรหมศิวะพัลลภ ตำแหน่ง **คณบดีคณะกรรมการบริการและการท่องเที่ยว** ปฏิบัติการแทนอธิการบดีมหาวิทยาลัยสงขลานครินทร์ ซึ่งต่อไปในสัญญานี้เรียกว่า “**ผู้ให้ทุน**” ฝ่ายหนึ่ง กับ **นาย/นาง/นางสาว...คณพศ.กมลเนาวกุล... ตำแหน่งอาจารย์... อยู่บ้านเลขที่ ...43/699....หมู่ที่.8..ตำบลบางพูด...อำเภอปากเกร็ด...จังหวัดนนทบุรี** ซึ่งต่อไปในสัญญานี้เรียกว่า “**ผู้รับทุน**” อีกฝ่ายหนึ่ง

ทั้งสองฝ่ายได้ตกลงทำสัญญากันไว้ มีข้อความดังต่อไปนี้

ข้อ 1 ผู้ให้ทุนตกลงให้ทุนและผู้รับทุนตกลงรับทุนอุดหนุนตามโครงการพัฒนาศักยภาพนักวิจัย โดยการศึกษาและวิจัยระดับปริญญาเอก ประจำปี 2564-2566 สำหรับใช้ในการศึกษาต่อในระดับปริญญาเอก ณ มหาวิทยาลัย Taylor's University Lakeside Campus ประเทศมาเลเซีย เป็นเงินจำนวน....564,472...บาท (...ห้าแสนหกหมื่นสี่พันสี่ร้อยเจ็ดสิบสองบาทถ้วน...) โดยผู้รับทุนจะมีการดำเนินงานวิจัย (วิทยานิพนธ์) ในระดับปริญญาเอก หัวข้อ “Dimensions of Hospitality Service Experience: An analysis of online reviews” หรือ หัวข้อที่คณะฯ ให้ความเห็นชอบ

ข้อ 2 การจ่ายเงินทุนอุดหนุน ผู้ให้ทุนจะจ่ายเงินทุนให้แก่ผู้รับทุน โดยการโอนเข้าบัญชี...ธนาคารไทยพาณิชย์ เลขที่ 817-279677-1 ชื่อ นายคณพศ กมลเนาวกุล...ของผู้รับทุน เมื่อผู้รับทุนดำเนินการขอเบิกจ่ายทุนพร้อมเอกสารแสดงรายการค่าใช้จ่ายตามจริงต่อผู้ให้ทุน ดังรายละเอียดต่อไปนี้

2.1 ค่าธรรมเนียมการศึกษา รวมถึงค่าธรรมเนียมอื่น ๆ ตามหลักสูตร เป็นเงินจำนวน ... 156,000 บาท (...หนึ่งแสนห้าหมื่นหกพันบาทถ้วน...)

2.2 ค่าใช้จ่ายในการทำงานวิจัย เช่น ค่าใช้จ่ายในการเก็บข้อมูล ยกเว้นค่าตอบแทนนักวิจัย เป็นเงินจำนวน... 100,000....บาท (...หนึ่งแสนบาทถ้วน...)

2.3 ค่าใช้จ่ายอันเกี่ยวกับการเรียน เช่น ค่าหนังสือ ตำรา เป็นเงินจำนวน ... 290,472....บาท (...สองแสนเก้าหมื่นสี่ร้อยเจ็ดสิบสองบาทถ้วน...)

2.4 ค่าใช้จ่ายอื่น ๆ เช่น ค่าเดินทาง ค่าที่พัก สำหรับการเดินทางไปเรียนหรือพบอาจารย์ที่ปรึกษา เป็นเงินจำนวน18,000..บาท (...หนึ่งหมื่นแปดพันบาทถ้วน...)

ข้อ 3 ผู้รับทุนต้องรายงานผลการศึกษาต่อผู้ให้ทุน ทุก ๆ 6 เดือน พร้อมแนบเอกสารที่เกี่ยวข้อง ตามแบบฟอร์มที่ผู้ให้ทุนกำหนด

หากผู้รับทุนไม่รายงานผลการศึกษาหรือขาดการติดต่อกับมหาวิทยาลัยที่ศึกษา หรือผู้ให้ทุน พิจารณาแล้วเห็นว่าผู้รับทุนไม่มีความก้าวหน้าในการศึกษาตามแผนที่กำหนดหรือเหตุอื่นใดที่เล็งเห็นแล้วว่าผู้รับ ทุนไม่สามารถสำเร็จการศึกษาได้อย่างแน่แท้ ผู้ให้ทุนอาจพิจารณาระงับการให้ทุนหรือยุติการให้ทุนแก่ผู้รับทุนตาม ควรแก่กรณี ทั้งนี้ เมื่อผู้รับทุนได้รับแจ้งจากผู้ให้ทุน ผู้รับทุนจะต้องคืนเงินทุนที่ได้รับไปทั้งหมด พร้อมดอกเบี้ย (ถ้ามี) ในอัตราร้อยละ 7.5 ต่อปี ของจำนวนเงินที่ต้องชำระ นับตั้งแต่วันที่ครบกำหนดชำระจนถึงวันที่ผู้รับทุนชำระ คืนให้แก่ผู้ให้ทุนครบถ้วนภายในระยะเวลาที่ผู้ให้ทุนกำหนด

ข้อ 4 ผู้รับทุนต้องตีพิมพ์ผลงานวิจัยในวารสารระดับนานาชาติในระหว่างการรับทุนตามสัญญา นี้ พร้อมระบุต้นสังกัดเป็นมหาวิทยาลัยสงขลานครินทร์ อย่างน้อย 1 ผลงาน และต้องยื่น Manuscript ที่พร้อมส่ง วารสารนานาชาติเพื่อพิจารณาตีพิมพ์อีก จำนวน 1 ผลงาน

ข้อ 5 ในระหว่างการรับทุนตามสัญญา นี้ หากผู้รับทุนได้รับทุนอื่นใดเพิ่มเติม ผู้รับทุนต้องแจ้งให้ ผู้ให้ทุนทราบโดยทันทีหลังจากได้รับเอกสารอย่างเป็นทางการจากผู้ให้ทุนรายอื่น เพื่อให้ผู้ให้ทุนพิจารณาการให้ ทุนตามสัญญา นี้ต่อไป

ข้อ 6 ผู้รับทุนต้องมีผลการศึกษาตลอดปีการศึกษาสำหรับรายวิชา Coursework ในระดับคะแนน เจลีสสะสมเป็นไปตามเกณฑ์ที่มหาวิทยาลัยที่ผู้รับทุนเข้าศึกษากำหนด และ/หรือ ต้องมีความก้าวหน้าของ วิทยานิพนธ์เป็นไปตามแผนที่กำหนด หรือ ต้องมีความก้าวหน้าของวิทยานิพนธ์เป็นไปตามแผนที่กำหนด

ข้อ 7 หากผู้รับทุนประสบปัญหาหรืออุปสรรคอื่นใด อันส่งผลต่อการเรียนของทุน ผู้รับทุน จะต้องรายงานเหตุดังกล่าวต่อผู้ให้ทุนเป็นลายลักษณ์อักษรเพื่อทราบโดยเร็ว เพื่อให้ผู้ให้ทุนพิจารณาตามความ เหมาะสมต่อไป

ข้อ 8 ผู้รับทุนต้องอยู่ปฏิบัติงาน ณ คณะกรรมการและการท่องเที่ยว เป็นระยะเวลาไม่น้อยกว่า 2 ปี นับแต่วันที่ผู้รับทุนสำเร็จการศึกษา โดยยึดวันที่สำเร็จการศึกษาตามปรากฏในใบรับรองผลการเรียน (Transcript) เป็นหลักด้วย

หากผู้รับทุนไม่อยู่ปฏิบัติงานตามกำหนดระยะเวลาดังกล่าว ผู้รับทุนต้องคืนเงินทุนที่ได้รับไป ทั้งหมดให้แก่ผู้ให้ทุน ภายใน 30 วัน นับแต่วันที่ได้รับแจ้งจากผู้ให้ทุน พร้อมดอกเบี้ย (ถ้ามี) ในอัตราร้อยละ 7.5 ต่อปี ของจำนวนเงินที่ต้องชำระ นับตั้งแต่วันที่ครบกำหนดชำระจนถึงวันที่ผู้รับทุนชำระคืนให้แก่ผู้ให้ทุนครบถ้วน

หากผู้รับทุนอยู่ปฏิบัติงานไม่ครบตามกำหนดระยะเวลาดังกล่าว ผู้รับทุนต้องชดเชยเงินคืนให้แก่ ผู้ให้ทุน โดยคำนวณเงินที่ต้องชดเชยคืนจากจำนวนเงินที่ผู้รับทุนได้รับไปทั้งหมด คูณกับ (ระยะเวลาที่เหลือที่ต้อง อยู่ปฏิบัติงาน แล้วหารด้วยระยะเวลาที่ต้องอยู่ปฏิบัติงานตามกำหนด (2 ปี)) เมื่อคำนวณได้เป็นเงินจำนวน เท่าใด ผู้รับทุนต้องคืนเงินทุนที่คำนวณได้ดังกล่าวคืนให้แก่ผู้ให้ทุน ภายใน 30 วัน นับแต่วันที่ได้รับแจ้งจากผู้ให้ ทุน พร้อมดอกเบี้ย (ถ้ามี) ในอัตราร้อยละ 7.5 ต่อปี ของจำนวนเงินที่ต้องชำระ นับตั้งแต่วันที่ครบกำหนดชำระ จนถึงวันที่ผู้รับทุนชำระคืนให้แก่ผู้ให้ทุนครบถ้วน

ข้อ 9 ในกรณีที่ผู้รับทุนไม่อยู่ปฏิบัติงานหรืออยู่ปฏิบัติไม่ครบกำหนดระยะเวลา 2 ปี ตามความในข้อ 8 วรรคหนึ่ง เพราะเหตุผู้รับทุนถึงแก่ความตายหรือเพราะเหตุอื่นใด ตามที่คณะกรรมการบริหารกองทุนวิจัยคณะกรรมการบริการและการท่องเที่ยวกำหนด ผู้รับทุนไม่ต้องรับผิดชอบตามความในข้อ 8 วรรคสอง และวรรคสาม แล้วแต่กรณี

ข้อ 10 ผู้รับทุนต้องปฏิบัติตามประกาศคณะกรรมการบริการและการท่องเที่ยว เรื่อง ทุนอุดหนุนตามโครงการพัฒนาศักยภาพนักวิจัยโดยการศึกษาและวิจัยระดับปริญญาเอก ประจำปี 2564-2566 รวมถึงระเบียบ/ข้อบังคับ/แนวปฏิบัติอื่น ๆ ที่เกี่ยวข้อง ทั้งที่ใช้บังคับอยู่แล้วและที่จะกำหนดขึ้นใช้บังคับในภายหน้า

ข้อ 11 ในกรณีที่ผู้รับทุนมีพันธะที่ต้องชดใช้เงินให้แก่ผู้ให้ทุนตามสัญญา ผู้รับทุนยินยอมให้ผู้ให้ทุนหักเอาจากเงินที่ผู้รับทุนพึงจะได้รับจากผู้ให้ทุนหรือจากเงินเดือน หรือบำเหน็จบำนาญ หรือเงินอื่นใดที่ผู้รับทุนพึงจะได้รับจากหน่วยงานเพื่อชดใช้เงินให้แก่ผู้ให้ทุนดังกล่าวได้

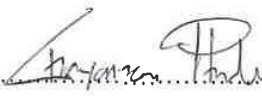
ข้อ 12 หากมีกรณีอื่นใดที่มีได้กำหนดไว้ในสัญญา ผู้รับทุนตกลงให้ผู้ให้ทุนมีอำนาจในการพิจารณาวินิจฉัยเพื่อกำหนดแนวทางการปฏิบัติตามสัญญา และให้ถือว่าคำวินิจฉัยของผู้ให้ทุนดังกล่าวเป็นที่สุด

ข้อ 13 ในวันทำสัญญานี้ ผู้รับทุนได้จัดให้ นาย/นาง/นางสาว....ปราธนา..กาลเนาวกุล...เกี่ยวข้องกับผู้รับทุนโดยเป็น....พี่สาว...เป็นผู้ค้ำประกันผู้รับทุนในการปฏิบัติตามสัญญานี้ด้วยแล้ว

ในกรณีที่ผู้ค้ำประกันถึงแก่ความตายหรือถูกศาลพิพากษาให้เป็นบุคคลล้มละลายระหว่างการค้ำประกันตามสัญญานี้ ผู้รับทุนจะต้องจัดให้มีผู้ค้ำประกันรายใหม่ภายใน 30 วัน นับแต่วันที่ผู้ค้ำประกันเดิมถึงแก่ความตายหรือเป็นบุคคลล้มละลาย และหากผู้รับทุนไม่ปฏิบัติตามดังกล่าว ผู้รับทุนยินยอมให้ผู้ให้ทุนบอกเลิกสัญญานี้ได้

สัญญานี้ฉบับนี้ จัดทำขึ้นเป็น 2 ฉบับ มีข้อความถูกต้องตรงกัน ทั้งสองฝ่ายได้อ่านและเข้าใจ เนื้อความในสัญญานี้โดยตลอดแล้ว เห็นว่าถูกต้องตรงตามเจตนารมณ์ทุกประการ จึงได้ลงลายมือชื่อไว้เป็นสำคัญต่อหน้าพยาน และยึดถือไว้ฝ่ายละฉบับ

(ลงชื่อ)..........ผู้รับทุน (ลงชื่อ)..........ผู้ให้ทุน
(นายกณพศ กาลเนาวกุล) (ผู้ช่วยศาสตราจารย์ ดร. พรพิชญ พรหมศิระพัลลภ)

(ลงชื่อ)..........พยาน (ลงชื่อ)..........พยาน
(ผู้ช่วยศาสตราจารย์ ดร. ตติยาพร จารุมณีรัตน์) (ผู้ช่วยศาสตราจารย์ ดร. ชยานนท์ ภูเจริญ)

สัญญาค้ำประกัน

ทำที่ มหาวิทยาลัยสงขลานครินทร์ วิทยาเขตภูเก็ต

วันที่..15..เดือน...กันยายน..พ.ศ.2564..

ตามที่ นาย/นางสาว...คุณพศ..กาลเนาวกุล..ซึ่งต่อไปในสัญญานี้เรียกว่า “ผู้รับทุน” ได้รับทุนอุดหนุนตามโครงการพัฒนาศักยภาพนักวิจัยโดยการศึกษาและวิจัยระดับปริญญาเอก ประจำปี 2564-2566 สำหรับใช้ในการศึกษาต่อในระดับปริญญาเอก จากมหาวิทยาลัยสงขลานครินทร์ ซึ่งต่อไปในสัญญานี้เรียกว่า “ผู้ให้ทุน” ตามสัญญาเลขที่...64004... ฉบับลงวันที่...6 กันยายน..2564.. ซึ่งต่อไปในสัญญานี้เรียกว่า “สัญญารับทุน” นั้น

ข้าพเจ้า นาย/นาง/นางสาว...ปราธนา..กาลเนาวกุล..อายุ...58..ปี เลขบัตรประจำตัวประชาชน...3-9098-00725-23-3... อยู่บ้านเลขที่..1515/26... ถนน..เพชรเกษม.. ตำบล/แขวง.....หาดใหญ่.... อำเภอ/เขต.... หาดใหญ่..... จังหวัด....สงขลา...คู่สมรสชื่อนาย/นาง/นางสาว....-..

ซึ่งต่อไปในสัญญานี้เรียกว่า “ผู้ค้ำประกัน” ตกลงทำสัญญาค้ำประกันให้ไว้แก่ผู้ให้ทุน ดังมีข้อความต่อไปนี้

1. ผู้ค้ำประกันตกลงผูกพันตนเข้าค้ำประกันผู้รับทุนต่อผู้ให้ทุน กล่าวคือ ถ้าผู้รับทุนปฏิบัติผิดสัญญาไม่ว่าข้อหนึ่งข้อใด ผู้ค้ำประกันยินยอมชำระหนี้ไม่เกินกว่าจำนวนเงินที่ผู้รับทุนต้องรับผิดชอบตามข้อผูกพันในสัญญารับทุนดังกล่าวนี้ ให้แก่ผู้ให้ทุนทันทีที่ได้รับแจ้งเป็นหนังสือจากผู้ให้ทุน โดยผู้ค้ำประกันจะรับผิดชอบสัญญาฉบับนี้จนกว่าจะมีการชำระหนี้ให้แก่ผู้ให้ทุนจนครบถ้วน

2. ในกรณีที่ผู้ให้ทุนตกลงผ่อนเวลาหรือผ่อนจำนวนเงินในการชำระหนี้ตามสัญญารับทุนให้แก่ผู้รับทุน โดยได้แจ้งให้ผู้ค้ำประกันทราบและผู้ค้ำประกันได้ตกลงยินยอมในการผ่อนเวลาหรือผ่อนจำนวนเงินในการชำระหนี้ นั้น ให้ถือว่าผู้ค้ำประกันตกลงมิให้ถือเอาการผ่อนเวลาหรือผ่อนจำนวนเงินในการชำระหนี้ดังกล่าวเป็นเหตุปลดเปลื้องความรับผิดชอบของผู้ค้ำประกันและจะรับผิดชอบในฐานะผู้ค้ำประกันตามสัญญาฉบับนี้ต่อไปจนกว่าจะมีการชำระหนี้ให้แก่ผู้ให้ทุนจนครบถ้วน

3. ผู้ค้ำประกันจะไม่เพิกถอนการค้ำประกันไม่ว่ากรณีใด ๆ トラบเท่าที่ผู้รับทุนยังต้องรับผิดชอบอยู่ตามเงื่อนไขในสัญญารับทุน

(ลงชื่อ).....ผู้ค้ำประกัน

(นางสาวปราธนา กาลเนาวกุล)

(ลงชื่อ).....พยาน

(ลงชื่อ).....พยาน

(.....)

(.....)

ข้าพเจ้า นาย/นาง/นางสาว.....-.....คู่สมรสของนาย/นาง/นางสาว....ปราธนา..กาลเนาวกุล.....
ผู้ค้าประกัน ได้ทราบข้อความในสัญญาค้ำประกันนี้แล้ว ยินยอมให้นาย/นาง/นางสาว...ปราธนา..กาลเนาวกุล....ทำสัญญาค้ำประกันฉบับนี้ได้

(ลงชื่อ).....คู่สมรสผู้ให้ความยินยอม

(.....-.....)

ข้าพเจ้าขอรับรองว่า ไม่มีคู่สมรส (เป็นโสด/หย่า/คู่สมรสตาย) ในขณะที่ทำสัญญานี้

(ลงชื่อ)..........ผู้ค้าประกัน

(นางสาวปราธนา กาลเนาวกุล)

หนังสือยินยอมให้หักเงินเพื่อชดใช้ตามสัญญาลงทุน

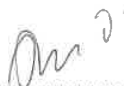
ตามที่ นาย/นาง/นางสาว....คณพศ..กาลเนาวกุล...ตำแหน่ง.....อาจารย์....สังกัดคณะกรรมการบริการ และการท่องเที่ยว ได้รับเงินทุนอุดหนุนจากกองทุนวิจัยคณะกรรมการบริการและการท่องเที่ยว ตามโครงการพัฒนา ศักยภาพนักวิจัยโดยการศึกษาและวิจัยระดับปริญญาเอก ประจำปี 2564-2566 สำหรับใช้ในการศึกษาต่อในระดับ ปริญญาเอก ตามสัญญาเลขที่....64004... ฉบับลงวันที่..15..กันยายน...2564.. เป็นเงินจำนวน.... 564,472... บาท (...ห้าแสนหกหมื่นสี่พันสี่ร้อยเจ็ดสิบสองบาทถ้วน...) นั้น

ในกรณีที่ข้าพเจ้าต้องชดใช้เงินให้แก่ผู้ให้ทุนตามสัญญาดังกล่าว ข้าพเจ้ายินยอมให้กองคลัง/งาน คลังและทรัพย์สิน/งานการเงินของหน่วยงานที่ข้าพเจ้าสังกัด หักเงินเดือน หรือเงินอื่นใดที่ข้าพเจ้ามีสิทธิ์ได้รับจาก หน่วยงานที่ข้าพเจ้าสังกัด เพื่อชดใช้เงินให้แก่ผู้ให้ทุนจนครบถ้วน โดยไม่จำเป็นต้องบอกกล่าวให้ข้าพเจ้าทราบ ล่วงหน้า

ข้าพเจ้าได้อ่านและเข้าใจเนื้อหาความในหนังสือนี้โดยตลอดแล้ว เห็นว่าถูกต้องตรงตามเจตนารมณ์ ทุกประการ จึงได้ลงลายมือชื่อไว้เป็นสำคัญต่อหน้าพยาน

(ลงชื่อ)..........ผู้ให้ความยินยอม (ผู้ลงทุน)
(นายคณพศ กาลเนาวกุล)

(ลงชื่อ).....พยานฝ่ายผู้รับทุน
(.....)

(ลงชื่อ)..........พยานฝ่ายผู้ให้ทุน
(ผู้ช่วยศาสตราจารย์ ดร. ตติยาพร จารุมณีรัตน์)

หนังสือมอบอำนาจ

ทำที่ มหาวิทยาลัยสงขลานครินทร์

วิทยาเขตภูเก็ต เลขที่ 80 หมู่ 1

ถนนวิชิตสงคราม ตำบลกะทู้

อำเภอกะทู้ จังหวัดภูเก็ต 83120

วันที่

โดยหนังสือฉบับนี้ ข้าพเจ้า มหาวิทยาลัยสงขลานครินทร์ โดยรองศาสตราจารย์พันธ์ ทองชุมนุญ ตำแหน่ง รองอธิการบดีวิทยาเขตภูเก็ต ขอมอบอำนาจช่วงให้ ผู้ช่วยศาสตราจารย์พรพิษณุ พรหมศิระพลภัก ตำแหน่ง คณบดีคณะกรรมการบริการและการท่องเที่ยว เป็นผู้มีอำนาจกระทำการแทนข้าพเจ้า โดยมีอำนาจในการลงนามในสัญญา รับทุนอุดหนุนของกองทุนวิจัย คณะกรรมการบริการและการท่องเที่ยว โครงการพัฒนาศักยภาพนักวิจัยโดยการศึกษาและวิจัยระดับปริญญาเอก ประจำปี 2564-2566

การใด ๆ ที่ผู้รับมอบอำนาจได้กระทำไปอันเกี่ยวข้องกับการอันได้รับมอบอำนาจช่วงนี้ ให้ถือเสมือนหนึ่งว่าข้าพเจ้าได้กระทำการนั้นด้วยตนเองทุกประการ

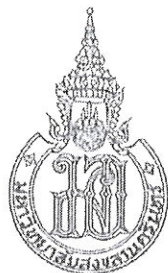
เพื่อเป็นหลักฐานแห่งการรับรองหนังสือฉบับนี้ ผู้มอบอำนาจ และผู้รับมอบอำนาจจึงได้ลงลายมือชื่อไว้เป็นสำคัญต่อหน้าพยาน

ลงชื่อ..........ผู้มอบอำนาจ
(รองศาสตราจารย์ ดร. พันธ์ ทองชุมนุญ)
รองอธิการบดีวิทยาเขตภูเก็ต

ลงชื่อ..........ผู้รับมอบอำนาจ
(ผู้ช่วยศาสตราจารย์ ดร. พรพิษณุ พรหมศิระพลภัก)
คณบดีคณะกรรมการบริการและการท่องเที่ยว

ลงชื่อ..........พยาน
(ผู้ช่วยศาสตราจารย์ ดร. ตติยาพร จารุมณีรัตน์)

ลงชื่อ..........พยาน
(ผู้ช่วยศาสตราจารย์ ดร. ชยานนท์ ภูเจริญ)



ประกาศคณะกรรมการบริการและการท่องเที่ยว
เรื่อง ทุนอุดหนุนตามโครงการพัฒนาศักยภาพนักวิจัยเพื่อการศึกษาและวิจัยระดับปริญญาเอก
ประจำปี 2564 – 2566 สำหรับอาจารย์คณะกรรมการบริการและการท่องเที่ยว

ด้วยคณะกรรมการบริการและการท่องเที่ยว จัดให้มีโครงการพัฒนาศักยภาพนักวิจัยโดยให้ทุน
ศึกษาและวิจัยระดับปริญญาเอก ประจำปี 2564 - 2566 แก่อาจารย์ เพื่อพัฒนาศักยภาพนักวิจัยและเพิ่ม
จำนวนอาจารย์ที่มีวุฒิการศึกษาระดับปริญญาเอกด้านการบริการและการท่องเที่ยว อีกทั้ง เพื่อเพิ่มจำนวน
งานวิจัยและการตีพิมพ์ระดับนานาชาติ เพื่อสร้างความยั่งยืนในด้านการวิจัยและตีพิมพ์ของคณะฯ
โดยมีรายละเอียด ดังนี้

1. ในประกาศนี้

“ทุน” หมายความว่า ทุนเพื่อศึกษาต่อระดับปริญญาเอกตามโครงการพัฒนา

ศักยภาพนักวิจัยเพื่อศึกษาและวิจัยระดับปริญญาเอก ปี 2564 - 2566

“อาจารย์” หมายความว่า อาจารย์ประจำคณะกรรมการบริการและการท่องเที่ยว

ที่เป็นข้าราชการ พนักงานมหาวิทยาลัย พนักงานเงินรายได้ ซึ่งยังไม่มี
วุฒิการศึกษาระดับปริญญาเอก

2. การดำเนินการ

คณะกรรมการวิจัยประจำคณะกรรมการบริการและการท่องเที่ยว เป็นผู้พิจารณาคัดเลือกตาม
หลักเกณฑ์ที่กำหนดไว้ในประกาศนี้

3. คุณสมบัติของผู้มีสิทธิ์ขอรับทุน

- 3.1 เป็นอาจารย์ประจำคณะกรรมการบริการและการท่องเที่ยวที่มีอายุงานในฐานะอาจารย์ประจำ
เป็นเวลาไม่น้อยกว่า 1 ปี นับถึงวันที่สมัครขอรับทุน
- 3.2 มีวุฒิการศึกษาระดับปริญญาโทและไม่เคยศึกษาต่อในระดับปริญญาเอก
- 3.3 ต้องทำงานวิจัย/วิทยานิพนธ์ในหัวข้อที่คณะฯ เห็นชอบ
- 3.4 ต้องมีใบตอบรับเข้าศึกษาต่อระดับปริญญาเอกจากมหาวิทยาลัยที่สามารถจัดการเรียน
การสอนและไม่กระทบต่อการปฏิบัติงานประจำ
- 3.5 ได้รับการเห็นชอบจากหัวหน้าสาขา
- 3.6 ยอมรับเงื่อนไขของการรับทุน

4. ทุนการศึกษา

จัดสรรทุนการศึกษา รวมทั้งสิ้นไม่เกิน 12 ทุน ในระยะเวลา 3 ปี ตั้งแต่ปี 2564 – 2566 ในวงเงินรวมทั้งสิ้นไม่เกิน 27,000,000 บาท ให้แก่อาจารย์ที่ผ่านการคัดเลือกตามโครงการฯ โดยมีรายละเอียดดังนี้

- 4.1 มหาวิทยาลัยที่ได้รับการจัดอันดับ 50 อันดับแรกของโลก จากการจัดอันดับของ QS World University Rankings ด้าน Hospitality and Leisure Management ทุนละไม่เกิน 3,000,000 บาท ต่อคน
- 4.2 มหาวิทยาลัยอื่นๆ ในต่างประเทศที่ได้รับการเห็นชอบจากคณะฯ ทุนละไม่เกิน 1,500,000 บาท ต่อคน
- 4.3 มหาวิทยาลัยภายในประเทศที่ได้รับการเห็นชอบจากคณะฯ ทุนละไม่เกิน 1,000,000 บาท ต่อคน

5. หลักเกณฑ์การให้ทุนและเงื่อนไขการรับทุน

5.1 หลักเกณฑ์การให้ทุน

- 5.1.1 ค่าใช้จ่ายของผู้รับทุนอ้างอิงตามงบประมาณค่าใช้จ่ายของนักเรียนทุนรัฐบาล – ก.พ. ยกเว้นรายการเงินชดเชยค่าใช้จ่ายในการดูแลนักเรียน

รายการ	เงื่อนไข		
1. ค่าเล่าเรียนและค่าธรรมเนียมการศึกษา	ตามที่จ่ายจริง	ค่าใช้จ่ายของ นักเรียนทุน รัฐบาล - ก.พ.	กรณี ผู้รับทุน ลา ศึกษา ต่อ
2. ค่าหนังสือและอุปกรณ์การศึกษา	เหมาจ่าย		
3. ค่าประกันสุขภาพ	เหมาจ่าย		
4. ค่าที่พัก ค่าเบี้ยเลี้ยง ¹	ตามที่จ่ายจริง		
5. ค่าใช้จ่ายประจำเดือน ²	เหมาจ่าย		
6. ค่าใช้จ่ายเบ็ดเตล็ด	ตามที่จ่ายจริง		
7. ค่าเดินทาง	ตามที่จ่ายจริง	ประกาศ ค่าใช้จ่าย มอ เรื่องการเบิก ค่าใช้จ่ายในการ เดินทางไป ปฏิบัติงาน	
8. ค่าใช้จ่ายในการทำวิจัย ³	ตามที่จ่ายจริงแต่ไม่ เกิน 100,000 บาท		
9. ค่าธรรมเนียมการโอน	ตามที่จ่ายจริง		

หมายเหตุ 1. กรณีการเดินทางไปศึกษาต่อหรือรายงานความก้าวหน้า ไม่เกิน 15 วัน

2. กรณีการเดินทางไปศึกษาต่อหรือรายงานความก้าวหน้า เกิน 15 วัน

3. ไม่สามารถเบิกค่าตอบแทนของนักวิจัยในการทำวิทยานิพนธ์ได้

- 5.1.2 ค่าเล่าเรียนและค่าธรรมเนียมการศึกษา สนับสนุนตามระยะเวลาของหลักสูตร ปกติ กรณีไม่สามารถสำเร็จการศึกษาตามระยะเวลาปกติของหลักสูตร ผู้รับทุนสามารถขออนุมัติขยายเวลาการรับทุนครั้งละ 6 เดือน ไม่เกิน 2 ครั้ง โดยไม่เพิ่มวงเงินที่ได้รับการอนุมัติ
- 5.1.3 หากผู้สมัครรับทุน ได้รับทุนการศึกษาบางส่วนหรือเต็มจำนวนจากมหาวิทยาลัย ที่สมัคร หรือหน่วยงานอื่น หรือ มีหัวข้อวิจัยตรงตามความต้องการของสาขาวิชา หรือคณะ ที่มีความจำเป็นเร่งด่วน หรือ ได้รับการตอบรับเข้าศึกษาจากมหาวิทยาลัย ที่ติดอันดับโลกของ QS World University Rankings ด้าน Hospitality and Leisure Management หรือ มีประสบการณ์การตีพิมพ์ใน Conference Proceedings หรือวารสารระดับชาติ/นานาชาติ ในฐานะ First Author หรือ Corresponding Author จะได้รับการพิจารณาเป็นกรณีพิเศษ

5.2. เงื่อนไขการรับทุน

- 5.2.1 ผู้รับทุนจะต้องรายงานผลการศึกษาต่อคณะฯ 6 เดือน/ครั้ง พร้อมแนบใบแจ้งผลการศึกษา
- 5.2.2 หากผู้รับทุนไม่รายงานความคืบหน้าตามที่คณะฯ กำหนด หรือผู้รับทุนขาดการติดต่อกับมหาวิทยาลัย หรือคณะฯ พิจารณาแล้วเห็นว่าผู้รับทุนไม่มีความก้าวหน้าในการศึกษาและอาจส่งผลต่อการสำเร็จการศึกษา คณะฯ อาจพิจารณายุติการสนับสนุนทุนแก่ผู้รับทุน โดยผู้รับทุนต้องคืนเงินทุนที่ได้รับไปทั้งหมดให้แก่คณะฯ ภายในระยะเวลาที่คณะฯ กำหนด
- 5.2.3 ผู้รับทุนต้องตีพิมพ์ผลงานวิจัยในวารสารระดับนานาชาติในระหว่างการรับทุน พร้อมระบุต้นสังกัดเป็นมหาวิทยาลัยสงขลานครินทร์ อย่างน้อย 1 ผลงาน และต้องยื่น Manuscript ที่พร้อมส่งวารสารนานาชาติเพื่อพิจารณาตีพิมพ์อีก จำนวน 1 ผลงาน
- 5.2.4 ในระหว่างการรับทุนนี้ หากผู้รับทุนได้รับทุนอื่นใดเพิ่มเติม ผู้รับทุนต้องแจ้งให้ผู้ให้ทุนทราบโดยเร็ว เพื่อให้ผู้ให้ทุนพิจารณาการให้ทุนต่อไป
- 5.2.5 หากผู้รับทุนมีอุปสรรคไม่สามารถศึกษาได้ด้วยประการใดก็ดี ผู้รับทุนต้องรับรายงานให้คณะฯ ทราบโดยทันที เพื่อพิจารณาดำเนินการตามเห็นสมควร

5.2.6 ผู้รับทุนต้องอยู่ปฏิบัติงานที่คณะฯ เป็นระยะเวลาไม่น้อยกว่า 3 ปี นับจากวันที่สำเร็จการศึกษา หากผู้รับทุนไม่อยู่ปฏิบัติงานหรือปฏิบัติงานไม่ครบตามกำหนดระยะเวลาดังกล่าว ผู้รับทุนต้องคืนเงินทุนที่ได้รับไปทั้งหมดให้แก่คณะฯ ภายใน 30 วัน นับตั้งแต่วันที่ได้รับแจ้งจากคณะฯ พร้อมดอกเบี้ยในอัตราร้อยละ 7.5 ต่อปี ของจำนวนเงินที่ต้องชำระ นับตั้งแต่วันที่ครบกำหนดชำระจนกว่าจะชำระเงินให้แก่คณะฯ ครบถ้วน ทั้งนี้ หากผู้รับทุนได้อยู่ปฏิบัติงานยังไม่ครบกำหนดดังกล่าว การคืนเงินทุนจะคิดคำนวณโดยเฉลี่ยตามสัดส่วนของระยะเวลาที่ได้อยู่ปฏิบัติงานมาแล้ว ภายใน 30 วัน หลังจากวันบอกเลิกสัญญา

5.2.7 ผู้รับทุนจะต้องทำวิจัยตามหัวข้อที่คณะฯ กำหนด ดังนี้

- 5.2.7.1.1 High Income Tourism
- 5.2.7.1.2 Health Tourism
- 5.2.7.1.3 Gastronomy Tourism
- 5.2.7.1.4 Hotel Operations and Management
- 5.2.7.1.5 Tourist Behaviors
- 5.2.7.1.6 Cultural Tourism
- 5.2.7.1.7 Sustainable Tourism
- 5.2.7.1.8 Community Based Tourism
- 5.2.7.1.9 MICE and Event Management
- 5.2.7.1.10 Aviation Management
- 5.2.7.1.11 Digital Tourism/ Technology Operations in Hospitality and Tourism
- 5.2.7.1.12 Service/Business Innovation and Entrepreneurship
- 5.2.7.1.13 หรือหัวข้องานวิจัยที่ได้รับตามเห็นชอบจากหัวหน้าสาขา

5.2.8 ผู้รับทุนจะต้องปฏิบัติงานเต็มเวลาที่คณะกรรมการบริการและการท่องเที่ยวโดยมีภาระงาน ดังนี้

- 5.2.8.1.1 ภาระงานสอน ในช่วงระยะเวลาที่ไม่ได้ลาศึกษาต่อ
- 5.2.8.1.2 ผู้บริหาร มีภาระงานสอน 3 – 6 ชั่วโมงต่อสัปดาห์
- 5.2.8.1.3 อาจารย์ มีภาระงานสอน 6 – 9 ชั่วโมงต่อสัปดาห์
- 5.2.8.1.4 การทำวิทยานิพนธ์ปริญญาเอกนับเป็นภาระงานวิจัย
- 5.2.8.1.5 งานอื่นๆ ตามภาระงานปกติที่ได้รับมอบหมาย
- 5.2.8.1.6 กรณีไม่สามารถปฏิบัติงานเต็มเวลาที่คณะฯ ตามเงื่อนไขข้างต้น จะต้องจัดทำเอกสารเสนอคณะกรรมการวิจัยคณะฯ พิจารณาเป็นกรณีไป

5.2.9 สำหรับผู้ที่มีความประสงค์ลาศึกษาต่อตลอดระยะเวลาการศึกษา ผู้ที่มีความ
ประสงค์ดังกล่าวควรพิจารณาสมัครทุนพัฒนาอาจารย์
มหาวิทยาลัยสงขลานครินทร์ เพื่อศึกษาระดับปริญญาเอก

6. การรับสมัคร

ให้ผู้ที่มีคุณสมบัติตามเกณฑ์ในข้อ 3 ยื่นความจำนง และส่งหลักฐานต่าง ๆ มายังฝ่าย
วิจัย คณะกรรมการบริการและการท่องเที่ยว มหาวิทยาลัยสงขลานครินทร์

7. หลักฐานประกอบการสมัคร

7.1 ใบสมัครขอรับทุน พร้อมกรอกรายละเอียดการสมัคร

7.2 ใบตอบรับเข้าศึกษาระดับปริญญาเอกจากมหาวิทยาลัย

7.3 แผนการลาศึกษาต่อ พร้อมหัวข้อวิจัย

8. การพิจารณาให้ทุน

คณะกรรมการวิจัยประจำคณะฯ เป็นผู้ตรวจสอบคุณสมบัติและพิจารณาให้ทุน และ
คณะกรรมการประจำคณะการบริการและการท่องเที่ยว เป็นผู้พิจารณาการลาศึกษาต่อ

ประกาศ ณ วันที่ 8 ธันวาคม 2564



(ผู้ช่วยศาสตราจารย์ ดร. พรพิษณุ พรหมศิวัชผล)

คณบดีคณะกรรมการบริการและการท่องเที่ยว