

# KANO MODEL ANALYSIS FOR FIVE-STAR HOTELS IN CHIANG MAI, THAILAND

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## ABSTRACT

*Chiang Mai is the second-largest city in Thailand. The number of foreign tourists who visit Chiang Mai, Thailand increases every year. Moreover, Chiang Mai city is the first ranking in the Top 10 cities in Asia in the year 2017 from Travel + Leisure journal. And Chiang Mai also is the third-ranking for The World's Top 15 cities from Travel + Leisure journal. Therefore, the hotels are very important for tourists because most of the tourists prefer to stay in hotels while they are traveling. The five-star hotels need to compete with each other. And good ways to solve these problems that are new strategies. Strategies are a long-term success. It will encourage the hotel's growth because they will serve customers better. The five-star hotel needs to use new strategies or innovation to apply to the working system. Analyzing the Kano model may produce good ways for new strategies with buyer value. This paper identifies the customer's decisions of selecting five-star hotels in Chiang Mai. Primarily we use a questionnaire in two-dimensional quality characteristics and then, interpret how the five-star hotels' managers will upgrade their hotel. The results of this study will provide the hotel managers with new concrete strategies for competitive advantage and future plan.*

**Keywords:** Five-star Hotels, Chiang Mai, Kano Model, Innovation.

## INTRODUCTION

The hotel industry is well-developed in Thailand. The tourism industry has growth rates by the main investments in the hotel industries of the country. An international hotel chain in Thailand, such as Marriott, InterContinental, Starwood, and Accor. Thailand also has a Thai hotel chain with a high-quality include Dusit International, Minor International, and Centara Hotels and Resorts. Most of the visitors who visit Thailand to come from neighboring countries. Thus, Thailand has the average length of stay is only 2.8 nights and the average length of stay is expected to grow by 6.2% in the period 2017-2020. (Ministry of Foreign Affairs, 2017).



FIGURE 1

**CHAIN OF SOME SELECTED LARGE HOTELS IN THAILAND**

Source: Collected by Krungsri Research, 2017

Today, Chiang Mai is the major hubs of northern Thailand include business, economics, and educations and so on. It is well-known for northern Thai culture, mountain views, and adventure activities (Figure 1). Hotels in Chiang Mai refers to upscale and luxury hotels; 2.6 million international visitor in 2015, 164 rooms of a number of a new room in 2016, 75.0% occupancy, 4,979 THB average daily rate (ADR), and 3,736 THB revenue per available room (RevPAR) (Hetherington et al., 2017). And the name list of the five-star hotels in Chiang Mai includes Dhara Dhevi Chiang Mai, Anantara Chiang Mai Resort, Le Meridien Chiang Mai, Shangri-La Hotel Chiang Mai, Kantary Hills, Chiang Mai, Rati Lanna Riverside Spa Resort Chiang Mai, Dusit D2 Chiang Mai, and so on.

**LITERATURE REVIEW**

Martin-Fuentes (2016) concluded that the hotel classification system will fulfill its function like guest rating increases with each additional star. The star classification has the relation between sustainability adjustment and customer delight (Gerdt et al., 2019). Hu, et al. (2019) designated client criticisms for high-end hotels are largely correlated to service concerns, but for clients of low-end hotels are often irritated by facility concerns. The feature of hotel services importantly influences on total competence. Profit efficiency will be more appropriate than cost efficiency if output quality contrasts. Hotel administration might achieve tactics that extend the utility of services like a plan to accomplish competitive advantage sustainability (Arbelo-Pérez, 2017). Sung et al. (2015) mentioned that hotel guests' expectations and actual experiences on hotel service quality usually fail due to hotels' complete breakdowns in delivering their standard. Customer service is a significant factor in the hotel industry's tactics and differentiates the hotel's proposition. The information system magnifies the effectiveness of the service personalization system. Service personalization intensifies hotel customers' assessment of value and service.

The dynamic of the customer relationship in the hotel can change by IT-enabled service systems (Piccoli et al., 2017). Galati & Galati (2019) proposed that cross-country stress and understanding diversities are obvious from online reviews, seeing the part of added determinants, particularly star ratings and tourists' biography that could enhance the knowledge of tourists' differentiation. Meanwhile overlooking star ratings and tourists' biography, it appeared that Americans sensed sanitation and quietness; Chinese sensed eatery and financial statements but negatively quietness, service posture and service proficiency;

Italians sensed internet and location but negatively convenience, eatery, financial statements, and common fulfillment. The check-in and check-out, sports facilities, and upgrade are three qualities that were similar to the three groups of tourists. Therefore, different countries regard hotel qualities uniquely. Liu et al. (2017) classified various clients' decisions for several hotel qualities via grouping hotel customers by language. Clients who speak different languages are observed to have different favorites. The conclusions mentioned that having between a different language and cultural background influences clients' favorites correlated to hotel qualities.

Talón-Ballester et al. (2018) used emerging Big Data techniques and Bootstrap resampling techniques for Proportion Tests for efficient client profiling of an international hotel chain that client information continues a fundamental necessary spot in hospitality management. The influential agreement was observed in the most illustrative point of repeaters remaining traveling without children. Big Data technology is beneficial in guest profiles and greatly helpful for interpreting indoor data accessible in Customer Relationship Management (CRM) information systems for the hospitality industry. Bi et al. (2020) advised that the asymmetric impacts concerning attribute performance (AP) on customer satisfaction (CS) will change opposite different market sectors include different kinds of hotels, different kinds of tourists and tourists from another region.

Laborer incomes in the hospitality and recreation industry are essentially motivated by financial constituents (Dogru et al., 2019). It has several disparities in service expectations depend on tourists' experiences (Lai et al., 2017). If matched with premium hotels, administrators of budget hotels should update their hotel services and staff performance (Geetha et al., 2017).

The Kano Model is a technique that can find out and prioritize the features in services or products that are significant for customer satisfaction. Liu et al. (2019) used the Kano model with the research topic "Application of Kano Model to Explore Insulation Bag for Breast Milk" to discover the basic needs and determinants of the insulation bag for breast milk, and design the next generation of the insulation bag for breast milk's design. Seo and Um (2019) classified delighters, satisfiers, and dissatisfiers with 50 Korean college students survey based on the Kano model and the results from their study could help college program operators better understand how each measurement of service impartiality and quality can cause either positive or negative emotion. Ma et al. (2019) used the Kano model to differentiate between future vehicle-driving services and analyzed consumers' perceived satisfaction.

Yao et al. (2018) researched about the Kano model analysis of features for mobile security applications to classify qualities for their features. Go & Kim (2018) applied the Kano model with the service blueprint approach for in-flight negative customer-to-customer interaction (NCCI). Kano quality categories could classify service quality attributes and differentiate between groups in the classification of each attribute based on annual flying frequency. Tama et al. (2015) developed the design of ceramic souvenir to reach the wants of the shoppers better, applying the theory of Kansei Engineering and Kano Model. And this study also analyzes or characterize Kansei words from purchaser understanding into characteristics in the Kano Model. Mention to the completion of the mapping on a Kano Model, the display determinant converts prioritized more for the improvement of the product design.

Chen et al. (2019) showed an intelligent Kano framework to analyze product characteristics by examining customer surveys. Related to the common Kano Model, The I-Kano framework is the new framework that has some distinguished profits. By substituting the review data with the more enlightening customer reviews data. Marti Bigorra et al. (2019) assumed a methodology for how to analyze the selected features from goods revisions in

terms of Kano classes. The object of Kano's categories is to enhance customer perception and to contribute appropriate customer data to product designers and specific product objective setting. Their research demonstrated two samples with smartphones and online text data from coffee machines. Conclusions showed that the aimed Kano categorization models present insightful data to product improvement methods.

Therefore, this study uses the Kano model to provide services that can create new strategies, new technologies, and satisfy customers' needs. According to E. Porter (1985) explained that differences of the competitor are a key source of competitive advantage. On the word of K. Rigby (2017) each company can enhance competitive positioning, gain entry to new targets, skills, and share the risk or cost of new development projects. However, this paper contributes to our understanding of innovation. Innovation can create new wealth. It is the specific function of a public service institution, entrepreneurship or even individual. Innovation is the process of new ideas to create a new system, process, or value for an organization.

Shin et al. (2019) stated that understanding technology innovation is the main point to focus on hotels. They researched on hotel front desk technology innovation in a large multinational hotel corporation with 251 hotel managements interviewees. They found out that technology innovation has effectiveness in front desk operation processes, tasks, and systems. Mention by Vladimirov & Williams (2018) a mixture of innovations and other internal and external factors effects on performance except for seasonality. But the main key for hotel performance both of direct and indirect effects is staff-related innovations. Innovation capacity also can boost and maximize the performance of hotel establishments (Hernandez-Perlines et al., 2019). Nicolau & Santa-Maria (2013) examined the effect of innovation on hotel market value and found that innovation has a positive effect on the future sales of the company. The product and organization innovations have a lower positive effect than marketing innovation. Raul de la Pena et al. (2016) hotel consumers have the willingness to pay more for hotels that have many kinds of innovation activities. De la Peña et al. (2016) estimated the influence of innovative activity on customers' willingness to pay in the hotel industry; the case of Cuban hotels. Their conclusions joined to innovation and internationalization are room prices (Membership of international hotel chains), high-quality, diversification, and customization.

Wikhamn (2019) studied how sustainable human resource management (HRM) practices in Swedish hotels influence the innovation-customer pleasure relationship. Their result is sustainable HR practices improve competencies of the hotel to innovation and content the customers. Hussain et al. (2016) told that culture and knowledge sharing practice has a vital force on service innovation performance. The hotels lack to generate a strong team culture and knowledge sharing practice to stimulate the method of service innovation performance while producing buyers with more satisfying experiences. Innovation approaches have various influences on performance depending on the service subsector. There are sectoral differences in innovation strategies in accommodation and other service subsectors (Martin-Rios & Ciobanu, 2019).

In the hospitality industry, artificial intelligence (AI) and robotics technologies have greatly affected with a replacement in the human workforce inside the setting of their turnover purpose and expected employment opportunities. AI and robotics perception were identified to be importantly linked with employee turnover intention (Li et al., 2019). Lee et al. (2020) presented the optimal potential and maintenance design of a robot logistics system that can decrease the human workload in the hospitality industry. In hotels, several duties can be substituted by robots such as guiding visitors to some areas, giving particular items to the guest rooms, and moving some items that visitors need to be withdrawn from the guest rooms. Their study recommended that the algorithm can support hotels when making

judgments for classify in tasks. The hospitality industry can view more qualified systems for human resource management in the future and also encourage hotels to rightly know how to handle robots and information technology.

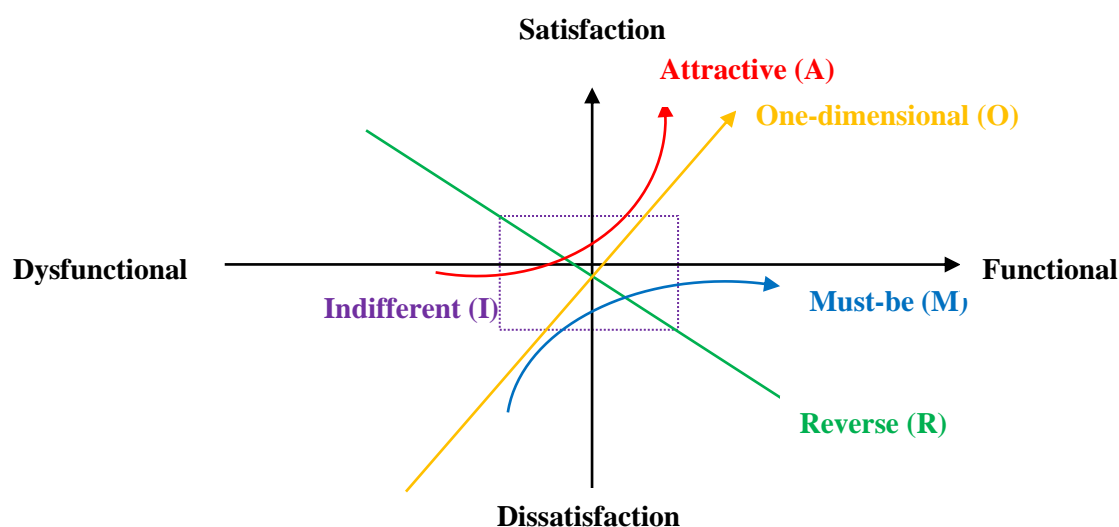
## DATA AND METHODOLOGY

### Data

In order to achieve this study's objectives, a Kano model questionnaire was administered via online survey with 130 customers who visited or stayed in five-star hotels in Chiang Mai, but we received from them only 100 people of an online questionnaire survey. The length of time is between July 20<sup>th</sup> to August 10<sup>th</sup>, 2019 for this survey.

### Methodology

Noriaki Kano is a professor emeritus at Tokyo University of Science (TUS) in Japan. He graduated master's degree and a doctoral degree from the University of Tokyo. His field is about quality management and general management. He developed the Kano model to satisfy customers in 1978. The origin of the Kano Model analysis was from two-factor theory by Frederick Herzberg. The Kano model is a theory to determine the services or products' features for customers' satisfaction. Xu et al. (2009) explained that the Kano model can efficiently organize customer decisions in product design while driving to an optimal tradeoff between the customer's fulfillment and the producer's potential. Professor Dr. Noriaki Kano classified the 3 main categories and 5 categories of customer requirements which were classified depending on abilities to create customer's needs. These 5 categories include attractive quality, must-be quality, one-dimensional quality, indifferent quality, and reverse quality (Figure 2), as shown below.



**FIGURE 2**  
**THE KANO MODEL**

We can design the Kano model questionnaire into two strategic questions between a functional and dysfunctional representation of the requirement and combine the functional and dysfunctional answers in its columns and rows. The result of the Kano model survey will combine into a graph by showing which category the requirement falls into, which is summarized in Table 1.

| Table 1<br>FUNCTIONAL VS DYSFUNCTIONAL COMPARISON |               |               |         |            |              |               |
|---|---------------|---------------|---------|------------|--------------|---------------|
| Customer Requirement                              |               | Dysfunctional |         |            |              |               |
|   |               | Satisfaction  | Must-be | No feeling | Can tolerate | Not satisfied |
| Functional  | Satisfaction  | Q             | A       | A          | A            | O             |
|   | Must-be       | R             | I       | I          | I            | M             |
|   | No feeling    | R             | I       | I          | I            | M             |
|   | Can tolerate  | R             | I       | I          | I            | M             |
|   | Not satisfied | R             | R       | R          | R            | Q             |

Timko (1993) suggested to use "*Better*" (Increase the satisfaction index) and "*Worse*" (Reduce the dissatisfaction index) scores which indicated in the numerical terms, how customers' needs will change the attributes. We can calculate by using the formulas:

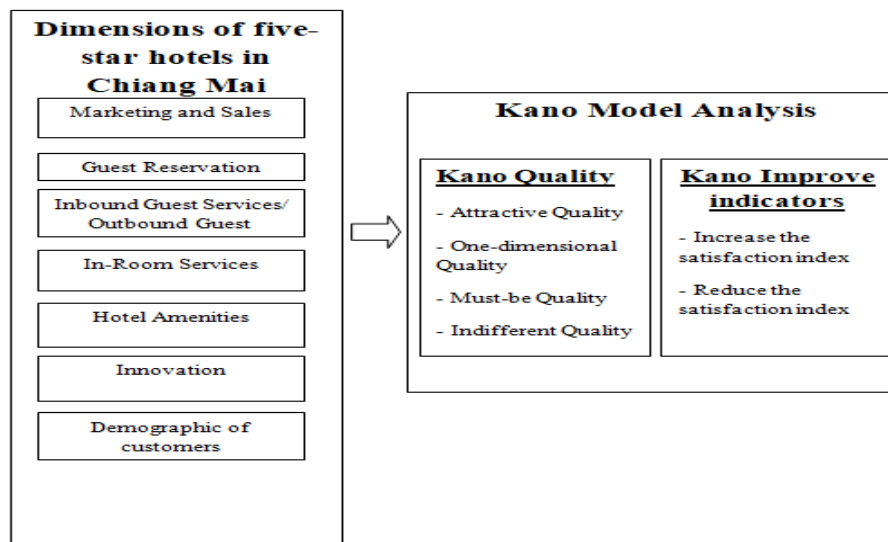
$$\text{Increase the satisfaction index} = \frac{A + O}{A + O + M + I}$$

$$\text{Reduce the dissatisfaction index} = \frac{O + M}{A + O + M + I}$$

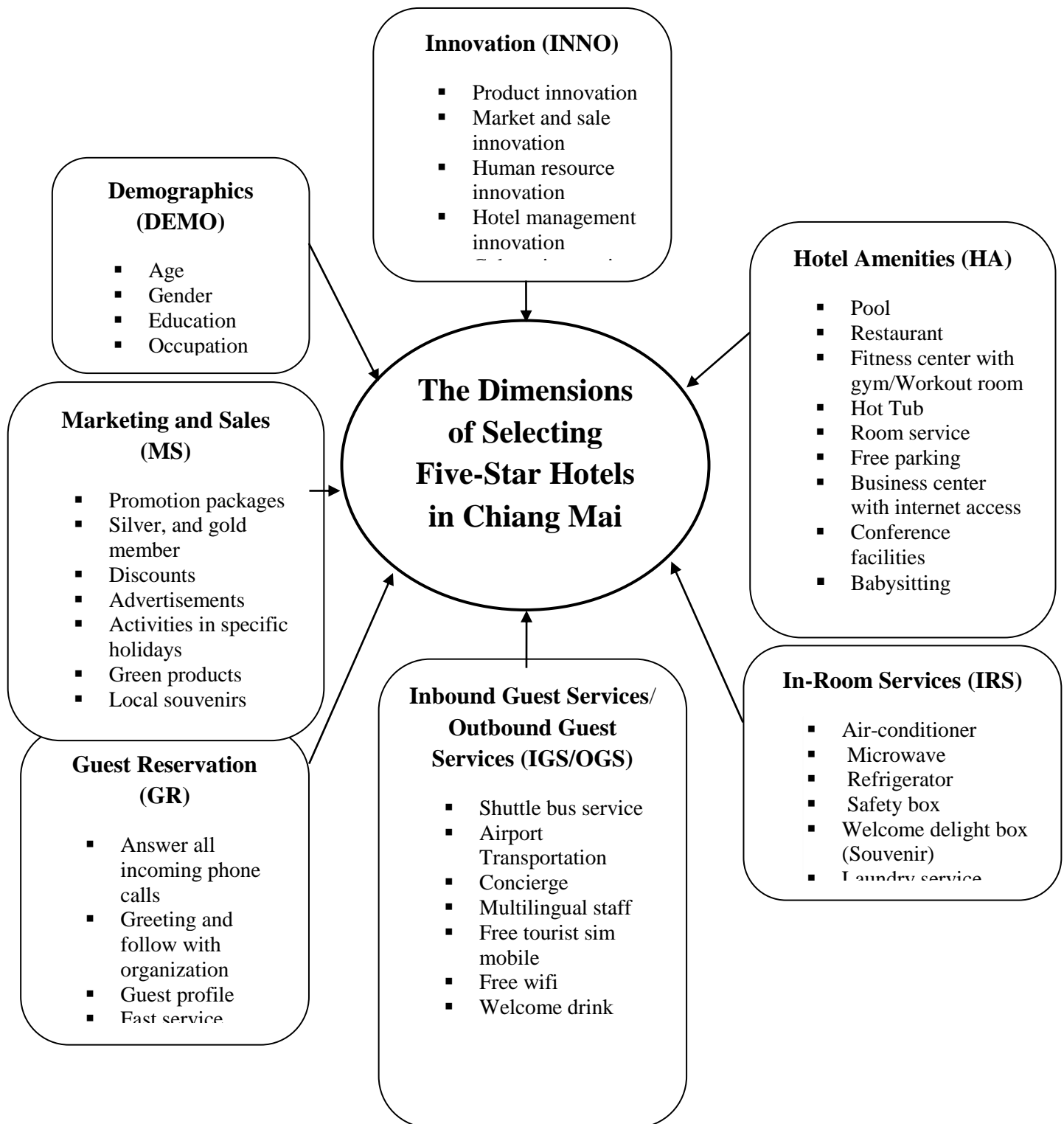
Where,

A = Attractive, O =One-dimensional, I =Indifferent, and M =Must-be

This research applied the Kano model to design the questionnaire which separates into 7 parts: (1) Demographic of customers; (2) Marketing and Sales; (3) Guest Reservation; (4) Inbound Guest Services/Outbound Guest; (5) In-Room Services; (6) Hotel Amenities, and (7) Innovation. And collected the data from the customers who visited or stayed in five-star hotels in Chiang Mai before, from July 20<sup>th</sup> to August 10<sup>th</sup>, 2019 (Figures 3 & 4).



**FIGURE 3**  
**THE KANO MODEL RESEARCH FRAMEWORK.**



**FIGURE 4**  
**THE FRAMEWORK OF CUSTOMERS' SELECTING FIVE-STAR HOTELS IN CHIANG MAI**

## EMPIRICAL RESULTS

### Descriptive Statistic Analysis of Sample Demographics

Summarizing of the respondents' background information for five-star hotels in Chiang Mai as shown in Table 2, 130 questionnaires were sent and 100 questionnaires were received. According to the survey, customers are male, 49%; customers are female, 51%. Most of the customers are 21-30 years old, 75%, and followed by the age of 31-40 years old, 15%, which shows that the customers who stayed in five-star hotels in Chiang Mai is the middle ages. The customers' education level shows that 46 of 100 customers, 46% are bachelor's degree, 41 % are master's degree, and 13% are doctoral degree. And 55% of respondents are employment, 20% work in military/civil service official. The personal income shows that 27% customers have earned 10,001-20,000 Baht per month, 26% of 20,001-30,000 Baht, followed by 20% of 30,001-40,000 Baht. Satisfying five-star hotels services in Chiang Mai, 97% of the customers stayed in five-star hotels were satisfied, but 3% were dissatisfied. The main reason for choosing a five-star hotel in Chiang Mai, 43% because of services, 42% because of rooms, and 6% because of food and beverages. Understanding the differences between hotel and hostel, 96% of customers understand the difference between hotel and hostel; on the other hand, 4% of the customers don't understand the differences between both of them. The source for five-star hotels' information in Chiang Mai, 47% of the customers get the information from the social network, 43% of the customers get the information from websites, 8% the customers get the information from word of mouth. Preferring price of staying in a five-star hotel one night, 45% customers preferred the price between 1,001-3000 Baht, 32% preferred the price between 3,001-5,000 Baht, and 13% preferred the price between 5,001-7,000 Baht, respectively.

In order to present the customers' demographic, 10 characteristics of customers and research results are included:

| Table 2<br>DEMOGRAPHICS |                 |                                 |           |              |
|-------------------------|-----------------|---------------------------------|-----------|--------------|
| Number                  | Characteristics | Categories                      | Frequency | Percentage % |
| 1                       | Gender          | Male                            | 49        | 49           |
|                         |                 | Female                          | 51        | 51           |
| 2                       | Age             | Under 20 years old              | 1         | 1            |
|                         |                 | 21-30 years old                 | 75        | 75           |
|                         |                 | 31-40 years old                 | 15        | 15           |
|                         |                 | 41-50 years old                 | 7         | 7            |
|                         |                 | 51-60 years old                 | 2         | 2            |
|                         |                 | 61-70 years old                 | 0         | 0            |
|                         |                 | Above 71 years old              | 0         | 0            |
| 3                       | Education       | Elementary school               | 0         | 0            |
|                         |                 | Junior high school              | 0         | 0            |
|                         |                 | High school/Equivalent          | 0         | 0            |
|                         |                 | Vocational/Technical school     | 0         | 0            |
|                         |                 | Bachelor's degree               | 46        | 46           |
|                         |                 | Master's degree                 | 41        | 41           |
|                         |                 | Doctoral degree                 | 13        | 13           |
| 4                       | Occupation      | Professional degree             | 0         | 0            |
|                         |                 | Student                         | 14        | 14           |
|                         |                 | Military/Civil service official | 20        | 20           |
|                         |                 | Employee                        | 55        | 55           |
|                         |                 | Self-employed                   | 11        | 11           |
|                         |                 | Retiree                         | 0         | 0            |



|    |   |                          |    |    |
|----|---|--------------------------|----|----|
| 5  | Personal Income   | Under 10,000 Baht        | 5  | 5  |
|    |   | 10,001-20,000 Baht       | 27 | 27 |
|    |   | 20,001-30,000 Baht       | 26 | 26 |
|    |   | 30,001-40,000 Baht       | 20 | 20 |
|    |   | 41,001-50,000 Baht       | 4  | 4  |
|    |   | 50,001-60,000 Baht       | 10 | 10 |
|    |   | 60,001-70,000 Baht       | 0  | 0  |
|    |   | Above 70,001 Baht        | 8  | 8  |
| 6  | Do you satisfy five-star hotel services in Chiang Mai?                | Satisfy                  | 97 | 97 |
|    |   | Not Satisfy              | 3  | 3  |
| 7  | What is the main reason for choosing a five-star hotel in Chiang Mai? | Staffs                   | 2  | 2  |
|    |   | Food and beverages       | 6  | 6  |
|    |   | Services                 | 43 | 43 |
|    |   | Rooms                    | 42 | 42 |
|    |   | Lobby                    | 0  | 0  |
|    |   | Lounge                   | 0  | 0  |
|    |   | Restaurants              | 2  | 2  |
|    |   | Others                   | 5  | 5  |
| 8  | Do you understand the differences between Hotel and Hostel?           | Understand               | 96 | 96 |
|    |   | Not understand           | 4  | 4  |
| 9  | What is your source for five-star hotels' information in Chiang Mai?  | Newspapers               | 0  | 0  |
|    |   | Magazines                | 0  | 0  |
|    |   | Website                  | 43 | 43 |
|    |   | Social Network           | 47 | 47 |
|    |   | Word of mouth            | 8  | 8  |
|    |   | Others                   | 2  | 2  |
| 10 | Preferring price of staying in a five-star hotel one night.           | Under 1,000 Baht         | 6  | 6  |
|    |   | Between 1,001-3000 Baht  | 45 | 45 |
|    |   | Between 3,001-5,000 Baht | 32 | 32 |
|    |   | Between 5,001-7,000 Baht | 13 | 13 |
|    |   | Above 7,001 Baht         | 4  | 4  |

**Source:** This study

### Kano Classification Analysis

Kano model is a theory for designers and developers to classify customer's need into five categories: attractive quality, must-be quality, one-dimensional quality, indifferent quality, and reverse quality. Therefore, the Kano model's survey result is shown in Tables 3, 4, 5, 6, 7, and 8.

The customers who used to stay at a five-star hotel in Chiang Mai was analyzed through the frequency analysis, 11 of the total 47 (MS1, MS3, GR4, GR7, IGS/OGS1, IGS/OGS2, IGS/OGS4, IGS/OGS5, IGS/OGS7, INNO4, INNO9) has been categorized as "Attractive Quality", 27 of total 47 (MS2, MS4, MS5, MS6, MS7, GR2, IGS/OGS3, IRS2, IRS4, IRS5, IRS6, IRS7, IRS8, HA1, HA2, HA3, HA4, HA7, HA8, HA9, INNO1, INNO2, INNO3, INNO5, INNO6, INNO7, INNO8) has been categorized as "Indifferent Quality", and

9 of total 47 (GR1, GR3, GR5, GR6, IGS/OGS6, IRS1, IRS3, HA5, HA6) are categorized as "One-dimensional Quality".

As the Tables 3, 4, 5, 6, 7, and 8 shows that 11 factors that attracted the customers to stay or visit the five-star hotels in Chiang Mai were categorized as "Attractive Quality". The customers who used the five-star hotels' services didn't consider 27 factors important and these factors are categorized as "Indifferent Quality", and 9 factors were categorized as "One-dimensional Quality" which is important for customers when they stayed in five-star hotels in Chiang Mai. The factor of gender, age, educational level, occupation, and personal income didn't affect the customers staying in five-star hotels in Chiang Mai.

| <b>Table 3</b>   |     |    |   |     |   |   |       |          |
|--|-----|----|---|-----|---|---|-------|----------|
| <b>KANO CATEGORIES (MARKETING AND SALES)</b>                     |     |    |   |     |   |   |       |          |
| Marketing and Sales (MS)   | A   | O  | M | I   | R | Q | Total | Category |
| The hotel offers promotion packages. (MS1)                       | 62* | 17 | 4 | 15  | 0 | 2 | 100   | A        |
| The hotel has a silver, and gold member for customers. (MS2)     | 26  | 10 | 2 | 60* | 0 | 2 | 100   | I        |
| Customers get discounts from the hotel. (MS3)                    | 52* | 18 | 6 | 23  | 0 | 1 | 100   | A        |
| There are advertisements about hotel. (MS4)                      | 13  | 9  | 3 | 72* | 1 | 2 | 100   | I        |
| The hotel holds different activities in specific holidays. (MS5) | 30  | 11 | 2 | 54* | 1 | 2 | 100   | I        |
| The hotel offers green products. (MS6)                           | 35  | 12 | 5 | 46* | 1 | 1 | 100   | I        |
| The hotel offers local souvenirs ordering service. (MS7)         | 23  | 14 | 2 | 60* | 1 | 0 | 100   | I        |

**Note:** \*Highest frequency

**Source:** This study

| <b>Table 4</b>  |     |     |    |     |   |   |       |          |
|---|-----|-----|----|-----|---|---|-------|----------|
| <b>KANO CATEGORIES (GUEST RESERVATION)</b>  |     |     |    |     |   |   |       |          |
| Guest Reservation (GR)  | A   | O   | M  | I   | R | Q | Total | Category |
| The hotel's staffs answer all incoming phone calls. (GR1)   | 24  | 37* | 17 | 18  | 2 | 2 | 100   | O        |
| When the hotel's staffs answer the phone, external call, greet and follow with the organization saying. (GR2) | 27  | 22  | 8  | 38* | 2 | 3 | 100   | I        |
| Guest profiles are confidential. (GR3)  | 10  | 60* | 9  | 18  | 2 | 1 | 100   | O        |
| The hotel's staffs answer the customers very fast or within three rings (The phone calls). (GR4)              | 37* | 18  | 9  | 35  | 0 | 1 | 100   | A        |
| The hotel cares about customers. (GR5)  | 24  | 54* | 8  | 10  | 2 | 2 | 100   | O        |
| The hotel satisfies customers' needs. (GR6)   | 29  | 40* | 9  | 18  | 2 | 2 | 100   | O        |
| The hotel treats customers like family. (GR7)   | 42* | 21  | 5  | 27  | 2 | 3 | 100   | A        |

**Note:** \*Highest frequency

**Source:** This study

| <b>Table 5</b>  |     |    |   |     |   |   |       |          |
|---|-----|----|---|-----|---|---|-------|----------|
| <b>KANO CATEGORIES (INBOUND GUEST SERVICES/OUTBOUND GUEST SERVICES)</b> |     |    |   |     |   |   |       |          |
| Inbound Guest Services/Outbound Guest Services (IGS/OGS)                | A   | O  | M | I   | R | Q | Total | Category |
| The hotel has a shuttle bus service. (IGS/OGS1)                         | 45* | 15 | 5 | 33  | 2 | 0 | 100   | A        |
| The hotel offers airport transportation. (IGS/OGS2)                     | 39* | 34 | 1 | 25  | 0 | 1 | 100   | A        |
| The concierges take care of customers. (IGS/OGS3)                       | 24  | 32 | 7 | 35* | 0 | 2 | 100   | I        |
| There are many multilingual staffs in the hotel. (IGS/OGS4)             | 39* | 18 | 5 | 36  | 2 | 0 | 100   | A        |

|   |     |     |   |    |   |   |     |   |
|---|-----|-----|---|----|---|---|-----|---|
| The hotel offers a free tourist sim mobile for a customer. (IGS/OGS5) | 45* | 6   | 3 | 43 | 3 | 0 | 100 | A |
| The customers can use the free wifi. (IGS/OGS6)                       | 10  | 70* | 6 | 8  | 2 | 4 | 100 | O |
| The hotel serves a welcome drink. (IGS/OGS7)                          | 42* | 16  | 4 | 36 | 1 | 1 | 100 | A |

**Note:** \*Highest frequency

**Source:** This study

| <b>Table 6</b><br><b>KANO CATEGORIES (IN-ROOM SERVICES)</b>  |          |          |          |          |          |          |              |                 |
|--|----------|----------|----------|----------|----------|----------|--------------|-----------------|
| <b>In-Room Services (IRS)</b>  | <b>A</b> | <b>O</b> | <b>M</b> | <b>I</b> | <b>R</b> | <b>Q</b> | <b>Total</b> | <b>Category</b> |
| There is an air-conditioner in the hotel room. (IRS1)  | 9        | 71*      | 8        | 7        | 2        | 3        | 100          | O               |
| There is a microwave in the hotel room. (IRS2)   | 26       | 6        | 2        | 63*      | 2        | 1        | 100          | I               |
| There is a refrigerator in the hotel room. (IRS3)  | 13       | 56*      | 10       | 18       | 3        | 0        | 100          | O               |
| The customers can use the safety box in the room. (IRS4)   | 32       | 25       | 5        | 36*      | 1        | 1        | 100          | I               |
| The hotel gives welcome delight box (Souvenir) to the customers who stay in the hotel room. (IRS5) | 43       | 7        | 3        | 45*      | 1        | 1        | 100          | I               |
| The hotel offers a laundry service. (IRS6)   | 34       | 23       | 5        | 37*      | 1        | 0        | 100          | I               |
| The hotel offers in-room dining 24 hours for serving the customers. (IRS7)                         | 36       | 15       | 2        | 46*      | 1        | 0        | 100          | I               |
| The customers can use a shoes shine service. (IRS8)  | 24       | 7        | 3        | 64*      | 2        | 0        | 100          | I               |

**Note:** \*Highest frequency

**Source:** This study

| <b>Table 7</b><br><b>KANO CATEGORIES (HOTEL AMENITIES)</b>                        |          |          |          |          |          |          |              |                 |
|---|----------|----------|----------|----------|----------|----------|--------------|-----------------|
| <b>Hotel Amenities (HA)</b>   | <b>A</b> | <b>O</b> | <b>M</b> | <b>I</b> | <b>R</b> | <b>Q</b> | <b>Total</b> | <b>Category</b> |
| Consumers choose the hotel because of the swimming pool. (HA1)                    | 10       | 13       | 8        | 63*      | 4        | 2        | 100          | I               |
| There are many kinds of restaurants in the hotel. (HA2)                           | 32       | 8        | 3        | 54*      | 2        | 1        | 100          | I               |
| Consumers choose the hotel because of the hot tub. (HA3)                          | 23       | 5        | 3        | 68*      | 1        | 0        | 100          | I               |
| Customers can go to exercise in the fitness center with a gym/Workout room. (HA4) | 31       | 22       | 3        | 42*      | 2        | 0        | 100          | I               |
| The hotel serves a room service. (HA5)  | 26       | 38*      | 5        | 28       | 2        | 1        | 100          | O               |
| The customers can park the car for free. (HA6)                                    | 16       | 56*      | 12       | 12       | 1        | 3        | 100          | O               |
| The hotel offers a business center with internet access. (HA7)                    | 29       | 18       | 9        | 40*      | 2        | 2        | 100          | I               |
| The hotel provides conference facilities. (HA8)                                   | 31       | 13       | 7        | 48*      | 1        | 0        | 100          | I               |
| The hotel has babysitting. (HA9)  | 27       | 10       | 3        | 59*      | 1        | 0        | 100          | I               |

**Note:** \*Highest frequency

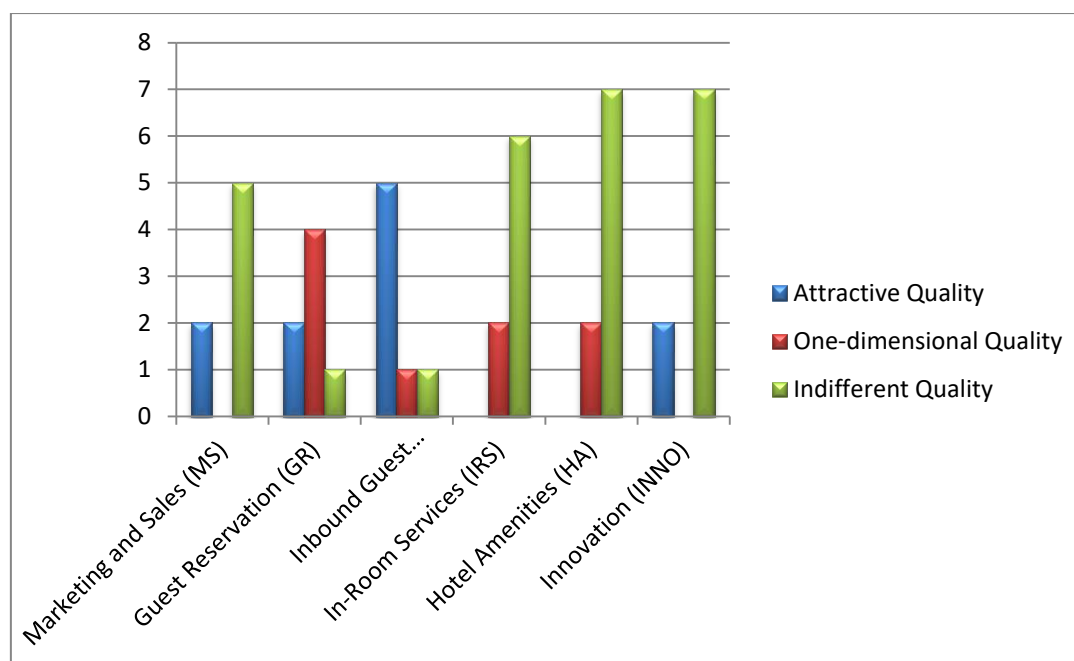
**Source:** This study

| <p align="center"><b>Table 8</b><br/><b>KANO CATEGORIES (INNOVATION)</b></p>  |            |          |          |            |          |          |              |                 |
|---|------------|----------|----------|------------|----------|----------|--------------|-----------------|
| <b>Innovation (INNO)</b>  | <b>A</b>   | <b>O</b> | <b>M</b> | <b>I</b>   | <b>R</b> | <b>Q</b> | <b>Total</b> | <b>Category</b> |
| The hotel uses innovative sales and marketing ideas such as Website, Social Media, Conversational Chatbots, and so on. (INNO1)  | 32         | 13       | 5        | <b>47*</b> | 3        | 0        | 100          | <b>I</b>        |
| The hotel uses Cloud or SaaS (Software as a Service) for managing the guest reservation. (INNO2)  | 31         | 7        | 5        | <b>55*</b> | 2        | 0        | 100          | <b>I</b>        |
| There are multi-lingual robots in the hotel. (INNO3)  | 29         | 2        | 1        | <b>66*</b> | 1        | 1        | 100          | <b>I</b>        |
| The hotel has a remote control application for controlling your room to turn on air-conditioner, TV, Lighting, and order drink and food through your smart phone or tablet. (INNO4)         | <b>46*</b> | 12       | 3        | 37         | 2        | 0        | 100          | <b>A</b>        |
| The hotel will use the voice-activated services in the guest room. (INNO5)  | 25         | 5        | 1        | <b>65*</b> | 4        | 0        | 100          | <b>I</b>        |
| In the hotel, there is a facial recognition system for getting in the room. (INNO6)   | 26         | 3        | 1        | <b>63*</b> | 6        | 1        | 100          | <b>I</b>        |
| There are multi-sensory coffee dispensers in the guest rooms and other places around the hotel. (INNO7)   | 32         | 5        | 1        | <b>59*</b> | 3        | 0        | 100          | <b>I</b>        |
| The hotel will use chatbots to interact with the hotel guests. Ex. suggesting special dishes, ordering meals and drinks, recommending interesting sightseeing and visits and so on. (INNO8) | 28         | 4        | 1        | <b>64*</b> | 3        | 0        | 100          | <b>I</b>        |
| Guests are able to check-in and check-out by themselves via a smart phone application. (INNO9)  | <b>42*</b> | 12       | 2        | 40         | 3        | 1        | 100          | <b>A</b>        |

**Note:** \*Highest frequency

**Source:** This study

In fact, there are 5 categories in the Kano model include attractive quality, must-be quality, one-dimensional quality, indifferent quality, and reverse quality, but each subsection was categorized as attractive quality, indifferent quality, one-dimensional quality in this research after determine the requirements of a five-star hotel in Chiang Mai. According to Figure 5 Marketing and sales (MS), in-room services (IRS), hotel amenities (HA), and innovation (INNO) were assessed as "*Indifferent Quality*". Marketing and sales (MS), in-room services (IRS), hotel amenities (HA), and innovation (INNO) would attract customers to visit or stay for five-star hotels in Chiang Mai. Guest Reservation (GR) assessed as "*One-dimensional Quality*" and follows by "*Attractive Quality*" which presented guest reservation was not the most consideration for five-star hotels in Chiang Mai. Regard to inbound guest services/outbound guest services (IGS/OGS), it was considered the most important to attract customers to stay in five-star hotels in Chiang Mai, and was also assessed as "*Attractive Quality*". Moreover, the customers' gender, age, educational level, occupation, and personal income did not affect the customers to stay in the five-star hotels in Chiang Mai.



**FIGURE 5**  
**OVERVIEW OF KANO CATEGORIES**

## CONCLUSIONS

Chiang Mai is the largest city in northern Thailand and also is the capital of the Lanna kingdom and a land of beautiful temples, mountains, and hill tribes. Chiang Mai has many landmarks for tourists all around the world. Nowadays, each airline has new routes and many direct flights to Chiang Mai, especially China. China is the biggest market for Thai tourism. Hence, the five-star hotel in Chiang Mai needs to augment its marketing strategy to survive. The main purpose of this study is to investigate the customers' decisions about selecting five-star hotels in Chiang Mai by using the Kano model in two-dimensional quality characteristics to analyze the five-star hotels' services and facilities.

As part of the Kano model, 11 of the total 47 defines as "*Attractive Quality*", 27 attributes as "*Indifferent Quality*", and 9 of total 47 defines as "*One-dimensional Quality*", which means if the five-star hotels in Chiang Mai provide these factors would satisfy the customers, but whenever the five-star hotel does not provide or serve these determinants, the customers would be dissatisfied.

## DISCUSSION

Current overview of the hotel business in Chiang Mai is found that there are approximately 3,000 hotels and a total of more than 70,000 rooms, including 1-5 star hotels, Inter Brand Hotels, Boutique Hotels, and Hostels, which has grown rapidly in the last 5 years ago from the original number of rooms around 60,000 rooms (2014-2018), with the investment expanding according to the number of tourists increasing continuously, due to the number of rooms up to 70,000 rooms. Thus, it affects higher competition in Chiang Mai hospitality. Consequently, the hospitality industries are the most significant type of accommodation and have high competitions continuously; it can provide revenue and satisfy the customer's needs. Thus, the owner could find different ways or new strategies to increase supply levels. Besides, innovation in the hotel industries is very crucial, new technologies could help the hotels to grow faster than usual. As expected, it can create new services and

differences in the hotel industry for satisfying customers. The customers usually expect new experiences and new things.

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