International Journal of Financial, Accounting, and Management (IJFAM)
ISSN: 2656-3355, Vol 5, No 3, 2023, 373-386 https://doi.org/10.35912/ijfam.v5i3.1641

Integrating Importance-Satisfaction Model and Performance Evaluation Matrix to improve service quality

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Article History
Received on 4 September 2023
1st Revision on 24 October 2023
2nd Revision on 14 November 2023
Accepted on 17 November 2023

Abstract
Purpose: The Taiwanese coffee market is growing every year, together with progressive changes in national habits and the concept of drinking coffee. This study examines a particular coffee studio and explores its service quality within a competitive environment as a basis for improvement.
Research methodology: The design of service elements for the questionnaire was based on the relevant literature. The study identified 19 quality attributes as survey items, all of which were then subsumed under the Importance-Satisfaction Model (I-S Model) and Performance Evaluation Matrix (PEM) for service quality.
Results: There are 8 service elements falling in "Excellent area," 3 service elements falling in "To be improved area," 3 service elements falling in "Surplus area," and 6 service elements falling in "Care-free area" as shown by the results of Importance-Satisfaction Model introduction. With regard to the Performance Evaluation Matrix which are introduced later on, 2 service elements fall in "Priority improvement area," 17 service elements fall in "Improvement area," and 1 service element falls in "Maintenance area."
Limitations: The results of this study are only applicable to the analysis of the coffee studio survey, and cannot be extrapolated to explain improvements in service quality across the entire coffee industry.
Contribution: It is expected that items in dire need of improvement can be confirmed by introducing a service quality model to enhance service quality, build a corporate image, and increase competitive advantage.
Keywords: *Coffee studios, Chain coffee shops, Service quality, Importance Satisfaction Model (I-S Model), Performance Evaluation Matrix (PEM)*
How to Cite: Chen, S., & Shun, Y. (2023). Integrating Importance-Satisfaction Model and Performance Evaluation Matrix to improve service quality. *International Journal of Financial, Accounting, and Management*, 5(3), 373-386.

1. Introduction

The number of employed personnel in the Taiwanese food and beverage industry increased from 2016 to 2019 (see Figure 1). It increased from 371,000 in 2016 to 412,000 in 2019. In 2018, this number surpassed 400,000, for the first time. However, in 2020, due to the impact of the COVID-19 pandemic, the number experienced a significant decline to 393,000, marking the first negative growth. The average annual growth rate was 1.49%. This indicates that in 2020, under the influence of the COVID-19 pandemic, some businesses in the food and beverage industry reduced personnel expenses to save costs

and cope with reduced income, resulting in a noticeable decrease in the number of employees in the industry (Research, 2021).

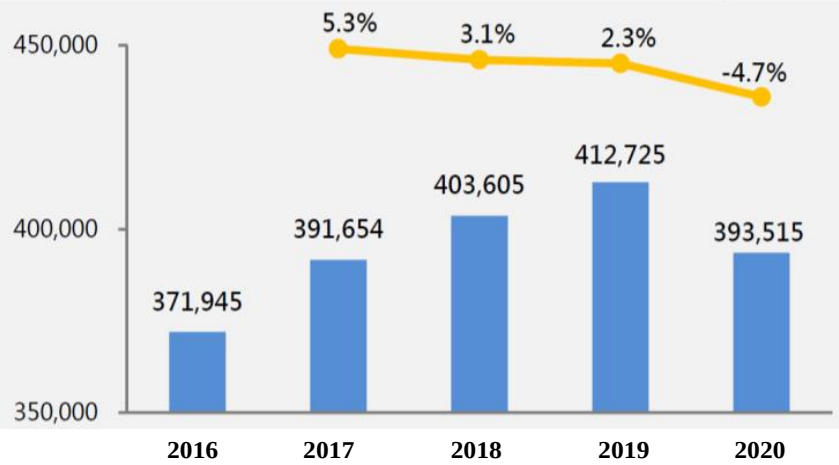

Figure 1. 2016-2020 Number of employees in the catering industry
Sources: Research (2021)

Owing to the continuous increase in the coffee industry's output value and the growing affordability of coffee prices, the economic scale of the coffee market has consistently expanded year by year. Coffee consumption has become a habit, with coffee transitioning from a premium beverage to a more budget-friendly option. The scale and business models of the coffee industry have been influenced by intensified competition among businesses, resulting in diverse development directions. Chain coffee shops focus on higher prices, taste, and convenience stores that prioritize affordability and convenience (Liang & Lin, 2014). The Ministry of Economic Affairs, Taiwan, has pointed out that, in recent years, beverage shop brands have continually innovated, expanding their numbers. This number jumped from 1,592 in 2011 to 4,096 in 2022, displaying a consistent upward trend each year with an average annual growth rate of 5.4%. (Figure 2).

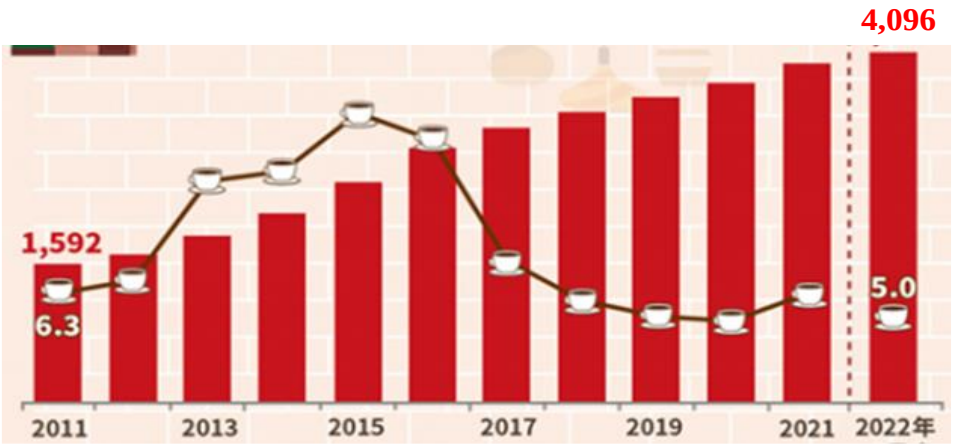

Figure 2. 2011-2022 number of cafes
Sources: MEA (2022)

In Taiwan, the primary sales channel for coffee beans is self-owned shops, which account for approximately 30% of the total sales volume. The next most significant channel is group purchasing, which contributes to approximately 14% of the sales. Approximately 10% came from coffee shop usage. Other distribution channels include distributors, roasters, coffee shops, and trade shows. However, the proportion of these channels is not substantial and farmers' self-production and self-sales models remain predominant. In 2013, Taiwan imported 79,587 metric tons of coffee and coffee products, with

coffee beans accounting for 21,800 metric tons, which is a 2.03-fold increase compared with the 19,996 metric tons imported in 2011. According to statistics from the Coffee Association, the value of the coffee industry in Taiwan, including chain convenience stores and coffee shops, reached approximately NT$66 billion in 2016, with convenience stores accounting for NT$18.8 billion and coffee shops for NT$23 billion. With the average consumption of one cup of coffee per person per day, the domestic coffee industry is experiencing continuous growth, attracting many new entrepreneurs because of its relatively low costs.

The service quality is not solely determined by the subjective evaluation of service providers or the preferences of individual customers (Sikder, Rana, & Polas, 2021; K.-J. Yang, Chen, & Yang, 2020). Rather, it is assessed based on the collective opinions of all customers (Amegayibor 2021; S.-H. Chen, 2011; Juran, 1974). Consequently, understanding customer needs is of paramount importance. To determine service quality, business organizations and scholars often use management models to assess and improve service quality (Widjaya & Padmoprayitno, 2022; K.-J. Yang et al., 2020). One such model is the Importance Performance Analysis (IPA) introduced by Martilla and James (1977), which has led to the development of various frameworks, including Yang's Importance Satisfaction Model (I-S Model) in 2003. These models are applied across industries to identify areas for improvement and to enhance competitive advantage through enhanced service quality.

Many studies have pointed out that the Performance Evaluation Matrix (PEM) is a convenient and useful tool for evaluating, analyzing, and improving service operating systems (Liu, Chen, & Zhang, 2021). This study adopts Chen's (2011) theory and revises the X-axis to represent "Importance" as a variable, while the Y-axis represents "Satisfaction." These two variables were used to develop an adjusted "Performance Evaluation Matrix that served as the research tool. By comparing and analyzing all customer service requirements using the I-S model and PEM, this study proposes a basis for improvement. Moreover, the study primarily focuses on hybrid and chain coffee shops, with fewer cases centered on coffee studios. This study examines a particular coffee studio and explores its service quality within a competitive environment as a basis for improvement.

1.2. Research objectives

In the global context of the 21st century, marketing has shifted from focusing on product quality and functionality to experiential selling, which has also altered marketing strategies in many industries. Building on the aforementioned research background and motivation, as the consumption of coffee beverages grows in Taiwan, the demand for coffee shops has evolved from merely valuing products and services to appreciating the experiences and atmosphere cultivated by coffee establishments. This study focuses on a specific coffee studio to explore the key factors that attract consumers to a coffee shop and the elements that require improvement in its management. It aims to provide customers with excellent consumption experiences and determine how a coffee shop positions itself within a competitive coffee market. The research objectives were as follows.

1. The essential elements of service demand in the coffee industry were identified through a literature review and in-depth interviews.
2. Determine the improvement items for the case study using the "Importance-Satisfaction Model" and the "Performance Evaluation Matrix."
3. Provide specific recommendations based on the research findings for the coffee industry to reference service quality management and operations.

2. Literature review

2.1 Coffee industry service elements

The classification of service elements in the coffee industry varies among researchers. Martineau (1958) pointed out that the service attributes of coffee shops include location, coffee quality, coffee temperature, lighting and music ambiance, coffee price, coffee variety, symbolic meaning, marketing advertisements, salesperson attitude, coffee display decoration, and architectural appearance. The diverse factors in coffee shops make coffee a vitalizing element for daily work at any location, showcasing individual taste and providing a new experience of various coffee consumption in life. W.

C. Wu and Cheng (2002) examined Taipei's chain coffee shops and found that customers' consumption considerations were divided into four dimensions: product, service, environment, and corporate image. Lin, Chuang, Yang, and Lin (2007) studied student consumption behavior and identified factors influencing coffee purchases, which included aspects like coffee expertise, aesthetic ambiance, convenience, reputation image, price, service quality, promotion, and other products.

C. L. Wu (2009) investigated the reasons for consuming at chain coffee shops, revealing motivations such as delicious coffee, tasty cakes, affordable prices, purchasing cakes, friendly attitude, convenient shopping, good image, easy parking, afternoon tea, and chatting with friends. Hsieh (2009) explored service quality and customer loyalty in chain coffee shops, identifying a total of 44 service quality elements. Some of the quality elements more relevant to coffee studios include the provision of product-related explanatory information, service personnel's ability to explain products and service skills, meal prices, meal flavors, beverage prices, coffee flavor and temperature, meal quality, meal service speed, crisis handling capability, meal portions, food safety and hygiene, convenience of the store's transportation location, handling of customer complaints, and timely introduction of new products.

Dong, Hung, and Chen (2015) investigated customer purchasing behavior in non-chain coffee shops, identifying factors like overall store impression, design effect, spatial functionality, exterior features, product service, and environmental atmosphere as influencing customers' product purchase considerations.

Lien (2017) conducted a study on customer satisfaction and importance assessment of Starbucks coffee attributes. The study identified 19 quality attributes as survey items as follows:

1. The taste of the meals.
2. Meals were fresh and hygienic.
3. Meals offer various options for this purpose.
4. Meals were unique.
5. I find this price to be reasonable.
6. Consuming here gives me a feeling of great value to money.
7. The product price list was clear and straightforward.
8. Convenience in Online Shopping.
9. Online shopping platforms are easy to navigate.
10. This location is easy to locate.
11. Promotional activities increase willingness to purchase.
12. Various product offers and discounts are available.
13. Usability and convenience of the application
14. Regular receipt of product advertisements and promotional materials.
15. Physical storage environment, environment, and decor.
16. Staff members wear neat uniforms and possess professional competence.
17. Staff members are friendly and courteous, and provide prompt services.
18. Business hours are convenient for customers.
19. Convenient transportation surroundings.

2.2 Importance-Satisfaction Model (I-S Model)

The Importance-Satisfaction Model (I-S Model) is derived from the "Importance and Performance Analysis (IPA)" proposed by Martilla and James (1977). This framework is simple and user friendly, making it frequently used by businesses as a management model. The framework converts "Performance" into "Satisfaction" because satisfaction is easier to assess and measure (Tonge & Moore, 2007). C. C. Yang (2003) introduced the I-S Model, which greatly aids businesses in making accurate decisions regarding service strategies. This allowed for the selection of importance and satisfaction scores based on respondents' answers to the questionnaire items. These scores were then plotted on a chart with importance (X-axis) and satisfaction (Y-axis) scores to form four regions: I. “Excellent area,” and II. “To-be-improved area,” III. “Surplus area,” and IV. “Care-free area”. This model's analysis

guides businesses to focus on the right direction for services to meet customer needs (C.-C. Yang, 2005), as illustrated in Figure 3. The analytical method known as the I-S Model has been widely used in service industry planning research to evaluate the relative worth and efficacy of various components (S–H. Chen, Chen, & Leung, 2023; Deng & Pierskalla, 2018; Lee & Xue, 2021).

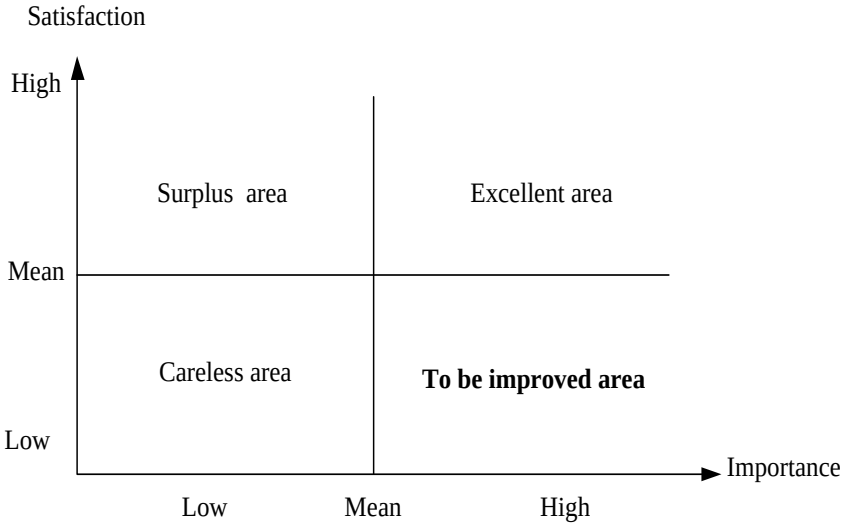

Figure 3. Importance-Satisfaction Model
Source: C. C. Yang (2003)

The I-S Model is described as follows (Xu, Li, Juan, Guo, & Lin, 2022):

1. Excellent area: Customer requirements in this area are considered important and satisfactory. These requirements should be retained and evaluated in future research.
2. To-be-improved area: The customer requirements located in this area are considered important to customers, but they do not currently meet their expected level of satisfaction. These requirements for improvement should be met immediately.
3. Surplus area: Customers are satisfied with the requirements located in this area, but these are not important to them. In other words, if the cost of meeting these requirements is limited, the provision level can be lowered.
4. Carefree area: The customer requirements in this area are less important and less satisfactory to customers. These requirements can be ignored because they have less value for the customers.

The I-S model has been applied in various studies, including improvements in employee satisfaction in the spa industry (S.-H. Chen, 2012), member satisfaction surveys in Rotary clubs (B.-S. Chen & Chen, 2016), enhancement of management systems in higher education organizations (Tsai, Huang, & Yang, customerstomers satisfaction analysis in Foodpanda's delivery services (Liu et al., and 2021), improvement of job satisfaction among high-tech employeesthe using quality loss function theory (S. Chen,et al.g t the the), and enhancement of hotel lobby design through the integration of the Kano method (HTsai& Tsaih, 2022). These related studies have found that the I-S Model is a simple yet valuable tool for improving satisfaction, enhancing service quality, and managing product design (Liu et al., 2021; C. C. Yang, 2003). This tool is simple and straightforward and is very helpful for management decision-making to improve high-importance/low-satisfaction service elements.

2.3 Performance Evaluation Matrix (PEM)

Lambert and Sharma (1990) proposed a Performance Evaluation Matrix (PEM) to determine the importance of logistics service quality attributes and a company's performance on these attributes. Because of the different perspectives explored by scholars, S.-H. Chen (2011) introduced a new matrix with a revised perspective. The horizontal axis is now based on the variable "Importance," while the vertical axis is based on "Satisfaction." These two variables form the revised "Performance Evaluation Matrix" (as shown in Figure 4). This matrix is divided into three areas: "Maintain," "Improvement,"

and "Priority improvement." Areas 1, 2, and 4 signify cases in which consumers' perceived satisfaction exceeds their importance. In these instances, service resources can be maintained as they are, and the strategy is to "Maintain" the current service quality. Areas 3, 5, and 7 indicate cases where satisfaction is important, suggesting that the service has not exceeded user expectations. Organizations must allocate more resources to improve the existing service quality, hence the "Improvement" strategy. Areas 6, 8, and 9 represent instances in which importance exceeds satisfaction, indicating that consumers are dissatisfied with the services provided for these attributes. In such cases, businesses must proactively address issues and seek improvements, leading to a " priority improvement" strategy. The service elements falling under the "Improvement" and "Priority improvement" categories represent priority areas for the improvement strategies proposed in this study.

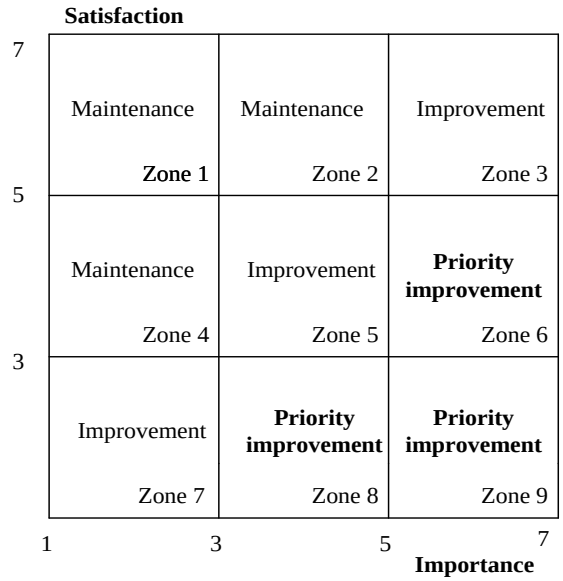

Figure 4. Revised Performance Evaluation Matrix
Source: S.-H. Chen (2011)

The Performance Evaluation Matrix method is an effective approach for evaluating a company's competitive position in the market, identifying opportunities for improvement, and guiding strategic planning. This Performance Evaluation Matrix was used to improve service quality in the banking industry (S.-H. Chen, 2009), optimizing the allocation and cost savings related to Automated Teller Machines (ATMs) in banks (K.-S. Chen, Chiou, & Ko, 2018), and enhancing patient satisfaction in the medical industry through the integration of the AHP method to prioritize improvements in areas of dissatisfaction (S.-H. Chen & Yeh, 2015). It is an excellent service quality evaluation method for managers seeking to determine their best improvement strategies (F.-Y. Chen & Chen, 2014).

3. Research methodology

3.1. Questionnaire design

The questionnaire design of this study focused on the service importance and satisfaction of a specific coffee studio. The design of service elements for the questionnaire is based on relevant literature (Dong et al., 2015; Hsieh, 2009; Martineau, 1958); Lien, 2017), which were consolidated to create an initial questionnaire. Owing to the unique nature of this individual studio case, in November 2021, discussions were held with 10 customers who had previously purchased coffee from the studio. During these discussions, consultations were conducted with three coffee business operators who managed individual studios to obtain the relevant service quality items. The following service elements were identified.

1. Coffee bean origin
2. Coffee price
3. Coffee quality
4. Freshness of coffee
5. Coffee roasting craftsmanship

6. Stability of coffee ingredients
7. Customization of coffee beans
8. Brand awareness of coffee
9. Visual design of coffee
10. Packaging material of coffee
11. Convenience of purchasing coffee
12. Safety of consuming coffee
13. Emergency response capability of the proprietor
14. Professional knowledge of the proprietor
15. Service attitude of the proprietor
16. Sharing of health knowledge by the proprietor
17. Interaction and sharing between the proprietor and customers
18. Timeliness of deliveries by the proprietor
19. Experience marketing (tastings or visiting roasting sites)
20. Marketing methods (educational events)

1. Service elements importance assessment
After consumers use the products and services of the studio, a survey is conducted to assess the importance of all service elements using a seven-point Likert scale. Importance assessment involves rating the importance from "Very important" (7 points) to "Not important at all" (1 point), and the higher the average score obtained after summing, the higher the perceived importance.

2. Service elements satisfaction assessment
After consumers use the products and services of the studio, a survey was conducted to assess the service satisfaction of all service elements using a seven-point Likert scale. Satisfaction assessment involves rating the satisfaction from "Very Satisfied" (7 points) to "Not Satisfied at All" (1 point), and the higher the average score obtained after summing, the higher the perceived satisfaction.

3. Demographics statistics
Personal demographics refer to background information about the survey participants, including gender, marital status, age, education level, occupation, monthly coffee spending, coffee flavor preferences, and other 8 items. This information was collected to understand the characteristics of the participants and to conduct further statistical analyses.

3.2. Research participants
The research scope of This study focuses on consumers of a specific coffee studio, and the research was conducted using a questionnaire survey. Purposive sampling was used to ensure the representativeness and response rate of the participants. The sampling period was from August to October 2021, and it is anticipated that 200 questionnaires will be distributed.

4. Result and discussion
4.1. Sample data
This study employed purposive sampling to distribute questionnaires to customers who had previously purchased coffee from the studio. A total of 200 questionnaires were distributed, 194 of which were collected, resulting in a response rate of 97%. After excluding invalid questionnaires, 183 were considered valid. The distribution of the valid sample describes the demographic background, as shown in Table 1.

Within the research sample, 98 individuals (54%) were female, representing the majority of female respondents. Among these, 112 (61%) were married, representing the majority in terms of marital status. In terms of age, 54 individuals (30%) were between 31 and 40 years of age, with the highest representation in the 31-40 age group. Within the surveyed group, 82 individuals (45%) were employed in the service industry, making this the most prominent occupational category. Regarding education level, 105 individuals (57%) held university degrees, with university-level education being the most

prevalent. Regarding the duration of coffee consumption, 60 individuals (33%) had been consuming coffee for 1–5 years, while 61 individuals (33%) had been consuming coffee for > 10 years, representing the largest group of long-term coffee drinkers. In terms of coffee expenditures, the majority (63%) spent 1000 NT dollars or less. Regarding coffee preferences, 101 individuals (55%) favored Black Coffee, while 68 individuals (37%) preferred lattes. Notably, a significant portion of the respondents favored Black Coffee.

Table 1. Descriptive statistics of sample population

Items	Demographic factors	No	Percent
Gender	Male	85	46%
	Female	98	54%
Marriage status	Unmarried (Divorce)	71	39%
	Married	112	61%
Age	Below 30	26	14%
	31-40	54	30%
	41-50	44	24%
	51-60	36	20%
	Above 60	23	13%
Occupation status	Office holder	31	17%
	Service industry	82	45%
	Technology industry	10	5%
	Freedom	13	7%
	Other	47	26%
Education degree	Below higher school	43	23%
	College/University	105	57%
	Above Master	35	19%
Time to start drinking coffee	Below 1 year	19	10%
	1-5	60	33%
	5-10	43	23%
	Above 10	61	33%
Amount of coffee purchased per month	Below NT$ 1000	112	61%
	NT$ 1001-3000	63	34%
	Above NT$3000	8	4%
Drinking coffee taste	Black coffee	101	55%
	Latte	68	37%
	Esoteric concentration	4	2%
	Cappuccino	8	4%
	Other	2	1%

4.2. Reliability validation

The reliability of the questionnaire in this study was assessed using Cronbach's α for reliability analysis. An α value above 0.7 indicates high reliability, a value between 0.35 and 0.7 suggests acceptable reliability, and a value below 0.35 indicates low reliability. The results revealed that both the importance and satisfaction of the service elements in this study, as assessed by Cronbach's α in the reliability analysis, exceeded 0.7. Moreover, the overall Cronbach's α for the entire questionnaire was 0.94, indicating a high level of measurement consistency. Therefore, this instrument was deemed suitable for further analyses. The details of the data are presented in Table 2.

Table 2. Reliability analysis of service elements of customer importance and customer satisfaction

Dimensions	Items	Cronbach's α
Importance	20	0.91
Satisfaction	20	0.89
Total	40	0.94

4.3. Implementing I-S Model and PEM

4.3.1. Descriptive statistics of customer importance and customer satisfaction

Following this study, the average and standard deviation of the 20 service elements were computed, as shown in Table 3. Subsequently, utilizing the correlated data, the I-S model and the PEM were constructed, as illustrated in Figures 5 and 6, respectively.

Table 3. Scores of service elements of customer importance and customer satisfaction

Items	Importance		Satisfaction	
	ME	SD	ME	SD
1. Coffee bean origin	5.45	1.42	5.96	1.15
2. Coffee price	6.02	0.98	4.95	1.40
3. Coffee quality	6.32	0.97	6.36	0.88
4. Freshness of coffee	6.32	1.05	6.42	0.86
5. Coffee roasting craftsmanship	5.95	1.10	6.15	0.99
6. Stability of coffee ingredients	5.90	1.14	6.08	0.96
7. Customization of coffee beans	5.09	1.32	5.56	1.10
8. Brand awareness of coffee	5.07	1.30	4.77	1.30
9. Visual design of coffee	4.60	1.37	4.87	1.31
10. Packaging material of coffee	5.11	1.27	5.67	1.12
11. Convenience of purchasing coffee	5.61	1.25	5.69	1.11
12. Safety of consuming coffee	6.43	0.98	6.17	1.02
13. Emergency response capability of the proprietor	5.63	1.29	5.78	1.18
14. Professional knowledge of the proprietor	5.98	1.17	6.16	0.94
15. Service attitude of the proprietor	6.06	1.19	6.26	0.95
16. Sharing of health knowledge by the proprietor	5.52	1.30	5.84	1.13
17. Interaction and sharing between the proprietor and customers	5.30	1.23	5.84	1.11
18. Timeliness of deliveries by the proprietor	5.64	1.20	6.03	1.05
19. Experience marketing (tastings or visiting roasting sites)	5.05	1.21	5.67	1.10
20. Marketing methods (educational events)	4.95	1.32	5.51	1.14
Total	5.60	1.20	5.79	1.09

4.3.2. Implementing I- S Model

In this study, all values were incorporated into the I-model. The average importance score was 5.60, while the average satisfaction score was 5.79, as depicted in Figure 5. Among the service elements, 8 service elements fell within the "Excellent area," 3 service elements were in the "To-be-improved area," 3 service elements were in the "Surplus area," and 6 service elements were in the "Care-free area."

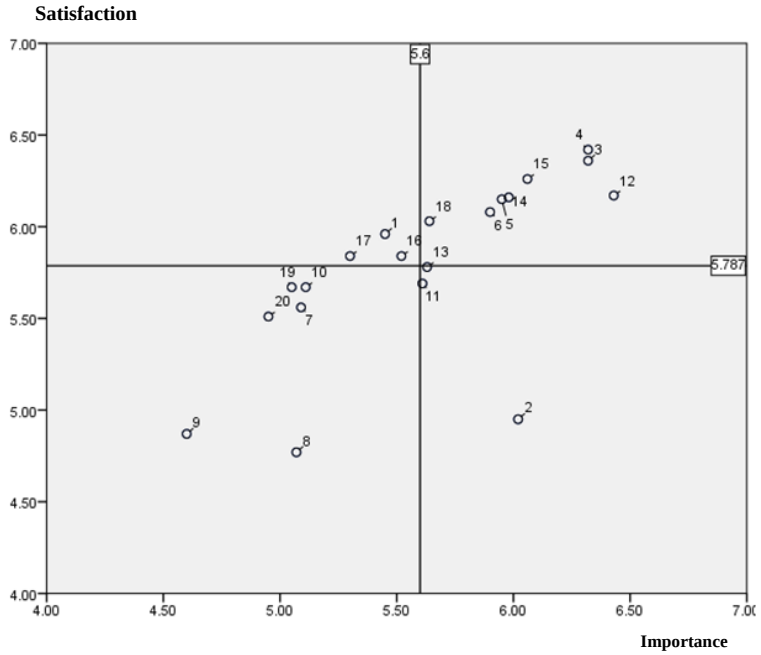

Figure 5. I-S Model of case study

4.3.3 Implementing PEM

All the numerical values were integrated into the PEM, and their visual representations are presented in Figure 6. Within the matrix, two service elements fell within the "Priority improvement area," 17 service elements were located in the "Improvement area," and 1 service element was situated in the "Maintenance area."

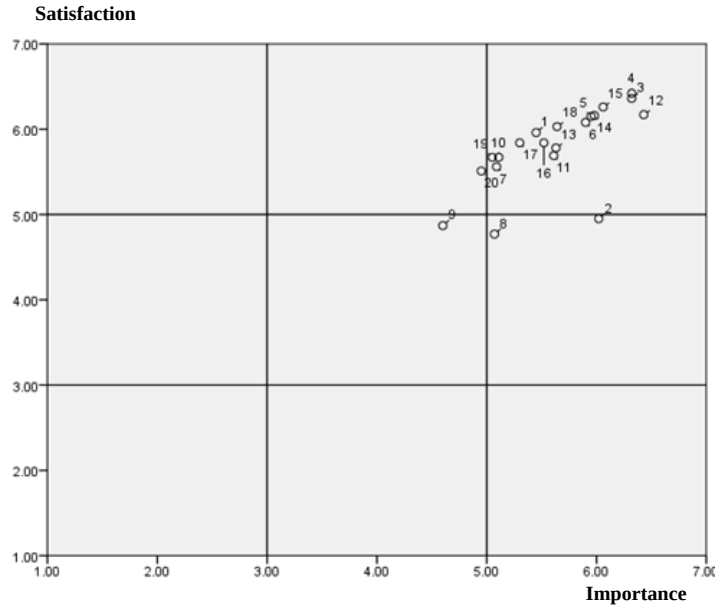

Figure 6. Performance Evaluation Matrix of case study

4.3.4 Comparison of service quality models

Improving service quality by using a single model can lead to subjectivity. Therefore, many researchers have conducted comparative analyses using two or more models to identify areas for improvement. Consequently, this study integrated the I-S Model and the PEM, yielding the results presented in Table 4.

For the service elements that fall into the "To-be-improved area" in the I-S Model and into the " Priority improvement area" or "Improvement area" in the PEM, the study identified the following as priority improvement items:

1. No. 2 Coffee price
2. No. 11 Convenience of purchasing coffee
3. No. 13 Emergency response capability of the proprietor

If a company has abundant resources and can allocate excess manpower or financial resources to improve service elements, for the service elements that fall into the "Care-free area" in the I-S Model and into the " Priority improvement area" or "Improvement area" in the PEM, the study treats the overlapping elements between these two models as secondary improvement items. These are:

1. No. 7 Customization of coffee beans
2. No. 8 Brand awareness of coffee
3. No. 9 Visual design of coffee
4. No. 10 Packaging material of coffee
5. No. 20 Marketing methods (educational events)

Table 4. Comparison data of service quality models

Items	**I-S Model**	**PEM**
1. Coffee bean origin	Surplus	Improvement
2. Coffee price	To-be-improved	Priority improvement
3. Coffee quality	Excellent	Improvement
4. Freshness of coffee	Excellent	Improvement
5. Coffee roasting craftsmanship	Excellent	Improvement
6. Stability of coffee ingredients	Excellent	Improvement
7. Customization of coffee beans	Care-free	Improvement
8. Brand awareness of coffee	Care-free	Priority improvement
9. Visual design of coffee	Care-free	Improvement
10. Packaging material of coffee	Care-free	Improvement
11. Convenience of purchasing coffee	To-be-improved	Improvement
12. Safety of consuming coffee	Excellent	Improvement
13. Emergency response capability of the proprietor	To-be-improved	Improvement
14. Professional knowledge of the proprietor	Excellent	Improvement
15. Service attitude of the proprietor	Excellent	Improvement
16. Sharing of health knowledge by the proprietor	Surplus	Improvement
17. Interaction and sharing between the proprietor and customers	Surplus	Improvement
18. Timeliness of deliveries by the proprietor	Excellent	Improvement
19. Experience marketing (tastings or visiting roasting sites)	Care-free	Maintain
20. Marketing methods (educational events)	Care-free	Improvement

4.4. Discussion and implication

In recent years, the beverage industry has experienced significant revenue growth, with coffee shops and handcrafted beverage stores being its main drivers. Well-known chain coffee brands, such as Uni-President Starbucks, 85°C, and Brown Café, have actively expanded their presence. Additionally, the number of independent coffee shops has been steadily increasing, contributing to the continuous growth of domestic coffee establishments. This case study involves an independent coffee studio, where the proprietor personally imports coffee beans from abroad and even handles the roasting process. This approach caters to individual customer preferences and shapes a unique coffee service chain. From this study's findings, only three elements fell into the "To-be-improved area" in the I-S Model, suggesting that the service provided by the business satisfies customers. However, in the PEM, two elements fell

into the " priority improvement area," indicating consumer satisfaction with the outcome. By integrating these two assessment tools, three priority improvement areas were identified

PEM is stringent in assessing satisfaction improvement because service elements must surpass their respective importance scores to be classified as improvement items. Therefore, for service elements falling into the "Improvement area" in PEM, scholars recognize the need for improvement. However, this requires abundant resources, including sufficient financial and manpower support, to categorize them as secondary improvement criteria (S–H. Chen, 2011). Thus, service elements falling into the "Care-free area" in the I-S Model and the " Priority improvement area" or "Improvement area" in the PEM, with overlapping elements between the two models, are considered secondary improvement items. This confirmed that this case required five areas for secondary improvement.

Hsieh (2009) explored service quality and customer loyalty in chain coffee shops and identified service quality elements such as the provision of product-related information, employees' product knowledge and service skills, meal prices, meal flavors, beverage prices, coffee flavor and temperature, dining quality, dining speed, crisis handling ability, portion sizes, food safety, store location convenience, and response to customer complaints. J. H. Chen, Wu, Chen, and Syu (2011) found that service quality management factors like cleanliness, seating comfort, food hygiene, and food quality were the highest-rated aspects for customer service quality in chain coffee shops. These findings align with this study's highest satisfaction levels with coffee quality and business service attitude. Business resources are always restricted, and providers must devise appropriate strategies to improve service quality, while retaining costs and ensuring a viable competitive advantage. This study demonstrates that the I-S model and PEM together provide an excellent measurement methodology for assessing priorities for service quality improvement.

5. Conclusion

5.1. Conclusion

The coffee industry is facing intense competition. To stand out in such a competitive market, businesses must adapt to evolving consumer demands in addition to cost management and maintaining quality. In addition, they must focus on online reviews and experiential marketing. Thus, enhancing customer engagement and online interaction has become a critical challenge in the service sector. Under the premise of cost management, it is crucial to improve service quality continuously to enhance competitive advantage. The key findings of this study are summarized as follows:

This study initially identified the service elements in the coffee industry and incorporated them into the service quality model. When utilizing the I-S Model, the results showed that 8 service elements were in the “Excellent area”, 3 service elements were in the “To-be-improved area”, 3 service elements were in the “Surplus area’, and 6 were in the “Care-free area”. Subsequently, when applying the PEM, two service elements were in the “Priority improvement area,” 17 service elements were in the “Improvement area,” and 1 was in the “Maintenance area.” The prioritized improvement order was determined by integrating the two models, as follows:

1. No. 2 Coffee price
2. No. 11 Convenience of purchasing coffee
3. No. 13 Emergency response capability of the proprietor

For companies with abundant resources, including excess manpower or financial assets, to invest in service element improvements, the secondary improvement items are as follows.

1. No. 7 Customization of coffee beans
2. No. 8 Brand awareness of coffee
3. No. 9 Visual design of coffee
4. No. 10 Packaging material of coffee
5. No. 20 Marketing methods (educational events)

In the face of intense market competition, domestic coffee shop operators diligently seek ways to make their products unique and differentiate their service characteristics to cater to the consumer markets. This effort shapes the brand and product uniqueness. In such a competitive environment, customer satisfaction influences repeat purchase intention. Satisfied customers are more likely to engage in repeat consumption (Bitner 1990; Kotler 1999). By identifying areas for improvement through relevant service quality models, enhancing customer satisfaction can lead to increased repurchase intentions, contributing to continuous profit growth, and creating competitive advantages for businesses.

5.2. Suggestion

Research in the coffee industry is abundant and diverse. Based on the findings of this case study, the following suggestions are made:

1. Businesses have demonstrated service quality that exceeds customer expectations across various aspects, leading to high customer satisfaction. It is advisable for businesses to maintain a competitive advantage. To identify areas of improvement, businesses should explore ways to enhance customer satisfaction. For instance, regarding emergency response capability, the business could establish a standard operating procedure (SOP) for emergency situations, ensuring the ability to handle urgent circumstances effectively.
2. It is recommended that the I-S Model and the PEM be applied to other industries. This would allow for the verification of whether these two methods yield differing results in different contexts, enabling further comparative analyses.

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