Applying the Kano Model to Explore the Operation Management Needs of Pizza Chains

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ABSTRACT :
The pizza chain market is gradually reaching saturation. It is necessary to graspcustomerdemand to attract more customers and increase revenue. Through the analysis of the Kano model, thisstudyfoundtwo items that can both increase customer satisfaction and reduce customer dissatisfaction, including "modernized and professional equipment" and "employees can do things right once." Pizza providers can improve these items to increase customer satisfaction and revenue.
KEYWORDS- *pizza chains, the Kano model, service quality*

I.INTRODUCTION

As the market for pizza chains is gradually reaching saturation and the competition is fierce, pizza providers need to grasp the needs of customers in order to attract more customers and improve their competitiveness. This study employed the scale proposed by Parasuraman et al. (1988). According to the questionnaire data, the service quality attributes which could improve benefits were identified. The results of the analysis can help pizza providers determine the priorities of service quality improvement

II. LITERATURE REVIEW

2.1 Service quality

Bateson and Hoffman (2002) mentioned that service quality is the attitude formed by customers' long-term and overall evaluation of the performance of service providers. Wakefield (2002) pointed out that service quality is the difference between service expectations and actual services. Parasuraman et al. (1988) introduced five dimensions of service quality, including (1) reliability, (2) responsiveness, (3) guarantee, (4) empathy, and (5) tangible. The service quality measurement items of this study were based on the questionnaires of Chung and Tsai (2020), Ugboma et al. (2007), and Parasuraman et al. (1988), which were modified according to the industrial characteristics.

2.2 Kano two-dimensional quality model

Matzler and Hinterhuber (1998) proposed a modified Kano two-dimensional quality factor classification table (as shown in Table 1). The quality attribute classification can be determined according to Table 1. Matzler and Hinterhuber's (1998) coefficient calculation formula is as follows:

SII (Satisfaction increment index) = $(A+O)/(A+O+M+I)$
DDI (Dissatisfaction decrement index) = $(O+M)/(A+O+M+I)\times(-1)$
A：Attractive Quality ； O：One-Dimensional Quality ； M：Must-Be Quality ； I：Indifferent Quality ；

III. RESEARCH METHOD

Items of service quality are modified based on questionnaires of Chung and Tsai (2020), Ugboma et al. (2007), and Parasuraman et al. (1988). The research subjects are customers of the store. From December 1 to December 31, 2022, this study retrieved 37 questionnaires. Variable items measured are the following: (1) Responsiveness: employees can immediately respond to customers' needs (Item1); employees can actively assist with customers (Item2); employees are willing to assist with the serve customers (Item3). (2) Tangible: employees' neat and tidy costumes and appearance (Item4); modernized and professional equipment (Item5); specific interior facilities, circulation and signs (Item6); service facilities meet the customers' needs (Item7). (3) Reliability:employees can provide reliable service (Item8); employees can precisely accomplish the commitment to the customers (Item9); employees can do the things right once (Item10). (4) Empathy: employees actively concern about individual customers (Item11); employees treat customers' benefits as priority (Item12); employees

understand individual customers' needs (Item13); it provides service in the bakery according to customers' needs (Item14). (5) Guarantee: employees can respond to customers' questions with sufficient professional knowledge (Item15); it provides comfortable service for customers (Item16); employees can provide responsible service (Item17); a specific indication of prices of goods (Item18).

IV. RESEARCH RESULTS

This study used two items of "benefit improvement service quality items" which can increase customer satisfaction while reducing customer dissatisfaction at the same time (as shown in Table 2). Pizza Chains providers can continue to maintain good operational quality for these quality items. In addition, this study made a two-dimensional quality classification for service quality items, of which 7 items were classified as attractive quality, and 11 items were classified as one-dimensional quality (as shown in Table 2). The items which can highly increase customer satisfaction and reduce customer dissatisfaction include "Modernized and professional equipment" and "Employees can do things right once." The providers can make improvements on these items to enhance their competitiveness.

V. CONCLUSION

This study used the Kano two-dimensional quality model and identified "service quality items for benefit improvement" to provide pizza Chains providers with strategies for improving service quality and for formulating operations and management. This study found that two items could increase customer satisfaction and reduce customer dissatisfaction at the same time, namely, "Modernized and professional equipment" and "Employees can do things right once." Pizza providers should track the improvement of these items and maintain good service quality to obtain maximized benefits.

Table 1 Categories of two-dimensional quality elements of Matzler and Hinterhuber

Negative Positive	I like it that way	Take it for granted	It does not matter	Can be tolerated	Dislike
I like it that way	Uncertain	Attractive Quality	Attractive Quality	Attractive Quality	One-Dimensional Quality
Take it for granted	Reverse Quality	Indifferent Quality	Indifferent Quality	Indifferent Quality	Must-Be Quality
It does not matter	Reverse Quality	Indifferent Quality	Indifferent Quality	Indifferent Quality	Must-Be Quality
Can be tolerated	Reverse Quality	Indifferent Quality	Indifferent Quality	Indifferent Quality	Must-Be Quality
Dislike	Reverse Quality	Reverse Quality	Reverse Quality	Reverse Quality	Uncertain

Table2 Kano customer satisfaction coefficients

Item	A	O	M	I	R	Q	Category	SII	DDI
1	17	13	4	3	0	0	A	0.514	※-0.857
2	18	16	0	3	0	0	A	0.556	※-0.944
3	13	18	1	5	0	0	O	0.457	※-0.886
4	10	18	2	7	0	0	O	0.412	※-0.824
5	16	12	2	7	0	0	A	※0.6	※-0.8
6	13	18	1	5	0	0	O	0.5	※-0.816
7	16	15	3	3	0	0	A	0.561	※-0.756
8	14	19	1	3	0	0	O	0.524	※-0.786
9	11	20	0	6	0	0	O	0.5	※-0.775
10	19	13	0	5	0	0	A	※0.690	※-0.762
11	18	9	3	6	1	0	A	※0.707	-0.659

12	12	21	2	2	0	0	O	0.511	-0.702
13	20	13	1	3	0	0	A	※0.702	-0.702
14	16	18	1	2	0	0	O	※0.612	-0.694
15	14	16	2	5	0	0	O	※0.617	-0.638
16	15	18	1	3	0	0	O	※0.62	-0.66
17	10	19	3	5	0	0	O	0.551	-0.592
18	9	22	2	4	0	0	O	0.529	-0.608
Total average								0.565	-0.748

A：Attractive Quality ； O：One-Dimensional Quality ； M：Must-Be Quality ；

I： Indifferent Quality ；R： Reverse Quality

SII (Satisfaction increment index) = (A+O)/(A+O+M+I)

DDI (Dissatisfaction decrement index) = (O+M)/(A+O+M+I)×(-1)

※ Denotes absolute value of coefficient > absolute value of the mean of total coefficient

REFERENCES

[1]. Bateson, J. E., Hoffman, K. D.,2001. Managing services marketing: Text and readings, Porto Alegre: Bookman.
[2]. Chung, Y.C, Tsai C.H., 2020. Study of Service Quality in Bakery. International Journal of Business and Management Invention, 9(1), 60-62
[3]. Matzler, K, Hinterhuber, H. H., 1998. How to make product development projects more successful by integrating Kano's model of customer satisfaction into quality function deployment, Technovation, 18(1), 25-38.
[4]. Parasuraman, A., Zeithaml, V.A, Berry, L.L, 1988. SERVQUAL: a multiple-item scale for measuring consumer perception of service quality. Journal of Retailing, 64 (1), 12-40.
[5]. Ugboma, C., Ogwude, I. C., Ugboma, O., Nnadi, K., 2007. Service Quality and Satisfaction Measurements in Nigerian Ports: An Exploration. Maritime Policy & Management, 34(4), 331-346.
[6]. Wakefield, R.,2002. Measuring Service Quality: A Reexamination and extension. The CPA Journal, 55-68
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