Evaluating Wedding Banquet Halls Using a Novel Multiple-Criteria Decision-Making Model

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Abstract

The annual turnover of the wedding banquet market in Taiwan is 500–1000 million new Taiwan dollars, which means that the Taiwanese wedding banquet halls market is very prosperous and stable. Huge business opportunities have attracted more and more investment from operators in the catering industry. However, beyond food, these operators do not understand the other needs of consumers. In reality, consumers usually spend much time and effort to make the decision to select a wedding banquet service because there are a number of other factors that concern consumers. Indeed, selecting a wedding banquet hall is a typical multiple-criteria decision-making (MCDM) problem. In this study, a hybrid MCDM method called DEMATEL-based ANP (DANP) was used to identify the key factors within the decision framework, consisting of 11 criteria in 5 aspects. A real case was enumerated to carry on the empirical study. Six key factors were identified: cost/price (C/P) value, reputation, professionalism, friendliness, premium gifts, and bargaining flexibility.

1   Introduction

Whether in ancient or modern times, marriage is one of the most important events in life. New couple usually hold a wedding ceremony to receive blessings from friends and relatives in China or abroad. This promotes the development of the

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wedding industry. According to professional differences, the wedding will include certain sub-services such as props and devices, the wedding dress, costumes, banquet food, audio and video production, and other components. Each wedding hall provides certain services that it does best. Among these services, the spending on the wedding banquet usually accounts for the main proportion of expenditures. In Japan, the expenses related to the wedding banquet account for 62.8%; in Hong Kong, the cost of the wedding banquet is 60%; in Mainland China, the cost of the wedding banquet is 40%; and in Korea, the banquet and the venue fee account for 30.5% of the total cost. In Taiwan, the cost of wedding expenses is higher than half the total cost, reaching 56.13%. With the rapid development of the wedding industry, the division of labor within this industry has also become formalized. Wedding halls gradually separated from the Taiwanese catering service industry and became a new category. In 2004, the first wedding hall devoting its efforts to professional service of wedding banquets opened in Taipei City and attracted the attention of numerous investors immediately. Today, this emerging market, with an annual output of 50 to 100 billion Taiwan dollars, has become a huge engine to attract capital investment. Nowadays, Chinese wedding service providers frequently visit Taiwan, hoping to benefit from the advanced experience of the Taiwanese providers. Undoubtedly, the wedding industry is evergreen and offers unlimited business opportunities as well.

Although Western-style weddings are highly respected around the world, because of the deep affection for Chinese folk culture, there are many differences (e.g., wedding venue) in selecting wedding halls between Chinese new couples and Westerners. The changes in modern life have resulted in the differentiation of services. Therefore, new couples will make a more cautious decision in selecting a wedding hall than in looking for a restaurant. Because the wedding banquet is the major expense of a wedding, selecting a favorite wedding venue and related services are of particular importance. However, because many factors must be taken into account, a new couple without experience usually has difficulty in selecting a wedding hall. This is a hot issue for investors, and therefore the management team is facing greater pressure. Because wedding hall managers must allocate enterprise resources accurately to seek the best operating performance, it is a great challenge for managers to understand the needs and desires of consumers so that the wedding hall can stand out from its many competitors. It is essential to identify the key factors that new couples consider when selecting a wedding hall, which provide a reference to the management team to provide more personalized services that meet the mutual expectations of both consumers and wedding hall managers.

Because there are many factors that should be taken into account and the factors have interdependent impacts (Hu et al., 2015), this is a classic case of multiple criteria decision-making (MCDM). With the vigorous development of wedding halls, relevant studies increased dramatically. Previous studies mainly focused on marketing by word-of-mouth reputation, consumer satisfaction, marketing strategy, brand awareness, and so on. However, previous studies have rarely addressed the

operating strategies and executive tactics of wedding halls. Therefore, a hybrid MCDM model combining decision-making trials and laboratory evaluation (DEMATEL) with an analytic network process (ANP), namely DEMATEL-Based ANP (DANP), was used to identify key factors for new couples selecting a wedding hall. Wedding hall managers can improve their business strategy based on the identified key factors, boosting both performance and customer satisfaction. The remainder of this paper is organized as follows: Section 2 reviews the related literature on the process of consumer decision-making, and Section 3 presents the research structure. Section 4 introduces the DANP model. Section 5 applies the DANP to identify the key factors for Taiwanese new couples in selecting a wedding hall. Section 6 discusses the various outcomes and provides conclusions.

2   Literature Review on Consumer Decision-Making Processes

According to the consumer's shopping habits, consumer goods are divided into four categories: convenience goods, shopping goods, specialty goods, and unsolicited goods (Kotler, 2003). Convenience goods are inexpensive frequent purchases, with little effort needed to purchase them. Shopping goods are products that consumers do not buy as frequently as convenience goods. They usually cost more than convenience goods and consumers expect to have them for longer, so that they will do some research before purchase. Specialty goods are products with unique features or branding. Consumers do not compare them with other products because the goods have features unique to them. Instead they will spend time searching for a retailer selling the product they want. Consumers are often prepared to travel to purchase their product and to pay a premium. Unsolicited goods are goods that the consumer does not know about or does not normally think of buying, and purchase of these goods arises due to danger or the fear of danger and lack of desire. According to the classification made by marketing researchers, wedding banquet services are more closely associated with shopping goods or specialty goods.

The economists, Nelson (1970) and Darby and Kami (1973), divided goods into three categories: search goods, experience goods, and credence goods, based on the asymmetry of information between consumers and manufacturers. Search goods are products or service with features and characteristics that are easily evaluated before purchase. Consumers can distinguish good from bad and know the differences between the various commodities before and after purchasing these goods, such as clothes. Experience goods are products or services where product characteristics are difficult to observe in advance, but these characteristics can be ascertained upon consumption. Experience goods typically have lower price elasticity than search goods because consumers fear that lower prices may be due to unobservable problems or quality issues. Credence goods are goods whose utility impact is difficult or impossible for the consumer to ascertain. In contrast to

experience goods, the utility gain or loss of credence goods is difficult to measure after consumption as well. The seller of the good knows the utility impact of the good, creating a situation of asymmetric information. Based on the classification made by economists, wedding services are more closely associated with "experience goods".

Whether merchandise service is categorized based on marketing researchers or economists, new couples must make a considerable effort to decide on a wedding banquet location.

3 Research Structure

The literature contains numerous studies of the vigorous development of wedding banquet halls, focusing on consumer lifestyle classification, consumer satisfaction, oral reputation, and brand awareness (Hsu, 2007; Zhuo, 2008; Lee, 2009; Chen, 2010; Jane, 2013; Wang, 2014). These studies clarified the market phenomenon, but rarely touched on issues of finding out the key decision-making factors for the consumer or determining the causal relationships among the key factors, which are considered as the most relevant issues for business performance.

First, using the Delphi technique, to achieve consensus, experienced senior managers working in wedding halls were invited to complete expert interviews. They proposed five aspects and eleven criteria that influence new couples to select a wedding hall from the perspective of decision-makers, as shown in Table 1.

To double-check the research structure, following a website discussion, the keywords related to wedding services were integrated. The i-Buzz IWOM Research Center conducted an online word-of-mouth monitoring experiment for the wedding industry based on 852 network channels from August 2015 to July 2016. The results showed that "environment, service, food, budget, and traffic" are the major concerns of consumers. Obviously, these are the same as the five aspects in Table 1. This step enhances the credibility of the aspects and criteria produced from the expert interview output by the Delphi technique.

Table 1: Aspects and criteria for new couples to select a wedding hall

Aspect	Criteria
Transportation (A)	• Convenience of public transport: Whether there are bus or MRT stations nearby and how many of them (A_1)
	• Parking lot: How many parking spaces and the parking fee (A_2)
Venue (B)	• High ceiling: Height of the banquet hall (B_1)
	• No pillar: There is no pillar to hinder the flow of movement and block the view (B_2)
	• Audio and video equipment: whether a projector and audio and video equipment can be used in the banquet hall (B_3)
Food (C)	• Word of mouth (market evaluation): word of mouth from relatives and friends, evaluation on social media (C_1)
	• C/P value (perceived by consumer): Consumer's views on C/P value from price and product (C_2)
Services (D)	• Professionalism: Emotions felt from the contact with service personnel when placing an order, specific feeling on degree of professionalism (D_1)
	• Friendliness: Emotions felt from the contact with service personnel when placing an order, specific feeling on friendliness (D_2)
Budget (E)	• Bargaining flexibility: Whether the price could be bargained by the consumer (E_1)
	• Premium offers: Whether additional goods, services, etc., are offered as gifts (E_2)

4　Dematel-Based ANP (DANP)

There are numerous multiple-criteria decision-making methods that can be used to identify key factors. The analytic network process (ANP) proposed by Saaty (1996) is a very effective tool.
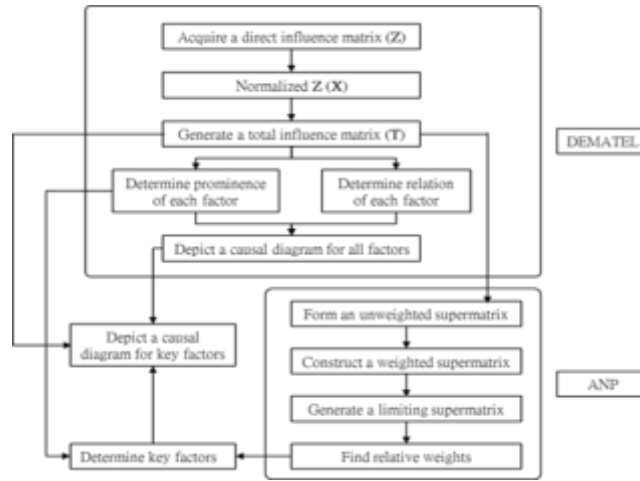
Figure 1: The proposed framework of the revised DANP

Nevertheless, a serious problem with ANP is that if too many criteria involve pairwise comparisons, the time required for these comparisons increases substantially (Xu and Wei, 1999). Furthermore, it is not easy to achieve consistency, especially for a high-order matrix (Hu and Tsai, 2006). A hybrid MCDM method, DEMATEL-based ANP (DANP) proposed by Yang and Tzeng (2008), which combines the Decision-Making and Trial Evaluation Laboratory (DEMATEL) with ANP, has been widely used (Tzeng & Huang, 2011). Unlike the simple combination of traditional DEMATEL and ANP methods, DANP is free from the consistency test. In DANP, the total influence matrix generated by DEMATEL is regarded as the unweighted ANP supermatrix (Ou Yang et al., 2011), avoiding troublesome pairwise comparisons.

4.1 Determining the Total Influence Matrix
The scores used to represent the degree of influence of one factor on another were: 0 (no effect), 1 (little effect), and 2 (strong effect) (Hu et al., 2016). Next, the direct influence matrix Zij was constructed using the degree of influence between each pair of elements as obtained by the questionnaire. Zij represents the degree of influence of criterion i on criterion j. All diagonal elements are set to zero.

$$
Z = \begin{bmatrix}
Z_c^{ll} & \cdots & Z_c^{lj} & \cdots & Z_c^{ln} \\
\vdots & & \vdots & & \vdots \\
Z_c^{il} & \cdots & Z_c^{ij} & \cdots & Z_c^{in} \\
\vdots & & \vdots & & \vdots \\
Z_c^{nl} & \cdots & Z_c^{nj} & \cdots & Z_c^{nn}
\end{bmatrix}
\tag{1}
$$

The direct influence matrix Z was subsequently normalized to yield a normalized direct influence matrix X after calculating

$$S = min\left[\frac{1}{max \sum_{j=1}^{n} Z_{ij}}, \frac{1}{max \sum_{i=1}^{n} Z_{ij}}\right] \quad X = S \cdot Z \tag{2}$$

The formula
(T=X(I-X)-1) was used to represent the total influence matrix T after normalizing the direct influence matrix. In this step, O was the zero matrix and i the identity matrix:

$$\lim_{K \to \infty} X^K = 0$$

$$T = \lim_{x \to \infty}\left(X + X^2 + X^3 + ... + X^K\right) = X\left(I - X\right)^{-1} \tag{3}$$

The total influence matrix T was viewed as an unweighted supermatrix and was used to normalize the total influence matrix to obtain the weighted matrix W for ANP. Finally, W was multiplied by itself several times until convergence to obtain the limiting supermatrix W* and the global weight of all elements.

4.2 Identifying key factors

It can be seen that the rankings of factor importance resulting from the prominences generated by DEMATEL and the relative weights obtained by DANP were inconsistent. In the opinion of Hu et al. (2015), because both DEMATEL and DANP provide partial messages regarding the selection of key factors, decisions on key factors should not be based on the prominences generated by DEMATEL or the relative weights obtained by DANP as the sole consideration. This motivates the use of these messages to determine the final importance rankings of the factors. The overall rankings of the factors are obtained by arranging the sums of rankings of each factor in ascending order.

5   Empirical Study

During the one-year online word-of-mouth monitoring experiment, the reputation effects caused by negative word-of-mouth reports were filtered out. Among the 9,292 pieces of data representing word-of-mouth reports, the wedding hall called "Amazing Hall" had the most referrals, with 399 pieces of word-of-mouth reputation data, and became the number-one wedding hall.
Based on the research framework shown in Table 1, the questionnaires were distributed to managers who were currently working in a wedding banquet hall and had been working there for more than two years; a total of 31 valid questionnaires were collected. Using the DEMATEL method, the initial direct influence matrix for the criteria shown in Table 2 was calculated using Eq. (1). The normalized direct influence matrix in Table 3 was obtained through Eq. (2).

The total influence matrix in Table 4 was calculated using Eq. (3), and Table 5 summarizes the prominence and relations of each criterion.

Table 2: The initial direct influence matrix for criteria

	A1	A2	B1	B2	B3	C1	C2	D1	D2	E1	E2
A1	0	1.5484	0.3548	0.3871	0.2581	1.5484	1.5484	0.871	0.8065	0.9355	1.0645
A2	1.4839	0	0.3548	0.3226	0.3548	1.4839	1.4516	0.7742	0.8065	0.871	1
B1	0.2903	0.2258	0	1.0968	0.871	1.0323	1.0968	0.7419	0.5484	0.6452	0.6452
B2	0.3226	0.2258	1.3226	0	0.9677	1.3548	1.2903	0.9032	0.7097	0.7419	0.7097
B3	0.2581	0.2581	0.7097	0.9677	0	1.2903	1.3226	1.0645	0.6774	0.7419	0.8387
C1	1.3548	1.3226	1.3548	1.2903	1.0968	0	1.7097	1.6129	1.6452	1.3548	1.2903
C2	1.3871	1.5161	1.4516	1.4516	1.4839	1.8065	0	1.7742	1.7742	1.4194	1.4516
D1	0.6129	0.6774	0.7742	0.9032	1.2903	1.7419	1.8065	0	1.7742	1.2903	1.2258
D2	0.6774	0.5806	0.6129	0.7097	0.871	1.6452	1.7097	1.8065	0	1.2258	1.1935
E1	1	0.9677	0.7419	0.6774	0.7742	1.3871	1.2903	1.1613	1.2258	0	1.2903
E2	1	0.9032	0.6774	0.5806	0.8387	1.3548	1.2581	1.129	1.2258	1.2258	0

Table 3: The normalized direct influence matrix for criteria

	A1	A2	B1	B2	B3	C1	C2	D1	D2	E1	E2
A1	0	0.0998	0.0229	0.0249	0.0166	0.0998	0.0998	0.0561	0.052	0.0603	0.0686
A2	0.0956	0	0.0229	0.0208	0.0229	0.0956	0.0936	0.0499	0.052	0.0561	0.0644
B1	0.0187	0.0146	0	0.0707	0.0561	0.0665	0.0707	0.0478	0.0353	0.0416	0.0416
B2	0.0208	0.0146	0.0852	0	0.0624	0.0873	0.0832	0.0582	0.0457	0.0478	0.0457
B3	0.0166	0.0166	0.0457	0.0624	0	0.0832	0.0852	0.0686	0.0437	0.0478	0.0541
C1	0.0873	0.0852	0.0873	0.0832	0.0707	0	0.1102	0.104	0.106	0.0873	0.0832
C2	0.0894	0.0977	0.0936	0.0936	0.0956	0.1164	0	0.1143	0.1143	0.0915	0.0936
D1	0.0395	0.0437	0.0499	0.0582	0.0832	0.1123	0.1164	0	0.1143	0.0832	0.079
D2	0.0437	0.0374	0.0395	0.0457	0.0561	0.106	0.1102	0.1164	0	0.079	0.0769
E1	0.0644	0.0624	0.0478	0.0437	0.0499	0.0894	0.0832	0.0748	0.079	0	0.0832
E2	0.0644	0.0582	0.0437	0.0374	0.0541	0.0873	0.0811	0.0728	0.079	0.079	0

Table 4: The total influence matrix for criteria

	A1	A2	B1	B2	B3	C1	C2	D1	D2	E1	E2	d
A1	0.1195	0.2094	0.135	0.1368	0.1352	0.2766	0.2742	0.2104	0.2026	0.1969	0.2067	2.1032
A2	0.2014	0.1133	0.1299	0.1283	0.1353	0.265	0.261	0.1983	0.1957	0.1872	0.1969	2.0122
B1	0.1028	0.098	0.0883	0.1544	0.1454	0.2011	0.2031	0.1645	0.1486	0.1443	0.1457	1.5961
B2	0.1198	0.1131	0.1829	0.1045	0.1676	0.2437	0.2385	0.1952	0.1785	0.1688	0.1685	1.8811
B3	0.1144	0.1132	0.1446	0.1596	0.106	0.2363	0.2363	0.2011	0.1744	0.1662	0.1731	1.8254
C1	0.2387	0.235	0.2377	0.2348	0.2323	0.2597	0.3562	0.3141	0.3075	0.2745	0.2741	2.9646
C2	0.2541	0.2587	0.257	0.2579	0.2686	0.3874	0.2802	0.3422	0.3329	0.2951	0.3003	3.2344
D1	0.1809	0.1826	0.1909	0.199	0.2286	0.3342	0.3352	0.2003	0.2955	0.2524	0.2513	2.6508
D2	0.1754	0.1688	0.1716	0.1778	0.1949	0.3132	0.3144	0.2912	0.1806	0.2374	0.2377	2.4631
E1	0.1856	0.1823	0.1679	0.1647	0.1769	0.284	0.2765	0.2413	0.2389	0.152	0.2313	2.3015
E2	0.1822	0.1755	0.1607	0.1559	0.1771	0.2768	0.2694	0.235	0.2345	0.2212	0.1504	2.2388
r	1.8747	1.8499	1.8665	1.8738	1.9678	3.0782	3.0449	2.5937	2.4896	2.296	2.336	

Table 5: Prominence and relation of each criterion

Criteria	D	R	D+R	D-R	Ranking
A1	2.1032	1.8747	3.9779	0.2285	7
A2	2.0122	1.8499	3.8621	0.1623	8
B1	1.5961	1.8665	3.4627	-0.2704	11
B2	1.8811	1.8738	3.7549	0.0073	10
B3	1.8254	1.9678	3.7931	-0.1424	9
C1	2.9646	3.0782	6.0428	-0.1136	2
C2	3.2344	3.0449	6.2793	0.1895	1
D1	2.6508	2.5937	5.2445	0.0571	3
D2	2.4631	2.4896	4.9527	-0.0266	4
E1	2.3015	2.2960	4.5975	0.0055	5
E2	2.2388	2.3360	4.5748	-0.0972	6

As shown in Table 6, a weighted supermatrix can be obtained by normalizing the total influence matrix. Table 8 shows the limiting supermatrix derived from the weighted supermatrix.

Table 6: The weighted supermatrix for criteria

	A1	A2	B1	B2	B3	C1	C2	D1	D2	E1	E2
A1	0.0637	0.1132	0.0723	0.073	0.0687	0.0899	0.09	0.0811	0.0814	0.0858	0.0885
A2	0.1074	0.0613	0.0696	0.0685	0.0687	0.0861	0.0857	0.0765	0.0786	0.0815	0.0843
B1	0.0548	0.053	0.0473	0.0824	0.0739	0.0653	0.0667	0.0634	0.0597	0.0629	0.0624
B2	0.0639	0.0611	0.098	0.0558	0.0852	0.0792	0.0783	0.0753	0.0717	0.0735	0.0721
B3	0.061	0.0612	0.0775	0.0852	0.0539	0.0768	0.0776	0.0775	0.0701	0.0724	0.0741
C1	0.1273	0.1271	0.1274	0.1253	0.1181	0.0844	0.117	0.1211	0.1235	0.1195	0.1173
C2	0.1355	0.1399	0.1377	0.1376	0.1365	0.1259	0.092	0.132	0.1337	0.1285	0.1285
D1	0.0965	0.0987	0.1023	0.1062	0.1162	0.1086	0.1101	0.0772	0.1187	0.1099	0.1076
D2	0.0936	0.0912	0.0919	0.0949	0.099	0.1018	0.1032	0.1123	0.0725	0.1034	0.1018
E1	0.099	0.0986	0.0899	0.0879	0.0899	0.0923	0.0908	0.093	0.096	0.0662	0.099
E2	0.0972	0.0948	0.0861	0.0832	0.09	0.0899	0.0885	0.0906	0.0942	0.0963	0.0644

Table 7: The limited supermatrix for criteria

	A1	A2	B1	B2	B3	C1	C2	D1	D2	E1	E2	
A1	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	7
A2	0.0799	0.0799	0.0799	0.0799	0.0799	0.0799	0.0799	0.0799	0.0799	0.0799	0.0799	8
B1	0.0631	0.0631	0.0631	0.0631	0.0631	0.0631	0.0631	0.0631	0.0631	0.0631	0.0631	11
B2	0.074	0.074	0.074	0.074	0.074	0.074	0.074	0.074	0.074	0.074	0.074	9
B3	0.0721	0.0721	0.0721	0.0721	0.0721	0.0721	0.0721	0.0721	0.0721	0.0721	0.0721	10
C1	0.1175	0.1175	0.1175	0.1175	0.1175	0.1175	0.1175	0.1175	0.1175	0.1175	0.1175	2
C2	0.1277	0.1277	0.1277	0.1277	0.1277	0.1277	0.1277	0.1277	0.1277	0.1277	0.1277	1
D1	0.1047	0.1047	0.1047	0.1047	0.1047	0.1047	0.1047	0.1047	0.1047	0.1047	0.1047	3
D2	0.0975	0.0975	0.0975	0.0975	0.0975	0.0975	0.0975	0.0975	0.0975	0.0975	0.0975	4
E1	0.0912	0.0912	0.0912	0.0912	0.0912	0.0912	0.0912	0.0912	0.0912	0.0912	0.0912	5
E2	0.0888	0.0888	0.0888	0.0888	0.0888	0.0888	0.0888	0.0888	0.0888	0.0888	0.0888	6

The overall rankings for the criteria were obtained by arranging the sums of the rankings of each criterion in ascending order, as shown in Table 9. According to the overall ranking list, reputation (market evaluation) (C1), C/P value (perceived by the consumer) (C2), professionalism (D1), friendliness (D2), bargaining flexibility (E1), and premium offers (E2) were selected as key criteria. According to the total influence matrix in Table 5, a causal diagram was developed and is shown in Figure 2.
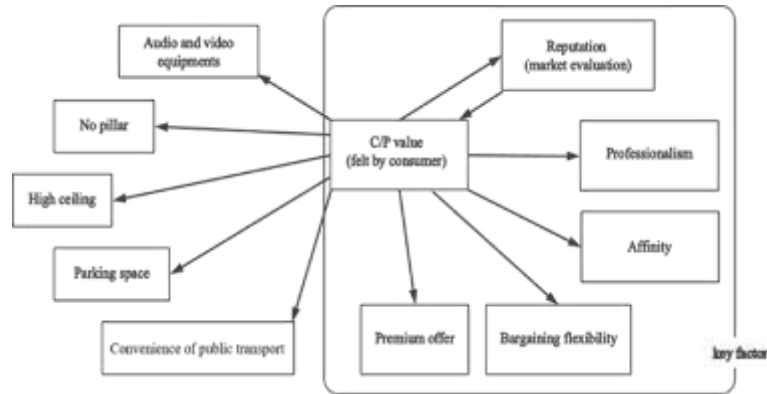
Figure 2: The causal diagram for evaluation criteria

6 Conclusions and Remarks

6.1 Conclusions

1. C/P value of food (perceived by the consumer), reputation in food (market evaluation):

In the final analysis, the highlight of the feast is still the "banquet", but it is also the "greatest common factor" in making an impression on the guests. The price of a wedding banquet is usually based on the "table price", which is related to the food served. Luxurious materials used in food will enhance the value of the wedding; the newly-wed couple will feel that the cost is effective and worthwhile, which will improve the order rate. Delicious food advertised by word of mouth will acquire an advantage. It is easy to leave carefully prepared good impressions while the new couple is collecting information.

2. Professional and friendly service:

Wedding banquets are often a new experience for couples, and because a wedding is a big life event, it is very common to see bafflement and anxiety, with couples answering "I do not know how to choose" to many questions. The i-Buzz IWC report also mentioned that 65% of the hot topics focused on "questions and answers" in the hope of getting experienced customers to provide guidance to alleviate doubts and appease new couples' anxieties.

3. Bargaining flexibility in budget and premium offers:

The amount of money spent on wedding banquets is not small, according to the Ministry of Commerce, Commercial Division, Strategic Plan of Consumption and Lifestyle Research and Training. A survey commissioned by TIER (Taiwan Institute of Economic Research) on the Taiwan wedding industry market size indicates that the wedding banquet is a major cost and accounts for 56.13% of the

total cost of a wedding. Therefore, new couples tend to be cautious when considering budget and try to obtain more premium offers for the wedding banquet to feel that they can make their money go farther.

6.2 Management implications

The wedding banquet is an occasion for the newly-wed couple to receive blessings from relatives and friends. As customary in Taiwan, the attending guests give money as a wedding gift. The host of the wedding hopes that guests enjoy a rich feast of exceptional value to make the guests feel esteemed, and therefore the food's C/P value becomes the most critical factor. Although the C/P value is what consumers perceive, it cannot be completely subjective, but must take into account the preferences of the invited friends and relatives of the newly-wed couple. Hence, the reputation of the food (market evaluation) becomes an important reference influencing the C/P value of the food.

A wedding banquet hall is responsible for receiving new couples, arranging the booking, and consulting with them about wedding plans and related activities. The professionalism and friendliness of the service personnel will affect the feelings of new couples about the wedding banquet venue, but when the C/P value of food is high, it will positively affect the new couple's feelings about the reception provided by service personnel. When arranging the wedding banquet and selecting the venue, the influence of budget seems to be lower than the C/P value of the food offered, which shows that consumers strongly identify with the C/P value of food. Once the new couple is satisfied with the C/P value of the food, they will not pay too much attention to the budget. Even factors such as the kind of equipment in the venue and convenience of transportation are affected by the positive influence of the C/P value of food.

It seems that the image that new couples have of holding a wedding banquet is focused more on the concept of a "feast", for which the C/P value of food is very crucial. When collecting information, they place more importance on the reputation of the food; when evaluating alternatives, food is important and will not be ignored. Those wedding halls and investors with a non-catering background should emphasize building up their brand with regard to the C/P value of their food (consumer feelings) and the performance and image of their food's reputation (market evaluation), using marketing tactics to win consumers and establish their competitive position.

Looking at other factors, the two transportation criteria (convenience of public transport and parking space), can affect other criteria to a great extent, but when ranking key criteria, the two transportation criteria are not included. The causal diagram reveals that as long as the positive feeling about the C/P value of the food is strong enough, it exerts a strong attraction and makes the new couple and their guests tolerate transportation inconveniences.

According to the results of this study, wedding banquet hall operators can enhance the perception of the C/P value of their food by adjusting menu combinations and by doing research and development to develop new dishes. As for marketing

tactics, the use of taste experiences and visual communication can guide the market to increase the volume of positive evaluation results. As for wedding banquet hall on-site operation and management, the professionalism and friendliness of the service personnel can be enhanced by education and training; in the reception and service process, the use of visual communication of auxiliary products, providing appropriate reminders to new couple on the C/P value of the food, emphasizes the C/P value of the food to increase order rates and reduce the number of requests from consumers for bargaining flexibility and premium offers.

6.3 Discussion

In this study, the DANP operating framework proposed by Hu et al. (2015) was used and is illustrated in Fig. 1. DEMATEL was combined with ANP to produce a causal diagram focusing on key criteria, and the aspects and criteria that should be given priority were analyzed to allocate enterprise resources effectively to achieve the best operating management performance.

Previous studies on wedding halls dealt mostly with consumer satisfaction, but a wedding banquet hall is different from a general restaurant in that repeated patronage based on consumer satisfaction in not commonly seen in the wedding banquet market. Satisfaction can only affect the reputation of the food. The analysis in this study revealed that to increase the operating performance of a wedding banquet hall, it would be more effective to make consumers perceive the C/P value of the food rather than its reputation. This study also confirmed the key position of the C/P value of the banquet food, its prominence, and its degree of relationship with other factors. These results will induce researchers to carry out extensive studies of wedding banquet hall operating strategies. Especially now, when diversified operating strategies are being used by each brand of wedding hall, smart research methods could help the industry to recognize consumers' needs and wants and develop alternative solutions.

Because the relationship between aspects and criteria in the real world is usually interdependent, to adapt to the current competitive market, in-depth clarification of consumers' inner expectations is important, before thinking about how to propose a better solution. Using smart research methods, a strategic program can be proposed to enhance the performance and competitiveness of the wedding banquet hall.

It is hoped that this study will help improve the efficiency of wedding banquet hall business strategies. The analytical results of this study shall help managers operate more effectively on the wedding hall business and to use suitable marketing tactics. This study provides an in-depth understanding of the operation and management of a wedding banquet hall.

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