Preferred criteria in winning budget hotel interior design projects in China

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Abstract. In the competitive Chinese market, to win an interior budget hotel design project, a sound proposal with attractive and preferred criteria is a must. In order to propose and win interior budget hotel design projects, it is necessary to understand client’s perspectives. Through literature reviews and interviews with practitioners and architecture professors; twenty criteria from value creation, economic advantage and tender quality aspects were derived. Three groups of a total 30 budget hotel operating and management personnel have participated the survey. Kano’s two-dimensional model along with Yang’s refined Kano model and Importance and Satisfaction model have been applied to come up with the ranking of the preferred criteria to be included in a design proposal. One-way ANOVA with Scheffe’s post hoc test were used to see the insight of budget hotel CEOs’ views on the twenty criteria. The results show that construction phase scheduling & control, construction cost control, systemized corporate identification, design phase scheduling & control, customer segment identification, easy to maintain design, easy to operate design, cultural heritage connection, room storytelling, and amenity storytelling are the top ten preferred design criteria for an interior designer to win budget hotel projects in China.

1. Introduction

Budget hotel first appeared in the United States in the 1950s. It is the outcome of the rise of American mass consumption and the rapid development of the road network [1]. It refers to small and medium-sized hotel with accommodation and breakfast as the main services. Its central around the idea to provide customer the “cost-effective” and “worthy” services, rather than “cheap” services. Standardized high-grade sanitation, comfort of guest rooms and facilities, and on-site convenience services are the must-haves. The moderate-priced rooms in these budget hotels attracted vast number of businessmen, wage earners, self-funded tourists and students [2-3]. From the early 1960s to the late 1980s, in addition to the substantial increase in room quantity, budget hotels also began to develop diversified products and expanded internationally. The expansion of American hotel chains into Europe resulted the rapid development of local European hotels. To diversify investment strategy, upscale hotel groups created a secondary mid to low scale brand and started to operate budget hotels. Through capital operations, purchases and integrations, these hotel groups quickly established a mature setup of budget hotels by the end of 1980s. However, as
competition intensifies, adjustments were made to the branding and management of budget hotels. These hotel groups started to pay more attention to the links of brand image, quality management, market segmentation, and product diversification [4-5].

By the 21st century, these world-famous budget hotel brands even expanded to China, Southeast Asia, and other regions [6]. In China, local Chinese budget hotel brands such as Huazhu Group, Jin Jiang International Company Limited, Home Inns Group, and Atour (ATOUR) were also developing rapidly [7-8]. By now, budget hotels in China included brands such as Accor Group’s Ibis, Wyndham Worldwide’ Days Inn, Jin Jiang International’s Jinjiang Inns, and the Holiday Inn Express of the Intercontinental Group. Thus, to expand in Chinese market, budget hotels pay more attention to brand management and marketing [9]. Hotel operating and management personnel changed their operational goals from not only providing excellent services [10] and quality rooms for stay, but also creating holistic users experience through thematic design and the use of intelligent technology [11-12]. Product innovations and standardization services can be achieved by integrating and cooperating with different trades. And it is also important to incorporate novel business model to win over franchisees and consumers. [13]. Yet, the cost for transformation or brand upgrade must remain the same, thus this becomes a potential winning design strategy to peruse for interior design firms.

The success of a design firm lies on constantly winning projects. In budget hotel design proposal, to win design project and to innovatively achieve value creation with limited resources, a designer is required not only to provide aesthetic and functional spaces, but also to incorporate creative and visionary business model in operating and management (O&M) aspects for a budget hotel. Accordingly, the objective of this study is to rank the proposed elements based on the response of hotel operating and management decision makers such as the chief executive officers (CEOs) and project managers (PMs). The views from the on-site hotel staffs were also included as the comments that might reflect first hand consumer experience. Since it is a preferential orientated study, Kano’s model, Yang’s refined Kano model and Importance-Satisfaction model were used to analyze the questionnaires that were sent out to the thirty participants.

2. Methods

2.1 Kano’s two-dimensional model

Dr. Noriaki Kano’s two-dimensional model has been known and used to evaluate customers’ expectations or preferences on a service [14-17]. It is often used to study the correlation between service quality and customer’s satisfaction. Essentially, there are three primary qualities of conditions that could alter a customer’s preference and satisfaction.

First quality is the “must be” condition that customers would expect to have certain quality, or else the customer would be dissatisfying. It is a quality control requirement from a hotel management’s perspective. The second quality is the “one-dimensional” requirement as customers will be satisfied and dissatisfied with and without the fulfilled services quality. It is viewed as quality control from a hotel management’s perspective. The third quality is to meet the potential needs of customers, called attractive quality creation. Basically, customers receive the unexpected services quality and are satisfied with it. Beside the first three qualities, the fourth and fifth qualities suggested do not need items for the hotel management. Figure 1 shown the completed Kano model. Here, the five qualities with their acronyms are shown. Attractive quality element (A) and one-dimensional quality element (O) are in first quadrant. Indifferent quality element (I) is in second quadrant. Must-be quality element (M) and reverse quality element (R) are in fourth quadrant. [18].
2.2 Refined Kano model and Importance-Satisfaction model

As products and services cannot meet the financial requirements, choices and trade-offs between the importance of quality attributes and customer satisfaction ought to be made [19], a refined Kano's two-dimensional quality model was proposed by Yang in 2005. The refined model as shown in Figure 2 is improved by considering the importance of quality attributes, and distinguishing between attractive quality, one-dimensional quality, must-be quality, and indifferent quality. Attributes of the highly attractive and less attractive qualities can be identified in the second quadrant.

The highly attractive quality attribute is intended to attract potential customers and with less costs and effort from the hotel management's perspective. Thus, it is a favor item to provide. Likewise, the attributes of the high and low value-added qualities can be identified in the first quadrant. High value-added quality attribute indicates customer satisfaction can be achieved easily with less costs and effort. It is also the best ways to satisfy customers. Meanwhile, despite the less contribution to customer
satisfaction, low value-added quality items should be kept, as these are often the expected service items. Must-be quality attributes are identified in third quadrant.

The critical and necessary quality attributes are very important to customers; these items must be provided to avoid dissatisfaction. Additionally, the potential quality attributes will gradually be transformed into attractive qualities. Hotel management should consider providing these attributes as strategic weapons in the future to attract customers. Care-free quality attribute is cost effective with less satisfaction feedback. Hotel management does not need to provide this quality attribute.

3. Data Collection

There are three parts to the questionnaire. First part is the basic information of participants. It was primary used to differentiate the authority level of participants. Chief executive officer (CEO), project manager (PM) and on-site staff were the three groups of the budget hotel participants. Second part is to evaluate the preference of the proposed interior design criteria. Twenty proposed interior design criteria from three aspects were derived based on literature reviews [20-21], interviews and discussion with professional practitioners and architecture professors. The aspects and criteria can be seen in Table 1 below. Third part of the questionnaire is to understand the participant’s judgements on how important and satisfaction of the proposed criteria based on their previous project experience.

To discover the attribute of the preferred criterion, Kano’s two-dimensional model was used. Each criterion has a positive and a negative question. Figure 3 shown the example of question in part 2. Likert scale of 1 to 5 was used with analogy of one represents dislike the function of criterion and five represents like the function of criterion.

To rank the proposed twenty criteria, Likert scale of 1 to 5 was used. One represents definitely not important or satisfy with the proposed criterion. Five represents very important or satisfy with the proposed criterion. Figure 4 shown the sample of part 3 question for the importance degree and satisfaction level of the criterion. There are a total of thirty questionnaires were collected for this study. The participants included seven budget hotel CEOs, nineteen PMs, and four on-site staffs.

| Criterion will be included in the proposal | Like | Must be | Neutral | Live with | Dislike |
|------------------------------------------|------|---------|---------|-----------|---------|
| 1. Systemized Corporate Identification   | O    |         |         |           |         |

| Criterion will not be included in the proposal |
|-----------------------------------------------|
| 1. Systemized Corporate Identification         | O    |

![Figure 3. Sample questionnaire of part 2.](image)

| How important is to include this criterion in the proposal? |
|-----------------------------------------------------------|
| Importance Degree                                         |
| Very important | Important | Acceptable | Not important | Definitely not important |
| 1. Systemized Corporate Identification | O | |

Based on your experience, what was the satisfaction level of

| Satisfaction Level |
|--------------------|
| O                  |
4. Data analyses and results

4.1 The preferred proposed design criteria and attributes

Twenty criteria from three aspects of a proposed interior design content for the budget hotel in China has been analyzed with Kano’s preference attributes and their correlated quality function deployments (QFD). As shown in Table 1, each criterion and the aspect of the proposed design content has its dedicated Kano’s preference attribute and QFD. In value creation aspect, since there are four one-dimensional preference criteria, it is considered as the one-dimensional or value-added aspect. The four criteria are cultural heritage connection, amenity storytelling, room storytelling, and business model innovation. These four value-added criteria are recommended to include in a design proposal. For economic advantage aspect, five out of six criteria have must-be preference attribute. These six criteria along with systemized corporate identification and customer segment identification from value creation aspect are considered as the backbone of a design proposal. All six criteria from tender quality aspect have indifferent preference qualities. The attractive criteria such as business model innovation and cross-disciplinary cooperation could use to draw client’s attention during the project presentation.

**Figure 4. Sample questionnaire of part 3.**

| Importance Degree | Very important | Important | Acceptable | Not important | Definitely not important |
|-------------------|----------------|----------|------------|---------------|-------------------------|
| Very satisfy      | Satisfy        | Acceptable | Not satisfy | Definitely not satisfy |

1. Systemized Corporate Identification

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**Figure 5. Importance and satisfaction plot for design proposal criteria.**

4.2 Importance and satisfaction of the proposed design criteria
As proposed by Yang in 2005, Kano’s method cannot differentiate further about the degree of importance and satisfaction level of each criterion, thus the refined Kano model method with the Importance and Satisfaction model were studied. Figure 5 illustrates the twenty design criteria in Yang’s proposed importance and satisfaction plot. Mean values of importance degree and satisfaction level are 4.040 and 3.415. It is clearly to see that construction phase scheduling & control, construction cost control, easy to maintain design, and energy and water saving design are the four design proposal criteria that required to be improved, despite the energy and water saving design was in indifferent preference quality from original Kano’s model. Six criteria from value creation aspect along with two criteria, design phase scheduling & control and easy to operate design, from economic advantage aspect will be expected to be included in a design proposal and with sufficient supporting materials.

Table 1. Kano’s preference attributes and QFD for interior design proposal criteria.

| Aspects                               | Evaluation Criteria            | Kano’s Preference Attributes and QFD |
|---------------------------------------|--------------------------------|-----------------------------------|
| Value Creation                        | Attractive (A)                 | 3.3% 20.0% 50.0% 26.7% 0.0%       |
|                                       | One-dimen. (O)                 |                                   |
|                                       | Must-be (M)                    |                                   |
|                                       | Indifferent (I)                |                                   |
|                                       | Reverse (R)                    |                                   |
|                                       | Deployment of Criteria         | M                                 |
|                                       | Deployment of Aspects          | O                                 |
| 1. Systemized Corporate Identification|                                 |                                   |
| 2. Cultural Heritage Connection       | 26.7% 33.3% 23.3% 16.7% 0.0% | O                                 |
| 3. Amenity Storytelling               | 20.0% 33.3% 30.0% 16.7% 0.0% | O                                 |
| 4. Room Storytelling                  | 20.0% 33.3% 26.7% 20.0% 0.0% | O                                 |
| 5. Customer Segment Identification    | 0.0% 26.7% 50.0% 23.3% 0.0% | M                                 |
| 6. Social Media Propagation           | 10.0% 30.0% 23.3% 36.7% 0.0% | I                                 |
| 7. Business Model Innovation          | 33.3% 33.3% 13.3% 20.0% 0.0% | A/O                               |
| 8. Cross-Disciplinary Cooperation     | 33.3% 30.0% 13.3% 23.3% 0.0% | A                                 |
| Economic Advantage                    | 9. Design Phase Scheduling & Control | 3.3% 16.7% 70.0% 10.0% 0.0%       |
|                                       | 10. Construction Phase Scheduling & Control | 0.0% 20.0% 80.0% 0.0% 0.0%       |
|                                       | 11. Construction Cost Control  | 3.3% 26.7% 63.3% 6.7% 0.0%       |
|                                       | 12. Easy to Maintain Design    | 10.0% 20.0% 50.0% 20.0% 0.0%     |
|                                       | 13. Easy to Operate Design     | 20.0% 26.7% 36.7% 16.7% 0.0%     |
|                                       | 14. Energy and                 | 23.3% 20.0% 23.3% 33.3% 0.0%     |
4.3 Overall ranking and potential of the proposed design criteria

Table 2 summarized and ranked the preferred interior design criteria for budget hotel projects in China. The top ten criteria are the backbone and expect to be included in design proposals. These are categorized in critical and high value-added attributes from refined Kano’s model. Construction phase scheduling & control, construction cost control and easy to maintain design are indicated to have area to improve. Social media propagation and energy and water saving are the two potential criteria that should be well addressed in proposals despite these were originally classified as the indifferent criteria.

4.4 Preference of the proposed design criteria with different authority participants

Since the participants have different authority levels that could affect the decision making for a budget hotel interior design project, it is definitely critical to see the preference from the CEOs and PMs’ perspectives for the proposed design criteria. Table 3 shows the integrating results of Kano’s preference attributes and the ANOVA tests of the importance degree and satisfaction level for each criterion. It is suggested that some criteria have significant differences from three groups of participants. For importance degree, customer segment identification is the only criterion that has a significant difference. For satisfaction level, besides customer segment identification, design phase scheduling & control, construction phase scheduling & control, and the six criteria from tender quality all have significant differences. This implies that participant with different authority level has different prioritized views on budget hotel interior design goal.

Schefe’s post hoc tests were conducted to see whether there is significant difference in terms of critical criterion from the participant group for the improvement of importance degree and satisfaction level. Table 4 shows that only eight criteria from satisfaction level have significant difference. This indicated that three groups of participants have reached consensus on the importance degree of all proposed criteria. Likewise, it is also implied that there are improvement areas of the eight criteria to achieve a consensus satisfaction level among the groups. Yet, it is also interesting to find out the paradox from CEOs and PMs on award winning designers and internationalized firm criterion. The average importance degree scores of award-winning designers for CEOs and PMs are 2.86 and 3.21. For internationalized firm, the average importance degree scores for CEOs and PMs are 2.43 and 2.63. Both criteria were classified as indifferent attribute from the original Kano’s preference model. However, despite the ECOs group tend to have lower importance degree scores on these two criteria than PMs group, the satisfaction level scores of CEOs are much higher than PMs. This implies that both criteria from tender quality aspect are still the critical proposed factors if they can be improved.

5. Conclusions

The proposed twenty interior design criteria from value creation, economic advantage, and tender quality aspects for a budget hotel in China have been studied for the preference attributes and importance degree and satisfaction level from hotel CEOs, PMs and on-site staffs. Kano’s two-dimensional model indicated that four criteria from value creation aspect are the expecting items to be included in a proposal. Additionally, criteria from economic advantage aspects are the “must have” items to be included in a design proposal.
To prioritize the criteria, refined Kano’s method along with importance degree and satisfaction level were conducted. The top ten criteria classified as critical and high value-added elements are construction phase scheduling & control, construction cost control, systemized corporate identification, design phase scheduling & control, customer segment identification, easy to maintain design, easy to operate design, cultural heritage connection, room storytelling, and amenity storytelling. Social media propagation and energy and water saving design are the two potential elements to be included in a design proposal. A winning interior design proposal would need to pay extra attention to these criteria.

On top of all, despite the original Kano’s preference attributes for award winning designers and internationalized firm from tender quality aspect were categorized as indifferent elements, Schefe’s post hoc test indicated that there are improving areas in terms of satisfaction levels for these criteria from CEOs’ perspective. Thus, it is sensible to include these two criteria in a proposal.

Table 2. Ranking and potential of proposed design criteria

| Order of Importance | Criteria | Importance Degree | Satisfaction Level | Original Kano Model Attribute | Refined Kano Model Attribute | Area of I-S Model |
|---------------------|----------|-------------------|--------------------|-------------------------------|------------------------------|-------------------|
| 1                   | 10. Construction Phase Scheduling & Control | 4.700 | 3.400 | M | Critical | To be improved |
| 2                   | 11. Construction Cost Control | 4.667 | 3.300 | M | Critical | To be improved |
| 3                   | 1. Systemized Corporate Identification | 4.633 | 3.767 | M | Critical | Excellent |
| 4                   | 9. Design Phase Scheduling & Control | 4.533 | 3.433 | M | Critical | Excellent |
| 5                   | 5. Customer Segment Identification | 4.500 | 3.600 | M | Critical | Excellent |
| 6                   | 12. Easy to Maintain Design | 4.400 | 3.333 | M | Critical | To be improved |
| 7                   | 13. Easy to Operate Design | 4.400 | 3.433 | M | Critical | Excellent |
| 8                   | 2. Cultural Heritage Connection | 4.300 | 3.700 | O | High value-added | Excellent |
| 9                   | 4. Room Storytelling | 4.267 | 3.433 | O | High value-added | Excellent |
| 10                  | 3. Amenity Storytelling | 4.233 | 3.600 | O | High value-added | Excellent |
| 11                  | 6. Social Media Propagation | 4.133 | 3.433 | | Potential | Excellent |
| 12                  | 14. Energy and Water Saving Design | 4.100 | 3.200 | | Potential | To be improved |
| 13                  | 7. Business Model Innovation | 4.000 | 3.300 | A/O | Less attractive/ Low value-added | Care-free |
| 14                  | 8. Cross-Disciplinary Cooperation | 3.967 | 3.400 | A | Less attractive | Care-free |
| 15                  | 16. Firm Experiences | 3.767 | 3.433 | I | Care-free | Surplus |
| 16                  | 19. Firm Size | 3.600 | 3.433 | I | Care-free | Surplus |
| 17                  | 17. Fancy Presentation | 3.567 | 3.467 | I | Care-free | Surplus |
| 18                  | 18. Presentation with Modern Technology | 3.267 | 3.233 | I | Care-free | Care-free |
| 19                  | 15. Award Winning Designers | 3.200 | 3.267 | I | Care-free | Care-free |
| 20                  | 20. Internationalized Firm | 2.567 | 3.133 | I | Care-free | Care-free |

Mean | 4.040 | 3.415 |
### Table 3. Kano’s preference attributes and ANOVA tests for importance degree and satisfaction level

| Evaluation Criteria                        | Kano Preference Attributes for Participants | ANOVA of Importance Degree | ANOVA of Satisfaction Level |
|--------------------------------------------|---------------------------------------------|----------------------------|-----------------------------|
|                                            | ECOs PMs On-site Staff                     | F  Sig.                    | F  Sig.                     |
| 1. Systemized Corporate Identification     | O  M  M                                  | .231 .796                  | 1.880 .172                  |
| 2. Cultural Heritage Connection           | O  O/M  A/M                              | .953 .398                  | .326 .724                   |
| 3. Amenity Storytelling                   | O  M  M                                  | 1.802 .184                 | .650 .530                   |
| 4. Room Storytelling                      | O  O  M                                  | 1.932 .164                 | .242 .787                   |
| 5. Customer Segment Identification        | O/M  M  M                                | 3.388 [0.049]              | 8.702 [0.001]               |
| 6. Social Media Propagation               | O  I  M                                  | .652 .529                  | .897 .420                   |
| 7. Business Model Innovation              | A  A/O  A/O/M/I                          | .349 .708                  | 2.300 .120                  |
| 8. Cross-Disciplinary Cooperation         | A  A/O  A/O/M/I                          | .229 .797                  | 1.212 .313                  |
| 9. Design Phase Scheduling & Control      | M  M  M                                  | .364 .698                  | 4.867 [0.016]               |
| 10. Construction Phase Scheduling & Control| M  M  M                                 | .764 .475                  | 5.826 [0.008]               |
| 11. Construction Cost Control            | M  M  M                                  | .566 .574                  | .026 .974                   |
| 12. Easy to Maintain Design              | M  M  M                                  | 1.117 .342                 | 1.138 .335                  |
| 13. Easy to Operate Design               | M  O  M                                  | 2.435 .107                 | .280 .758                   |
| 14. Energy and Water Saving Design        | A  I  M                                  | 3.172 .058                 | .120 .887                   |
| 15. Award Winning Designers              | A/I  I  A                                | 2.152 .136                 | 4.559 [0.020]               |
| 16. Firm Experiences                     | A/O/M  I  I                             | 1.028 .371                 | 7.035 [0.003]               |
| 17. Fancy Presentation                   | O  I  M/I                               | .214 .809                  | 8.019 [0.002]               |
| 18. Presentation with Modern Technology  | I  I  A                                 | .283 .756                  | 4.066 [0.029]               |
| 19. Firm Size                            | O/I  I  I                               | 1.835 .179                 | 5.310 [0.011]               |
| 20. Internationalized Firm               | I  I  I                                 | .182 .834                  | 6.369 [0.005]               |

### Table 4. Preference of proposed design criteria with different authority participants.

| Evaluation Criteria                        | Participant (Mean) | Scheffe’s Post Hoc Test – Sig. |
|--------------------------------------------|--------------------|--------------------------------|
| 5. Customer Segment Identification        | CEOs (4.29)        | PMs (3.42) On-Site Staffs (3.25) | .002 |
| 9. Design Phase Scheduling & Control      | CEOs (4.14)        | PMs (3.21) On-Site Staffs (3.25) | .011 |
| 10. Construction Phase Scheduling & Control| CEOs (4.14)        | PMs (3.21) On-Site Staffs (3.25) | .136 |
| 15. Award Winning Designers              | CEOs (3.71)        | PMs (3.05) On-Site Staffs (3.50) | .028 |
| 16. Firm Experiences                     | CEOs (4.00)        | PMs (3.21) On-Site Staffs (3.50) | .809 |
| 17. Fancy Presentation                   | CEOs (4.00)        | PMs (3.26) On-Site Staffs (3.50) | .004 |
| 19. Firm Size                            | CEOs (4.00)        | PMs (3.21) On-Site Staffs (3.50) | .265 |
| 20. Internationalized Firm               | CEOs (3.57)        | PMs (3.00) On-Site Staffs (3.00) | .007 |
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