

An application of choice-based conjoint analysis to measure willingness to pay for casino buffets

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Abstract

Purpose – The purpose of this study is to discover what attributes of casino buffet restaurants are the most important for customers' willingness to pay (WTP).

Design/methodology/approach – Choice-based conjoint analysis was used in this study to test seven attributes: food, price/value, real price, service, atmosphere, the number of reviews and user-generated star ratings. Sawtooth Software was used to do the conjoint analysis, and a series of significance *t*-tests were run to determine the significance of each attribute on WTP with Statistical Package for the Social Sciences (SPSS).

Findings – Based on a survey of 483 respondents who had visited a buffet at a casino within the last two years, this study found that food is ranked as the most significant attribute of a casino buffet restaurant, followed by real price and service quality.

Originality/value – Theoretically, this work is the first to the authors' knowledge to apply the antecedents of behavioral intention to willingness-to-pay for niche restaurants. Practically, the results of this study will help casino buffet operators as they re-open after COVID-19. Future studies could collect data in the post-pandemic environment and examine WTP at casino buffets in different geographic locations.

Keywords Casino buffets, Willingness to pay, Choice-based conjoint analysis, Restaurants, Las vegas

Paper type Research paper

Introduction

The restaurant industry plays a vital role in the US economy because of its size and contribution to employment (Bilgihan, Seo, & Choi, 2018); it generated \$864.3bn in revenue in 2019 (NRA, 2021). There are 150,000 single full-service restaurants in the United States (Ibisworld, 2021) and 12.2mn people worked in the restaurant industry in 2019 (US Bureau of Labor Statistics, 2021). However, there is very little research into some crucial aspects of the industry, like what directly impacts consumers' willingness-to-pay (WTP) for restaurants in general and, especially, for niche restaurants like buffet restaurants inside casinos. A casino buffet is defined as a self-service, all-you-can-eat food and beverage outlet inside a casino or



casino-hotel where the patrons pay for the meal before they consume it (Roehl, 1996). This type of restaurant is common in hotels on the Las Vegas Strip as they provide food and beverage to a large number of customers; indeed, these restaurants often take up a considerable amount of space in the property making them the largest food and beverage outlets in these properties by square foot (Roehl, 1996). Therefore, they have a major impact on the food and beverage revenue for casino-hotels.

As the hospitality industry emerges from the COVID-19 pandemic, operators need to understand what impacts customers' WTP. One of the most heavily impacted segments of the restaurant industry was casino buffets (Leopold, 2020). For instance, in 2019, Las Vegas Strip resorts set a new record by generating over \$3bn in revenue from food sales at their casinos (O'Connor, 2020; Schwartz and Rajnoor, 2022). However, the food revenue became \$1,074bn in 2021 (Schwartz and Rajnoor, 2022) and \$1.7bn in 2022 for strip casinos (Velotta, 2023). Thus, all casino buffets in Las Vegas were closed at the beginning of the COVID-19 pandemic (Komenda, 2021). They have suffered during the pandemic as casinos have used it as an opportunity to close down parts of their business that are not profitable. Buffets are often unprofitable, and according to the CEO of Caesars Entertainment, their buffets in Las Vegas lose an average of \$3mn per year (Roeben, 2022). Moreover, according to UNLV Center for Gaming Research, the number of employees working in food departments fell from 21,290 to 14,764 (31% decrease) between 2020 and 2021 (Schwartz and Rajnoor, 2022).

While the buffet at the Wynn re-opened with table-side service in the summer of 2020, other integrated resorts waited until the restrictions were lifted (Leopold, 2020). As these buffets re-open, however, there is a lack of research on what influences WTP for these restaurants. While these buffets were inexpensive and offered low-quality food (Meeks, 2020), they are now high-priced and offer gourmet food (Meeks, 2020). As operators re-assess these outlets, they need to understand what impacts WTP for their guests.

The current study sought to fulfill this operational need while examining WTP in buffets through the lens of choice theory. Choice theory purports that consumers make choices based on maximizing their personal happiness; these choices are consistent and rational (Green & Shapiro, 1996). This study is the first to the authors' knowledge to examine the antecedents of WTP in niche restaurants. It determines if previous research into WTP for traditional, sit-down restaurants is applicable to all types of restaurants. This work will extend the literature related to restaurant revenue management and apply antecedents of behavioral intention to WTP, a unique approach contributing to the restaurant revenue management literature.

Literature review

Casino buffet restaurants

The word "buffet" originated in the United Kingdom (UK), where food was often put on a sideboard for the family to serve themselves (The Runnymede-on-Thames, 2017). Buffets in Las Vegas used to be considered bargains in the late 1950s (Mack, 1999). Leading Las Vegas casinos increased casino buffets' quality by offering a sumptuous choice of alternatives in the early 2000s (Kaplan, 2019). By the mid-2010s, a dinner buffet could cost upwards of \$50 and include items like Kobe Beef (Lam, 2014). The importance of quality has increased, as demonstrated by the Bacchanal Buffet at Caesars Palace, which cooks 90% of the food in front of its customers to preserve freshness (Vegas Convention and Visitors Authority, 2019). Casino buffets are highly attractive for guests because they offer a diverse range of cuisines such as Chinese, Italian, German, American hot dogs and more, catering to everyone's preferences (Szydelko, 2021). The operation of buffet restaurants is also different from traditional restaurants. Buffets allow customers to serve themselves and are considered a convenient method for feeding large numbers of customers with a minimum of employees (Xi, 2019). Disadvantages of buffets include long lines and a casual atmosphere (Hasa, 2016).

While researchers have examined buffets, most studies were related to eating behaviors within a buffet setting. These studies examined the potential for overeating and buffets' contribution to obesity (Just, Sigirci, & Wansink, 2014). Buffets allow their patrons to eat various energy-dense foods, which can cause over-eating, weight gain (Young & Nestle, 2002) and obesity (Just *et al.*, 2014). Concerning hospitality, Oyewole (2013) examined the multi-attribute dimensions of service quality in buffet restaurants. Just *et al.* (2014) pointed out that patrons have less taste satisfaction with lower buffet prices. Regarding casino buffet restaurants, most of the studies have mainly examined the effect of casino buffet restaurants on gaming revenues (Tanford & Eunju, 2013; Tanford & Lucas, 2011).

Hospitality and tourism researchers have recently expanded the work into WTP for restaurants. Sukhu and Bilgihan (2021) examined the impact of positive word-of-mouth on WTP and found that it significantly impacted consumer WTP. Other researchers have found that local ownership, locally sourced food and food quality are signals that affect WTP for consumers (Lin, Sharma, & Ouyang, 2020). Additionally, the importance of locally sourced food is significantly impacted by health consciousness and community attachment (Shin, Im, Jung, & Severt, 2018), which may not be present when consumers travel to Las Vegas, a destination of excess. Researchers have also found that authenticity, physical environment (Lin & Jiang, 2021), sustainability (Ottenbacher, Kuechle, Harrington, & Woo-Hyuk, 2019) and restaurant reviews (Vajjhala & Ghosh, 2021) are important to customers. Most of these studies have focused on general restaurants rather than specific types of restaurants. Those focused on distinctive restaurants have examined Michelin-star restaurants (e.g., Kiatkawsin & Han, 2019) and particular types of cuisine (e.g., Lin & Jiang, 2021). However, these studies have yet to focus on the multi-billion-dollar buffet restaurant segment.

Post-Keynesian consumer choice theory

The neo-classical choice theory states that consumers seek to maximize their personal utility (happiness) through their choices (Allingham, 2000). When presented with various options, consumers will consistently choose the aspects of a product or service they value the most (Zafirovski, 2000). A key component of neo-classical choice theory is that consumers are rational, meaning that their behavior is consistent (Allingham, 2002). Post-Keynesian scholars, however, argue that this is a simplistic approach to understanding consumer choice (Lavoie, 1994). Lavoie (1994) argues that consumer choice is more complex; consumers make different decisions under different circumstances. This is not to say that consumers are not rational, but different types of rationality are demonstrated under different circumstances (Lavoie, 2022).

There is a large volume of published studies using choice theories in hospitality. Masiero, Heo and Pan (2015) used choice theory to determine guest WTP for hotel rooms. Gibbs, Guttentag, Gretzel, Morton, and Goodwill (2018) used a hedonic pricing model with a choice theory to analyze pricing in the sharing economy. Belarmino *et al.* (2021) used choice theory with conjoint analysis to explore the current impact of travel magazines on hotel guests' WTP. Moreover, Belarmino and Repetti (2022) studied the relationship between restaurants' devotion to COVID-19 regulations and consumers' WTP. Therefore, it is reasonable to assume that the uniqueness of a casino buffet would influence the impact of different antecedents and antecedent levels on consumers.

Restaurant attributes

Hospitality and tourism researchers have examined the antecedents of behavioral intentions and customer satisfaction. Hospitality researchers have found that guests choose restaurants mostly based on four factors. These are food quality, service quality, value and atmosphere (Sukhu, Bilgihan, & Seo, 2017). These facts have been found to impact WTP (Gunden, 2017).

Food quality is related to the quality of raw and prepared products, food safety and sanitation (Parsa, Gregory, Self, & Dutta, 2012). Service is associated with the speed of service, the accuracy of the orders and proper condiments (Parsa *et al.*, 2012). The atmosphere is related to the physical evidence of the restaurant’s atmosphere, like décor and amenities (Parsa *et al.*, 2012). Value is defined as the consumer’s overall evaluation of the net worth of the service or products based on their assessment of what is received against what is sacrificed, such as costs or sacrificed time, effort and opportunity costs in acquiring and utilizing the service (Cronin, Brady, & Hult, 2000). Table 1 outlines our proposed model; the antecedents are described in more detail below.

Food quality has emerged as the most significant indicator of restaurant quality and as a primary predictor of customer loyalty (Lee & Whaley, 2019). In early studies, food quality was the most significant attribute for restaurant selection (Schroeder, 1985). Moreover, Jang and Namkung (2009) pointed out that low food quality caused customers to write negative reviews. Parikh (2013) stated that a restaurant might have had a pleasant atmosphere or service. However, consumers would consider dining experiences negatively if restaurants do not offer high-quality food. Likely, consumers’ payment decisions are strongly influenced by the food quality offered (Sukhu *et al.*, 2017).

Service quality is vital for the success of a restaurant (Ribeiro & Prayag, 2019). Service quality helps companies to differentiate themselves from the competition and to gain a competitive advantage (Kandampully, 1998). Service quality was associated with the speed of

Star Rating from online reviews	1-star 2-star 3-star 4-star 5-star
Number of online reviews	1-50 reviews 51-100 reviews More than 100 reviews
Food Quality	Poor Fair Good Very Good Excellent
Service Quality	Poor Fair Good Very Good Excellent
Atmosphere Quality	Poor Fair Good Very Good Excellent
Real Price	\$21.99 \$32.99 \$54.99
Price Range for Value	\$ \$\$ \$\$\$ \$\$\$\$

Source(s): Table by authors

Table 1.
Attributes and
attribute levels

service, level of convenience provided, proper maintenance of service-related equipment, the accuracy of orders and proper condiments (Love & Miller, 1986). Intangible aspects of service quality include quickness and polite, helpful, professional behavior provided by the service staff (Dutta, Parsa, Parsa, & Bujisic, 2014). Service quality creates loyalty and attracts new patrons (Zeithaml, Bitner, & Gremler, 1996). Employees play a crucial role in the service quality of restaurants (Gunden, 2017). Positive interactions between employees and customers improve the service quality of a restaurant (Jin & Lee, 2016).

Atmosphere plays a vital role in customers' evaluations of overall restaurant quality (Bacon, Besharat, Parsa, & Smith, 2016). Atmosphere includes tangible cues that assist restaurant customers in assessing quality (Levitt, 1981). Atmosphere has hard and soft dimensions. Hard dimensions are related to safety, cleanliness, ergonomics, noise and space allocation. Soft dimensions relate to image, style and comfort (Bacon *et al.*, 2016). Interior design, lighting and dining area were considered the main part of tangible aspects of a restaurant that affected consumer behaviors and their interpretations of a restaurant (Gunden, 2017). Moreover, layout, accessibility, facility aesthetics, electronic equipment, seating comfort and cleanliness influenced the perception of a restaurant's servicescape (Wakefield & Blodgett, 1996). The use of colors, sounds, sights and smells impact customers' behavioral intentions and table turns (Robson, 1999). Customers spend more time and money at restaurants with better décor (Wansink, 2007). Restaurant atmosphere affects customer WTP (Sukhu *et al.*, 2017).

Although value has several dimensions (Sweeney & Soutar, 2001), this paper focuses on price/value for money. Customers' perceived value is a vital indicator for long-term business success (Sukhu *et al.*, 2017). Customer value is defined as a ratio between quality (benefit) and cost (price) (Clemes, Gan, & Ren, 2011). Many restaurants gain a competitive advantage by offering greater value than competitors (DiPietro, Parsa, & Gregory, 2011). Value for money is significant for consumers when selecting a restaurant (Yuksel & Yuksel, 2003). Researchers have verified that value for money should be a priority for restaurant managers (Sukhu *et al.*, 2017). Value for money is an indispensable part of a restaurant's success (Sukhu *et al.*, 2017) since most restaurant patrons are price sensitive (Raab, Mayer, Kim, & Shoemaker, 2009). Value for money directly affects the dining experience and the choice of restaurants (Teng & Chang, 2013).

Real price is described as an expense for purchasing a restaurant meal (Kim, Lee, & Yoo, 2006; Yost and Cheng, 2021). It is perceived as a vital attribute for consumers when selecting a restaurant (Gunden, 2017). Jung, Sydnor, Lee, and Almanza (2015) supported that the real meal price is one of the most critical factors while making a dining decision. Diners stated that if restaurants are too pricy, they will not frequent these expensive restaurants (Gunden, 2017). Hence, casino buffets must offer affordable prices to attract and retain customers in a competitive environment (Biswas & Verma, 2022).

It has been shown that the number of online reviews affected restaurant performance positively (Zhang, Ye, Law, & Li, 2010). Online review volume impacts the probability that more consumers know about products or services (Lu, Ba, Huang, & Feng, 2013). Additionally, the number of online reviews influences consumers' restaurant decisions (Luca & Zervas, 2016). For example, customers might prefer an expensive restaurant with more reviews over a less expensive restaurant with fewer reviews (Gunden, 2017). Moreover, an increase in online reviews leads to higher traffic to restaurant websites (Zhang *et al.*, 2010). Online reviews play a critical role in providing vital information about restaurants for consumers (Jeong & Jang, 2011) and significantly impact WTP for general restaurants (Vajjhala & Ghosh, 2021).

Online reviews might also directly impact consumer behavior and the revenues of hospitality organizations (Kwok, Xie, & Richards, 2017). Specifically, people look for other people's recommendations when they are unsure about a product or service to reduce the

risks (Ha, Park, & Park, 2016). Moreover, when people look for a restaurant in unfamiliar places, they can easily search for information through mobile phones and make choices based on online ratings (Bilgihan *et al.*, 2018). Online review ratings are also significant when evaluating restaurant performances (Kovács, Carroll, & Lehman, 2014). Previous studies have stated that the higher the online restaurant ratings, the more customers tend to choose a restaurant (Luca & Zervas, 2016). For instance, Luca and Zervas (2016) analyzed whether online reviews influenced restaurant demand using publicly available data sets. This study reported that a one-star increase in a Yelp rating caused a 5-9% revenue increase for independent restaurants.

Therefore, we propose the following hypotheses:

- H1. Food quality has a statistically significant impact on WTP for casino buffets.
- H2. Service quality has a statistically significant impact on WTP for casino buffets.
- H3. Atmosphere has a statistically significant impact on WTP for casino buffets.
- H4. Price/value has a statistically significant impact on WTP for casino buffets.
- H5. Real Price has a statistically significant impact on WTP for casino buffets.
- H6. The number of online reviews has a statistically significant impact on WTP for casino buffets.
- H7. User-generated star rating has a statistically significant impact on WTP.

Methodology

Choice-based conjoint analysis was used in this study to test seven attributes: food, price/value, real price, service, atmosphere, the number of reviews and user-generated star ratings. Conjoint analysis is employed to explore the joint effect of a set of independent variables on an ordinal scale of measurement dependent variable (Wu, Liao, & Chatwuthikrai, 2014).

Conjoint measurement is employed to develop an interval variable from ordinal data and is founded on a primary effect analysis-of-variance model. Respondents provide data with their choices about hypothetical products defined by attribute combinations (Sawtooth Software, 2019). The numerical part-worth utility value is calculated for the levels of each attribute (Malhotra, 2010). Large part-worth utilities are considered the most preferred level; small part-worth utilities are the least preferred (Rao, 2014).

Conjoint analysis has two underlying assumptions. The first can be illustrated as a combined level of product/service. Second, the significant level of attributes of product/service perceived by customers is identified by these attribute levels (Koo, Tao, & Yeung, 1999). The survey was conducted on Amazon Mechanical Turk (Mturk).

In the scenario (Appendix), the price points were \$21.99, \$32.99 and \$54.99 for casino buffets. The minimum dinner price of a casino buffet at the time of this study was \$21.99 for the Circus Buffet (Circus Circus, 2020); the maximum dinner price was \$54.99 at the Bacchanal Buffet (Caesars Palace, 2020). The median dinner price was \$32.99 (Beauregard, 2019). Food quality, service and atmosphere had attribute levels of poor, fair, good, very good and excellent (Gunden, 2017). The number of reviews was defined as 1-50, 51-100 and over 100 (Viglia, Minazzi, & Buhalis, 2016). The star matrix used was 1 to 5 stars, the star metric used on common online review websites (Pitman, 2019). Price/Value was defined as \$ (the lowest), \$\$, \$\$\$ and \$\$\$\$ (the highest) (Gunden, 2017; Konuk, 2019). Sawtooth Software randomly designed 27 scenarios based on the criteria such as food quality, service, atmosphere, price, star matrix, number of reviews and value (Sawtooth Software, 2019).

The study population were US citizens 18 years or older who had been at a casino buffet restaurant at least once in the preceding six months and who read online reviews for restaurant selection. The online questionnaire was designed in Sawtooth Software for each respondent. The survey was conducted on Mturk. Orme (2014) recommends that the sample size for conjoint studies is between 150 and 1,200 respondents. This study had 483 respondents, which was acceptable for conjoint analysis.

Results

A total of 504 surveys were collected on Mturk. Of 504 respondents, 21 did not answer attention questions and were excluded from the analysis. A total of 483 surveys were analyzed using Sawtooth Discover software and SPSS24. We collected demographic and behavioral information. In this study, 257 (53.21%) were male, and 224 (46.38%) were female. By age, 45.6% were 25-34, 23.4% were 35-44, and the other 31.5% fell into the other age categories (see Table 2).

Variables	N	%
<i>Gender</i>		
Male	257	53.21
Female	224	46.38
Transgender	1	0.21
Prefer Not to Answer	1	0.21
<i>Age</i>		
18-24	21	4.35
25-34	220	45.55
35-44	113	23.40
45-54	69	14.29
55-64	42	8.70
>65	18	3.73
<i>Education</i>		
Some High School	3	0.62
High School	33	6.83
Some College	64	13.25
Associate	58	12.00
Bachelor's	238	49.28
Master's	75	15.53
Doctoral	4	0.83
Professional	8	1.66
<i>Employment</i>		
Full-Time	375	77.64
Part-Time	60	12.42
Unemployed	28	5.8
Retired	15	3.11
Other	5	1.04
<i>Annual Household Income</i>		
<\$30,000	71	14.70
\$30,000-\$49,999	118	24.43
\$50,000-\$74,999	134	27.74
\$75,000-\$99,999	86	17.81
\$100,000-\$200,000	69	14.29
>\$200,000	5	1.04

Table 2.
Demographic
characteristics

Source(s): Table by authors

Results

We examined seven attributes (food quality, service quality, atmosphere, price/value, the number of online reviews, real price and overall restaurant rating) for their impact on WTP. The participants were given a variety of scenarios and asked which buffet they would choose, as the attributes were varied by level. Sawtooth Discover software generated a score for the relative significance of each attribute. This analysis can disclose the hidden motivation of respondents (Wu *et al.*, 2014). When presented with a series of choices, guests tend to focus on those attributes they value the most, allowing them to maximize their happiness (Sawtooth Technical Paper Series, 2016). This score is an arbitrary score related to the other choices within the survey done by Sawtooth Software automatically. Large part-worth utilities are considered the most preferred level, and small part-worth utilities are the least preferred ones (Rao, 2014). The relative attractiveness of each attribute level is related to the ranking (Wyner, 1992). However, this importance level does not relate to the significance tests. The relative importance of each casino buffet attribute describes which attribute affected casino buffet restaurant selection most. Table 3 displays the important values for this study.

The conjoint analysis results indicated that food quality was considered the most significant attribute in casino buffet selection, with 25.16% importance. Likewise, real price (16.40%), service quality (15.02%), online reviews stars rating (13.45%) and atmosphere (13.14%) were also perceived as significant attributes for casino buffet customers. The price range for value (9.27%) and the number of online reviews (7.56%) scores were lower than other attributes (Table 3). According to these findings, food quality, real price and service quality were relatively more significant than online reviews' star-rating, atmosphere, price range for value and the number of online reviews.

The part-worth utilities were computed using maximum likelihood done by Sawtooth software automatically (Table 4). The lowest price (\$21.99) and the median price (\$32.99) were weighted in a positive direction, while the highest price was weighted in a negative direction (\$54.99). User-generated online ratings of three-star, four-star, and five-star ratings were weighted in the positive direction, and one-star and two-star ratings were weighted in the negative direction. More than 100 online reviews and 51-100 online reviews were weighted in a positive direction while 1-50 online reviews were weighted in negative direction. The first three levels of food quality (Good-Very Good-Excellent) were weighted in positive directions while Poor and Fair food quality were weighted in negative directions.

The first three levels of service quality (Good-Very Good-Excellent) were weighted in positive directions, while poor service quality and fair service quality were weighted in negative directions. The first three levels of atmosphere (Good-Very Good-Excellent) were weighted in positive directions, while Poor and Fair atmosphere were weighted in negative direction. Finally, the price range for value \$\$\$ and value \$\$\$\$ were weighted in a positive direction while \$\$ and \$ were weighted in a negative direction (Table 4).

Attributes	Importance (%)	Standard deviations (%)	Lower 95% CI	Upper 95% CI	Rank
Food Quality	25.30	10.98	24.18	26.14	1
Real Price	16.43	11.55	15.37	17.43	2
Service Quality	15.08	7.75	14.34	15.71	3
Star rating	13.54	9.55	12.60	14.30	4
Atmosphere	13.08	7.64	12.46	13.82	5
Price/Value	9.15	8.78	8.49	10.06	6
Number of Reviews	7.41	11.55	6.92	8.20	7

Source(s): Table by authors

Table 3.
Relative attribute
importance score

Attributes	Level 1	Level 2	Level 3	Level 4	Level 5
Real Price	\$21.99 35.03	\$32.99 10.58	\$54.99 -45.62		
Online Ratings	One-Star -29.43	Two-Star -24.07	Three-Star 2.95	Four-Star 20.05	Five-Star 30.5
Number of Online Reviews	1-50 reviews -21.88	51-100 reviews 3.39	>100 reviews 18.48		
Food Quality	Poor -85.76	Fair -40.34	Good 12.46	Very Good 47.07	Excellent 66.57
Service Quality	Poor -42.97	Fair -17.31	Good 11.01	Very Good 18.81	Excellent 30.45
Atmosphere	Poor -34.8	Fair -13.15	Good 7	Very Good 17.69	Excellent 23.26
Price Range for Value	\$ -19.2	\$\$ -2.76	\$\$\$ 4.4	\$\$\$\$ 17.56	

Table 4.
Part-worth utilities

Source(s): Table by authors

Table 5 quantifies the dollar amount of WTP for each attribute. To calculate this, the utility point or weighted trade-off was calculated (Chapman, 1991). First, the difference between the highest and lowest part utility was calculated to be 80.65, which is found by subtracting -45.62 from 35.03. Then, the lowest real price (\$21.99) was subtracted from (\$54.99). The difference was \$33.00. As the last step, 80.65 was divided by \$33.00. \$0.41 was calculated as the trade of value, which shows the value of each part-worth utility to the guest. A utility score of one means \$0.41 ($1 \times \$0.41 = 0.41\$$), and a utility score of 35.03 means \$14.33 ($35.03 \times \0.41) (Table 5). Hence, the implicit guest value is calculated as multiplying part-worth utility with Trade-Off.

According to survey respondents, part-worth analysis results indicated that food quality, real price and service quality are the most important attributes. In theory, casino buffet customers are willing-to-pay premiums for star ratings on review websites (\$12.48 for 5-stars, \$8.20 for 4-stars and \$1.21 for 3-stars) while two stars decrease WTP (-\$9.85), as does a 1-star-rating (-\$12.04). More than 100 reviews increased WTP by \$7.56, 51-100 reviews increased WTP by \$1.39, while reviews between 1-50 decreased WTP by \$8.95. Excellent food quality increased the WTP for a meal by \$27.24, very good food quality increased the WTP for a meal by \$19.26 and good food quality increased the WTP for a meal by \$5.10 while fair food quality decreased WTP by \$16.51 and poor food quality decreased WTP by \$35.09. Excellent service quality increased WTP for a meal by \$12.46, very good service quality increased WTP by \$7.70 and good service quality increased WTP by \$4.51, while fair service quality decreased WTP by \$7.08 and poor service quality decreased WTP by \$17.58. Excellent atmosphere increased WTP for a meal by \$9.52, very good atmosphere increased WTP by \$7.24 and good atmosphere increased WTP by \$2.86. However, a fair atmosphere decreased WTP by \$5.38 and poor service quality decreased WTP by \$14.24. Price/value slightly influences WTP; price/value (\$\$\$\$) increased the WTP for a meal by \$7.19 and price/value (\$\$\$) increased the WTP for a meal by \$1.80. On the other hand, price/value (\$\$) decreased WTP for a meal by \$1.13, and price/value (\$) decreased WTP for a meal by (\$7.86) (Table 5).

Significance tests

A series of significance tests were run to determine the significance of each variable on WTP (Table 6). For the *t*-test analysis, a fair market share was determined as a comparison point. This amount is calculated by dividing 100% by 7, since there were seven attributes in this study. Hence, a fair market share needs to be 14.29%.

Attributes		Trade-off	Implicit guest value
	Real Price	0.41	
\$21.99	35.03		\$14.33
\$32.99	10.58		\$4.33
\$54.99	-45.62		(\$18.67)
	Star-Ratings		
One-Star	-29.43		(\$12.04)
Two-Star	-24.07		(\$9.85)
Three-Star	2.95		\$1.21
Four-Star	20.05		\$8.20
Five Star	30.5		\$12.48
	Number of Reviews		
1-50 reviews	-21.88		(\$8.95)
51-100 reviews	3.39		\$1.39
More than 100 reviews	18.48		\$7.56
	Food Quality		
Poor	-85.76		(\$35.09)
Fair	-40.34		(\$16.51)
Good	12.46		\$5.10
Very Good	47.07		\$19.26
Excellent	66.57		\$27.24
	Service Quality		
Poor	-42.97		(\$17.58)
Fair	-17.31		(\$7.08)
Good	11.01		\$4.51
Very Good	18.81		\$7.70
Excellent	30.45		\$12.46
	Atmosphere Quality		
Poor	-34.8		(\$14.24)
Fair	-13.15		(\$5.38)
Good	7.00		\$2.86
Very Good	17.69		\$7.24
Excellent	23.26		\$9.52
	Price Range for Value		
\$	-19.2		(\$7.86)
\$\$	-2.76		(\$1.13)
\$\$\$	4.4		\$1.80
\$\$\$\$	17.56		\$7.19

Source(s): Table by authors

Table 5.
Willingness-to-pay of
each attribute

Attributes	<i>M (%)</i>	<i>SD (%)</i>	<i>t (481)</i>	<i>p</i>	<i>Cohen's d</i>
Food Quality	25.30	10.98	22.03	0.01	1.002
Real Price	16.43	11.55	4.07	0.01	0.185
Service Quality	15.08	7.75	2.25	0.025	0.102
Star rating	13.54	9.55	-1.74	0.083	-0.079
Atmosphere	13.08	7.64	-3.47	0.001	-0.158
Price/Value	9.15	8.78	-12.87	0.001	-0.586
Number of Reviews	7.41	11.55	-21.774	0.001	-0.991

Note(s): **p* < 0.05

Source(s): Table by authors

Table 6.
Results of *t*-Test

H1 tested if food quality significantly impacts WTP for casino buffet restaurants. A one-sample *t*-test was run to determine whether food quality was different to normal, as defined as a fair market share of 14.29%. Mean food quality score ($M = 25.30\%$, $SD = 9.55\%$) was higher than fair market share of 14.29%, a statistically significant mean difference of 11.01%, 95% CI [0.1003, 0.1199], $p = 0.001$, $d = 1.00$ (Table 6).

H2 tested if service quality significantly impacts WTP for casino buffets. A one-sample *t*-test was run to determine whether service quality was different to normal, as defined as a fair market share of 14.29%. Mean food quality score ($M = 15.08\%$, $SD = 7.55\%$) was higher than fair market share of 14.29%, a statistically significant mean difference of 0.8%, 95% CI [0.0010, 0.0149], $p = 0.00025$, $d = 0.1023$. Service quality has a significant positive impact on WTP for casino buffet restaurants (Table 6).

H3 investigated if the atmosphere significantly impacts WTP for casino buffet restaurants. A one-sample *t*-test was run to determine whether the atmosphere was different to normal, as defined as a fair market share of 14.29%. Mean food atmosphere score ($M = 13.08\%$, $SD = 7.64\%$) was less than the fair market share of 14.29%, a statistically significant mean difference of -1.21% , 95% CI $[-0.0189, -0.0052]$, $p = 0.0001$, $d = -0.157$. However, the conjoint analysis ranking demonstrated that atmosphere is less important than food quality, service quality and real price (Table 6).

H4 tested if the perception of price/value significantly impacts WTP for casino buffet restaurants. A one-sample *t*-test was run to determine whether the value of money was different to normal, as defined as a fair market share of 14.29%. The mean value of money score ($M = 9.15\%$, $SD = 8.78\%$) was less than the fair market share of 14.29%, a statistically significant mean difference of -5.14% , 95% CI $[-0.0592, -0.0435]$, $p = 0.0001$, $d = -0.675$ (Table 6). However, the conjoint analysis revealed that real price was perceived as more important than the value of money. Previous literature also supported those consumers perceived the best value as the lowest price or greatest discount (Oches, 2019).

H5 tested if real price significantly impacts WTP for casino buffet restaurants. A one-sample *t*-test was run to determine whether the real price was different to normal, as defined as a fair market share of 14.29%. Mean real price score ($M = 16.43\%$, $SD = 11.55\%$) was higher than fair market share of 14.29%, a statistically significant mean difference of 2.14%, 95% CI $[-0.0513, -0.0592]$, $p = 0.001$, $d = 0.185$ (Table 6). Real price has a significant impact on WTP for casino buffet restaurants.

H6 investigated if the number of online reviews significantly impacts WTP for casino buffet restaurants. A one-sample *t*-test was run to determine whether the number of online reviews was different to normal, as defined as a fair market share of 14.29%. Mean food atmosphere score ($M = 7.41\%$, $SD = 7.64\%$) was less than fair market share of 14.29%, a statistically significant mean difference of 6.88%, 95% CI $[-0.0750, -0.0626]$, $p = 0.0001$, $d = -0.99$ (Table 6). However, this conjoint analysis-based survey revealed that the number of online reviews does have less effect on WTP. Survey respondents perceived the number of online reviews is the least significant restaurant attribute perceived by casino buffet customers.

H7 measured if online reviews' star rating significantly impacts WTP for casino buffet restaurants. A one-sample *t*-test was run to determine whether online reviews was not different to normal, as defined as a fair market share of 14.29%. Mean online reviews star-rating score ($M = 13.54\%$, $SD = 9.55\%$) was less than fair market share of 14.29%, a statistically not significant mean difference of -0.75% , 95% CI $[-0.0750, -0.0626]$, $p = 0.083$, $d = -1.74$ (Table 6). The conjoint analysis ranking demonstrated that online review star-rating is less important than food quality, service quality and real price according to casino buffet customers.

Discussion

This study sought to understand what impacts WTP for consumers at a casino-hotel buffet. Food & beverage has become an increasingly important part of the revenue for these properties (D&B Hoovers, 2020). As buffets re-open in post-pandemic times (Stapleton, 2021), it is vitally important for them to understand what impacts WTP for their consumers. This study examined WTP through the lens of choice theory, which proposes that consumers select the alternatives that maximize their utility and happiness (Marshall, 1961).

According to the one-sample *t*-test results, food quality significantly impacts WTP for a casino buffet restaurant. According to the conjoint analysis, food quality was considered the most significant attribute in casino buffet selection, with a 25.16% importance. Furthermore, excellent food quality increased the WTP for a meal by \$27.24, very good food quality increased the WTP for a meal by \$19.26 and good food quality increased the WTP for a meal by \$5.10. Several recent studies also showed that food quality was the most important attribute when selecting a full-service restaurant (Bilgihan *et al.*, 2018).

The real price for the buffet was the second most important antecedent of WTP, rated at 16.40%. According to the one-sample *t*-test results, real price significantly impacts WTP for casino buffet restaurants. Researchers found that real price was perceived as the most critical factor affecting consumers' dining choices (Jung *et al.*, 2015). Restaurants need reasonable prices to survive in a competitive environment (Soriano, 2002). Suku *et al.* (2017) supported that offering competitive prices for the restaurants was important for WTP for restaurants and promotions might be offered for competitive menu prices.

The third most significant attribute for casino buffet was service quality with 15.02%. According to the one-sample *t*-test results, service quality influenced WTP positively; excellent service quality increased WTP for a meal by \$12.46 and good service quality increased WTP by \$4.51. Service quality motivated customers to pay a price premium for restaurants, which helped them differentiate themselves from the competition and gain a competitive advantage (Kandampully, 1998). Hence, restaurants will generate more revenue and profit by improving service quality (DiPietro *et al.*, 2011).

User-generated star ratings (13.45%) were the fourth important attribute perceived by casino buffet customers. According to the one-sample *t*-test results, online reviews do not significantly influence WTP. Casino buffet customers are willing-to-pay premiums for star ratings on review websites (\$12.48 for five stars, \$8.20 for four stars and \$1.21 for three stars). Several studies have stated that the higher the online restaurant ratings, the more customers tend to choose a restaurant (Bilgihan *et al.*, 2018). However, conjoint analysis ranking demonstrated that online review star rating is less important than food quality, service quality and real price according to casino buffet customers.

Atmosphere (13.14%) was also perceived as a significant attribute for casino buffet customers. However, according to the one-sample *t*-test results, the atmosphere impacts the WTP less than the food quality. Casino buffets were considered to be luxury restaurants (Baltazar, 2020). Rhee, Yang, and Kim (2016) found that food was the most important attribute in luxury restaurants compared to the atmosphere. Dutta *et al.* (2014) studied restaurants in India and found that food quality was more important than the atmosphere while selecting a restaurant and had more impact on WTP.

Price/value was perceived as one of the least important casino buffet attributes for customers (9.27%) after the number of online reviews. According to the one-sample *t*-test results, price/value has less impact on the WTP than real price (16.43%). Gunden (2017) also supported that consumers perceived the best value as the lowest price or the greatest discount.

Finally, the number of online reviews (7.41%) was considered the least important attribute according to the one-sample *t*-test results. Previous studies found that customers might prefer an expensive restaurant with more reviews over a less expensive restaurant with fewer

reviews (Gunden, 2017). It has been shown that the number of online reviews affected restaurant performance positively (Zhang *et al.*, 2010). However, according to survey respondents' perceptions in this study, the number of online reviews is the least significant restaurant attribute perceived for casino buffets. The reason might be that online manipulations might occur in online reviews, which decreases the validity of online reviews (Hu, Bose, Koh, & Liu, 2012). Luca and Zervas (2016) found that 16% of restaurant reviews on Yelp were filtered. These reviews tend to be more extreme (favorable or unfavorable) than other reviews; the number of suspicious reviews increased significantly. Also, restaurant guests wrote unfavorable fake reviews more when restaurants had experienced intense competition (Luca & Zervas, 2016). The competition among casino buffets in Las Vegas (Gregory, 2021) may negatively influence the trust of the participants in this study.

Conclusion

While researchers have previously investigated WTP for restaurants (Gunden, 2017; Sukhu *et al.*, 2017), they have not investigated WTP for niche restaurants. By their very nature, certain restaurants offer a unique style of service and food that makes them worthy of examination. Today's all-you-can-eat restaurants, like those found in casino hotels in Las Vegas, are a multi-million-dollar revenue generator (Hull, 2021) that are considered an attraction unto themselves (Hull, 2021). This study expands the study of WTP to niche restaurants and finds that the antecedents of WTP are significantly different for this type of restaurant.

One of the main fundamental concepts of WTP is that each consumer's choices were divided into certain aspects of products or services which maximize their personal utility (Kroneberg & Kalter, 2012). Food, service, real price, service quality, online reviews star-rating, atmosphere, the price range for value and the number of online reviews were measured in this study. Choice-based conjoint determined which of these impacted WTP. It was found that food (25.30%), real price (16.43%) and service quality (15.08%) significantly positively influence WTP based on fair market share of 14.29%. Conversely, atmosphere (13.08%), price/value (9.15%) and number of online reviews (7.41%), have less impact on the WTP. Online reviews star-ratings do not influence WTP.

Implications

This study has several theoretical and practical implications. From the theoretical perspective, this research demonstrates the application and validity of post-Keynesian choice theory by its application to casino buffet customers. In traditional restaurants, consumers' ability to optimize their purchases is constrained; choosing one menu item means excluding all other items. However, in a casino buffet, consumers have the ability to choose as many options as they would like. While researchers typically examine the impact of pricing on constrained purchases (e.g. Allingham, 2002), this study expanded the research in choice theory to understand the impact of unconstrained menu options on WTP for buffets. The current study also adds to Lavoie's (1994) research that emphasizes that consumer choice is complex by demonstrating such complexity in regard to the unconstrained environment of buffets. Further, Keynes (1921) argued that probability has a subjective element to it, namely that rather than being a purely quantifiable element, there are elements of human behavior that have to be examined in order to have a true understanding of probability. When making a purchase, there is a certain amount of risk involved that forces consumers to make a probability calculation related to their purchase (Keynes, 1921). Price can act as a proxy for the level of uncertainty a consumer is willing to accept, as paying a higher price indicates a

higher acceptance of uncertainty (Rosser, 2001). Indeed, the post-Keynesian scholar Poirer (1988) argued that Bayesian regression is in fact a subjective form of probability calculation in the Keynesian tradition. Inasmuch as the calculations for conjoint analysis rely on Bayesian regression, this paper contributes by extending on the work in subjective probability studies and choice theory to niche restaurants. Therefore, the results of this study identify which elements of casino buffets reduce uncertainty and increase the probability of a customer being satisfied with their choices.

This research contributes to the larger body of literature regarding WTP in restaurants by using the antecedents of behavioral intentions for general restaurants in a study of WTP for niche restaurants. It also adds to previous research regarding casino buffet restaurants, which has focused solely on the effects of casino buffet restaurants on gaming revenues (Tanford & Eunju, 2013). This study treats casino buffets as dining destinations and not as a convenience due to location in the casino.

The results of this study demonstrate that the antecedents of behavioral intention also impact WTP. This study agrees with previous research that food quality is the most important attribute considered when selecting a full-service restaurant (Jung *et al.*, 2015). It also shows that casino buffet customers perceived food as the most essential factor impacting WTP. Perutkova (2009) also supported that food quality was more significant than other attributes, such as service and ambiance, in upscale restaurants. This study supported the findings from previous studies that consumer decision-making choice is highly correlated with high food quality (Jung *et al.*, 2015). Even though most previous studies on customers' WTP in restaurants highlight food quality as the most crucial attribute, rankings of the importance of other attributes differ according to the type of restaurants, which highlights the significance of this study to investigate another type of restaurant – buffets. In contrast to this study, past research found that speed of service was more important than food quality and atmosphere in quick-service restaurants (Perutkova, 2009). Interestingly, this study showed that the speed of service was of secondary importance in buffet service, probably because customers mostly serve themselves. Previous researchers found that service has a critical role in customer satisfaction in restaurants (Gunden, 2017). While food quality is generally critical to restaurant success, excellent food alone does not guarantee success without high quality service (Parsa, Self, Njite, & King, 2005). This study also uniquely identified pricing premium levels excellent service can yield for a buffet. It agrees with previous research by highlighting the importance of service quality in restaurants. This study adds to previous research (Bilgihan *et al.*, 2018) on the effects of star ratings on review websites by quantifying premium amounts casino customers are willing-to-pay for 5-3 star ratings in reviews.

This study has several implications for casino buffet operators. It can assist managers during a challenging pandemic and post-pandemic times. Managers of casino buffet restaurants can rely on the results because the method applied (choice theory) guarantees that participants consistently pursued the best alternative of attribute choices presented in a way that value is maximized and choices are based on their preference and expected utility. Managers can use this method to identify attribute choices preferred by their target markets and provide them to their guests. The conjoint analysis applied showed that food quality, real price and service quality are the most significant casino buffet attributes. Restaurant management should prioritize these key attributes for buffets to create and maintain a favorable reputation in the market and therewith minimize customers' risks perception to purchase an upscale buffet. They should focus on offering food that is high in quality and fresh, as well as a variety of food (different tastes and dietary differences) according to their desires. Moreover, conducting market research and gathering feedback from casino buffet customers to identify their preferences and expectations is highly recommended. Having this information will help managers to shape the buffet menu and offerings according to the desires of casino buffet customers.

Real price was also perceived as important by casino buffet customers, which is unique from previous studies of WTP, indicating that price is more important for casino buffets than for other types of restaurants, which makes sense since Las Vegas's casino buffets are expensive. Managers need to ensure that customers perceive that the buffets they purchase, even though expensive, represent a good value for the price. Casino buffet executives must continuously assess and modify pricing in response to market dynamics and customer input and need to apply effective pricing strategies. During low-demand periods, they might benefit from Groupon and other promotions. A loyalty program can be created to boost repeat visits and give incentives to loyal customers. These incentives might be listed as discounts, special promotions or exclusive access to the new menu items.

Service quality is another essential attribute for casino buffet customers. This is an interesting finding, as it is generally assumed that service quality is of secondary importance when it comes to buffets. This is different when it comes to upscale buffets. By providing excellent service, casino buffet managers can gain a competitive advantage and assure highly satisfied customers willing to pay premium prices. It is highly recommended to develop an inviting atmosphere, ensure cozy seating and offer live entertainment to create a delightful buffet experience. Technology can be used to improve customer experience. Implementing online reservations or a mobile ordering system might minimize wait times and improve efficiency. Interactive menu displays might be used for providing information about the buffet items. Last but not least, training for buffet employees about food items and service will increase customer satisfaction and loyalty (Heung, 2002).

After Covid-19, hygiene became very important for restaurants (Cifci, Ogretmenoglu, Sengel, Demirciftci, & Kandemir Altunel, 2022). Maintaining impeccable hygiene is crucial in a buffet environment. Managers need to implement strict sanitation protocols, consistently check and clean the buffet area and provide intensive training to their staff on adhering to proper food handling and safety measures. The marketing team of your casino buffet needs to emphasize your commitment to cleanliness to instill trust and reassure your customers.

These results can be applied to non-casino buffets as well, as these results mirror much of the previous research into general restaurants, indicating that, while the style of service is different for buffets, the expectations are not significantly different but are nuanced towards the uniqueness of this dining experience. In addition, the results of this study reveal that today's Las Vegas' buffet restaurants are unique in the sense that they are upscale restaurants that nevertheless provide self-service, which provides exceptional challenges. In order to be successful, buffet managers in Las Vegas need to adjust employee recruiting and training practices accordingly. Also, maintaining employee satisfaction will be crucial to be able to continue to demand premium prices and to assure guest satisfaction at the same time. Finally, even though the study cannot actually be generalized because of the unique character of Las Vegas, it can be applied to other niche restaurants such as upscale buffets everywhere.

Limitations and future research

The current study is not without limitations and affords opportunities for future research. Choice-based conjoint analysis was used for studying WTP for casino buffet customers. One of the limitations of this study was that each of the attributes was ranked according to the importance of each factor in relationship to each other (Wyner, 1992). Future researchers could explore other methods of testing WTP for this type of restaurant. Other limitation is that various factors such as food quality, service quality, atmosphere, price, number of reviews and overall restaurant rating were presented in different combinations to the participants, and the author did not have control over the scenarios. There are inherent limitations to using online panel surveys and with Mturk. Using focus groups and personal interviews might be other tools to gain inside into consumers' perceptions. Future research may also investigate casino buffet executives' perspectives of WTP. This study was

geographically limited by studying casino buffets in Las Vegas even though the results could be generalized to other casino buffets in other locations. Future studies could examine WTP at casino buffets in different studies to look at city effects or examine consumers of different buffets to investigate restaurant-type effects.

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Appendix

The following scenario was presented to the participants:

For the following set of questions, imagine that you are planning to have dinner at a casino buffet restaurant on the Las Vegas Strip. You will be offered a series of different buffet restaurants to choose from. For each set, imagine that these are the only buffets available. Star ratings and number of reviews are from a travel website.

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