

Would you be willing to pay more if AI robot waiters were introduced? The pivotal role of need for uniqueness and perceived uniqueness

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ABSTRACT

Service robots have the potential to enhance customer experiences with their innovative technology, but many people still feel uncomfortable around them. While some customers are open to being served by robots, most still prefer interacting with humans. This inconsistency highlights the need to explore why consumers choose robotic service restaurants over conventional ones. This study aims to extend the existing literature by examining the need for uniqueness and perceived uniqueness as critical determinants of attitudes and willingness to pay more. To the best of the author's knowledge, there are few studies that explore these factors in the context of service robots, particularly in Indonesia. We surveyed 308 customers who dined at restaurants with robot waiters. Our analysis, using regression and Sobel, revealed that the need for uniqueness doesn't significantly affect how consumers feel about these restaurants or their willingness to pay more. However, perceived uniqueness positively affects both consumer attitudes and willingness to pay more, both directly and indirectly. This means that while the need for uniqueness can motivate consumers to explore novel experiences like dining at a restaurant with robot waiters, restaurants must ensure that the overall experience meets or exceeds customer expectations to enhance positive attitudes and willingness to pay more.

Keywords: Artificial Intelligence; Need for Uniqueness; Perceived Uniqueness; Brand Attitude; Buying Behavior

JEL Code:
D12, L84, M31, O33

DOI:
10.31106/jema.v21i1.21796

Article History:
Received 2024-01-24
Reviewed 2024-03-04
Revised 2024-04-02
Accepted 2024-04-27

Licensed:
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How to Cite:
Ramadhan, T. S., & Krisnanto, A. B. (2024). Would you be willing to pay more if AI robot waiters were introduced? The pivotal role of need for uniqueness and perceived uniqueness. *JEMA: Jurnal Ilmiah Bidang Akuntansi dan Manajemen*, 21(1), 172-198. doi: 10.31106/jema.v21i1.21796

Introduction

Over the past few decades, there have been significant advancements in automated service robots (Lu et al., 2019; Wirtz et al., 2018; Zhaohui et al., 2016) and the hospitality industry's response to these changes (Ivanov et al., 2022; Tuomi et al., 2021). Hospitality companies around the world are now using robots for many tasks that used to need humans. According to Ivanov et al. (2022), robots are becoming more common and popular in various hospitality industry segments. In hotels, they serve as front desk agents and concierges, deliver room service and meals, porters, and clean rooms (Seyitoğlu & Ivanov, 2021; Fuentes-Moraleda et al., 2020). At events, robots entertain guests and provide a physical presence for virtual attendees (Ogle & Lamb, 2019). Additionally, robots are being used in attractions like museums (Ioannakis et al., 2020; Vásquez & Matia, 2020) and travel sectors such as airports (Pereira et al., 2021) and autonomous vehicles (Bai et al., 2023). The use of robots as restaurant waiters is also on the rise (Cheong et al., 2016). Restaurant owners are increasingly turning to robots to save labor costs and streamline services and serve as a key marketing tool to attract consumers (Ivanov et al., 2022; Shin & Kang, 2020). For example, the Chinese retail giant Alibaba has developed a culinary retail business integrating robots and artificial intelligence (AI). A robot named "He," resembling a microwave, replaces waitstaff by taking orders and delivering food to guests. Customers at this restaurant simply order through the Hema app using a QR code. Inspired by modern restaurants in China, Rong Heng Seafood Restaurant in Singapore and Reveuse Resto in Indonesia also use robots named Lucy, Mary, Kittybot, and Bellabot to deliver food orders to tables and return dirty dishes to the kitchen. Additionally, Hajime Robot Restaurant in Thailand employs samurai robots as servers and cooks, who not only serve food but also entertain customers with dancing and singing.

Service robots are at the forefront of technological innovation, representing automated technology in a physical form equipped with advanced artificial intelligence (AI). These robots feature adaptable interfaces, allowing them to seamlessly interact and communicate with customers, transforming the co-production of services into a futuristic experience (Paluch et al., 2022; Wirtz et al., 2018). On the other hand, a service robot is also defined as a freely programmable kinematic device that executes semi or fully-automated tasks beneficial to humans and equipment, operating with varying degrees of independence. Moreover, they are designed to exclude tasks related to industrial automation and manufacturing operations, focusing instead on improving everyday human activities and operational efficiency across

non-industrial domains (Kang et al., 2022). Collins (2020) pointed out that the main difference between industrial and service robots is where they work. Industrial robots are used in controlled and structured environments, with employees trained to work with them for specific tasks. On the other hand, service robots operate in changing environments, like delivering luggage to rooms, requiring them to navigate through busy and tight spaces such as hotel elevators. These robots interact with people to do their jobs, like taking food orders or answering questions, needing high levels of skill and AI.

Research on service robots in the hospitality sector, especially restaurants, has expanded massively in recent years. Previous studies have shown the impressive benefits of using robotic services in restaurants, such as cutting costs, boosting revenues, and making operations run more efficiently (Ransbotham et al., 2017). For employees, these technologies alleviate repetitive tasks like order-taking and check-ins, freeing them up to focus on personal interactions and manage critical back-office work (Mingotto et al., 2021; Abbas et al., 2023). The use of robot technology also shapes positive attitudes (Kim et al., 2023) and enhances experiences for consumers (Ivanov et al., 2017; Jain et al., 2023). Many consumers describe their encounters with service robots as "Wow" moments (Cha, 2020; Tung & Au, 2018). Moreover, the presence of service robots in restaurants significantly boosts consumers' willingness to pay more (Nguyen et al., 2021; Dwivedi et al., 2018) and increases their intention to use and revisit (de Kervenoael et al., 2020; Ruiz-Equihua et al., 2023), and encourages them to recommend the establishment to others (Li et al., 2024).

While service robot has the potential to greatly improve customer experiences through their innovative technology (Čaić et al., 2019), many people still feel uncomfortable around them (Tojib et al., 2022; Brodsky, 2021). Although some customers are open to the idea of being served by both robot and human staff, they generally prefer human interaction (Song & Kim, 2022). This inconsistency highlights the need to research consumer motivation toward the use of robotic service restaurants to better understand and address these preferences and concerns (Hwang et al., 2019). Motivation, which involves the internal and external factors that drive behavior to achieve goals, is key in shaping consumer actions (Hwang et al., 2020). This means that when consumers are strongly driven to buy or use a new and innovative product or service, they are more likely to follow through and make the purchase or use it. This study uses the need for uniqueness and perceived uniqueness as the internal and external motivational factors underlying consumer behavior. To the best of the author's knowledge, there are only three previous studies (Li et al., 2023; Chang & Kim, 2021; Kim et al., 2020) that have used the need for uniqueness, and one study (Lv et al., 2023) that has used

perceived uniqueness as constructs in the context of service robot acceptance in restaurants. While Li et al. (2023) used cognitive appraisal theory and explored the dimensions of "coolness," "warm," and "cuteness" to study how anthropomorphism-based communication affects consumers' emotional attachment to a brand and their willingness to pay more, Chang & Kim (2021) explored whether aligning the type of service robot (functional vs. social) with a firm's relationship style (exchange vs. communal) can enhance customer satisfaction. Lv et al. (2023) studied strategies to make service robots appear more human-like, focusing on perceived identity uniqueness. Finally, Kim et al. (2020) examined how consumer innovativeness relates to the use of robotic restaurants.

By using the concepts of the need for uniqueness and perceived uniqueness as pivotal factors in shaping consumer attitudes and their willingness to pay more, this study aims to extend the existing literature. Additionally, Choi and Wan (2021) added culture plays a critical role in the adoption of service robots. Western cultures, for example, often struggle to accept and interact with human-like robots compared to Eastern cultures (Geraci, 2006). Westerners tend to be more analytical, while East Asians are more holistic in their cognitive styles (Nisbett et al., 2001). Consequently, human-like robots may provoke more cognitive discomfort and mixed feelings in Westerners than in East Asians (Dang & Liu, 2021). For instance, East Asians typically describe robots as both highly competent and warm, whereas Westerners view them as competent but cold (Lee & Sabanovic, 2014). Moreover, Li et al. (2019) discovered that Chinese users perceive robots as more autonomous and flexible in decision-making, while American users regard them as practical assistants following predefined orders. Despite these insights, there is a noticeable gap in examining Indonesian culture and values concerning the use of service robots in restaurants. This study aims to address this gap by focusing on the Indonesian context.

Literature Review

The concepts of the need for uniqueness and perceived uniqueness are crucial for understanding why consumers adopt new technology. Although they might seem similar, the need for uniqueness refers to an internal drive to be different, while perceived uniqueness pertains to the external evaluation of how unique a product appears. Tian et al. (2001) defined the need for uniqueness as the extent to which people pursue distinction to enhance their self-image for others to see. Abosag et al. (2020) added that the need for uniqueness is based on counter-conformity, where individuals seek to be different. Internally, people feel satisfied and pleased when they see themselves as unique and separate from others. Externally, they

can be viewed positively by showing independence because independence is seen as a sign of strong character and autonomy (Park et al., 2013; Snyder & Fromkin, 1977). This behavior leads to avoiding similarities with others and losing interest in products or brands that are commonly used. However, feeling left out from social groups may trigger a need for belonging to engage with non-anthropomorphized brands (Abosag et al., 2020).

Feeling different from others has long been known to significantly influence consumer behavior. For example, individuals with a high need for uniqueness are more likely to choose options not chosen by others (Chan et al., 2012) and are less willing to share positive word of mouth for purchased products (Cheema & Kaikati, 2010; Moldovan et al., 2015). Studies by Lang and Armstrong (2018) and Chan et al. (2015) also found that the higher an individual's desire to be seen as unique, the higher their purchase decisions and repurchase intentions among materialistic consumers. Furthermore, many previous studies, such as those by Jebarajakirthy and Das (2021), Das et al. (2021), Abosag et al. (2020), Stathopoulou and Balabanis (2019), Kauppinen-Räsänen et al. (2018), and Yoo and Park (2016), have also found a relationship between the need for uniqueness and luxury consumption. The integration of service robots, specifically robot waiters, in restaurants, can significantly enhance the perceived luxury by aligning with modern notions of innovation (Hemonnet-Goujot et al., 2022) and exclusivity experiences (Bachmann et al., 2019; Ostovan & Nasr, 2022). The relationship between the need for uniqueness and consumer attitude is intricately influenced by consumer knowledge, as revealed by Zhan and He (2012). Their study demonstrates that the relationship between the need for uniqueness and brand attitudes is moderated by the level of consumer knowledge. Specifically, as consumers become more knowledgeable about various luxury brands, they tend to evaluate well-known brands more negatively. This shift occurs because the goal of uniqueness-seeking becomes increasingly significant; knowledgeable consumers perceive widely recognized brands as less capable of fulfilling their desire for distinctiveness.

H₁: The need for uniqueness negatively relates to the attitude toward luxury restaurants that adopt robot waiters.

H₂: The need for uniqueness positively relates to the willingness to pay more price at luxury restaurants that adopt robot waiters.

Alongside to the need for uniqueness, perceived uniqueness is a key factor in predicting technology acceptance (Blazquez et al., 2020; Chen, 2019). According to Lindman (2000), perceived uniqueness is how consumers view a product or brand as unique and distinct from

other competing products and brands (Liljedal & Dahlén, 2018; Netemeyer et al., 2004). When consumers perceive a product or brand as distinct, it is more likely to be remembered and stand out among many competitors, increasing the chances of a positive evaluation (Swaminathan et al., 2020; Tian et al., 2001). This sense of a brand's distinctiveness is fundamental to creating a positive brand experience (Hafez, 2022). In conclusion, perceived uniqueness is how much consumers recognize a product or brand as different and exceptional compared to similar products or brands, enhancing its likelihood of being remembered and favorably judged.

Studies by Wu et al. (2012), Chen and Sun (2014), and Dwivedi et al. (2018) indicate a strong association between perceived uniqueness and buying behavior, including purchase intention and decisions. However, this positive relationship can differ between mass-market and luxury brands (Cereda, 2020; Wang et al., 2022). For luxury products, perceived uniqueness is often linked to a willingness to pay a premium price (Nguyen et al., 2021; Dwivedi et al., 2018; Chen & Sun, 2014; Anselmsson et al., 2014). In contrast, mass-produced products lose their uniqueness because they become commodities without exclusivity (Makkar et al., 2014). Mass-market products may focus more on price to stay competitive, which can lower their perceived value and emotional appeal. Sestino et al. (2021) explored how luxury brands' messages focusing on product sustainability rather than traditional luxury features impact perceived product uniqueness and consumers' conspicuous consumption orientation. He found that when luxury products are marketed with a focus on sustainability (versus performance), it leads to more positive attitudes towards the product, and this effect is mediated by consumers' perceived product uniqueness. Hafez (2022) further established that perceived uniqueness also moderates the relationship between social media marketing activities and brand experience. Thus, the more positively consumers perceive a (restaurant) brand's uniqueness, the more favorably they evaluate the (restaurant) brand.

H₃: Perceived uniqueness positively influences their attitude toward luxury restaurants that adopt robot waiters.

H₄: Perceived uniqueness positively influences their willingness to pay more price at luxury restaurants that adopt robot waiters.

The Theory of Reasoned Action (TRA) explains how attitude influences behavior, suggesting that humans are rational beings capable of processing decision-making information (Ajzen, 1991). TRA describes attitude as a psychological tendency to evaluate an object either favorably or unfavorably, and these attitudes shape behavior. These attitudes can

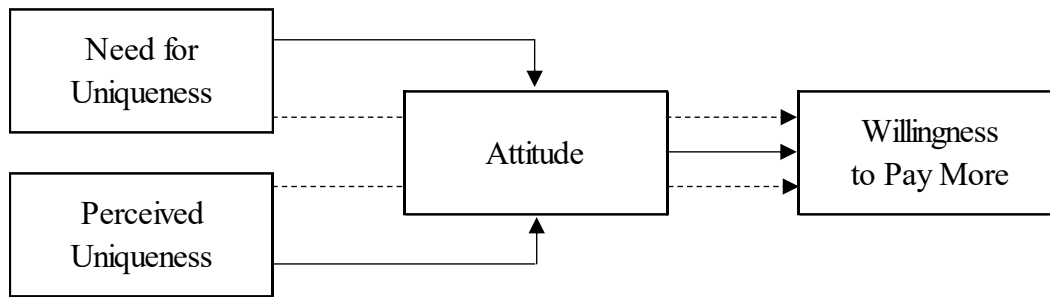
be positive or negative, desirable or undesirable. Previous studies consistently show that attitude is crucial to consumer behavior (Lee & Kang, 2013). According to Wang et al. (2019), brand attitude, a classic variable for understanding consumers' preferred brand, refers to the degree of likeability and favorability a consumer has towards a particular brand (Colliander & Marder, 2018). This attitude significantly impacts consumers' preference for one brand over others (Augusto & Torres, 2018). Schivinski and Dąbrowski (2014) added that brand attitude affects product perception, especially when consumers follow brands on social media and participate in brand communities; it helps build positive attitudes, loyalty (Arghashi et al., 2021), brand equity, and purchase intentions (Beukeboom et al., 2015). Furthermore, when they have a positive attitude towards a brand, they are more likely to spend more money on that brand's products (Dijkmans et al., 2015; Augusto & Torres, 2018).

Brand attitude is an important element as it helps in predicting customers' buying preferences. Since customers seek consistency between their values, attitudes, and behaviors (Raggiotto et al., 2018), brand attitude serves as a bridge between their thought processes and their behavior (Rup et al., 2021; Ramesh et al., 2018; Primanto & Dharmmesta, 2019; Zarantonello & Schmitt, 2013; Sumarto et al., 2023). When consumers have a need for uniqueness, they tend to look for brands that can meet this need. If they find a brand that they see as unique and aligns with their desires, this will create a positive attitude toward that brand (Zhan & He, 2012). A positive attitude towards a brand not only leads to continuous preference for the brand (Wu et al., 2012; Chen & Sun, 2014; Dwivedi et al., 2018) but also positively affects their intention to purchase and their willingness to pay a higher price (Dijkmans et al., 2015; Augusto & Torres, 2018).

- H₅: Brand attitude positively influences willingness to pay more price at restaurants that adopt robot waiters.
- H₆: Brand attitude positively mediates the relationship between need for uniqueness and willingness to pay more price at luxury restaurants that adopt robot waiters.
- H₇: Brand attitude positively mediates the relationship between perceived uniqueness and willingness to pay more price at luxury restaurants that adopt robot waiters.

Figure 1 illustrates a conceptual framework that explores the relationships between observed variables. The arrows in the framework indicate the direction of influence between these constructs, with solid arrows showing direct influences and dashed arrows indicating indirect influences.

Figure 1. Conceptual Framework



Methods

A quantitative study was conducted to precisely understand how motivation factors like need for uniqueness and perceived uniqueness influence customers' attitudes and their willingness to pay more at restaurants that use robot waiters. For this purpose, a structured questionnaire using a five-point Likert scale, ranging from “strongly disagree” to “strongly agree,” was designed to gather responses from the target population. The survey took approximately 10–15 minutes to complete. The target respondents for this study were customers who had been served by robot waiters at several sushi restaurants (names kept confidential to avoid bias and potential legal issues) located in major Indonesian cities such as Surabaya and Jakarta. The first part of the questionnaire included demographic questions, while the second part focused on questions related to the hypotheses and the relationships between the research variables. A total of 352 questionnaires were distributed among restaurant customers who had been served by robot waiters. After removing incomplete questionnaires, 308 questionnaires remained for analysis. The high return rate of 87.5% demonstrates the representativeness of the sample being studied.

In our study, we measured the need for uniqueness using a set of items from Tian et al. (2001). These items cover three aspects: creative choice counter-conformity (the tendency to be different from others by making choices that are still seen as good by those others), unpopular choice counter-conformity (the degree to which individuals choose products and brands that go against group norms, risking social disapproval to show their uniqueness), and avoidance of similarity (the tendency to lose interest in, or stop using, items that become common, to stay different from others). For perceived uniqueness, we adopted the items from Chen and Sun (2014) and Chen (2019). Lastly, while consumer attitude in the study was measured using a scale developed by Arghashi et al. (2021), willingness to pay more was evaluated using scales from Augusto & Torres (2018) and Oke et al. (2023). Table 1 shows our framework and the detailed item measurement of each variable.

Table 1. Pearson Correlation and Cronbach's Alpha

Variables	Items	Pearson Correlation
Need for Uniqueness (NUNQ) $\alpha = 0.687$	I collect unusual brands to show that I'm different	0.686
	I believe the brands I choose reflect my unique personality	0.661
	When I behave differently, I know others might find me peculiar, but I don't care	0.592
	I often break the rules of my social group about what to buy	0.706
	I try to avoid brands that are popular with most people	0.641
Perceived Uniqueness (PUNQ) $\alpha = 0.772$	When a brand I own becomes popular, I start using it less	0.486
	Dining at a restaurant with service robots feels like a one-of-a-kind experience	0.667
	The presence of service robots makes my visit to this restaurant memorable	0.813
	I feel that restaurants with service robots are different from traditional dining places	0.827
	Dining at a restaurant with service robots makes me out of the ordinary	0.776
Attitude (ATTD) $\alpha = 0.804$	A restaurant that uses robot waiters is pleasant	0.730
	A restaurant that uses robot waiters is favorable	0.772
	A restaurant that uses robot waiters is good	0.661
	A restaurant that uses robot waiters is attractive	0.777
	A restaurant that uses robot waiters is enjoyable	0.801
Willingness to Pay More (WILL) $\alpha = 0.699$	I would pay more to eat at a restaurant with service robots	0.793
	I choose restaurants with service robots even if others are cheaper	0.727
	I am willing to pay more if the restaurant uses robot waiters	0.847

Furthermore, validity and reliability are crucial for measuring instruments used to obtain research data. Validity shows how well a test measures what it is meant to measure, ensuring the research truly represents the concept under study. Reliability, on the other hand, refers to

the test's ability to produce stable and consistent results over time. To verify the validity and reliability, we used Pearson correlation coefficient (r_c), with accepted threshold is higher than 0.094 for a sample size of 308, and Cronbach's alpha, with α value above 0.60, indicates acceptable reliability (Al-Banna, 2019). Table 1 shows that all Pearson correlation coefficients and Cronbach's alpha are above the accepted threshold of 0.094 and 0.600, indicating that each item validly measures its intended construct and is consistent. The Need for Uniqueness construct has a Cronbach's alpha of 0.687, with correlation coefficients ranging from 0.486 ("When a brand I own becomes popular, I start using it less") to 0.706 ("I often break the rules of my social group about what to buy"). The Perceived Uniqueness construct demonstrates strong reliability with a Cronbach's alpha of 0.772 and correlation coefficients from 0.667 ("Dining at a restaurant with service robots feels like a one-of-a-kind experience") to 0.827 ("I feel that restaurants with service robots are different from traditional dining places"). The Attitude construct shows high reliability with a Cronbach's alpha of 0.804 and correlations between 0.661 ("A restaurant that uses robot waiters is good") and 0.801 ("A restaurant that uses robot waiters is enjoyable"). The Willingness to Pay More constructs a Cronbach's alpha of 0.699, with correlations from 0.727 ("I choose restaurants with service robots even if others are cheaper") to 0.847 ("I am willing to pay more if the restaurant uses robot waiters").

This study used the Kolmogorov-Smirnov test to assess the normality of the models. Our results show that the Kolmogorov-Smirnov value is 0.081 with a significance (Sig.) level of 0.200. Since this value is higher than the threshold of 0.05 (Astuti & Simon, 2023), we can conclude that the residuals follow a normal distribution. Therefore, the data are suitable to be processed and analyzed for further analysis using the Statistical Package for the Social Sciences (SPSS) version. Regression analysis was conducted to test the direct effect of the need for uniqueness and perceived uniqueness on consumers' attitudes and willingness to pay more. For the regression analysis, significance was determined at a p-value threshold of less than 0.05. For the indirect effect, we used the Sobel test to analyze the mediation role of consumers' attitudes. A Sobel test result with a p-value of less than 0.05 was considered to indicate a significant mediation effect (Koopman et al., 2014).

Result and Discussion

Table 3 presents the demographic profiles of the study participants. The sample comprised 197 males (64%) and 111 females (36%). The majority of respondents were aged between 24 and 29 years old, accounting for 66% (202 individuals), followed by 30 - 34 year

Table 3. Demographic Profiles

Category		Frequency	Percentage
Gender	Male	197	64%
	Female	111	36%
Age	24 – 29 years old	202	66%
	30 – 34 years old	89	29%
	35 – 40 years old	13	4%
	Prefer not to say	4	1%
Status	Married	93	30%
	Single	138	45%
	Prefer not to say	77	25%
Who did you visit the restaurant with?	Family	124	40%
	Partner	44	14%
	Friends	132	43%
	Alone	8	3%

olds at 29% (89 individuals), 35 to 40-year-olds at 4% (13 individuals), and those who preferred not to disclose their age at 1% (4 individuals). Regarding marital status, 30% (93 respondents) were married, 45% (138 respondents) were single, and 25% (77 respondents) chose not to reveal their status. When asked about their dining companions, 40% (124 respondents) visited the restaurant with family, 14% (44 respondents) with a partner, 43% (132 respondents) with friends, and 3% (8 respondents) dined alone.

The regression results in Table 4 show the relationships between the need for uniqueness, perceived uniqueness, attitudes, and willingness to pay more. For Hypothesis 1 (NUNQ → ATTD), the standardized coefficient is 0.144, the t-value is 1.523, and the p-value is 0.131 (higher than 0.050). Therefore, this hypothesis is rejected. This means the need for uniqueness does not significantly affect brand or restaurant attitudes. Similarly, Hypothesis 2 (NUNQ → WILL) is rejected, with a standardized coefficient of 0.137, a t-value of 1.509, and a p-value higher than 0.050 (0.135), showing that the need for uniqueness does not significantly affect willingness to pay more. The non-significant findings for Hypotheses 1 and 2 suggest that the need for uniqueness does not play a crucial role in shaping attitudes or willingness to pay more. This could imply that while consumers may desire to be unique, this need does not necessarily translate into more favorable attitudes towards brands or

restaurants, nor does it lead them to spend more. The need for uniqueness can indeed motivate consumers to explore novel experiences, such as dining at a restaurant with robot waiters. However, to enhance positive attitudes and willingness to pay more, restaurants must ensure that the overall experience aligns with or surpasses customer expectations.

Several factors significantly influence the decision to visit a luxury restaurant. One primary factor is the quality of food and beverages served; consumers expect dishes made with high-quality ingredients, appealing presentation, and exceptional taste (Hyun et al., 2016; Jeannot et al., 2022). Furthermore, a unique culinary experience plays a significant role in attracting visitors. For some, dining at a luxury restaurant is a way to showcase their social status and enjoy an exclusive, unusual culinary adventure (Kiatkawsin & Sutherland, 2020). Additionally, the restaurant's reputation and the exclusivity of its service are pivotal; establishments with a strong reputation and personalized, high-end service are more likely to attract customers seeking a distinguished dining experience (Erkmen & Hancer, 2019; Han & Hyun, 2017; Jun et al., 2017; Yang & Mattila, 2016).

In contrast, Hypothesis 3 (PUNQ → ATTD) is accepted, with a standardized coefficient of 0.601, a t-value of 6.350, and a p-value of 0.000 (lower than 0.050), indicating a strong positive relationship between perceived uniqueness and attitudes. For, hypothesis 4 (PUNQ → WILL) also shows a significant positive effect, with a standardized coefficient of 0.638, a t-value of 7.053, and a p-value of 0.000 (lower than 0.050), therefore it can be concluded that hypothesis 4 is accepted. This means perceived uniqueness strongly affects willingness to pay more in restaurants that are served by robot waiters. Lastly, hypothesis 5 (ATTD → WILL) is

Table 4. Direct and Indirect Hypotheses Test Result

Hypotheses	Std. Coefficient	t-Value	p-Value	Decision
H ₁ : NUNQ → ATTD	0.144	1.523	0.131	Rejected
H ₂ : NUNQ → WILL	0.137	1.509	0.135	Rejected
H ₃ : PUNQ → ATTD	0.601	6.350	0.000	Accepted
H ₄ : PUNQ → WILL	0.638	7.053	0.000	Accepted
H ₅ : ATTD → WILL	0.649	7.904	0.000	Accepted
Hypotheses	Sobel Test Statistic	One-tailed Probability	Two-tailed Probability	Decision
H ₆ : NUNQ → ATTD → WILL	1.487	0.068	0.136	Rejected
H ₇ : PUNQ → ATTD → WILL	4.965	0.000	0.000	Accepted

accepted, with a standardized coefficient of 0.649, a t-value of 7.904, and a p-value of 0.000 (lower than 0.050), highlighting the strong positive effect of attitudes on willingness to pay more in restaurant that serves by robot waiter. These significant results highlight that restaurant perceived as unique can significantly enhance both their attitudes and willingness to pay more. The more unique a restaurant is perceived to be, the more positive their attitudes will be, and the more likely they are to pay a higher price. This suggests that focusing on creating a unique and distinctive experience, such as using robot waiters, can be a successful strategy for restaurants to improve customer attitudes and increase their willingness to spend more. It aligns with Hafez (2022), Nguyen et al. (2021), Swaminathan et al. (2020), Dwivedi et al. (2018), Chen & Sun (2014), and Anselmsson et al. (2014) findings that conclude perceived uniqueness had a positive and significant effect on attitudes towards luxury brands and their willingness to pay more. The results of this study also indicate that consumers who have a high perception of uniqueness are more likely to have a positive attitude toward luxury restaurants that uses robot waiters.

The Sobel test for Hypothesis H6, which investigates whether the attitude mediates the relationship between the need for uniqueness and willingness to pay, yielded a test statistic of 1.487. The corresponding one-tailed probability is 0.068, and the two-tailed probability is 0.136. Since the two-tailed probability is greater than the commonly used significance level of 0.05, the mediation effect is not statistically significant. Consequently, we reject the hypothesis that attitude mediates the relationship between the need for uniqueness and willingness to pay. This suggests that in this context, consumers' need for uniqueness does not significantly influence their willingness to pay through their attitudes toward the restaurant that uses robot waiters. For Hypothesis H7, which examines whether attitude mediates the relationship between perceived uniqueness and willingness to pay, the Sobel test yielded a test statistic of 4.965. Both the one-tailed and two-tailed probabilities are 0.000, indicating a highly significant mediation effect. Given that these probabilities are well below the 0.05 threshold, we accept the hypothesis that attitude significantly mediates the relationship between perceived uniqueness and willingness to pay. This finding implies that consumers who perceive a restaurant using robot waiters as unique are more likely to have a positive attitude toward it, which, in turn, increases their willingness to pay a premium price for the offered menu.

Interestingly, our study failed to demonstrate the mediating role of consumer attitude in the relationship between the need for uniqueness and willingness to pay more. This outcome may be attributed to the complexity of consumer needs for uniqueness within the context of

luxury restaurants using robot waiters. Although consumers may perceive robotic technology as innovative and aligning with their identity as uniqueness seekers, this perception does not necessarily translate into an overall positive attitude toward the restaurant. Consumers often have distinct standards or elevated expectations for other aspects of the luxury dining experience, such as personalized service from human staff, an exclusive atmosphere, and exceptional food quality. Therefore, while the concept of robot waiters may intrigue them and partially fulfill their need for uniqueness, this interest is not strong enough to significantly mediate their positive attitudes toward the restaurant and increase their willingness to pay more. Furthermore, while robot waiters are undeniably an innovative technology with great potential to enhance customer experiences (Čaić et al., 2019), many people still feel uncomfortable around robots (Tojib et al., 2022; Brodsky, 2021). Even though some customers are open to the idea of having both robot waiters and human staff serve them, they still generally prefer to be served by human staff (Song & Kim, 2022). Lastly, the robots in the restaurants studied were primarily used for order delivery, lacking other unique features that might amaze consumers and enhance their overall dining experience. This limitation resulted in a lack of emotional attachment and reduced willingness to pay more among customers (Li et al., 2023).

Restaurants should prioritize highlighting their unique qualities to strengthen the perception of uniqueness among consumers. This can be achieved by offering innovative products, creating memorable experiences, or providing special services like robot waiters. Marketing efforts should spotlight these unique aspects to create a strong perception of uniqueness. Additionally, since positive attitudes are closely linked to willingness to pay more, businesses should work on enhancing consumer perceptions through high-quality service, personalized experiences, and ensuring customer satisfaction. Continuous investment in innovation is essential for maintaining and boosting perceived uniqueness. Businesses should explore new technologies and creative ideas that set them apart from competitors, such as using AI and robotics to create an exciting and futuristic dining experience. Tailored marketing strategies should highlight the unique and innovative aspects of the restaurant, using compelling stories to reinforce the perception of uniqueness and attract consumers willing to pay a premium. Regularly gathering and analyzing consumer feedback will help businesses understand how their brand's uniqueness is perceived and make necessary adjustments to marketing and operational strategies. By focusing on these strategies, restaurants can capitalize on the positive impact of perceived uniqueness to improve consumer attitudes and increase their willingness to pay more, leading to greater success.

Conclusion and Suggestion

The result of the study offers valuable insights into how the need for uniqueness and perceived uniqueness influence consumer attitudes and willingness to pay more in restaurants using robot waiters. The analysis shows that the need for uniqueness does not have a significant impact on how consumers feel about a brand or their willingness to spend more money, as evidenced by the lack of significant results in these areas. On the other hand, perceived uniqueness has a powerful and positive effect on both consumer attitudes and their willingness to pay more. When consumers see a brand or restaurant as unique, their attitudes toward it improve significantly, and this positive attitude makes them more willing to pay higher prices. These findings emphasize the importance of perceived uniqueness in shaping consumer behavior, suggesting that unique and distinctive features of a brand or restaurant can greatly enhance consumer attitudes and increase their willingness to spend more.

Future studies should explore not only the use of robot waiters but also the menus offered by restaurants. Comparing the price and taste of dishes in restaurants using robot waiters with those in similar restaurants not using robots could provide deeper insights. This comparative analysis could help determine whether the perceived uniqueness of robot waiters extends to overall dining satisfaction and value perception. Additionally, future studies should consider other marketing stimuli, such as the ambiance of the restaurant, particularly places that are cozy and attractive or suitable for photographing and posting on social media. Comparing the levels of positive attitudes and willingness to pay more in restaurants with such appealing environments could reveal other potential factors that influence consumer buying behavior. By addressing these areas, future studies can build on the current findings and contribute to a more nuanced understanding of the dynamics between uniqueness, consumer attitudes, and spending behavior.

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