Michelin-starred restaurant diner return willingness: A case study from Thailand

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Abstract: This study investigates the factors influencing the return willingness (RW) of diners at Michelin-starred restaurants in Thailand. The focus is on understanding how service novelty (SN), new product innovation (NPI), culinary standards (CS), and diner satisfaction (DS) contribute to diners' intentions to return. A quantitative approach was employed using structural equation modeling (SEM) to analyze data collected from a sample of 320 diners. The study examined the direct and total effects of the variables on RW. The analysis revealed that service novelty, new product innovation, culinary standards, and diner satisfaction collectively account for 75% of the variance in return willingness ($R^2 = 0.75$). Service novelty, new product innovation, and culinary standards exhibit significant direct effects on return willingness, with total effect (TE) values of 0.87, 0.79, and 0.76, respectively. Diner satisfaction also significantly impacts return willingness, with a TE value of 0.42. All nine proposed hypotheses were supported, confirming the positive influence of SN, NPI, CS, and DS on diners' return willingness. The study underscores the critical role of continuous innovation, high culinary standards, and exceptional diner satisfaction in fostering repeat business. These factors are integral to enhancing customer loyalty at Michelin-starred restaurants in Thailand. The findings offer valuable insights for restaurant managers aiming to boost customer loyalty and sustain long-term success. Emphasizing service innovation, maintaining high culinary standards, and ensuring diner satisfaction can significantly improve diners' return willingness.

Keywords: Cuisine, Customer satisfaction, Hospitality industry, International dining, Revisit intention, Thailand.

1. Introduction

The rapid transformation of Thailand's dining culture, influenced by shifts in economic and social dynamics, has seen a decline in traditional home-cooked meals. Instead, a culture of dining out has emerged, driven by the need for convenience, speed, and social interaction. This transition has led to a surge in dining options and heightened competition among restaurant operators in Thailand [1].

A significant player in this evolving landscape is the Michelin-starred restaurant, which attracts both tourists and locals seeking exceptional culinary experiences. The Michelin Guide, established in France in 1900, is renowned globally for its rigorous standards and prestigious star ratings [2]. In Thailand, a strategic collaboration between the Tourism Authority of Thailand (TAT) and Michelin has elevated the country's cuisine and chefs on the world stage. Since the launch of the Michelin Guide in Thailand in 2017, the impact on culinary tourism has been substantial, with an estimated $36 million boost to the tourism sector [3]. As of January 18, 2024, Thailand boasts 447 Michelin-starred establishments, significantly enhancing its culinary reputation [3]. These restaurants are instrumental

in attracting tourists and offering unparalleled dining experiences endorsed by gourmets and chefs worldwide.

Understanding influencing factors of diner satisfaction is essential for restaurant managers, as it directly affects customer loyalty and positive word-of-mouth [4]. Key elements contributing to the Michelin star ranking include food quality [5], staff behavior [6], cleanliness and hygiene [7], ambiance [8], and gastronomic aspects such as diverse food options and appealing decor [9]. Customer satisfaction is influenced by these culinary standards as well as the location and ambiance of the establishment.

Customer satisfaction with gastronomic experiences plays a vital role in overall tourist satisfaction, influencing their choice of travel destinations and intention to revisit [9]. Despite the challenges posed by the COVID-19 pandemic, Thailand's street food culture remains resilient and globally renowned, enhancing its appeal as a culinary destination [10-11]. Diner satisfaction is shaped by various factors including food taste, affordability, value for money, dining experience, and restaurant service [12]. Research indicates that service quality, particularly staff behavior and responsiveness, significantly affects customer satisfaction. Additionally, the taste and quality of food, affordability, and overall dining experience contribute to customer contentment [13].

Michelin-starred restaurant operators must focus on sustainable quality to encourage repeat patronage [14]. Factors such as personal satisfaction and unique selling points like product and service innovation, including fresh ingredients, nutritional principles, culinary mastery, and service enhancements, are critical in attracting returning customers [15].

Therefore, this study aims to identify the factors influencing diner return willingness at Michelin-starred restaurants in Thailand. The insights provided will help entrepreneurs develop strategies to enhance food tourism, elevate Thai cuisine and hospitality standards globally, and strengthen Thailand's tourism and service sectors. While research specifically on Michelin-starred restaurants in Thailand is limited, this study offers valuable contributions to the local context.

2. Methods

2.1. Problem Statement

Despite the growing popularity of Michelin-starred restaurants in Thailand and their significant contribution to the nation's culinary reputation, there remains a critical knowledge gap regarding the factors that influence diners' willingness to return to these establishments. Therefore, the authors set out to investigate how specific elements such as service novelty, new product innovation, culinary standards, and diner satisfaction impact patrons' attitude to revisit Michelin-starred restaurants. Understanding these factors is essential for restaurant managers and entrepreneurs to tailor their strategies effectively, elevate the dining experience, and foster long-term patronage, thereby contributing to the sustainable growth of Thailand's culinary tourism industry.

2.2. Research Objectives

RO1. To examine the variables influencing diner return willingness to Michelin-starred restaurants in Thailand.

RO2. To develop a structural equation model (SEM) of how service novelty (SN), new product innovation (NPI), culinary standards (CS), and diner satisfaction (DS) affect diner's return willingness (RW) to a Michelin-starred establishment.

2.3. Research Hypotheses

The following nine hypotheses were proposed for the study, along with their observed variables (Figure 1).

H1a: Service novelty (SN) directly affects return willingness (RW).
H1b: Service novelty (SN) directly affects diner satisfaction (DS).

H1c: Service novelty (SN) directly affects culinary standards (CS).
H2a: New product innovation (NPI) directly affects diner satisfaction (DS).
H2b: New product innovation (NPI) directly affects return willingness (RW).
H2c: New product innovation (NPI) directly affects culinary standards (CS).
H3: Diner satisfaction (DS) directly affects return willingness (RW).
H4a: Culinary standards (CS) directly affect diner satisfaction (DS).
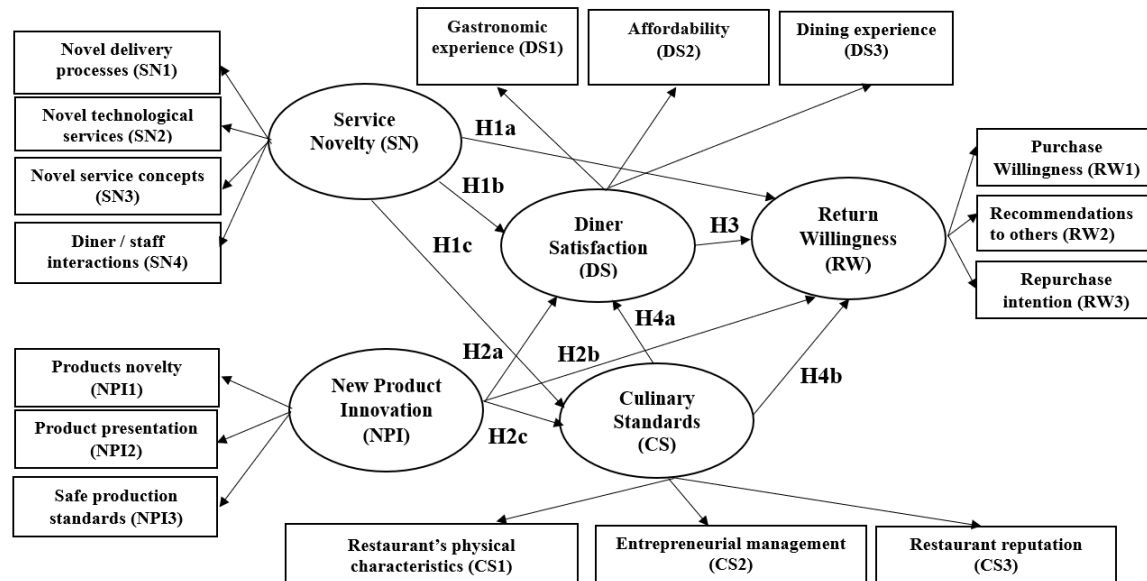*H4b: Culinary standards (CS) directly affect return willingness (RW).*

Figure 1.
The study's conceptual model.

2.4. Population and Sample Groups

The target population consisted of diners who have previously patronized Michelin-starred restaurants in Thailand and have visited these establishments more than once. This specific group was chosen because their repeated visits indicate a level of satisfaction and familiarity with the dining experience, making them ideal respondents for assessing factors influencing return willingness.

The researchers determined the sample size based on criteria suitable for SEM analysis, using an often-recommended sample size of 10-20 collected questionnaires per number of observable variables in the SEM analysis [16]. For this study, which involves 16 observable variables, the maximum sample size is calculated using a ratio of 20:1, resulting in a proposed sample size of 320 respondents.

2.5. Sampling Method

Due to the absence of precise information on the exact number of diners who have visited Michelin-starred restaurants in Thailand, a non-probability sampling method was employed, comprising two steps: quota sampling and proportional allocation based on restaurant ratings.

Given the proposed sample size of 320, a quota sampling method was utilized to ensure representation based on the proportion of diners visiting Michelin-starred restaurants. The sample was divided into two categories: diners of 1-star Michelin restaurants and diners of 2-star Michelin restaurants. This approach ensures that the sample accurately reflects the distribution of Michelin-starred restaurants in Thailand.

The quota sampling method ensures that the sample size is proportionately distributed between the

different categories of Michelin-starred restaurants, providing a balanced representation of diner experiences across the selected sample (Table 1).

Table 1.
Quota sampling by Michelin-Starred restaurant rating for the year 2023.

Stars	Michelin restaurants	Number	Restaurant proportioning	Proportioning results
1	One Star	29	82.85%	(320 x 82.85) ÷ 100 = 265
2	Two Stars	6	17.50%	(320 x 17.50) ÷ 100 = 55
Totals		35	100%	320

2.6. Purposive Sampling for Targeted Sample Selection

For diners who have patronized Michelin-starred restaurants in Bangkok, Thailand, a purposive sampling method was employed. The survey questionnaires were collected at the venues where the customers visited the Michelin-starred restaurants rated 1-star and 2-star. The sample comprised diners who had visited the restaurants multiple times, totaling 320 respondents. The questionnaire collection focused on diners who have experienced the services of Michelin-starred restaurants, ensuring the sample met the predetermined quota. This method specifically targeted diners who had used the services of Michelin-starred restaurants.

2.7. Tool Quality Check

Questionnaire construction: The questionnaire comprised Likert rating scales with five levels, each with defined scoring criteria and interpretations (Figure 2).

Figure 2.
Likert rating scales with scoring criteria and interpretations.

2.8. Ethics Statement

Before taking part in the study, all participants provided their informed consent. The research adhered to the Declaration of Helsinki guidelines and was approved by the university's ethics committee. Additionally, participants were assured that their information would remain confidential.

2.9. Three-Step Quality Inspection

The researchers then proceeded to inspect the quality of the research tools used to ensure they were of high quality, with both content validity and reliability. This was done in three steps:
Step 1: Inspection by five specialized experts.
Five specialized experts inspected the measurement tools used in this research questionnaire to ensure their quality. They calculated the Index of Item – Objective Congruence (IOC) to gauge the alignment of the content with the research objectives. Only items with an IOC value higher than 0.60

were chosen. It was determined that the IOC values ranged between 0.80 and 1.00.

Step 2: Questionnaire try-out

The questionnaire used a 'try-out' with a sample group of 30 individuals who were not part of the research sample. Subsequently, the collected data was analyzed to determine its reliability using Cronbach's Alpha Coefficient. A reliability coefficient of ≥ 0.7 is sought. The processing of Cronbach's Alpha yielded a value of 0.94, within the prescribed standard, indicating that the proposed questionnaire items were highly reliable.

Step 3: Data collection

For this research, data collection was carried out by requesting cooperation from a sample group of diners who have patronized Michelin-starred restaurants on multiple occasions. The researchers distributed the questionnaire to the sample group to fill out and collected them afterward. From this process and monitoring, 320 completed surveys were returned.

2.10. Data Analysis

The authors analyzed the collected data using SPSS/PC+ (Statistical Package for the Social Sciences) Version 23.0. The statistical methods employed included:

Descriptive analysis: This was used to analyze the demographic data and the questionnaire responses. Percentage and frequency tables were used for the demographic data, while descriptive analysis (quantitative) was used for the questionnaire responses. The questionnaire included questions rated on a 5-point Likert scale, and the analysis involved calculating means ($\bar{x}$), and standard deviations (SD), and interpreting the significance of scores of diners' opinions.

Testing hypotheses: The Pearson Product Moment Correlation (PPMC) (*r*) was used to test the hypotheses of relationships between variables, with a significance level of 0.05, with suggested *r* value interpretations of weak (0.10-0.29), moderate (0.30-0.49), or strong (0.50-1.00) [17]. Construct validity (CV) testing and the interpretation of correlation coefficients followed predefined criteria, indicating the strength of relationships.

Inferential statistics: Data was coded using SPSS/PC+ Version 23.0 and analyzed using both descriptive and inferential statistics. A SEM path analysis was conducted using LISREL Version 9.20. Criteria and values used for analyzing the data output and fit from the LISREL model can be found in Figure 3. Values in yellow and red indicate the study's values, indicating an excellent fit.
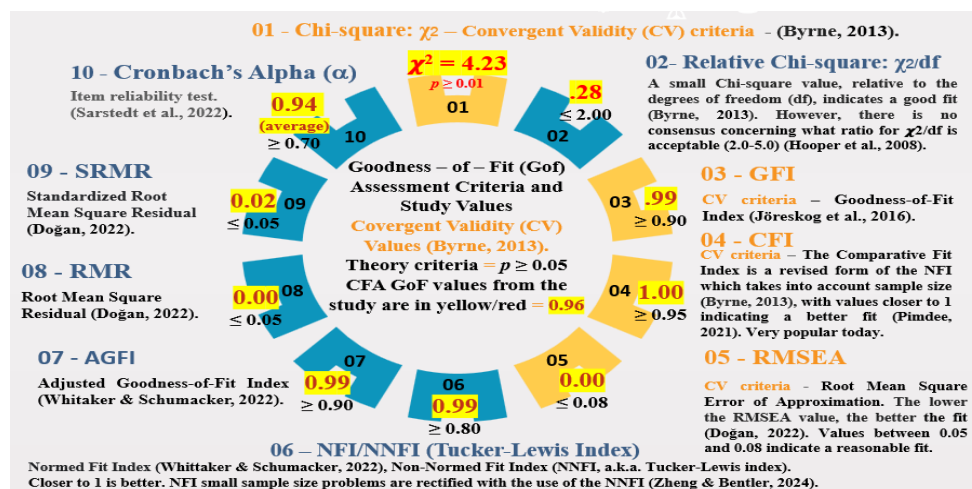

Figure 3.
CFA goodness-of-fit assessment wheel.
Source: [16], [18-24].

3. Results and Discussion

3.1. Diner Characteristics

Table 2 presents an analysis of diner characteristics in one and two-star Michelin-starred restaurants in the Bangkok metropolitan area, drawing from a sample size of 320 diners. From the diners' responses, it was noted that the majority identified as female (65.90%), with the age group of 21-30 years old constituting the largest segment (23.10%), followed closely by those aged 31-40 years (21.60%). Professionally, the diners came from diverse occupational backgrounds with self-employed individuals, comprising 24.10% of the sample, followed by those in civil service (15.30%) and entrepreneurship (14.40%). Monthly incomes also showed diversity, with the income bracket $559 to $837 representing 22.50% and $559-$697 representing 23.10% of the diners. Lastly, considering education levels, the majority of diners held at least a bachelor's degree, accounting for 62.80% of the sample.

Table 2.

Michelin-starred restaurant diner characteristics (*n*=320).

Diner characteristics	Number	%
Gender		
Men	109	34.10
Women	211	65.90
Total	320	100.00
Age		
Under 21 years old	34	10.60
21to 30 years old	74	23.10
31to 40 years old	69	21.60
41 to 50 years old	66	20.60
51to 60 years old	38	11.90
More than 60 years old	39	12.20
Total	320	100.00
Profession		
Academic Pursuit	34	10.60
Civil Service	49	15.30
Public Sector Employment	40	12.50
Corporate Employment	32	10.00
Entrepreneurship	46	14.40
Freelancing	42	13.10
Self-Employment	77	24.10
Total	320	100.00
Monthly income in USD		
Less than $416	20	6.30
$417 – $558	44	13.80
$559-$697	72	22.50
$698-$837	74	23.10
$838-$976	54	16.90
More than $977	56	17.50
Total	320	100.00
Education		

Diner characteristics	Number	%
Under bachelor's degree	34	10.60
Bachelor's degree	201	62.80
Postgraduate	85	26.60
Total	320	100.00
Michelin Stars		
1 star	265	82.80
2 stars	55	17.20
Total	320	100.00

3.2. Service Novelty (SN)

Service novelty is evaluated based on various factors, including novel delivery processes, technological services, service concepts, and diner/staff interactions. The mean scores for all SN variables indicate a high level of SI, with particularly high scores for novel delivery processes and diner/staff interactions (Table 3). These scores suggest that restaurants prioritize innovative approaches to service delivery and customer interaction, which are crucial for enhancing the dining experience. The skewness and kurtosis values indicate a relatively normal distribution of data for SN variables.

First, it was determined that all three SN hypotheses were consistent and supported, with SN showing a very strong impact (0.62, 14.62**, $p < 0.01$) on restaurant worthiness (RW). This was followed by SN's moderate impact on diner satisfaction (DS) (0.54, 10.67**, $p < 0.01$) and customer satisfaction (CS) (0.42, 8.46**, $p < 0.01$).

Eren et al. found a positive impact on both the restaurant's image and diners' intention to return, and added that innovative services enhance diners' intentions to revisit and make additional purchases [25]. Similarly, Huang et al. highlighted that Michelin Green Star restaurants could serve as advocates for sustainability [26]. In parallel, Gupta and Pande identified that Gen Z consumers' perceptions of robotic restaurants' functional, socio-emotional, and relational attributes influence their attitudes and performance evaluations, thereby affecting their revisit intentions [27]. Additionally, Doeim et al. demonstrated that service value plays a significant role in diners repurchase intentions at fast-food establishments [28]. Consequently, service innovation is pivotal in shaping customers' willingness to return to restaurants.

3.3. New Product Innovation (NPI)

NPI encompasses the innovation-related variables concerning product development, presentation, and adherence to safe production standards. The mean scores for all NPI variables are notably high, indicating a strong emphasis on innovation within the restaurant industry. Particularly noteworthy is the high score for safe production standards, underscoring a commitment to food safety and quality assurance. The skewness and kurtosis values suggest a relatively normal distribution of data for all NPI variables (Table 3).

NPI's hypotheses analysis determined that all three were moderately supported. Of these, H2c (NPI to DS) was the strongest, followed by H2b (NPI to RW) and H2a (NPI to DS). Supporting this was Ding et al., who reported that a restaurant's ability for innovation significantly affects RW [29]. Nataya and Sutanto further noted that NPI has a significant effect on service innovation, which in turn significantly influences marketing performance [14].

Table 3.
Basic statistics of SN, NPI, DS, CS, and RW classified by aspect.

Service novelty (SN)	$\bar{x}$	S.D.	Int.	Skewness	Kurtosis
Novel delivery processes (SN1)	4.41	0.56	Most	–0.44	–4.89
Novel technological services (SN2)	4.10	0.66	High	–1.95	–3.45
Novel service concepts (SN3)	4.36	0.64	Most	–1.96	–4.23
Diner/Staff interactions (SN4)	4.26	0.60	Most	–0.47	–5.20
Averages	4.28	0.48	Most	–0.68	–3.41
New product innovation (NPI)	$\bar{x}$	SD	Int.	Skewness	Kurtosis
Products novelty (NPI1)	4.12	0.69	Most	-1.32	-5.83
Product presentation (NPI2)	4.13	0.63	High	-1.24	-2.48
Safe production standards (NPI3)	4.28	0.65	Most	-1.15	-6.23
Averages	4.17	0.56	Most	-1.93	-2.90
Diner Satisfaction (DS)	$\bar{x}$	S.D.	Int.	Skewness	Kurtosis
Gastronomic experience (DS1)	3.75	0.89	High	–0.64	–2.53
Affordability (DS2)	3.96	0.84	High	–1.85	–4.56
Dining experience (DS3)	4.04	0.82	High	–0.66	–4.35
Averages	3.92	0.80	High	–1.72	–4.63
Culinary Standards (CS)	$\bar{x}$	S.D.	Int.	Skewness	Kurtosis
Restaurant's physical characteristics (CS1)	4.30	0.55	Most	–1.22	–3.65
Entrepreneurial management (CS2)	3.93	0.65	High	–0.85	–4.56
Restaurant reputation (CS3)	3.94	0.78	High	–0.65	–4.53
Averages	4.06	0.51	High	–1.68	–5.21
Return willingness (RW)	$\bar{x}$	S.D.	Int.	Skewness	Kurtosis
Purchase willingness (RW1)	4.28	0.62	Most	–1.69	–3.74
Recommendations to others (RW2)	4.15	0.64	High	–0.75	–6.21
Repurchase intention (RW3)	3.90	0.83	High	–1.25	–2.53
Averages	4.11	0.61	High	–0.66	–4.70

Note: Int. – Interpretation where 'most' = the highest level (4.21–5.00) and 'high' represented values 3.41–4.20.

3.4. Diner Satisfaction (DS)

Diner satisfaction is evaluated based on three dimensions: gastronomic experience, affordability, and overall dining experience. The mean scores for these variables indicate a high level of DS, particularly in gastronomic and dining experiences. However, affordability scores are slightly lower, highlighting a potential area for addressing price-related concerns. The skewness and kurtosis values suggest a relatively normal distribution of data for diner satisfaction variables.

Hypothesis H3 is moderately supported, showing a significant relationship between DS and RW with a correlation coefficient (r) of 0.42, a t-test value of 8.53**, and $p < 0.01$. These findings align with Widjaja et al., who emphasized that service quality is a significant factor in a consumers' intentions to return, recommend, and revisit establishments in Indonesia [30]. Similarly, Jansri et al. asserted that excellent service quality during the initial visit fosters consumers' intentions to return and engage in continuous repeat patronage, accompanied by positive word-of-mouth recommendations [31].

3.5. Culinary Standards (CS)

Culinary Standards (CS) assess the restaurant's physical characteristics, entrepreneurial management, and reputation. The mean scores for CS variables are relatively high, indicating a generally high level of culinary standards. However, there is some variability among the components,

with entrepreneurial management and restaurant reputation scoring slightly lower than physical characteristics. This suggests potential areas for improvement in managerial aspects and reputation management. The skewness and kurtosis values indicate a relatively normal distribution of data for CS variables.

The analysis determined that both CS hypotheses were consistent and supported. CS showed a moderate impact on RW with values of 0.53, 14.62**, $p < 0.01$. Social Norms (SN) also had a moderate impact on DS with values of 0.54, 10.55**, $p < 0.01$. However, the relationship from CS to DS (H4a) was weak, with values of 0.37, 7.41**, $p < 0.01$.

These findings align with Ramli, who indicated that a restaurant's quality of service significantly affects DS and RW [32]. This is consistent with other studies showing that product and service quality, as well as price perception, affect consumer satisfaction in the food service industry ([33-34]. Good service quality, including reliability, responsiveness, assurance, tangibility, and empathy, is crucial for achieving higher consumer satisfaction [35]. (Baig et al., 2022). These findings also align with Kim et al., who in Korea determined the importance of a food's healthiness on RW [36].

3.6. Return Willingness (RW)

Return willingness encompasses purchase willingness, recommendations to others, and repurchase intention. The mean scores for RW variables indicate a high level of willingness among diners to return to the restaurant, with particularly high scores for purchase willingness and recommendations to others. However, repurchase intention scores are slightly lower, suggesting a potential area for improvement in fostering repeat business. The skewness and kurtosis values indicate a relatively normal distribution of data for RW variables.

Table 3 provides a comprehensive overview of basic statistics for various aspects related to new product innovation (NPI), service novelty (SN), culinary standards (CS), diner satisfaction (DS), and return willingness (RW).

According to Rajput and Gahfoor, repeat patronage is characterized by consumers' willingness to return for another visit, driven by their satisfaction and positive experiences with the impressive service quality during their initial visit [37]. This behavior leads to an increased frequency of visits to the restaurant and positive word-of-mouth recommendations to others. Toanun and Sukkaew reported that in Bangkok coffee shops, RW is dependent on customer satisfaction levels, including the shop's image, expectations, perceived value, and perceived quality [38].

These findings align with Du Plessis and Roberts-Lombard [39] and Ibrahim et al. [40], who discussed three aspects of RW: 1) purchase willingness, 2) recommendations, and 3) return to purchase. Rahimizhian and Irani further assert that repeat patronage reflects consumers' RW based on their previous experiences and satisfaction levels, with positive word-of-mouth communication about the quality of service experienced during initial visits influencing consumers' intentions to return [41].

From the analysis of factors influencing RW of Michelin-starred restaurants in Thailand, three key variables were identified, each with standardized loading weights (bsc) ranging from 0.66 to 0.74. The variable with the highest significance weight is purchase willingness (RW1) (bsc = 0.74), followed by recommendations to others (RW2) (bsc = 0.69), and repurchase intention (RW3) (bsc = 0.66).

3.7. SEM Analysis Results

Table 4 presents the SEM's correlation values between latent variables, showcasing multiple significant associations:

First, there are moderately positive correlations between the constructs of new product innovation (NPI) and service novelty (SN), culinary standards (CS), diner satisfaction (DS), and return willingness (RW). This implies that higher levels of innovation in product offerings tend to coincide with increased novelty in service delivery, elevated culinary standards, greater diner satisfaction, and enhanced willingness to return.

Similarly, SN exhibits positive correlations with NPI, CS, DS, and RW. This suggests that restaurants implementing innovative service concepts and delivery processes are likely to see improvements in product innovation, culinary standards, diner satisfaction, and customers' return willingness.

Moreover, CS displays positive correlations with NPI, SN, DS, and RW. This indicates that maintaining high culinary standards in food preparation and presentation is associated with increased innovation in product offerings, novelty in service delivery, diner satisfaction, and return willingness.

Furthermore, DS demonstrates positive correlations with NPI, SN, CS, and RW. This highlights the significance of constructs such as NPI, SN, and CS in influencing overall DS, ultimately impacting their likelihood of returning for future visits.

Last, RW shows positive correlations with NPI, SN, CS, and DS. This suggests that customers who perceive higher levels of NPI, SN, CS, and DS are more likely to express willingness to return for future dining experiences.

Additionally, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy indicates that the data is suitable for factor analysis, with a value of 0.765. Bartlett's Test of Sphericity is significant (Chi-Square = 765.412, df = 10, p = 0.00), confirming that correlations between variables are sufficiently large for factor analysis, lending credibility to the results.

Table 4.
Correlation analysis of latent variables.

Latent Variable	Correlation values				
	NPI	**SN**	**CS**	**DS**	**RW**
New product innovation (NPI)	1.00				
Service novelty (SN)	0.67**	1.00			
Culinary standards (CS)	0.73**	0.62**	1.00		
Diner satisfaction (DS)	0.68**	0.56**	0.69**	1.00	
Return willingness (RW)	0.45**	0.64**	0.63**	0.49**	1.00
KMO = 0.765					
Bartlett's Test of Sphericity: Chi-Square= 765.412, df = 10, p = 0.00					

Note: **Sig. ≤ 0.01.

3.8. Multiple Linear Regression Analysis (MLRA)

Table 5 details the results of an MLRA investigating the factors influencing diners' return willingness (RW) in Michelin-starred restaurants.

Latent Variable and Observable Variable: These columns specify the latent variable (e.g., new product innovation, service novelty, diner satisfaction, culinary standards) and the corresponding observable variable (e.g., NPI1, SN1, RQ1, CS1). This categorization helps identify which specific aspect of each latent variable is being analyzed.

Element Weight Value (bsc): This column represents the standardized regression coefficient (beta weight) for each observable variable. It indicates the relationship direction and strength between the predictor variable (observable variable) and the outcome variable (RW). A higher absolute value indicates a stronger relationship. For example, a value of 0.62** for NPI1 suggests that for every one-unit increase in NPI1, RW increases by 0.62 units.

Standard Error (SE): Although not reported for all variables, SE provides an estimate of the variability or precision of the regression coefficient [42]. A lower SE indicates greater precision in estimating the true value of the coefficient. However, its absence for some variables does not necessarily diminish the overall interpretability of the regression analysis.

t-Value: The t-value indicates the significance of the regression coefficient. A higher absolute t-value suggests that the coefficient is more likely to be statistically significant. For example, a t-value of 22.91 for NPI1 indicates that the relationship between NPI1 and RW is statistically significant.

The R^2 value indicates the variance proportion in the dependent variable (RW) explained by the independent variables (observable variables). A higher R^2 value indicates a better fit of the regression model to the data. For instance, an R^2 value of 0.58 for NPI1 suggests that 58% of the variability in RW can be explained by NPI1.

Table 5.
MLRA of observed factors affecting diners' RW.

Latent variables	Observable variables	Element weight value			
		b_{sc}	SE	t	(R^2)
Service novelty (SN)	SN1	0.75**	<-->	<-->	0.64
	SN2	0.69**	0.06	20.49	0.62
	SN3	0.66**	0.06	20.49	0.59
	SN4	0.68**	0.06	20.71	0.57
New product innovation (NPI)	NPI1	0.62**	<-->	<-->	0.58
	NPI2	0.66**	0.05	24.01	0.59
	NPI3	0.61**	0.05	20.64	0.58
Diner satisfaction (DS)	DS1	0.67**	<-->	<-->	0.64
	DS2	0.65**	0.06	19.53	0.57
	DS5	0.61**	0.06	20.64	0.58
Culinary standards (CS)	CS1	0.61**	0.04	22.91	0.58
	CS2	0.66**	<-->	<-->	0.59
	CS3	0.60**	0.05	20.64	0.58
Return willingness (RW)	RW1	0.74**	<-->	<-->	0.65
	RW2	0.69**	0.06	20.49	0.62
	RW3	0.66**	0.06	20.49	0.59

Chi-Square = 4.23, df = 15, p = 0.99, χ^2/ df = 0.28, RMSEA = 0.00, RMR = 0.00, GFI = 0.99, AGFI = 0.99

Note: ** p<0.01, bsc = standardized loading weight value. Sign <--> = The SE and t values are not reported as mandatory parameters.

The significance of each column lies in providing insights into the strength, direction, significance, precision, and explanatory power of the relationships between the observable variables (predictors) and RW (outcome). These results aid in understanding the factors influencing diners' return willingness in Michelin-starred restaurants, thereby guiding managerial decisions and strategic interventions aimed at enhancing customer satisfaction and loyalty.

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3.9. Factors Influencing Diner Return Willingness (RW)

One of the most significant findings of this analysis is the high coefficient of determination (R^2) value for RW, which stands at 0.75 (Table 6). This indicates that approximately 75% of the variance in customers' willingness to return can be explained by the combined influence of culinary standards, diner satisfaction, and new product introduction.

The analysis reveals a strong direct effect (DE) of CS on RW, with a coefficient of 0.42**. Additionally, the total effect (TE) of culinary standards on RW is 0.62**. These values indicate that customers' perceptions of culinary standards significantly influence their likelihood of returning to the dining establishment.

Similarly, DS emerges as a key predictor of RW. The analysis indicates a significant DE of diner satisfaction on RW, with a coefficient of 0.54**. Additionally, the TE of diner satisfaction on RW is 0.77**. This suggests that satisfied diners are more likely to revisit the dining establishment, highlighting the key role of customer satisfaction in driving repeat business.

Interestingly, the analysis also reveals a significant TE of NPI on RW, with a coefficient of 0.62**. This implies that the introduction of new menu items or culinary innovations can positively impact customers' willingness to return to the establishment.

The high R^2 value for RW underscores the importance of CS, DS, and NPI in shaping customers' perceptions and driving repeat business. By understanding and leveraging these factors, dining establishments can position themselves for long-term success and sustainable growth.

Table 6.
Statistical analysis of factors influencing RW in Dining.

Dependent variables	R^2		Independent variables			
		Effect	DS	CS	NPI	SN
Culinary standards (CS)	0.43	DE	-	-	0.56**	0.42**
		IE	-	-	-	-
		TE	-	-	0.56**	0.42**
Diner satisfaction (DS)	0.52	DE	-	0.37**	0.48**	0.54**
		IE	-	-	0.25**	0.23**
		TE	-	0.37**	0.73**	0.77**
Return willingness (RW)	0.75	DE	0.42**	0.53**	0.53**	0.62**
		IE	-	0.23**	0.26**	0.25**
		TE	0.42**	0.76**	0.79**	0.87**

Note: **$p<0.01$; Symbol – no parameter line according to the research hypothesis.

3.10. Final Hypotheses Testing

Figure 4 and Table 7 show the results of the final hypotheses testing. The results reveal strong evidence supporting the hypothesized relationships between the examined variables. Firstly, regarding SN, our analysis indicates a significant and positive direct influence on RW (coefficient = 0.62, t-test = 14.62, $p < 0.01$) and DS (coefficient = 0.54, t-test = 10.67, $p < 0.01$), aligning with our research expectations.

Similarly, NPI demonstrates a substantial direct impact on both diner satisfaction (coefficient = 0.48, t-test = 9.24, $p < 0.01$) and return willingness (coefficient = 0.53, t-test = 10.21, $p < 0.01$), confirming our research hypotheses. These findings suggest that investments in innovative service and product offerings are conducive to fostering diner satisfaction and increasing repeat patronage in hospitality establishments.

Moreover, our analysis underscores the critical role of diner satisfaction, revealing a significant direct influence on return willingness (coefficient = 0.42, t-test = 8.53, $p < 0.01$). This highlights the importance of prioritizing customer experience and satisfaction as key drivers of customer loyalty and retention in the restaurant industry.

Furthermore, our study finds that CS exerts a direct influence on both diner satisfaction (coefficient = 0.37, t-test = 7.41, $p < 0.01$) and return willingness (coefficient = 0.53, t-test = 10.55, $p < 0.01$), consistent with our research hypotheses. This underscores the significance of maintaining high

standards of service delivery and ambiance to enhance overall diner satisfaction and encourage repeat patronage.

In summary, our findings provide empirical support for the hypothesized relationships between SN, NPI, DS, CS, and RW in the restaurant industry. These results offer valuable insights for industry practitioners, highlighting specific areas where strategic investments and initiatives can be directed to optimize customer retention, loyalty, and business performance.
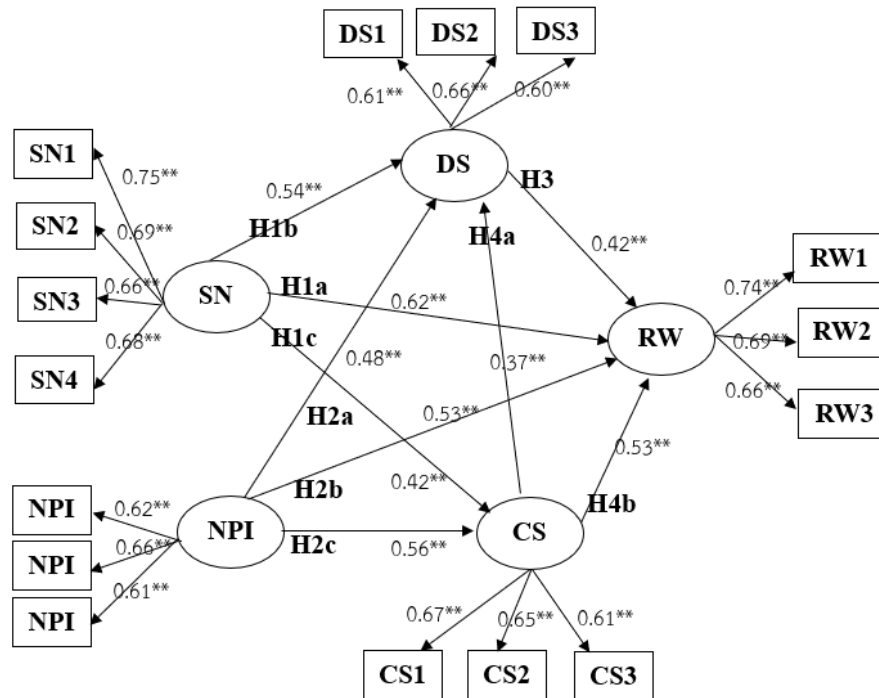

Figure 4.
Final model.
Note: Chi-Square = 4.23, df = 15, p = 0.99, χ^2/ df = 0.28, RMSEA = 0.00, RMR = 0.00, GFI = 0.99, AGFI = 0.99

The Chi-Square (χ^2) statistic evaluates whether the model adequately fits the data by testing the null hypothesis. Here, the Chi-Square value is 4.23 with 15 degrees of freedom (df). The p-value for this Chi-Square statistic is 0.99, implying a good fit, as a p-value close to 1 indicates no significant disparity between the observed and expected covariance matrices [43]. The Chi-Square/df (χ^2/df) ratio assesses model fit while accounting for sample size and model complexity. A value near 1 suggests a good fit. In this instance, χ^2/df is 0.28, indicating a strong fit between the model and the data.

The RMSEA statistic gauges the discrepancy between the observed covariance matrix and the model-implied covariance matrix per degree of freedom. An RMSEA value of 0.00 denotes a perfect model fit [19]. The RMR measures the difference between the observed and model-implied covariance matrices. An RMR value of 0.00 also signifies a perfect fit [19]. The GFI and AGFI indices assess the model's fit to the data, with values approaching 1 indicating a good fit. Both GFI and AGFI are 0.99 in this case, demonstrating an excellent model fit [21].

These findings suggest that the structural equation model tested fits the data very well, as evidenced by the high p-value for the Chi-Square test [18], low values for χ^2/df, RMSEA [20], and RMR, and high values for GFI and AGFI.

Table 7 presents the results of testing nine hypotheses. The findings revealed that all nine hypotheses supported the idea that the variables had a positive impact on the RW of Michelin Star restaurants in Thailand, with statistical significance at $p < 0.01$. Hence, we can conclude that the outcomes of this study align with the assumptions of the research framework.

Table 7.
Final hypotheses testing.

Hypotheses	Coef.	t-test	Results
H1a: SN directly affects RW.	0.62	14.62**	Spd.
H1b: SN directly affects DS.	0.54	10.67**	Spd.
H1c: SN directly affects CS.	0.42	8.46**	Spd.
H2a: NPI directly affects DS.	0.48	9.24**	Spd.
H2b: NPI directly affects RW.	0.53	10.21**	Spd.
H2c: NPI directly affects CS.	0.56	11.24**	Spd.
H3: DS directly affects RW.	0.42	8.53**	Spd.
H4a: CS directly affects DS.	0.37	7.41**	Spd.
H4b: CS directly affects RW.	0.53	10.55**	Spd.

Note: DE = direct effect, ** = $p < 0.01$, Spd. =Supported.

4. Conclusion

The study revealed that diners' return willingness (RW) at Michelin-starred restaurants in Thailand is significantly influenced by culinary standards (CS), diner satisfaction (DS), and new product innovation (NPI), collectively explaining 75% of the variance in RW. Maintaining high culinary standards, ensuring positive dining experiences, and continuously innovating menu offerings are crucial for enhancing customer loyalty and encouraging repeat patronage. These findings provide practical insights for restaurant managers to improve customer retention and achieve long-term success by focusing on these key factors.

Author Contributions:

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Copyright:

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