

An Empirical Study of Purchase Intention of Macau Tourists Based on Multiple Linear Regression --Take the Ruins of St. Paul's as an example

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Abstract: The rapid development of Macao's tourism economy has attracted a large number of domestic and foreign tourists to visit famous scenic spots in Macao, including the Ruins of St. Paul. The research object is to explore the impact of tourist factors on tourist attractions in Macao on their purchase intentions: (1) the impact of tourists coming to Macao on the local economy; (2) whether the infrastructure, service quality and other factors of local attractions in Macao are trusted by tourists; (3) based on the above factors, the willingness of tourists to consume in Macao. In order to study the future development direction of Macao's tourism economy as well as to discover the existing problems in the tourism industry, this paper takes the Ruins of St. Paul's attraction as the blueprint of the survey, and uses multiple linear regression to quantitatively analyze the six dimensions of Infrastructure Construction (IC), Public Transportation Services (PTS), Marketing Services (MS), Tourism Supervision Services (TSS), Perceived Trust Level (PTL), and Visitors' Willingness to Spend Money at the Attraction (The six dimensions of PI) were quantitatively analyzed to derive the level of satisfaction regarding travelers' visit to the St. Paul's Pavilion, and ultimately the path coefficients associated with each variable. The results of the study revealed that : (1) When tourists visit the Ruins of St. Paul in Macao, the infrastructure, public transportation, market services, and trust of tourists in the attraction have a significant positive impact on the purchase decision of tourists, while the local tourism services have no significant impact on the purchase decision. (2) There is a positive correlation between tourists' evaluation of the infrastructure, public transportation, market services and tourism supervision of the big three buses, and (3) the above factors are positively related to their trust in scenic spots and willingness to buy, indicating that there is a certain relationship between different variables. The results of this analysis and the corresponding conclusions drawn provide a reference for enhancing the overall tourism development of the city of Macau.

1 Introduction

1.1 Research background

On December 20, 1999, Macao was returned to the motherland and the number of trade between mainland residents and Macao has been growing. In 2018, with the official opening of the Hong Kong-Zhuhai-Macao Bridge and the official listing of the Hengqin Guangdong-Hong Kong-Macao Deep Cooperation Zone, travelers are making more and more trips to and from Macao. In 2023, in order to promote the development of the local tourism industry, the Macao SAR Government intensified its cooperation with e-commerce platforms, airlines and travel agencies, and launched a series of activities and price concessions for tours, air tickets and hotels, so as to enhance the competitiveness of tourism. At the same time, the Master Plan for Tourism Development points out that the Macao region has organized diversified and unique

tourism projects, such as the "Specialty Shops Program" and "Tourism Plus", in order to explore local unique tourism projects.

According to Statistics and Census Service^[1], as of November 2022, the total value of imports and exports of mainland residents to and from the Macao region via Gongbei Port amounted to RMB 335.48 billion. The economic pillars of Macao are mainly based on the service industry, most typically the local gaming, tourism and financial industries. According to the statistics of Macau's relevant departments, the gross revenue from lucky gaming has increased from 286.73 billion patacas in 2003 to as high as 148.449 billion patacas in 2023 (as of October), an increase of about 2.51 times. According to the Gross Domestic Product (GDP) of Macau for the years 2001 to 2022 as given by the Statistics and Census Service, the GDP of Macau was MOP 51.12 billion in 2001 and will be MOP 247.926 billion in 2022, an increase of 384.99%. These figures clearly demonstrate the rapid development of Macau's tourism industry. Macau's rich tourism resources, unique cultural charms and world-class

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entertainment facilities have attracted a large number of domestic tourists. With the continuous development of Macau's tourism industry, Macau is gradually becoming a popular vacation spot for tourists from all over the world.

1.2 Literature review

Scholar WU C G. (2011)^[2], in studying the influencing factors of consumers' willingness to spend on inbound tourism, pointed out that national income, price level, relative price and travel habits all have an impact on consumers' willingness to buy. Scholars Tang J.C. (2017)^[3] and Yin & Qin (2020)^[4] established an autoregressive distributed lag model (ARDL) to analyze the demand change factors of China's inbound tourism consumption. It is found that in addition to the conclusion of WU C G. (2011)^[2], factors such as the local exchange rate, the continuity of the duration of tourism activities, and the "self-selection effect" of tourists also affect the demand changes. In this paper, we refer to the Statistics and Census Service of the Macao SAR Government^[1], and select the last five years to analyze the changes of tourist arrivals in Macao, so as to explore the development trend of Macao's tourism industry. Figure 1 of the time series variation shows that from January 2017 to September 2019, visitor arrivals to Macau fluctuated within the mean value range, with the number of arrivals ranging from two million to three million. However, due to the global novel coronary epidemic, there was a sharp decrease from January 2020 to January 2023, which seriously affected the economic development of Macau's tourism industry. Subsequently, arrivals soared dramatically, returning to over three million, and the end of the epidemic era heralded the recovery of the tourism economy.

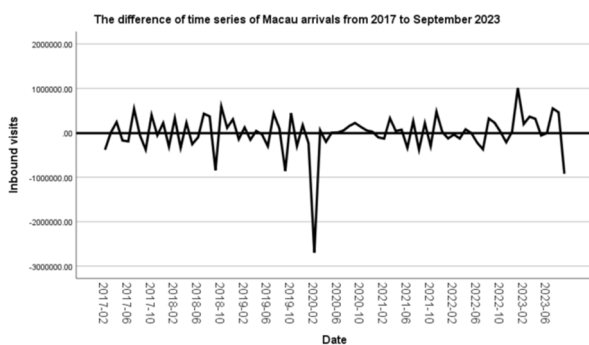


Fig.1 The Difference of Time Series of Macau Arrivals From 2017 to September 2023

government's policy of relaxing customs clearance, tourists coming to Macao have a more convenient way of traveling, and the number of tourists will be more and more, and "how to cope with the swarm of tourists and improve the quality of tourism" has become one of the topics discussed in the tourism industry of Macao. In this paper, we use multiple linear regression to analyze the tourists who visit the Ruins of St. Paul's to evaluate the consumers' purchase intention, which is of great significance to the research of discovering the problems of tourism resources and quality evaluation of scenic spots; through the discovery of problems and the formulation of corresponding improvement strategies, which is conducive to promoting the economic development of Macau's tourism.

2 Research design

2.1 Research Model and Research Hypothesis

2.1.1 Research Model

This paper combines the theoretical models of scholars Xie J.L. (2022)^[5] and Ma et al.(2021)^[6] to explore the effects of infrastructure construction (IC), public transportation services (PTS), scenic market services (MS), tourism supervision services (TSS), and perceived trust (PTL) on visitors' willingness to spend money at the attraction (PI), respectively, in the St. Paul's Pavilion Path. The research model construction, variable definitions and indicator sources in this paper are shown in Figure 2 and as Table 1:

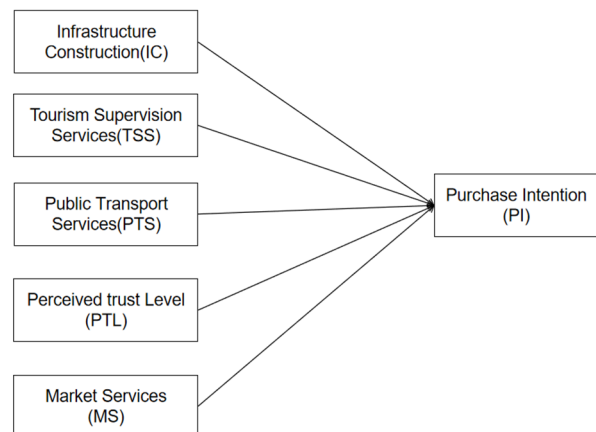


Fig. 2 Research model

1.3 Purpose of the study

With the announcement and implementation of the Macao

Tab.1 Potential variables and measured variables

Variant	Observational Indicators	Sources of Indicators
Infrastructure Construction (IC)	Orderly maintenance, financial services, rest areas, and sanitary facilities	Ma et al. (2021) ^[6]
Public Transportation Services (PTS)	Transportation guide signs, internal route planning clarity, and external convenience	
Variant	Observational Indicators	Sources of Indicators
Marketing Services (MS)	Catering services, tour guide services, merchandise services, entertainment services	Ma et al. (2021) ^[6]
Tourism Supervision	Complaint acceptance, quality control of goods or services,	

Services (TSS)	price control	
Perceived Trust Level (PTL)	Promotional content, price proximity, cultural integration	
Purchase Intention (PI)	Length of stay, likelihood of revisiting, likelihood of spending money at scenic spots	Xie J.L. (2022) ^[5]

2.1.2 Model Assumptions

Cai J.H. et al. (2022)^[7] studied the influencing factors of consumers' purchase of pure electric vehicles from the perspectives of government incentive policies and perceived value, and proved that infrastructure construction affects welfare value, which in turn affects the willingness to purchase a car. Ma et al. (2021)^[6] established an evaluation index system of tourists' satisfaction with tourism public services based on SEM and IPA models. Among them, the first-order latent variables include tourism public information service, tourism public transportation service, tourism safety and security service, tourism public infrastructure service, administrative supervision service and tourism market service. The above first-order latent variables are used to observe the satisfaction of tourism public service system, which in turn affects the pre-trip expectation, overall satisfaction, willingness to revisit and willingness to recommend. Therefore, the following hypotheses are proposed in this paper:

H1: Infrastructure development (IC) has a positive effect on purchase Intention (PI).

H2: Public Transportation Services (PTS) has a positive effect on Purchase Intention (PI).

H3: market services (MS) have a positive effect on purchase Intention (PI).

H4: Tourism Supervision Service (TSS) has a positive effect on Purchase Intention (PI).

Zhao Z.X. (2023)^[8], in his study of customer purchase intention in the context of "live broadcasting + tourism", adopted the theory of consumer behavior, the theory of rational action, and established the SOR model to prove that consumers' perceived trust will be affected by the anchor's promotion of the product information, which will affect the purchase intention. Morgan et al. (1994)^[9] introduced the concept of "perceived trust" on the framework of BRA and defined trust as "the perception of confidence in the reliability and honesty of a trading partner". Consumers often have a sense of trust in a certain thing before generating consumption behavior. Wu X.L. and Xu P. (2023)^[10], in his study of consumers in "cloud tourism", based on the theory of BRA, verified that the degree of trust affects the overall attitude of customers, which influences the willingness to buy. Therefore, this paper proposes the following hypotheses:

H5: Perceived level of trust (PTL) has a positive effect on purchase intention.

2.2 Questionnaire Design

The model established in this paper is mainly constructed on the basis of the relevant literature of research scholars at home and abroad. Through the model structure, the

author refers to the questionnaire items, variable scales of some scholars as well as the conclusions drawn from the study, and follows the logic and prudence of the questionnaire structure to design the questionnaire. At the same time, combined with this paper's research on the factors influencing travelers' willingness to buy at Ruins of St. Paul's, as well as combined with the characteristics of Macau's tourist attractions, this paper refers to the "Classification, Survey and Evaluation of Tourism Resources" (Standard No. GB/T 18972-2017)^[11] to make moderate modifications to the questionnaire's question items, scales, and other aspects of the questionnaire, and to formulate a questionnaire that conforms to the purpose of this paper's study and the significance of the study.

In this paper, the full quantitative analysis of data is carried out, and the questionnaire designed for the study adopts a five-level Likert scale, and the respondents are evaluated according to their own experience feelings of field trips, and the evaluation results are quantified. The scale ranges from 1-5, with scores from highest to lowest indicating strongly agree (5), agree (4), not sure (3), disagree (2), and strongly disagree (1).

3 Questionnaire Data Collection and Analysis

This paper adopts the field survey method, randomly sampling tourists who are visiting the Ruins of St. Paul's and conducting the survey in crowded areas such as commercial streets and visitor centers near the attraction. The survey was conducted from November 7, 2023 to November 22, 2023, and a total of 212 questionnaires were distributed to tourists, 173 were recovered, and 151 were valid questionnaires, with a validity rate of 87.28%.

3.1 Reliability and Validity Analysis of the Scale

Reliability analysis: in the process of questionnaire design, this paper firstly did a pre-survey, according to the suggestions of respondents and scholars, the authenticity and consistency of the pre-survey questionnaire were tested and analyzed to ensure that the questionnaire topics were clearly stated and easy to be understood by the respondents. Before carrying out hypothesis testing and regression analysis, this paper needs to test the reliability and validity of the survey data in order to prove the authenticity and reliability of the data. The reliability coefficient of each variable in this paper is above 0.9, and the overall reliability value of the questionnaire is 0.901, which are all above the basic standard value of 0.7. In examining the reliability and validity analysis of the SCL-90 applied to college students in Guangdong Province, China, Hou Y.M. et al. (2020)^[12] conducted an internal consistency test and demonstrated that, in general, internal

consistency reliability are better when the Cronbach's α coefficient is greater than 0.7. Therefore, it is indicating internal consistency reliability are better, which suggests that the reliability of the questionnaire of this research is relatively satisfactory.

Validity test analysis: the KMO and Bartlett's sphericity test in this study yielded an overall KMO value of 0.890 for the questionnaire, an approximate chi-square of 517.386, and a significant value of 0.000 for Bartlett's sphericity test, which indicates moderate structural validity; if it is less than 0.01, it means that the original hypothesis is rejected and the questionnaire is reliable in terms of validity. The factor loading coefficients of the variables PTL, IC, MS, PI, PTS, and TSS are 0.857, 0.855, 0.849, 0.800, 0.789, and 0.775, respectively. If the factor

loading coefficients of the measured variables are all greater than 0.6 (in absolute value), then it indicates that there is a certain relationship between the variables.

3.2 Correlation Analysis Among Variables

In this paper, in order to verify whether the research model and the research hypotheses are valid, this paper used Pearson correlation to analyze the correlation of the six variables, namely, infrastructure construction (IC), public transportation services (PTS), market services (MS), tourism supervision services (TSS), perceived trust level (PTL), and Purchase Intention (PI), respectively, as shown in Table 2:

Tab. 2 Questionnaire Correlation Analysis

Considerations	IC	PTS	MS	TSS	PTL	PI
IC	1					
PTS	0.619**	1				
MS	0.696**	0.537**	1			
TSS	0.619**	0.524**	0.609**	1		
PTL	0.629**	0.634**	0.690**	0.629**	1	
PI	0.635**	0.591**	0.632**	0.457**	0.630**	1

** Significant correlation at the 0.01 level (two-tailed).

From the above table, it can be seen that the correlation coefficient between infrastructure development and public transportation services is 0.619; the correlation coefficient between infrastructure development and scenic market services is 0.696; the correlation coefficient between infrastructure development and tourism regulatory services is 0.619; the correlation coefficient between infrastructure development and perceived trust is 0.629; the correlation coefficient between infrastructure development and consumption willingness correlation coefficient is 0.635; the correlation coefficient between scenic market services and public transportation services is 0.537; the correlation coefficient between tourism regulatory services and public transportation services is 0.524; the correlation coefficient between perceived trust and public transportation services is 0.634; the correlation coefficient between consumption willingness and public transportation services is 0.591; the correlation coefficient between scenic market services and tourism regulatory services is 0.609; the correlation coefficient between scenic market services and perceived trust is 0.690; the correlation coefficient between scenic market services and willingness to consume is 0.632; the correlation

coefficient between tourism regulatory services and perceived trust is 0.629; the correlation coefficient between tourism regulatory services and willingness to consume is 0.457.

The correlation coefficient between perceived trust and at the same time, the correlation coefficients are significant at the 0.01 level (two-tailed), which indicates that the conclusion that "there is a linear positive correlation between the variables" is reliable.

4 Multiple Linear Regression Analysis

4.1 Analysis of Multiple Linear Regression Data

In this paper, infrastructure construction (IC), public transportation service (PTS), market service (MS), tourism supervision service (TSS) and perceived trust level (PTL) are used as independent variables, and purchase intention (PI) is used as the dependent variable for regression analysis. As shown in Table 3, R2 indicates the goodness of fit of the fitted regression equation, and the closer to 1, the better the fit.

Tab.3 Summary of Regression Models

Model	R	R ²	adjusted R ²	Errors in standardized estimates	Durbin Watson
1	.734	0.539	0.523	0.37171	1.935

As can be seen from Table 4, the adjusted R² is 0.523, indicating that the independent variables "infrastructure development", "public transportation services", "market services", "tourism supervision services" and "perceived trust" can explain 52.3% of the variance of the dependent variable "consumption willingness" in this study.

"Tourism Supervision Services" and "Perceived Trust Level" can explain 52.3% of the variance of the dependent variable "Purchase Intention". In general, Durbin-Watson is between 0-4, and the data are independent. The Durbin-Watson value of this study is 1.935, indicating that the sample data of this study is independent.

Tab.4 ANOVA Test

mould		square sum (e.g. equation of squares)	(number of) degrees of freedom (physics)	mean square	F	significance
1	regression (statistics)	23.46	5	4.692	33.958	.000
	residual	20.034	145	0.138		
	(grand) total	43.494	150			

As can be seen in Table 4, the F-value of this study is 33.958 with significant effect of P at 0.001 level, indicating that this study has been successfully modeled.

In this study, SPSS 26.0 software was used to analyze the influencing factors of tourists' willingness to spend money when visiting the Ruins of St. Paul's attractions, and a multiple linear regression model and regression equation were established based on the above variables. It is assumed that Y_{PI} has the following relationship with X_{PTL} , X_{IC} , X_{MS} , X_{PTS} , X_{TSS} :

$$Y_{PI} = \beta_0 + \beta_1 X_{PTL} + \beta_2 X_{IC} + \beta_3 X_{MS} + \beta_4 X_{PTS} + \beta_5 X_{TSS} + \epsilon \quad (1)$$

In the formula(1), Y_{PI} stands for "consumption willingness", X_{PTL} stands for "perceived trust", X_{IC} stands for "infrastructure construction", X_{MS} stands for "scenic spot market services", X_{PTS} for "public transportation services", X_{TSS} for "tourism regulatory services"; $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are regression coefficients, and the size of the absolute value of β represents the degree of explanation of each variable to Y_{PI} , and the plus and minus signs indicate the relationship with the dependent variable. The positive and negative signs indicate the positive and negative explanations with the dependent variable Y_{PI} respectively. ϵ represents the error term.

Tab.5 Regression Coefficients

Model	Unstandardized coefficient B	Standard Error	Standardized Coefficient Beta	t	Sig.	95.0% Confidence Interval for B		Covariance Statistics	
						lower limit	limit	tolerances	VIF
(Constant)	0.551	0.281		1.96	0.052	-0.005	1.107		
1 IC	0.287	0.102	0.252	2.826	0.005**	0.086	0.487	0.4	2.498
PTS	0.204	0.077	0.209	2.656	0.009**	0.052	0.355	0.514	1.947
MS	0.264	0.095	0.247	2.768	0.006**	0.075	0.453	0.398	2.51
TSS	-0.101	0.075	-0.107	-1.352	0.178	-0.248	0.047	0.503	1.987
PTL	0.235	0.089	0.236	2.628	0.01*	0.058	0.411	0.392	2.548

*P < 0.05, **P < 0.01

The findings in Table 5 show that:

(i) Infrastructure construction (IC) ($\beta = 0.252, P < 0.01$), public transportation services (PTS) ($\beta = 0.209, P < 0.01$), market services (MS) ($\beta = 0.247, P < 0.01$), and perceived trust level (PTL) ($\beta = 0.236, P < 0.05$) all affect purchase intention (PI). However, Tourism Supervision Service (TSS) ($\beta = -0.107, P = 0.178$) does not affect the purchase intention (PI).

(ii) Except for tourism supervision services (TSS), the t-value is greater than 1.96, which indicates that the ANOVA test of this study has a significant positive effect of infrastructure construction (IC), public transportation services (PTS), market services (MS), and perceived trust level (PTL) on purchase intention (PI) at the 0.01 significance level.

(iii) When analyzing the tolerance and inflation factor (VIF), if the tolerance value is less than 0.1 or the VIF value is greater than 10, it means that there is multicollinearity in the sample data. The sample data selected in this paper have tolerance values greater than 0.1 and VIF values less than 10, indicating that there is no serious multicollinearity in the independent variables of this study.

From the table 5, the regression equation is derived:

$$Y_{PI} = 0.551 + 0.236X_{PTL} + 0.252X_{IC} + 0.247X_{MS} + 0.209X_{PTS} - 0.107X_{TSS} \quad (2)$$

4.2 Validation Results for Residuals Following a Normal Distribution

In this paper, 151 sample sizes were selected to generate histograms and normal P-P plots of regression-standardized residuals by linear regression, i.e., Figures 3 and 4. where the mean of the histogram in Figure 3 is 6.64E-16, and the standard deviation is 0.983. In this paper, it is found that in the histogram of residuals, the highest point of the normal distribution curve and the highest point of the histogram converge to 0, indicating that the histogram of residuals obeys the normal distribution; in the P-P plot, the scatter points are basically distributed around the 45° diagonal of the first quadrant, which again indicates that the histogram of residuals obeys the normal distribution linear regression is reached in the normality condition. The P-P plot also indicates that the normality condition is satisfied.

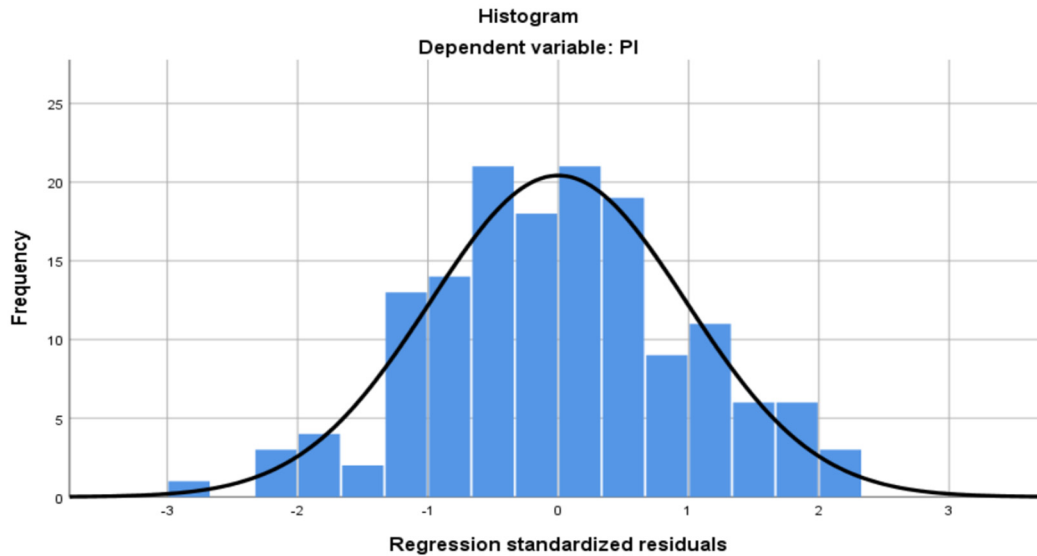


Fig. 3 Histogram of Residuals on Purchase Intention (PI)

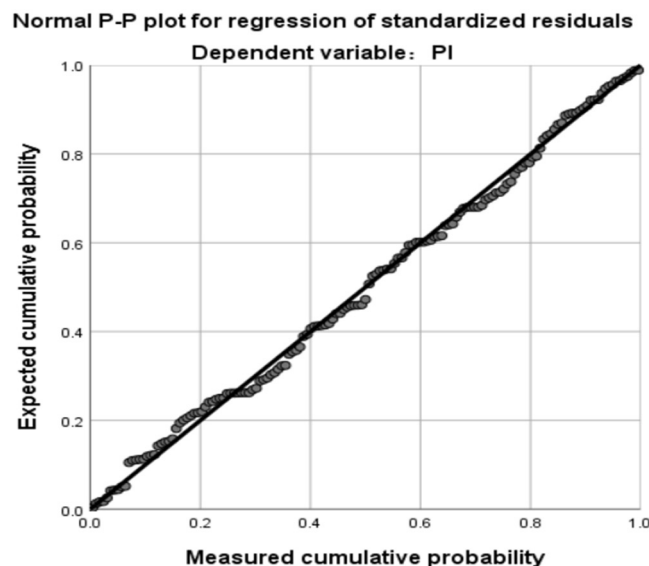


Fig. 4 P-P Chart on Purchase Intention (PI)

4.3 Multiple Linear Regression Conclusions

Based on the above data, this paper analyzes each independent variable that affects the willingness to consume:

Infrastructure construction (IC): the regression analysis results show that infrastructure construction has a positive impact on consumption intention, the hypothesis H_1 is established that the higher the degree of infrastructure construction improvement, the higher the consumption intention of travelers in the St. Paul's Square. Infrastructure construction is mainly reflected in the role of the government: the government takes appropriate government purchase measures to establish public facilities and provide services for the society through the rational allocation of resources and the precondition of satisfying public interests, which is conducive to the resolution of the conflict between economic policies and the redistribution of social resources. Therefore, the degree of government investment in a tourist attraction

affects the sense of experience of that traveler when visiting the attraction, and thus influences his or her purchasing decision for goods and services.

Public Transportation Services (PTS): The results of the regression analysis show that public transportation services have a positive effect on consumption sentiment, and the hypothesis H_2 holds. That is, the more convenient public transportation to the Ruins of St. Paul's will promote tourists to cultivate consumption sentiment at the attraction.

Scenic market services (MS): The results of regression analysis show that scenic market services have a positive impact on consumption intention, and the hypothesis H_3 holds. That is, the more the catering service, tour guide service, merchandise service and entertainment service of Ruins of St. Paul's meets the expectations of the general public, the stronger the intention of customers to spend their time and money to experience the local humanistic atmosphere and specialties of Macau will be.

Tourism Supervision Services (TSS): the results of regression analysis show that there is no significant impact

of tourism supervision services on consumption intention, and the hypothesis H_4 does not hold in this study. Therefore, to address this bias, this paper randomly interviews the respondents to explain the reason for the existence of this error. The results show that the vast majority of travelers visit St. Paul's with the main purpose of experiencing Macau's local flavors and cuisines and understanding the historical background of the Ruins of St. Paul's. Respondents also indicated that travelers understand the price level of the Macau region and spend money at the attractions for a memorable experience, yet they tend to be rarely influenced in their spending decisions by the reasonableness of the government's quality and price control and the integrity of the complaint mechanism. This further suggests that tourism regulatory services are not a major influence on customers' willingness to spend.

Perceived trust level (PTL): The results of regression analysis show that perceived trust level has a positive effect on consumption intention, hypothesis H_5 holds. Explained in terms of publicity content and cultural integration, the local government of Macao and tourism companies publish publicity of the Ruins of St. Paul's on WeChat and other websites, introducing the famous attractions of St. Paul's, Macao's specialties, and famous specialties (such as beef jerky and pork chop buns), which is no different from what customers see in their on-site visits. At the same time, travelers will be deeply attracted to the historical background of the Ruins of St. Paul's, and even macroscopically understand the history of Macau's economic and cultural development. Analyzing from the perspective of price proximity, travelers pay much attention to the cost-effectiveness of target goods and services. For example, mainland Chinese tourists compare the products or services of the same attribute with the local consumer prices in Macau, as a way to determine whether the various merchants in Macau have been inflating prices and generating the phenomenon of illusion theory, so as to validate the reasonableness of the prices set. Whether the mainland tour guide group caters to the needs and spending power of the tourists, and formulates a tour guide that meets the taste of the tourists.

5 Future Prospects of Macau Tourism

According to the results of linear regression, it is concluded that the four variables of "infrastructure construction, scenic spot market service, perceived trust, and public transportation service" have a positive influence on tourists' consumption intention, and the degree of influence decreases in order. This paper takes the Ruins of St. Paul's as a pilot survey and analyzes the indicators of tourists' satisfaction through linear regression to map the development of tourism in the whole region of Macao, aiming at exploring the direction of the future development of the tourism industry in Macao and gaining insights into the paths of improving and perfecting the existing problems of the tourism industry in Macao, as well as looking forward to the future. Based on this, this paper gives suggestions from the perspective of Macau's tourism industry:

5.1 Government Sets Reasonable Prices to Stimulate Tourism Consumption

For Mainland residents, Macau's high prices may be a disadvantage. At the macro level, Macau's tourism economy is developing too fast and prices are rising. According to the theory of supply and demand, if the conditions are the same, the higher the price of common goods and services, the lower the demand from customers. When the demand is reduced to a certain level, it will inhibit the development of tourism. The more the prices of goods and services of the net attractions, including the Ruins of St. Paul's, tend to be higher than the local average prices of the same category in Macau during the same period, the greater the effect of the emergence of a disincentive is likely to be. Therefore, price control by the Government is crucial. Only when the prices set are in line with consumer expectations are tourists likely to make purchasing decisions accordingly. Besides, in view of the problem of land tension in Macao, Lu S.X. (2021)^[13] discussed the feasibility of land space development in Macao from the perspectives of evaluating the effectiveness of the existing development practices and the constitutionality of "one country, two systems". Macao has been able to increase its land area mainly through land reclamation, land leasing and regional cooperation, effectively alleviating the problem of land tension and providing more opportunities for the development of Macao's tourism industry.

5.2 Consolidation of the Position of Macao's Tourist Attractions in the Global Tourism Sector

Against the backdrop of Xi Jinping's "One Belt, One Road" concept, Macao has taken the initiative to cooperate with the countries along the route to strengthen cultural exchanges and trade in commodities in tourism; at the same time, with the construction of the Guangdong-Hong Kong-Macao Greater Bay Area, the people of Hong Kong and the mainland have become more closely connected, and the number of exchanges between the governments of the different regions has increased, resulting in a richer and richer exchange of resources in the tourism industry. At the same time, Macao has a close relationship with Portuguese-speaking countries. According to Chen (2023)^[14], the cooperation framework document on the joint construction of the "Belt and Road" between Chinese and Portuguese-speaking countries has been signed, and the cooperation platform of the "Belt and Road" allows Portuguese-speaking countries to access China's preferential lending policies, which provides them with a reserve of capital, thus improving the quality of life of the Portuguese-speaking countries. The "Belt and Road" cooperation platform allows Portuguese-speaking countries to access China's favorable loan policies, providing them with financial reserves and thus improving their quality of life. Mao Y.H. and Chen (2023)^[15] was pointed out that the bilateral and multilateral cooperation between Portuguese-speaking countries has contributed to the construction of the Sino-Portuguese platform in Macao and to the improvement of the policy of centralized governance of Macao. Therefore, Macao should capitalize

on these opportunities for cooperation, taking advantage of its strengths and complementing its weaknesses in terms of tourism mechanisms and macroeconomics, and seizing the opportunity.

5.3 Keeping Up with the Trend of the Times and Realizing Tourism Science and Technology Innovation

At tourist attractions, a tour guide player can be designed. When walking to an attraction, the player will automatically play information about the attraction, so that tourists can better experience the charm of the city of Macao, and at the same time be able to play the role of a smart city. The Macau government has recently improved the transportation arrival system by installing electronic displays (showing local time, temperature and number of arrivals) at bus stops, while Macau needs to implement the construction and development of the Tourism Information Exchange Platform, which will be a manifestation of the city's technological advancement.

6 Shortcomings and Prospects of the Study

Although the variables studied in this research have been verified as reasonable by other scholars, in real life, there may also be other factors that affect tourists' willingness to spend. Therefore, the research results obtained in this paper are somewhat different from the actual situation. This paper should continue to expand the data acquisition channels, appropriately expand the sample size, and introduce other models, moderately increase the relevant variables, and consider as many influencing factors as possible.

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