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An Analysis of Attractiveness Factors in Medical Tourism (Based on the Cases of China and Russia)

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Abstract. Medical tourism in the countries participating in the Belt and Road Initiative is experiencing significant growth. The article aims to identify the impact of various external stimuli on tourists' internal evaluations and behavior in the field of medical tourism through the Stimulus–Organism–Response (S–O–R) model. The article researches the influence of tourists' attitudes, perceived value, perceived costs, facilitating conditions, IT support, tourist satisfaction, and travel readiness. A non-probability sampling method was used among 640 respondents over the age of 18 from Russia and China. Data were collected using five-point Likert-scale questionnaires, and the analysis was conducted using PLS-SEM algorithm. The structural model demonstrated a coefficient of determination of $R^2 = 0.597$, explaining 59.7% of the variance in the model. Tourists' attitudes, perceived value, perceived costs, and IT support showed a significant positive effect on satisfaction and travel readiness. Facilitating conditions influenced satisfaction but did not affect travel readiness. Tourist satisfaction acted as a significant mediator between the studied factors and medical tourism behavior.
Keywords: tourists' attitudes, perceived value, perceived costs, facilitating conditions, IT support, tourist satisfaction, travel readiness, medical tourism, the Belt and Road Initiative, consumer behavior.

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1. Introduction

Medical travel, defined as pursuing healthcare across international borders, has undergone substantial growth in Belt and Road Initiative (BRI) nations, where infrastructure investment and cross-border cooperation have enabled access to affordable and high-quality care [27]. These countries are strategically positioned to become emerging hubs for cross-border healthcare, supported by enhanced infrastructure, affordable services, and cultural ties.

Through the Stimulus–Organism–Response (S-O-R) model [18], this research aims to discover how diverse external cues influence tourists' internal assessments and medical travel intention. The S-O-R model, initially conceived in environmental psychology, has been extensively utilized in tourism research to elucidate the impact of external influences (stimuli) on cognitive and emotional states (organism), resulting in behavioral outcomes (response) [6].

Within this framework, five principal stimuli are identified: Tourist Attitude (TA), Perceived Value (PV), Perceived Cost (PC), Facilitating Conditions (FC), and IT Support (ITS). These stimuli affect critical organismic variables, namely Tourist Satisfaction (TS) and Willingness to Travel (WT), which serve as psychological mediators between external circumstances and behavioral intentions in medical tourism decision-making. The response variable, Medical Travel Behaviour (MTB), represents the culmination of these internal reactions.

Existing studies tend to focus on service quality and cost-effectiveness as determinants of MTB [12], but integrated psychological and technological factors such as tourist attitude and IT support remain underexplored in holistic models. Cross-national comparative studies in the context of BRI countries are sparse, leaving a gap in understanding how institutional, cultural, and digital readiness shape MTB [28].

This study aims to investigate how important stimuli (TA, PV, PC, FC, ITS) affect TS and WT within medical tourism, examining the mediating functions of TS and WT in influencing MTB, and providing practical insights for policymakers and healthcare practitioners in BRI nations.

2. Theory and Hypothesis Development

The Stimulus–Organism–Response theory, initially developed by Mehrabian and Russell [18], delivers a psychological framework for understanding how external environmental cues affect individuals' internal emotional and cognitive states, eventually leading to specific behavioral outcomes. The S-O-R model provides a useful framework for studying factors that impact patients' satisfaction, emotional reactions, and intentions to seek treatment abroad.

Tourist Attitude

Tourist Attitude serves as the foundational psychological driver of medical travel decisions, encompassing both cognitive and affective evaluations of potential healthcare destinations [21]. Attitudes are shaped by several variables, including previous experiences with overseas travel or healthcare, anticipated health risks, cultural compatibility, and belief in the quality and safety of foreign healthcare facilities [14]. A traveler who has previously undergone a successful medical procedure abroad is more inclined to perceive similar sites favorably, hence reinforcing their decision to revisit.

H1a: Tourist Attitude has a significant effect on Tourist Satisfaction. H1b: Tourist Attitude has a significant effect on Willingness to Travel.

Perceived Value and Perceived Cost

Perceived Value represents the trade-off between service quality and financial spending, while Perceived Cost includes both direct and indirect expenditures like healthcare and transportation [11]. PV operates as a multidimensional construct encompassing functional value (technical quality of medical procedures), emotional value

(peace of mind and comfort), and social value (prestige associated with foreign treatment) [23]. PC extends beyond monetary factors to include psychological costs (treatment anxiety) and opportunity costs (time away from work), creating a "hidden cost calculus" that varies by demographic [11].

H2a: Perceived Value has a significant effect on Tourist Satisfaction. H2b: Perceived Value has a significant effect on Willingness to Travel. H2c: Perceived Cost has a significant effect on Tourist Satisfaction. H2d: Perceived Cost has a significant effect on Willingness to Travel.

Facilitating Conditions

Facilitating Conditions encompass accessibility of transportation options, availability of translators or multilingual personnel, convenience of scheduling appointments, hospital infrastructure, and visa flexibility [2]. These conditions play an essential enabling role by lowering the perceived complication and hazard of receiving medical care overseas, especially for first-time or long-distance travelers.

H3a: Facilitating Conditions have a significant effect on Tourist Satisfaction. H3b: Facilitating Conditions have a significant effect on Willingness to Travel.

IT Support

The increasing importance of Information Technology in medical tourism has transformed how travelers assess and interpret healthcare services internationally. Tourists depend on hospital websites, accreditation platforms, treatment comparison portals, and government-sanctioned directories to assess destination quality [9]. The integration of telemedicine and virtual consultation tools before travel significantly affects tourists' attitudes and satisfaction by providing early reassurance about medical procedures and provider expertise [24].

H4a: IT Support has a significant effect on Tourist Satisfaction. H4b: IT Support has a significant effect on Willingness to Travel. H5: IT Support has a significant effect on Medical Travel Behavior.

Tourist Satisfaction and Willingness to Travel

Tourist Satisfaction encapsulates travelers' emotional and cognitive assessments of a destination's comprehensive offerings, encompassing healthcare service quality, hospitality infrastructure, cultural sensitivity, and perceived safety [19]. Willingness to Travel represents the psychological readiness, motivational state, and intentional strength behind medical travel decisions, serving as a proximal predictor of behavior [5].

H6: Tourist Satisfaction has a significant effect on Medical Travel Behavior. H7: Willingness to Travel has a significant effect on Medical Travel Behavior.

Mediation Effects

H8a-e: Tourist Satisfaction mediates the relationship between TA, PV, PC, FC, ITS and Medical Travel Behavior. H9a-e: Willingness to Travel mediates the relationship between TA, PV, PC, FC, ITS and Medical Travel Behavior.

The proposed theoretical model is presented in Figure 1.

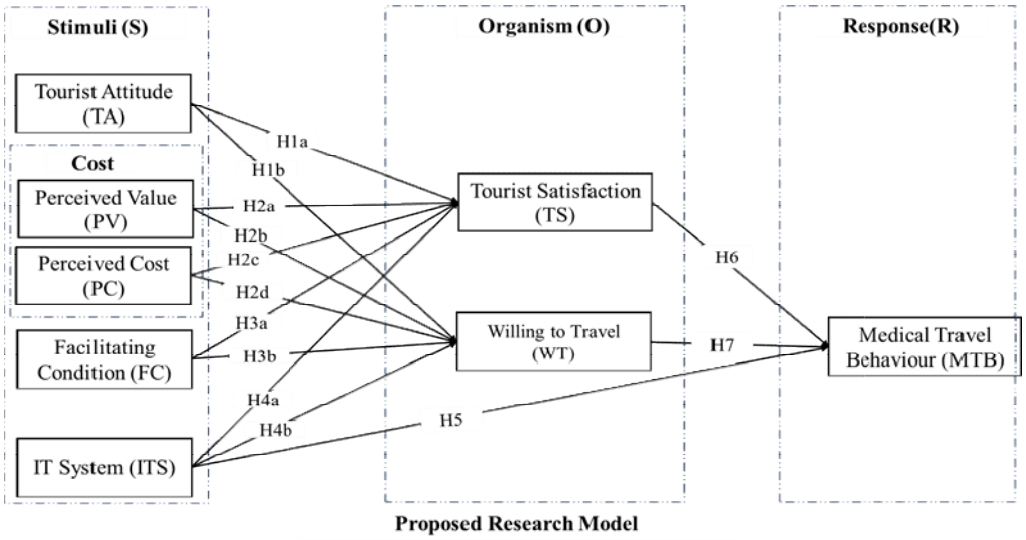

Figure 1: Proposed model

3. Methodology

Study Design. This study focuses on medical travel behavior in BRI countries, specifically selecting China and Russia as research contexts. These countries have increasingly positioned themselves as active players in the global medical tourism market, implementing strategic initiatives to attract international patients [13].

Sample and Data Collection. A non-probability sampling method was employed, targeting individuals aged 18+ with previous experience using medical travel-related technology. A total of 800 questionnaires were distributed (China: 550, Russia: 250), with 698 responses received, yielding an 87% response rate. After rejecting incomplete replies (58 participants), the final sample comprised 640 stable responses.

Measurement. Variables were assessed using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). Measurement items were adapted from previous research with similar conceptual definitions.

Table 1: Variables and Sources

Variable	*Items*	*Deleted Items*	*Sources*
Tourist Attitude (TA)	4	-	[1]; [8]
Perceived Value (PV)	4	PV4	[25]; [15]
Perceived Cost (PC)	4	-	[11]
Facilitating Condition (FC)	4	FC2	[3]; [17]
IT Support (ITS)	5	ITS5	[9]
Tourist Satisfaction (TS)	4	TS4	[11]; [17]
Willing to Travel (WT)	4	WT3	[5]
Medical Travel Behavior (MTB)	5	-	[4]

Data Analysis

PLS-SEM techniques were employed using Smart-PLS 4.1.1.2 for structural equation modeling, demonstrating good efficacy for statistical data analysis [22]. This methodology was optimal for testing hypotheses given the complex and exploratory nature of the study.

Table 2: Demographic Data

Characteristic	*Options*	*Frequency*	*(%)*
Gender	Men	291	45,47
	Women	349	54,53
Age	18–25	111	17,34
	26–35	199	31,09
	36–45	173	27,03
	45–55	106	16,56
	56-above	51	7,97
Academic qualifications	High school	71	11,09
	College	170	26,56
	Undergraduate	279	43,59
	Master/PhD	120	18,75
Health Insurance Coverage	Public	199	31,09
	Private	249	38,91
	Both	81	12,66
	None	111	17,34

4. Results

Common Method Bias. Harman's one-factor analysis and Variance Inflation Factor (VIF) test were employed. Results revealed that a singular unrotated factor did not exceed 50% of total variance, confirming the absence of common method bias [20]. All independent constructions had VIF values below 3.

Reliability and Validity

Table 3: Reliability and Validity of Model Measurement

Items	*FL*	*CA*	*CR*	*AVE*
TA1	0,861	0,891	0,891	0,754
TA2	0,884			
TA3	0,886			
TA4	0,841			
PV1	0,868	0,891	0,891	0,754
PV2	0,823			
PV3	0,849			
PC1	0,901	0,900	0,902	0,769
PC2	0,873			
PC3	0,862			
PC4	0,872			
FC1	0,863	0,872	0,875	0,723
FC3	0,872			
FC4	0,811			

Items	*FL*	*CA*	*CR*	*AVE*
FC5	0,853			
TS1	0,809	0,797	0,807	0,712
TS2	0,893			
TS3	0,826			
WT1	0,796	0,887	0,889	0,821
WT2	0,957			
WT4	0,957			
MTB1	0,853	0,888	0,890	0,691
MTB2	0,839			
MTB3	0,775			
MTB4	0,860			
MTB5	0,826			

Note: FL = Factor Loading; CA = Cronbach's Alpha; CR = Composite Reliability; AVE = Average Variance Extracted

All components were substantially loaded on their respective structures at $p < 0.001$. Composite reliability values exceeded 0.6, signifying dependability. AVE values for all constructs surpassed the threshold of 0.5, and composite reliability values demonstrated good reliability.

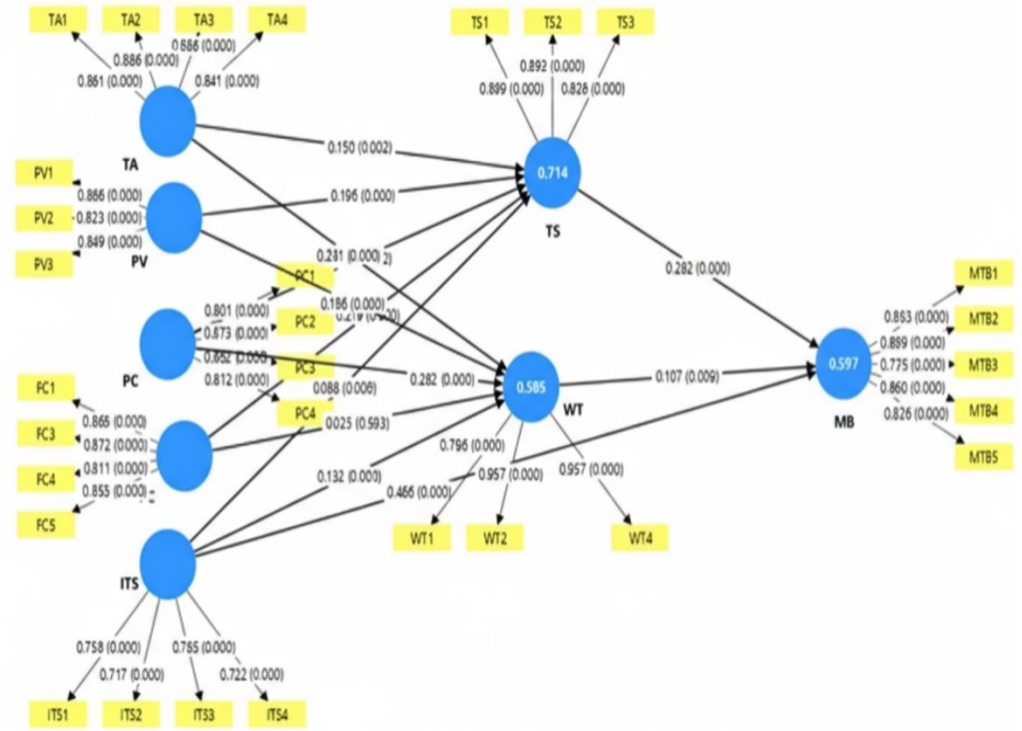

Figure 2: Combine Results of the Model

Discriminant Validity

Table 4: Discriminant Validity (HTMT Ratio)

	FC	*ITS*	*MTB*	*PC*	*PV*	*TA*	*TS*	*WT*
FC								
ITS	0,898							
MTB	0,688	0,896						
PC	0,646	0,681	0,788					
PV	0,622	0,628	0,622	0,892				
TA	0,616	0,657	0,662	0,665	0,845			
TS	0,669	0,664	0,807	0,691	0,686	0,851		
WT	0,714	0,768	0,678	0,604	0,691	0,782	0,804	

All samples had HTMT ratio values within the 0.90 threshold, indicating good discriminant validity [10].

Structural Model

A bootstrapping technique of 5000 sub-samples was performed using Smart-PLS. The coefficient of determination R^2 was 0.597, demonstrating that 59.7% of the variance in the model was explained. The model showed sufficient predictive relevance (MTB = 0.624; TS = 0.712; WT = 0.596). Model fit indices SRMR = 0.056 indicated good model fit [7].

Table 5: Structural Model Path Coefficients

Hypothesis	*Paths*	*β*	*T-statistics*	*P-values*	*Result*
H1a	TA → TS	0,150	3,046	0,002	Supported
H1b	TA → WT	0,231	4,834	0,000	Supported
H2a	PV → TS	0,196	5,257	0,000	Supported
H2b	PV → WT	0,186	3,966	0,000	Supported
H2c	PC → TS	0,297	6,562	0,000	Supported
H2d	PC → WT	0,282	5,490	0,000	Supported
H3a	FC → TS	0,219	6,190	0,000	Supported
H3b	FC → WT	0,025	0,535	0,593	Not Supported
H4a	ITS → TS	0,088	2,728	0,006	Supported
H4b	ITS → WT	0,132	3,316	0,001	Supported
H5	ITS → MTB	0,466	8,449	0,000	Supported
H6	TS → MTB	0,282	6,792	0,000	Supported
H7	WT → MTB	0,107	2,631	0,009	Supported

Mediation Analysis

Table 6: Mediating Effects Results

Hypothesis	*Paths*	*β*	*T-statistics*	*P-values*	*Result*
H8a	TA → TS → MTB	0,042	2,964	0,003	Supported
H8b	PV → TS → MTB	0,055	3,987	0,000	Supported
H8c	PC → TS → MTB	0,084	4,807	0,000	Supported

H8d	FC → TS → MTB	0,062	4,119	0,000	Supported
H8e	ITS → TS → MTB	0,025	2,503	0,012	Supported
H9a	TA → WT → MTB	0,025	2,240	0,025	Supported
H9b	PV → WT → MTB	0,020	2,344	0,019	Supported
H9c	PC → WT → MTB	0,030	2,555	0,011	Supported
H9d	FC → WT → MTB	0,003	0,458	0,647	Not Supported
H9e	ITS → WT → MTB	0,014	1,988	0,047	Supported

5. Discussion

This research provides a comprehensive analysis of factors influencing medical travel behavior, highlighting the interplay of tourist attitude, perceived value, perceived cost, facilitating conditions, and IT support within the S-O-R framework. The findings validate that tourist attitude serves as a fundamental psychological determinant, favorably affecting both tourist satisfaction and willingness to travel, consistent with literature emphasizing that travelers' inclinations towards medical tourism are influenced by previous experiences, perceived health risks, and confidence in medical services.

Perceived value and perceived cost significantly influenced outcomes, with both showing positive correlations with satisfaction and willingness to travel. The positive correlation of perceived cost indicates a complex understanding within the "value-cost paradox," suggesting that when expenses are regarded as reasonable, transparent, or justified by superior service quality, they enhance rather than diminish satisfaction. This phenomenon supports the notion that destinations effectively combining high-quality services with reasonable pricing achieve optimal demand.

Facilitating conditions substantially impacted tourist satisfaction but showed no significant direct influence on willingness to travel. This indicates that while enhanced infrastructure and logistical assistance are crucial for positive post-decision experiences, they may not serve as primary factors initially compelling individuals to choose medical travel. The enabling role of facilitating conditions becomes evident once the initial decision threshold is crossed.

IT Support significantly affected tourist satisfaction, willingness to travel, and had direct impact on medical travel behavior. This underscores the pivotal function of digital platforms, telemedicine, online evaluations, and AI-driven personalization tools in enhancing trust, transparency, and suitability for international patients. These technologies mitigate uncertainty and perceived dangers, essential for influencing medical travel decisions in the digital age.

The mediation analysis confirmed the critical roles of tourist satisfaction and willingness to travel as psychological intermediaries. Tourist satisfaction strongly moderated the relationships among all antecedent variables and medical travel behavior, demonstrating that positive emotional and cognitive assessments are essential for fostering destination loyalty and word-of-mouth recommendations. Willingness to travel mediated most relationships except between facilitating conditions and medical travel behavior, corroborating that while quality facilities enhance experience, they may not directly motivate initial travel decisions.

6. Conclusion

This comparative analysis among BRI nations identifies distinct factors influencing visitor perceptions and destination appeal in medical tourism. The study demonstrates that positive tourist attitude, favorable perceived value-cost balance, and robust IT

support constitute the most critical factors influencing medical tourism through their effects on tourist satisfaction and willingness to travel. Facilitating conditions, while vital for enhancing satisfaction, appear less influential on initial travel motivation.

For enhancing global competitiveness in medical tourism, strategic initiatives must prioritize service transparency, patient communication, and cultural sensitivity to cultivate favorable tourist attitudes. Balancing perceived value and cost remains essential for demand generation, while investing in robust IT infrastructure and leveraging big data for personalized services can markedly enhance patient trust and satisfaction. BRI countries must strategically address cultural expectations, institutional trust, and service transparency to transform positive perceptions into genuine medical travel intentions.

The study's limitations include the use of non-probability sampling and focus on China and Russia, which may restrict generalizability to all BRI nations. Future research should expand scope to include broader BRI countries using probability sampling methods and examine specific impacts of geopolitical factors and varying healthcare regulatory frameworks on patient decision-making.

Conflict of interests: There is no conflict of interest among the authors.

Ethics approval: This study was reviewed and approved by the concerned offices.

Consent to participate: Informed consent was obtained from all individual participants included in the study.

Data availability: The datasets generated during and/or analyzed during the current study are available from the corresponding author upon reasonable request.

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Анализ факторов привлекательности в медицинском туризме (на материале Китая и России)

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Аннотация. Медицинский туризм в странах инициативы «Пояс и путь» показывает значительный рост. Проведенное исследование было направлено выявление влияния различных внешних стимулов на внутренние оценки туристов и их поведение в области медицинского туризма через модель «Стимул — Организм — Реакция». Исследуется влияние отношения туристов, воспринимаемой ценности, воспринимаемых затрат, способствующих условий, ИТ-поддержки, удовлетворенности туристов и готовности к путешествиям. Использовался метод невероятностной выборки среди 640 респондентов старше 18 лет из России и Китая. Данные собирали с помощью анкет по пятибалльной шкале Лайкерта, анализ проводился с использованием PLS-SEM. Структурная модель продемонстрировала коэффициент детерминации R^2 = 0,597, объясняя 59,7% дисперсии модели. Отношение туристов, воспринимаемая ценность, воспринимаемые затраты и ИТ-поддержка показали значительное положительное влияние на удовлетворенность и готовность к путешествиям. Способствующие условия влияли на удовлетворенность, но не на готовность к путешествиям. Удовлетворенность туристов выступила значимым посредником между изученными факторами и поведением медицинского туризма.
Ключевые слова: отношение туристов, воспринимаемая ценность, воспринимаемые затраты, способствующие условия, ИТ-поддержка, удовлетворенность туристов, готовность к путешествиям, медицинский туризм, инициатива «Пояс и путь», поведение потребителей.

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