

Model Development & Consideration of its potential
as the Innovative Tools through Application
of Multi-AI based Technology to Domestic
and International Tourism Issues Research

다중 AI 기술의 국내·외 관광 이슈 연구에의 적용을 통한
모델 개발과 혁신의 도구로서 가능성 고찰



2025. 7. 4.

Han, Hag-Chin | Hannam University, Korea

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1. Introduction



Educational Goals

in Hotel and Airline Management

호텔항공경영학과 교육목표 인식

1 안

교육목표는

첫째, 변화하는 글로벌 호텔·항공 기업에서 요구하는 핵심 역량을 갖추기 위해 체계적인 이론 교육과 실무 중심의 기업 맞춤형 프로그램을 운영합니다. 이를 통해 기업 현장과 완벽한 조화로 완성되는 전문 인재를 양성합니다.

둘째, 글로벌 호텔·항공 산업을 핵심으로 관광, 컨벤션·전시, 외식, 복합 리조트 등 다양한 산업 분야로 진출 시 맞춤형 진로 설계가 가능하도록 교육과정을 제공합니다. 또한, 공공기관 취업 및 국내·외 대학원 진학자를 위한 맞춤형 트랙을 운영하는 등 개개인의 목표에 최적화된 경력개발을 지원합니다.

셋째, 글로벌 무대에서 탁월한 경쟁력을 갖추기 위해 외국어 교육, 전문 자격증 취득, 국내·외 인턴십 프로그램을 강화하고 있으며, 글로벌 감각을 지닌 창의적 리더로 성장할 수 있도록 지도하며 전 세계와 교류할 수 있도록 폭넓은 네트워크 기회를 제공합니다.

Educational goals,

First, to equip students with the core competencies required by the ever-evolving global hotel and airline industries, we operate systematic theoretical education and hands-on, company-customized programs. Through this, we nurture professionals who are perfectly aligned with real-world corporate environments.

Second, focusing on the global hotel and airline industries, we offer curricula that support personalized career planning across various sectors including tourism, conventions and exhibitions, food service, and integrated resorts. In addition, we operate tailored tracks for those seeking employment in public institutions or pursuing graduate studies in Korea and abroad, thereby supporting optimized career development for each individual's goals.

Third, to foster outstanding global competitiveness, we strengthen foreign language education, professional certification acquisition, and domestic and international internship programs. We guide students to grow into creative leaders with a global perspective and provide extensive networking opportunities to engage with the world.

Educational Goals in Hotel and Airline Management

호텔항공경영학과 교육목표 인식

2안

교육목표는

첫째, 호텔·항공 산업의 현장 수요에 부합하는 실무 중심 교육을 통해, 즉시 투입 가능한 직무 수행 능력을 갖춘 전문가를 양성합니다.

둘째, 다양한 국가와 문화에 대한 이해를 기반으로, 글로벌 관광·항공 서비스 환경에서 경쟁력 있는 외국어(특히 영어 및 제2외국어) 능력을 강화합니다.

셋째, 호텔·항공·관광 분야 간 융합을 통해 복합적 문제를 해결할 수 있는 창의적 사고력과 기획력을 기릅니다.

넷째, 고객 중심 서비스 마인드와 윤리 의식을 갖춘 인재 양성을 위해, 인성교육과 리더십 교육을 병행합니다.

다섯째, 스마트 관광, 항공 예약 시스템, 빅데이터 분석 등 디지털 전환에 대응하는 ICT 융합 역량을 배양합니다.

Educational goals,

First, we cultivate professionals equipped with job-ready practical skills through field-oriented education that meets the demands of the hotel and airline industries.

Second, based on an understanding of diverse countries and cultures, we enhance foreign language skills—especially English and a second foreign language—for competitiveness in the global tourism and aviation service environment.

Third, through the convergence of the hotel, airline, and tourism fields, we develop creative thinking and planning abilities to solve complex problems.

Fourth, to foster talent with a customer-centered service mindset and a strong sense of ethics, we provide both character education and leadership training.

Fifth, we build ICT convergence capabilities to respond to digital transformation, including smart tourism, airline reservation systems, and big data analysis.

Quiz(1)

작성자 : 한학진 | 작성일 : 3월 25일 오전 9:15

조회수 : 221

다음에 제시하는 한남대학교 호텔항공경영학과 교육목표에 대한 여러분의 의견을 내일까지 주시기 바랍니다.

참고로 본 내용은 2026년 입시설명회 시 학과홍보자료로 활용할 계획입니다.

파이팅입니다.

호텔항공경영학과 교육목표(학과홍보용).hwp

< 이전

다음 >

14개의 댓글

황민아(20####05) 3월 25일 오후 8:49

결론적으로, 두 안 모두 좋은 점이 있지만, 저는 2안이 조금 더 끌립니다. 2안은 실무 중심으로 현장에 바로 적용할 수 있는 능력을 키워주는 것 같아서 실제로 일할 때 도움이 많이 될 것 같습니다. 요즘은 디지털 기술이나 ICT 기술이 중요한 시대이기 때문에, 그런 부분을 배울 수 있다는 점도 굉장히 매력적이라고 생각합니다. 다만, 1안처럼 다양한 산업 분야로 진출할 수 있는 기회가 많다는 점도 좋지만, 실무 경험을 쌓는 게 더 중요하다고 느껴져서 2안이 더 마음에 듭니다.

임고은(20####34) 3월 25일 오후 8:52

1안은 기업 맞춤형 교육과 대학원 진학 지원을 통해 학문적 실무적 경쟁력을 강화하고, 자격증 취득 지원으로 취업 경쟁력을 높이는 강점이 있다고 보입니다. 반면, 2안은 실무 중심 교육과 창의적 문제 해결 능력을 강조하지만 대학원 진학과 자격증 취득 지원이 부족합니다. 그러나 2안에서 강조한 빅데이터 분석과 디지털 전환은 중요하므로 1안에 이를 포함시키면 더 효과적인 교육 과정이 될 것 같습니다. 따라서 1안을 기본 방향으로 하되, 빅데이터 분석과 스마트 관광의 내용을 포함하면 좋을 것 같습니다.

조용준(20####24) 3월 25일 오후 10:24

1안은 기업 맞춤형 네트워크를 강조하고 있으며, 다양한 진로설계와 국제적 감각 배양에 강점을 두고 있습니다. 반면 2안은 실무중심, 글로벌 경쟁력, 창의적 문제 해결 능력, 윤리 의식, 디지털 기술 활용 능력을 강조하고 있는 것 같습니다. 기업과의 협력 및 취업을 좌우선으로 한다면 1안이 유리하고 실무능력, 디지털 역량 창의력 배양을 통한 다양한 커리어 개발을 원한다면 2안이 효과적인 것 같습니다. 개인적으로 미래 트렌드를 고려했을 때 2안이 더 균형잡힌 교육 목표라고 생각합니다. 특히 디지털 기술, 창의적 문제 해결력, 윤리적 리더십 등은 향후 호텔, 항공, 관광 산업에서 더욱 중요해질 요소이기 때문입니다.

김예진(20####71) 3월 25일 오후 11:29

1안은 기업 맞춤형 교육과 실무 중심 학습을 통해 졸업 후 즉시 활용 가능한 능력을 기르는 데 초점을 맞추고 있어 단기적인 취업 경쟁력 확보에 유리하지만 2안은 보다 미래 지향적이며 다양한 역량을 갖춘 인재를 양성하는데 적합해 보입니다. 디지털 전환 및 융합 교육을 강조하는 부분이 호텔·항공 산업의 미래발전에 있어 호텔·항공 산업의 트렌드에 적합하다고 생각합니다. 따라서 1안과 2안 모두 장점이 있지만, 2안을 기본으로 1안의 장점인 맞춤형 실무 교육을 포함한다면 좋을것 같습니다.

정지훈(20####12) 3월 26일 오전 00:45

1안을 보고 취업을 하는 선배님들을 먼저 떠올리게 되었습니다. 양성되시는 과정을 꼭 뒤에서 보고 배웠습니다. 원하는 수업이나 강의를 맞추어 들을수 있는 맞춤형 진로 설계가 실제로 이루어지고 있었고 국내적으로 많은 실습과 인턴십이 제공되었습니다. 하지만 국외적으로 실습이나 인턴십이 제공되지 않고 있지만 홍보나 공지의 부재, 또는 이것이 아예 이뤄지지 않고 있는 것이 현실이라고 생각합니다. 해외 체류의 기회와 해외사업 프로젝트 및 액션러닝이 이루어지면서 세계적인 감각이나 안목을 넓히고 글로벌 리더로 성장해 나가는 것보다는 오히려 현재로써는 그러한 글로벌 리더들을 뒷받침해주는 "글로벌 팔로워" 양성에 가깝다고 생각합니다. 1안과 2안을 살펴보면 다른점은 명확합니다. 1안 보다 2안은 현대적인 교육목표를 잡았다고 생각합니다. 수년 전까지만해도 고객을 위한 서비스 정신과 외국어 (영어, 스페인어 등) 정도만 되는 직원이 필요했다면 현대에는 과거의 기준을 바탕으로 빅데이터 분석, 스마트 관광에 발빠르게 인공지능의 윤리적인 방안을 검토하며 창의적인 의견을 피력하는 직원이 필요하기 때문에 교육 목표로써는 좋은 방안이라고 생각합니다. 수백가지의 알뜰한 교육 목표보다는 선배님들의 사례집이나 전세계의 한남대학교 호텔항공경영학과(컨벤션호텔경영학과)를 졸업한 문화관광경영인들의 성공 사례나 의견들을 듣고 정리한것이 한남대학교 호텔항공경영학과 홍보로써는 최고일것 같습니다.

이찬희(20####15) 3월 26일 오전 10:13

1안과 2안 모두 장점이 있지만, 저는 1안을 기본으로 하면서 2안의 디지털 기술 역량 강화 요소를 추가하는 것이 가장 이상적이라고 생각합니다. 1안은 맞춤형 진로 설계와 글로벌 경쟁력 강화를 강조하며, 다양한 진로를 모색할 수 있다는 점에서 매력적이었습니다. 특히 2번 문항처럼 여러 산업으로 진출할 기회를 제공하는 점이 강점으로 느껴졌습니다. 하지만 요즘은 빅데이터 분석, 스마트 관광, AI 기술 등 디지털 역량이 필수적인 시대이기 때문에, 2안의 마지막 항목처럼 ICT 융합 교육이 포함되면 더욱 실용적인 교육 목표가 될 것이라 생각합니다.

우도은(20####84) 3월 26일 오전 11:22

1안은 호텔·항공 산업뿐만 아니라 관광, 컨벤션, 외식, 리조트 등 다양한 산업과의 연계를 강조하며, 외국어 교육과 네트워크 기회를 통해 글로벌 리더십을 키우는 부분도 강조하고 있고 2안은 보다 실무 중심의 교육과 즉시 투입 가능한 인재 양성에 초점을 맞추고 있으며, 창의적 사고력과 문제 해결 능력을 강조하고 있습니다. 개인적으로는 1안에서 장기적인 비전이 돋보이는 반면, 2안은 보다 현실적인 교육 방향과 실질적인 취업 역량 강화에 초점을 맞추고 있어 실용성이 더 높아보입니다

김예현(20####33) 3월 26일 오후 1:09

1안은 자신이 선호하는 기업 맞춤형 교육과 우리 학과에서 나아갈 수 있는 다양한 진로들을 더욱 잘 알 수 있는 목표입니다. 우리과 이들을 생겼했을 때 단편적으로 생각하게 되는 호텔리어나 승무원 뿐만이 아닌 사무직과 관련된 부분에서의 정보들도 얻어갈 수 있어서 미래 나의 진로의 폭을 더욱 넓히기 좋은 방향입니다. 또한, 외국어 교육과 글로벌 경쟁력 강화를 통하여 실무에 접근하거나 취업에도 도움을 줄 수 있는 방향성을 보입니다. 2안은 우리 과의 실무 역량과 현재 우리 사회 성장에 맞춤형인 스마트 관광과 빅데이터 분석 등을 통한 사회와 함께 성장해 나가는 서비스, 서비스 마인드까지 포괄한 "실무"에 집중한 방안들과 실질적인 취업에 가까운 역량들을 성장 시키기 위한 방안입니다. 1안과 비슷하게 외국어와 글로벌 경쟁력의 강화를 통하여 실무에 한 발자국 더 잘 다가갈 수 있는 방안입니다. 현대에 우리 사회에 바로 투입되어 취업 하기 좋은 방안입니다.

현재는 취업에 바로 투입되는 것도 좋지만, 아직 확실히 자신이 좋아하/원하는 진로를 정하지 못한 학생들이 많은데 자신의 관심 있는 부분과 여러 방향의 직업들을 알 수 있게 하고, 연계되는 실무까지 함께 볼 수 있는 1안이 다양한 부분에서 자신을 깨닫게 하고 성장할 수 있게 하기 좋은 교육 방안인 것 같습니다.

전은영(20####37) 3월 26일 오후 4:48

저는 1안이 더 좋다고 생각합니다. 그 이유로 첫째, 이론과 실무를 결합한 기업 맞춤형 교육 프로그램을 통해 글로벌 호텔·항공 산업에서 요구하는 핵심 역량을 체계적으로 갖출 수 있도록 하기 때문입니다. 또한 둘째, 취업뿐만 아니라 관광, 전사, 외식등 다양한 산업으로의 진출을 고려한 맞춤형 진로 설계를 지원하여 학생들이 보다 폭넓은 기회를 가질 수 있도록만들어주기 때문에 1안이 더 좋다고 생각합니다.

2. Generative AI-Based Research Trends in Tourism Field





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Years

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Publication title

☐ International Journal of Hospitality

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Research article • Full text access

1 How well can ChatGPT forecast tourism demand?

Tourism Management, June 2025

Doris Chenguang Wu, Wenjia Li, ... Shujie Shen



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Abstract



Extracts



Figures



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Research article • Full text access

2 Understanding the impact of ChatGPT on tourism and hospitality: Trends, prospects and research agenda

Journal of Hospitality and Tourism Management, September 2024

Marianna Sigala, Keng-Boon Ooi, ... Ivy Huiyue Ye



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Abstract



Extracts



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3 Co-creating with ChatGPT for tourism marketing materials

Annals of Tourism Research Empirical Insights, May 2024

Yaozhi Zhang, Nina Katrine Prebensen



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Abstract



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Figures



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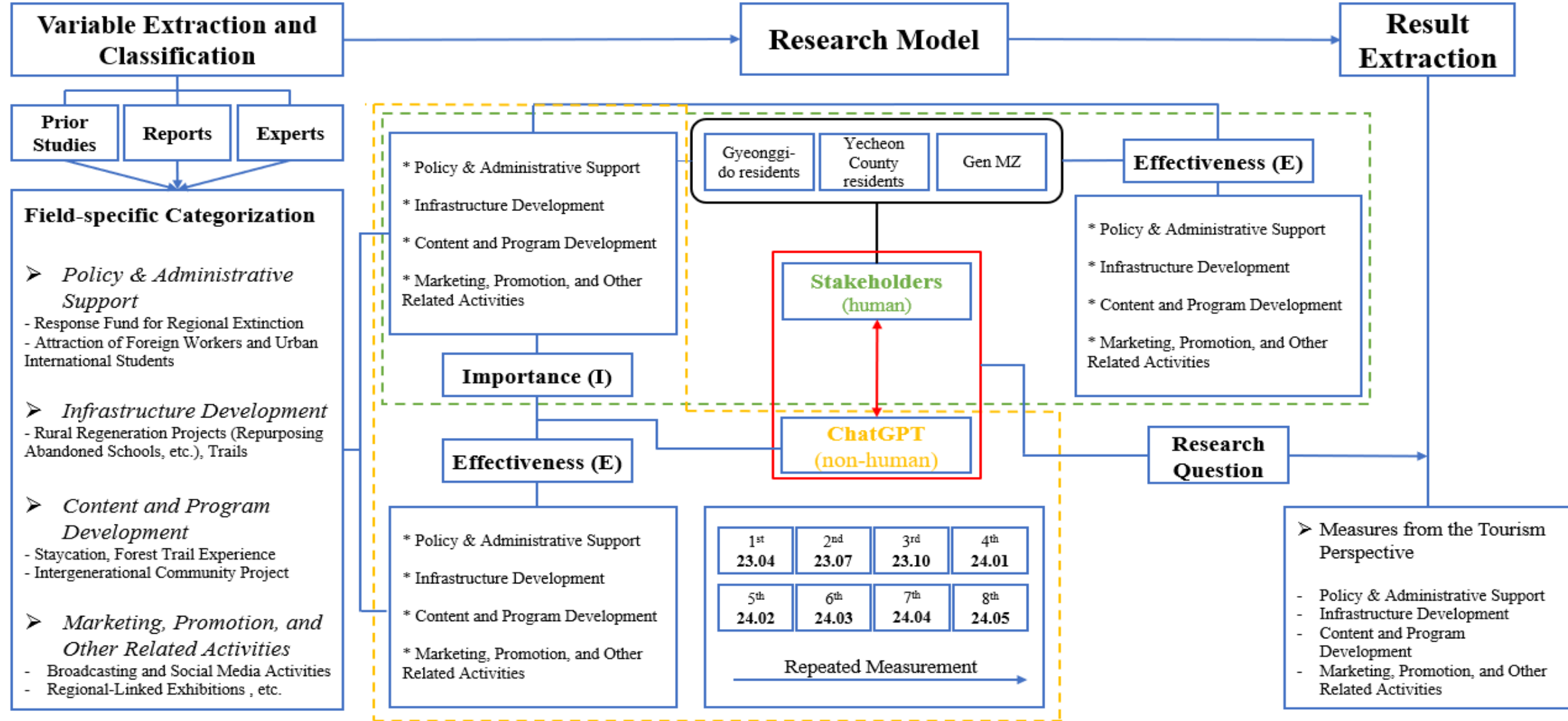


Division(Category)		Science Direct	Scopus	Total
AI & Tourism		8,515	213	8,728
ChatGPT & Tourism		692	75	767
Gemini & Tourism		272	2	274
Perplexity & Tourism		255	1	256
Human Intelligence(HI) & AI Comparision in Tourism		11	1	12
Total		9,745	292	10,037
IPA	Apply ChatGPT to IPA in tourism Field	3	1	4
	Apply Gemini to IPA in tourism Field	1	.	1
	Apply Perplexity to IPA in tourism Field	4	.	4
	ChatGPT, Gemini, and Perplexity Comparision by using in tourism field	.	.	.
Laddering Methodology (In-depth Interview)	Apply ChatGPT to Laddering Methodology in tourism Field	6	3	9
	Apply Gemini to Laddering Methodology in tourism Field	4	.	4
	Apply Perplexity to Laddering Methodology in tourism Field	4	.	4
	ChatGPT, Gemini, and Perplexity Comparision using laddering in tourism field	.	.	.
SEM (Structural Equation Model)	Apply ChatGPT to SEM in tourism Field	62	5	67
	Apply Gemini to SEM in tourism Field	16	.	16
	Apply Perplexity to SEM in tourism Field	7	.	7
	ChatGPT, Gemini, and Perplexity Comparision using SEM in tourism field	.	.	.
AHP (Analytic Hierarchy Process)	Apply ChatGPT to AHP in tourism Field	11	1	12
	Apply Gemini to AHP in tourism Field	1	.	1
	Apply Perplexity to AHP in tourism Field	3	.	3
	ChatGPT, Gemini, and Perplexity Comparision using AHP in tourism field	.	.	.
Tourist Satisfaction Level	Apply ChatGPT to Tourist Satisfaction Level in tourism Field	67	1	68
	Apply Gemini to Tourist Satisfaction Level in tourism Field	4	.	4
	Apply Perplexity to Tourist Satisfaction Level in tourism Field	32	.	32
	ChatGPT, Gemini, and Perplexity Comparision using AHP in tourism field	.	.	.
Total		225	11	236

3. Application of IPA or IEA Methodology & H(A)I Integrated Model Development



Variable Extraction and Research Model



Results of ChatGPT analysis for common overcoming challenges

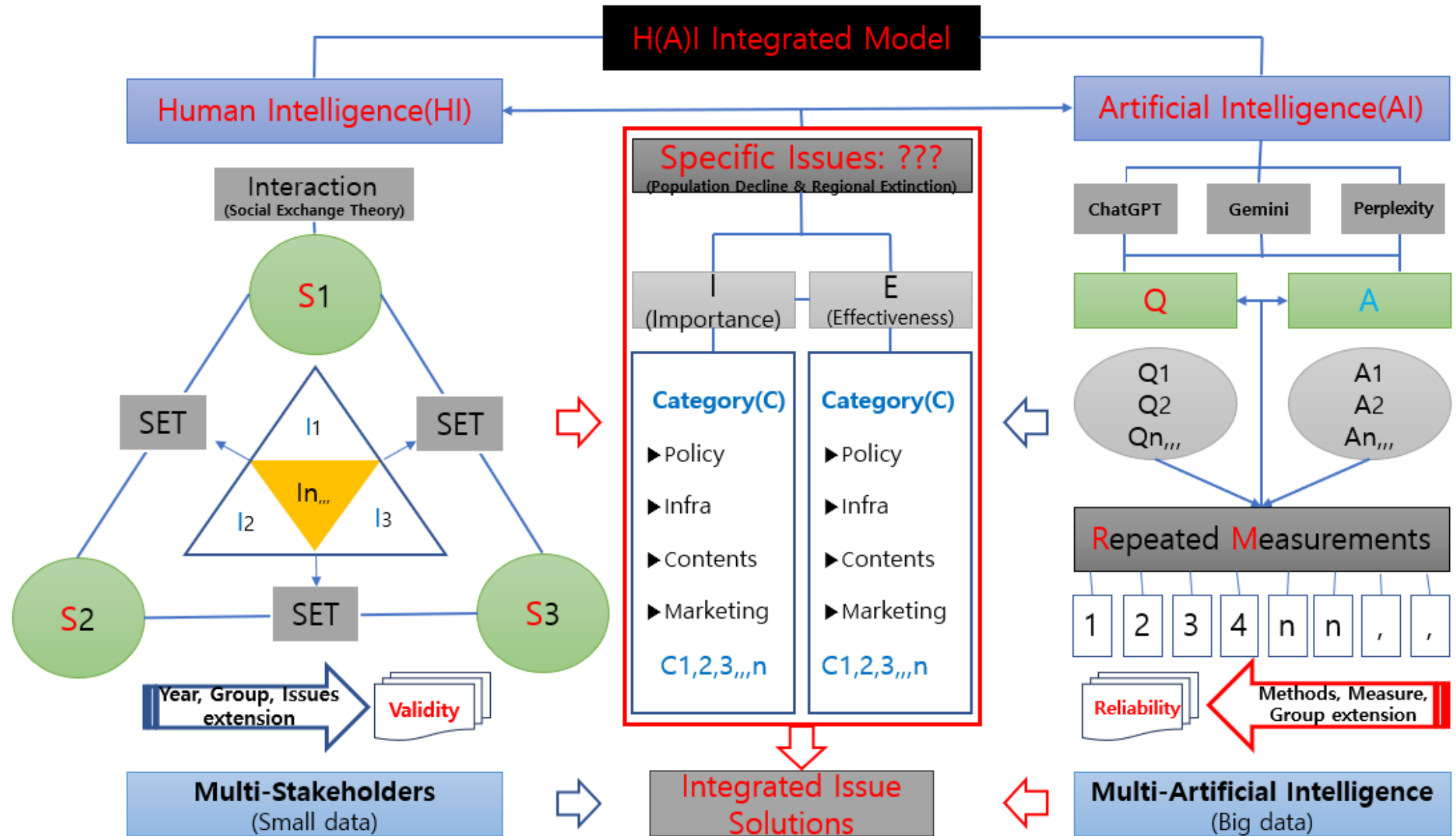
Items	Importance									Effectiveness								
	1st	2nd	3rd	4th	5th	6th	7th	8th	Mean	1st	2nd	3rd	4th	5th	6th	7th	8th	Mean
	23.04	23.07	23.10	24.01	24.02	24.03	24.04	24.05		23.04	23.07	23.10	24.01	24.02	24.03	24.04	24.05	
1) Attracting large and medium-sized enterprises	4	5	4	5	4	5	4	5	4.5	4	4	4	5	4	4	4	4	4.1
2) Providing high-quality jobs	5	5	5	5	5	5	5	5	5.0	4	4	5	5	5	5	5	5	4.8
3) Education (universities, etc.) and cultural services	4	5	5	5	5	5	5	5	4.8	4	5	5	5	5	4	4	5	4.6
4) Medical (hospitals, etc.) services	5	5	5	5	5	5	5	5	5.0	4	5	5	5	5	5	4	5	4.7
5) Housing (real estate, etc.) issues	5	5	5	5	5	5	5	5	5.0	4	5	5	5	4	4	5	5	4.6
6) Childcare (kindergartens, postnatal care centers) issues	5	5	5	5	5	5	5	5	5.0	4	5	5	5	5	5	5	5	4.8
7) Utilization of regional revitalization funds	4	5	5	4	4	4	3	4	4.1	4	5	5	4	4	4	3	4	4.1
Mean	4.78									4.52								

Results of ChatGPT & Multi-stakeholders analysis of common overcoming challenges

Contents	I/E	Targets	Mean	S.D.	t value	Post-validation
1) Attraction of large and mid-sized enterprises	I	ChatGPT	4.50	.534	-1.728	a<b,c,d
		Stakeholders	3.91	.954		
	E	ChatGPT	4.12	.353	-1.235	a,b,c,d
		Stakeholders	3.95	.960		
2) Provision of quality employment opportunities	I	ChatGPT	5.00	.000	-17.205***	a<b,c,d
		Stakeholders	4.20	.921		
	E	ChatGPT	4.87	.353	-5.137**	a<b,c,d
		Stakeholders	4.19	.909		
3) Educational and cultural services (e.g., universities)	I	ChatGPT	4.87	.353	-2.863**	a,b,c<d
		Stakeholders	3.96	.894		
	E	ChatGPT	4.62	.517	-1.992*	a<b,c,d
		Stakeholders	3.95	.941		
4) Medical and healthcare services (e.g., hospitals)	I	ChatGPT	5.00	.000	-18.615***	a,b,c<d
		Stakeholders	4.23	.821		
	E	ChatGPT	4.75	.462	-2.059*	a,b,c<d
		Stakeholders	4.08	.905		
5) Housing and real estate issues	I	ChatGPT	5.00	.000	-22.173***	a,b,c<d
		Stakeholders	3.85	1.030		
	E	ChatGPT	4.62	.517	-2.191*	a,b,c<d
		Stakeholders	3.82	1.028		
6) Childcare services (e.g., kindergartens, postpartum care centers)	I	ChatGPT	5.00	.000	-25.134***	a,b,c<d
		Stakeholders	3.84	.910		
	E	ChatGPT	4.87	.353	-7.973***	a,b,c<d
		Stakeholders	3.81	.935		

a. Gyeonggi-do residents, b. Yecheon County residents, c. Generation MZ, d. ChatGPT

Development of an Integrated Model



4. Application of MEC Theory by ChatGPT & Gemini



The following is the laddering methods procedures for the AI Hotel.

The procedure firstly is marking after selecting "5 attributes" that you think important in choosing(using) this hotel, secondly, and then find out the 'benefits or consequences' you can get through these "Attributes" by finding the numbers in Step 2 and link them, thirdly, link what you ultimately want to pursue through these 'benefits or consequences' to the 'Value (Step 3)' number. Double connections are possible.

[EX : • Various rooms 1 → 8 • provides a new type of differentiated service 8 → 1 • Self-satisfaction]

❑ 1 Step : Attributes		➡	❑ 2 Step : Benefits or Consequences		➡	❑ 3 Step : Value	
Various rooms	1		1 Effective use is possible by responding best	1		1 Self-satisfaction	
Atmosphere	2		2 Clean and eco-friendly	2		2 Focus on other itineraries	
Human services	3		3 Having very interesting and special experience.	3		3 Coexistence of human & machine	
Registration procedure)	4		4 Fast, simple and convenient	4		4 Happy life	
Reception by robot(check-in)	5		5 I'm excited and feel very good	5		5 Peace of mind	
Information by robot	6		6 Emotionally safe service experiences are possible	6		6 Joy and Fun	
Hotel facilities	7		7 Guide you more accurately and kindly	7		7 Self-actualization(Achievement)	
Hotel equipment(automation)	8		8 Provides a new type of differentiated service	8		8 Coexistence of human & environment	
Hotel fame	9		9 Fresh, tidying and delicious	9		9 Friendship promotion	
Room management(Cleaning)	10		10 Increase energy efficiency	10		10 Sustainable hotel management	
Bath room management	11		11 Feel deeply impressed and charming about the AI	11		11 Family love	
Food & Beverage service	12		12 Frequent hotel usage possible	12		12 leave Impressive memories	
Robot dress and appearance	13		13 Getting better service than humans	13		13 Freedom	
Breakfast(menu variety)	14		14 It is economical	14		14 Other()	
Farewell service by robot	15		15 There are a lot of things to do on your own	15			
Hotel concept & design	16		16 Robot's response and contents are cute	16			
Robot cloakroom	17		17 Feel comfortable, and cozy	17			
Porter robot	18		18 Experience modern and smart facilities	18			
Door lock(facial recognition system)	19		19 Only available for a fixed time	19			
Hotel price or cost	20		20 Feel calm(quiet) atmosphere and warmth	20			
Hotel images	21		21 It has a simple function of sophisticated design	21			
Latest technology(piano, lawn mowers)	22		22 I'm scared of being strange and scary	22			
Buffet restaurant	23		23 It is free and convenient to purchase	23			
Cafe	24		24 Slightly slow, but it carries heavy baggages	24			
Vending machine(Smart kiosk)	25		25 Experience the latest automation systems(robot)	25			
Amenity store	26		26 The menu is varied and abundant	26			
Other()	27		27 It's difficult to get help in an emergency	27			

ChatGPT-based Analysis

Based on recent academic research, industry reports, and customer preference surveys related to **AI or smart hotels**, the **5 most important selection attributes** are generally considered to be:

★ Top 5 Most Important Selection Attributes of AI/Smart Hotels:

1. Smart Room Technology

- Reason: Guests expect convenience and novelty, such as voice control, smart lighting, and temperature control.
- Impact: Directly affects comfort and user satisfaction.

2. AI-based Services (Concierge, Check-in, Room Service)

- Reason: Speeds up service delivery and enhances personalization.
- Impact: Reduces human error, improves efficiency and guest experience.

3. Contactless & Safety Features

- Reason: Especially important post-COVID-19.
- Impact: Builds trust and ensures hygiene, a critical decision factor.

4. High Connectivity & Infrastructure

- Reason: Guests, especially business travelers and Gen Z/Millennials, value fast Wi-Fi and tech-friendly rooms.
- Impact: Enables seamless use of other smart features.

5. Personalization via AI (Data-Driven Customization)

- Reason: Increases guest loyalty and satisfaction through tailored experiences.
- Impact: Enhances service value and emotional engagement.

✅ Why Safety Features Are Critically Important in AI/Smart Hotels:

1. Post-Pandemic Consumer Behavior

- Since COVID-19, travelers place **greater emphasis on hygiene, health, and non-contact services**.
- **Contactless technologies** (e.g., keyless entry, facial recognition, mobile check-in/out) have become baseline expectations.

2. Trust and Risk Perception

- In smart environments where human interaction is minimal, **perceived safety** becomes a key factor in **trust-building**.
- If a guest doesn't feel safe (physically or digitally), no amount of high-tech amenities will retain them.

3. Cybersecurity & Data Protection

- Smart hotels collect vast amounts of personal data. Concerns over **data privacy, AI surveillance, and hacking risks** make **digital safety** a top concern.
- Customers prioritize hotels that ensure **robust cybersecurity protocols**.

4. Emergency Response Systems

- AI-powered monitoring (e.g., smoke detection, crowd density alerts) enables **faster emergency response**, improving actual safety and **perceived hotel competence**.

5. Differentiation Factor

- Safety-focused smart features (e.g., UV cleaning robots, real-time air quality sensors) help **differentiate hotels** in a competitive market.

if so, through cybersecurity & data Protection, what we pursuit in fianlly? We mean the ultimate value?

Excellent insight, 교수님.

When we consider **cybersecurity & data protection** in AI/smart hotels, they are not just technical features—they serve as a **means** to achieve deeper **psychological and emotional values** for the guest.

✓ Ultimate Value Pursued Through Cybersecurity & Data Protection:

1. Trust

- Guests must **trust** the hotel to protect their personal and financial information.
- Trust is foundational for using other AI-based or personalized services.

2. Peace of Mind

- Knowing their data and privacy are secure gives guests a sense of **mental security** and **emotional relief** during their stay.

3. Freedom to Engage

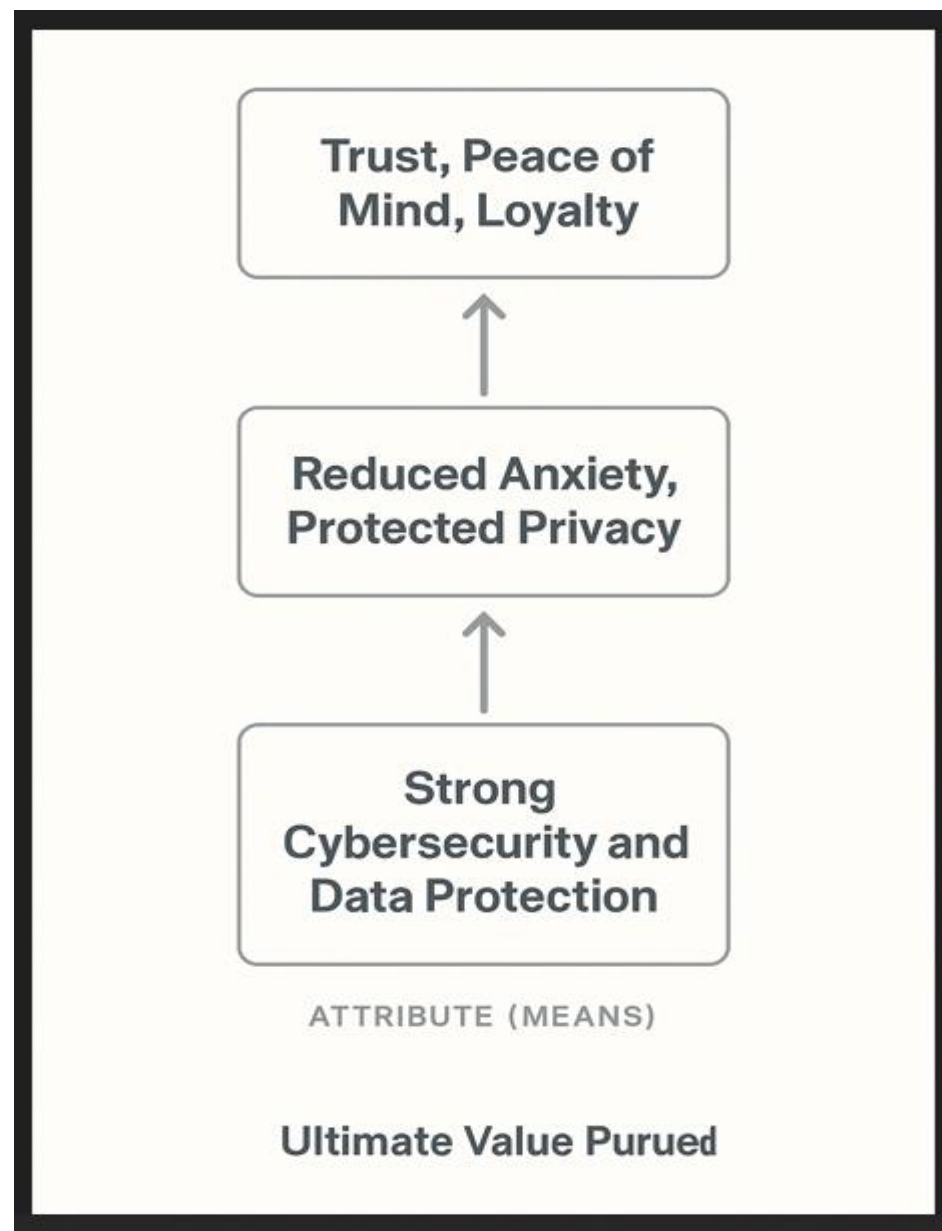
- When cybersecurity is guaranteed, guests feel **free to fully enjoy** smart services (voice AI, facial recognition, app-based controls) without worry.

4. Dignity and Respect

- Proper data handling signals that the hotel **respects guest autonomy and identity**, reinforcing **human dignity** in a tech-driven environment.

5. Loyalty & Satisfaction

- When guests feel protected and respected, they're more likely to **return** and **recommend** the hotel.



Gemini-based Analysis

please tell us the selection attributes of smart or AI hotel?

◆ A smart or AI hotel leverages advanced technologies to enhance guest experience, optimize operations, and improve sustainability. Here are some key selection attributes:

For Guest Experience:

- **Personalization:** AI systems analyze guest preferences and past behavior to offer tailored recommendations for services, amenities, and local experiences. For example, suggesting restaurants based on previous dining choices or adjusting room temperature automatically upon arrival.
- **Convenience and Control:** Smart rooms offer guests control over various aspects of their environment through voice commands, mobile apps, or in-room tablets. This includes adjusting lighting, temperature, entertainment systems, and even opening curtains.
- **Seamless Check-in/Check-out:** AI-powered systems enable faster, contactless check-in and check-out via mobile apps, self-service kiosks, or even facial recognition, reducing wait times and enhancing convenience.
- **Virtual Concierge Services:** AI-powered chatbots or virtual assistants provide 24/7 guest support, answering inquiries, offering recommendations, and fulfilling requests without the need for constant human intervention.
- **Enhanced Communication:** AI facilitates real-time translation and multilingual support, breaking down language barriers and ensuring effective communication between hotel staff and international guests.
- **In-Room Entertainment and Information:** Smart TVs with integrated streaming services, smart speakers providing information, and augmented reality experiences can enhance the guest's stay.

For Hotel Operations:

- **Operational Efficiency:** AI and automation streamline routine tasks such as room cleaning schedules, maintenance, and administrative work, reducing labor costs and improving efficiency.
- **Predictive Maintenance:** AI algorithms can analyze data from connected devices to predict potential maintenance issues, allowing for proactive repairs and minimizing downtime.
- **Energy Management and Sustainability:** Smart thermostats, lighting systems, and automated window treatments optimize energy consumption based on occupancy and guest preferences, leading to significant cost savings and reduced environmental impact.
- **Enhanced Security:** Features like facial recognition for room access and AI-powered surveillance systems can improve the safety and security of both guests and the property.
- **Data-Driven Decision Making:** AI can analyze vast amounts of data on guest behavior, operational efficiency, and market trends, providing valuable insights for better decision-making in areas like pricing, staffing, and resource allocation.
- **Smart Customer Relationship Management:** AI tools help hotels understand guest preferences and feedback, enabling personalized communication, targeted marketing, and loyalty program management.

Key Functional Attributes Identified by Research:

- **Convenience and Control:** As mentioned above, providing guests with easy control over their environment and services.
- **Maintenance and Security:** Ensuring well-maintained facilities and a secure environment through smart technologies.
- **Contactless Environment:** Offering services and interactions with minimal physical contact, which has become increasingly important.

of them, the most important 5 attributes?

if so, why enhanced security is so important?

✦ Okay, narrowing it down to the top 5 most important attributes of a smart or AI hotel, considering both guest and operational perspectives, I'd say they are:

1. **Personalization:** The ability to tailor services, recommendations, and the room environment to individual guest preferences significantly enhances satisfaction and loyalty. This makes the guest feel valued and understood.
2. **Seamless Convenience and Control:** Effortless check-in/out, intuitive in-room controls (lighting, temperature, entertainment), and readily available virtual assistance contribute directly to a smooth and stress-free stay. Time and ease are highly valued by travelers.
3. **Enhanced Security:** Feeling safe and secure is a fundamental need. Smart security features like digital room keys, AI-powered surveillance, and secure data handling provide peace of mind for guests.
4. **Operational Efficiency:** While less visible to guests, efficient operations underpin the quality and speed of service. AI-driven automation of tasks, predictive maintenance, and optimized resource allocation lead to a smoother running hotel and a better overall guest experience.
5. **Contactless Environment (Increasingly Important):** In recent times, the ability to minimize physical contact through mobile check-in, digital room keys, virtual concierge services, and automated service requests has become a significant factor for many travelers' comfort and safety.

These five attributes collectively address core guest needs and critical operational requirements, making them the most impactful in defining a successful smart or AI hotel.

✦ That's a crucial question! Enhanced security is paramount for several fundamental reasons in the context of a smart or AI hotel:

- **Guest Safety and Well-being:** This is the most obvious and non-negotiable reason. Hotels are responsible for providing a safe environment for their guests. Enhanced security measures, such as AI-powered surveillance, digital key systems that are harder to duplicate, and potentially even predictive analysis of security risks, directly contribute to preventing incidents and ensuring the physical safety of guests and their belongings. This peace of mind is a fundamental expectation for any traveler. ▾
- **Protection of Personal Data:** Smart hotels collect and process a significant amount of personal data, from booking information and payment details to preferences and even biometric data in some cases (e.g., facial recognition for room access). Robust security systems are essential to protect this sensitive information from cyber threats, data breaches, and unauthorized access. A failure in this area can lead to severe reputational damage, legal liabilities, and a loss of guest trust.
- **Asset Protection:** Hotels have valuable physical assets, including guest rooms, equipment, and infrastructure. Enhanced security measures help protect these assets from theft, vandalism, and damage, contributing to the long-term viability and profitability of the hotel.
- **Building Trust and Reputation:** A hotel known for its strong security measures builds trust with potential guests. Travelers want to feel secure in their accommodation, especially in unfamiliar environments. A reputation for prioritizing safety and security can be a significant competitive advantage, attracting more guests and fostering loyalty. Conversely, security breaches or incidents can severely damage a hotel's reputation and lead to a decline in bookings. ▾

if so, through guest safety and well-being, what we pursue finally? We mean the ultimate value?



Ah, that's a profound question that gets to the heart of why guest safety and well-being are so crucial. Ultimately, by prioritizing guest safety and well-being, what we pursue as the ultimate value in the hospitality industry is **cultivating trust and fostering enduring loyalty**.

Here's a breakdown of why:

- **Trust as the Foundation:** When guests feel safe and well-cared for, a fundamental layer of trust is established. They trust the hotel to protect them, their belongings, and their personal information. This trust is the bedrock upon which a positive and lasting relationship can be built. Without this basic trust, other aspects of the guest experience, no matter how technologically advanced or personalized, will feel hollow and potentially unsettling.
- **Loyalty as the Fruit of Trust and Positive Experience:** When guests consistently feel safe, comfortable, and well-looked after, they are far more likely to return. This isn't just about a single positive stay; it's about creating a sense of security and care that makes the hotel their preferred choice time and again. Loyalty translates into repeat business, positive word-of-mouth referrals, and a more sustainable business model for the hotel.
- **Enhanced Brand Reputation and Value:** A hotel known for its unwavering commitment to guest safety and well-being cultivates a strong and positive brand reputation. This reputation becomes a valuable asset, attracting new guests who prioritize these aspects and reinforcing the loyalty of existing ones. In a competitive market, a reputation for care and security can be a significant differentiator.
- **Creating a "Home Away From Home":** The ultimate goal of hospitality is often to create a comfortable and welcoming environment where guests feel at ease, almost like a home away

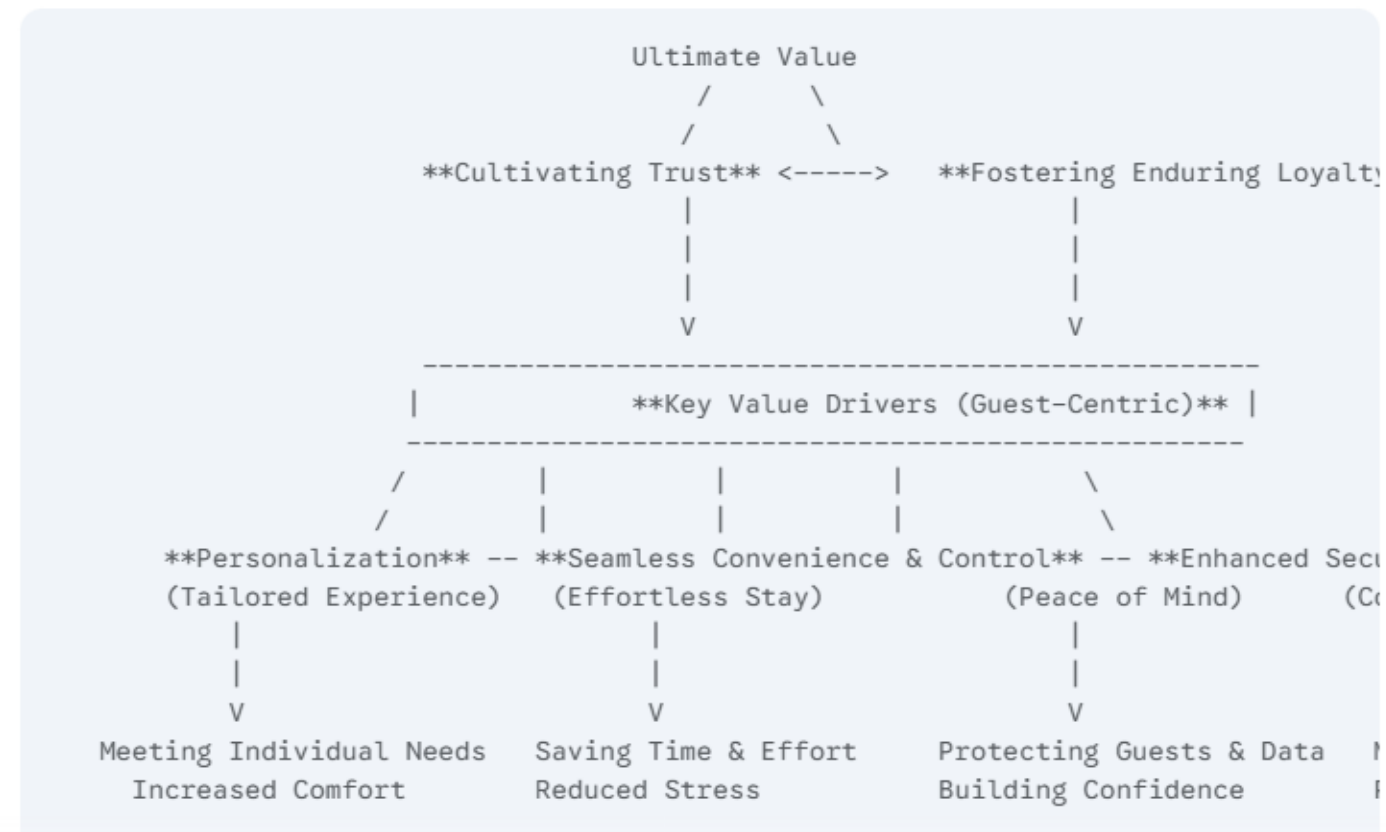
please show us value map by using this results?



Okay, let's create a value map based on our discussion about the selection attributes and the ultimate value of guest safety and well-being in a smart or AI hotel.

Value Map: Smart/AI Hotel

This map illustrates how the key attributes of a smart or AI hotel contribute to the ultimate value of cultivating trust and fostering enduring loyalty by focusing on guest safety and well-being.



5. Application of SEM Model by ChatGPT & Gemini



ChatGPT-based **Attributes**

Main Selection attributes of a Smart hotel(13)

Selection Attributes of Smart Hotel

1. Smart Room Control

- Voice or app-based control of lighting, temperature, curtains, TV, etc.

2. Contactless Services

- Mobile check-in/out, digital keys, touchless payments.

3. High-Speed Wi-Fi & Connectivity

- Seamless internet access, IoT-enabled devices, and device charging stations.

4. AI Concierge & Chatbots

- 24/7 virtual assistance for room service, tourism info, or requests.

5. Personalization via Data

- Personalized room settings, content preferences, and loyalty-based experiences.

6. Smart Entertainment Systems

- Streaming services, smart TVs, voice assistants like Alexa or Bixby.

7. Cybersecurity & Data Privacy

- Secure platforms for personal and payment information protection.

8. Sustainable Technology

- Energy-efficient systems (e.g., motion sensor lighting, smart thermostats).

9. Smart Bathroom Features

- Automatic faucets, smart mirrors, temperature-controlled showers.

10. Robot Services

- Room delivery robots, cleaning robots, or concierge robots.

11. Mobile App Integration

- All-in-one app for booking, room control, and service requests.

12. Health & Safety Systems

- Air quality monitoring, UV sterilization, contact tracing features.

13. Seamless Service Integration

- Interoperability between different systems (e.g., smart room + smart restaurant booking).

ChatGPT-based **Dimensions or Factors**

Grouped into 4 core dimensions(factors)

◆ 1. Smart Convenience & Automation

Focuses on automation, ease of use, and integration for a seamless experience.

- Smart Room Control (voice/app-based)
- Mobile App Integration
- Smart Bathroom Features
- Robot Services
- Smart Entertainment Systems

◆ 2. Contactless & Personalized Services

Emphasizes individual preferences and safe, efficient service delivery.

- Contactless Services (check-in/out, digital keys)
- AI Concierge & Chatbots
- Personalization via Data
- Seamless Service Integration

◆ 3. Connectivity & Infrastructure

Relates to the digital and technological backbone of the smart hotel.

- High-Speed Wi-Fi & Connectivity
- Mobile App Integration (dual-category)
- IoT-enabled infrastructure (implied within above)

◆ 4. Safety, Privacy & Sustainability

Captures guests' need for trust, cleanliness, and environmental care.

- Cybersecurity & Data Privacy
- Health & Safety Systems (e.g., UV sterilization, air monitoring)
- Sustainable Technology (smart energy systems)

ChatGPT-based Suggestion Model

Structural equation model (SEM)

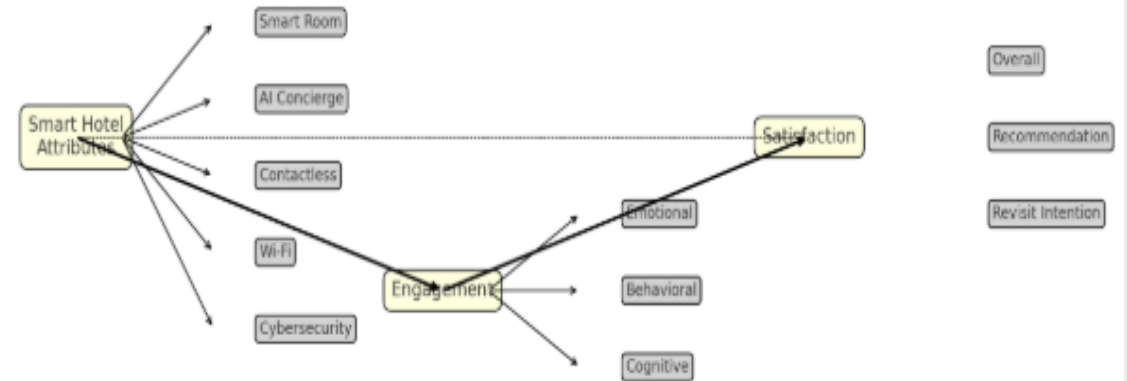
Conceptual Model: Smart Hotel Attributes → Engagement → Satis...

Conceptual Model: Smart Hotel Attributes → Engagement → Satisfaction



Structural Equation Model (SEM): Smart Hotel → Engagement → ...

Structural Equation Model (SEM): Smart Hotel → Engagement → Satisfaction



❖ 이 유형의 인터랙티브 차트는 아직 지원되지 않습니다

Structured set of Hypotheses

◆ Main Effect Hypotheses

H1. Smart hotel attributes have a positive effect on guest engagement.

(Smart Hotel Attributes → Engagement)

H2. Guest engagement has a positive effect on satisfaction.

(Engagement → Satisfaction)

H3. Smart hotel attributes have a direct positive effect on guest satisfaction.

(Smart Hotel Attributes → Satisfaction)

◆ Mediating Effect Hypothesis

H4. Engagement mediates the relationship between smart hotel attributes and satisfaction.

(Smart Hotel Attributes → Engagement → Satisfaction)

◆ Moderating Effect Hypotheses

H5a. Age moderates the relationship between engagement and satisfaction, such that the effect is stronger/weaker depending on age.

(Engagement × Age → Satisfaction)

H5b. Gender moderates the relationship between engagement and satisfaction.

(Engagement × Gender → Satisfaction)

H5c. Nationality moderates the relationship between engagement and satisfaction.

(Engagement × Nationality → Satisfaction)

◆ Optional Control Variables (if applicable)

You may control for hotel type (budget/luxury), travel purpose (leisure/business), or length of stay.

Gemini-based Attributes

Main selection attributes of a smart hotel(9)

- **Convenience and Control:** Smart hotels offer guests greater control over their environment through mobile apps or in-room devices. This includes managing lighting, temperature, entertainment systems (like smart TVs with streaming service integration), and even window treatments. Features like mobile key access and automated check-in/check-out further enhance convenience by reducing wait times and offering a seamless arrival and departure process.
- **Maintenance and Security:** Smart systems contribute to enhanced maintenance and security. Automated systems can monitor room conditions, detect issues like leaks or malfunctions, and prompt staff for timely intervention. Security is bolstered through features like digital key access, facial recognition for entry, and smart surveillance systems.
- **Contactless Environment:** In today's world, contactless options are highly valued. Smart hotels often provide contactless check-in/check-out via apps or kiosks, digital room keys, voice-activated controls, and the ability to request services through apps, minimizing physical interaction.
- **Personalization:** Smart hotels leverage data and AI to personalize the guest experience. This can range from pre-setting room temperature based on guest preferences to offering tailored recommendations for dining or local attractions through in-room devices or hotel apps. Some systems can even adjust room settings based on past stays or integrate with guests' personal streaming accounts.
- **Technology Integration:** The seamless integration of various smart technologies is crucial. This includes a reliable Wi-Fi network, well-designed mobile apps, user-friendly in-room control systems (like voice assistants such as Alexa or Google Assistant), and efficient communication between different hotel systems.
- **Automation:** Look for hotels that automate routine tasks to improve efficiency and guest service. This can include automated check-in/check-out, automated room service ordering, and even robotic assistants for tasks like luggage handling or concierge services.
- **Energy Efficiency and Sustainability:** Many smart hotels incorporate features that promote energy conservation, such as smart thermostats that adjust based on occupancy, automated lighting systems, and overall energy management systems that optimize resource use.
- **Communication and Service:** Smart hotels often provide multiple digital channels for guests to communicate with hotel staff, make requests, or provide feedback. AI-powered chatbots and virtual assistants can offer 24/7 support and instant responses to inquiries.
- **Data Privacy and Security:** As smart hotels rely on technology and data, robust measures for data privacy and security are essential to protect guest information.

Gemini-based Dimensions or Factors

Selection Attributes two-three Key Dimensions

1. Guest Experience Enhancement: This dimension focuses on how the smart technologies directly improve the guest's stay, making it more convenient, comfortable, and personalized. It encompasses attributes like:

- **Convenience and Control:** Mobile keys, in-room device control (lighting, temperature, entertainment), automated check-in/check-out.
- **Contactless Environment:** Digital keys, voice controls, app-based service requests.
- **Personalization:** Tailored recommendations, pre-set room preferences, integration with personal accounts.
- **Communication and Service:** Digital communication channels, AI-powered chatbots, efficient service requests.

2. Operational Efficiency and Sustainability: This dimension highlights how smart technology optimize the hotel's operations, leading to better resource management and potentially a more sustainable approach. It includes attributes like:

- **Maintenance and Security:** Automated monitoring, digital security systems (key access, surveillance).
- **Automation:** Automated check-in/out, room service ordering, robotic assistance.
- **Energy Efficiency and Sustainability:** Smart thermostats, automated lighting, energy management systems.

3. Technology Foundation and Integration: This dimension considers the underlying technological infrastructure and how well different systems work together to deliver the smart hotel experience. It includes attributes like:

- **Technology Integration:** Seamless operation of Wi-Fi, mobile apps, in-room controls, and hotel systems.
- **Data Privacy and Security:** Robust measures to protect guest data.

Alternatively, we could simplify this into two broader factors:

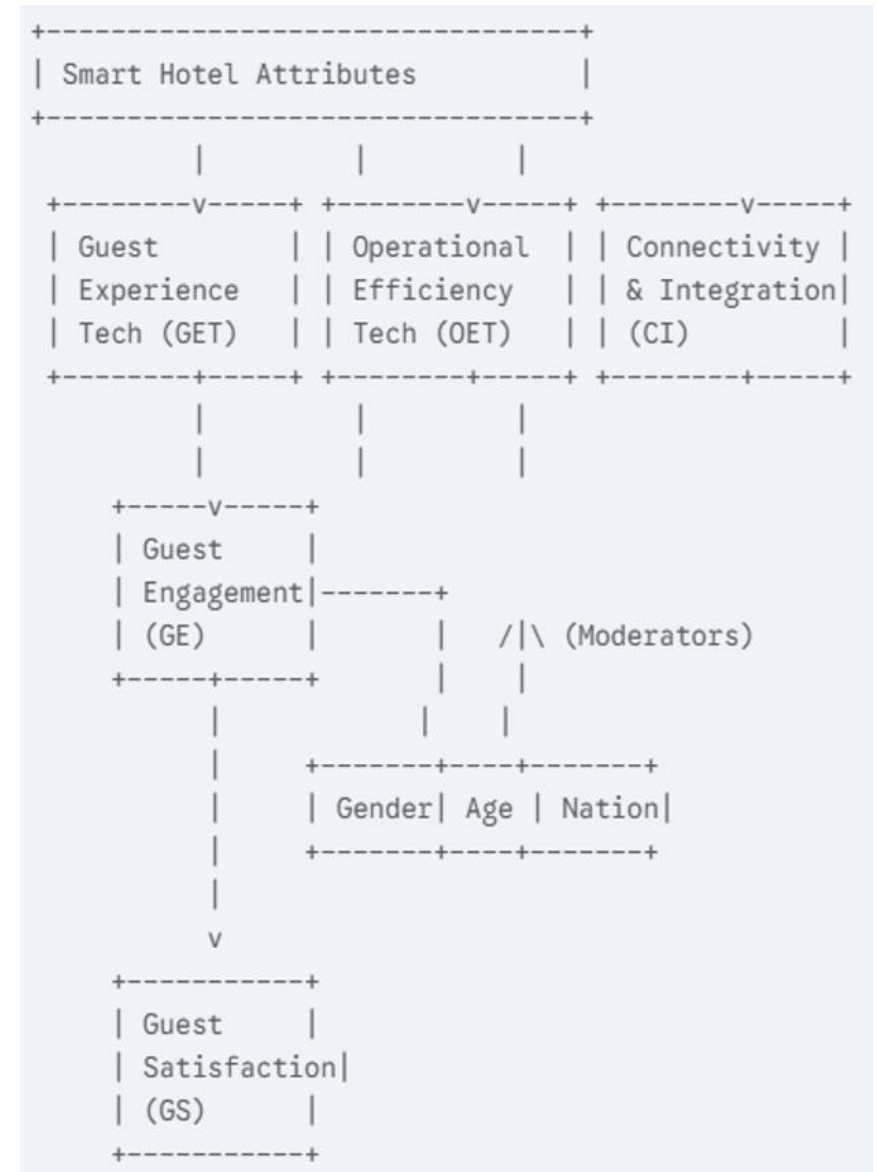
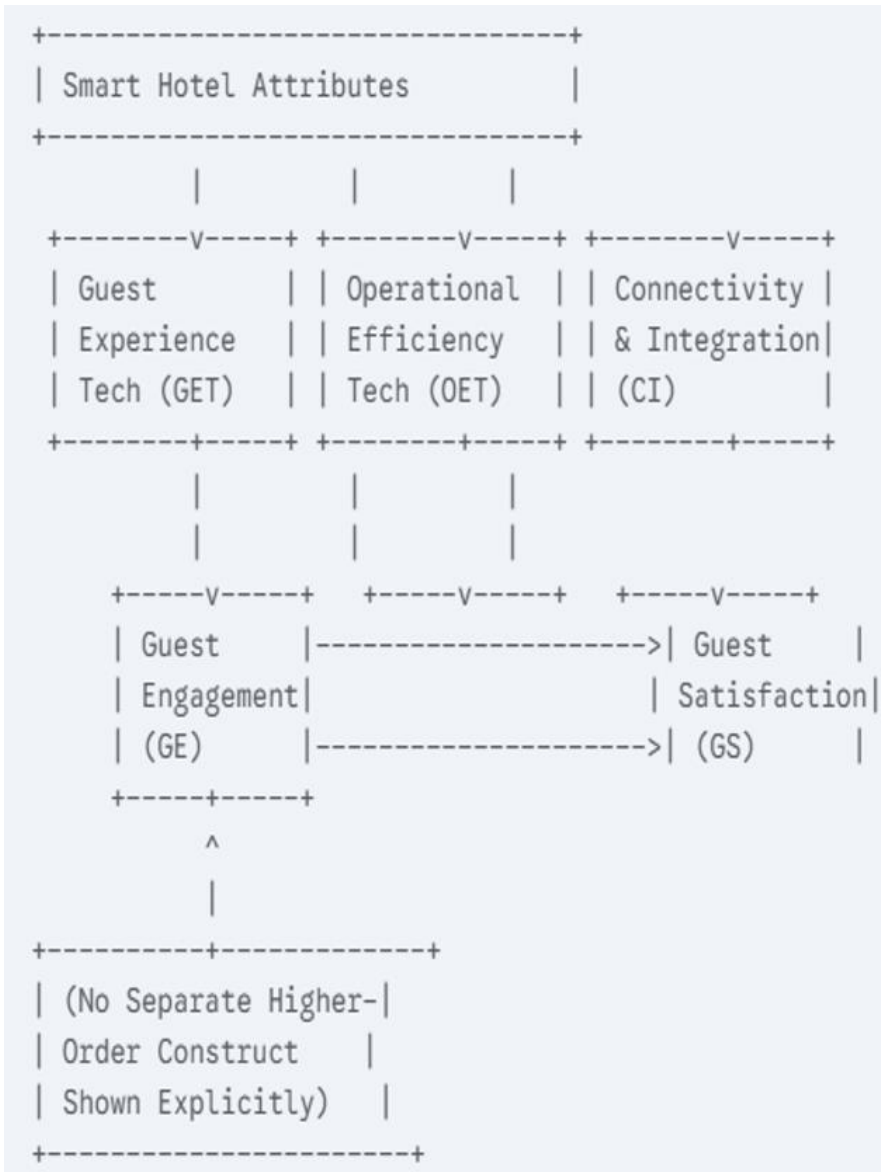
A. Guest-Centric Smartness: This encompasses all the technologies and features directly aimed at improving the guest's experience, combining elements from the "Guest Experience Enhancement" and parts of the "Technology Foundation and Integration" (specifically the user-facing aspects).

B. Hotel Operational Smartness: This focuses on the technologies that primarily benefit the hotel's efficiency, sustainability, and security, drawing from the "Operational Efficiency and Sustainability" dimension and the backend aspects of "Technology Foundation and Integration" (like system interoperability and data security).

The choice between two or three dimensions depends on the level of granularity you need for your evaluation. Both approaches provide a structured way to assess the selection attributes of a smart hotel. Which approach resonates more with your needs?

Gemini-based Suggestion Model

Conceptual Path Diagram(SEM)



Hypotheses

Hypotheses Regarding Direct Effects:

- **H1:** Guest Experience Technology (GET) has a positive direct effect on Guest Engagement (GE).
- **H2:** Operational Efficiency Technology (OET) has a positive direct effect on Guest Engagement (GE).
- **H3:** Connectivity and Integration (CI) has a positive direct effect on Guest Engagement (GE).
- **H4:** Guest Engagement (GE) has a positive direct effect on Guest Satisfaction (GS).
- **H5:** Guest Experience Technology (GET) has a positive direct effect on Guest Satisfaction (GS).
- **H6:** Operational Efficiency Technology (OET) has a positive direct effect on Guest Satisfaction (GS).
- **H7:** Connectivity and Integration (CI) has a positive direct effect on Guest Satisfaction (GS).

Hypotheses Regarding the Mediating Effect:

- **H8:** Guest Engagement (GE) mediates the relationship between Guest Experience Technology (GET) and Guest Satisfaction (GS).
- **H9:** Guest Engagement (GE) mediates the relationship between Operational Efficiency Technology (OET) and Guest Satisfaction (GS).
- **H10:** Guest Engagement (GE) mediates the relationship between Connectivity and Integration (CI) and Guest Satisfaction (GS).

Hypotheses Regarding the Moderating Effects:

- **H11:** Gender moderates the relationship between Guest Engagement (GE) and Guest Satisfaction (GS), such that the effect of guest engagement on satisfaction is different for different gender groups. (We might further specify the direction if we have theoretical reasons to believe so, e.g., "the positive effect of guest engagement on satisfaction is stronger for female guests").
- **H12:** Age moderates the relationship between Guest Engagement (GE) and Guest Satisfaction (GS), such that the effect of guest engagement on satisfaction varies with the guest's age. (Again, we could specify the nature of this moderation if theoretically informed, e.g., "the positive effect of guest engagement on satisfaction is stronger for younger guests").
- **H13:** Nationality moderates the relationship between Guest Engagement (GE) and Guest Satisfaction (GS), such that the effect of guest engagement on satisfaction differs across different nationalities. (This would likely be explored by comparing specific nationality groups).

**6. Could Generative AI
be the innovative tools
in Tourism Industries or Fields?
- including **AI ethics****



7. Conclusion



**Discussions
with together?**

