

Review of Literature on the Concept of Neuromarketing in the Hospitality Industry

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Abstract:

The present paper attempts to encompass the existing literature review on Neuromarketing in the Hospitality industry. The subject chosen for the review collection is pervasive in the modern era. The relevance of neuromarketing in the Hospitality industry cannot be denied on all fronts. The spectrum of the reviews has been very broad, viz; all 42 reviews were stated from 2015 to 2023, which is nearly eight years. We have tried to do the paper's title justice by ensuring the most updated reviews in maximum numbers. The entire set of reviews has been presented in tabular form to ensure maximum explanation in the best understandable format. All eight columns constitute the table and present every minor detail available for the reader's growth; the paper further follows the research gap with an integral conclusion that winds up the paper with immense dignity for the researchers whose contributions have brought life into the dead experiences and experiments.

Introduction

Neuromarketing, an emerging field that combines neuroscience and marketing, has captured the attention of businesses and researchers alike, offering a groundbreaking approach to understanding consumer behaviour. Pioneered by Nobel Prize winner Ale Smidts in 2002, neuromarketing utilizes advanced technologies, such as functional magnetic resonance imaging (fMRI), electroencephalography, and eye-tracking, to delve into the cerebral mechanisms that drive consumer decision-making (Morin, 2011).

By studying the brain's reactions to various marketing stimuli, neuromarketing provides invaluable insights into the emotional, cognitive, and subconscious processes that influence consumer behaviour (Gill & Singh, 2022). This knowledge, in turn, enables businesses to optimise their marketing strategies, creating more effective and personalised campaigns that resonate with their target audience (Akbari, 2014).

One of the key advantages of neuromarketing is its ability to uncover the underlying drivers of consumer behaviour, which often operate subconsciously (Mishra & Shukla, 2020). Traditional marketing methods, such as surveys and focus groups, may fail to capture these nuanced and unconscious responses, leaving marketers with an incomplete understanding of their audience. In contrast, neuromarketing techniques can reveal the subtle emotional and cognitive responses that shape purchasing decisions, allowing businesses to tailor their messaging and branding to better connect with consumers. (Parchure et al., 2020)

Moreover, neuromarketing can potentially revolutionise how businesses approach product development and advertising. By studying the brain's reactions to various marketing stimuli, researchers can identify the most effective ways to capture the attention and interest of consumers, ultimately leading to more successful campaigns and increased customer engagement. (Morin, 2011)

Despite the perceived advantages of neuromarketing, some marketing scholars remain cautious about the widespread adoption of these techniques, citing concerns about the reliability and ethical implications of such methods. (Akbari, 2014) As the field continues to evolve, it will be crucial for researchers and businesses to address these

concerns and establish clear ethical guidelines to ensure the responsible and transparent use of neuromarketing.

The tourism industry has faced unprecedented challenges in the wake of the COVID-19 pandemic, with travel restrictions, economic uncertainties, and shifting consumer behaviours profoundly impacting the sector (Sharma et al., 2021). As Thomas Zoega Ramsey aptly notes, neuromarketing provides a unique lens through which tourism destinations and operators can gain deeper insights into the inner workings of the tourist's mind. The application of neuromarketing techniques, such as the analysis of brain activity and physiological responses, enables tourism marketers to move beyond reliance on self-reported data and gain a more objective understanding of tourist preferences and behaviours (Gaafar & Al-Romeedy, 2021). In the post-pandemic context, the value of neuromarketing in tourism is further amplified. As tourists' priorities and decision-making processes have undergone significant shifts, the ability to accurately gauge their emotional and cognitive responses to tourism offerings becomes paramount (Guo et al., 2014). Neuromarketing can provide valuable insights into which travel products and experiences are most attractive to the current market, enabling tourism enterprises to make informed decisions and adapt their offerings accordingly.

Table : Tabular Presentation of Review of Literature

Year	Authors	Abstract	Research Objectives	Hypotheses	Conclusions	Results	Contributions	Practical Implications
2023	Abeer Al*Nafjan , Mashael Aldayel ⁱ	* Neuro*tourism applies neuroscience in tourism for marketing improvements. * Methods include BCI, eye*tracking, galvanic skin response for analysis.	* Analyse trends in neuro*tourism research over 12 years. * Identify the lack of artificial intelligence integration in neuro*tourism studies.	* Neuro*tourism lacks integration of artificial intelligence techniques. * Advancements in technology and research collaboration will facilitate field growth.	* Neuro*tourism allows for extracting subconscious information from tourists to improve marketing tactics. * The field of neuro-tourism is growing, but there is a lack of integration of artificial intelligence techniques.	* The number of published articles on neuro*tourism has significantly increased. * There is a lack of integration of artificial intelligence techniques in neuro*tourism studies.	* Analysed 52 articles in neuro*tourism research for trends. * Identified lack of artificial intelligence integration in studies.	* Extract subconscious tourist emotions for personalised tourism products. * Improve marketing tactics in the tourism industry using neuroscience techniques.
2023	Asra Al Fauzi, Lidya Ari Widayari ⁱⁱⁱ	* Neuromarketing tools for understanding consumer behaviour * Techniques include fMRI, EEG, facial expressions, and more.	* Study neuropsychological mechanisms guiding consumer decision-making and behaviour. * Measure behavioural responses based on psychology using neuroscience tools.	* Neuromarketing tools help understand consumer behaviour through brain activity measurement. * Traditional techniques lack unconscious emotional response information in consumer behaviour.	* Neuromarketing tools can predict consumer behaviour. * Parameters such as cognitive information and excitement are important.	* Neuromarketing tools can predict consumer behaviour and measure advertising effectiveness. * Companies like BBC, Coca-Cola, Ford, and L'Oreal have used neuromarketing.	* Predicting consumer behaviour using neuromarketing tools * Companies like BBC, Coca-Cola, and Ford utilise neuromarketing techniques	* Neuromarketing tools can help predict the effectiveness of advertising campaigns. * Marketers can use tools such as fMRI, eye tracking, EEG, facial expressions, and GSR to measure consumer behaviour.

Year	Authors	Abstract	Research Objectives	Hypotheses	Conclusions	Results	Contributions	Practical Implications
2023	Bansal, R., Pruthi, N., Bansal, T., & Chaudhary, A. ⁱⁱⁱ	* Neuromarketing is an integrative field that combines marketing, psychology, and neuroscience. * It offers insights into customers' cognitive decision-making systems using neuroscience techniques.	* Explore tools, roles, and ethical concerns of neuromarketing. * Identify neural-level functions in customers' brains for marketing insights.	* Neuromarketing explores neural functions in customers' brains for insights. * Neuromarketing provides knowledge about customers' cognitive decision-making systems.	* Neuromarketing offers fresh perspectives and potent methods for marketing research. * It provides insightful knowledge about customers' cognitive decision-making systems.	* Exploring tools, roles, and ethical concerns of neuromarketing. * Provides insights into customers' cognitive decision-making system.	* Neuromarketing offers fresh perspectives and potent methods for marketing research. * It provides insightful knowledge about customers' cognitive decision-making systems.	* Provides fresh perspectives and potent methods for marketing research * Helps marketers understand customers' cognitive decision-making system at a neural level
2023	López*Rodríguez, C. E., & Aguja, F. A. P. ^{iv}	* Analyzes neuromarketing impact on internationalising hotel services in Bogota, Colombia. * Emphasizes user experience and decision-making benefits in the hotel market.	* Analyze neuromarketing impact on internationalising hotel services in Bogota * Associate company size with influential factors in hotel internationalisation	* Neuromarketing elements crucial for internationalising hotel services in Colombia. * User experience and decision-making benefits of neuromarketing in the hotel market.	* Business development, eye-tracking, and design are fundamental for internationalisation. * Neuromarketing ensures a favourable user experience and facilitates decision-making.	* Business development, eye-tracking, and design are fundamental for internationalisation. * Neuromarketing ensures a favourable user experience and facilitates service decision-making.	* Business development, eye-tracking, and design crucial for internationalising hotel services. * Neuromarketing ensures a favourable user experience and facilitates hotel decision-making.	* Neuromarketing aids in internationalising hotel services through user experience enhancement. * Business development and design are crucial for hotel service internationalisation.
2023	Ricardo Patricio Medina Chicaiza ^v	* The paper proposes using neuromarketing as an alternative to advertising in medical services. * It addresses the lack of specialised marketing in medical centres.	* Develop advertising content in medical services using neuromarketing. * Address the lack of specialised marketing in medical centres for advertising content.	* No specific hypotheses are mentioned in the text. * Hypotheses are not part of the discussed content.	* Neuromarketing is an alternative method for developing specialised medical advertising. * The stages of the advertising strategy are supported by neuromarketing tools and techniques.	* The paper proposes the use of neuromarketing as an alternative to medical advertising. * The paper suggests a strategy for developing advertising content in medical services.	* Utilization of neuromarketing tools in medical advertising strategy. * Bibliographic study to support information on medical advertising and neuromarketing.	* Improved marketing strategies for medical centres using neuromarketing techniques. * Development of specialised advertising content for medical services.
2022	Arijit Goswami, G. K. Deshmukh ^{vi}	* Neuromarketing is an emerging interdisciplinary discipline * It blends psychology, neuroscience, and economics	* Study the influence of neuromarketing tools on consumer purchasing behaviour * Enhance the application of neuromarketing methods for understanding customer preferences	* Neuromarketing tools influence purchasing behaviour. * Neuromarketing methods gauge customer preferences for purchasing decisions.	* Neuromarketing is an emerging interdisciplinary discipline. * It provides insight into consumer decision-making.	* Neuromarketing is an emerging interdisciplinary discipline. * It provides insight into consumer purchasing behaviour.	* Neuromarketing gives insight into the subconscious mind in decision-making. * Neuromarketing tools help understand consumer purchasing behaviour.	* Insight into the subconscious mind for decision-making * Enhanced application of neuromarketing methods for consumer preferences
2022	Asad Ullah, Gulsher Ali Baloch, Ahmed Ali, Abdul Baseer Buriro, Junaid Ahmed, Bilal Ahmed, Saba Akhtar ^{vii}	* The paper proposes a predictive modelling method for recognising consumer preferences for online products using EEG signals and machine learning. * The study achieves relatively high accuracy in product-wise classification using Artificial Neural Networks and Support Vector Machine.	* Predict customer preferences for e-commerce products using EEG signals. * Investigate tuning of classifiers for improving product-wise and subject-wise classification.	* EEG signals can predict customer preferences for e-commerce products. * Neuromarketing techniques can increase the success of new product launches.	* The proposed framework effectively predicts customer product selection preferences using EEG signals. * The framework provides a superior solution compared to traditional methods of predicting product success.	* Subject-wise classification results: ANN achieved 50.40% accuracy, k-Nearest Neighbors achieved 60.89% accuracy. * Product-wise classification results: ANN achieved 81.23% accuracy, and Support Vector Machine achieved 80.38% accuracy.	* Predictive modelling for product consumer preferences using EEG signals. * Achieved high accuracy in product classification with machine learning.	* Neuromarketing can be used to determine customer preferences for decision-making. * Machine learning techniques can be applied to analyse EEG signals for product classification.
2022	Boz, H., & Koç, E. ^{viii}	* Discusses the role of psychophysiological tools in tourism and hospitality research. * Explains the use	* Understand customers' reactions and emotions in tourism and hospitality. * Explore the role of neuromarketing	* Neuromarketing tools help understand customer reactions and emotions in service encounters.	* Psychophysiological tools are valuable in understanding customers' reactions and emotions.	* The paper discusses the role and potential of psychophysiological tools in tourism and hospitality research.	* Discusses the role and potential of psychophysiological tools in tourism research.	* Enhances understanding of customer emotions in tourism and hospitality. * Helps improve service quality

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		of EEG, Eye Tracker, GSR, and Facial Recognition.	tools in service encounters.		* Tools such as EEG, Eye Tracker, GSR, and Facial Expression Recognition are useful.	* It explains the use of tools such as EEG, Eye Tracker, and Facial Expression Recognition in understanding customer reactions and emotions.		based on customer reactions and emotions.
2022	Dsouza Prima Frederick ^{ix}	* The paper explores the concept of neuromarketing and its influence on customer decision-making. * It highlights the importance of neuromarketing principles for understanding consumer behaviour and planning marketing strategies.	* Explore the relevance and implications of neuromarketing in the marketing field. * Analyze benefits, limitations, ethical concerns, and future potential of neuromarketing.	* Neuromarketing hypotheses focus on consumer behaviour, decision-making, and advertising effectiveness. * Hypotheses explore the impact of neuroscience on marketing strategies.	* The neuromarketing concept has potential for future development. * Benefits, limitations, ethical issues, and future potential discussed.	* Neuromarketing has gained importance in various fields of marketing. * The study highlights the benefits, limitations, ethical issues, and future potential of neuromarketing.	* Neuromarketing helps marketers understand consumer mindset and predict reactions. * The paper discusses neuromarketing's benefits, limitations, and ethical issues.	* Neuromarketing offers new channels for marketing research and analysis. * It helps marketers understand consumer behaviour and develop effective marketing strategies.
2022	Fabiano De Abreu Agrela Rodrigues, Flávio de Fava Sanches*	* Neuromarketing is a technique used to understand consumer behaviour and motivations. * The study explores the application of neuromarketing in optimizing business processes.	* Presenting the application of methods involving neuromarketing in the negotiation process. * Contribute to the construction of reference theoretical knowledge about neuroscience and innovation. * Presenting the application of methods involving neuromarketing in the negotiation process.	* Neuromarketing optimises business processes and boosts targeted sales. * Understanding consumer behaviour through neuroscience enhances business profitability.	* Neuromarketing can optimise business processes and improve sales results. * Understanding consumer behaviour through neuroimaging techniques is essential for success.	* The paper presents the application of neuromarketing in optimising business processes. * It highlights the importance of understanding consumer behavior and motivations.	* Construction of reference theoretical knowledge about neuroscience, organizational structure and innovation.	* Neuromarketing can be used to optimize and improve business processes. * Understanding consumer behaviour through neuromarketing can lead to better decision-making.
2022	G Komninos ^{xi}	* Neuromarketing is a branch of neuroscience that understands consumer's brain structure. * It helps develop attractive products and advertising that drive consumer spending.	* Understand consumer brain structure for product development * Create attractive, neuro* sensory products for consumer consumption	* Neuromarketing aims to understand consumer brain structure for product development. * Big companies benefit from neuromarketing in influencing consumer emotions and reasoning.	* Neuromarketing is an innovative branch of neuroscience that helps understand consumer behaviour. * Big companies have benefited from neuromarketing to create attractive products.	* Neuromarketing provides an understanding of the consumer's brain structure for product development. * Big companies benefit from neuromarketing by creating attractive products for consumers.	* Understand brain structure to develop attractive products and publicity. * Big companies benefit from emotion and reasoning behind purchases.	* Neuromarketing can be used to understand consumer preferences and develop attractive products. * Big companies have benefited from using neuromarketing to influence consumer behaviour.
2022	Javier Leonardo Grajales Mantilla, Vannya Esther Mendez Chavez ^{xii}	* Neuromarketing is a new approach to understanding consumer behaviour. * It involves studying the nervous system and perception to analyse consumer behaviour.	* Describe the neuromarketing concept and its importance in understanding consumer behaviour. * Highlight the study of the nervous system and perception in marketing.	* Neuromarketing explores consumer behaviour through understanding mental processes. * Understanding perception and the nervous system aids in consumer behaviour analysis.	* Neuromarketing is a new approach to understanding consumer behaviour. * Understanding perception is important for marketing strategies.	* Describes the concept of neuromarketing and its importance for marketing. * Emphasizes the need to understand consumer perception and implement strategies.	* Understanding consumer behaviour through mental processes * Importance of neuromarketing for marketing strategies and organisations	* Understanding consumer behaviour through neuroscience and perception. * Implementing strategies based on mental processes for marketing effectiveness.
2022	Monika Gupta; Sandhir Sharma; Shubhi Bansal ^{xiii}	* Neuromarketing: a study on the impact of branding and advertising on the human brain. * Analyzing formal education in neuromarketing	* Analyze current and future formal education scenarios in neuromarketing. * Understand the viewpoints of youth and educationists on	* Analyzing formal education scenario in neuromarketing during Covid times. * Understanding viewpoints of youth and educationists	* Neuromarketing is an emerging field of interest for big corporates. * There is a need for certified professionals in neuromarketing.	* The paper analyses the current and future scenario of formal education in neuromarketing. * The researcher considers the viewpoints of youth	* Analyzing current and future formal education scenarios in neuromarketing. * Understanding viewpoints of youth and educationists in	* Demand for certified professionals in neuromarketing is increasing. * Formal education in neuromarketing is gaining

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		during Covid times.	neuromarketing education.	on neuromarketing education.		and educationists in this context.	the neuromarketing domain.	importance in the industry.
2022	Rizwan Raheem Ahmed, Dalia Streimikienė, Zahid Ali Channar, Hassan Abbas Soomro ^{xiv}	<ul style="list-style-type: none"> * Neuromarketing is a costly technique for designing marketing strategies. * Neural networks offer a cost-effective alternative for predicting consumer buying behaviour. 	<ul style="list-style-type: none"> * Examine neural networks as an alternative to traditional neuromarketing tools. * Investigate predictive consumer buying behaviour using artificial intelligence. 	<ul style="list-style-type: none"> * Neural network is a cost-effective alternative to traditional neuromarketing tools. * Neural networks can predict consumer buying behaviour effectively in advertising. 	<ul style="list-style-type: none"> * Neural networks are a cost-effective and powerful alternative to traditional neuromarketing tools. * Artificial neural networks can be used to examine consumer buying behaviour. 	<ul style="list-style-type: none"> * Neural networks are a cost-effective alternative to traditional neuromarketing tools. * Neural networks can predict consumer buying behaviour in advertising campaigns. 	<ul style="list-style-type: none"> * Neural network is a cost-effective alternative to traditional neuromarketing tools. * Significant implications for future researchers and brand managers in sectors. 	<ul style="list-style-type: none"> * Neural networks are a cost-effective alternative to traditional neuromarketing tools. * The study has implications for future researchers and brand managers.
2022	Shreyasi Pranjali, Pradhyum an Singh Lakhawat ^{xv}	<ul style="list-style-type: none"> * Neuromarketing is a new field that studies consumer responses to marketing stimuli. * It helps in understanding consumer motivations, preferences, and decision-making. 	<ul style="list-style-type: none"> * Study consumer motivations, preferences, and decisions related to market situations. * Gain insight into consumer responses to marketing stimuli. 	<ul style="list-style-type: none"> * Neuromarketing helps study consumer behaviour and predict decision-making. * It measures physiological and neural signals to gain consumer insights. 	<ul style="list-style-type: none"> * Neuromarketing helps study consumer behaviour and predict decision-making. * It can reduce uncertainty and provide insights into consumer motivations and preferences. 	<ul style="list-style-type: none"> * The paper provides an overview of the neuromarketing approach. * It highlights how neuromarketing can help in studying consumer behaviour. 	<ul style="list-style-type: none"> * Neuromarketing helps measure the physiological and neural signals of the brain. * It provides insight into consumer motivations, preferences, and decisions. 	<ul style="list-style-type: none"> * Neuromarketing can help understand consumer motivations, preferences, and decisions. * It can be used to predict and manipulate consumer decision-making.
2021	Ahmed H. Alsharif, Md Zafir Md Salleh, RohaizatB aharun ^{xvi}	<ul style="list-style-type: none"> * Neuromarketing uses neuroscience tools to study consumer behaviour * Emotional and cognitive processes receive attention in NM 	<ul style="list-style-type: none"> * Study neural correlates of consumer behaviour and cognitive and emotional processes. * Analyze activity regions in consumers' brains when exposed to stimuli. 	<ul style="list-style-type: none"> * Focus on emotional and cognitive processes in consumer behaviour. * Utilize neuroscience tools to study neural correlates of decision-making. 	<ul style="list-style-type: none"> * Neuromarketing uses neuroscience tools to study consumer behaviour. * Emotional and cognitive processes receive attention in NM. 	<ul style="list-style-type: none"> * Neuromarketing uses neuroscience tools to study consumer behaviour * Emotional and cognitive processes receive attention in NM 	<ul style="list-style-type: none"> * Neuromarketing uses neuroscience tools to study consumer behaviour and decision-making processes. * It provides precise information about brain activity when exposed to marketing stimuli. 	<ul style="list-style-type: none"> * Neuromarketing provides precise information about brain activity in response to marketing stimuli. * It aids in shaping and understanding future research directions in marketing.
2021	Ahmed H. Alsharif, Nor Zafir Md Salleh, RohaizatB aharun ^{xvii}	<ul style="list-style-type: none"> * NM studies use fMRI, EEG, and ET to understand consumer behaviour. * Tools provide insights into mental and physiological reactions to stimuli. 	<ul style="list-style-type: none"> * Understand mechanisms of decision-making in the consumer's brain towards marketing stimuli. * Use state-of-the-art technology to gauge consumer responses effectively. 	<ul style="list-style-type: none"> * Neuromarketing tools enable gauging consumers' neurometrics and biometrics responses. * Provide valuable information about physiological and mental reactions towards marketing stimuli. 	<ul style="list-style-type: none"> * NM tools provide valuable insights into consumer behaviour * EEG, fMRI, and ET gauge neurotics and biometrics responses 	<ul style="list-style-type: none"> * NM tools like fMRI, EEG, and ET gauge consumer responses * Provide valuable information about physiological and mental reactions 	<ul style="list-style-type: none"> * NM tools like fMRI, EEG, and ET gauge consumer responses effectively. * Provide valuable insights into consumer behaviour that are impossible to obtain through traditional methods. 	<ul style="list-style-type: none"> * Neuromarketing tools provide insights into consumer behaviour that are impossible to obtain through traditional methods. * EEG, FMRI, and ET gauge neurometrics and biometrics responses effectively.
2021	Ahmed H. Alsharif, Nor Zafir Md Salleh, RohaizatB aharun, Alharthi Rami Hashem E, Alharthi Rami Hashem E ^{xviii}	<ul style="list-style-type: none"> * Neuromarketing is the application of neuroimaging and physiological tools in consumer behaviour research. * It focuses on recording neural correlates of decision-making, emotion, attention, and memory. 	<ul style="list-style-type: none"> * Analysed neuromarketing research trends in the last five years. * Examined neural correlates of consumers' behaviour using neuroimaging tools. 	<ul style="list-style-type: none"> * Hypotheses related to NM research trends and outcomes. * Testing effects of neuromarketing on consumer behaviour and preferences. 	<ul style="list-style-type: none"> * The paper provides a bibliometric analysis of neuromarketing research in the last five years. * The paper discusses the application of neuroimaging and physiological tools in studying consumers' behaviour. 	<ul style="list-style-type: none"> * The paper provides a bibliometric analysis of neuromarketing research in the last five years. * The paper focuses on the application of neuroimaging and physiological tools in recording consumers' behaviour. 	<ul style="list-style-type: none"> * Application of neuroimaging and physiological tools in consumer behaviour analysis. * Recording neural correlates of decision-making, emotion, attention, and memory. 	<ul style="list-style-type: none"> * Insights for marketers to understand consumer behaviour using neuroimaging tools. * Potential for improving marketing strategies based on neural correlates research.
2021	Bitty Sebastian ^{xix}	<ul style="list-style-type: none"> * Neuromarketing studies consumer behaviour using brain research, economics, and neuroscience. * Impact of reputation 	<ul style="list-style-type: none"> * Examine the impact of reputation campaigns, brands, and items on consumers. * Analyse consumer reactions to marketing stimuli 		<ul style="list-style-type: none"> * Neuromarketing is a promising field in marketing science. * Primary and secondary data were analysed 	<ul style="list-style-type: none"> * Neuromarketing examines the impact of campaigns, brands, and items on consumers. * Primary data was collected from 200 	<ul style="list-style-type: none"> * Neuromarketing studies the impact of campaigns, brands, and items on consumers. * Primary data was collected from 200 	<ul style="list-style-type: none"> * Neuromarketing helps understand consumer reactions before promotional activities. * Primary and secondary data were analysed

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		campaigns, brands, and items on consumer decisions.	using neuromarketing tools.		using statistical tests.	samples in Ernakulam District.	samples in Ernakulam District.	using statistical tests for insights.
2021	Manuel Cortés Cuns ^{xx}	* Neuromarketing uses neuroscience to understand consumer behaviour and influence decision-making. * Techniques include fMRI, EEG, PET, and MEG to study brain activity.	* Understand consumer behaviour and motivation * Influence consumer choice through neuroscience techniques	* Neuromarketing hypotheses: Influence consumer behaviour, understand motivation, and market products effectively. * Classification of neuromarketing: It is not universally agreed upon; various perspectives exist.	* Traditional marketing techniques are becoming less relevant. * Neuromarketing provides a competitive advantage in understanding consumer behaviour.	* The paper provides a theoretical review of the origin of neuromarketing. * The paper discusses the neuroscientific techniques used to market products and services.	* Understanding consumer behaviour and motivation * Developing more effective marketing strategies	* Neuromarketing helps understand consumer behaviour and motivation. * It allows for more effective marketing strategies.
2020	Aida Azlina Mansor, Salmi Mohd Isa ^{xxi}	* Neuromarketing combines neuroscience and marketing for consumer analysis insights. * Focuses on the subconscious mind, preferences, motivations, and predicting behaviour.	* Explain fundamental concepts of neuromarketing for marketing research. * Develop effective approaches for better consumer services through scientific methods.	* Neuromarketing provides insights into consumer preferences, motivations, and behaviour. * Neuromarketing complements traditional marketing methods rather than replacing them.	* Neuromarketing offers valuable resources for marketing research. * Challenges include lack of experience, high costs, and lack of accessibility to resources.	* Neuromarketing provides insights into consumer preferences and behaviour. * Neuromarketing complements traditional marketing methods.	* Application of neuroscientific methods in marketing research * Providing information on consumer preferences and behaviour	* Neuromarketing offers valuable resources for marketing research. * It can lead to more effective customer segmentation.
2020	Gunjan Mishra, Mithi Shukla ^{xxii}	* Neuromarketing is a field that combines neuroscience and market research. * It aims to understand the physiological and psychological responses of consumers to stimuli.	* Understand consumer behaviour through neuroscience and market research techniques. * Analyze the evolution of neuromarketing studies on consumer behaviour.	* Neuromarketing aims to understand consumer behaviour through neuroscience and market research. * Techniques like Eye Tracking, EEG, fMRI, and Galvanic Skin Response were utilised.	* Neuromarketing can help understand the cognitive processes of consumers. * Major advances are being made in marketing.	* Major advances are being made in the marketing area. * Neuromarketing can help understand the cognitive processes of consumers.	* Understanding consumer psychology through neuroscience and market research techniques. * Advancements in marketing understanding cognitive processes and decision-making of consumers.	* Neuromarketing can help understand consumer behaviour and influence decision-making. * Techniques like eye tracking, EEG, fMRI, and facial analysis can be used to study consumer responses.
2020	Natalia Abuin Vences, Jesús Díaz*Cam po, Daniel Francisco García Rosales ^{xxiii}	* Social networks changed organisation relations from asymmetric to symmetric. * Neuromarketing enhances the emotional connection between organisations and social media users.	* Review the effectiveness of neuromarketing in emotional connection on social networks. * Explore the importance of sociology and psychology in social network communication.	* Neuromarketing enhances the emotional connection between organisations and users on social networks. * Social influence plays a significant role in user behaviour on social media.	* Neuromarketing is an effective tool for improving emotional connection in social networks. * Social influence plays a significant role in user behaviour on social media.	* Neuromarketing is an effective tool for improving the emotional connection between organisations and users in social networks. * Social influence plays a significant role in user behaviour on social networks.	* Neuromarketing is important in the emotional connection between organisations and users. * Social influence and user behaviour in social networks.	* Neuromarketing enhances the emotional connection between organisations and social media users. * Social influence in networks affects user behaviour and engagement.
2020	Nerio Ramón Olivar Urbina ^{xxiv}	* Neuromarketing used to design strategies for marketing mix of new product * Unconscious psycho*emotional elements and product characteristics influence buying decisions	* Design strategies for marketing mix in product development * Explore unconscious psycho*emotional elements influencing buying decisions	* Unconscious psycho*emotional elements influence buying decisions. * Neuromarketing is effective for positioning new products.	* Unconscious psycho*emotional elements influence buying decisions * Neuromarketing is an effective tool for positioning new products	* Main reasons behind buying decisions are unconscious psycho*emotional elements. * Neuromarketing is a reliable and precise tool for positioning new products.	* Unconscious psycho*emotional elements influence buying decisions. * Neuromarketing is effective for positioning new products.	* Neuromarketing provides a deep understanding of unconscious buying decisions. * Neuromarketing is effective for positioning new products.
2020	Pierina Elizabeth Castro*García, Halder Yandry Looor*Zambrano ^{xxv}	* Estudiosobre neuromarketing para aumentarventasenf uneraria. * Se aplicóencuesta a clientes para	* Design neuromarketing strategies to increase effective sales. * Understand customer responses to improve	* Neuromarketing strategies increase effective sales in Jardines de Manabi. * Neuromarketing contributes to the advancement of commercial	* The study found low variability in the amounts of customer withdrawals. * Customers tend to have low satisfaction and	* The paper discusses the use of neuromarketing strategies to increase sales in a funeral company. * The paper concludes that	* Neuromarketing contributes to advancing commercial activities for international and national companies. * Consider various	* Neuromarketing strategies can enhance sales in funeral services. * Customer satisfaction and information influence customer

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		evaluarsatisfacción del servicio.	commercial activities.	activities in various companies.	lack information about the services.	neuromarketing can contribute to the success of businesses.	factors when implementing proposed neuromarketing strategies.	retention in funeral services.
2020	Raquel Tinoco*Egas, Oscar Juanatey*Boga, Valentín* Alejandro Martínez* Fernández ^{xxvi}	* Neuromarketing combines neuroscience tools with marketing for innovative solutions. * Tools like EEG and EDA are used for marketing problem-solving.	* Analyze theoretical aspects of neuromarketing. * Identify essential tools for application and measurement in neuromarketing.	* Neuromarketing tools enhance market research for academia and empirical practices. * Electroencephalography and electrodermal activity are key measurement tools.	* Neuromarketing combines neuroscience and marketing for significant solutions. * Tools like electroencephalography and electrodermal activity are used.	* The paper discusses the theoretical aspects of neuromarketing and its measurement tools. * The paper highlights the importance of electroencephalography and electrodermal activity in neuromarketing studies.	* Combines neuroscience with marketing and offers unique solutions for various sectors. * Tools like EEG and electrodermal activity used for business problems.	* Neuromarketing tools: EEG, electrodermal activity, solve business and marketing problems. * Combining psychophysiological data with questionnaire responses for insights.
2020	Suheela Shabir ^{xxvii}	* Neuromarketing techniques offer innovative methods for understanding consumer behaviour. * Neuromarketing has a strong influence on consumer buying behaviour and decision-making.	* Evaluate consumer behaviour using neuromarketing techniques. * Explore the impact of neuromarketing on decision-making processes.	* Neuromarketing tools influence consumer behaviour, preferences, and decision-making. * Neuro marketing enhances marketing inputs like advertising, pricing, and branding.	* Neuro marketing offers new avenues in marketing. * Ethical aspects and research protocols need improvement.	* Neuromarketing influences consumer behaviour, advertising, pricing, and decision-making. * Neuromarketing complements traditional research for a better understanding of consumer behaviour.	* Neuromarketing influences consumer buying behaviour, advertising, pricing, and distribution. * Neuro marketing offers innovative methods for probing consumer minds directly.	* Neuro marketing enhances understanding of consumer behaviour for effective marketing. * Ethical considerations and research protocols need to be developed.
2019	Sadhna Shukla ^{xxviii}	* Neuromarketing examines brain responses to marketing stimuli. * Traditional marketing research approaches provide biased solutions.	* Explore brain responses to marketing stimuli for consumer behaviour understanding * Compare traditional marketing with advanced neuromarketing research approaches	* Neuromarketing explores brain responses to marketing stimuli for consumer behaviour. * Integrates methodologies to probe and synthesise customer's underlying emotions.	* Neuromarketing provides hidden insight into consumer behaviour. * Ethical issues and dilemmas faced by neuromarketing companies.	* Provides an integrative outline of tools and technologies used in neuromarketing * Explores methodologies to reveal consumer decision-making mysteries	* Provides an integrative outline of tools and technologies used in neuromarketing * Explores methodologies to reveal consumer decision-making mysteries	* Provides an integrative outline of tools and technologies used in neuromarketing * Explores methodologies to reveal consumer decision-making mysteries
2018	Lino Barbasso, Giuseppe Tardivo, Milena Viassone, Francesca Serravalle ^{xxix}	* Traditional marketing limitations are overcome by neuromarketing for consumer behaviour insights. * Neuromarketing focuses on brain parts influenced by advertising messages.	* Highlight the influence of neuromarketing on consumer decisions * Detail parts of brain advertising messages act on	* Neuromarketing positively influences the measurement of consumer behaviour. * Traditional marketing methods have limitations related to the subjectivity of responses.	* Neuromarketing allows managers to understand consumer thoughts and emotions. * Neuromarketing positively impacts the measurement of consumer behaviour.	* Positive effects on measuring consumer behaviour * Provides theoretical and managerial implications	* Neuromarketing allows a direct understanding of consumer thoughts, emotions, and intentions. * Highlights the impact of advertising messages on specific parts of the brain.	* Directly understand consumer thoughts, emotions, and intentions. * Measure the impact of advertising messages on consumer choices.
2018	Sergio Orlando Botello Bermúdez, Karen Tatiana Suárez Vega ^{xxx}	* Review of global neuromarketing literature trends and research gaps. * Thematic exploration guides academic production in the neuromarketing field.	* Identify trends and gaps in neuromarketing literature worldwide. * Guide academic production practices in the field of neuromarketing.	* Identified empirical trends and gaps in neuromarketing literature. * Lack of systematic reviews and specialised journals in neuromarketing.	* Neuromarketing provides relevant information for consumer reactions and advertising messages. * Implementation of neuromarketing principles is increasing but requires specialised teams and funding.	* The number of publications on neuromarketing has increased significantly over time. * The main empirical trends in neuromarketing include factors such as the influence of TV and commercials, measurement through magnetic resonance, and the role of reputation.	* Identification of empirical trends and gaps in the literature on neuromarketing. * Exploration of various topics related to neuromarketing for academic production.	* The paper suggests that applying the suggestions can change the general perception of neuromarketing and build a strong community that benefits both large and small companies. * The paper identifies trends and gaps in the literature on

Year	Authors	Abstract	Research Objectives	Hypotheses	Conclusions	Results	Contributions	Practical Implications
								specific topics in neuromarketing.
2017	Ming Hsu ^{xxxi}	<ul style="list-style-type: none"> * Brain-based approaches complement traditional methods in understanding customer attitudes. * Practical guidance for managers on validation and generation of insights. 	<ul style="list-style-type: none"> * Validate and generate insights using traditional and brain-based methods. * Emphasize the complementarity of traditional and brain-based approaches to understanding customers. 	<ul style="list-style-type: none"> * Validation and hypothesis testing are hallmarks of evidence-based management. * Brain-based approaches complement traditional methods in understanding customer insights. 	<ul style="list-style-type: none"> * Brain-based approaches complement traditional methods in understanding customers. * Managers can validate existing insights and generate novel insights. 	<ul style="list-style-type: none"> * Practical guidance for managers on brain-based approaches in marketing. * Emphasizes traditional and brain-based approaches as complementary for understanding customers. 	<ul style="list-style-type: none"> * Brain-based approaches for understanding customer thoughts, feelings, and intentions. * Emphasizes traditional and brain-based approaches as complements in understanding customers. 	<ul style="list-style-type: none"> * Brain-based approaches complement traditional methods for understanding customers. * Enable validation of existing insights and generation of novel insights.
2017	Mona Kansal ^{xxxii}	<ul style="list-style-type: none"> * Neuromarketing uses neuroscience techniques to understand consumer buying behaviour. * Techniques used include fMRI, EEG, eye tracking, PET, MEG, and GSR. 	<ul style="list-style-type: none"> * Understand consumer buying behaviour using neuroscience techniques * Analyse the growth and expansion of the Neuromarketing market worldwide 	<ul style="list-style-type: none"> * Neuromarketing helps understand consumer behaviour for better marketing decisions. * Techniques like fMRI, EEG, Eye Tracking, PET, MEG, and GSR are used. 	<ul style="list-style-type: none"> * Neuromarketing uses neuroscience techniques to understand consumer behaviour. * Techniques such as fMRI, EEG, eye tracking, etc. are used. 	<ul style="list-style-type: none"> * The paper studies neuromarketing as a tool to understand consumer buying behaviour. * The paper analyses the growth and expansion of the neuromarketing market worldwide. 	<ul style="list-style-type: none"> * Understanding consumer buying behaviour through neuroscience techniques * Analysing growth and expansion of the Neuromarketing market worldwide 	<ul style="list-style-type: none"> * Understanding consumer behaviour for better marketing decisions * Analysis of growth and expansion of the neuromarketing market
2017	Steven J. Stanton, Walter Sinnott-Armstrong, Scott A. Huettel ^{xxxiii}	<ul style="list-style-type: none"> * Neuromarketing uses neuroscience to study consumer behaviour and decision-making. * Ethical concerns were addressed, and a potential positive impact on society was highlighted. 	<ul style="list-style-type: none"> * Identify ethical concerns and potential risks in neuromarketing research. * Propose steps to mitigate ethical risks and protect consumers. 	<ul style="list-style-type: none"> * Ethical concerns with neuromarketing practices and potential misuse identified. * Steps suggested to mitigate ethical risks and reduce threats to consumers. 	<ul style="list-style-type: none"> * Neuromarketing has the potential for a positive impact on society and consumers. * Ethical concerns can be mitigated with proper practices. 	<ul style="list-style-type: none"> * Ethical concerns in neuromarketing research practices in the industry identified. * Steps to mitigate ethical risks and reduce threats to consumers proposed. 	<ul style="list-style-type: none"> * Articulating common ethical concerns with neuromarketing * Identifying potential ethical issues in industry practices 	<ul style="list-style-type: none"> * Neuromarketing has the potential to enhance consumers' experiences. * Consumers can make free choices even if influenced by physiological factors.
2017	Terry Daugherty, Ernest Hoffman ^{xxxiv}	<ul style="list-style-type: none"> * Neuromarketing uses neuroscience to analyse and understand consumer behaviour. * Embraced for scientific measurement and reducing uncertainty in marketing research. 	<ul style="list-style-type: none"> * Analyse and understand consumer behaviour using neuroscientific research methods * Provide marketers with means to reduce uncertainty in marketing research 	<ul style="list-style-type: none"> * Neuromarketing offers objective measurement over subjective research methods. * Diagnostic and evaluative behavioural research can reduce uncertainty for marketers. 	<ul style="list-style-type: none"> * Neuromarketing provides scientific and objective measurements for analysing consumer behaviour. * The full potential of neuromarketing has yet to be unlocked. 	<ul style="list-style-type: none"> * Provides an explanation of common neuromarketing techniques * Presents a contextual framework for understanding marketing research outcomes 	<ul style="list-style-type: none"> * Objective measurement is preferred over subjective methods like surveys and focus groups. * Diagnostic and evaluative research can reduce uncertainty for marketers. 	<ul style="list-style-type: none"> * Provides means to analyse and understand consumer behaviour effectively. * Helps reduce uncertainty in marketing research through objective measurement methods.
2017	Yrd. Doç. Dr. Gülberk Gültekin Salman, Ar. Gör. Burçak Parker ^{xxxv}	<ul style="list-style-type: none"> * Neuromarketing studies analyse consumer purchasing tendencies for efficient advertising budget use. * Focus on the rise, techniques, and effects of neuromarketing in Turkey. 	<ul style="list-style-type: none"> * Analyse neuromarketing studies globally and in Turkey. * Evaluate the positive and negative effects of neuromarketing efforts in Turkey. 	<ul style="list-style-type: none"> * Neuromarketing studies aim to analyse consumers' purchasing tendencies efficiently. * Neuro*depth interviews with marketing professionals evaluate positive and negative effects. 	<ul style="list-style-type: none"> * The paper examines the rise and functioning of neuromarketing and its techniques. * The paper presents the analysis and results of advertising techniques in Turkey. 	<ul style="list-style-type: none"> * The paper examines the rise and functioning of neuromarketing parameters. * The paper presents the history, analysis, and results of neuromarketing techniques in Turkey. 	<ul style="list-style-type: none"> * Analysing consumers' purchasing tendencies * Developing efficient advertising techniques for effective budget utilisation 	<ul style="list-style-type: none"> * Develops neuromarketing techniques for efficient advertising budget use. * Analyse the positive and negative effects of neuromarketing efforts.
2016	Dijana Čosić ^{xxxvi}	<ul style="list-style-type: none"> * Neuromarketing combines psychology, economics, and consumer neuroscience. * Techniques like eye tracking measure respondent's reactions. 	<ul style="list-style-type: none"> * Gain insight into unconscious drivers of choice and preference. * Discover the respondent's reactions to different stimuli using neuromarketing techniques. 	<ul style="list-style-type: none"> * Neuromarketing studies aim to understand unconscious drivers of choice. * Traditional methods upgraded with techniques like eye tracking in research. 	<ul style="list-style-type: none"> * Neuromarketing combines psychology, economics, and consumer neuroscience. * Eye tracking is a widely used neuromarketing technique. 	<ul style="list-style-type: none"> * Eye tracker recorded fixations in defined areas of interest * One scene in the commercial drew more attention 	<ul style="list-style-type: none"> * Combines behavioural psychology, economics, and consumer neuroscience * Measures respondent's reaction to different stimuli 	<ul style="list-style-type: none"> * Small sample size limits the generalizability of findings * Fixed colour and positioning introduce potential bias

Year	Authors	Abstract	Research Objectives	Hypotheses	Conclusions	Results	Contributions	Practical Implications
2016	Jorge Álvarez* C alderón, Irene García* Ro ndón ^{xxxvii}	* It focuses on Neuromarketing and Neuro-Linguistic programming for creativity	* Create a new culture based on multiple intelligence and creativity. * Implement Neuromarketing and Neurocommunication strategies for business growth.		* Promotes new culture based on multiple intelligence and neuroscience techniques. * Focus on Neuromarketing, Neurogestion, Neurocommunication, and Neuromarketing techniques. * Aims to create a new culture based on multiple intelligences.	* Incorporates Neuromanagement, Neurogestion, Neural communication, and Neuromarketing techniques. * Aims to create a new culture based on multiple intelligences.	* Neuromanagement, Neurogestion, Neural communication, Neuromarketing * Create a new cultural business based in multiple intelligence.	* Implement neuromarketing and Neural communication strategies to increase customer satisfaction. * Create a new culture based on multiple intelligences and creativity.
2016	Manish Madan ^{xxxviii}	* Neuromarketing reveals consumer desires using brain scanning technology for marketing strategies. * Study focuses on key variables influencing acceptance of neuromarketing in India.	* Identify key variables influencing acceptance of neuromarketing in India. * Establish interrelationships of variables using Interpretative Structural Modelling.	* Identify key variables influencing acceptance of neuromarketing in India. * Establish interrelationships of variables using Interpretative Structural Modelling.	* The paper identifies key variables that influence the acceptance of neuromarketing in Indian society. * The paper establishes a structural framework for the smooth flow of neuromarketing in India.	* Identified key variables influencing acceptance of neuromarketing in Indian society. * Established a structural framework for the smooth integration of neuromarketing in India.	* Identifying key variables that influence the acceptance of neuromarketing in India * Establishing a structural framework for the smooth integration of neuromarketing in Indian society	* Identifies key variables influencing acceptance of neuromarketing in Indian society. * Establishes a structural framework for smooth integration of neuromarketing in India.
2016	Mikel Alonso López, Maria Francisca Blasco López, Víctor Molero Ayala ^{xxxix}	* Study on somatic marker theory in decision-making using fMRI. * Emotions influence consumer decisions, impacting rational processes.	* Explore the influence of emotions on the decision-making process. * Investigate somatic marker theory in consumer behaviour.	* Emotions influence decision-making process. * Somatic markers accelerate decision-making for survival and energy saving.	* Emotions play a significant role in decision-making and consumer behaviour. * Somatic markers and future memories influence the decision-making process.	* The somatic marker and future memories influence the decision-making process. * Emotions play an important role in consumer behaviour and decision-making.	* Emotions influence the decision-making process, adding positive or negative components. * Emotions play a crucial role in consumer behaviour and decision-making.	* Emotions influence consumer decisions, impacting marketing strategies. * Somatic markers accelerate the decision-making process in consumer behaviour.
2015	Harit Kumar, Priyanka Singh ^{xl}	* Neuromarketing uses brain research in marketing, gaining popularity in academia. * Focus on consumer contradictions, using neuroimaging, EEG, FMRI, and Eye Tracking.	* Study role and emergence of neuromarketing in market research. * Measure consumer behaviour using neuroimaging, EEG, FMRI, and Eye Tracking.	* Neuromarketing is an effective tool for marketers in market research. * Marketing research focuses on the physical body, mind, heart, and spirit.	* Neuromarketing is an effective tool for marketers. * Marketing research focuses on the physical body, mind, heart, and spirit.	* The paper discusses the emergence and role of neuromarketing as a tool for market research. * The paper explores the practices involved in neuromarketing	* Neuromarketing simplifies market research by probing minds effectively. * Marketing research focuses on the physical body, mind, heart, and spirit.	* Simplifies probing minds for advertisers * Utilizes neuroimaging, EEG, FMRI, and Eye Tracking for Research
2015	Neven Šerić, Marijana Jurišić, Duje Petričević ^{xli}	* Neuromarketing research potential for optimising tourist destination perception. * Comparison of neuromarketing techniques with standard research methods.	* Evaluate neuromarketing potential for optimising tourist destination brand perception. * Compare neuromarketing techniques with standard research methods in tourism marketing.	* Neuromarketing research can optimise destination offers for desired guest perception. * No research has been found on the application of neuromarketing in destination brand management.	* Neuromarketing techniques should be used in tandem with standard research. * No research has been found on neuromarketing applications in destination brand management.	* Neuromarketing techniques should be used in tandem with standard research. * No research has been found on neuromarketing applications in destination brand management.	* Comparison of neuromarketing techniques with standard research methods * Evaluation of neuromarketing potential for destination brand management	* Neuromarketing can optimise destination offer perception for potential guests. * Neuromarketing techniques should be used in tandem with standard research.
2015	Sunita Kumar ^{xlii}	* Neuromarketing delves into the subconscious mind to understand consumer behaviour. * Investigates attention levels and their influence on users consciously and unconsciously.	* Understand how attention levels influence users in advertising. * Explore conscious and unconscious effects of different attention levels.	* Consumers may not be aware of true feelings in situations. * Neuromarketing can measure attention levels and influence users consciously/unconsciously.	* Neuromarketing predicts consumer reactions accurately using brain activity. * Neuromarketing impacts consumerism and the study of human behaviour significantly.	* Neuromarketing measures attention levels from advertisement exposure. * Different attention levels influence users consciously and unconsciously.	* Consumers may not be aware of true feelings in situations. * Neuromarketing shows the path to profitable branding and advertising business.	* Neuromarketing helps understand consumer behaviour through brain activity analysis. * Neuromarketing tools include MRI, skin response, eye tracking, and voice analysis.

Analysis of Word Frequency Visualization

Figure 1.2 Word Frequency Visualization



The reviews stated above give a perfect idea of work done as of now on the related parametric of neuromarketing in the Hospitality industry. Work done to date details the relevance of the former in the hospitality industry. The above is the pictorial representation of the Word frequency visualization, which means the visual representation of the frequency of words within a given body of text. This reveals the frequency of words being repeated in the present context of the given theme.

Conclusion:

In conclusion, the integration of neuro-tourism and neuromarketing has opened new avenues for understanding consumer behaviour and enhancing tourism experiences. Despite the promising advancements, significant research gaps remain, particularly in the application of artificial intelligence to these fields. Addressing these gaps could lead to more effective marketing strategies and improved tourist experiences. Future research should focus on incorporating AI-driven techniques in neuro-tourism and neuromarketing, which has the potential to revolutionize these fields by providing deeper insights and more precise methods for capturing unconscious emotional responses. As these areas evolve, the synergy between AI and neuroscience will be crucial in driving innovation and effectiveness in both the tourism and marketing sectors.

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