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Neuroscience Unveiled: Shaping Consumer Behaviour with SEM Analysis

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Abstract: Neuromarketing explores the subconscious mechanisms that impact customer choices. This research investigates the influence of neuromarketing on customer behaviour by analysing data, uncovering complex connections between emotion, attention, memory, perception, motivation, decision-making, and purchasing behaviour. Insights assist marketers in customising plans. This research examines the impact of consumer behaviour, with a focus on the emotional and cognitive components that drive decision-making. The study employs meticulous data analysis methods, such as data cleansing, descriptive statistics, and Structural Equation Modelling (SEM) with the assistance of Amos software. It examines the connections between emotion, attention, memory, perception, motivation, decision-making, and consumer purchasing behaviour. The inclusion of demographic information about the respondents enhances the research by offering valuable insights into various customer categories. Attention and memory have a robust positive association, highlighting the significant influence of attention on memory. Trust is strongly associated with attention, memory, motivation, and decision-making, emphasising the widespread impact of trust. The regression weights highlight the beneficial influence of attention, memory, perception, and motivation on consumer purchasing behaviour, but decision-making has a negative correlation.

Keywords: Neuromarketing, Consumer Behaviour, Emotion, Attention, Memory, Perception, Motivation, Decision-making.

I. Introduction

Neuromarketing is a discipline within marketing that use information from neuroscience to comprehend the behaviour and emotions of customers, and then employ this understanding to enhance marketing plans and methods. The research used methodologies such as functional magnetic resonance imaging (fMRI), electroencephalography (EEG), and eye-tracking to examine the brain's reaction to various marketing stimuli, including advertisements, packaging, and product designs. The objective of neuromarketing is to acquire a profound comprehension of customers' motives, preferences, and decision-making processes in order to develop marketing campaigns that are more efficient and captivating. Neuromarketing has the capacity to greatly influence consumer purchase behaviour by equipping marketers with a more profound comprehension of how customers make choices and what motivates their buying decisions. Neuromarketing utilises neuroscience approaches to analyse how the brain reacts to marketing stimuli. This enables firms to develop products and marketing campaigns that are more captivating and successful. For instance, it has the ability to uncover the most efficient hues, forms, visuals, and language to use in marketing, packaging, and product design. Additionally, it may provide valuable understanding of the emotional and psychological factors that shape consumer behaviour, including impulsive purchasing, brand devotion, and the effects of social influence. Neuromarketing has the potential to enhance firms' marketing tactics, boost revenue, and foster more robust customer connections [14, 19].

1.1 Importance of Neuromarketing

Despite receiving criticism, neuromarketing continues to be a helpful tool for organisations wanting to get deeper insights into client preferences. It utilises diverse techniques to comprehend person preferences, responses to advertising, and packaging inclinations. In addition to improving the effectiveness of marketing campaigns, neuromarketing also aids in identifying subconscious reactions, devising distinctive methods, connecting with the requirements of the target population, and boosting the entire customer experience. Marketers may obtain a competitive advantage by using neuroscience findings

to enhance product characteristics and generate favourable reactions. Companies are encouraged to thoroughly explore the workings of neuromarketing in order to achieve long-term success in comprehending and fulfilling client wants [17-20].

1.2 Principal of neuromarketing

Neuromarketing use functional magnetic resonance imaging and electroencephalogram technologies to examine individuals' physiological and brain reactions to advertising, packaging, and design. This strategy offers organisations with crucial insights into the genuine demands and requirements of customers. Marketers observe the neural activity of customers when they are exposed to advertisements or designs, enabling them to customise their tactics depending on feedback and analysis of changes. Brands get crucial customer insights by using brain scanning methods such as eye movement, pupil size, facial expressions, heart rate, and emotions. This data is used to make informed choices that improve advertising, content production, packaging, website design, and brand identity. By doing so, companies are able to effectively attract consumers and satisfy their requests [21-23].

1.3 Neuromarketing and Consumer Behaviour

The discipline of Consumer Behaviour examines the factors that impact an individual's selection of one product over another. Marketers analyse consumer behaviour in the marketplace to understand the factors influencing people's purchase choices, with the aim of improving customer service. Thus, these effects mould consumer behaviours. These include aspects like as one's psychological well-being, interpersonal relationships, cultural background, and financial situation. When considering consumer preferences, such as the popularity of a product or the lack of attraction of a service, it is important to take human psychology into serious consideration. Motive, perception, learning, and viewpoint are all crucial psychological components. Neuromarketing is of utmost importance in this particular situation. Neuromarketing approaches may provide marketers, psychologists, and economists with a deeper understanding of how marketing stimuli and messages are processed at both the conscious and unconscious levels [6] [20].

II. Research Background

A recent study conducted by Yasir & Haq (2022) conducted a thorough examination of the influence of neuromarketing on customer behaviour. The study specifically investigated the effects of sensory processing, brand familiarity, and loyalty on emotional and cognitive aspects. Concerns of an ethical nature were brought up, underscoring the need for more study to guarantee the appropriate use of neuromarketing methods. Ahmed et al.'s (2022) study focused on the ethical aspects of neuromarketing and its influence on consumer behaviour. The authors emphasised the role of emotional and cognitive factors and suggested neural networks as a cost-effective and ethically conscious alternative. Changuán & Simbaña (2022) used a unique methodology by integrating questionnaires and neuroimaging to establish a connection between emotional involvement and increased intentions to make purchases. This study provides useful insights for enhancing emotional engagement techniques and improving marketing efforts. Frederick's (2022) study explored the interconnectedness of neuromarketing and consumer behaviour, highlighting its impact on strategy, brand selection, and general consumer behaviour. The study also addressed ethical considerations associated with this link. Ezeugwu et al. (2022) emphasised the influence of executive function on behaviour in neuromarketing, calling for a more comprehensive comprehension of emotional and cognitive reactions and proposing customised marketing methods for emerging economies. Goswami & Deshmukh (2022) emphasised the importance of neuromarketing in understanding how consumers make decisions. They discussed the origins, uses, and relevance of neuromarketing in uncovering the unconscious factors that affect consumer choices.

Stefko et al. (2021) conducted a study on gender differences in neuromarketing, which revealed variations in consumer purchasing behaviour and enhanced our comprehension of gender-specific shopping behaviour in the field of neuromarketing. Alsharif et al. (2021) examined the development of neuromarketing across time, specifically investigating neuroscience techniques used to investigate human decision-making. The authors also discussed ethical considerations and anticipated future obstacles. Bočková et al. (2021) provided a thorough description of neuromarketing, highlighting its reliance on neuroscientific methods and examining its benefits, constraints, and theoretical consequences. Khurana et al. (2021) investigated the use of neuromarketing in comprehending customers' emotions, emphasising the utilisation of brain-related research in the field of management. The study also highlighted the potential of EEG (electroencephalography) and discussed ethical problems associated with its usage. Alsmadi & Hailat (2021) conducted a study on consumer behaviour

using brain-based methods. They explored the field of neuromarketing and its potential uses, while also discussing ethical considerations and responding to criticism. Garczarek-Bąk et al. (2021) conducted a study in neuromarketing where they used EEG, EDA, and eye-tracking to evaluate psychophysiological responses. Their research aimed to anticipate customers' purchase decisions and emphasised the influence of electrodermal peaks and brand familiarity. Kalaganis et al. (2021) focused on the achievements and expansion of neuromarketing, highlighting the ability of EEG to measure consumers' mental states. They also examined combined neuromarketing approaches and provided an overview of prospective future developments. Pethö et al.'s (2021) study, which examined the relationship between gender equality, consumer buying behaviour, and neuromarketing, found that there were no statistically significant variations between genders in terms of ratings and purchasing behaviour. This finding provides a more nuanced view of the influence of neuromarketing. In a recent study, Singh (2020) examined how neuromarketing affects people's views of online stores. The study analysed consumers' emotions and fixation spots and found that neuromarketing technologies are helpful in measuring the impact of advertising campaigns. In their study, Glova & Mudryk (2020) examined the possibility for future development in the field of neuromarketing. They specifically focused on its applications and its ability to provide insights into customers' buying behaviours and their reactions to incentives.

Iloka & Onyeke (2020) conducted a study of the historical aspect of neuromarketing, emphasising its revolutionary character and advocating for empirical research to investigate problems related to reliability, validity, and generalisability. A study conducted by Aldayel et al. (2020) highlighted the superiority of neuromarketing over traditional marketing in uncovering unconscious motives. The researchers used EEG signals and deep learning techniques to accurately anticipate client preferences. Parchure et al.'s (2020) study emphasised the significance of neuromarketing in comprehending client behaviour and decision-making processes, as it analysed the change in marketing techniques. The study conducted by Rawnaque et al. (2020) included a thorough examination of neuromarketing technology. The researchers analysed existing literature, identified prevailing patterns, and investigated the various approaches and machine learning algorithms used in empirical studies. In their study, Gill & Singh (2020) examined the influence of neuromarketing on the marketing sector, highlighting its ability to enhance understanding of client behaviour and the need for a cost-effective framework for marketers. Vences et al. (2020) conducted a study to assess the effectiveness of neuromarketing in enhancing emotional connections between companies and online audiences. Their research focused on the sociological and psychological elements that determine social media impact. The historical examination culminated with Moya et al.'s (2020) study on neuromarketing methodology in food packaging research. The study proposes a framework to improve validity and recommends the integration of neuromarketing and declarative methods for more accurate outcomes.

2.1 Systematic Reviews

Author Name and Year	**Research Area**	**Methodology**	**Findings**
Yasir, F., & Haq, M. A. U. (2022)	Neuromarketing Impact on Consumer Behaviour	Literature Review, Analysis of academic journals, books, and reports	Emotional and cognitive factors significantly influence consumer buying behaviour. Sensory processing, brand recognition, and brand loyalty play crucial roles. Ethical concerns about potential manipulation in neuromarketing highlighted. Packaging and labels affect consumer purchasing decisions through neuromarketing effects.
Ahmed, R. R., Streimikiene, D., Channar, Z. A., Soomro, H. A., Streimikis, J., & Kyriakopoulos, G. L. (2022)	Neuromarketing and Consumer Behaviour	Neural Network Method, Analysis of consumer responses	Neuromarketing provides a deeper understanding of consumer purchasing decisions. Emotional and cognitive factors, brand recognition, loyalty, and packaging influence unconscious decision-making. Ethical concerns addressed, and further research needed. Neural network offers a cost-effective alternative to conventional neuromarketing methods.
Changuán, M. P. O., & Simbaña, J. A. L. (2022)	Emotional Engagement and Consumer Intentions	Questionnaires and Neuroimaging Techniques	Higher emotional engagement correlates with increased purchase intentions. Neuromarketing techniques enhance consumer engagement. Insights valuable for companies to improve marketing strategies and consumer engagement.

Frederick, D. P. (2022)	Impact of Neuromarketing on Purchasing Decisions	Literature Review, Investigation of Neuromarketing Strategies	Neuromarketing influences various marketing aspects, including strategy, brand choice, consumer behaviour, ad creation, and decision-making. Significance of neuromarketing principles for better understanding customer behaviour emphasized. Ethical issues addressed.
Remigious Ezeugwu, C., Achi, A., & Ezeugwu, C. F. (2022)	Executive Function and Neuromarketing	Examination of executive function and its impact on marketing	Executive function components (inhibitory control, working memory, cognitive flexibility) crucial in understanding customer responses. Neuromarketing helps businesses comprehend emotional, mental, and behavioural reactions in developing economies.
Goswami, A., & Deshmukh, G. K. (2022)	Customer Decision-Making Processes	Exploration of neuromarketing techniques	Neuromarketing techniques shed light on subconscious mind's influence on consumer choice. Brain-related studies in management reveal how the subconscious influences consumer decisions.
Stefko, R., Tomkova, A., Kovalova, J., & Ondrijova, I. (2021)	Gender Equality and Consumer Buying Behaviour	Assessment of consumer buying behaviour and neuromarketing from a gender perspective	Gender-specific disparities in consumer buying behaviour and neuromarketing identified. Neuromarketing's impact on shopping behaviour discussed in the context of gender disparities.
Alsharif, A. H., Salleh, N. Z. M., Baharun, R. O. H. A. I. Z. A. T., & Yusoff, M. E. (2021)	Development and Application of Neuromarketing	Review of neuromarketing methods and ethical concerns	Neuromarketing, using neuroimaging capabilities, studies consumer behaviour. Efficient use of neuroscience methods for studying human decision-making discussed. Ethical concerns addressed, and potential future challenges examined.
Bočková, K., Škrabánková, J., & Hanák, M. (2021)	Definition and Application of Neuromarketing	Proposal of a complete definition of neuromarketing	Neuromarketing defined as a field using neuroscientific approaches for understanding consumer behaviour. Combining findings from various neuromarketing methods produces accurate, objective data for informed management decisions.
Khurana, V., Gahalawat, M., Kumar, P., Roy, P. P., Dogra, D. P., Scheme, E., & Soleymani, M. (2021)	Brain Processing and Neuromarketing	Investigation of brain processing in consumer preferences	Neuromarketers use neuroscience to understand consumer feelings about goods and services. Brain imaging methods, especially EEG, help capture in-the-moment decision-making processes. EEG potential in neuromarketing discussed.
Alsmadi, S., & Hailat, K. (2021)	Neurological Approaches to Consumer Behaviour	Exploration of consumer behaviour through neurological methods	Neuromarketing emerges as an interdisciplinary field using brain-based approaches to understand customer behaviour. Neuroimaging technologies and ethical concerns discussed.
Garczarek-Bąk, U., Szymkowiak, A., Gaczek, P., & Disterheft, A. (2021)	Psychophysiological Measurements in Neuromarketing	Examination of psychophysiological measurements in neuromarketing	Psychophysiological measurements assessed during product video viewing. Emotional responses predict future purchase choices. Electrodermal activity significant in forecasting purchases. Familiarity with the brand influences purchase decisions.
Kalaganis, F. P., Georgiadis, K., Oikonomou, V. P., Laskaris, N. A., Nikolopoulos, S., & Kompatsiaris, I. (2021)	Hybrid Neuromarketing Strategies	Focus on EEG as the primary modality in hybrid neuromarketing	EEG stands out as a cost-effective and minimally intrusive neuroimaging method. Hybrid neuromarketing strategies combining EEG with other methods explored. EEG potential in capturing mental states discussed.
Pethö, T., Štefko, R., & Gburová, J. (2021)	Product Policy, Neuromarketing, and Gender	Theoretical review of product policy and neuromarketing	Examination of consumer perception and response to different promotion types. No significant gender-based variations in product quality ratings and purchasing behaviour found. Satisfied customers essential for a successful product strategy.

Singh, S. (2020)	Influence of Neuromarketing on Online Shopping Behaviour	Analysis of neuromarketing in the context of online shopping	Neuromarketing plays a critical role in influencing online consumer behaviour. Application of neuromarketing principles helps in understanding online shopping preferences. Impact of neuromarketing on e-commerce discussed.
Zhang, X., Zhang, J., Fu, M., & Lu, Y. (2020)	Neuromarketing Applications in E-commerce	Application of neuromarketing in the e-commerce sector	Neuromarketing applications enhance the effectiveness of e-commerce platforms. Improved understanding of customer preferences and behaviour leads to better marketing strategies. Ethical considerations in neuromarketing emphasized.
Bogdanov, V., & Antón, C. (2020)	Neural Correlates of Consumer Decisions	Investigation of neural correlates in consumer decision-making	Neural correlates identified during consumer decision-making processes. Brain regions activated in response to marketing stimuli crucial for predicting purchase decisions. Implications for marketers to design effective advertisements discussed.
Maio, G. R., Verplanken, B., Manstead, A. S. R., Stroebe, W., Abraham, C., Sheeran, P., & Conner, M. (2019)	The Psychology of Consumer Behaviour	Comprehensive review of psychological factors influencing consumer behaviour	Examines various psychological factors affecting consumer behaviour. The role of attitudes, emotions, and social influences explored. Theoretical frameworks and practical implications for understanding and predicting consumer behaviour discussed.
Javor, A., Koller, M., Lee, N., Chamberlain, L., Ransmayr, G., & Lee, Y.	Neuromarketing Insights into Consumer Behaviour	Investigation using functional magnetic resonance imaging (fMRI)	Brain activity patterns during the evaluation of marketing stimuli identified. Neural responses linked to subsequent purchasing behaviour. Neuromarketing insights valuable for predicting consumer choices.
Husain, S., Vasquez-Parraga, A. Z., Pitt, L. F., & Parente, R. (2019)	The Role of Neuroscience in Marketing	Examination of neuroscience applications in marketing	Neuroscience tools, such as EEG, fMRI, and eye-tracking, offer insights into consumer behaviour. Ethical considerations discussed. Emerging trends and future directions in the field of neuromarketing highlighted.
Peck, J., & Childers, T. L. (2019)	Insights from Behavioural Neuroscience	Application of neuroscience principles in consumer research	Behavioural neuroscience principles applied to consumer research. Understanding the neural processes underlying consumer behaviour provides valuable insights for marketers. Implications for marketing strategies and consumer decision-making discussed.
Pereira, A., & Salgueiro, M. F. (2018)	Impact of Neuromarketing in Consumer Decisions	Examination of neuromarketing's impact on consumer decisions	Neuromarketing provides insights into unconscious consumer decision-making processes. Neuroscientific tools, such as EEG and eye-tracking, contribute to understanding consumer preferences. Implications for designing effective marketing strategies discussed.
Reimann, M., Schilke, O., Weber, B., Neuhaus, C., & Zaichkowsky, J. (2011)	Neuromarketing: Insights from Neuroscience	Examination of neuromarketing from a neuroscience perspective	Neuromarketing uses neuroscience methods to understand consumer behaviour. Neuroimaging techniques, such as fMRI and EEG, employed to study neural responses to marketing stimuli. Insights into consumer preferences and decision-making processes discussed.

2.2 Problem statement

Neuromarketing is an expanding discipline that use neuroscientific research and methodologies to comprehend the cognitive processes behind consumer buying behaviour. This discipline seeks to reveal the subconscious mechanisms that propel consumer behaviour, including the affective and cognitive elements that impact the process of selecting choices. Neuromarketing has a substantial influence on consumer purchasing behaviour by offering valuable information on how organisations may effectively reach and connect with their intended audiences.

III. Data Analysis and Findings

The investigation of neuromarketing and consumer purchasing behaviour included many essential stages: data cleansing, descriptive statistics, demographic analysis, factor and reliability analysis, correlation analysis, Structural Equation

Modelling, and visualisation via Amos. The results provided subtle and detailed insights for marketers, highlighting the need of openness, ethical issues, and a full report.

Table 1: Description of Factors

Section	**Description**
Factors	Emotion (EM), Attention (AT), Memory (ME), Perception (PE), Motivation (MT), Decision-making (DM).
Factor	Consumer Buying Behaviour (CBB).
Relational Map	Identify relationships between independent factors (EM, AT, ME, PE, MT, DM) and the dependent factor (CBB).

Understanding consumer behaviour involves examining emotions, attention, memory, perception, motivation, and decision-making to identify their impact on buying behaviour. The respondent details include demographics (age, gender, income, education, family size), profession, and location. Analysing these reveals insights into the target audience, aiding in tailoring marketing strategies for diverse consumer segments in specific areas and professions, considering socio-economic factors.

Table 2: Demographic Details

Respondent Details	
Name	Respondent's Name
Age	18-30 (1), 30-45 (2), Above 45 (3)
Gender	Male (1), Female (2)
Income Level (Monthly)	Below 25k (1), 25k-60k (2), Above 60k (3)
Education Level	Below 10th (1), Above 10th and below Graduate (2), Above Graduate (3)
Members in Family	Single (1), Less than 4 (Nuclear) (2), More than 4 (Joint) (3)
Profession	Government Jobs (1), Private Jobs (2), Self/Business (3)
Location	Delhi (1), Noida (2), Gurgaon (3) , Greater Noida (4)

Table 3: Correlations of factors

			Estimate
TR	<-->	AT	.334
TR	<-->	ME	.756
TR	<-->	PE	.242
TR	<-->	MT	.271
TR	<-->	CBB	.545
ME	<-->	AT	.602
AT	<-->	PE	.347
AT	<-->	MT	.655
AT	<-->	DM	.201
AT	<-->	CBB	.731
TR	<-->	DM	.243
ME	<-->	PE	.292
ME	<-->	MT	.433
ME	<-->	DM	.234
ME	<-->	CBB	.708
PE	<-->	MT	.327
MT	<-->	DM	.239
CBB	<-->	DM	.223

			Estimate
CBB	<-->	MT	.705
CBB	<-->	PE	.435
PE	<-->	DM	.510

The correlation estimates in the default model reveal key insights into the relationships among various factors in the study on neuromarketing and consumer buying behaviour. Notably, a strong positive correlation exists between Attention (AT) and Memory (ME) at 0.756, indicating that heightened attention positively influences memory. Attention also demonstrates a robust positive correlation with Consumer Buying Behaviour (CBB) at 0.731, underscoring the significance of capturing consumers' attention for influencing purchasing decisions. Furthermore, Memory exhibits a substantial positive correlation with both Motivation (MT) and Consumer Buying Behaviour (CBB) at 0.433 and 0.708, respectively, emphasizing the role of memory in shaping motivational factors and impacting consumer choices. Additionally, Perception (PE) demonstrates a noteworthy positive correlation with Motivation (MT) at 0.435, suggesting that how consumers process sensory information influences their motivational tendencies. These correlation findings underscore the interconnectedness of emotional, cognitive, and motivational factors in influencing consumer behaviour. The strong positive correlations between key elements such as Attention, Memory, and Consumer Buying Behaviour emphasize the intricate interplay of neuromarketing components in shaping consumer decisions.

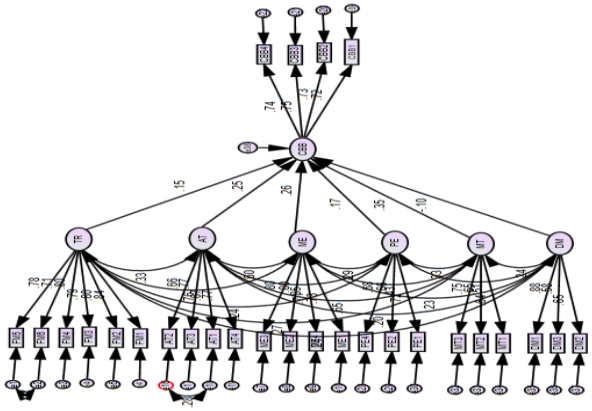

Fig. 1: SEM Structure and Model

The calculation of degrees of freedom for the default model entails the analysis of 378 unique sample moments and the estimate of 77 parameters, leading to a total of 301 degrees of freedom (378 - 77). The statistical study revealed that the model's fit was supported with a chi-square value of 626.738 and 301 degrees of freedom, suggesting a Probability level of 0.000. The chi-square test for goodness of fit using the default model produced a minimum value of 626.738 with 301 degrees of freedom, indicating a very significant result ($p < .000$). This signifies a substantial disparity between the recorded data and the projected values of the model, highlighting inconsistencies in the fundamental patterns. The degrees of freedom, determined by subtracting the number of estimated parameters from the number of sample moments, equalled 301. These results indicate that it is necessary to improve the model or consider other models in order to better match the complexities of the data and improve the overall accuracy.

Table 4: Regression Weights

			Estimate	S.E.	C.R.	P
CBB	<---	TR	.080	.035	2.293	.022
CBB	<---	AT	.265	.075	3.549	*
CBB	<---	ME	.204	.063	3.241	.001
CBB	<---	PE	.157	.048	3.302	*
CBB	<---	MT	.277	.051	5.475	*
CBB	<---	DM	-.080	.038	-2.095	.036

The regression weights in the default model provide useful insights into the connections between independent components (Attention - AT, Memory - ME, Perception - PE, Motivation - MT, Decision-making - DM) and the dependent variable, Consumer Buying Behaviour (CBB). Significantly, Attention, Memory, Perception, and Motivation have a favourable and statistically significant impact on CBB. The estimated effects are 0.265, 0.204, 0.157, and 0.277, respectively. The findings suggest that increased levels of attention, memory, perception, and motivation have a favourable impact on consumer purchasing behaviour. In addition, the negative regression weight of -0.080 for Decision-making suggests a negative correlation, implying that as decision-making grows, consumer purchasing behaviour declines. The statistical significance, as shown by the critical ratio (C.R.) values, and the p-values provide further support for the trustworthiness of these correlations. In summary, our results highlight the many ways in which neuromarketing aspects influence consumer buying choices in the specific environment that was researched.

Table 5: Correlations

			Estimate
TR	<-->	AT	.334
TR	<-->	PE	.242
TR	<-->	MT	.271
TR	<-->	DM	.243
AT	<-->	PE	.347
AT	<-->	MT	.655
AT	<-->	DM	.201
PE	<-->	MT	.327
PE	<-->	DM	.510
MT	<-->	DM	.239
ME	<-->	AT	.602
TR	<-->	ME	.756
ME	<-->	PE	.292
ME	<-->	MT	.433
ME	<-->	DM	.234

The correlation estimates in the default model reveal complex interconnections among crucial elements in neuromarketing. There is a significant and positive correlation of 0.602 between Attention (AT) and Memory (ME), indicating that increased attention has a beneficial impact on memory. The association between Trust (TR) and both Attention and Memory is significant, with respective values of 0.334 and 0.756, emphasising the impact of trust on cognitive and emotional reactions. Furthermore, there is a noteworthy and strong positive correlation of 0.655 between Attention (AT) and Motivation (MT), which highlights the link between attracting attention and stimulating consumer activity. Decision-making (DM) is positively correlated with attention (AT), perception (PE), and motivation (MT), indicating a strong connection between DM and these cognitive processes. The correlation results highlight the complex interaction of emotional, cognitive, and motivational elements in neuromarketing. They provide useful insights into the components that influence customer reactions and decision-making processes.

Findings

The correlation estimates inside the default model highlight the complex interconnections among Trust (TR), Attention (AT), Memory (ME), Perception (PE), Motivation (MT), and Decision-making (DM). Significantly, there is a robust positive correlation of 0.756 between trust (TR) and memory (ME), indicating that trust plays a vital role in influencing customers' recollection of brands or goods. The favourable associations between TR and AT (0.334), TR and MT (0.271), and TR and DM (0.243) highlight the impact of trust on many aspects of neuromarketing. The correlation coefficient of 0.602 between attention (AT) and memory (ME) indicates a strong positive relationship, indicating that directing attention has a beneficial effect on the process of storing and recalling information in memory. Moreover, the strong positive correlation of 0.655 between attention (AT) and motivation (MT) highlights the connection between compelling marketing

tactics and driving customer behaviour. Attention (AT) is positively correlated with PE (0.347) and DM (0.201), highlighting its influence on consumers' perception and decision-making. The positive correlation of 0.327 between PE and MT indicates that the way consumers perceive sensory information affects their motivational inclinations. The robust positive correlation of 0.510 between PE (perceived effectiveness) and DM (decision-making) suggests that consumers' perceptions significantly influence their decision-making processes. Furthermore, the variable ME has significant positive associations with PE (0.292) and MT (0.433), highlighting the importance of creating memorable branding in shaping perception and motivation. In summary, these association studies highlight the interdependence of emotional, cognitive, and motivational components in influencing consumer behaviour. The default model reveals the connections between trust, attention, memory, perception, motivation, and decision-making, which together shape the intricate realm of consumer purchasing behaviour.

Regression Weight Findings

The regression weights in the default model provide a clearer understanding of how the independent components (AT, ME, PE, MT, DM) affect the dependent variable, Consumer Buying Behaviour (CBB). The regression analysis reveals that the regression weights for AT (0.265), ME (0.204), PE (0.157), and MT (0.277) are both positive and statistically significant. This indicates that greater levels of attention, memory, perception, and motivation have a favourable impact on customer purchasing behaviour. The negative regression weight of -0.080 for DM indicates a negative correlation, suggesting that as decision-making grows, consumer purchasing behaviour declines. This discovery implies that customers who take longer to make decisions may have a decreased tendency to make purchases. The statistical importance of the regression weights is reinforced by the critical ratio (C.R.) values and p-values, indicating the dependability of the found correlations. The C.R. values above the essential thresholds (2.293, 3.549, 3.241, 3.302, 5.475) and the corresponding p-values (< .05) instill confidence in the durability of the observed effects.

Conclusion and Findings

The research examines how neuromarketing affects customer purchasing behaviour by doing a thorough examination of the default model's correlations and regression weights. This analysis offers detailed insights into the intricate interactions between different elements. The data uncovers significant patterns that elucidate the interaction between emotional, cognitive, and motivational factors in impacting customer choices.

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