

Applying Neuroscience in Marketing: Insights from the Internship at IRIC

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This report is submitted to the school of Business and Economics, United International University as a partial requirement for the degree fulfillment of Bachelor of Business Administration

Applying Neuroscience in Marketing: Insights from the Internship at IRIIC

Submitted to:

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Letter of transmittal

October 20, 2024

To

Dr. Sarker Rafij Ahmed Ratan
Associate Professor, School of Business and Economics
United International University

Subject: Submission of internship report on “Applying Neuroscience in Marketing: Insights from the Internship at IRIIC”.

Dear Sir,

Attached is the internship report entitled " Applying Neuroscience in Marketing: Insights from the Internship at IRIIC submitted as part of the Bachelor of Business Administration program at United International University.

This report details my experiences and insights gained as a Project Coordinator at IRIIC, where I focused on the commercialization of neuromarketing projects. The activities included developing business strategies, market analysis, and implementing neuromarketing techniques such as EEG and the Implicit Association Test (IAT).

I appreciate your guidance and support throughout my internship and in the preparation of this report. I look forward to your feedback.

Sincerely,

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Declaration of the student

I, Abir Mohd Shad, confirm that the internship report titled "Applying Neuroscience in Marketing: Insights from the Internship at IRIIC" submitted to the School of Business and Economics, United International University, is my own original work. This report was created to meet some of the criteria needed for the completion of the Bachelor of Business Administration (BBA) degree.

I confirm that the content in this report is my original work and has not been plagiarized from unauthorized sources or previously presented elsewhere for academic purposes. I also confirm that I have acknowledged any help, references, or sources utilized in this report.

I acknowledge that if I commit plagiarism or engage in academic misconduct, my submission will be invalidated, and I take full responsibility for the accuracy and integrity of this report.

Signature: ABIR

Name: Abir Mohd Shad

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Date:17/10/2024

Acknowledgement

I am grateful to the director of IRIIC (Institute of Research, Innovation, Incubation & Commercialisation) Khondaker Abdullah-Al-Mamun for being supportive all my thought-out internship period providing me an opportunity and his valuable guidance. It was a very enriching experience because I learned from his knowledge and mentoring, making me to know more about neuromarketing.

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It has been their help that was greatly needed to conquer this hurdle and finish off the internship on time.

Abstract/ Executive summary

During my internship as a Project Coordinator at the Institute of Research, Innovation, Incubation & Commercialization (IRIIC), affiliated with United International University, I actively contributed to the commercialization of neuromarketing initiatives designed to optimize marketing strategies through innovative technology. A key responsibility in this role involved leading the design and implementation of an Implicit Association Test (IAT) specifically adapted for the neuromarketing field. This project was part of a comparative analysis of two prominent telecommunications companies in Bangladesh, Grameenphone and Robi, assessing the impact of their advertising campaigns by examining subconscious consumer reactions.

This project includes comprehensive market research with the formulation of business strategies and the application of neuromarketing tools like EEG and IAT that evaluates and compare how each brand's advertisement is influencing consumer behavior and subconscious approach. The insights from this study are expected to offer meaningful contributions to this new field of neuromarketing which identifies the effective advertising practices and strategies.

This report covers the research methods which has been utilized with the obstacles faced during the process and the key takeaways from the project. The experience I got from this internship not only enhance my knowledge of neuromarketing but also provided me hands-on opportunities to apply academic concepts in practical scenarios and effectively connecting theoretical learning with industry practices. The outcome of this internship is aiming to guide the businesses in precise their advertising strategies that better aligns with consumer behavior and preferences which is promoting more impactful marketing efforts within Bangladesh.

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List of Abbreviation

Abbreviation	Full Form
IRIIC	Institute of Research, Innovation, Incubation & Commercialization
EEG	Electroencephalography
IAT	Implicit Association Test
BBA	Bachelor of Business Administration
UIU	United International University
4IR	Fourth Industrial Revolution
ICT	Information and Communication Technology
ROI	Return on Investment
GP	Grameenphone
BCI	Brain computer Interface

CHAPTER I: INTRODUCTION

1.1 Background of the Report

This report shows my internship experience at the Institute of Research, Innovation, Incubation, and Commercialization (IRIIC), located at United International University. IRIIC has a dynamic environment where research, innovation, and business commercialization intersect, leveraging technologies, which is associated with the Fourth Industrial Revolution (4IR). While doing this internship, I had the valuable opportunity to work hands-on with neuromarketing projects and focusing on how to effectively translate academic theories into practical business strategies, which is addressing the gap between classroom knowledge and real-world applications.

1.2 Objectives of the Report

This report focuses on several key objectives:

To present a thorough overview of the tasks and responsibilities handled during the internship.

To explore how neuromarketing techniques were utilized to study consumer behavior.

To assess the practical value of these techniques in a commercial environment.

To reflect on the personal growth and skills gained throughout the internship.

1.3 Motivation of the Report

The motivation for this report arises from the growing importance of neuromarketing in today's marketing strategies and the necessity to grasp how subconscious consumer responses can impact marketing performance. This report seeks to highlight the practical application of neuromarketing strategies within the Bangladeshi market, offering insights that contribute to the expanding field of consumer neuroscience.

1.4 Scope and Limitations of the Report

This report covers the activities undertaken, the methodologies applied, and the insights gained during the internship at IRIIC, with an emphasis on neuromarketing. However, the scope is limited by the proprietary nature of the data and the confidentiality agreements imposed by IRIIC and its clients, which prevent the inclusion of certain detailed findings and specific client-related information.

1.5 Definition of Key Terms

- **Neuromarketing:** The application of neuroscience to marketing, involving the study of how people's brains respond to marketing stimuli, using techniques like EEG and eye-tracking to measure changes in activity, attention, and emotion.
- **EEG (Electroencephalography):** A method used in neuromarketing to record electrical activity of the brain through multiple electrodes placed on the scalp, providing insights into consumer emotional engagement.
- **Implicit Association Test (IAT):** A technique used in neuropsychology and neuromarketing to measure the strength of automatic associations between concepts in memory.

This introduction provides essential context for the upcoming discussion of the tasks, challenges, and achievements during the internship, setting the stage for a comprehensive analysis within the report.

CHAPTER II: COMPANY AND INDUSTRY PREVIEW

2.1 Company Analysis:

Institute of Research, Innovation, Incubation & Commercialization (IRIIC)

2.1.1 Overview and History

The Institute of Research, Innovation, Incubation & Commercialization (IRIIC) is a pivotal institution under United International University, established to foster innovation and bridge the gap between academia, industry, and government in Bangladesh. It was started in December 2014, where beginning with the Advanced Intelligent Multidisciplinary Systems Lab (AIMS Lab) and till now IRIIC has grown into a multidisciplinary hub which includes various research labs and centers like the Brain Computer Interface Research Lab and the University Innovation Hub.

2.1.2 Trend and Growth

IRIIC has a good amount of growth in its scope and impact since the beginning. It is reducing the challenges and opportunities that the Fourth Industrial Revolution (4IR) is concerned with, and it has expanded its research and development focus to areas such as digital health innovation and the integration of 4IR technologies. Having continuous support from allies like the Bangladesh Hi-Tech Park Authority and the ICT Division, IRIIC is now positioned at the forefront of technological innovation in Bangladesh.

2.1.3 Customer Mix

IRIIC's customer base includes academic institutions, industry partners, and government organizations. IRIIC is supporting these stakeholders and delivering innovative solutions to complex problems, and it is promoting a culture of collaboration and innovation.

2.1.4 Product/Service Mix

IRIIC is completing a variety of projects which includes research and development in areas like machine learning, natural language processing, and brain computer interface. It also works on incubation and commercialization to support startups and innovative projects that offers both intellectual guidance and material resources which drive their success.

2.1.5 Operations

IRIIC's operations are enhancing collaboration across various fields of science and technology. The institution has placed a significant importance on sustainable practices and efficient management strategies which ensures that its projects align with its core objectives of driving innovation and to get commercial success.

2.1.6 SWOT Analysis

- **Strengths:** IRIIC has a solid academic foundation with cutting-edge research facilities and strong partnerships with the industry and government.
- **Weaknesses:** IRIIC has limited public awareness and minimal engagement beyond academics is one of the major weaknesses.
- **Opportunities:** The expansion into new research areas using 4IR technologies that give opportunities for increased funding and providing better integration with global innovation networks.
- **Threats:** The fast technological advancements that could outgrow the current project timelines and the growing competition that is coming from other research institutions can be a threat to IRIIC.

2.2 Industry Analysis: Neuromarketing in Bangladesh

2.2.1 Specification of the Industry

Neuromarketing is the study which combines neuroscience and marketing that help us gain insights into consumer behavior. It uses technologies such as EEG, eye-tracking, and facial coding that analyzes physiological and neural signals which helps us predict how consumers will respond to products, brands, and advertisements.

2.2.2 Size, Trend, and Maturity of the Industry

The neuromarketing industry in Bangladesh is now in its early stages but it is experiencing rapid growth as businesses recognize the benefits of data-driven marketing strategies. Globally, the neuromarketing field is expanding by the advancements in technology which improve the accuracy and practicality the consumer insights.

2.2.3 External Economic Factors

Economic growth has raised market competition, and the rising consumer spending in Bangladesh are the reason for adoption of neuromarketing. Having the economic stability, businesses are more interested to invest in innovative marketing strategies which includes neuromarketing, to enhance their competitive edge.

2.2.4 Technological Factors

The recent progress in biometric technologies, data analytics, and machine learning is driving the neuromarketing industry. The availability of high-quality, affordable BCI (brain computer interface) devices encourages adoption which makes neuromarketing accessible to businesses of all sizes.

2.2.5 Barriers to Entry

The high upfront costs of technology and training makes it difficult to initiate. The need for specialized personnel such as expert biomedical engineers and the challenges of blending neuroscience with marketing strategies pose significant barriers to entry. These

factors make it very difficult for the new firms to enter the industry without having considerable investment and expertise.

2.2.6 Supplier Power

Supplier power in the neuromarketing industry is moderate. Although there are many technology providers but the specialized nature of neuromarketing tools that allows those offering advanced and reliable solutions to have greater influence over pricing and usage terms.

2.2.7 Buyer Power

Buyer power is moderate in this industry where given the limited number of providers and the high switching costs is associated with the specialized services and technologies involved in neuromarketing industry. However, the industry expansion and more providers enter the market, buyer power is likely to increase.

2.2.8 Threat of Substitutes

The traditional market research methods such as surveys and focus groups are the biggest threat as substitutes. However, the predictive capabilities of neuromarketing is becoming more evident and the reliance on these traditional research approach is to be declined in near future.

2.2.9 Industry Rivalry

Industry rivalry in the neuromarketing industry is currently low because of the limited number of players in the Bangladeshi market. However, more the awareness and adoption grows the competition is more likely to increase as the companies are looking to have a technological advantage and have competitive edge over the competition.

CHAPTER III: INTERNSHIP EXPERIENCE

3.1 Position, Duties, and Responsibilities

Being a Project Coordinator at the Institute of Research, Innovation, Incubation & Commercialization (IRIIC) my responsibility was to develop and execute the neuromarketing project. My role was to complete comprehensive range of tasks which was designed to ensure the success of each project from start to deployment. The key responsibilities I managed given below:

1. **Develop Business Plans:** I made detailed business plans to commercialize neuromarketing projects with aligning with broader market demand and organizational goal.
2. **Identify Market Opportunities:** I have analyzed the market trends and consumer behavior where I identified new opportunities for neuromarketing applications and developed strategies based on that.
3. **Present Neuromarketing Services:** I have presented our neuromarketing services to potential clients and stakeholders and showcased the scientific solution and potential ROI our service can offer.
4. **Build and Maintain Client Relationships:** I have established and nurtured strong relationship with clients and which was a critical part of my role by ensuring customized solutions that meet the clients specific marketing needs.
5. **Lead Product Development:** From concept to market launch, I have developed strategies and processes by coordinating with interdisciplinary teams to bring neuromarketing project to be a commercial success.
6. **Manage Neuromarketing Research Projects:** I have monitor the operational part of our neuromarketing research projects by ensuring they were conducted efficiently and effectively.
7. **Collect, Analyze, and Interpret Data:** I have utilized tools like EEG and eye-tracking and collected vast amounts of neuromarketing data to analyzed and interpreted to derive actionable insights.

8. **Provide Actionable Insights:** The insights I have gained from data analysis was transformed into actionable insights for our clients to help them to optimize their marketing campaigns based on consumer brain responses.

3.2 Training

My training during the internship at IRIIC was combined with formal and practical work and that provides a foundation in neuromarketing. Here are the key aspects of my training given below:

Academic Courses

I have completed two courses on neuromarketing from Copenhagen Business School. These courses provided me a theoretical understanding of the principles of neuromarketing that includes the psychological and neurological measures of consumer behavior. The knowledge I have acquired from these courses helped me in understanding the real reason behind consumer decisions making and how marketing strategies can be developed to influence these decisions effectively by using neuromarketing tools.

Practical Training

Under the guidance of my supervisor at IRIIC, I have received training in the use of neuromarketing tools such as EEG and eye-tracking devices. This practical training includes learning how to set up the equipment, conducting experiments, and interpret the data from these tools. The training has covered the application of neuromarketing techniques in real-world scenarios which taught me how to apply the theoretical knowledge that I have gained from my courses to understand and to predict consumer behavior effectively.

3.3 Contribution to Departmental Functions

During my internship at IRIIC, I have contributed to the neuromarketing department by the development of a specific neuromarketing tool which is known as the Implicit Association Test (IAT). This tool was used to find out the implicit bias of a consumer.

Development of the IAT

I played a major role in developing the test IAT that assess how effectively a slogan works in consumers on a subconscious level. This involved combining both the technical and research teams to ensure the test is measuring subconscious associations and preferences accurately.

Implementation in Grameenphone Project

The IAT test was implemented in a project involving Grameenphone which is one of the leading telecom operators in Bangladesh. The project was aimed to compare the effectiveness of advertising between Grameenphone and its competitor, Robi. My responsibility was to develop the methodology and test design and the application of the IAT to gather data on consumer reactions to slogans.

Comparative Study and Analysis

My contribution was conducting the comparative study that determines which company Grameenphone or Robi which had more effective advertising in influencing consumer in a subconscious level. My work involved in designing the study with selecting the appropriate stimuli for advertise and slogan and analyzing the collected data to provide meaningful insights to client.

3.4 Evaluation

My performance during the internship at IRIIC was continuously evaluated by my supervisor Dr. Khandokar Abdullah Al Mamun who provided me with detailed feedback on various aspects of my work. Here is a summary of the evaluation given below:

Proactive Approach

The evaluation has highlighted my proactive approach to managing the responsibilities and the challenges. I was commended for taking initiative which was not just in executing assigned tasks but also in identifying and addressing the potential issues before they impact the project timelines or outcomes. This proactive behavior was beneficial in the environment of neuromarketing research where the responsiveness and the adaptability are very crucial.

Handling Complex Projects

I was involved in several complex projects which includes the comparative study between Grameenphone and Robi, where I applied the Implicit Association Test (IAT) to measure the effectiveness of slogans on consumer subconscious. My ability to efficiently manage these projects especially my skill in doing multiple part of the projects simultaneously.

Strong Analytical Skills

My supervisor specifically highlighted my analytical skills like interpreting the data collected through neuromarketing tools like EEG and IAT. My ability to transform the raw data into understandable and actionable insights was very crucial in driving the success of the projects I was involved with.

Overall Impact

The overall evaluation of my internship performance was extremely positive which reflects my commitment to the project and my ability to use neuromarketing tools to deliver value

to our projects and clients. This positive assessment from my supervisor confirms my potential in the field of marketing and provides a strong foundation for my future career.

3.5 Skills Applied

During my internship at IRIIC, I have applied a diverse set of skills that was very crucial for the success of several neuromarketing projects. These skills not only contributed to my personal development but also has impacted the progress and the outcomes of the projects.

Project Management

One of the key skills I have developed was project management which involved planning, organizing, and managing resources that brings successful completion of specific project. I was responsible for monitor project timelines and ensuring that each phase of the project was completed on scheduled time.

Strategic Planning

Strategic planning was another set of skill I have applied during my internship. This involved setting priorities of the project work were focusing on the energy and the resources to strengthening operations which ensures that employees and other stakeholders were working toward common goals.

Client Relationship Management

I have frequently interacted with major clients such as Unilever and Grameenphone where I have showcased our neuromarketing products and services the personnels. Managing these client relationships involved communications, understanding their needs and expectations to ensure better client management and ensuring that our deliverables met these requirements of the clients.

Analytical Abilities

My role required analytical thinking especially when it came to interpreting complex neuromarketing data. I have analyzed data from EEG and eye-tracking to understand consumer behavior and preferences. This analysis played a crucial role in developing insights that we recommended to our clients.

Effective Communication

I have presented our findings and strategies to clients like Grameenphone also increased my communication skills. It was essential to make the data and insights clearly to ensure that clients understand the value of our work and how it could have a greater impact in their marketing strategies.

3.6 New Skills Developed

My internship at IRIIC has helped me in my professional development particularly in the field of neuromarketing. Here are some of the new skills that I have acquired:

Advanced Data Analysis

During my internship I have mastered advanced data analysis techniques which was crucial for interpreting the complex data that was generated by neuromarketing tools. I have learned how to use software tools to analyze EEG and eye-tracking data that has allowed me to find out meaningful patterns and insights that we can directly apply to improve the marketing strategies. This skill was not only about handling large datasets but also about understanding the data trends and their implications on consumer behavior.

Practical Application of Neuromarketing Techniques

Apart from theoretical knowledge, I have gained great experience in applying neuromarketing techniques in a business context. I was involved in setting up and running

experiments where I used to configure the hardware (like EEG headsets and eye-trackers) to implement the tests with participants. This practical experience gave me insights into the technical challenges of neuromarketing research and how to overcome them.

Integration of Neuroscience and Marketing

One of the most important skills I have developed was the ability to integrate neuroscience with marketing. Understanding how neuro responses can influence consumer behavior that helped me to make suggestions for more effective marketing campaigns that are based on scientific evidence rather than just making assumptions.

3.7 Application of Academic Knowledge

My background in marketing played a pivotal role in my work during the internship at the Institute of Research, Innovation, Incubation & Commercialization (IRIIC). Here's how I applied my academic knowledge to real projects and enhanced my skills given below:

Theoretical Foundations

My academic knowledge in marketing helped me with understanding of fundamental marketing concepts such as market segmentation, consumer behavior, and the marketing mix. These concepts were applicable to the projects I worked where applying neuromarketing studies that was aimed to understand how consumers perceive and react to different marketing stimuli.

Marketing Strategies

During the internship I was involved in developing marketing strategies that were full of neuromarketing data. By applying theoretical models of consumer behavior I was able to make targeted strategies that were specific to the subconscious preferences of the consumers which was uncovered through our neuromarketing research.

CHAPTER IV: CONCLUSIONS AND KEY FACTS

4.1 Recommendations for Improving Departmental Operations

At my internship experience at IRIIC, several recommendations I have made to further enhance the efficiency of departmental operations:

1. **Enhance Data Integration:** Implement more enhance systems for integrating and analyzing data from multiple neuromarketing tools to fasten research processes.
2. **Expand Training Programs:** Regular training sessions for new and existing staff on the latest neuromarketing techniques and tools can be helpful to enhance skill levels across the department and make a culture of continuous learning.
3. **Increase Interdepartmental Collaboration:** Make stronger collaboration between the marketing research, and data analysis teams to enhance the interdisciplinary approach needed for completion of the project

4.2 Key Understanding

Throughout my internship, I gained several key insights that have profound implications for both my personal development and the field of neuromarketing:

- **Consumer Subconscious:** Neuromarketing tools such as EEG and eye-tracking provide deep insights and helped me to understand into the subconscious preferences of consumers which are not revealed through traditional marketing research methods.
- **Interdisciplinary Approach:** Effective neuromarketing requires knowledge from neuroscience, psychology, marketing , and consumer behaviour to fully understand consumer decision making at a subconscious level.
- **Data-Driven Decision Making:** The application of the analytical tools like EEG , eye tracking to interpret complex data to ensures that marketing strategies are based on scientific evidence which enhancing their effectiveness.

4.3 Conclusion

The internship at the Institute of Research, Innovation, Incubation & Commercialization was a great experience that significantly enhanced my understanding and skills in the field of neuromarketing. The hands-on experience with cutting-edge neuromarketing research tools which used for BCI (brain computer interface) technologies and methodologies enhanced my academic knowledge and prepared me for future challenges in the marketing industry. The insights I have gained from this internship will guide me in future in marketing field and give me a competitive edge over others in then marketing sector ensuring that I continue to apply data-driven strategies to understand and predict consumer behavior effectively. The experience from IRIIC has highlighted the importance of integrating academic knowledge with practical application. It is a principle that I will carry forward in my career.

Reference

1. F.S. Rawnaque, K.M. Rahman, S.F. Anwar, et al. Technological advancements and opportunities in Neuromarketing: a systematic review. *Brain Inf.* 7, 10 (2020). (IF: 6.245 as per Scimago, Scopus) doi: <https://doi.org/10.1186/s40708-020-00109-x>
2. Ananna Biswas, Mashrur, F. R., Rahman, K. M., Miya, M. T. I., Vaidyanathan, R., Anwar, S. F., Sarker, F., & Mamun, K. A. 2022. An Overview of Neuro- marketing Research in Developing Countries: Prospects and Challenges. In *Proceedings of ICCA '22: 2nd International Conference on Computing Advancements-ICCA 2022 (ICCA '22)*. [Accepted; In press]
3. F. R. Mashrur, M. T. I. Miya, F. S. Rawnaque, K. M. Rahman, R. Vaidyanathan, S. F. Anwar, F. Sarker, and K. A. Mamun "MarketBrain: An EEG based intelligent consumer preference prediction system," in 2021 43rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC) doi: <https://doi.org/10.1109/EMBC46164.2021.9629841>
4. Mashrur, F. R., Rahman, K. M., Miya, M. T. I., Vaidyanathan, R., Anwar, S. F., Sarker, F., & Mamun, K. A. (2022). An Intelligent Neuromarketing System for Predicting Consumers' Future Choice from Electroencephalography Signals. *Physiology & Behavior*, 113847. IF: 3.2 doi: <https://doi.org/10.3389/fnhum.2022.861270>
5. F. R. Mashrur, K. M. Rahman, M. T. I. Miya, R. Vaidyanathan, S. F. Anwar, F. Sarker, and K. A. Mamun, "An EEG-based Intelligent Neuromarketing System for Predicting Consumers' Choice" in *The International Conference on 4th Industrial Revolution and Beyond (IC4IR 2021)* [Accepted; In press]
6. Mashrur, F. R., Rahman, K. M., Miya, M. T. I., Vaidyanathan, R., Anwar, S. F., Sarker, F., & Mamun, K. A. BCI-based Consumers' Choice Prediction from EEG signals: An Intelligent Neuromarketing System. *Frontiers in Human Neuroscience*, 311 doi: <https://doi.org/10.1016/j.physbeh.2022.113847>
7. Mashrur, Fazla Rabbi, et al. "An EEG-based Intelligent Neuromarketing System for Predicting Consumers' Choice." *The Fourth Industrial Revolution and Beyond: Select Proceedings of IC4IR+*. Singapore: Springer Nature Singapore, 2023. 31-43.
8. Intelligent Neuromarketing Framework for Consumers' Preference Prediction from EEG Signals and Eye Tracking [Accepted]
9. Ishtiaque F, F. R. Mashrur, M. T. I. Miya, K. M. Rahman, R. Vaidyanathan, S. F. Anwar, F. Sarker, and K. A. Mamun. "BCI-based Consumers' Preference Prediction using Single Channel Commercial EEG Device" [Accepted in 25th International Conference on Computer and Information Technology (ICCIIT)]
10. Ishtiaque, Farhan, et al. "AI-based Consumers' Preference Prediction Using a Research-grade BCI and a Commercial-grade BCI for Neuromarketing: A Systematic Comparison." 2023 International Conference on Electrical, Computer and Communication Engineering (ECCE). IEEE, 2023.
11. Bosshard, S., & Walla, P. (2023). Sonic influence on initially neutral brands: using EEG to unveil the secrets of audio evaluative conditioning. *Brain Sciences*, 13(10), 1393.
12. Bosshard, S., Koller, M., & Walla, P. (2019). Can evaluative conditioning change well-established attitudes towards popular brands? Your brain says yes even though your mouth says no. *Brain sciences*, 9(5), 106.
13. Healy, G. F., Boran, L., & Smeaton, A. F. (2015). Neural patterns of the implicit association test. *Frontiers in human neuroscience*, 9, 605.

14. Cai, H., & Wu, L. (2021). The self-esteem Implicit Association Test is valid: evidence from brain activity. *PsyCh Journal*, 10(3), 465-477.