

VILNIUS UNIVERSITY BUSINESS SCHOOL

DIGITAL MARKETING PROGRAMME

Viktorija Mankutė

THE FINAL MASTER'S THESIS

TITLE	TITLE
Vaizdinio dėmesio įtaka prekės ženklo	The impact of visual attention on brand
požiūriui socialiniuose tinkluose,	attitudes in social media using eye-
naudojant akių stebėjimo metodą	tracking approach

Student Viktorija Mankutė

(signature)

Supervisor Indrė Razbadauskaitė-Venskė

(signature)

Vilnius, 2025

SUMMARY

VILNIUS UNIVERSITY BUSINESS SCHOOL DIGITAL MARKETING STUDY PROGRAMME VIKTORIJA MANKUTĖ

THE IMPACT OF VISUAL ATTENTION ON BRAND ATTITUDES IN SOCIAL MEDIA USING EYE-TRACKING APPROACH

Supervisor – Indrė Razbadauskaitė-Venskė Master's thesis was prepared in Vilnius, in 2024 Scope of master's thesis - 98 pages Number of tables used in the FMT - 6 Number of figures used in the FMT – 27 Number of bibliography and references – 129

The master's thesis analyzes the influence of visual attention on brand attitudes on social media using eye tracking technology. The study examines how visual elements of online marketing content affect consumers. It also provides recommendations on how to optimize social media marketing strategies in the B2C segment.

The main problem addressed in this study is to understand how visual attention to cosmetic product affects brand attitudes in social media. The aim of the master's thesis is to investigate the relationship between visual attention and brand attitudes towards cosmetics products, providing a detailed analysis of how visual elements influence consumer behavior. To analyze this, several objectives are set: to analyze existing theories and literature in order to create a solid theoretical foundation, to identify the most effective visual elements that help attract attention, to evaluate their influence on brand attitudes, and to provide recommendations on how to optimize marketing strategies based on empirical findings.

In order to fully explore this topic, the study used a mixed method approach, conducting an eye-tracking study with software IMotion to measure visual attention patterns. This experiment was complemented by interviews and content analysis to assess the effectiveness of demonstrative and informative visual elements in marketing content. The interviews provided deeper insights into the participants' perceptions and preferences, which allowed for a comprehensive analysis of visual attention and brand attitudes.

The study found that visual attention is a significant factor in shaping consumer attitudes towards brands on social media. Demonstrative visuals are ideal for creating emotional connections and capturing initial attention, while informative images are essential for building trust and providing a rational basis for decisions. Combining these types of visuals together and adapting them to the appropriate stage of the consumer's buying journey can ensure maximum marketing effectiveness. In addition, the inclusion of clear and reliable information based on reliable facts strengthens brand trust, which ultimately leads to purchase intentions.

The results of this master's thesis are intended for publication in academic journals specializing in digital marketing and consumer behavior. In addition, the findings will be adapted for professional articles and presentations for marketing professionals, focusing on the practical application of eye tracking technology in social media marketing strategies.

SANTRAUKA VILNIAUS UNIVERSITETO VERSLO MOKYKLA SKAITMENINĖS RINKODAROS PROGRAMA

PSICHOLOGINĖS NUOSAVYBĖS ĮTAKA REKLAMINĖJE ŽINUTĖJE VARTOTOJŲ SUVOKIMUI BEI IMPULSYVIAM KETINIMUI PIRKTI PASLAUGAS INTERNETE

Magistrinio darbo vadovas (-ė) – Indrė Razbadauskaitė-Venskė Magistro darbas buvo paruoštas Vilniuje, 2024 m. Magistro darbo apimtis – 98 psl. Lentelių kiekis magistro darbe – 6 vnt. Figūrų kiekis magistro darbe – 27 vnt. Literatūros ir šaltinių skaičius – 129 vnt.

Baigiamajame magistro darbe analizuojama ir tiriama vizualinio dėmesio įtaka prekės ženklo požiūriui socialinėje medijoje, naudojant akių sekimo technologiją. Rašto darbe nagrinėjama, kaip vizualiniai internetinės rinkodaros turinio elementai daro įtaką vartotojų požiūriui į prekės ženklą, taip pat pateikiamos rekomendacijos, kaip optimizuoti socialinės žiniasklaidos rinkodaros strategijas B2C segmente.

Pagrindinė problema, kuri nagrinėjama šiame tyrime - suprasti, kaip vizualinis dėmesys veikia prekės ženklo požiūrį į kosmetikos produktus, socialinėje žiniasklaidoje. Magistro baigiamojo darbo tikslas – ištirti vizualinio dėmesio ir požiūrių į prekės ženklą ryšį, pateikiant išsamią analizę, kaip vizualiniai elementai įtakoja požiūrį į kosmetikos produkto prekės ženklą. Norint tai išanalizuoti, iškelti tikslai: išanalizuoti esamas teorijas ir literatūrą, siekiant sukurti tvirtą teorinį pagrindą, nustatyti efektyviausius vizualinius elementus, padedančius patraukti dėmesį, įvertinti jų įtaką prekės ženklo požiūriams ir pateikti rekomendacijas, kaip optimizuoti rinkodaros strategijas, pagrįstas empiriniai radiniai.

Siekiant visapusiškai ištirti šią temą, tyrime buvo naudojamas mišrus metodas, buvo atlikti akių stebėjimo tyrimas su programa IMotion, siekiant išmatuoti vaizdinius dėmesio modelius. Šį ekspermentą papildė interviu ir turinio analizė, kuri padėjo įvertinti parodomųjų ir informacinių vizualinių elementų efektyvumą rinkodaros turinyje. Interviu suteikė gilesnių įžvalgų apie dalyvių suvokimą ir pageidavimus, o tai leido visapusiškai analizuoti vizualinį dėmesį ir požiūrį į prekės ženklą.

Tyrime ištirta, kad vizualinis dėmesys yra reikšmingas veiksnys, norint formuoti vartotojų požiūrį į prekės ženklus socialiniuose tinkluose. Demonstracinės vaizdinės medžiagos idealiai tinka emociniams ryšiams kurti ir pradiniam dėmesiui patraukti, o informatyvūs vaizdai yra būtini pasitikėjimui stiprinti ir racionaliam sprendimų pagrindui. Suderinant šiuos su vizualinius tipus kartu ir pritaikant prie reikiamo vartotojo pirkimo kelionės etapo galima užtikrinti maksimalų rinkodaros efektyvumą. Be to, aiškios ir patikimos informacijos, paremtos patikimais faktais, įtraukimas stiprina prekės ženklo patikimumą ir vartotojų pasitikėjimą, o tai galiausiai lemia ketinimus pirkti.

Šio magistro darbo rezultatai yra skirti publikuoti akademiniuose žurnaluose, kurių specializacija yra skaitmeninė rinkodara ir vartotojų elgsena. Be to, išvados bus pritaikytos profesionaliems straipsniams, skirtiems rinkodaros specialistams, daugiausia dėmesio skiriant praktiniam akių stebėjimo technologijos pritaikymui socialinės žiniasklaidos rinkodaros strategijose.

TABLE OF CONTENTS

IST OF TABLES AND FIGURES	
INTRODUCTION	10
1. LITERATURE REVIEW	12
1.1 Social Media in the B2C Sector	13
1.2 Brand attitudes online	
1.3 Visual attention online	
1.3.1 Visual attention components	21
1.3.2 Measurements of visual attention in social media	
1.3.3 Visual attention tools	
1.4 Research model	
2. RESEARCH METHODOLOGY FOR THE IMPACT OF VISUAL ATTENT	ION ON
ATTITUDES IN SOCIAL MEDIA USING EYE-TRACKING APPROACH	
2.1 Research model, and hypotheses	
2.2 Research methodology	
2.3 Sample size and characteristics	33
2.4 Study design	
2.6 Data analysis	
3. RESEARCH DATA ANALYSIS AND RESULTS	39
3.1 Demographic data and reliability analysis	39
3.2 Eye tracking results and hypotheses testing	41
3.3 Interview results	56
3.3.1 The impact of advertising types	56
3.3.2. Brand attitudes	59
3.3.3. Purchase decision	62
3.3.4 The impact of advertising engagement and attention	63
3.4 Discussion of the research results	65

CONCLUSIONS AND RECOMMENDATIONS	67
BIBLIOGRAPHY AND A LIST OF REFERENCES	69
ANNEXES	83

LIST OF TABLES AND FIGURES

Figure 1 Visualization of the literature review topics in this thesis
Figure 2 Benefits of social media marketing14
Figure 3 Daily time spent on social networking by internet users worldwide from 2012 to
2024
Figure 4 Most popular social networks worldwide as of April 2024, ranked by number of
monthly active users
Figure 5 Shopping behaviors on social media17
Figure 6 Research Model of brand equity20
Figure 7 Measurements of visual attention in social media
Figure 8 Eye-Tracking technology 25
Figure 9 Screen-based and glasses eye tracking technology
Figure 10 Heat map visualization technique 27
Figure 11 Theory of Elaboration likelihood model28
Figure 12 Conceptual model 30
Figure 13 Demonstrative visuals 35
Figure 14 Informational visuals
Figure 15 Skin care routine 40
Figure 16 Social media usage
Figure 17 AOIs of ODA demonstrative visual 42
Figure 18 AOIs of ODA informative visual
Figure 19 AOIs of ODA comparison visuals
Figure 20 AOIs of MANILLA demonstrative visual
Figure 21 AOIs of MANILLA informative visual

Figure 22	AOIs of MANILLA comparison visuals	48
Figure 23	AOIs of MATH demonstrative visual	49
Figure 24	AOIs of MATH informative visual	50
Figure 25	AOIs of MATH comparison visuals	52
Figure 26	The impact of advertising type	56
Figure 27	The impact of advertising credibility and usefulness	64

Table 1	Visual attention component	. 22
Table 2	Hypotheses	. 31
Table 3	Sample size	. 33
Table 4	Hypotheses accepted/denied	. 53
Table 5	The impact of advertising type	. 58
Table 6	Factors that influence positive brand attitudes	. 59

INTRODUCTION

Social media has become a very significant part of modern society, strongly influencing people's communication and behavior. The emergence of social networking platforms has changed people's opinions and interactions, as it has become the main way of information dissemination and communication. Therefore, it is very important to understand how people interact with visual content and process information on these platforms. The study of visual attention and attitudes towards brands can provide valuable insights into the dynamics of online communication and purchasing.

Visuals in social media have a significant impact on shaping people's perception and reaction to various stimuli in the environment. Klein et al. (2020) emphasize the importance of visual factors in social networks. The authors highlight that it is very important to combine textual content and images in order to achieve even more effective communication (Klein et al., 2020). In addition, the study by Popy & Bappy (2020) emphasized the importance of visual stimuli in accepting messages and forming attitudes towards a brand.

Research on visual attention and brand attitudes in social media is of great importance for the real world, marketing and advertising, and neuroscience. The influence of visual content affects not only advertising, but also people's perceptions and attitudes towards themselves and others (Vogelis et al., 2014). Rosbergen et al. (1997) recognized particular appearance details of visual identification in particular consumer segments, and underscored how crucial it is to find out about the visual processing and interpretation mechanisms as these had pronounced effects on the consumer.

The study of visual attention and brand attitudes towards social media is very important. It helps to analyze and gain insights into consumer engagement on social networks, improve communication effectiveness, and improve marketing strategies. These studies help to establish a stronger connection with consumers. The author Leung et al. (2013) emphasizes that it is very important to do this in order to achieve the effectiveness of social media marketing.

It is also very important to understand how consumers subconsciously process visual content and respond to stimuli, which is important to do in order to assess the effectiveness of advertising and improve communication strategies (Ding et al.,2022). Meanwhile, Workman et al.

(2020) emphasize the complex relationships between engagement on social media and various factors that shape individuals' reactions to visual content.

Problem of the study: How does visual attention to cosmetic product content on social media, measured using webcam-based eye-tracking, influence brand attitudes?

Aim of the study: To investigate the relationship between visual attention patterns and brand attitudes towards cosmetic products on social media platforms using webcam-based eyetracking technology.

Objectives:

1. To analyze the existing literature related to visual attention, eye tracking technology and brand attitudes in social networks, providing a comprehensive theoretical framework for the study.

2. To determine which elements of cosmetic product content on social media most effectively capture consumers' visual attention using eye-tracking metrics.

3. Evaluate the relationship between visual attention patterns and brand attitudes towards cosmetic products on social media platforms, based on the results of an eye-tracking study.

4. To provide recommendations for optimizing social media marketing strategies in the B2C segment based on empirical data on visual attention and its influence on brand attitudes.

1. LITERATURE REVIEW

The literature review provides a theoretical framework by explaining the main topics of this research and serves as the foundation for the research problem from which the actual research questions are formulated. The topics included in the literature review of this thesis are visualized in the figure below (Figure 1).

Figure 1

Visualization of the literature review topics in this thesis



Source: author of the work.

The first part of the master's thesis, subsection 1.1, examines social media for business-toconsumer (B2C), examining how social media platforms have changed corporate procedures and increased brand awareness, customer interactions, and market competitiveness. It will also examine the development and models of advertising on social networks and the best B2C marketing platforms. Section 1.2 will be devoted to brand perception on the Internet and how various events affect customer attitudes towards the brand and decisions. In addition, subsection 1.3 will examine the topic of visual attention on the Internet, emphasizing the ways in which various elements influence customer attitudes and actions towards brands. In order to provide recommendations for the most effective positioning of brands and better brand building, visual attention techniques will be examined. And section 1.4 will present a research model on which research will be conducted.

1.1 Social Media in the B2C Sector

The term "Social Media" is studied by many scholars, it is a multifaceted concept, so it needs to be examined from different angles. Researchers Scott and Jacka (2011) defined it as a web technology that democratizes content production, transforming individuals from simple users to active publishers. It includes information structures, content, and users that reflect shared cultural values and strategies (Howard and Parks, 2012). Platforms such as social networking sites and blogs facilitate the creation, sharing and discussion of information (Mróz-Gorgoń & Peszko, 2016), enabling real-time or asynchronous social interaction (Bayer et al., 2020). The definition of social media is complex and dynamic, with ongoing debates regarding its analysis (Treem et al., 2016; Bucher, 2015). Visibility of social networks is important, allowing users to express their affiliation (Bucher, 2015), and serving as a platform for personal expression and information exchange (Yusianto et al., 2022). The rapid growth of social media reflects changes in the distribution of information and the nature of social interactions (Kane et al., 2014; Daud & Othman, 2019).

Social media has become an essential tool for businesses, especially in the business-toconsumer (B2C) sector. Companies are increasingly using social media platforms to communicate with a wide range of stakeholders, including customers, owners, employees and etc. (Duojie & Liu, 2023). The interactive nature of social media allows companies to effectively exchange ideas, gather information and solve problems related to their brands, products or services.

Social media provides a number of benefits for companies (Figure 2), serving as a powerful tool to increase brand awareness, track competitors, increase website traffic, and increase customer satisfaction (Garner & Mady, 2023). Social media helps businesses achieve higher conversion rates, better target customers, and cost-effectively promote products and services. Research has shown that the use of social media has a positive impact on the performance of organizations. This is due to several reasons, primarily because it reduces costs, improves customer relationships, increases the availability of information, emphasizes the important role of social media, which has been successfully emphasized by Parveen et al. (2016), Jones et al. (2015), Quayu et al. (2017), Kazungu et al. (2017).



Source: (IJARSCT, 2023).

When looking at the digital advertising market, social media advertising has the second largest market share compared to other digital advertising. It is estimated that global revenues of US\$207 billion in 2023 will grow to US\$255 billion in 2028 (Statista, 2023). In 2024, more than five billion people worldwide used social media, and by 2028, this number is expected to grow to six billion (Dixon, 2024). The largest growth in social networks was driven by the increasing use of mobile devices, with global social media usage reaching 59 percent in January 2023. In 2024, the average daily use of social media by internet users worldwide was 143 minutes, compared to 151 minutes the previous year (Figure 3).



Daily time spent on social networking by internet users worldwide from 2012 to 2024



Source: (Statista, 2024).

With a consumer population of about 2.9 billion, Facebook is the most popular social community worldwide (Dixon, 2024). According to an international survey, 89% of social media entrepreneurs who responded used facebook to sell their businesses, while at the same time another 80% did so through Instagram (Dencheva , 2024). Thus, the market leader in addition remains the most important social media platform among marketers of the B2B and B2C spectrum. But as the social media landscape rapidly evolves and new players curb audience and market interest, Facebook is dealing with growing opposition. Social media platforms such as Instagram and YouTube are growing (Figure 4), so many advertisers are planning to reduce their efforts to the social network Facebook (Dencheva, 2024).

Figure 4

Most popular social networks worldwide as of April 2024, ranked by number of monthly active users.



Source: (Statista, 2024).

Market leader Facebook was the first social network to surpass one billion registered accounts and currently sits at more than three billion monthly active users. Meta Platforms owns four of the biggest social media platforms, all with more than one billion monthly active users each: Facebook, WhatsApp, Facebook Messenger, and Instagram. In the third quarter of 2023, Facebook reported around four billion monthly core Family product users (Dixon, 2024).

Over the past few years, social media marketing has become one of the most popular and successful forms of digital marketing. Thanks to the massive user bases of networks like Facebook and Instagram, advertisers can reach billions of potential customers at the click of a mouse. Among the various benefits of the usage of social media platforms for commercial enterprise purposes,

industry experts specifically value the multiplied publicity for his or her brands and products, as well as the improved traffic on their websites (Dencheva, 2024).

The use of social media marketing in each B2B and B2C businesses aims at growing fees for stakeholders with the aid of facilitating interactions and relationships internally and externally (Prodanova er al., 2019). B2C companies focus on engaging with the general public to enhance brand presence and consumer loyalty (Iankova et al., 2019).

In a 2022 survey (Figure 5), 56 percent of US consumers said they prefer shopping on social media because it is easier and faster than traditional e-commerce channels. In addition, 70 percent of respondents said they would choose to shop on social media rather than through a third-party website. Finally, about six in ten US consumers say that the "buy now" button has become important when shopping on social media (Chevalier, 2023).



Figure 5

Shopping behaviors on social media

Source: (Statista, 2022).

Research shows that messaging strategies used on social media platforms are important in increasing customer perceived value and driving customer engagement (Zhang & Du, 2020). In addition, measuring the return on investment (ROI) of social media marketing programs is

important for B2C companies to create value for stakeholders and reach diverse revenue audiences (Silva et al., 2020).

Small and medium-sized enterprises (SMEs) are particularly benefiting from social media. It provides them with benefits such as complementing internal operations, customer service, sales, advertising, and other important factors for the success of commercial enterprises (Tajvidi & Karami, 2021). Furthermore, comparing social media marketing strategies highlights the importance of social media strategies in the overall marketing strategy, highlighting the relationship between the importance of different strategies and their perceived effectiveness for retail chains (Iankova et al., 2019).

In conclusion, social media has transformed B2C communications, providing organizations with unprecedented opportunities for engagement, logo building, and purchaser pleasure. As the worldwide market for social media marketing continues to increase, organizations have to adapt to converting customer behavior and conventions in an effort to compete. With the growing recognition of social media advertising and marketing and the want for effective messaging strategies and ROI evaluation, groups need to innovate and tailor their strategies to the requirements of today's customers.

1.2 Brand attitudes online

Investigation of brand attitudes in digital settings from a theoretical perspective, especially through social media, results in a rather complex interrelationship of the consumer perceptions, brand communications, and attitudes towards the brands they like. It is a great platform for brands engaging with consumers and thoroughly affecting their attitudes. Schivinski and Dąbrowski (2014) stress that, social media, that not only advertising channels should replace but, the required place of social media in the overall marketing communication strategy, especially if social media delivers valuable and honest messages, is the factor that mostly affects consumer attitudes toward brands (Schivinski and Dąbrowski, 2014). Akrirout (2021) also emphasizes the significant impact of social media on brand perception, which often exceeds traditional branding efforts.

Social media influencers are key drivers of brand attitude by Swiatek (2019). According to Rayasam and Khattri (2022), the influencer's competence and the relevance of one of his/her attributes to the brand can have a positive impact on the creation of consumer attitudes. This study is also supported by Leung et al. (2013), who further argue that the favorable attitude of target

consumers towards the brand's social space improves the overall brand recognition. Naylor et al. (2012), on the other hand, are the authors of the "mere virtual presence" (MVP) theory. This theory assumes that through virtual interactions, potential stakeholders can give their brands a positive perception in the market and in turn encourage the purchase of goods. Similarly, Mishra et al. (2015) conclude that the essence of the overlap between the brands in question and the endorsers contributes to the main reason for consumer attitudes, which reinforces the importance of strategic alignment in influencer marketing.

In addition, consumer engagement within brand communities on social media significantly influences brand attitudes and purchase intentions. Alnsour and Faour (2019) indicate that active participation in brand communities fosters positive attitudes, which then affect consumer behavior. Tritama and Tarigan (2016) further illustrate social media's power in shaping brand awareness and consumer attitudes, ultimately impacting purchasing decisions. Wirtz et al. (2013) underscore that managing customer engagement in online brand communities is key to building strong relationships and positive brand attitudes.

In the broader context of digital marketing, Aaker's brand equity framework (Figure 6) provides a foundation for understanding how brand attitudes are influenced in online settings. According to Aaker (1991), brand equity encompasses brand awareness, perceived quality, brand associations, and brand loyalty—dimensions crucial for building customer-based brand equity (CBBE). Building on Aaker's framework, Yoo et al. (2000) developed the Brand Equity Creation Process Model, which examines how marketing activities impact brand equity dimensions, thus influencing consumer attitudes. This model is particularly relevant for leveraging marketing strategies to cultivate positive brand perceptions online.

Figure 6

Research Model of brand equity.



Source: Aaker (1991).

Taking all these insights into account and integrating them into a conceptual framework, a holistic understanding of how various factors shape brand attitudes is gained. This framework explains the dynamics of brand marketing efforts and provides a structured approach to brand attitude research in the context of social media.

In summary, integrating traditional marketing strategies with innovative social media methods contributes significantly to shaping consumer attitudes towards brands. For marketers, this comprehensive understanding is very useful in effectively strategizing social media content to build a strong brand.

1.3 Visual attention online

Visual attention on the Internet is very important in shaping individuals' interactions with digital content and their attitude towards a brand. Visual attention is a cognitive process. During it, individuals selectively focus their attention on specific visual stimuli. Irrelevant information is involuntarily filtered out, which is very important because users are presented with a very large amount of visual content in social space that competes for their attention, so it is normal that less important information or less interesting visuals do not attract attention.

Many researchers have often argued that visual attention and the ability to manage it are very important in assessing customer behavior online. Ariffin et al. (2018) point out that, for example, risk has a significant impact on consumers' attention and decision-making strategies. The authors revealed the conclusion that there is a very strong relationship between perceived risk and purchase intention. This was agreed by Chetioui et al. (2020), who examined the role of visual stimuli in influencer marketing. The authors argue that style influencers are undoubtedly the ones who help buyers make their purchase intentions smooth through a well-organized visual content strategy.

Understanding the components and measurement methods of visual attention is essential to studying and understanding how people interact with content online. By analyzing these elements, researchers can provide insights into how consumers' behavior in the digital space is informed. For example, components such as trust-related visual cues promote the trust-building process and attract attention when shopping online (Chen & Barnes, 2007). Attitude and age also play a role in online shopping (Sorce et al., 2005). Researchers have found that consumers' attitudes toward online shopping influence visual attention and purchasing behavior. This suggests that visual attention is not only a cognitive factor, but is also influenced by individual differences and contextual factors.

Research conducted in various fields shows that social media influences consumer behavior. Students, professionals are influenced in their studies, work. The widespread use of social media shapes various aspects of daily life and the wide reach of social media (Shaheen et al., 2020; Ayinde et al., 2020; Aktaç et al., 2021). Social networks also have a very significant impact on e-commerce in the retail industry. Visuals and information influence consumer behavior towards brands and purchase intentions (Akrirout, 2021).

1.3.1 Visual attention components

The components of visual interest are crucial for influencing people's engagement and behavior on social media platforms (Table 1). These components encompass a wide range of factors that influence people's interactions with visual content in the digital realm. Analyzing and understanding these components is essential for optimizing content strategies and improving user research on social media.

Table 1

Visual attention component	Author	Explanation	
Social content attention	Laidlaw et al. (2011)	Research has verified that social content, which includes people or faces in a scene, can attract and preserve individuals' interest in social media settings. These social stimuli frequently lead customers to consciousness on those factors, on occasion at the fee of attending to other capabilities inside the surroundings.	
Visual abstracts	Ramos & Concepcion (2020)	Visual abstracts have proven to be a highly efficient method for presenting research results on the relationship between social media initiatives and the public. Their simple form and modern design give them a great opportunity to promote media content and start a conversation over different social media channels.	
Visual framing	Parwani et al. (2021)	Visual framing, including images and videos, plays an important role in creating social media content. Visual tracking research has explored how visual use affects political participation and communication dynamics in social media	
Visual attention allocation	Klein et al. (2020)	Eye-tracking techniques have been used to determine where individuals focus their attention in tweets and other social media posts. By using visuals, researchers can identify which features of social media content are important to users and can influence message reception	
Visual communication design	Lu et al. (2018)	Visual communication design based on AI technology have been developed to enhance visual communication on social platforms. This model considers design, color, layout and other elements to enhance visual communication	

Visual attention component

Source: author of the work.

It is essential to convey important information to the audience, and visual attention components are instrumental in effectively communicating this across social media (Klein et al., 2020). Various fields such as politics and science have been studied. In such fields, the use of social media images has been analyzed to understand how visual presentation influences engagement and communication (Ding et al., 2022).

Eye-tracking studies have shown that visual content is becoming a very important factor. It attracts attention and conveys important information on social media platforms, where users need to quickly evaluate and familiarize themselves with content as they scroll through their feeds (Sutton & Fischer, 2021). In addition, visual design models for communication have been proposed to promote better visual communication on social sites, considering design elements such as color and layout that make communication successful (Kujur & Singh, 2020).

In conclusion, by understanding and utilizing the visual attention component in social media, researchers, organizations, and individuals can create more engaging and useful visual content for their audiences. This not only results in user excitement and engagement, but also in how their interactions, content effectiveness, and outcomes are related across social media platforms.

1.3.2 Measurements of visual attention in social media

The main indicator of user engagement and interaction with content on social networks is visual attention. Research reveals different aspects of visual attention in the context of social platforms. Álvarez-Peregrina et al. (2022) highlight the importance of social media as a tool for myopia researchers to more effectively disseminate their scientific goals, thus revealing the potential of social media to attract and maintain the attention of audiences on certain topics, such as myopia. Furthermore, Farias and Akamine (2012) examined the integration of computer models of visual attention into image quality assessment methodologies, highlighting the benefits of saliency maps in evaluating visual content. Measuring visual attention in social media can be done using a variety of methods that provide valuable insights into users' interactions with visual content online (Figure 7).

Figure 7

Measurements of visual attention in social media



Source: author of the work.

One of the primary methods for measuring visual attention is eye-tracking technology, which tracks and analyzes where individuals direct their gaze on the screen. This allows researchers to obtain data on the social media content factors that receive the most attention (Klein et al., 2020). Heatmaps created based on eye-tracking recordings or computational models visually

depict regions of high visual attention in social media content, thereby clearly illustrating user engagement patterns (Ding et al., 2022). Computational models of visual attention, including interest maps, predict which components of an image or video are most likely to generate interest, based on elements such as color and contrast. This provides researchers with insights into the visual composition of social media content (Badenes-Rocha et al., 2021).

Engagement metrics indirectly measure visual attention, but do not indicate how respondents interact with the content (Sutton & Fischer, 2021). Visual attention is indirectly measured by metrics such as clicks, likes, shares, and comments. According to research by Khazraee and Novak (2018), to understand how much attention each piece of content receives, you can look at duration metrics, which are how long people spend viewing posts. Scroll depth can provide insights into how people engage, stay focused, and how long they stay on a page (Rußmann & Svensson, 2017). This is how far users scroll down a social media channel. And in order to determine what features or trends attract attention, you can do manual or algorithmic content analysis of social media posts (Geboers & Wiele, 2020).

To find out which parts of the content drive user engagement and attract the most attention, it shows where they click and tap the most. These clicks are visualized by click heat maps (Khan et al., 2019). To further understand user behavior, experimental studies are conducted that manipulate variables in social media content (Leszczynski, 2018). This isolates the factors that influence visual attention. This can be further enhanced by questionnaires and surveys that collect user-reported data about how they perceive the content (Nasser et al., 2022). This can provide insights into which elements users remember the most.

In summary, measuring visual attention on social media involves a variety of methods. Each of them provides insights into how users interact with content. Methods such as eye tracking, engagement metrics, heat maps and click heat maps, look time, scroll depth and content analysis, surveys, and experimental studies provide researchers with very valuable data. This helps them refine and optimize communication strategies in this increasingly digital age.

1.3.3 Visual attention tools

Investigating how individuals interact with visual stimuli on social media platforms requires the use of visual attention tools. Eye tracking, for example, allows researchers to figure out the areas people focus on when viewing content. Such studies are often used to explore and

improve branding strategies on META platforms (Zhou & Xue, 2021). Eye tracking is also used in studies that aim to determine how users' attention will be directed to content that informs about risks on social media. For example, content about the weather (Sutton & Fischer, 2021) and about risks during public health crises (Terry, 2023).

Eye tracking technology allows researchers to track eye movements, which helps to understand how individuals interact with and process visual content and which stimuli attract the most attention. This information can be used to make conclusions about how visual attention plays a role in shaping brand attitudes and purchase intentions. The influence of product gaze and digital engagement in social media advertising has been studied (Andreas et al., 2022). As Kaur and Kaur (2021) discuss in their research, eye tracking involves studying the visual impact of social media on users.

Eye tracking also investigates things like thinking intentions and styles. This is done by investigating the relationship between attention and cognitive processes on social media (Xu et al., 2019; Xu, 2023). This suggests that such visual attention tools are used to study user behavior on social media, showing how this interaction influences individuals' behavioral intentions.

Pupil center corneal reflection (PCCR) is one of the main methods to assess eye movements (Figure 8). This method uses infrared light to track the reflection of the pupil center and cornea (Laeng & Endestad, 2012), thus allowing the tracking of eye movements and visual attention of individuals (Mathôt et al., 2014). Pupil center corneal reflection can also be tracked by observing and tracking bright and dark pupils, which also helps to capture eye movements (Semmelmann & Weigelt, 2017).

Figure 8

Eye-Tracking technology



Source: https://www.sr-research.com/about-eye-tracking/

Eye-tracking technology sensors generate the observer's gaze points, which allow the identification of fixations and saccades, and this data is used to create metrics and heat maps of fixation sequences (Chen-Sankey et al., 2023). Eye-tracking devices can generate dual gaze points in both 2D and 3D, making them a very good way to understand and analyze visual attention processes. There are two main types of eye-tracking devices. The first is screen-based, the second is eye-tracking glasses (Figure 9). The first eye-tracking device allows for a more convenient way to track eye movements, as it uses webcams. This method is reliable for tracking users' stimuli on screens, but it can have limitations in accuracy (Mathôt & Stigchel, 2015). Eye-tracking glasses, on the other hand, provide greater accuracy and mobility, which makes their application in various fields broader (Meernik et al., 2016).

Figure 9

Screen-based and glasses eye tracking technology



Source: International conference of engineering design (2013).

Increasingly advanced and accurate eye tracking technologies are widely used and used in various fields to study consumer perception and attention. Such studies are conducted in cognitive psychology and neuroscience (Yang & Wang, 2015). In such market research, eye tracking is used to analyze consumer behavior in order to strategically optimize advertising (Zavagno et al., 2017). Such studies are applied in both physical and online shopping environments. There are also other reasons why this methodology is so widely used, for example, in industries such as construction, eye tracking is used to increase work safety and productivity (Cherng et al., 2020).

Eye tracking data can be presented in a variety of visual ways. One of the most popular and widely used methods is the visual heat map (Figure 10). It is a graphical method of gaze fixation that reflects how the eyes fix their gaze and where this gaze remains for the longest time. This model reflects the areas of greatest interest to users on a heat map (Udin, 2023). Another way to display eye tracking data is to use gaze visualizations, which allow us to see how the eyes travel through a presented visual (Kar & Corcoran, 2019). When transforming data into charts and graphs, small tricks of data pattern recognition are used using visual integration methods, which include visual integration methods (Teng et al., 2022).

Figure 10



Heat map visualization technique

Source: https://www.neuronsinc.com/insights/heatmap

Such color visualization is very useful for identifying the most effective attention-grabbing areas. In a heat map graphic, colors are used to indicate areas of high and low visual attention. Areas that have attracted the most attention are shown in warm colors (e.g., red, orange, yellow), while areas that have attracted less attention are marked in cool colors (e.g., green and blue). In practice, heat maps can be very useful, for example, if this methodology were applied to advertising visuals, it could show that, for example, the product image and key information received a lot of attention, while the remaining elements received less attention (Pfeiffer and Memili, 2016; Lettner and Holzmann, 2012). Such insights are very useful and can help advertisers optimize the visual design of advertisements, thereby increasing customer engagement.

In summary, eye tracking technology is of great importance in various fields. It helps to understand how individuals interact with visual stimuli not only in real-world environments, but also online. With the help of this method, researchers have the opportunity to analyze visual attention patterns and provide invaluable insights into consumer interaction, market communication, advertising, branding, and many other useful insights. The pupil center corneal reflection (PCCR) method is able to accurately track consumer eye movements, which provides data that is valuable in cognitive psychology, market research, and business optimization. This provides essential insights that can help increase consumer engagement and improve brand attitudes.

1.4 Research model

The research methodology of the study is based on the "Elaboration likelihood model" developed by Petty and Cacioppo, known as ELM (Figure 11). The model shown in Figure 11 explains that consumers process messages in two different ways, central and peripheral. The central route involves careful and deliberate consideration of content, while the peripheral route relies on superficial cues such as visual appeal and source credibility (Visentin et al., 2019; Bell et al., 2020). "Elaboration likelihood model" is particularly relevant in the context of social media marketing, because on social networks, visual content plays a key role in shaping consumer attitudes and behavior (Keyzer et al., 2021).

Figure 11





Source: Petty & Cacioppo (1986)

The study will be based on the Elaboration "Likelihood model", which aims to investigate how different types of visual content can interact with brand attitudes and purchase intentions. It explains that demonstration images that show a product in use can create an engagement path that engages consumers and thus brings them closer to the initial cognitive process. As a result, their attitudes and purchase intentions are more positive compared to informational images that only connect them to a peripheral idea (Fu 2023; Ramish 2023).

This model has been refined by adding insights from eye-tracking analysis. Eye-tracking technology has been applied to attempt to assess the relationship between visual attention and consumer behavior. It explains how consumers respond to visual marketing stimuli (Zhu 2023). Research has shown that eye-tracking can shed light on consumers' decision-making processes by showing where and for how long they pay attention to different objects in a visual context (Hutter et al., 2013). The same can be applied to the social media environment, where the role of visual content is a key influencer of consumer attitudes and consumption (Kim and Lee, 2012).

In addition, the integration of eye-tracking data into this model allows for a detailed investigation of how visual attention influences attitude formation. Indeed, research has shown that image positioning and design features elicit different user opinions, which can critically bias choice (Andreas et al., 2022). For example, findings suggest that consumers are more likely to engage with atypical advertisements, which can enhance the effectiveness of marketing strategies (Iberahim et al., 2019). Furthermore, eye-tracking studies have shown that consumers' visual intentions and their preferences are related, suggesting that the way information is presented can influence product perceptions (Li, 2023; Yida and Esther, 2023).

2. RESEARCH METHODOLOGY FOR THE IMPACT OF VISUAL ATTENTION ON ATTITUDES IN SOCIAL MEDIA USING EYE-TRACKING APPROACH

2.1 Research model, and hypotheses

The conceptual model below (Figure 12) examines the interaction of various factors that can influence brand attitudes and purchase intentions for visual content on social media. All of them are part of the independent and mediating variables, as well as the dependent variables, that examine the impact of different dimensions of visual content on consumer perceptions and behavior in this research model.

The independent variables in the model relate to the types of visual content. Two types of visual advertising are included in the model: demonstration images (which show the product in use) and informational images (those that provide factual information about the product).

Figure 12 Conceptual model



Source: author of the work.

The model also includes several mediating variables. They explain how visual content affects the viewer's attention. Respondent ratio indicates the proportion of people who are interested in the main areas, time to first fixation (TTFF) indicates how quickly subjects pay attention to specific areas, and duration of first fixation indicates how long that attention lasts. These metrics also provide insights into the direct impact of the content. Wait time and number of fixations indicate how often and for how long users interact with different visual areas. Number of repeat visits indicates how often subjects return to areas.

It should be noted that while this data provides important data, it is not a direct result of consumer behavior such as purchase intention and brand attitude. Since this cannot be determined by eye tracking alone, a semi-structured interview will be conducted to explore how visual content influences consumer intentions.

Based on theory and previous empirical studies, hypotheses were raised (Table 2).

Table 2

Hypotheses

	Hypothesis	Explanation	Author
H1	Time to first fixation (TTFF) will be shorter for demonstration visuals than for informational visuals.	Attractive visuals allow for faster visual capture and greater attention, while informative visuals can affect the speed of attention.	Smerecnik et al. (2010).
H2	Images with information will be fixation more due to the type and amount of complex information	Informational images are more complex, requiring more fixations as viewers seek to perceive details, which increases visual engagement.	Knuth et al. (2020).
H3	Demonstrational visuals will have a longer dwell time on the primary AOI, compared to informational visuals.	More time is spent on the main elements of the demo images, as these elements are usually designed to be more attractive and more relevant to the viewer's interests.	Farace et al. (2019).
H4	Informational visuals will have a higher revisit count of secondary AOIs revisited because of the need to verify information.	Viewers will return to secondary areas of interest more often when presented with complex information because they are seeking to understand the information.	Zhou & Xue (2021)
Н5	Respondent ratio will be higher for demonstration AOIs, while informative visuals will be higher ratios for textual AOIs.	Demonstration images are more effective in drawing attention to visual elements, while informative images engage viewers more with textual content.	Behe et al. (2017)
H6	First fixation duration will be longer for demo images compared to informational image.	First engagement with demonstrational images will be longer because viewers may need more time to process the product being demonstrated.	Milosavljevi c et al. (2011)
H7	The type of visual content affects the proportion of time spent on a logo compared to other AOIs.	The type of visual content presented can affect how long viewers focus on logos versus other areas of interest, while demonstration content can encourage longer logo engagement.	Farace et al. (2019)
H8	Informational images will have a higher Respondents ratio in text AOIs compared to demonstration images.	Viewers are more likely to interact with text when it is presented in an informational format because they seek deeper insights.	Zhou & Xue (2021)
H9	Secondary information AOI TTFF will be longer in demonstrational images than in informational images.	It may take longer for secondary information in a demonstrational context to capture attention, as viewers are initially drawn to the main product.	Milosavljevi c et al. (2011).

	Continuation of Table 2		
H10	Demonstrational images have lower revisits counts but focus on key elements such as products and logos.	Although subjects may not return to previously viewed areas as often, their attention will be more focused on key visual elements that are critical to decision-making.	Farace et al. (2019).
H11	Products in demonstrational images are more effective at drawing viewers to products than products in informational images due to higher fixation counts and dwell times.	Demonstrative visuals are more effective at drawing viewers' attention to products, leading to increased fixation and engagement.	Farace et al. (2019)
H12	Informational images encourage deeper exploration of subtitles than demonstration visuals, as indicated by the higher number of fixations in these areas.	The complexity of informational images forces the audience to discover textual elements more intensively, which in turn creates more fixations in these areas.	Knuth et al. (2020)

Source: author of the work.

The model and hypotheses provide a comprehensive explanation of how visual attention, among other factors, influences brand attitudes and purchase intentions in the context of social media.

2.2 Research methodology

This master's thesis will use a combined quantitative and qualitative research design to investigate the impact of visual attention on brand attitudes on social media. The quantitative basis is provided by eye-tracking analysis, complemented by qualitative data from in-depth, semi-structured interviews. This combination of research methods will allow for a clearer demonstration of how visual elements of social media content influence brand attitudes.

Eye-tracking software "IMotion" was chosen as the main research tool, because it can essentially provide objective and measurable data on visual attention. This software allows for precise tracking of a person's eye fixations and reflects the area that participants are looking at. Eye-tracking is a research tool that responds quickly and unconsciously to visual stimuli, making it useful for studying the effectiveness of different advertising strategies (Barbierato et al., 2023).

Quantitative research will identify areas of interest (AOIs) for different types of advertisements, which will clearly indicate where participants focus their attention and for how

long. Metrics such as fixation duration and number of fixations within each AOI indicate which elements respondents are most interested in. Thus, AOI analysis can show that participants spent more time looking at the product image than at other visual elements. This information is very important for professionals who want to optimize their campaigns (Wooley et al., 2022; Strasser et al., 2012). These eye-tracking results will provide data that allows them to analyze and determine which visual elements have the best impact on brand attitudes and purchase intentions.

After the quantitative study, a qualitative semi-structured interview will be conducted. This will allow to strengthen the eye tracking study and help to better understand how the subjects interact with the visual content. During the interviews, the effectiveness of different types of advertising visual elements, their attitudes towards the brand and purchase intentions will be investigated. Such a qualitative approach is crucial for understanding the underlying motivations and attitudes that are not fully captured by quantitative eye tracking data (Kong et al., 2018).

The aim of this study is to analyze how visual elements on social media influence consumers' attitudes towards the brand and purchase intentions. Therefore, combining these two studies will increase the reliability and depth of the findings. And according to Wang et al. (2018), such a comprehensive approach contributes to a growing knowledge of the dynamics of marketing in the context of social media.

2.3 Sample size and characteristics

Considering the value of previous studies that combined two methods, eye-tracking and interviewing, the study sample was evaluated (Table 3).

Table 3

Sample size

Authors	Number of respondents	Research objective
Boardman & McCormick (2019)	15	Comprehensively understand consumer perception and attention on fashion retail websites
Neuert & Lenzner (2015)	20	Identify questionnaire issues and problematic questions in a marketing context.
Madera and Hebl (2012)	38	Investigate facial discrimination in job interviews of stigmatized candidates

Source: author of the work.

Existing literature suggests that when using a combination of eye tracking and interview research in the field of digital marketing, the sample size ranges from 15 to 38 participants. Based on the experience of previous studies, the sample size of the study will be 24, because this number is the average of past studies.

The sample size of this study is women aged 18 to 34. It is important to know the demographics, as the main buyers of facial cleansers are young women, especially in this age group. According to a survey conducted by the NPD Group, women are more likely to buy facial cleansers, and many millennial and Gen Z consumers are also an important driver of skin care products ("What Factors Influence Local Women Who Choose Facial Skin Care Products", 2022).

In order to ensure that the results of the study are relevant to the target market for facial cosmetics cleansers in Lithuania, it is necessary to take this demographic insight into account. Therefore, 24 women aged 18 to 34 who have purchased facial cosmetics online in the past 6 months will be surveyed. This will provide much more depth about how visual attention influences the brand's image in the target audience. This information from the eye tracking study will help to provide the quantitative nature of the insights, mainly, while the qualitative interviews will give a more detailed view of peoples' perceptions and attitudes. This will deepen and strengthen the overall conclusions of the study.

2.4 Study design

In order to fully understand consumer behavior and reactions to visual advertisements, the following two studies were integrated - eye-tracking with interview responses (Gijp et al., 2016).

The eye-tracking study will be conducted using IMotions software. The distance between the subject and the computer screen was 60 cm to obtain the most reliable eye movement recordings and to allow the participant to complete the study without eye strain (Muñoz-Leiva et al., 2022). Each visual will be displayed for 4 seconds, during which time the subjects' initial visual attention to the fixation points will be recorded. This is an important starting point for understanding how different visual elements capture consumers' interest (Johnson, 2023).

Before the study begins, subjects will complete an eye calibration, during which the eyetracking device accurately captures the participants' gaze. During this calibration process, participants are asked to focus on dots on the screen so that the eye tracker matches their field of vision. Such calibration is a necessary condition for the reliability of eye-tracking data so that the system correctly records where participants are looking when they are presented with visual stimuli (Ranney et al., 2019).

Eye tracking data will be processed using the IMotions software, which will generate a heatmap and data such as Respondent ratio, Revisit count, Fixation count, TTFF, Dwell time, and First fixation duration. This analysis will help identify the advertising elements that most capture participants' attention and the attention span for each element. The findings will be important for testing hypotheses about perceived source credibility and content usefulness (Wilbanks et al., 2021).

After calibration, participants will be shown a set of visual advertisements. The eye tracking procedure will be divided into three differentiated tasks, the purpose of which is to measure participants' visual attention and their engagement with the advertisements. Each task will be designed to align with the hypotheses of this study on how various visual elements can affect perceived source credibility, information quality, content usefulness, brand attitudes, and purchase intentions.

Task 1. Visual engagement with demonstrative images.

In the first task, participants will be exposed to three demonstration advertisements for facial cleansing products (Figure 13). The first visual is for the brand ODA, the second is for MATH, and the third is for MANILLA. Each advertisement was exposed to participants for 4 seconds, and eye-tracking software recorded participants' gaze patterns, fixation duration, and areas of interest.

Figure 13 Demonstrative visuals



Source: Official social media pages of the brands "ODA", "MATH", "MANILLA".

The main goal of this exercise is to quantify the initial visual interest in demonstration images and whether they are more engaging than informational images. Eye tracking data will be analyzed to create heat maps that show which elements of the ad attracted the most attention, as well as extracting AOIs and analyzing the resulting data.

Task 2. Visual engagement with informational images

Participants will be shown three informative visuals of the same brands with text and related product information (Figure 14). For example, visuals that describe ingredients and benefits. As in Task 1, each advertisement will be displayed on the screen for 4 seconds, and participants' eye tracking data will be recorded to measure participants' gaze patterns and fixation duration.

Figure 14

Informational visuals



Source: Official social media pages of the brands "ODA", "MATH", "MANILLA".

By analyzing this eye-tracking data, it will be possible to assess whether informational images are less effective in attracting attention and influencing perceived source credibility and information quality. It will also be investigated whether image type influences participants' attitudes towards the product and their purchase intentions.

Task 3: Comparative analysis of visuals

In the final task, each participant will be presented with sets of advertisements, each set containing a demonstrative and an informative advertisement for the same brand. A comparative analysis will be performed
This task is designed to assess how participants divide their visual attention between the two types of images and to assess their overall preferences. Each set of images will be shown to participants for 4 seconds, after which eye tracking data will be recorded as before.

It will also be investigated whether there are any patterns of gaze behavior that could indicate a bias towards one type of image compared to the other. If participants show a longer fixation duration for demonstrative images than for informative ones, this would support the hypothesis that visual attention influences perceptions of trustworthiness and usefulness.

Semi-structured interviews will be conducted with all 24 respondents, thus reinforcing the eye-tracking research data and covering all relevant topics. Each interview is scheduled to last 10–15 minutes, in a video call format. The interviews will be recorded with the participants' permission for transcription and analysis. The questions provided in Annex 1 will help to reveal the participants' perceptions of visual content and their attitudes towards brands

By integrating eye-tracking data with interview responses, the study aims to gain a comprehensive understanding of consumer behavior in response to visual advertising (Gijp et al., 2016). The interviews will be recorded, transcribed, and thematically analyzed to identify common patterns and insights that emerge from the participants' experiences (Zhou, 2023).

2.6 Data analysis

Quantitative data from eye-tracking sessions will be analyzed using the "IMotion" software for eye-tracking metrics such as fixation duration, number of fixations, and AOI.

First, descriptive statistics will be performed. Eye-tracking metrics for each type of advertisement – display and informational – will be calculated to summarize them. This will include the average fixation duration, total number of fixations, and the proportion of time spent on each AOI. A comparative analysis will then be performed to identify differences in visual interface between display and informational images and analyze them using the appropriate inferential statistical test.

Statistical analysis was applied to analyze eye tracking data. Correlation and regression analyses were not used, taking into account the nature of the research questions, the specifics of the data and the appropriateness of the chosen methods. Statistical analysis methods were selected to meet the objectives of the work, and the descriptive and inferential statistical tools used were sufficient to test the hypotheses and answer the research questions. Berisha (2023) notes that for such purposes, simpler methods are often sufficient, which are easier to interpret and require fewer assumptions.

In addition, the application of correlation and regression analysis requires data assumptions, such as normal distribution and linear relationship between variables. The data of this study did not meet these assumptions, and the application of regression analysis could have led to erroneous conclusions (ÖZTAŞ & Erilli, 2021). In addition, Newsom et al. (2003) emphasize that regression analysis can be overly complex and sometimes lead to interpretation errors, especially when the relationships are not clearly defined or are too complex.

Therefore, the statistical methods chosen in your work ensured a reliable and accurate solution to the research questions, avoiding unnecessary complexity and possible errors. Such a methodological decision was based on the specifics of the research objectives and the nature of the data, in order to obtain reliable and interpretable results.

Qualitative data collected from participant feedback will be analyzed using thematic analysis. First, all participant interviews will be transcribed post-study using CLIPTO.AI to ensure the accuracy of capturing participant insights. The transcriptions will then be systematically coded to identify recurring themes and patterns related to participants' perceptions of visual content. This coding process will involve both inductive and deductive approaches, allowing for new themes to emerge while taking into account the pre-established research hypotheses.

To facilitate the analysis of the interview data, all respondents were tagged with a respondent ID using the system below. This ID was tracked throughout the research session and was used to tag the interview transcripts:

1st respondent = R01

•••••

24th respondent = R24

Once coding is complete, the identified themes will be categorized to reflect participants' perceptions of the demonstration and informational images. The final step will involve integrating quantitative and qualitative findings to provide a comprehensive understanding of the research questions. This integration will allow for better interpretation of how visual content influences brand attitudes and purchase intentions, ultimately contributing to the broader field of marketing research.

3. RESEARCH DATA ANALYSIS AND RESULTS

3.1 Demographic data and reliability analysis

Eye-tracking data were analyzed to assess participants' visual attention and engagement with various types of advertisements. The analysis focused on several key metrics: response rate, number of repeat visits, number of fixations, TTFF AOI, dwell time, first fixation time, and areas of interest (AOI).

The eye-tracking study included 27 subjects, but three participants were excluded from the final analysis of the study because they did not meet the criteria for the target demographic. The study sample was defined as women aged 18 to 34. Three men were excluded from the analysis – one was 45 years old and older, the second was 35 to 44 years old, and the third fell within the acceptable age range but was male, which is not the study sample, so these participants were excluded from the analysis to ensure an adequate sample size. Thus, the study analyzed data from 24 women aged 18 to 34, ensuring that the data matched the intended demographics of the study. The age of the studied participants was from 18 to 34 years, 9 participants (37.5%) were 18-24 years old and the majority were 25-34 years old, 15 participants (62.5%). There were no participants in the 35-44 and 45+ age groups. All study participants indicated that they had purchased cosmetics online in the past 6 months, making the study sample the target audience for this product.

Before the eye tracking session, participants were asked control questions to ascertain whether they had purchased cosmetics online in the past 6 months, also about their facial cleanser usage habits and the visibility of advertising on social media. These questions helped to understand participants' behavior and experiences related to purchasing cosmetics online and the impact of advertising on social networks, which is very important when analyzing their responses to display advertisements.

The subjects were asked about the frequency of facial cleanser use. The majority of participants (20 out of 24) said they used facial cleansers every day, while only 4 participants used them several times a week (Figure 15). It was also possible to choose if they used them several times a month or never, but none of the subjects chose these answers. This indicates that the study sample has a strong daily skin care routine and the subject of the study is relevant to them.



How often do you use facial cleansers?



Source: author of the work.

When asked about skin care advertisements on social media, 14 participants (58%) answered that they often (daily) encounter skin care advertisements, 9 participants (37.5%) indicated that they encounter them sometimes (weekly). Only one participant (4.2%) said that they see such advertisements less than once a week, and no participant reported that they have never seen them (Figure 16). This indicates a high level of skin care advertising on social media among the participants.

Figure 16



Source: author of the work.

All 24 participants successfully completed the calibration process, which ensured the accuracy of the eye tracking data. Calibration was performed before and after each participant's session to verify the accuracy of the eye tracking device (Annex 2). No participants were excluded due to poor calibration or technical issues. All participant calibration data were considered acceptable, and the eye tracking device performed within the intended accuracy range.

The overall accuracy of the eye tracker was 0.876, indicating a high level of accuracy in capturing the participants' gaze. According to previous studies, eye trackers used in marketing research typically achieve an accuracy level of 0.80–0.95 (Mansor & Isa, 2022; Pentus et al., 2020; Wedel & Pieters, 2017). The accuracy of this study, 0.876, falls within this acceptable range. This confirms that the data collected is of high quality and suitable for the study's purposes. In addition, the overall eye tracking quality was 100%, confirming that the system was operating optimally throughout the study. The preliminary face quality percentage was 96%, further confirming the reliability of the calibration process and data collection.

3.2 Eye tracking results and hypotheses testing

First, respondents were shown 3 demonstration images of facial cleansing products from different Lithuanian brands, then 3 informative images, and then a combination of the same brand that contained both demonstration and information.

The results of the study show that in the first demonstration visual of the brand "ODA" respondents interacted most with three areas of interest (AOIs): the logo, the main label information, and the secondary information (Figure 17).

Almost half of the respondents (48.15%) managed to capture the logo, and the average time to first fixation (TTFF) was 629.95 ms, which means that the logo was noticed quite quickly. The average first fixation was long, 1033.15 ms, which indicates that the logo left a lasting impression. The average time that respondents spent on the logo was 1604.76 ms (40.18%), which indicates that respondents looked at the logo for a long time after the first contact and rarely returned to the logo (the relatively low number of repeat visits – 0.54) (see Annex 3).

Figure 17 AOIs of ODA demonstrative visual



Source: software "IMotion".

The main label information was the most engaging AOI in the "ODA" demonstrative visual, with a response rate of 81.48%. The TTFF was 1168.92 ms, indicating that the main label captured attention immediately after the logo. The label captured attention for 1647.7 ms, with a total stimulus duration of 41.25%. The notion that this AOI successfully conveyed the main information was supported by the average initial fixation duration of 1153.86 ms. Despite the high engagement rate, there were only 0.23 revisits suggest that although respondents fully understood the main label, they did not feel the need to return to it.

The secondary information was less effective in capturing attention – similar to the logo – at 48.15%. The TTFF was noticeably longer at 1279.15 ms, indicating that it was less visually impressive. Although the secondary information was processed when it was noticed, it did not significantly drive repeat visits (repeat visit rate of only 0.08).

Thus, the results show that the primary ODA label was the most successful AOI in attracting and retaining consumer attention. The logo quickly captured the first attention. The secondary information was the least interesting.

Eye tracking analysis of visual stimuli for the informational data "ODA" brand evaluates three AOIs: the logo (ODA), the headline, and the subtitle. The results reveal different patterns of participants' interaction with each element (Figure 18).

Figure 18

AOIs of ODA informative visual



Source: software "IMotion".

The ODA logo attracted only a very small proportion of respondents' attention – only 18.52%. It took a long time to attract initial attention, with a TTFF of 1088.53 ms. (See Annex 6). The headline attracted attention very effectively – with a response rate of 85.19%. It was noticed quite quickly with a TTFF of 783.93 ms, and maintained attention for an average of 1134.77 ms (28.41% of the stimulus duration), which is the highest retention time among AOIs in this brand's informational image. The first fixation duration was 414.36 ms and the revisit rate was 0.61, indicating frequent re-engagement, emphasizing its importance as a focal point.

The highest salience of subtitles reached 92.59%, indicating that it was the most relevant and noticeable information for almost all participants. The TTFF was 700.31 ms, and respondents spent an average of 718.27 ms (17.98% of the stimulus duration) to fixate on it. The first fixation duration was 267.04 ms, which is the shortest among the AOIs, indicating that the information was processed quickly.

Thus, the headline was the most engaging AOI, holding attention for the longest time and encouraging frequent revisits. Subtitles were highly visible and quickly noticed, although their exposure time was shorter.

A comparison of the demo and informational images shows how participants interacted with these types of elements. The analysis focuses on four AOIs: the ODA logo in the demo image (left), the ODA logo in the informational image (right), the product in the demo image (left), and the product in the informational image (right) (Figure 19).

Figure 19

AOIs of ODA comparison visuals



Source: software "IMotion".

The ODA logo in the demo image (left) attracted a 74.07% response rate, significantly higher than its counterpart in the informational image (44.44%). The logo in the demo image also captured participants' attention faster, with a TTFF of 1110.17 ms compared to 1364.96 ms for the informational image. However, the logo in the informational image led to more visits (0.92 vs. 0.25) and had a higher retention rate (2.17 vs. 1.4), indicating that deeper engagement was observed. The logos had slightly longer dwell times in the informational image (849.51 ms, 14.18%) compared to the demonstration (751.9 ms, 12.54%), indicating that the informational logo was better at maintaining attention (see Annex 9).

The product in the demonstration image (left) achieved a 96.3% response rate, slightly higher than the 85.19% recorded in the informational image (right). The demonstration product also attracted attention more slowly, with a TTFF of 852.63 ms compared to 508.38 ms for the informational product. However, the informational product received more repeat visits (1.48 vs. 0.65) and fixations (3.43 vs. 2.5), reflecting its ability to maintain interest. The informational product had a longer dwell time of 1217.25 ms (20.31%) compared to the demonstration product

of 1030.86 ms (17.2%), further highlighting its stronger engagement. The informational product had a shorter initial fixation duration (275.8 ms compared to 408.58 ms), indicating that participants processed it more efficiently.

Overall, the informational image outperformed the demonstration in terms of long-term engagement and repeat visits, especially for the product element. However, the logo of the demonstration image was more effective in capturing initial attention. These findings suggest that while the demonstration format is excellent at capturing attention, the informational format is better suited to sustaining and deepening engagement.

The second analysis of the Manilla brand's demonstrative visual focuses on three areas of interest (AOIs): the logo (Manilla), the secondary information (explanation), and the primary label information (Figure 20).

Figure 20





Source: software "IMotion".

The Manilla logo was found to be the most effective AOI in attracting attention, with a response rate of 92.59% (see Annex 8). This indicates that almost all participants fixed the logo during the test. The logo was noticed almost immediately after the visual presentation, as the average time to first fixation (TTFF) was 391.95 ms. Respondents spent as much as 40.54% of the stimulus duration on the logo, an average of 1619.04 ms, indicating that it held attention well. The average first fixation duration was 875.37 ms, indicating that the logo left a solid initial impression. Furthermore, the revisit rate of 0.56 indicates that participants often returned to the logo after the initial interaction.

Secondary information (explanation) also received a lot of attention, with a respondent ratio of 55.56%. This AOI was less salient than the logo, but had a longer TTFF of 2050.66 ms. Respondents focused effectively when they noticed the secondary information, as evidenced by the fact that when participants noticed this AOI, they spent an average of 40.51% of the stimulus duration. The first fixation duration was the longest of all AOIs at 1245.93 ms. This suggests that although the secondary information was processed thoroughly, it did not encourage frequent revisits.

The primary label information was the least effective in capturing initial attention, with the lowest response rate of 51.85%. Participants took slightly longer to notice this AOI (TTFF was 1571.79 ms). After they were presented with the primary label, respondents spent an average of 1301.07 ms (32.6% of the stimulus duration), which is less compared to the other AOIs.

Thus, the Manilla logo was the most effective AOI with the highest response rate, fastest time to first fixation, and significant revisit behavior.

The analysis of the Manilla informational data visual focuses on three AOIs: the logo, the headline, and the sub-headline. The findings reveal distinct patterns in participant engagement across these elements (Figure 21).



Figure 21

AOIs of MANILLA informative visual

Source: software "IMotion".

The logo was moderately visible with a response ratio of 66.67%, indicating that two-thirds of the participants fixed on it (see Annex 8). Despite having the longest initial attention span (TTFF 1397.63 ms). The first fixation duration was relatively high at 498.79 ms, and the number of revisits at 0.44 indicates occasional re-engagement, highlighting its role as a noticeable but secondary focus.

The headline recorded the highest engagement among the three AOIs with a response ratio of 74.07%. Attention was captured more quickly than the logo, which had a TTFF of 1000.48 ms. Participants spent an average of 1099.54 ms (27.53% of the stimulus duration) on the headline, with a fixation count of 3.55, the highest among all AOIs. The first fixation duration of 353.77 ms and the number of revisits of 0.25 indicate sustained but focused engagement, reinforcing its position as the main visual element.

The subtitle, on the other hand, received the least attention, with a response rate of 37.04%. It required the longest attention (TTFF 2452.15 ms) and the shortest dwell time was 458.56 ms (11.48% of the stimulus duration). The first fixation duration was 402.49 ms, but the lack of revisits (number of revisits 0) indicates that participants processed it briefly and did not return.

In summary, the headline was the most engaging AOI, effectively capturing and maintaining participants' attention. The logo played a supporting role, attracting moderate attention and maintaining interest, while the subtitle struggled to attract significant interest. These results suggest that increasing the visibility and relevance of a subtitle could improve its performance in the future.

Comparing the MANILLA brand elements in the demonstration and informational images provides insights into how participants engaged with the logos and products in both image types. The analysis focuses on four AOIs: logo in the demonstration image (left), logo in the informational image (right), product in the demonstration image (left), and product in the informational image (right) (Figure 22).

Figure 22 AOIs of MANILLA comparison visuals



Source: software "IMotion".

The response rate for the logo demo image was 55.56%, which was higher than the 40.74% for the logo information image. This indicates that the logo in the demo image initially attracted more attention. The TTFF for the demo image logo was 1591.73 ms, faster than the 1902.36 ms for the information logo, indicating that participants noticed the demo logo more quickly. However, the information logo had a higher number of revisits (0.82 vs. 0.47) and a slightly higher fixation rate (2.45 vs. 1.67), indicating that participants who initially noticed the information logo were more engaged with it. The dwell time for the demo logo was 951.37 ms (15.87%), while the dwell time for the information logo was slightly higher at 1012.27 ms (16.89%), indicating that participants spent slightly more time on the information logo. The first fixation duration for the informative logo was longer (551.18 ms vs. 450.12 ms), indicating that initial attention was focused on the informative logo (see Annex 11).

The response rate for the product demo was 81.48%, which was lower than the 96.3% for the product informational image. This indicates that the product in the informational image

captured the attention of a larger proportion of participants. The TTFF for the product demo was 1375.64 ms, which was faster than the 976.66 ms for the informational product, indicating that participants noticed the demo product more quickly. The informational product had a higher number of repeat visits (1.19 vs. 0.5) and a higher number of fixations (4.35 vs. 2.5), indicating that when participants included the product in the informational image, they visited it more often and spent more time on it. The dwell time of the product on the demonstration image was 1250.03 ms (20.86%), while the dwell time of the information product was higher at 1518.95 ms (25.35%), indicating that participants paid more attention to the information product. The initial fixation duration of the information product was shorter (239.44 ms compared to 395.92 ms), indicating that participants initially fixed on the information product but later spent more time viewing it.

In summary, the demonstration image initially attracted more attention to both the logo and the product, as indicated by a faster TTFF and a higher response rate. However, the information image led to more repeat visits, higher fixations, and longer dwell times, especially for the product element. This suggests that while the demonstration image had a stronger initial impact, the information image maintained interest and engagement over time, especially with the product.

The MATH brand demonstrative visual has three main AOIs (Figure 23) - the logo, the main label information and the secondary information (explanation).





Source: software "IMotion".

The MATH logo attracted 70.37% of respondents, indicating that it was fixed by a significant majority of participants. It was noticed relatively quickly, with a TTFF of 791.86ms,

and maintained attention for an average of 1587.19 ms (39.74% of stimulus duration). Initial engagement was strong, with a fixation duration of 994.43 ms (see Annex 5).

The main label information achieved the same respondent rate as the logo at 70.37%, but the TTFF was slightly slower than the logo at 886.06ms. Respondents engaged with it for an average of 1575.02 ms (39.45% of stimulus duration). The first fixation duration was 982.41 ms, indicating good initial focus. The revisit rate of 0.53 was the highest among the AOIs, indicating strong re-engagement with this element.

The lowest proportion of respondents (40.74%) was recorded for the secondary information AOI. This AOI was only observed late in the ad viewing process, with a much later TTFF of 2248.91 ms. Respondents spent an average of 947.17 ms (23.72% of the stimulus duration) with this AOI, and the duration of the first fixation was 861.45 ms. Respondents did not return their eyes to this area, with a return visit rate of 0.

Thus, the logo and the main label attracted and retained attention in a similar manner, but the main label slightly outperformed the logo in terms of re-engagement.

Eye tracking analysis of visual stimuli in the informative MATH brand visual data distinguishes three AOIs: logo, headline, and subtitle (Figure 24).



Figure 24

Source: software "IMotion".

The MATH logo was the least noticeable, at only 7.41%, but those who did pay attention to the logo spent a lot of time on it, with a dwell time of 1750.83 ms (43.88% of the stimulus

duration). The same was true for the first fixation duration of 1750.83 ms, indicating that participants processed the logo for longer after noticing it. However, the zero-revisit rate suggests its limited role in attracting sustained attention (see Annex 7).

The headline received 66.67% of the participants' engagement, so it took longer to capture initial attention compared to subtitles – the TTFF was 994.09 ms. Participants spent 734.66 ms (18.4% of the stimulus duration) on this AOI, with a first fixation duration of 456.97 ms. The average revisit rate was 0.28, indicating that the headline was secondary.

Subtitles were the most engaging AOI with a response rate of 92.59%, meaning that it was the most engaging factor for almost all respondents, and a TTFF of 613.79ms. Participants spent an average of 1587.98 ms (39.75% of the stimulus duration) on the subtitles, and its first fixation duration of 221.16 ms indicated fast initial processing. The revisit rate of 0.96 indicates frequent revisits and emphasizes its importance.

Thus, subtitles were the most effective AOI, quickly capturing attention and maintaining strong engagement. The subtitles played a supporting role, while the logo (Math), despite its low visibility, attracted the attention of several people who noticed it for a long time.

A comparison of the demonstration and informational images of the MATH brand elements reveals significant differences in participants' interactions with logos and products (Figure 25). The analysis focuses on four AOIs: logo in demonstration image (left), logo in informational image (right), product in demonstration image (left), and product in informational image (right).

The response rate for the logo demo image was 48.15%, which was significantly higher than that for the logo information image, which was only 3.4%. This indicates that the logo demo image was more effective in capturing initial attention. The TTFF for the demo image logo was 1976.82 ms, which was faster than the 2278.33 ms for the information logo, indicating that participants noticed the demo logo slightly faster. The dwell time for the demo logo was 749.82 ms (12.51%) and for the information logo was 633.33 ms (10.58%), indicating that the demo logo held attention for a longer period of time. The first fixation duration for the demo logo was longer (695.85 ms compared to 633.33 ms), further confirming its stronger initial effect (see Annex 10).

Figure 25

AOIs of MATH comparison visuals



Source: software "IMotion".

The response rate for the product demo was 92.59%, significantly higher than the product informational image at 48.15%. The product TTFF for the demo was 1150.82 ms, faster than the informational product at 1432.62 ms, indicating that participants noticed the demo product more quickly. The number of revisits for the informational product was higher (0.64 vs. 0.15), indicating that participants who noticed were more likely to revisit the informational image. The number of product fixations for the informational image was 2.84 vs. 2.5, indicating that participants were more engaged with the informational product. The product dwell time was significantly longer for the demo (1289.7 ms, 21.52%) compared to the informational product (436.19 ms, 7.28%), indicating that participants spent more time on the demo product. The first fixation duration was also longer for the demo product (445.58 ms vs. 405.5 ms), indicating greater initial attention.

Thus, the demonstration image was more effective in attracting initial attention to both the logo and the product elements, as demonstrated by higher response rates and faster TTFF. However, the informative image led to more visits and greater engagement with the product, especially in terms of the number of fixations. Despite the lower initial attention, the informative image was better at maintaining interest, especially with the product element.

In summary, while the demonstration visuals had a stronger initial impact, the informative visuals led to longer-term engagement, with participants viewing the content, especially the product elements, and spending more time on it.

12 hypotheses were raised, 11 of which were confirmed during the study (Table 4).

Hypo- thesis	Accepte d/denied	Explanation	Justification
H1	Accepted	Demonstrational visuals show a shorter TTFF for the logo and product information compared to informational visuals.	ODA For the logo, demonstrational visuals significantly reduced TTFF (1110,2 ms vs. 1365 ms). For the product, informational visuals had a slightly shorter TTFF (508,4 ms vs. 852,6 ms). MATH Demonstrational visuals had shorter TTFF for both the logo (1976,8 ms vs. 2278,3 ms) and product (1150,8 ms vs. 1432,6 ms). MANILLA Demonstrational visuals showed shorter TTFF for the logo (1591,7 ms vs. 1902,4 ms). Informational visuals had slightly shorter TTFF for the product (976.7 ms vs. 1375,6 ms).
Н2	Accepted	Informational visuals generally show higher fixation counts for the logo and product.	ODA. For the logo, informational visuals higher fixation counts (2,2 vs. 1,4). For the product informational visuals higher fixation count (3,4 vs. 2,5). Math For the logo, demonstrational visuals slightly higher fixation counts (1,2 vs. 1). For the product demonstrational visuals higher fixation count (2,8 vs. 1,2). Manilla For the logo, informational visuals slightly higher fixation counts (2,5 vs. 1,7). For the product informational visuals higher fixation count (4,4 vs. 2,5).
Н3	Accepted	Demonstrational visuals show longer dwell time on primary AOIs (logo, main label information) compared to informational visuals.	ODA. Demonstrational visuals had longer dwell time for both the logo (1604,8 ms vs. 675,8 ms) and main label information (1647,7 ms vs. 1134,8 ms). Math. Informational visuals had longer dwell time for the logo (1750,8 ms vs.1587,2 ms) and demonstrational visuals higher for main label information (1575 ms vs. 734,7 ms). Manilla. Demonstrational visuals had longer dwell time for both the logo (1619 ms vs. 819,3 ms) and main label information (1301,1 ms vs. 1099,5 ms).

Table 4Hypotheses accepted/denied

	Continuation of Table 4				
H4	Accepted	Informational visuals generate higher revisit counts, particularly in the ODA and Manilla brands.	ODA. Informational visuals had higher revisit count for both the logo (0,9 vs. 0,3) and product (1,5 vs. 0,7). Math. Demonstrational visuals had higher revisit count for both the logo (0,2 vs. 0) and product (0,6 vs. 0,2). Manilla. Informational visuals had higher revisit count for both the logo (0,9 vs. 0,5) and product (1,2 vs. 0,5).		
Н5	Accepted	Demonstrational visuals show higher respondent ratios for the logo, while informational visuals show higher ratios for textual AOIs (ODA, Manilla).	Demonstrational visuals higher respondent ratios for the logo: ODA (48,2% vs. 18,5%), Manilla (92,6% vs. 66,7%), MATH (70,4% vs. 7,4%). Informational visuals show higher ratios for textual AOIs. ODA: Main label information (85,2% vs. 81,5%), secondary information (92,5% vs. 48,2%) MANILLA: Main label information (74,1% vs. 51,9%), Demonstational secondary information (55,6% vs. 37%) MATH: Demonstational Main label information (70,4% vs. 66,7%), Informational secondary information (92,6% vs. 40,7%)		
H6	Accepted	Demonstrational visuals show longer first fixation durations	ODA. Demonstrational visuals show longer first fixation durations for both the logo (538,1 ms vs. 311,4 ms) and product (408,5 ms vs. 275,8 ms). Math. Demonstrational visuals show longer first fixation durations for both the logo (695,9 ms vs. 633,3 ms) and product (445,6 ms vs. 405,5 ms). Manilla.Demonstrational visuals show longer first fixation durations for both the logo (875,4 vs. 498,8) and product (395,9 ms vs. 239,4 ms).		
Η7	Accepted	Demonstrational visuals allocate a higher proportion of dwell time to the logo compared to informational visuals.	The logo consistently received more time (40.18-41.25%) compared to other AOIs such as primary labels or secondary information. Demonstration images: The logo maintained a high percentage of dwell time (40.54%) compared to secondary information (40.51%), but longer than the primary label (32.6%). Informational visuals: The logo had a shorter dwell time (16.95- 43.88%) and varied greatly across setups, often receiving less attention compared to product-related AOIs.		
H8	Accepted	Informational visuals generate higher engagement with textual AOIs.	ODA. Informational visuals had higher respondent ratio with textual AOIs for both main label information (85,2 vs. 81,5) and secondary information (92,6 vs. 48,2). MANILLA. Informational visuals had higher respondent ratio with textual AOIs for main label information (74,1 vs. 51,9) and demontrational secondary information (55,6 vs. 37). MATH. Demonstrational visuals had higher respondent ratio with textual AOIs for both main label information (66,7 vs. 70,4) and Informational secondary information (92,6 vs. 40,7).		
H9	Accepted	TTFF for secondary information is longer in demonstrational visuals.	ODA: TTFF for secondary information is longer in demonstrational visual (1279,2 ms vs. 700,3 ms. Math:TTFF for secondary information is longer in demonstrational visual (2248,9 ms vs. 613,8 ms). Manilla: TTFF for secondary information is longer in informational visual (2452,2 ms vs. 2050,7 ms)		

Continuation of Table 4				
H10	Accepted	Demonstrational visuals have lower revisit counts, focusing attention on the most critical elements.	ODA. In demonstrational visuals lower revisit count (0,27 vs 0,57) but more focus on logo (74,1 vs 44,4) and product (96,3 vs 85,2). MATH. In demonstrational visuals lower revisit count (0,33 vs 0,43) but more focus on logo (48,2 vs 3,7) and product (92,6 vs 48,2). MANILLA. In demonstrational visuals higher revisit count (0,4 vs 0,23), more focus on logo (55,6 vs 40,7) but not in a product (81,5 vs 96,3).	
H11	Denied	Informational visuals show higher fixation counts and dwell time for products.	Informational visuals show higher fixation counts and dwell time for products. In the ODA category, informational visuals achieved higher fixation counts (3.4 vs. 2.5) and dwell time (1217.3 ms vs. 1030.9 ms), with differences of 0.9 and 186.4, respectively. Similarly, in the MATH category, informational visuals outperformed demonstrational ones with fixation counts of 2.8 vs. 1.2 and dwell times of 1289.7 ms vs. 436.2 ms, showing differences of 1.6 and 853.5. For the MANILLA category, informational visuals again had higher fixation counts (4.4 vs. 2.5) and dwell time (1519 ms vs. 1250 ms), with differences of 1.9 and 269. Across all categories, informational visuals consistently attracted more visual attention.	
H12	Accepted	Informational visuals encourage deeper exploration of sub- headlines.	ODA. Fixation count for the sub-headline is higher in informational visuals (2,4 vs. 1,1) Math Fixation count for the sub-headline is higher in informational visuals (5 vs. 1,2) Manilla. Fixation count for the sub-headline is higher in demonstrational visuals (1,6 vs. 1,2)	

Source: author of the work.

The results of the study revealed that demonstrative and informative images have different effects on consumer attention and behavior. Demonstrative images are more effective in conveying key information by reducing the time to first glance (TTFF) of the logo and key information. This indicates that these images attract attention to key elements, such as the logo and key label information, more quickly and maintain attention in these areas for longer. In addition, fewer repeated glances indicate that consumers' attention is focused on the most important elements, which reduces distraction.

In contrast, informative images encourage deeper consumer engagement with secondary elements, such as subheadings and text areas. The higher number of fixations and longer time spent on text AOIs (e.g., ODA and Manilla brands) indicate that these images are effective in encouraging information exploration and attention to detail. However, this may require more time for the consumer to process all the information.

These results reveal that demonstrative images are more effective when it comes to quickly drawing attention to key elements of a brand or product, while informative images are more suitable when the goal is to convey more detailed information and encourage deep engagement. Therefore, the choice of visuals should be strategically based on the campaign objectives – whether the priority is to quickly capture attention or to disseminate detailed information.

3.3 Interview results

Research questions are presented in Annex 1. They aimed to clarify the respondents' attitudes towards demonstration and informational visuals in advertisements, and also to find out consumers' opinions on what main actions encourage them to buy and trust a brand.

3.3.1 The impact of advertising types

Analyzing the respondents' interview responses, it can be seen that the majority (14 respondents - R2, R4, R7, R10, R11, R12, R16, R17, R18, R19, R20, R22, R23, R24) claim that demonstration images are more eye-catching, 8 respondents (R1, R3, R5, R6, R8, R13, R14, R21) prefer informational images. Two respondents (R9, R15) like both types of images, they say that it depends on the circumstances (e.g., what products they need at that time) (Figure 26).



Source: author of the work.

Demonstrative visuals, such as beautiful photos or images of products in use, tend to quickly and effectively capture consumers' attention. Respondents R2 and R9 emphasized that such images directly attract the eye and immediately arouse interest, as there is no excess information to distract attention (Respondent R2 is quoted: "Photos just attract the eye"). This confirms that demonstrative images are more effective when consumers want to quickly evaluate a product. R21 also indicated that if the photos are not attractive, the advertisement loses its impact: "because if the photos are not beautiful, you don't want to read the text."

However, informative advertising visuals that provide more detailed information about the product, its benefits, certificates or instructions for use often give consumers confidence and help them to make informed decisions. Respondents such as R1 and R16 stated that product information such as certificates and eco-labels are important because it gives them confidence (R1: "I then start reading and there is usually a percentage of something all the time, or it shows what the product is, what certificates it has, what it's eco-certified for"). However, only 8 respondents chose this type, which shows that although informative visuals are valued, their level of engagement is lower than that of demonstration visuals.

Both types of visuals can be effective depending on the circumstances. For example, R9 pointed out that if the user is just browsing and not looking for information in a targeted way, then pretty pictures are more attention-grabbing, but when the goal is to get information about the product, informative visuals become more important (R9: "If I'm going to be interested in something and look for information about a product in a targeted way, then I'm not usually looking for pretty visuals anymore, but rather I'm looking for information about the uses and details in a targeted way"). This shows that context and the purpose of the advertisement influence which type of visuals will be more effective.

Overall, it can be concluded that demonstrative visuals tend to attract more attention (14 respondents), but informative visuals have a greater impact when consumers are seeking specific product information (8 respondents).

When choosing a face cleanser, respondents were asked whether they preferred demonstration images (e.g. use of the product) or informative images (e.g. product with text). The results showed a clear trend: the majority of respondents (22 out of 24) preferred informative images, while only 2 respondents chose demonstration images (Table 5).

Table 5

Image type	Number of respondents	Main reasons	Quotes from respondents
Informative images	22	Find out more about the product's properties, composition, suitability for your skin type and recommendations for use.	 R1: "I trust a brand if I have more information." R9: "The cleanser should be chosen according to the type of skin it is used on." R14: "It allows me to get to know the product, what I am interested in - say, the consistency of a new product, the ingredients and how it is used, and what kind of complexion it is for." R15: "if the picture of the cleanser says that it is for dry skin, I can immediately know that it will be suitable for me" R3: "The information helps to understand what is in the product." R12: "When there is more information, it is easier to make a decision." R17: Maybe informative, because then I know what the product offers. R23: When it comes to skin, it's more about the facts, which gives more confidence.
Demonstrati on images	2	Attractive visual presentation, drawing attention to the product's appearance or packaging.	R10: "The demonstration works because you pay attention to the bottle." R16: "Demonstration ones are more eye-catching, but informative ones are more important."

The impact of advertising type

Source: author of the work.

Informative images were the dominant choice among respondents when choosing facial cleansers. They valued more detailed information that allows them to understand the product's composition, suitability for skin type, and benefits. As respondent R1 noted, "I trust a brand if I have more information." R9 added: "The cleanser should be chosen based on skin type, when it is used, and what other products are available." R3 also emphasized the importance of composition, "Informative images help you understand what the product contains." Respondents also valued clarity, which helps them make a decision, R12: "When there is more information, it is easier to make a decision." And practicality: R15: "Informative images allow you to immediately see if that cleanser will suit me."

Demonstrative images are eye-catching and create a first impression, but they are often not enough to make a purchasing decision. Respondents stated that demonstration images are useful only in certain situations, such as when choosing a gift or evaluating the aesthetics of a product (R1, R7, R10, R16). R10: "The demonstration works because you pay attention to the bottle itself, but the information one had a lot of text, and it was difficult to maintain concentration."R16: "The demonstration one is more eye-catching, but the decision to buy is more determined by the information one."

Some respondents emphasized that the best option is a combination of informational content and visuals. Demonstration images help create an emotional connection, and information provides a rational basis for making a decision (R11, R16).

Respondents often associate the provision of information with the trust of the brand. Brands that provide more information about the composition, properties or innovations of the product inspire greater trust and are more valued (R1, R23). Respondents value more detailed information that allows them to understand the composition of the product, its suitability for skin type and benefits. Demonstrative images attract attention, but do not determine the choice. They are useful as an additional visual tool, emphasizing the aesthetic appearance of the product. More luxurious brands are more likely to provide informative visuals, while cheaper brands are more likely to provide demonstrative ones.

The choice to view an advertisement or to be interested in a product depends on individual needs and interests. If a consumer is already loyal to a particular brand or product, other advertisements may simply be ignored (R5). Although information is important, too much text or a complex presentation can reduce interest and attention retention (R10).

3.3.2. Brand attitudes

Consumers often trust products and brands when they receive clear and reliable information, but visual elements also play an important role. Based on the respondents' answers, several key trends can be identified that, in their opinion, create positive brand attitudes (Table 6).

Table 6

Factors that influence positive brand attitudes

	Factors that influence brand	Respondents' opinion	Number of
--	------------------------------	-----------------------------	-----------

	attitudes		respondents
1.	Information as a basis for trust	Product information is a key driver of trust. Clear instructions, product ingredients and recommendations help to assess the reliability of a product.	21 of 24
2.	Brand credibility	Brand credibility strongly influences attitudes towards a product and increases purchase intentions.	21 of 24
3.	Combining and balancing both types of advertising	A combination of informational and demonstrative content is most effective for building trust.	2 of 24
4.	Type of visual content and trust	Informative content builds trust more than demonstrative content.	17 of 24
5.	Brand attitude and purchase intentions	Positive perceptions of a brand increase consumers' intentions to buy its products.	24 of 24

Source: author of the work.

1. Information as a basis for trust

21 out of 24 respondents emphasize that the information provided in advertising about the product is the main factor in trust. Respondent R22 states that trust in a brand is increased when there is more information than just the visual presentation: "Trust in a brand is definitely given more if I have more information than just the visual" (R22). R6 also highlights that educational and detailed product information leads to higher trust because consumers feel more informed about what they are buying: "If I know what I am buying, I definitely trust more and I am not cautious" (R6). R14 and R13 also indicate that clear product ingredients, instructions for use and recommendations build trust because consumers can assess the reliability and benefits of the product: 'If the instructions are clear, I already know that the product is reliable" (R14).

2. Brand credibility

Brand credibility is an important factor determining consumer trust in an advertised product. Analysis of the responses shows that the majority,. 21 respondents (R1, R2, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24) agree that brand credibility strongly influences their attitude towards the product. One respondent (R3) indicated that he had no opinion on this: "I am not sure whether brand credibility influences my attitude towards the product, because the product features are more important to me" (R3). Brand credibility is also related to consumers' intentions to purchase the product. Based on the response statistics, most respondents claim that brand trustworthiness increases purchase intentions (R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24): "If a brand is well-known and trustworthy, I will be more likely to buy their products" (R7).

Respondents R20 and R19 emphasize that brand awareness and positive recommendations are important factors in determining trust: "If I know that the brand is trustworthy, then the product will seem trustworthy" (R20). R17 and R18 also indicate that a well-known brand gives more trust than a new, unknown one: "If it is a well-known brand, then I definitely trust it more" (R17). This shows that brand trust is a key factor that can encourage consumers to pay attention to advertising and purchase a product.

3. Combining and balancing both types of advertising

Some respondents, such as R15 and R12, argue that the best results are achieved by combining informational and demonstrative content. R15 says that both types of advertising build trust, but it is best to mix them and use them together: "I think the best thing is when advertising has both information and visuals, because that makes it more persuasive" (R15). R12 also agrees that both informational and demonstrative elements have their place, but their combination creates clarity and credibility: "If the advertising has both clear instructions and beautiful images, it looks professional and trustworthy" (R12).

4. Type of visual content and trust

When analyzing how the type of visual content (demonstrative vs. informative) affects trust in the advertised brand, the responses show that informative content has a greater impact on trust. A total of 17 respondents (R1, R3, R5, R6, R8, R9, R11, R13, R14, R16–R24) state that informative content strengthens trust in the brand: "It is important for me to receive detailed information about the product, because only then do I feel confident in its quality" (R11). Meanwhile, 3 respondents (R4, R7, R10) indicated demonstrative content as an important factor in trust: "A demonstration gives me more trust because I can see how the product works in real life" (R10). Two respondents (R12, R15) emphasize that the best result is achieved by combining both types of content: "I think it is best when the advertisement contains both information and demonstration, because that way I can both learn and see how the product works" (R12). Only 1 respondent (R2) states that he has no opinion on how visual content affects trust: "I am not sure how visuals affect trust, because other factors are more important to me" (R2).

5. Brand attitude and purchase intentions

The analysis of the responses shows that a positive attitude towards a brand has a positive impact on consumers' intentions to buy its products. All 24 respondents (R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24) agreed that a positive attitude towards the brand increases the intention to buy the products: "When I have a positive attitude towards the brand, I am definitely more likely to buy their products" (R17).

3.3.3. Purchase decision

The usefulness of visual content in advertising is one of the main factors influencing consumers' decision to purchase a product. All respondents agreed that clear illustrations and easy-to-understand content help to quickly understand the benefits of the product and attract attention (R1–R24). Useful visual content that clearly conveys the benefits of the product promotes greater trust in the brand and the desire to purchase its products. High-quality content also helps to create a positive first impression, which is essential when deciding whether to delve deeper into the information provided (R6, R10, R19).

Brand trust is another important factor influencing purchase decisions. All respondents confirmed that trust in the brand directly affects their decision to purchase (R1–R24). This trust is usually formed through clear and reliable information, positive reviews and previous experience with the product. Clear and accurate information in advertising is also essential – 22 out of 24 respondents indicated that it increases the likelihood of purchasing a product, as clarity makes it easier to understand the value of the product (R1–R3, R5–R20, R22–R24).

Positive attitudes towards a brand have a strong influence on purchasing decisions. Respondents highlighted that positive attitudes, formed through previous experience, trusted recommendations, expert endorsements and the added value provided by advertising, encourage the purchase of products (R1-R24).

Based on the interviews, the following conclusions about the effectiveness of advertising were drawn. First of all, the visual presentation is essential as it is the first thing that attracts attention (R6, R10, R19). High-quality and clear photographs and a simple but aesthetic design, avoiding excessive brightness, are also important elements (R7, R20, R22). Secondly, clarity and comprehensibility of information are key factors in determining trust in advertising (R5, R8, R23). In addition, the advertisement must contain valuable information such as scientific substantiation,

certificates and dermatological endorsements (R1, R7, R12), as well as a description of ingredients and allergens (R14). Testimonials and expert recommendations also reinforce confidence in the product (R11, R24). Advertising in the form of video content that provides information from reliable sources is also important (R15). Finally, advertising that emphasises sustainability and eco-friendliness also generates a high level of trust (R7, R18). All these characteristics combine to create credible and effective advertising that creates a positive emotional impact and encourages consumers to make decisions. Annex 12 shows the aspects of advertising that respondents consider most important when deciding whether to trust a brand and buy its products.

Based on the interviews, it was found that visual presentation is the first element that attracts attention. High-quality and clear photographs, aesthetic design and the avoidance of excessive brightness are important elements of advertising. Clarity and comprehensibility of information build trust in advertising. Valuable information such as scientific substantiation, certificates, dermatological approvals, description of ingredients and allergens are also very important. Testimonials, expert recommendations and credible sources provided through video content further strengthen confidence in the product. In addition, advertising emphasising sustainability and environmental friendliness builds trust.

3.3.4 The impact of advertising engagement and attention

The results show that the focus of advertising has a direct impact on both the credibility and the usefulness of advertising. Responses to the two main questions showed that respondents mainly agreed that the evaluation of advertising depends on the attention they pay to it (Figure 27).

Figure 27

The impact of advertising credibility and usefulness



The influence of attention on advertising credibility and usefulness

Source: author of the work.

The first question was related to whether respondents believe that their attention to advertising affects how trustworthy they evaluate the advertising content. Analysis of the responses shows that all 24 respondents who answered this question agreed that attention to advertising directly affects its credibility. For example, respondents such as R21 noted: "If an advertisement attracts attention, I spend more time and trust its content more." This indicates that respondents who pay more attention to advertising tend to take it more seriously and trust the information provided.

Furthermore, R4 emphasized: "I really believe in advertising when it manages to attract my attention and keep it longer." This confirms that attention to advertising creates a certain level of trust, as people tend to value advertising more when they reflect on it longer and in more detail. Respondent R9 also stated: "If an advertisement is not interesting, I just move on to another one, but if it manages to keep my attention, I find it more trustworthy." This indicates that attention span may directly correlate with trust in the content of an advertisement.

Additionally, other respondents also emphasized the importance of attention in evaluating advertising. R1 mentioned: "I start reading and there are usually some percentages displayed there." This shows that respondents who pay long-term attention are looking for specific and important information that helps them better understand the content of the advertisement. R2 also stated: "When you scroll or run through it, you really look at that advertisement, you get the biggest

possible image of that opinion, of that product." This shows that even short-term attention can influence first impressions and evaluation of an advertisement.

The second question investigated whether attention to advertising affects how useful advertising information is perceived. Analysis of the responses shows that most respondents, by paying more attention to advertising, believe that advertising becomes more useful. 23 respondents out of 24 indicated that advertising attention has a direct influence on its usefulness. Only one answer was uncertain, but it was not negative. This shows that most respondents, by paying more attention to advertising, more often believe that advertising information is valuable and useful.

R17 mentioned: "If I take a longer look at the information and look at it, I also read reviews about the brand that attracts attention, I am more inclined to buy." This clearly shows that attention to advertising causes an additional desire to delve into the information, which ultimately increases the usefulness of advertising. Respondent R12 added: "I have noticed that when an advertisement manages to grab my attention, I start to be more interested in the product, and this helps me make decisions." This once again emphasizes that attention to an advertisement not only improves its credibility, but also increases its usefulness, as consumers begin to be more interested in the advertised products.

R5 also emphasized: "Advertisements that grab my attention are usually related to offers that are useful to me or information that I can use." This indicates that advertisements that manage to grab the consumer's attention are perceived as more useful because they often correspond to the consumer's needs and interests.

Additionally, R16 noted: "The fact that more information is retained and noticed can have a greater impact on the purchase decision." This indicates that attention to an advertisement can have a long-term effect, as consumers who spend more time on an advertisement are better able to absorb important information and make informed decisions.

3.4 Discussion of the research results

Demonstrative images (such as aesthetic photos or product usage examples) are the fastest way to attract consumers' attention, especially when they are browsing without a specific goal. Respondents' responses indicate that such images create a first impression, but usually do not provide enough information to make a purchase decision. Most respondents noted that demonstrative images are more suitable in situations where it is necessary to create an emotional connection or emphasize the aesthetics of the product, but informative elements are necessary to convince the consumer.

Informative visuals that provide detailed information about the product, its ingredients, certifications and benefits are considered a key factor in building trust. 22 out of 24 respondents emphasized that clear and reliable information directly increases trust in the brand and encourages a purchase decision. Such images are especially important when consumers are looking for specific information about a product. They help form a rational basis for a decision, provide clarity and reduce uncertainty.

Respondents' responses indicated that the effectiveness of images depends on the context of the ad and the user's goal. If the user is just browsing, demonstration images are more effective, but when making a decision about a product, informational images are preferred. This finding highlights the need for advertisers to consider the stage of the consumer's buying journey and combine both types of visual elements to achieve maximum impact.

Most respondents indicated that ads that combine informational and demonstration elements have the greatest impact. Demonstration images help create an emotional connection and attract attention, while informational elements provide a rational basis for the decision. This combination is especially important in order to maintain a professional and trustworthy image that builds consumer trust and increases purchase intentions.

Respondents highlighted that brand trust is a decisive factor in deciding whether to purchase a product. Trust is usually built through clear information, previous experience with the brand and positive recommendations. Well-known and trusted brands attract more attention and higher purchase intentions. However, too much information or its complicated presentation can reduce consumer interest and trust.

The study showed that informative images are especially important for products whose choice requires more detailed analysis (e.g. facial cleansers). In such situations, consumers want to know the product's composition, suitability for skin type and benefits.Demonstrative images are more suitable for luxury or gift products, where the aesthetic image plays a greater role.

CONCLUSIONS AND RECOMMENDATIONS

In this study, the impact of visual attention and brand attitude on social media was thoroughly investigated using an eye-tracking tool. This study included a literature review and the methodologies required to conduct the study. This was followed by actual quantitative and qualitative research based on information and data collected through experiments and simulations. After analyzing the topic and conducting the research, the conclusions of the master's thesis are presented.

1. The theoretical framework reveals the strong role of social media in shaping B2C communication. By integrating traditional marketing strategies with social networks, visual content promotes a positive consumer attitude towards the brand and increases its value. The analyzed studies revealed that well-planned social media communication and images have a significant impact on consumers' visual attention. Visual attention is a key factor in content effectiveness, which is influenced by positioning, design and engagement metrics, and eye tracking technology provides accurate insights into user interaction. Therefore, these insights are very valuable for organizations in optimizing content strategies, which improves marketing results.

2. Quantitative eye-tracking research has shown that demonstrative and informative images capture consumers' attention differently. Demonstrative images draw consumers' attention to key elements, such as logos and key product labels. In such areas, the time to first fixation (TTFF) is shorter, and attention is focused on these areas. Informative images, on the other hand, draw consumers deeper into secondary elements, such as subtitles and text, which require more time for users to delve into them, resulting in more fixations and longer viewing times. This suggests that demonstrative images are a good choice for highlighting important brand elements, while informative images convey important information more clearly and encourage consumers to explore the ad more deeply. Specialists should strategically choose visual content types, combining deep user engagement with attention capture.

3. Eye tracking and interviews revealed that visual attention has a significant impact on brand attitudes on social media, and that demonstrative and informative images play different but complementary roles. Demonstrative visuals, such as those that show beautiful product photos or the product in use, effectively and quickly capture consumers' attention and create emotional connections. While effective in highlighting the beauty and aesthetics of a product, such visuals lack the depth that is required for consumers to make a purchase decision. Informative images that provide detailed product information, certifications, and other benefits build consumer trust in the brand. These elements are important for consumers who make rational purchasing decisions. Based on the respondents' responses and the results of the study, it was found that it would be most beneficial to combine these two visual types, first attracting attention and promoting emotional engagement with demonstrative elements, and then providing the consumer with a rational basis for buying and trusting the brand with informative elements. This combination is recommended for professionals to achieve maximum advertising impact, create a trustworthy attitude towards the brand image, and a desire to purchase.

4. To optimize social media marketing strategies in the B2C segment, marketers should strategically combine demonstration and informational visuals based on user goals and product categories. Demonstration visuals should capture attention and create emotional connections, while clear and concise informational images provide essential details that help maintain trust and help make decisions. These elements need to be combined so that they all work together, complementing each other. Sharing testimonials, reliable information, and consumer reviews is recommended to build and strengthen trust in the brand.

The conclusions of the master's thesis have several practical implications for marketing professionals. First of all, align visual content with the consumer's purchasing journey, attract attention with demonstration images, and use informational ones in the decision-making stages. Second, informational elements in advertisements must be concise and clear to interest, maintain attention, and build trust. And third, pay attention to the emotional and rational aspects of consumer behavior, that is, combine visual content so that it looks both attractive and useful.

However, the study has certain limitations. The eye-tracking study was conducted in a controlled environment. This means that it cannot fully replicate the real-life behavior of users on social media platforms. Also, the demographic profile of the participants and the sample size may limit the generalization of the findings. In the future, it is recommended to study a more diverse audience and conduct this study in a real social media environment, thus deepening the insights of this research.

BIBLIOGRAPHY AND A LIST OF REFERENCES

- 1. Akrirout, I. (2021). The impact of social media on e-commerce in retail industry. Mas Journal of Applied Sciences, 8(8). https://masjaps.com/index.php/mas/article/view/73
- Aktaç, Ş., Kargin, D., & Güneş, F. (2021). The relationship between social media use, eating attitude and body mass index among nutrition and dietetic female students: a cross-sectional study. Revista Española De Nutrición Humana Y Dietética, 25(1), 78-86. https://www.renhyd.org/index.php/renhyd/article/view/1094
- Allam, A., Sak, G., Diviani, N., & Schulz, P. (2017). Do quality markers for health websites affect the perception of vaccination webpages?. Computers in Human Behavior. https://www.sciencedirect.com/science/article/abs/pii/S0747563216307440?via%3Dihub
- Andreas, J., Irawan, K., & Rahman, F. (2022). Effect of gaze and product salience on digital visual engagement: an experimental research. Eligible Journal of Social Sciences, 1(2), 72-86. https://eligible-lldikti3.kemdikbud.go.id/index.php/eligible/article/view/16
- Andreas, J., Irawan, K., & Rahman, F. (2022). Effect of gaze and product salience on digital visual engagement: an experimental research. Eligible Journal of Social Sciences, 1(2), 72-86. https://doi.org/10.53276/eligible.v1i2.16
- 6. Ariffin, S., Mohan, T., & Goh, Y. (2018). Influence of consumers' perceived risk on consumers' online purchase intention. Journal of Research in Interactive Marketing, 12(3), 309-327. https://www.emerald.com/insight/content/doi/10.1108/JRIM-11-2017-0100/full/html
- Ayinde, A., Fapojuwo, O., Soetan, A., Suleiman, M., & Adeyinka, A. (2020). Effects of socialv media on researchers' attitude to work at the international institute of tropical agriculture, oyo state, nigeria. Journal of Agricultural Extension, 24(2), 12-22. <u>https://www.ajol.info/index.php/jae/article/view/195662</u>
- Badenes-Rocha, A., Bigné, E., & Ruiz, C. (2021). Impact of cause-related marketing on consumer advocacy and cause participation: a causal model based on self-reports and eyetracking measures. Psychology and Marketing. https://onlinelibrary.wiley.com/doi/10.1002/mar.21590
- 9. Barbierato, E., Berti, D., Ranfagni, S., Hernández–Álvarez, L., & Bernetti, I. (2023). Wine label design proposals: an eye-tracking study to analyze consumers' visual attention and

preferences. International Journal of Wine Business Research. https://www.emerald.com/insight/content/doi/10.1108/ijwbr-06-2022-0021/full/html

- 10.Bayer, J., Triệu, P., & Ellison, N. (2020). Social media elements, ecologies, and effects. Annual Review
 of
 Psychology.
 https://www.annualreviews.org/content/journals/10.1146/annurev-psych-010419-050944
- 11.Bhaskaran, S. (2023). Impact of special software training on quality of life among people with visual impairment. Indian Journal of Ophthalmology. https://journals.lww.com/ijo/fulltext/2023/71100/impact_of_special_software_training_on_q uality_of.9.aspx
- 12.Bigras, É., Léger, P., & Sénécal, S. (2019). Recommendation agent adoption: how recommendation presentation influences employees' perceptions, behaviors, and decision quality. Applied Sciences, 9(20), 4244. https://www.mdpi.com/2076-3417/9/20/4244
- 13.Blascheck, T., Kurzhals, K., Raschke, M., Burch, M., Weiskopf, D., & Ertl, T. (2017). Visualization of eye tracking data: a taxonomy and survey. Computer Graphics Forum, 36(8), 260-284. https://onlinelibrary.wiley.com/doi/10.1111/cgf.13079
- 14.Boardman, R. and McCormick, H. (2019). The impact of product presentation on decisionmaking and purchasing. QMR. https://www.emerald.com/insight/content/doi/10.1108/qmr-09-2017-0124/full/html
- 15.Bol, N., Boerman, S., Bergstrom, J., & Kruikemeier, S. (2016). An overview of how eye tracking is used in communication research. https://link.springer.com/chapter/10.1007/978-3-319-40250-5_40
- 16.Bol, N., Boerman, S., Bergstrom, J., & Kruikemeier, S. (2016). An overview of how eye tracking is used in communication research. https://link.springer.com/chapter/10.1007/978-3-319-40250-5_40
- 17.Brooks, H., Bee, P., & Rogers, A. (2018). Introduction to qualitative research methods.. https://chooser.crossref.org/?doi=10.7765%2F9781526136527.00012
- 18.Bucher, T. (2015). Networking, or what the social means in social media. Social Media + Society. <u>https://journals.sagepub.com/doi/10.1177/2056305115578138</u>
- 19.Bulling, A. and Bednarik, R. (2014). Introduction to the petmei special issue. Journal of Eye Movement Research, 7(3). https://bop.unibe.ch/JEMR/article/view/2379

- 20.Cavanagh, S., Wmn., M., Miranda, B., Hunt, L., & Kennerley, S. (2019). Visual fixation patterns during economic choice reflect covert valuation processes that emerge with learning. Proceedings of the National Academy of Sciences. https://www.pnas.org/doi/full/10.1073/pnas.1906662116
- 21.Chae, S. and Lee, K. (2013). Exploring the effect of the human brand on consumers' decision quality in online shopping. Online Information Review, 37(1), 83-100. https://www.emerald.com/insight/content/doi/10.1108/14684521311311649/full/html
- 22.Chen, M. (2007). Consumer attitudes and purchase intentions in relation to organic foods in taiwan: moderating effects of food-related personality traits. Food Quality and Preference, 18(7), 1008-1021.

https://www.sciencedirect.com/science/article/abs/pii/S095032930700050X?via%3Dihub

- 23.Chen, X. (2023). Utilizing artificial intelligence-based eye tracking technology for screening adhd symptoms in children. Frontiers in Psychiatry, 14. https://www.frontiersin.org/journals/psychiatry/articles/10.3389/fpsyt.2023.1260031/full
- 24.Chen, Y. and Barnes, S. (2007). Initial trust and online buyer behaviour. Industrial Management & Data Systems, 21-36. https://www.emerald.com/insight/content/doi/10.1108/02635570710719034/full/html
- 25.Chen-Sankey, J. (2024). Using eye tracking to examine young adults' visual attention to ecigarette advertising features and associated positive e-cigarette perceptions. Annals of Behavioral Medicine, 58(6), 445-456. https://doi.org/10.1093/abm/kaae018
- 26.Chetioui, Y., Benlafqih, H., & Lebdaoui, H. (2020). How fashion influencers contribute to consumers' purchase intention. Journal of Fashion Marketing and Management, 24(3), 361-380. https://www.emerald.com/insight/content/doi/10.1108/JFMM-08-2019-0157/full/html
- 27. Chevalier, S. (2023) Adoption level of selected social media shopping behaviors in the United States in 2021. <u>https://www.statista.com/statistics/1334456/social-media-shopping-behaviors-us/</u>
- 28.Dahmen, N. (2011). Photographic framing in the stem cell debate. American Behavioral Scientist, 189-203. https://doi.org/10.1177/0002764211419489

- 29.Daud, S. and Othman, K. (2019). Awareness of social business by using social media network in malaysia. Management and Accounting Review, 139. <u>https://doi.org/10.24191/mar.v18i1.832</u>
- 30.De Angelis, M., & D'Atri, A. (2021). "Exploring the Impact of Visual Attention on Consumer Behavior: A Review of Eye Tracking Studies." *Journal of Business Research*, 129, 1-12. https://doi:10.1016/j.jbusres.2021.01.045.
- 31.Dencheva, V. (2024). Leading social media platforms used by marketers worldwide as of January 2023. <u>https://www.statista.com/statistics/259379/social-media-platforms-used-by-</u> <u>marketers-worldwide</u>
- 32.Dimpfel, W. (2015). Neuromarketing: neurocode-tracking in combination with eye-tracking for quantitative objective assessment of tv commercials. Journal of Behavioral and Brain Science,137-147. https://doi.org/10.4236/jbbs.2015.54014
- 33.Ding, X., Feng, P., Wang, J., & Lin, M. (2022). Metaphorical or straightforward comparing the effectiveness of different types of social media advertising. Frontiers in Neuroscience, <u>https://www.frontiersin.org/journals/neuroscience/articles/10.3389/fnins.2022.851729/full</u>
- 34.Dixon, S. J. (2024). Most popular social networks worldwide as of April 2024, ranked by number of monthly active users. <u>https://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/</u>
- 35.Dixon, S. J. (2024). Number of social media users worldwide from 2017 to 2028. https://www.statista.com/statistics/278414/number-of-worldwide-social-network-users/
- 36.Duojie, C. and Liu, S. (2023). Quantitative analysis of social media use in the energy and resources sector: national comparison and sector analysis. Frontiers in Ecology and Evolution. <u>https://www.frontiersin.org/articles/10.3389/fevo.2023.1178042/full</u>
- 37.Festor, P. (2023). Evaluating the human safety net: observational study of physician responses to unsafe ai recommendations in high-fidelity simulation.. https://doi.org/10.1101/2023.10.03.23296437
- 38.Fleischer, J., & Möller, J. (2020). "The Effect of Visual Attention on Consumer Decision-Making: An Eye Tracking Study." *Journal of Consumer Marketing*, 37(5), 1-10. doi:10.1108/JCM-02-2020-3686
- 39.Gaczek, P., Leszczyński, G., & Zieliński, M. (2021). Is ai augmenting or substituting humans?. International Journal of Technology and Human Interaction, 18(1), 1-14. https://doi.org/10.4018/ijthi.293193
- 40.Gagliardi, A. and Dobrow, M. (2011). Paucity of qualitative research in general medical and health services and policy research journals: analysis of publication rates. BMC Health Services Research. https://doi.org/10.1186/1472-6963-11-268
- 41.Garner, B. and Mady, A. (2023). Social media branding in the food industry: comparing b2b and b2c companies' use of sustainability messaging on twitter. Journal of Business and Industrial Marketing, <u>https://www.emerald.com/insight/content/doi/10.1108/JBIM-09-2022-0418/full/html</u>
- 42.Ge, Y., Li, F., Li, X., & Li, W. (2021). What is the mechanism underlying the interleaving effect in category induction: an eye-tracking and behavioral study. Frontiers in Psychology, 12. https://doi.org/10.3389/fpsyg.2021.770885
- 43.Guha, C., Viecelli, A., Wong, G., Manera, K., & Tong, A. (2021). Qualitative research methods and its application in nephrology. Nephrology. https://doi.org/10.1111/nep.13888
- 44.Hernandez-Nino, J., Thomas, M., Alexander, A., Ott, M., & Kline, J. (2021). The use of qualitative methods in venous thromboembolism research. Research and Practice in Thrombosis and Haemostasis. https://doi.org/10.1002/rth2.12593
- 45.Hollingworth, A., Williams, C., & Henderson, J. (2001). To see and remember: visually specific information is retained in memory from previously attended objects in natural scenes. Psychonomic Bulletin & Review, 761-768. https://doi.org/10.3758/bf03196215
- 46.Holmqvist, K., Nyström, M., & Mulvey, F. (2012). Eye Tracking: A Comprehensive Guide to Methods and Measures, Oxford university press. https://doi:10.1093/acprof:oso/9780199247734.001.0001.
- 47.Howard, P. and Parks, M. (2012). Social media and political change: capacity, constraint, and consequence. Journal of Communication, 62(2), 359-362.
 <u>https://academic.oup.com/joc/article-abstract/62/2/359/4085822?redirectedFrom=fulltext</u>
- 48.Iankova, S., Davies, I., Archer-Brown, C., Marder, B., & Yau, A. (2019). A comparison of social media marketing between b2b, b2c and mixed business models. Industrial Marketing

Management,

https://www.sciencedirect.com/science/article/abs/pii/S0019850117301116?via%3Dihub

- 49.Iberahim, H., Zulkurnain, N., Shah, R., & Rosli, S. (2019). Visual merchandising and customers' impulse buying behavior: a case of a fashion specialty store. International Journal of Service Management and Sustainability, 4(1). https://doi.org/10.24191/ijsms.v4i1.8141
- 50.Jacob, M. and Hochstein, S. (2010). Gathering and retaining visual information over recurring fixations: a model. Cognitive Computation, 105-123. https://doi.org/10.1007/s12559-010-9084-x
- 51.Jahn, G. and Braatz, J. (2014). Memory indexing of sequential symptom processing in diagnostic reasoning. Cognitive Psychology, 68, 59-97. https://doi.org/10.1016/j.cogpsych.2013.11.002
- 52.Jiang, Y. (2019). Research on the best visual search effect of logo elements in internet advertising layout. Journal of Contemporary Marketing Science, 2(1), 23-33. https://doi.org/10.1108/jcmars-01-2019-0009
- 53.Jones, N., Borgman, R., & Ulusoy, E. (2015). Impact of social media on small businesses.
 Journal of Small Business and Enterprise Development, 22(4), 611-632.
 https://journals.sagepub.com/doi/10.1177/2056305115578138
- 54.Kane, G., Alavi, M., Labianca, G., & Borgatti, S. (2014). What's different about social media networks? a framework and research agenda. Mis Quarterly, 38(1), 274-304. <u>https://misq.umn.edu/what-s-different-about-social-media-networks-a-framework-and-research-agenda.html</u>
- 55.Kar, A. and Corcoran, P. (2019). Gazevisual: a practical software tool and web application for performance evaluation of eye tracking systems. Ieee Transactions on Consumer Electronics, 65(3), 293-302. https://doi.org/10.1109/tce.2019.2912802
- 56.Kaur, H. and Kaur, K. (2021). Investigating the effects of consistent visual identity on social media. Journal of Indian Business Research, 13(2), 236-252. https://www.emerald.com/insight/content/doi/10.1108/JIBR-06-2020-0174/full/html
- 57.Kazungu, I., Matto, G., & Massawe, H. (2017). Social media and performance of micro enterprises in moshi tanzania. International Journal of Academic Research in Business and

Social Sciences, 7(5). <u>https://hrmars.com/index.php/IJARBSS/article/view/2883/Social-</u> Media-and-Performance-of-Micro-Enterprises-in-Moshi-Tanzania

- 58.Khachatryan, H. and Rihn, A. (2014). Eye-tracking methodology and applications in consumer research. Edis, 2014(7). https://doi.org/10.32473/edis-fe947-2014
- 59.Kiefer, P., Giannopoulos, I., & Raubal, M. (2013). Where am i? investigating map matching during self-localization with mobile eye tracking in an urban environment. Transactions in Gis, 18(5), 660-686. https://doi.org/10.1111/tgis.12067
- 60.Klein, E., Roberts, K., Manganello, J., McAdams, R., & McKenzie, L. (2020). When social media images and messages don't match: attention to text versus imagery to effectively convey safety information on social media. Journal of Health Communication, 25(11), 879-884. <u>https://www.tandfonline.com/doi/full/10.1080/10810730.2020.1853282</u>
- 61.Kong, S., Huang, Z., Scott, N., Zhang, Z., & Shen, Z. (2018). Web advertisement effectiveness evaluation: attention and memory. Journal of Vacation Marketing, 25(1), 130-146. https://doi.org/10.1177/1356766718757272
- 62.Król, M. and Król, M. (2021). Eye movement anomalies as a source of diagnostic information in decision process analysis.. Journal of Experimental Psychology Learning Memory and Cognition, 47(6), 1012-1026. https://doi.org/10.1037/xlm0000931
- 63.Laidlaw, K., Foulsham, T., Kuhn, G., & Kingstone, A. (2011). Potential social interactions are important to social attention. Proceedings of the National Academy of Sciences, 108(14), 5548-5553. <u>https://www.pnas.org/doi/full/10.1073/pnas.1017022108</u>
- 64.Lettner, F. and Holzmann, C. (2012). Heat maps as a usability tool for multi-touch interaction in mobile applications.. https://doi.org/10.1145/2406367.2406427
- 65.Leung, X., Bai, B., & Stahura, K. (2013). The marketing effectiveness of social media in the hotel industry. Journal of Hospitality & Tourism Research, 39(2), 147-169. <u>https://journals.sagepub.com/doi/10.1177/1096348012471381</u>
- 66.Leung, X., Bai, B., & Stahura, K. (2013). The marketing effectiveness of social media in the hotel industry. Journal of Hospitality & Tourism Research, 39(2), 147-169. https://doi.org/10.1177/1096348012471381

- 67.Li, H., Xu, J., Fang, M., Tang, L., & Younghwan, P. (2023). A study and analysis of the relationship between visual—auditory logos and consumer behavior. Behavioral Sciences, 13(7), 613. https://doi.org/10.3390/bs13070613
- **68.**Li, Y. (2023). The application of new media in brand communication: the impact of brand's visual image on consumer purchase intentions. Journal of Creative Industry and Sustainable Culture, 2, 22-33. https://doi.org/10.32890/jcisc2023.2.2
- 69.Lu, D., Neves, L., Carvalho, V., Zhang, N., & Ji, H. (2018). Visual attention model for name tagging in multimodal social media.. <u>https://aclanthology.org/P18-1185/</u>
- 70.Ma, Y. (2023). The quality evaluation of psychometric scale reply base on eye tracking.. https://doi.org/10.1117/12.2684717
- 71.Mansor, I. (2022) Areas of Interest (AOI) on marketing mix elements of green and non-green products in customer decision making. Neurosci Res Notes, <u>https://neuroscirn.org/ojs/index.php/nrnotes/article/view/174</u>
- 72.Mróz-Gorgoń, B. and Peszko, K. (2016). Marketing analysis of social media definition considerations. European Journal of Service Management, 20, 33-40. https://wnus.usz.edu.pl/ejsm/en/issue/256/article/3502/
- 73.Naylor, R., Lamberton, C., & West, P. (2012). Beyond the "like" button: the impact of mere virtual presence on brand evaluations and purchase intentions in social media settings. Journal of Marketing, 76(6), 105-120. https://doi.org/10.1509/jm.11.0105
- 74.Ndiaye, Y. (2023). Eye tracking and artificial intelligence for competency assessment in engineering education: a review. Frontiers in Education, 8. https://doi.org/10.3389/feduc.2023.1170348
- 75.Neuert, C. (2015). Incorporating eye tracking into cognitive interviewing to pretest survey questions. International Journal of Social Research Methodology. https://www.tandfonline.com/doi/full/10.1080/13645579.2015.1049448
- 76.Obaidellah, U., Haek, M., & Cheng, P. (2018). A survey on the usage of eye-tracking in computer programming. Acm Computing Surveys, 51(1), 1-58. https://doi.org/10.1145/3145904
- 77.Pappas, I., Sharma, K., Mikalef, P., & Giannakos, M. (2018). Visual aesthetics of e-commerce websites: an eye-tracking approach.. https://doi.org/10.24251/hicss.2018.035

- 78.Parveen, F., Jaafar, N., & Sulaiman, A. (2016). Social media's impact on organizational performance and entrepreneurial orientation in organizations. Management Decision, 54(9), 2208-2234. https://www.emerald.com/insight/content/doi/10.1108/MD-08-2015-0336/full/html
- 79.Parwani, P., Lee, J., Khalique, O., & Bucciarelli-Ducci, C. (2021). Social media use in cardiovascular imaging. Current Cardiology Reviews, 17(2), 150-156. <u>https://www.eurekaselect.com/article/102173</u>
- 80.Pentus, K. et al. (2020). Mobile and stationary eye tracking comparison package design and in-store results. JCM. <u>https://www.emerald.com/insight/content/doi/10.1108/jcm-04-2019-3190/full/html</u>
- 81.Pfeiffer, T. and Memili, C. (2016). Model-based real-time visualization of realistic threedimensional heat maps for mobile eye tracking and eye tracking in virtual reality., 95-102. https://doi.org/10.1145/2857491.2857541
- 82.Phau, I. and Teah, M. (2009). Devil wears (counterfeit) prada: a study of antecedents and outcomes of attitudes towards counterfeits of luxury brands. Journal of Consumer Marketing, 26(1), 15-27. https://doi.org/10.1108/07363760910927019
- 83.Popy, N. and Bappy, T. (2020). Attitude toward social media reviews and restaurant visit intention: a bangladeshi perspective. South Asian Journal of Business Studies, 11(1), 20-44. <u>https://www.emerald.com/insight/content/doi/10.1108/SAJBS-03-2020-0077/full/html</u>
- 84.Prodanova, J. and Looy, A. (2019). How beneficial is social media for business process management? a systematic literature review. Ieee Access, 7, 39583-39599. https://ieeexplore.ieee.org/document/8663288
- 85.Rahman, A., Asrarhaghighi, E., & Rahman, S. (2015). Consumers and halal cosmetic products: knowledge, religiosity, attitude and intention. Journal of Islamic Marketing, 6(1), 148-163. https://doi.org/10.1108/jima-09-2013-0068
- 86.Ramos, E. and Concepcion, B. (2020). Visual abstracts: redesigning the landscape of research dissemination. Seminars in Nephrology, 40(3), 291-297. https://www.seminarsinnephrology.org/article/S0270-9295(20)30049-8/fulltext

- 87.Ratwani, R., Trafton, J., & Boehm-Davis, D. (2008). Thinking graphically: connecting vision and cognition during graph comprehension.. Journal of Experimental Psychology Applied, 14(1), 36-49. https://doi.org/10.1037/1076-898x.14.1.36
- 88.Rayasam, L. and Khattri, V. (2022). Social media influencer endorsement. International Journal of Online Marketing, 12(1), 1-14. https://doi.org/10.4018/ijom.299403
- 89.Reingold, E., Reichle, E., Glaholt, M., & Sheridan, H. (2012). Direct lexical control of eye movements in reading: evidence from a survival analysis of fixation durations. Cognitive Psychology, 65(2), 177-206. https://doi.org/10.1016/j.cogpsych.2012.03.001
- 90.Reingold, E., Yang, J., & Rayner, K. (2010). The time course of word frequency and case alternation effects on fixation times in reading: evidence for lexical control of eye movements.. Journal of Experimental Psychology Human Perception & Performance, 36(6), 1677-1683. https://doi.org/10.1037/a0019959
- 91.Rihn, A., Khachatryan, H., Campbell, B., Hall, C., & Behe, B. (2016). Consumer preferences for organic production methods and origin promotions on ornamental plants: evidence from eye-tracking experiments. Agricultural Economics, 47(6), 599-608. https://doi.org/10.1111/agec.12258
- 92.Rosbergen, E., Pieters, R., & Wedel, M. (1997). Visual attention to advertising: a segmentlevel analysis. Journal of Consumer Research, 24(3), 305-314. https://academic.oup.com/jcr/article-abstract/24/3/305/1800188?redirectedFrom=fulltext
- 93.Saleem, S. and Anjum, S. (2023). Emerging influence of online reviews on antecedents and consequence of consumer-based brand equity in restaurant industry of karachi, pakistan. Research Journal for Societal Issues, 5(1), 150-178. https://rjsi.org.pk/index.php/Research/article/view/59
- 94.Schivinski, B. and Dąbrowski, D. (2014). The effect of social media communication on consumer perceptions of brands. Journal of Marketing Communications, 22(2), 189-214. <u>https://doi.org/10.1080/13527266.2013.871323</u>
- 95.Shaheen, A., Alanazi, F., Alrashid, L., Almadani, R., Altamrah, S., Almusallam, S., ... & Melam, G. (2020). Undergraduate physical therapy students' attitudes towards using social media for learning purposes at king saud university, saudi arabia. Bulletin of Faculty of Physical Therapy, 25(1). <u>https://bfpt.springeropen.com/articles/10.1186/s43161-020-00014-8</u>

- 96.Silva, S., Duarte, P., & Almeida, S. (2020). How companies evaluate the roi of social media marketing programmes: insights from b2b and b2c. Journal of Business and Industrial Marketing, 35(12), 2097-2110. <u>https://www.emerald.com/insight/content/doi/10.1108/JBIM-06-2019-0291/full/html</u>
- 97.Smerecnik, C., Mesters, I., Kessels, L., Ruiter, R., Vries, N., & Vries, H. (2010). Understanding the positive effects of graphical risk information on comprehension: measuring attention directed to written, tabular, and graphical risk information. Risk Analysis, 30(9), 1387-1398. https://doi.org/10.1111/j.1539-6924.2010.01435.x
- 98.Smith, J., Palermo, N., Theobald, J., & Wells, J. (2015). Body size, rather than male eye allometry, explainschrysomya megacephala(diptera: calliphoridae) activity in low light. Journal of Insect Science, 15(1), 133. https://doi.org/10.1093/jisesa/iev114
- 99.Sorce, P., Perotti, V., & Widrick, S. (2005). Attitude and age differences in online buying. International Journal of Retail & Distribution Management, 33(2), 122-132. https://www.emerald.com/insight/content/doi/10.1108/09590550510581458/full/html
- 100. Statista. (2023). Social Media Advertising: market data & analysis. https://www.statista.com/study/36294/digital-advertising-report-social-media-advertising/
- 101. Strasser, A., Tang, K., Römer, D., Jepson, C., & Cappella, J. (2012). Graphic warning labels in cigarette advertisements. American Journal of Preventive Medicine, 43(1), 41-47. https://doi.org/10.1016/j.amepre.2012.02.026
- 102. Sutton, J. and Fischer, L. (2021). Understanding visual risk communication messages: an analysis of visual attention allocation and think-aloud responses to tornado graphics. Weather Climate and Society, 13(1), 173-188. https://journals.ametsoc.org/view/journals/wcas/13/1/wcas-d-20-0042.1.xml
- 103. Tajvidi, R. and Karami, A. (2021). The effect of social media on firm performance. Computers in Human Behavior, 115, 105174. https://www.sciencedirect.com/science/article/abs/pii/S0747563217305514?via%3Dihub
- 104. Teng, F., Liu, Y., & Guo, J. (2022). Visual integration relationship between buildings and the natural environment based on eye movement. Buildings, 12(7), 930. <u>https://www.mdpi.com/2075-5309/12/7/930</u>

- 105. Terry, K. (2023). The role of social media in public health crises caused by infectious disease: a scoping review. BMJ Global Health, 8(12), e013515. <u>https://gh.bmj.com/content/8/12/e013515</u>
- 106. Treem, J., Dailey, S., Pierce, C., & Biffl, D. (2016). What we are talking about when we talk about social media: a framework for study. Sociology Compass, 10(9), 768-784. <u>https://compass.onlinelibrary.wiley.com/doi/10.1111/soc4.12404</u>
- 107. Udin, N. (2023). Visual heatmap analysis of happy meal advertise on citra pariwara 2022 award using instanteye tracker. E3s Web of Conferences, 426, 02043. <u>https://www.e3sconferences.org/articles/e3sconf/abs/2023/63/e3sconf_icobar23_02043/e3sconf_icobar23_02 043.html</u>
- 108. Vaidya, A. and Fellows, L. (2015). Testing necessary regional frontal contributions to value assessment and fixation-based updating. Nature Communications, 6(1). <u>https://doi.org/10.1038/ncomms10120</u>
- 109. Vogel, E., Rose, J., Roberts, L., & Eckles, K. (2014). Social comparison, social media, and self-esteem.. Psychology of Popular Media Culture, 3(4), 206-222. https://psycnet.apa.org/doiLanding?doi=10.1037%2Fppm0000047
- 110. Wang, T., Tsai, C., & Tang, T. (2018). Exploring advertising effectiveness of tourist hotels' marketing images containing nature and performing arts: an eye-tracking analysis. Sustainability, 10(9), 3038. https://doi.org/10.3390/su10093038
- Wedel, M., & Pieters, R. (2008). "A review of eye-tracking research in marketing." *In: Handbook of Marketing Research*. Thousand Oaks, CA: Sage Publications. doi:10.4135/9781412976110.n7.
- Wedel, P. (2017). A Review of Eye-Tracking Research in Marketing. Review of Marketing Research.

https://www.taylorfrancis.com/books/9781351550932/chapters/10.4324/9781351550932-5

113. Wei, D., Bhardwaj, A., Jagadeesh, V., Piramuthu, R., & Churchill, E. (2014). When relevance is not enough: promoting visual attractiveness for fashion e-commerce.. https://doi.org/10.48550/arxiv.1406.3561

- 114. Wooley, B., Bellman, S., Hartnett, N., Rask, A., & Varan, D. (2022). Influence of dynamic content on visual attention during video advertisements. European Journal of Marketing, 56(13), 137-166. https://doi.org/10.1108/ejm-10-2020-0764
- 115. Workman, J., Lee, S., & Liang, Y. (2020). Social media engagement, gender, materialism, and money attitudes.. <u>https://www.iastatedigitalpress.com/itaa/article/id/12084/</u>
- 116. Xu, H., Gong, Y., Qin, Z., & Xie, J. (2019). Relationship between social media activities and thinking styles. Marketing Intelligence & Planning, 38(2), 195-208. https://www.emerald.com/insight/content/doi/10.1108/MIP-09-2018-0378/full/html
- 117. Xu, Z. (2023). What predicts the intention to engage in home-based exercise: the theory of planned behavior. SHS Web of Conferences, 155, 01005. <u>https://www.shs-conferences.org/articles/shsconf/abs/2023/04/shsconf_sdmc2022_01005/shsconf_sdmc2022_01005.html</u>
- 118. Xuan, K. and etc. (2022). What factors influence local female consumers in making facial skincare choices? evidence from penang, malaysia. BJSSH. https://doi.org/10.35370/bjssh.2022.4.1-02
- 119. Yadav, G. Sushant, K. (2023) The Role of Social Media in Digital Marketing https://www.ijarsct.co.in/Paper14738.pdf
- 120. Yida, Y. and Esther, N. (2023). Sociopsychological determinants and internet gaming disorder among online gamers: the mediating role of in-game content purchase intention. AJA. https://doi.org/10.58896/aja.v1i1.3
- 121. Ying, S. and Wang, S. (2019). Understanding consumers' intentions to purchase green products in the social media marketing context. Asia Pacific Journal of Marketing and Logistics, 32(4), 860-878. https://doi.org/10.1108/apjml-03-2019-0178
- 122. Yusianto, H., Hidayat, M., & Susmartianingsih, Y. (2022). The essence of free speech and individual expression in the digital era., 115-121. <u>https://www.atlantispress.com/proceedings/icdnr-22/125978734</u>
- 123. Zhang, J. and Du, M. (2020). Utilization and effectiveness of social media message strategy: how b2b brands differ from b2c brands. Journal of Business and Industrial Marketing, 35(4), 721-740. <u>https://www.emerald.com/insight/content/doi/10.1108/JBIM-06-2018-0190/full/html</u>

- 124. Zhang, W. and Liu, H. (2017). Study of saliency in objective video quality assessment.
 Ieee Transactions on Image Processing, 26(3), 1275-1288.
 https://doi.org/10.1109/tip.2017.2651410
- 125. Zhou, L. and Xue, F. (2021). Show products or show people: an eye-tracking study of visual branding strategy on instagram. Journal of Research in Interactive Marketing, 15(4), 729-749. https://www.emerald.com/insight/content/doi/10.1108/JRIM-11-2019-0175/full/html
- 126. Zhou, L. and Xue, F. (2021). Show products or show people: an eye-tracking study of visual branding strategy on instagram. Journal of Research in Interactive Marketing, 15(4), 729-749. <u>https://doi.org/10.1108/jrim-11-2019-0175</u>
- 127. Berisha, A. (2023). An empirical study on micro, small, and medium enterprises access to finance in kosovo: a survey based analysis. Multidisciplinary Science Journal, 6(5), 2024068. <u>https://doi.org/10.31893/multiscience.2024068</u>
- 128. Newsom, J., Prigerson, H., Schulz, R., & Reynolds, C. (2003). Investigating moderator hypotheses in aging research: statistical, methodological, and conceptual difficulties with comparing separate regressions. The International Journal of Aging and Human Development, 57(2), 119-150. <u>https://doi.org/10.2190/13lv-b3mm-pewj-3p3w</u>
- 129. ÖZTAŞ, C. and Erilli, N. (2021). Contributions to theil-sen regression analysis parameter estimation with weighted median. Alphanumeric Journal, 9(2), 259-268. <u>https://doi.org/10.17093/alphanumeric.998384</u>

ANNEXES

Annex 1

Interview research questions

1. Which type of advertising image engages you more: demonstrative (e.g., product in use, beautiful photos) or informative (e.g., an ad with a lot of text and information)?

2. How does the type of visual content (demonstrative vs. informative) affect your trust in the advertised brand?

3. When choosing a facial cleanser, are demonstrative images (e.g., product in use) or informative images (e.g., product with text) more helpful to you?

4. How does brand trust (what you think about the company) affect your attitude towards the product?

5. How does the information provided in the advertisement (is it clear, accurate) affect your attitude towards the brand?

6. How do you assess the usefulness of the visual content provided in the advertisement? If you find the content useful, does it increase your trust in the brand or your willingness to buy its products?

7. How does trust in the brand affect your intention to buy its products?

8. How does the information provided in the advertisement (is it clear, accurate) affect your likelihood of purchasing the product?

9. Does the usefulness of the visual content of the advertisement (e.g., clear illustrations, easy-to-understand content) affect your decision to purchase the product?

10. Do you think that the amount of attention you pay to the advertisement (e.g., do you watch it all the way through or just quickly "skip" your eyes) affects how reliable you assess the content of this advertisement? "For example, if an advertisement catches your attention and you look at it for a longer time, you may be more likely to trust the information provided in it.

11. Do you think that the amount of attention you give to an advertisement (e.g., whether you watch it all the way through or just quickly "skip" your eyes) affects how useful the advertising information is? "For example, if an advertisement is interesting and grabs your attention, you may notice more important information about the product than if you quickly move on to another advertisement.

12. How does your attitude towards a brand affect your intention to buy its products?

13. What aspects of advertising do you consider most important when deciding whether to trust a brand or buy from it?

Annex 2 Pre- and post-study calibrations PRE-STUDY CALIBRATION



POST-STUDY CALIBRATION



Source: author of the work.

ODA demonstrational eye tracking data

	logo ODA	main label information	secondary information-explanation
Information			
AOI duration (ms)	3994	3994	3994
AOI duration (%)	100	100	100
Fixation based metrics			
Respondent ratio (%)	48,2	81,5	48,2
Revisit count,	0,5	0,2	0,1
Fixation count	1,6	1,8	1,1
TTFF AOI (ms)	630	1168,9	1279,2
Dwell time (ms)	1604,8	1647,7	1242,4
Dwell time (%)	40,2	41,3	31,1
First fixation duration (ms)	1033,2	1153,9	1227,4

MANILLA demonstrational eye tracking data

	logo Manilla	secondary information-explanation	,main label information
Information			
AOI duration (ms)	3993	3994	3994
AOI duration (%)	100	100	100
Fixation based metrics			
Respondent ratio (%)	92,6	55,6	51,9
Revisit count,	0,6	0,2	0,4
Fixation count	2,5	1,5	1,6
TTFF AOI (ms)	392	2050,7	1571,8
Dwell time (ms)	1619	1617,5	1301,1
Dwell time (%)	40,5	40,5	32,6
First fixation duration (ms)	875,4	1245,9	1029,3

Math demonstrational eye tracking data

	logo Math	main label information	,secondary information-explanation
Information			
AOI duration (ms)	3993	3993	3993
AOI duration (%)	100	100	100
Fixation based metrics			
Respondent ratio (%)	70,4	70,4	40,7
Revisit count,	0,5	0,5	0
Fixation count	1,8	2	1,2
TTFF AOI (ms)	791	886,1	2248,9
Dwell time (ms)	1587,2	1575	947,2
Dwell time (%)	39,7	39,5	23,7
First fixation duration (ms)	994,4	982,4	861,5

ODA demonstrative eye tracking data

	logo ODA	headline	sub-headline
Information			
AOI duration (ms)	3994	3994	3994
AOI duration (%)	100	100	100
Fixation based metrics			
Respondent ratio (%)	18,5	85,2	92,6
Revisit count,	0,6	0,6	0,5
Fixation count	2	3,2	2,4
TTFF AOI (ms)	1088,5	783,9	700,3
Dwell time (ms)	675,8	1134,8	718,3
Dwell time (%)	17	28,4	18
First fixation duration (ms)	429,7	414,4	267

Annex 7 MATH informational eye tracking data

	logo Math	headline	sub-headline
Information			
AOI duration (ms)	3995	3995	3995
AOI duration (%)	100	100	100
Fixation based metrics			
Respondent ratio (%)	7,4	66,7	92,6
Revisit count,	0	0,3	1
Fixation count	1	1,9	5
TTFF AOI (ms)	1081,7	944,1	613,8
Dwell time (ms)	1750,8	734,7	1588
Dwell time (%)	43,9	18,4	39,8
First fixation duration (ms)	1750,8	457	221,2

MANILLA demonstrative eye tracking data

	logo Manilla	headline	sub-headline
Information			
AOI duration (ms)	3994	3994	3994
AOI duration (%)	100	100	100
Fixation based metrics			
Respondent ratio (%)	66,7	74,1	37
Revisit count,	0,4	0,3	0
Fixation count	2,1	3,6	1,2
TTFF AOI (ms)	1397,6	1000,5	2452,2
Dwell time (ms)	819,3	1099,5	458,6
Dwell time (%)	20,5	27,5	11,5
First fixation duration (ms)	498,8	353,8	402,5

Comparative ODA visual data

	logo ODA left	logo ODA right	product left	product right
Information				
AOI duration (ms)	5993	5993	5993	5993
AOI duration (%)	100	100	100	100
Fixation based metrics				
Respondent ratio (%)	74,1	44,4	96,3	85,2
Revisit count,	0,3	0,9	0,7	1,5
Fixation count	1,4	2,2	2,5	3,4
TTFF AOI (ms)	1110,2	1365	852,6	508,4
Dwell time (ms)	751,9	849,5	1030,9	1217,3
Dwell time (%)	125	14,2	17,2	20,3
First fixation duration (ms)	538,1	311,4	408,6	275,8

Comparative MATH visual data

	logo MATH left	logo MATH right	product MATH left	product MATH right
Information				
AOI duration (ms)	5994	5994	5994	5994
AOI duration (%)	100	100	100	100
Fixation based metrics				
Respondent ratio (%)	48,2	3,7	92,6	48,2
Revisit count,	0,2	0	0,6	0,2
Fixation count	1,2	1	2,8	1,2
TTFF AOI (ms)	1976,8	2278,3	1150,8	1432,6
Dwell time (ms)	749,8	633,3	1289,7	436,2
Dwell time (%)	12,5	10,6	21,5	7,3
First fixation duration (ms)	695,9	633,3	445,6	405,5

Comparative MANILLA visual data

	logo MANILLA left	logo MANILLA right	product MANILLA left	product MANILLA right
Information				
AOI duration (ms)	5992	5992	5992	5992
AOI duration (%)	100	100	100	100
Fixation based metrics				
Respondent ratio (%)	55,6	40,7	81,5	96,3
Revisit count,	0,5	0,9	0,5	1,2
Fixation count	1,7	2,5	2,5	4,4
TTFF AOI (ms)	1591,7	1902,4	1375,6	976,7
Dwell time (ms)	951,4	1012,3	1250	1519
Dwell time (%)	15,9	16,9	20,9	25,4
First fixation duration (ms)	450,1	551,2	395,9	239,4

Annex 12 Advertising key elements

Advertising aspects	Key elements	Respondent mentions	Citations
Visual presentation	Visuals are the first aspect that attracts attention	R6, R10, R19 R21	R6: "First of all, the visual – how the product is presented. It is the first sign that catches the eye and attention, and you already spend time."; R10: "If it is not very exaggerated, it is in the first place."; R19: "First of all – the visual, how it looks." R21 If the advertisement is attractive, it encourages more interest in the product, which increases the likelihood that I will choose it.
	High-quality, clear and harmonious photos	R20, R22	R20: "It is important how the advertisement is presented.High-quality photos, uncluttered text and main selling points.";R22: "I think the visual should have some accents that would draw attention, for example, brighter colors, catchy and engaging text, high-quality photos."
	Aesthetic design and simplicity, avoiding excessive brightness	R7, R18	R7: "Sustainability, naturalness, reusability, research and medical evidence. These things inspire the most confidence, but the aesthetic side and design are also very important."; R18: "Clarity. Everything should be understandable at first glance, without unnecessary details or excessive brightness. It should look organic and simple."
Clarity of information	Information must be clear, easy to understand and not overloaded	R2, R5, R8, R23 R21 R18 R16 R15	 R2"The more precisely the description, the more trust there is, and if the descriptions are simply too much text, then you usually don't delve into such advertising." R5: "Information. But so that the text is not overloaded. The most important thing is to mention the facts."; R8: "This advertising must be clear, there must be a lot of information, useful, and it must be easy to understand."; R23: "It is important not to overload the text, if there is any information provided, then it must be written clearly and briefly"). R21 If the information is understandable and is somewhat additional, and not just pictures, it is more convincing. R18, the clearer and more understandable the information is unclear or difficult to understand, I will probably not even delve into it. It is easier to accept, so I decide to choose that product faster. R15 - The clearer the information is presented, the easier it is for me to accept it and the easier it is for me to make a decision is presented, the easier it is for me to provide the advection is presented.

	It is important to provide specific facts about the benefits of the product	R17, R19	R17: "There should be specific facts about what the product gives me." R19: "Then it is important how the information is presented, the added value
Content informative ness	Scientific justification, certificates and dermatologist approvals	R1, R7, R12	R1: "Certificates are very important to me, usually from independent organizations or environmental certificates. Doctor's approvals are also important, because I myself had a lot of problems with skin and dermatology, so I talked a lot about which brands I can use. It is very important for me to be approved and that new ingredients are scientifically approved."; R7: "Sustainability, naturalness, secondary use, research and medical evidence. These things inspire the most confidence, but the aesthetic side and design are also very important."; R12: "Testimonials and composition, scientific justification (if it is about cosmetics)".
	Description of ingredients, allergens and clarity of product price	R14	R14: "So, for example, if we are talking about cosmetics, face washes, it is important to see the ingredients, allergens and the price of the product.").
	Added value that the advertisement emphasizes	R19	R19: "It is also important whether I trust the product, whether I have already bought it, and whether there is any discount that would encourage purchase."
Recommend ations and feedback	Previous customer reviews or expert recommendatio ns	R1, R2, R11, R15 R17 R24	R1 "You hear from friends that it helped them a lot or they liked it." Analysis: Reviews from relatives influence purchasing decisions. R2 "- So if the recommendation is good, then you trust that product, and if it is bad, then you usually don't even buy it." R11: "Well, it's information, reviews – these are probably the main things. It's very important to get feedback, read reviews before that."; R15: "I think that recommendations or if someone recommended that product, or I have already bought from that brand. " R17 - If I trust it, I have already used it or it was recommended to me, then I am more inclined to buy it than a new, untested one. R24: "Maybe there should be some feedback from other buyers, or show how those products are used, maybe influencers increase that credibility, because when famous people talk about a product, you involuntarily think that if they use it, then you can really trust it.")
	Influencers' opinion, if they are reliable and related to the	R9, R16, R24	R9: "The way the advertisement is presented is the most influential for me – both in time and place. If the product is advertised through influencers or channels that have nothing to do with cosmetics, my trust usually decreases, because it is not

	advertised product		the target audience. However, if the advertisement is presented purposefully, it really inspires trust and I am usually interested in it."; R16: "First of all, information that is reliable, all visuals and texts, photos and everything else. And in the last stage – influencers."; R24: "Maybe there should be some feedback from other buyers, or showing how those products are used, maybe influencers increase that credibility, because when famous people talk about a product, you involuntarily think that if they use it, then you can really trust it."
Brand and credibility	The impact of a well-known brand and previous experience with it	R1, R10, R15, R17, R19, R20	R1"If I try a product for the first time, then I hope for a second time." R10: "First of all, the visual, how it looks. Then it is important how the information is provided, the added value. It is also important whether I trust the product, whether I have already bought it, and whether there is any discount that would encourage purchase."; R15: "I think that recommendations or if someone recommended that product, or I have already bought from that brand." R17: "If I trust it, have already used it or been recommended to me, then I am more likely to buy it than a new, untested one." R19: "First of all, the visual, how it looks. Then it is important how the information is provided, the added value."). R20 "if the brand is already known and the product has been tested, I trust it more"
	Advertising harmony and credibility	R21	R21: "Text. There are a lot of visuals now, but text gives more credibility, especially if the advertising is harmonious, there is enough information and visual elements that do not distract attention.").
Sustainabili ty and environmen tal friendliness	Environmental friendliness, naturalness and sustainability are important aspects	R7, R18	R7: "Sustainability, naturalness, reusability, research and medical evidence. These things inspire the most confidence, but the aesthetic side and design are also very important."; R18: "Clarity. Everything should be understandable at first glance, without unnecessary details or excessive brightness. It should look organic and simple.").
	Reusability of the product also inspires confidence	R7	R7: "Sustainability, naturalness, reusability, research and medical evidence. These things inspire the most confidence, but the aesthetic side and design are also very important."
Advertisem ent form	Video content that talks about a product often inspires trust	R15	R15: "Maybe if the ad mentions some testimonials, or if the ad is a video where a trustworthy person talks about that product."
	Right time and place	R9	R9: "The biggest influence on me is how the ad is presented – both in time and place. If a product is promoted through

			influencers or channels that have nothing to do with cosmetics, my trust usually decreases because it's not the target audience. However, if the ad is presented in a targeted manner, it really builds trust and I usually get interested in it."
The emotional side of advertising	Aesthetics and the emotional impact of advertising help to make a decision	R13	R13: 'The aesthetics and emotional impact of advertising help people make up their minds. This is an important point because the viewer may like it but may not like it.").
	Beautifully sounding and engaging texts	R22	R22: "I think a visual should have some accents that would draw attention, for example brighter colors, sounding and engaging text, high-quality photos.").

Source: Work by author.