

I regretted having facial harmonisation. Bibliometric study on regret, cognitive dissonance and self-esteem in the repurchase process of facial harmonisation aesthetic procedures

Me arrependi de ter feito harmonização facial. Estudo
bibliométrico sobre arrependimento, dissonância
cognitiva e autoestima no processo de recompra de
procedimentos estéticos de harmonização facial

JOÃO ROBERTO ROCHA LEMOS

UNIVALI, Itajaí, SC
joaorobertolemos@gmail.com

LUCIANA MERLIN BERVIAN

UNIVALI, Itajaí, SC
lumerlin@univali.br

ABSTRACT

In the context of contemporary marketing, it is crucial to understand the causes of post-purchase regret and cognitive dissonance in order to improve the customer experience. Marketers seek to minimise negative experiences in competitive markets, where repurchase indicates customer loyalty and satisfaction. Based on this, this article aimed to present a bibliometric study relating the influences of regret, cognitive dissonance and self-esteem on the repurchase process of facial harmonisation procedures. For this purpose, the Web of Science database was used from 2004 to 2024. The results showed that the years of greatest scientific production on the proposed theme were 2020, 2021, 2022 and 2023. The country with the highest number of publications was the USA. The most frequent keywords were: “quality of life”, “cosmetic surgery”, “satisfaction”. The most cited authors were: Garcia, Julie K.; Liew, Steven; Silberberg, Michael B. The area with the greatest production was surgery.

Keywords: facial harmonisation, regret, cognitive dissonance, repurchase, self-esteem

RESUMO

No contexto do marketing contemporâneo, é crucial compreender as causas do arrependimento pós-compra e da dissonância cognitiva para melhorar a experiência do cliente. Os profissionais de marketing buscam minimizar experiências negativas em mercados competitivos, onde a recompra indica fidelidade e satisfação do cliente. Com base nisso, este artigo teve como objetivo apresentar um estudo bibliométrico relacionando as influências do arrependimento, da dissonância cognitiva e da autoestima no processo de recompra de procedimentos de harmonização facial. Para tanto, utilizou-se a base de dados Web of Science no período de 2004 a 2024. Os resultados mostraram que os anos de maior produção científica sobre o tema proposto foram 2020, 2021, 2022 e 2023. O país com o maior número de publicações foram os EUA. As palavras-chave mais frequentes foram: “qualidade de vida”, “cirurgia cosmética”, “satisfação”. Os autores mais citados foram: Garcia, Julie K.; Liew, Steven; Silberberg, Michael B. A área com maior produção foi a cirurgia.

Palavras-chave: harmonização facial, arrependimento, dissonância cognitiva, recompra, autoestima

1. INTRODUCTION

In the modern marketing landscape, it is essential for professionals to understand the causes and manifestations of post-purchase regret and cognitive dissonance in order to improve the customer experience (Lee & Cotte, 2009; Sarwar et al., 2019). Reducing negative experiences is an ongoing goal for marketers, especially in competitive markets, where repurchase indicates customer loyalty and satisfaction (Hellier et al., 2003).

Understanding the reasons for consumer regret after purchasing products or services is crucial (Lee & Cotte, 2009). According to Lee and Cotte (2009), an in-depth knowledge of the forms of post-purchase regret can help promote more satisfying consumer experiences.

Marketing is constantly working to minimise consumers' negative experiences during their interactions with products and services. Understanding the causes of post-purchase regret is vital (Lee & Cotte, 2009). According to Lee and Cotte, understanding the different types of regret, as related to the process and the outcome, improves customer satisfaction. These forms of regret can arise for reasons such as under-consideration, over-consideration, previous alternatives or changes in meaning (Lee & Cotte, 2009). In addition, there is decision regret in aesthetic medical contexts, which represents relevant negative emotions when acquiring elective medical services (Brehaut et al., 2003).

Lee and Cotte (2009) identify four components of post-purchase regret: related to the process, the outcome, previous alternatives and changes in meaning. Understanding these components can help professionals adopt strategies aimed at improving the customer experience.

One of the main objectives of decision-making is to mitigate regret, highlighting the importance of understanding its nature, prevention, reduction and measurement (Sarwar et al., 2019). The purchasing process can lead to consequences in post-purchase evaluations, especially in cases of cognitive dissonance due to the discrepancy between expectations and reality (Park et al., 2015).

Cognitive dissonance arises when post-purchase evaluations contradict initial cognitions about a product or service. Comparative judgements in the decision-making process influence the consumer's evaluation. Tsiros and Mittal (2000) state that regret results from comparisons between outcomes and alternatives not chosen, emphasising the need for a well-founded decision-making process. Festinger (1957) describes cognitive dissonance as the incompatibility between beliefs and behaviour, particularly relevant in aesthetic consumption.

This discrepancy can significantly affect post-purchase evaluation, as comparative judgements are essential to assess the decision made. It is important to note that while cognitive dissonance and post-purchase regret are both associated with post-purchase outcomes, they are distinguished by the dissonant feelings that often lead to the consideration of different alternatives (Sarwar et al., 2019).

Understanding the various types of regret and cognitive dissonance is crucial to developing strategies that improve the customer experience and encourage repurchase (Sarwar et al., 2022). Therefore, a central objective of the purchasing decision is to reduce regret, which makes it essential to understand its nature and methods to prevent, mitigate and evaluate its impact (Sarwar et al., 2019).

Based on this, this article aims to present a bibliometric study relating the influences of regret, cognitive dissonance and self-esteem on the repurchase process of facial harmonisation procedures.

2. LITERATURE REVIEW

2.1. Post-Purchase Regret

Regret is commonly recognised as a painful emotion that emerges when comparing "what is" with "what could have been" (Sugden, 1985; Gilovich & Medvéc, 1995; Lee & Cotte, 2009). In other words, this emotion appears when an outcome achieved is seen as less favourable in relation to a potentially better outcome that could have been achieved if a different choice had been made (Bell, 1982; Tsiros & Mittal, 2000).

In addition, regret occurs when people engage in cognitive endeavours to reflect on the decision they have made in comparison with the options they have set aside (Inman et al., 1997). Regret is a reflection of a mental process in which people must engage in a cognitive evaluation, comparing the option chosen with the one rejected. People regret their choices when this comparison results in a negative perception, i.e. when the rejected option is considered superior to the one chosen (Lee & Cotte, 2009).

Thus, regret leads to self-criticism, which is a fundamental part of this process. The process of regret occurs when an individual compares their insufficient decisions with alternatives that are considered superior. Instead of just comparing the results, individuals who regret the process evaluate and contrast the decision-making methods they used. For example, they may reflect on the need to have evaluated more options before making a purchase (Connolly & Zee-lenberg, 2002).

Lee and Cotte (2009) created and validated the PPCR scale, a tool for measuring consumers' post-purchase regret, based on their research into process- and outcome-related regret. The PPCR scale classifies regret into four categories: "Regret due to missed alternatives," which applies to consumers who believe they have chosen an inferior option to others they did not consider; "Regret due to a change in meaning," which happens when consumers perceive a reduction in the usefulness of the product between purchase and a later point in time; "Regret due to under-consideration," which occurs when consumers feel they did not have enough information in quality or quantity to make a more informed choice; and "Regret due to over-consideration," when consumers feel they had excessive and unnecessary information when making their decision.

2.2. Cognitive Dissonance

According to Festinger's (1957) definition, cognitive dissonance is a psychological phenomenon that occurs when there is a conflict between an individual's beliefs and attitudes or behaviours. This dissonance can be divided into two main categories: product dissonance and emotional dissonance, as proposed by Powers and Jack (2013). Product dissonance involves situations in which consumers make erroneous purchasing choices and reflect on the options they did not choose. In contrast, emotional dissonance is related to the discomfort felt when reality is compared to the more favourable outcomes of the alternatives that were considered (Powers & Jack, 2013).

According to Festinger (1957), people naturally seek consistency between their cognitions, which encompass their beliefs and opinions. A cognitive system is described as a complex and interactive set of beliefs, attitudes and values, which both influence and are influenced by behaviour (Littlejohn & Foss, 2010).

Cognitive dissonance is one of the most researched phenomena in the history of psychology. The term refers to a psychological state in which a person's cognitions, including their beliefs, attitudes and behaviours, conflict (Festinger, 1957). Experiencing cognitive dissonance is uncomfortable, which motivates people to try to resolve the inconsistency between their conflicting cognitions (Elliot & Devine, 1994).

2.3. Self-Esteem

According to Coopersmith (1967), self-esteem refers to a person's continuous evaluation of themselves, implying a position of acceptance or rejection. This concept reflects the level at which the individual sees themselves as having positive characteristics.

It is made up of a set of weighted values, which are reflected in the individual's habitual attitudes towards themselves. Thus, self-esteem is a personal experience that manifests itself to others through verbal reports and perceptible attitudes in public environments.

Self-esteem is defined as the sum of the values a person attributes to themselves. This principle encompasses several dimensions, such as personal value, self-respect, self-confidence and self-love (ROSENBERG, 1986). Michener, Delamater and Myers (2005) suggest that social evaluation can have an impact on self-confidence. By comparing themselves with people in lower social positions, a person tends to increase their self-esteem; on the other hand, by doing so with those in higher positions, they may notice a drop in their well-being and self-confidence.

Solomon (2008) proposes that self-esteem has a direct link to the positivity of a person's self-concept. This self-concept refers to an individual's cognitive and emotional understanding of "who we are" and "what we are" (SCHOUTEN, 1991), forming a set of convictions about their own personal characteristics and judgments. The term self-concept covers role identities, personal attributes, interpersonal relationships, fantasies, possessions and other symbols used by individuals for self-construction and self-understanding. Among the various symbols and expressions of the self, the body plays a very important role, both psychically and culturally (BELK, AUSTIN, 1986).

Delinsky (2005) argued that the more appearance affects women's self-confidence, the greater their support for plastic surgery. The writer also noted that as women's self-esteem rises, their acceptance of cosmetic surgery also increases. For people with high self-esteem, cosmetic surgery can be seen as a positive action, serving as a proactive resource to reinforce self-image.

2.4. Repurchase

The concept of repurchase is widely covered in academic literature and is fundamental to understanding consumer behaviour, especially in highly competitive markets. Repurchase refers to the intention and action of a consumer to purchase a product or service from the same company again, and is seen as an indicator of customer loyalty and satisfaction (Hellier et al., 2003).

Therefore, repurchase intention refers to the degree to which customers are willing to purchase the same product or service again, and is a direct, objective and perceptible predictor of future purchasing behaviour (Jones & Taylor, 2007; Lin & Liang, 2011). This intention is associated with the likelihood or willingness of consumers who have already made an initial purchase

to continue using and acquiring products or services from the same company, considering current and future situations (Kuan et al., 2008). Chaudhuri and Holbrook (2001) define repurchase intention as brand loyalty, divided into two dimensions: behavioural and tendency.

Repurchase intention is a process influenced by various factors, such as customer satisfaction, service quality, trust and the shopping experience (Durmaz et al., 2020). When these factors meet or exceed consumer expectations, they can positively favour the repurchase decision. According to the Expectancy Confirmation Theory, customer satisfaction occurs when the perceived performance of the product or service matches or exceeds the consumer's initial expectations (Liao et al., 2017).

However, one negative factor that can affect repurchase is post-purchase regret. Regret is a negative emotion that arises when the consumer realises that an alternative choice would have been more advantageous than the option chosen (Zeelenberg & Pieters, 2007). Research indicates that post-purchase regret can considerably reduce repurchase intention, as it causes dissatisfaction and distrust, making the consumer look for different alternatives the next time they make a purchase (Tsiros & Mittal, 2000).

2.5. Aesthetic Consumption

According to Venkatesh and Meamber (2008), aesthetic consumption is characterised by the sensory experiences that arise when using objects or services with aesthetic attributes. This type of consumption involves stimulating the senses, providing pleasure, catharsis, transformation and symbolism when experiencing aesthetic products or services (Araújo et al., 2020). Charters (2006) adds that aesthetic consumption integrates elements such as the search for pleasure, sensory perception and symbolism, which emerge from experiences with aesthetically orientated products or services. In this context, interaction with these products or services results in sensations of pleasure, catharsis and transformation (Charters, 2006).

Araújo et al. (2020) identify three forms of connection between consumption and aesthetics: sensory perceptions, pleasure, catharsis and transformation, and symbolism. In the first connection, related to sensory perceptions, aesthetic consumption intensifies the individual's sensations through experience (Araújo et al., 2020). The experiences provided by aesthetic consumption offer elements of fantasy, emotions and multisensory aspects, as well as symbolism (Charters, 2006; Holbrook & Hirschman, 1982). In addition, aesthetic consumption gives meaning to the individual's life (Venkatesh & Meamber, 2008). Thus, aesthetic

consumption encompasses both the fundamental aesthetic functions of certain products and the sensory experiences that emerge when consuming products and services (Venkatesh & Meamber, 2008).

The link between consumption and aesthetics, as indicated by Araújo, Davel and Rentschler (2020), manifests itself in the use of consumption to achieve pleasure, catharsis and transformation. This type of consumption involves individuals in an engaging way, incorporating multi-sensory, fantasy and emotional aspects. This interaction is closely related to the concept of hedonic consumption (Holbrook & Hirschman, 1982). In this context, aesthetic consumption has the potential to provide pleasure, stimulate the imagination and offer fun to the individual (Holbrook & Hirschman, 1982).

2.6. Aesthetic Consumption for Facial Harmonisation

Facial aesthetic procedures account for around 60 per cent of the most common procedures, with the main aim of improving quality of life and increasing satisfaction with appearance (Guthrie et al., 2017). There is evidence to support people's concern with their physical attractiveness, with facial symmetry being an attribute associated with attractiveness. This highlights that the search for facial symmetry drives facial harmonisation procedures (Fink & Penton-Voak, 2002; Kaipainen et al., 2016; Cao, 2020). In a study by Babadi et al. (2018), which investigated the psychological motivations behind facial aesthetic surgery, it was found that the desire to achieve a "beautiful" appearance is the main motivator for those who opt for facial aesthetic surgery.

Another indicator that drives the demand for facial procedures is the constant search for a youthful appearance, with the aim of maintaining one's image and emphasising conformity to social norms. This is due to the widespread belief that youth is linked to productivity and success, becoming a standard of beauty (Assawavichairoj & Taghian, 2017; Cao, 2020; Custódio et al., 2020; Lins et al., 2021). With regard to social acceptance, individuals seeking validation and genuine confidence tend to adjust their appearance to align with the standards set by society (Babadi et al., 2018).

Thus, it is clear that the facial area has become increasingly relevant, as rejuvenation procedures, both less invasive and more complex, are being performed in various ways and with high frequency (Custódio et al., 2020). There is a wide range of facial procedures available to achieve a more youthful appearance; however, it is the more invasive procedures that often offer more significant results (Custódio et al., 2020).

3. METHOD

This study is classified as descriptive and exploratory and is a bibliometric study. According to Vanti (2002), bibliometric research consists of quantifying scientific production in a given field of study. Bibliometric studies are governed by three laws: Lotka's Law, which assesses the productivity of authors; Zipf's Law, which analyses the frequency of keywords; and Bradford's Law, which examines the productivity of journals. Figure 1 shows the methodological stages of the research based on the aforementioned laws (Vanti, 2002).

Based on these laws, a protocol was developed to carry out this research, consisting of nine stages. The first stage involved selecting the search bases, opting for the Web Of Science Core Collection (WoS-CC) database. In the second stage, the search algorithms were defined, in line with the article's objective, which included combining the following terms in English: *aesthetic consumption*, *facial harmonisation*, *post-purchase regret*, *cognitive dissonance*, *repurchase*, *marketing*, *consumption*, *self esteem*. Although the search was also carried out with the terms in Portuguese, no relevant results were obtained. It is important to emphasise that the database search was carried out using Boolean operators and synonyms in order to broaden the scope of the results. With the definitions established in the first two stages, the third consisted of carrying out the search itself. In the fourth stage, filters were applied to restrict the results to articles published in peer-reviewed journals, with publications dated between 2004 and 2024, and which were accessible.

The fifth stage consisted of using EndNote to select articles based on titles, keywords and abstracts, as well as mining the articles that met the study's objectives. In the sixth stage, the articles were systematised in a spreadsheet developed in the Excel™ application, where the articles that met the criteria defined in the previous stage were listed. This spreadsheet categorised the authors, the year of publication and the source of each article. In addition, the "Most frequent topics", "Most used keywords" and "Research area" were highlighted. In the seventh stage, bibliometric

indicators were calculated for each article identified, following the application of the six initial stages, including the number of citations of both articles and authors. In addition, variables such as year of publication, country, language and journal name were taken into account to better elucidate the results. The eighth stage consisted of a detailed analysis of the bibliometric data, at which point tables and graphs were organised to present the results. The initial eight stages were carried out on the same day to minimise any bias in the results. Finally, in the ninth stage, an empirical analysis of the bibliometric data was carried out, relating the theories based on the algorithms and their interrelationships.

The VOSviewer™ software was used to create bibliometric graphical networks. For the keyword map, a co-occurrence analysis was carried out using the unit of analysis "all keywords", considering only those with a minimum of three occurrences. For the map of citations per document, the criterion established was a minimum of five occurrences. In both maps, each cluster is represented by a distinct colour and symbolises a set of nodes that are closely related. Terms with stronger relationships were positioned closer together. The lines connecting the results represent the existing relationships, with thicker lines indicating a stronger link between two authors (Van & Waltman, 2018).

4. BIBLIOMETRIC RESEARCH

Based on the five (5) keywords shown in Table 1, 968 articles were found.

4.1. Descriptive Analysis of Citations and References

After an individual analysis of the articles, those specifically related to aesthetic consumption in harmonisation, regret, cognitive dissonance, repurchase and self-esteem were selected, leaving 36 articles.

The total number of citations of the 36 articles selected and classified in WoS was 589. Citations in all databases

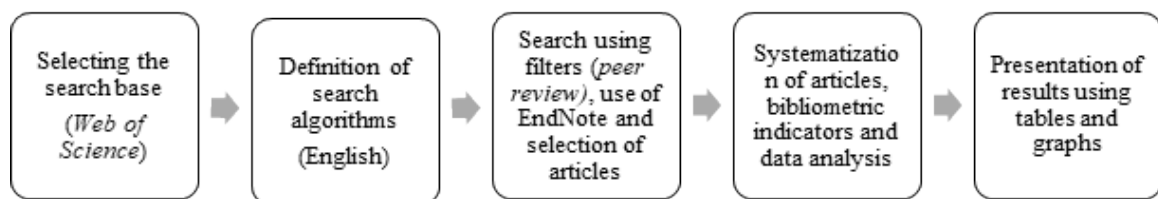


Figure 1: Methodological stages of the research.

Source: Developed by the authors.

Table 1

Research search keys.

Ranking	Results	Search - Web of Science
#6	78	TS=((“Aesthetic consumption” OR aesthetic consumption OR aesthetic* dentistry OR facial aesthetic* OR “facial cosmetic” OR “facial harmonisation” OR “facial cosmetic surgery”) AND (regret*))
# 5	308	TS=((“Aesthetic consumption” OR aesthetic consumption OR aesthetic* dentistry OR facial aesthetic* OR “facial cosmetic” OR “facial harmonisation” OR “facial cosmetic surgery”) AND (post-purchase regret OR cognitive dissonance OR repurchase OR regret OR marketing OR consumption OR self esteem))
4	181	TS=((“Aesthetic consumption” OR aesthetic consumption OR aesthetic* dentistry OR facial aesthetic* OR “facial cosmetic” OR “facial harmonisation” OR “facial cosmetic surgery”) AND (post-purchase regret OR cognitive dissonance OR repurchase OR regret OR marketing OR consumption))
3	01	TS=((“Aesthetic consumption” OR aesthetic consumption) AND (aesthetic* dentistry OR facial aesthetic* OR “facial cosmetic” OR “facial harmonisation” OR “facial cosmetic surgery”) AND (post-purchase regret OR cognitive dissonance OR repurchase OR regret OR marketing OR consumption))
2	185	TS=((“cosmetic surgery”) and (post-purchase regret OR cognitive dissonance OR repurchase OR regret OR “facial harmonisation” OR marketing OR consumption))
1	215	TS=((“Aesthetic consumption”) OR (“Facial cosmetic” OR “facial harmonisation” OR “cosmetic surgery”) AND (post-purchase regret OR cognitive dissonance OR repurchase OR regret OR marketing OR consumption))

Source: Prepared by the authors.

totalled 635. The count of references cited was 1,442. Citations in WOS ranged from 0 to 111 citations (average of 16.36). Citations from all databases ranged from 0 to 118 citations (average 11.52). Two articles were cited more than 100 times, and can be considered classics (Garfield, 2013).

The majority of scientific productions were articles - 32 (88.8%), 4 were reviews (11.2%). 2 articles (5.5%) were written in non-English (French and Spanish).

4.2. Descriptive Analysis of Authors and Institutions

In accordance with the principles of the laws that guide bibliometric research, Table 3 lists the authors with the highest number of published articles.

Table 4 lists the most cited authors and the corresponding number of published works. In total, 109 authors received 2,095 citations, of which 794 (37.89%) were among the ten most cited authors. The other authors were cited between 47 and 1 times.

With regard to co-citations (Table 5), there is a co-citation diagram (Figure 2) which was drawn up using the VOSviewer™ programme and taking into account

a minimum of 4 co-citations per author. The figure shows a marked concentration of authors around the main authors, covering a total of 8 different authors. In the collaborative studies, Sarwer, David B. and Cash, Tf stand out as having connected with authors belonging to two different clusters.

With regard to the country of origin of the research (Figure 3), 47.2% of the publications were in the USA, totalling 17 articles. The second most cited country was England, with 4 (11.1%), followed by Australia and Canada with 3 each (8.3%). Portugal contributed 2 publications (5.5%) and Brazil 1 publication (2.7%), all in English.

4.3. ANALYSING INSTITUTIONS, JOURNALS AND AREAS

It can be seen that the three main institutions have the same number of papers (2), without any particular emphasis. This shows that the publications are quite spread out. As for those with one publication, we have: Universidade do Minho, Universidade do Porto, Abbvie, Acadian Facial Plast Surg, Albany Medical College, Alexandria University, Allergan, Anyang University, Bradbury Sullivan LGBT Community Centre, Brigham Young University, Cairo University, Cancer Institute

Table 2

The 10 most cited articles.

Ranking	Authors	Article title	Journal	Total citations	Year of publication	Country
1	Swift, Arthur; Liew, Steven; Weinkle, Susan; Garcia, Julie K.; Silberberg, Michael B.	The Facial Aging Process From the Inside Out	Aesthetic Surgery Journal	118	2021	Canada
2	Furnham, Adrian; Levitas, James	Factors that motivate people to undergo cosmetic surgery	Plastic Surgery	105	2012	England
3	Galanis, Charles; Sanchez, Ivan S.; Roostaeian, Jason; Crisera, Christopher	Factors Influencing Patient Interest in Plastic Surgery and the Process of Selecting a Surgeon	Aesthetic Surgery Journal	53	2013	USA
4	Husein, Omar F.; Sepehr, Ali; Garg, Rohit; Sina-Khadiv, Mehdi; Gattu, Shilpa; Waltzman, Joshua; Wu, Edward C.; Shieh, Mason; Heitmann, Gregory M.; Galle, Samuel E.	Anthropometric and aesthetic analysis of the Indian American woman's face	Journal of Plastic, Reconstructive & Aesthetic Surgery	52	2010	USA
5	Tijerina, Jonathan D.; Morrison, Shane D.; Nolan, Ian T.; Vail, Daniel G.; Nazerali, Rahim; Lee, Gordon K.	Google Trends as a Tool for Evaluating Public Interest in Facial Cosmetic Procedures	Aesthetic Surgery Journal	50	2019	USA

Ranking	Authors	Article title	Journal	Total citations	Year of publication	Country
6	Brennan, Meagan E.; Flitcroft, Kathy; Warrier, Sanjay; Snook, Kylie; Spillane, Andrew J.	Immediate expander/ implant breast reconstruction followed by post-mastectomy radiotherapy for breast cancer: Aesthetic, surgical, satisfaction and quality of life outcomes in women with high-risk breast cancer	The Breast	41	2016	Australia
7	Kwak, Edward S.	Asian Cosmetic Facial Surgery	Facial Plastic Surgery	21	20010	USA
8	Marsidi, Nick; van den Bergh, Maurice W. H. M.; Luijendijk, Roland W.	The Best Marketing Strategy in Aesthetic Plastic Surgery: Evaluating Patients' Preferences by Conjoint Analysis	Plastic and Reconstructive Surgery	21	2014	The Netherlands
9	Braude, Lucy; Kirsten, Laura; Gilchrist, Jemma; Juraskova, Ilona	A systematic review of women's satisfaction and regret following risk-reducing mastectomy	Patient Education and Counseling	20	2017	Australia
10	McIlwee, Bridget E.; Alster, Tina S.	Treatment of Cosmetic Tattoos: A Review and Case Analysis	Dermatologic Surgery	19	2018	USA

Source: Prepared by the authors.

Hospital CAMS, Capitulo Estet Orofacial Colegio Dent V Reg, Centre Hospitalier Universitaire Sainte Justine, Chinese Academy of Medical Sciences Peking Union Medical College, CHU Grenoble Alpes, Communaute Universite Grenoble Alpes, Cosmoderm Clin, Cosmoplast Clin, Dongseo University, Egyptian Knowledge Bank EKB, Emory University, Florida State University, FPT University.

Figure 4 illustrates the areas involved in the 36 articles analysed in this bibliometric study.

Of the 21 areas cited, surgery (15 articles), dentistry (3 articles), dermatology (3 articles), oncology (3 articles) and psychology (3 articles) accounted for 74.8 per cent.

Table 3

Main authors and number of papers published.

Authors	Number of Papers	%
Tijerina, Jonathan	2	5.56
Swift, Arthur	1	2.78
Liew, Steven.	1	2.78
Weinkle, Susan	1	2.78
Garcia, Julie K.	1	2.78
Silberberg, Michael B.	1	2.78
Furnham, Adrian	1	2.78
Levitas, James	1	2.78
Others	27	74.98
Total	36	100

Source: Prepared by the authors.

Table 4

Most cited authors and number of papers published

Authors	Publications	Quotes
Garcia, Julie K	1	111
Liew, Steven	1	111
Silberberg, Michael B.	1	111
Swift, Arthur	1	111
Weinkle, Susan	1	111
Crisera, Christopher	1	48
Galanis, Charles	1	48
Roostaeian, Jason	1	48
Sanchez, Ivan S.	1	48
Galle, Samuel E.	1	47
Total	10	794

Source: Prepared by the authors.

Table 5

Authors with more than 3 co-citations.

Authors	Cocitations
Rohrich, Rj.	9
Sarwer, Db.	7
Swami, V.	7
Clough, Kb.	6
Stice, E.	5
Klassen, Af.	5
Krishna, A.	5
Sturm Arthur C, Jr.	5
Cash, Tf.	4
Pusic, Al	4
Farkas, Lg	4
Metcalfe, Ka	4
Total	65

Source: Prepared by the authors.

In addition to the areas mentioned in figure 4, the following also stand out: business economics, obstetrics and gynaecology, multidisciplinary science and technology, anaesthesiology, chemistry, environmental sciences and ecology, general internal medicine, health sciences and services, history and philosophy of science, public, environmental and occupational health, religion, social and multidisciplinary sciences, urology and nephrology, women's studies.

Table 7 shows the journals with the highest number of publications: Aesthetic Surgery Journal, The Breast Journal, Plastic and Reconstructive Surgery, Plastic and Reconstructive Surgery-Global Open, Canadian Journal of Plastic Surgery, Journal of Plastic Reconstructive and Aesthetic Surgery, Facial Plastic Surgery, Dermatologic Surgery, JAMA Facial Plastic Surgery, Journal of Cosmetic Dermatology, International Journal of Cosmetic Science, which belong to the field of aesthetics.

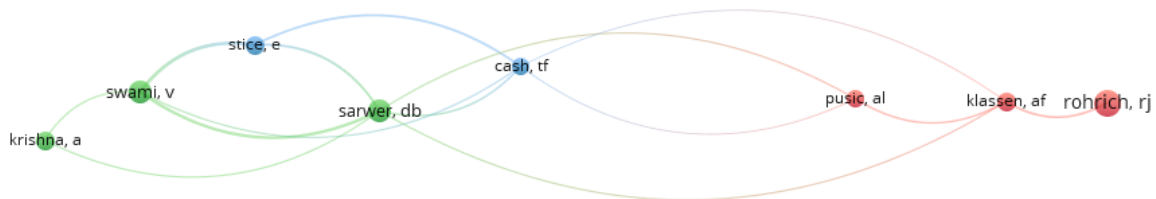


Figure 2: Author co-citation diagram with a minimum of 15 co-citations per author.

Source: Prepared by the authors.

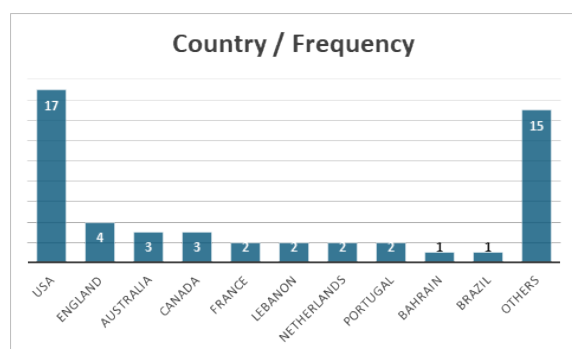


Figure 3: Countries with the highest frequency of publications.

Source: Prepared by the authors.

Table 6

Institutions with the highest number of productions.

Institutions	Publications	%
State University System Of Florida	2	5,5
University Of California System	2	5,5
University Of Sydney	2	5,5
Others	30	83,1
Total	36	100

Source: Prepared by the authors.

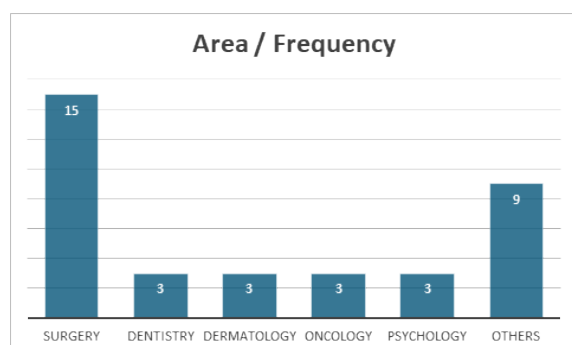


Figure 4: Research areas of the related works.

Source: Prepared by the authors.

4.4. Analyses of Terms and Keywords

In the analysis of co-occurrence of keywords, the VOSviewer™ programme was used with a minimum of two occurrences, totalling 32 occurrences, distributed in 4 different clusters, in cluster 1 we have 10 items, in cluster 2, 8 items, in cluster 3, 7 items, and in cluster 4, 7 items. The keywords with the most occurrences were: “quality of life” (10 occurrences), “cosmetic

Table 7

Most cited journals.

Journals	Publications	%
Jama Facial Plastic Surgery	5	14,7
The Breast Journal	2	5,8
Plastic and Reconstructive Surgery	2	5,8
Plastic and Reconstructive Surgery-Global Open	2	5,8
Others	32	67,9
Total	25	100

Source: Prepared by the authors.

surgery” (7 occurrences), “surgery” (6 occurrences), “decision making” (4 occurrences), “satisfaction” (4 occurrences), “impact” (4 occurrences), “reconstruction” (4 occurrences), (Figure 5).

4.5. Analyses of Annual Scientific Production

The years with the highest scientific output were 2020, 2021, 2022 and 2023, with 5 articles each, totalling 20 articles (55.2%), which demonstrates the recent trend for this type of research. The number of citations followed the same order, i.e. there has been an upward trend in citations in recent years. In 2016 and 2019, there were 3 articles each, totalling 6 articles in these 2 years (16.6%).

5. FINAL CONSIDERATIONS

This study analysed consumers’ perceptions of regret and cognitive dissonance in relation to facial harmonisation, adopting a bibliometric approach to identify trends and patterns in the academic literature surrounding this topic. By analysing 36 specific articles, it was possible to observe a significant gap in the understanding of the motivations and emotional consequences associated with facial aesthetic procedures, especially in the context of repurchase.

The results showed that 74.8 per cent of the studies focus on areas such as surgery, dentistry and psychology, showing an interdisciplinary approach to the subject. The co-citations and keyword analyses highlighted the relevance of terms such as “quality of life”, “cosmetic surgery” and “satisfaction”, indicating the importance of these factors in the decision to undergo cosmetic procedures. In addition, the increase in research in recent years reflects the growing academic and societal interest in understanding

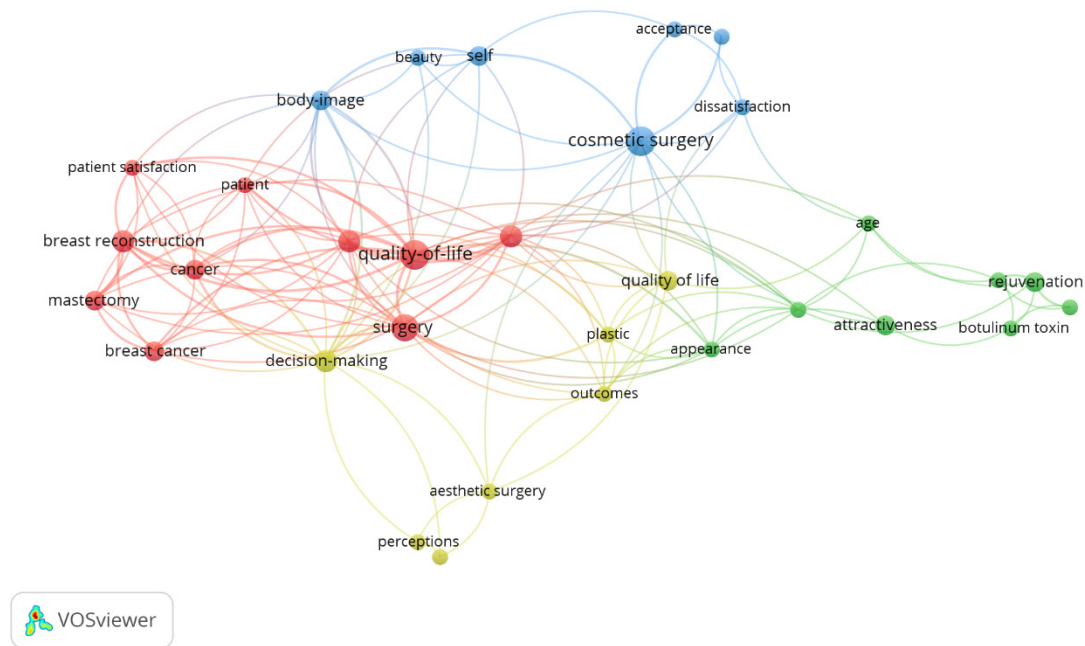


Figure 5: Frequency of keywords.

Source: Prepared by the authors.

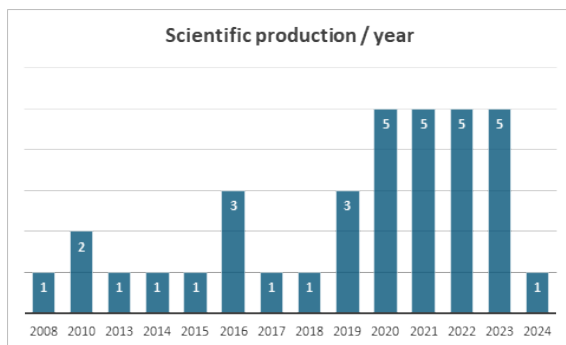


Figure 6: Annual scientific production.

Source: Prepared by the authors.

the psychological and emotional aspects of aesthetic consumption.

The application of bibliometric laws provided valuable insights. Based on Lotka's Law, it was observed that academic production on this topic is concentrated in a relatively small number of authors, which indicates that only a few of them have a productive and consistently cited output. This suggests that research into regret and cognitive dissonance in aesthetic procedures is an emerging field, with potential for further expansion as more researchers recognise its relevance.

Zipf's Law revealed patterns in the keywords used, highlighting terms such as "quality of life", "cosmetic surgery" and "satisfaction" as frequent in the literature.

This distribution reinforces the centrality of these concepts in the discussion of aesthetic procedures, highlighting the need for approaches that emphasise not only aesthetic results, but also improvements in quality of life and long-term satisfaction.

By applying Bradford's Law, we noticed that the relevant literature is dispersed in various journals, with a significant concentration in titles dedicated to cosmetic surgery and dermatology. We identified that journals such as "JAMA Facial Plastic Surgery", "Plastic and Reconstructive Surgery", "Plastic and Reconstructive Surgery-Global Open", "The Breast Journal", are fundamental for accessing quality research, which underlines the importance of these publication channels for the dissemination of new discoveries.

In terms of practical contributions, this study's insights into regret and cognitive dissonance can help aesthetic health and marketing professionals develop strategies to minimise negative post-purchase experiences. This can be achieved through clearer communication of the expectations and results of procedures, as well as more robust post-procedure support.

Given the limitation of this study to the Web of Science database, it is suggested that future research broaden the scope to include other data sources and further explore the relationship between cognitive dissonance, regret and repurchase decisions in facial harmonisation aesthetic procedures. Such an endeavour could result in a more comprehensive understanding of consumer

needs and expectations, contributing to more ethical marketing practices and more satisfactory interventions in the facial aesthetics sector.

In conclusion, the growing academic attention to this topic in recent years indicates a recognition of the importance of understanding the emotional and cognitive experiences in the aesthetic consumption of facial harmonisation. By advancing this line of research, it is hoped that both theory and practice can evolve to offer solutions that favour consumer health and satisfaction.

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