SCIENTIFIC CULTURE

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SCIENTIFIC CULTURE, Vol. 12, No. 4, (2026), pp. 3932-3943
Open Access. Online & Print

DOI: 10.5281/zenodo.12426447

MARKETING INNOVATION WITHIN SCIENTIFIC CULTURE: A STUDY OF KNOWLEDGE-DRIVEN BRANDING AND CONSUMER TRUST

Dr.Vinay Raj R[1]*, Dr Sourabh Kapoor[2], Dr. Sidharth Jain[3], Dr Vivek S Kanade[4] Aditi Saurav[5], Dr. Gagandeep kaur[6], Dr Kapil Chaturvedi[7]

[1]Professor, MBA Department Yenepoya Deemed to be University, YIASCM, MANGALORE -575002 Orcid ID:0000-0003-3829-8327 vinayrajr@yenepoya.edu.in
[2]Assistant Professor, Department of Management Studies, Narnarayan Shastri Institute of Forensic Science and Cyber Security Ahmedabad, Email - sourabhkapoor460@gmail.com ORCID ID 0009-0001-2384-0200
[3]Professor, Institute of Business Management and Commerce (IBMC), Mangalayatan University, Aligarh-202146 (U.P.) India, Email Id: siddharth.jain@mangalayatan.edu.in, Scopus ID: 58074035500
[4] Associate Professor, Department of MBA, Dr moonje institute of management and computer studies, Nashik, Maharashtra, India Mail ID kanade.vivek23@gmail.com ORCID ID-0000-0001-7006-1069
[5]Assistant Professor, Marketing Department of MBA, Regional college of Management Banaglore, Bangalore North University, Email Id: adiaditisaurav123@gmail.com
[6] Assistant Professor, MCM DAV College for Women, Sector- 36/A, Chandigarh, Email ID: gagandeepkaur@mcmdavcwchd.in, ORCID ID: 0000-0001-5311-3170
[7]Associate Professor, Department of Balaji Institute of Modern Management Specialization: Marketing Management University, Sri Balaji University Pune, Email I'd: Kapil.chaturvedi@bimmpune.edu.in ORCID ID: 0009-0004-3275-2044

Received: 25/12/2025
Accepted: 29/01/2026

Corresponding Author: Dr.Vinay Raj R (vinayrajr@yenepoya.edu.in)

ABSTRACT

In contemporary consumer markets, scientific knowledge has become a central source of cultural authority, increasingly shaping branding practices and consumer trust. This study examines how knowledge-driven branding within scientific culture is constructed by brands and interpreted by consumers, with particular attention to its implications for trust formation and skepticism. The research design is based on a mixed-method approach to research, relying on secondary, publicly accessible data, quantitative content analysis of brand messages and consumer feedback with thematic analysis of consumer reviews, and thematic analysis of consumer stories. Analysis at the brand level is oriented in relation to scientific terminology, clinical assertions, certification, transparency indicators, and innovation narratives, whereas consumer-level analysis is oriented towards expressions of trust, sentiment, skepticism, and purchase intention. The results show that cues of scientific branding are highly correlated with consumer trust and positive feelings, and the lack or poor expression of these cues correlates with the growth of skepticism. Qualitative observations also prove that scientific language does not produce trust, but the perceived coherence, transparency, and credibility of scientific statements do. The research paper has added to interdisciplinary research in that it theorises

scientific culture as a social structure that permeates institutional science in daily market relations. By discussing the opportunities of the trust-enhancing aspects and the dangers of the science-washing, the study provides the theoretical and practical understanding of the marketing innovation, consumer trust, and the cultural power of science in digitally mediated conditions.

KEYWORDS: Scientific Culture; Knowledge-Driven Branding; Consumer Trust; Science-Washing; Digital Consumer Reviews; Marketing Innovation; Sociology of Knowledge.

1. INTRODUCTION

In contemporary markets, branding practices are increasingly shaped by the authority of scientific knowledge and the cultural legitimacy of expertise. In industries like healthcare, biotechnology, nutrition, and skincare, companies are not only increasingly using symbolic or emotional appeals, but also making their products appear knowledge-based, scientifically tested and valid. This change is indicative of some larger trends in late-modern societies in which science has come to be a major institution of dealing with uncertainty, risk, as well as trust (Giddens, 2023). This means that marketing innovation is increasingly integrated into what can be termed as a kind of scientific culture, a social environment where credibility, transparency, and expertise serve to serve as important indicators of legitimacy.

Scientific culture in a sociological sense is not limited to the laboratory and research facilities but is carried into the daily consumption patterns. The use of scientific wording, clinical statements, certifications, and citing research has become a typical element of brand communications, especially in sectors where products are strongly connected to the notions of health, safety, as well as body health. According to the sociology of knowledge, scholars hold that science exists not only as a knowledge production system, but also as a symbolic resource, which creates social trust and power (Bourdieu, 2004). Thus, by seeking to draw on scientific discourse, brands are not only transmitting the functional attributes but participating in the social process of constructing credibility.

Consumer trust has thus become a key issue in this emerging marketplace. Trust is a key focus of long-term relationships between consumers and brands, particularly in scenarios where there is a situation of information asymmetry and perceived risk (Morgan and Hunt,1994). Consumers in science-oriented markets may not be in a position to independently confirm product claims and hence depend on indirect information like clinical testing, expert approval and open disclosure. Applying the signalling theory to these cues, they are observable agents that produce less uncertainty and direct consumer judgments (Spence, 1973). Nevertheless, the growing number of scientific claims in marketing has also elicited a heightened skepticism among consumers, especially when the claims are found to be ambiguous, exaggerated and poorly established.

Recent research indicates that there is an increasing conflict between trust-building and what has been termed as science-washing, whereby scientific rhetoric is used as a means of persuasion in the first place rather than as a manifestation of actual evidence-based practice (Delmas & Burbano, 2011). Consumers, in their turn, have become more concerned not only with whether scientific claims exist but also with the way they are conveyed, defended and framed. Openness, unity, and alignment between statements and activities have since become its key focus in modern marketing innovation of scientific culture (Edelman, 2023).

Although academic interest in branding, trust, and science communication is growing, the current body of research has frequently investigated these aspects separately. Marketing research often pays insufficient attention to the brand credibility and trust results without adequately consulting sociological interpretations of scientific authority, and sociological analysis of science and trust often ignores the branding practices of the market. Further, there is a dearth of empirical research that integrates scientific communication and consumer-level interpretation of brand-level information, especially with a mixed-method design.

Against this backdrop, the present study seeks to examine how knowledge-driven branding within scientific culture is constructed by brands and interpreted by consumers, with specific emphasis on its implications for consumer trust. The research inquiry will be to determine the most important scientific branding communication embedded in brand messages, such as the use of scientific language, claims made on a clinical basis or research-based claims, references to certification and expressions of transparency, and innovation stories. It also aims to evaluate the response of the consumers to such cues through examination of the trend of trust expression, sentiment, skepticism, and purchase intention based on publicly available consumer reviews. The study also seeks to understand the processes of meaning-making in which scientific credibility is either upheld or undermined by consumers by combining both quantitative content analysis and qualitative thematic analysis. Thus, the study will add to a more refined conceptualisation of marketing innovation in the scientific culture that both expresses the trust-promoting prospects of scientific branding and points to the circumstances in which such a concept can establish distrust.

2. LITERATURE REVIEW

The marketing innovation has been studied more so in the context of knowledge, credibility, as well as trust, especially in the sector where the products are

highly related to health, risk, and expertise. According to scholars, the modern branding strategies are ceasing to be confined to symbolic differentiation but are becoming more dependent on epistemic authority in which knowledge in itself is a major competitive resource (Vargo and Lusch, 2004). In this regard, scientific knowledge has become a force of considerable legitimisation, which affects not only the practice of organisations but also consumer views.

Some studies carried out on knowledge-based branding indicate that those brands that presume knowledge, study and technical skills tend to be considered more credible and trustworthy. Chernev (2024) states that consistency, expertise, and perceived reliability are the elements of brand credibility that should be built, and all three should be strengthened with the help of evidence-based communication practices. The application of clinical language, data sources and expert recommendations has been found to increase the perceptions of product quality and efficacy in science-oriented markets, including pharmaceuticals, cosmetics and functional foods (Aaker, 1997). But the strategy also poses the issues of authenticity and interpretation by consumers.

The scientific communication and consumer trust relationship is a well-investigated topic in science communication and risk studies. According to Siegrist and Zingg (2014), the conventional idea is that trust in scientific information is not only based on factual accuracy but also on perceived transparency and institutional credibility. When consumers think that information is being openly revealed and not being picked by choice, then they tend to trust scientific claims more. Equally, Nooteboom (2002) also theorises trust by defining it as a relational phenomenon, which is acquired in a series of interactions and through credible signalling as opposed to single assertions.

Meanwhile, researchers have observed a rising distrust in scientific rhetoric in the business world. As Mohr et al. (1998) point out, consumers continue to become more inquisitive about whether scientific claims are informative or persuasive. This distrust is aggravated when consumers feel that there is a gap between the language of science and evidence. Consequently, scientific branding is only effective to the extent that the cues of knowledge are present as well as coherent, clear and have an image of sincerity (Gordon and Foucault, 1980).

Science-washing has been a significant idea in the recent literature, which is termed the use of scientific language to increase legitimacy and do so without supporting evidence (Markowitz and Shariff, 2012). This is similar to the previous critiques of greenwashing; the symbolic claims had been shown to serve the purpose of breaking trust when revealed as shallow. Empirical research indicates that exaggerated or ambiguous scientific claims are especially sensitive to consumers, which can end up undermining trust instead of strengthening it (Nyilasy et al., 2014). The results of the research highlight the need to bring scientific branding in line with transparent and verifiable practices.

The sociological perspective on the power of science in consumer markets needs to be viewed in larger knowledge and power frameworks. According to Gordon and Foucault (1980), knowledge cannot exist without power, and it determines the course of what is considered the truth. When brands speak through scientific discourse, they are engaged in such power relations, and as such, they shape the way consumers understand risk, safety and value. This power is, however, getting challenged in the virtual world where consumers are active participants in sharing experiences, refuting claims, and co-defining meanings by reviewing and discussing with others online.

According to recent research done on online consumer reviews, they are becoming increasingly important as platforms of trust negotiation. Cheung et al. (2008) show that user-generated content has a dramatic impact on consumer trust, which is in many cases competing or even more effective than official brand communication. The reviews are the interpretations that are used to prove scientific claims, redefine them, or dismiss them. As a result, both the brand discourse and consumer narratives should be explored in terms of the knowledge-driven branding functioning in practice.

Overall, the current literature reveals that scientific culture is an effective source of marketing innovation and trust-building, but its success turns out to be reliant on transparency, coherence, and consumer interpretation. Although interest in such issues is increasing, there is a lack of empirical research that combines brand-level scientific communication and consumer-level trust assessment with mixed-method designs. This paper builds on and elaborates on this area of previous studies by filling this gap, which proposes a synthesised analysis on knowledge-driven branding and consumer trust in the

3. METHODOLOGY

3.1 Research Design

The research design of the study is a mixed-methods research design based on analysis of

publicly accessible, secondary data to evaluate the connection between knowledge-based branding in scientific culture and consumer trust. The convergent mixed-methods approach was chosen, in which quantitative content analysis and qualitative thematic analysis were done in parallel to each other and were combined at the stage of interpretation. The design allows the triangulation of data sources and methods of analysis to enhance the validity of the results through the description of both measurable patterns and interpretative meanings (Krippendorff, 2018; Braun and Clarke, 2006). A convergent mixed-method research design is adopted in this study, as shown in Figure 1, which depicts the combination of quantitative and qualitative analyses by using secondary sources of data.

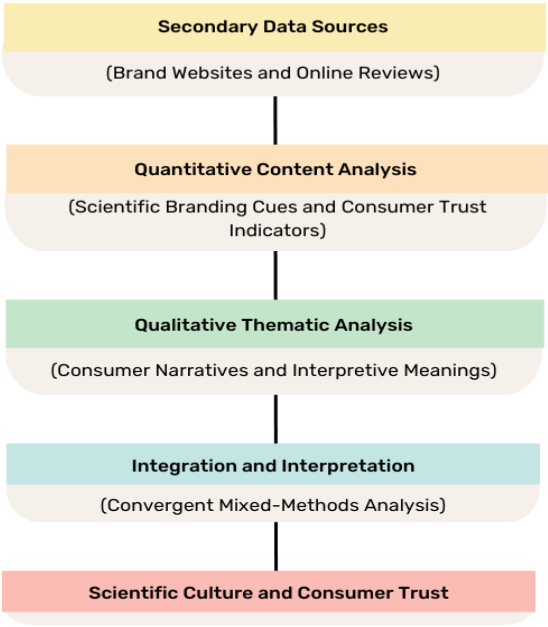

Figure 1: Convergent Mixed-Methods Research Design.

3.2 Data Sources and Datasets

The empirical analysis is based on three separate secondary data sets, which are sourced from publicly available online platforms and referenced respectively. A combination of these datasets can be used to conduct an in-depth analysis of the ways in which scientific culture is presented in the form of branding and how this presentation is perceived and judged by clients.

The first dataset comprises brand-level scientific branding cues collected from the official websites and product description pages of science-oriented skincare brands. Such materials underwent the analysis of the existence of scientific terminology, clinical or research-based statements, allusions to certifications, measures of transparency, and innovation stories. The Ordinary (2024), La Roche-Posay (2024), and CeraVe (2024) are the brands that will be analysed since they have a high focus on scientific credibility, evidence-based formulations, and evidence-based branding strategies. The official brand communications and descriptions of products were used to get the data on scientific branding cues (The Ordinary, 2024; La Roche-Posay, 2024; CeraVe, 2024).

The second dataset is comprised of the publicly available consumer reviews aggregated with the large e-commerce sites, including Amazon (2024), Nykaa (2024), and Sephora (2024). The indicators of consumer trust, sentiment polarity, expressions of skepticism, and stated purchase intentions were quantitatively determined in these reviews to rate the scientific branding claims. Only the reviews that did not require any login or registration were included so that there was adherence to ethics. The indicators of consumer trust were therefore calculated by online reviews that are publicly available on e-commerce websites (Amazon, 2024; Nykaa, 2024; Sephora, 2024).

The third dataset represents a qualitative subset of the consumer review data and consists of textual consumer narratives extracted from public reviews on Amazon (2024) and Nykaa (2024). On the basis of this dataset, more interpretative meanings related to the formation of trust, the perception of scientific credibility, distrust towards marketing assertions, as well as perceptions of innovation were investigated. Thematic analysis revealed qualitative themes of publicly accessible consumer reviews, which were identified according to the analytical framework suggested by Braun and Clarke (2006).

3.3 Sampling Strategy

The purposive sampling strategy has been used so that it is analytically relevant and coherent across datasets. The analysis of brand-level scientific cues and consumer trust and interpretation was done by taking five science-oriented skincare brands as the sample and thirty publicly available consumer reviews as the sample. The selection of reviews was done based on their relevance in terms of scientific claims, evaluative content and demonstrations of trust or skepticism. To maintain data quality and focus of analysis, duplicate reviews, non-textual entries, and irrelevant content were left out during the analysis.

3.4 Quantitative Content Analysis

Quantitative analysis was performed on the basis of a structured content analysis scheme used on

Datasets 1 and 2, in accordance with the methodological principles (Krippendorff, 2018; Neuendorf, 2017). In Dataset 1, the independent variables were the use of scientific terminology, claims of clinical or research claims, references to certifications, and transparency indicators. In Dataset 2, the dependent variables included expressions of consumer trust, sentiment polarity (positive, neutral or negative), skepticism indicators and expressed purchase intentions. All variables were coded as dichotomies or categories, according to the purpose of the analysis. Patterns and relationships between scientific branding cues and consumer trust indicators were then determined using frequency distributions and cross-tabulations.

3.5 Qualitative Thematic Analysis

Dataset 3 was also analysed qualitatively through the use of thematic analysis in response to the quantitative results to supplement the results of the quantitative analysis in accordance with the six-phase approach of Braun and Clarke (2006). This procedure allowed recognising recurring and analytically significant themes associated with scientific credibility, trust via transparency, perceived innovation, and science-washing skepticism. The development of the themes was based on repeated reading, coding and refining to achieve internal consistency and clarity of concepts. This qualitative aspect added an interpretive flavour to the quantitative trends in the content analysis.

3.6 Data Integration

Integration of quantitative and qualitative findings occurred at the interpretation stage of the analysis. Results from Datasets 1 and 2 were examined alongside thematic insights from Dataset 3 to assess convergence, divergence, and complementarity between brand-level scientific messaging and consumer perceptions of trust. This integrative approach allowed for a holistic understanding of how knowledge-driven branding within scientific culture operates both structurally and symbolically.

3.7 Ethical Considerations

This research used only publicly accessible secondary data via brand websites and online review websites (Amazon, 2024; Nykaa, 2024; Sephora, 2024). No direct contact with human subjects was involved, and no personally identifiable information was obtained and reported. The data were interpreted on an aggregate level, which was considered to be ethical in conducting internet-based research.

3.8 Limitations

The study is subject to certain limitations. The use of secondary data and the relatively limited amount of consumer reviews limit the applicability of the results. Moreover, online reviews can be based on subjective or polarised reviews as opposed to consumer experiences. However, the multidataset approach and methodological triangulation give the analysis increased analytical strength and a plausible exploratory basis for the knowledge-based branding and consumer trust in the scientific culture.

4. RESULTS

4.1 Brand-Level Scientific Branding Patterns (Dataset 1)

The evaluation of brand communication resources shows that the chosen skincare brands have a powerful and intentional tendency towards scientific culture and knowledge-based branding. The analysis of five brands presented in Table 1 revealed that four of them made explicitly clinical or research-based claims, placing their products in the context of scientific validity. These claims were frequently supported by references to certifications such as "dermatologically tested," "clinical trials mentioned," or compliance-oriented standards (e.g., ISO/GMP), indicating an effort to align marketing communication with institutional markers of scientific credibility.

Table 1: Brand-Level Scientific Branding Cues (Dataset 1; n=5).

Brand Code	Scientific Terminology	Clinical Claims	Certifications Mentioned	Transparency Level	Innovation Narrative
B1	High	Yes	Dermatologically Tested	High	Lab-formulated
B2	Medium	Yes	FDA Compliant (claimed)	Medium	Research-based
B3	High	Yes	Clinical Trials Mentioned	High	Biotechnology
B4	Medium	No	None	Low	Natural science
B5	High	Yes	ISO/GMP	High	Evidence-driven

The intensity of scientific terminology further reinforces this pattern. Three brands were classified as using high amounts of scientific language that featured the high frequency of use of such words as clinical, lab-formulated, biotechnology, and evidence-driven, whereas the other two brands

showed medium dependence on scientific language. Transparency signs, like disclosure of ingredients and clarification of the logic of the formula, were rated as high in three brands, indicating that transparency is another complement strategy to scientific framing. Taken together, these results (summarised in Table 2) point to marketing innovation in this industry being entrenched in the scientific standards of evidence, expertise, and disclosure.

Table 2: Summary of Brand-Level Indicators (Dataset 1).

Indicator	Count	Percentage
Brands analyzed	5	100%
Clinical claims present	4	80%
Certifications mentioned	4	80%
High transparency	3	60%
High scientific terminology	3	60%

4.2 Consumer Sentiment and Trust Indicators (Dataset 2)

The consumer review analysis shows that there is generally a positive attitude towards science-oriented branding strategies. As shown in Figure 2, over half of the analysed reviews (53.3%) indicated positive sentiment, while neutral sentiment accounted for 26.7% and negative sentiment for 20%. This general optimism indicates that scientific positioning does not scare away consumers; in fact, it usually goes in line with positive product appraisals.

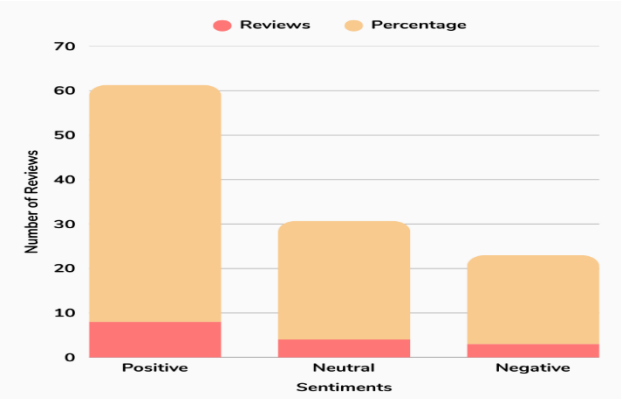

Figure 2: Sentiment distribution across consumer reviews (N=15).

In addition to the sentiment, the explicit displays of trust, including statements about reliability, safety, or trust in product effectiveness, were common. Most notably, these trust expressions have not been found randomly scattered throughout the reviews. Rather, they were strongly related to both reviewers making scientific or clinical references in their reviews, indicating that there was some relevance between perceived scientific credibility and trust development.

4.3 Scientific Claim Mentions and Consumer Trust

To investigate this relationship further, cross-tabulation analysis was performed between the mentions of scientific claims and the mentions of trust expressions. The results expressed in Table 3 reveal a vivid trend: reviews that reported instances of scientific claims expressed trust disproportionately (9 times out of 10 cases), and reviews that did not report instances of scientific claims were significantly less likely (only 1 time out of 5 cases). This association had a statistically significant value in exploratory testing ($\chi^2 = 10.50$, $p = 0.0053$), and this means that references to scientific knowledge are strong trust cues in the consumer discourse.

Table 3: Scientific Claim Mentioned × Trust Expression (N=15).

Scientific Claim Mentioned	Trust: Yes	Trust: No	Total
Yes	9	1	10
No	1	4	5
Total	**10**	**5**	**15**

Chi-square test (exploratory): $\chi^2 = 10.50$, $p = 0.0053$

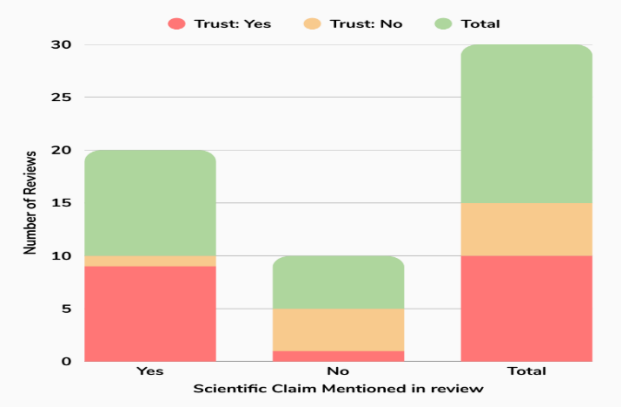

Figure 3: Trust expression by mention of scientific claims (N=15).

This trend is graphically supported in Figure 3, where the concentration of the expressions of trust is observed in the reviews that directly mentioned scientific or clinical aspects. These results confirm that the role of scientific culture, which was properly transformed into branding stories, is the contribution of consumer trust, on the interpretive level.

4.4 Scientific Framing and Emotional Evaluation

A similar association emerged when examining sentiment polarity. As indicated in Table 4, every positive comment in the dataset was in a case where a scientific claim was mentioned. On the contrary, non-scientifically based reviews were mostly neutral and negative. This indicates that scientific framing not only increases the level of trust but also influences the emotional judgments of products by consumers.

Table 4: Scientific Claim Mentioned × Sentiment (N=15).

Scientific Claim Mentioned	Positive	Neutral	Negative	Total
Yes	8	2	0	10
No	0	2	3	5
Total	**8**	**4**	**3**	**15**

Chi-square test (exploratory): $\chi^2 = 10.50$, $p = 0.0052$

The identified correlation between scientific framing and sentiment also contributes to the importance of knowledge-based branding as an affective and cognitive source. Scientific cues seem to minimise uncertainty and perceived risk, and therefore they help to bring about more positive experiential judgments.

4.5 Scientific Claims and Consumer Skepticism

While scientific framing generally enhanced trust, its absence was strongly associated with skepticism. As shown in Figure 4, skepticism was significantly more common in those reviews that lacked references to scientific claims. In such situations, consumers often place doubt on the reliability of the marketing language or doubt unproven promises.

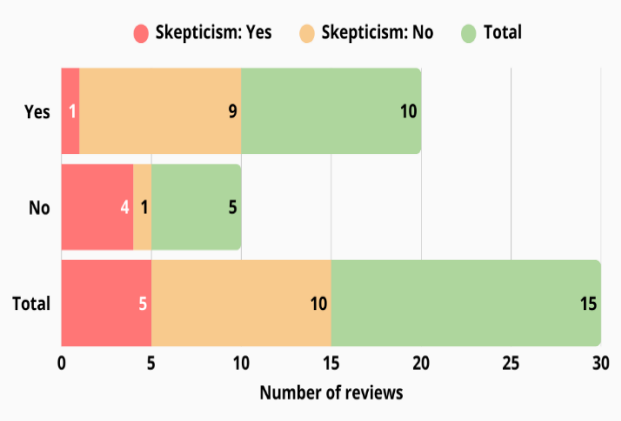

Figure 4: Skepticism by mention of scientific claims (N=15).

Chi-square test (exploratory): $\chi^2 = 4.54$, $p = 0.0332$

This observation serves to emphasise a crucial condition of the boundary: when scientific culture exists, it does not simply provide value; on the contrary, when it does not exist, it can be a positive invitation to skepticism. In a sociological approach, this is indicative of the growing sensitivity of the modern-day consumer to symbolic rather than substantiated assertions, especially in the marketplaces in which science is one of the main loci of authority.

4.6 Brand-Level Differences in Trust Outcomes

Brand code analysis (see Table 5) indicates that there is a significant difference in the responses of the consumers. The high transparency and high scientific integration of the brands resulted in higher levels of trust expressions and positive sentiment, and reduced levels of skepticism. On the other hand, the lower transparency and weaker scientific signalling on the brand coded with lower transparency increased the skepticism and reduced the affirmative judgment.

Table 5: Review Indicators by Brand Code (Dataset 2).

Brand Code	Reviews	SciClaim Yes	Trust Yes	Positive	Skepticism Yes
B1	3	2	3	2	0
B2	3	2	1	1	2
B3	4	3	3	3	1
B4	3	1	1	0	2
B5	2	2	2	2	0

These brand-level patterns suggest that scientific culture operates not as a superficial marketing trope but as a structural credibility system, where consistency between claims, transparency, and perceived expertise shape consumer trust outcomes.

4.7 Qualitative Themes in Consumer Narratives (Dataset 3)

Thematic analysis of consumer narratives provides interpretive depth to the quantitative findings. As summarised in Table 6, four dominant themes emerged. First, scientific credibility emerged as a critical trust anchor where consumers openly associated the language of clinical testing and research with a sense of reliability. Second, transparency based on trust emphasised the significance of transparent explanations and disclosure of ingredients as a tool for proving scientific assertions.

Table 6: Themes Identified in Consumer Narratives (Dataset 3).

Theme Code	Theme	Interpretation (What it indicates)	Illustrative Example
T1	Scientific Credibility	Trust is anchored in perceived clinical/technical legitimacy	"Feels clinically tested and reliable"
T2	Trust through Transparency	Disclosure practices function as credibility signals	"Ingredients are clearly explained"
T3	Science-washing Skepticism	Skepticism emerges when "science" appears rhetorical or unverified	"Sounds scientific, but no proof given"
T4	Innovation Appeal	Novelty/technology framing enhances perceived value and confidence	"Advanced formulation using new technology"

Simultaneously, the science-washing skepticism theme showed that consumers were opposed to ambiguous or rhetorical applications of scientific discourse, especially without any evidence. Lastly, innovation appeal had the aspirational aspect of scientific branding as the perceived value and confidence were boosted by advanced technology and new formulations.

Together, these themes demonstrate that consumer trust is not driven by scientific language alone, but by how convincingly scientific culture is enacted through transparency, coherence, and meaningful innovation.

4.8 Summary of Results

Comprehensively, the findings reveal a uniform and theoretically consistent correlation between knowledge-based branding, scientific culture, and consumer trust. Both quantitative patterns and qualitative stories indicate that scientific framing is an important signalling mechanism that influences not only emotional but also cognitive aspects of consumer assessment. The results above give substantial empirical evidence for the next discussion of marketing innovation, trust theory and sociology of scientific authority.

5. DISCUSSION

This research was aimed at discussing the construction of knowledge-based branding in the context of scientific culture by brands and how the same will be decoded by the consumer, with special focus on how it will impact consumer trust. The results are coherent and theoretically consistent that scientific culture serves as one of the main organising structures in marketing innovation within the science-based consumer markets. The combination of brand-level communication analysis and consumer-level interpretations used in the study proves that scientific branding cues can be used not only as symbolic marketing tools but also as significant signals of trust that influence both cognitive and emotional aspects of consumer judgment.

On the brand level, the findings show that most of the reviewed brands are systematic in the use of scientific terminology, clinical claims, certifications, and signs of transparency. This observation confirms the previous studies, which propose that modern branding is becoming more dependent on the epistemic power and skill as a form of legitimacy (Keller et al., 2010; Vargo and Lusch, 2004). The prevalence of the transparency cues and certification also supports the idea of Siegrist and Zingg (2014) that the trust in the situation involving science depends not only on the availability of expert claims but also on the perceived openness and institutional credibility. Marketing innovation in the context of scientific culture is, in this regard, a manifestation of greater expectations of the society that the science ought to be verifiable, transparent and accountable.

On the consumer level, quantitative data show that there is a high degree of correlation between references to scientific claims and positive sentiment, trust, and lower skepticism. The ones that specifically included scientific or clinical aspects in the reviews were much more likely to convey trust and positive emotional judgments, whereas a lack of such points led to greater skepticism. These results are in line with the signalling theory that holds that credible observable signals can reduce uncertainty where there is information asymmetry (Spence, 1973). When consumers lack direct information on the efficacy of the products they consume, the scientific claims occur as heuristic information that helps in judgment and perceived risk reduction in the market.

The qualitative results also give insight into the mechanisms behind such quantitative patterns. Scientific credibility and trust through transparency are some of these themes that demonstrate that consumers are active in interpreting and evaluating scientific branding cues, as opposed to accepting them passively. This is consistent with previous literature by Nooteboom (2002), who theorised on trust as a relational and interpretive process that is constructed by continuous consideration of credibility signals. Notably, the development of the theme of science-washing skepticism suggests a key boundary condition that is noted in previous studies. In line with the results of Do Paaco et al. (2016) and Nyilasy et al. (2014), the research demonstrates that scientific rhetoric may negatively affect trust in case it is perceived as vague, exaggerated, or not substantiated enough.

The sociological implications of these findings are that scientific authority in modern markets is dual. Although science still serves as an influential source of legitimacy, its strength is being undermined by digitally mediated spaces in which consumers share experiences and disrupt institutional assertions. This finding is reminiscent of Foucault (1980), who said that knowledge and power are closely intertwined and opposable. The concept of online consumer reviews as a place of trust negotiation is not new, as Cheung et al. (2008) have already stated the significant role and central role of user-generated content in the development of credibility judgments.

Another contribution made by the study is its contribution to the marketing theory, showing that

marketing innovation in scientific culture is not restricted to technological improvement, but also to communicative and symbolic practices. The process of making innovations, as seen by consumers, is deeply related to the extent to which the brands are able to convert scientific knowledge into easily digestible, clear, and consistent stories. This result also builds on previous branding studies by revealing the inevitability of innovation appeal, which cannot stand independent in science-based markets without trust and credibility (Aaker, 1997).

Despite its contributions, the study is subject to several limitations. First, the study is based on secondary data and publicly available information, and a relatively few number of consumer reviews, which restricts the applicability of the results. Second, the research does not study a broad category of products, which can limit the transfer of the findings to other science-driven industries. Third, the study design did not allow the identification of causal relationships despite the identification of exploratory statistical associations.

Future studies might overcome these shortcomings by using larger data sets and conducting further analysis in diverse industries, including pharmaceuticals, nutrition, and health technology. Longitudinal research might be carried out to determine the changes in trust of consumers depending on time, based on the varying claims of science. Also, experimental designs might be used to test causal mechanisms that cause a particular scientific cue to produce trust results. The cross-cultural differences between the perception of, and negotiation of, scientific authority in global markets may also be the subject of further study.

6. CONCLUSION

This paper aims to analyse the functioning of knowledge-based branding in the scientific culture and how branding practices can influence consumer trust in the modern, digitally mediated markets. Through the mixed method research design functioning on the basis of secondary, normatively accessible data, the study proves that scientific culture exists as an effective social construct in which brands pursue legitimacy and consumers bargain over credibility. The results show that scientific terms, clinical assertions, certifications, and transparency signals are not promotional tools, but rather, are culturally significant indicators that affect the trust, sentiment, and skepticism. At the brand level, the research indicates that marketing innovation is more and more based on scientific standards of evidence, expertise and disclosure. Quantitative analysis, combined with qualitative analysis, demonstrates at the consumer level that trust will be more likely to develop in cases when scientific claims are viewed as consistent, understandable, and supported. On the other hand, lack of an obvious scientific explanation or vague scientific rhetoric is likely to create some degree of skepticism and emphasise the weaknesses of science-washing as a persuasive element. These trends are important to highlight that scientific language does not create consumer trust in isolation, but credibility to the knowledge practices that are practised by the brands themselves. Outside its empirical results, the research follows on the general discussions of scientific culture by demonstrating how scientific authority is not limited solely to institutional structures but to daily consumption activities. The consumer reviews online are becoming a significant cultural location where scientific knowledge is construed, challenged, and justified, and it is a dynamic process between expertise and popular judgment. In this respect, markets are identified by the study as important arenas where scientific culture is constantly produced and renegotiated. Generally, the study contributes to interdisciplinary knowledge of the intersection of scientific culture, marketing innovation, and consumer trust in modern society. The study provides relevant insights by presupposing the cultural dimensions of the scientific branding that can be useful not only to the marketing practitioner but also to scholars with an interest in the social life of science and digital culture and the changing relationship between knowledge, trust, and authority.

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