

Visual Logo Innovation and Institutional Identity in a Sustainable Digital Society: A Bibliometric Perspective

Inovasi Logo Visual dan Identiti Institusi dalam Masyarakat Digital yang Mampan: Satu Perspektif Bibliometrik

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ABSTRACT

Visual logo innovation is a critical determinant of institutional identity, yet its intellectual landscape particularly within the intersecting contexts of digital transformation and sustainability remains systematically unmapped. This study provides a comprehensive bibliometric overview of global scholarship on visual logo innovation and institutional identity to identify foundational knowledge structures, thematic evolution, and emerging research frontiers relevant to a sustainable digital society. A bibliometric analysis was conducted on 1,026 journal articles retrieved from the Scopus database, spanning 2016 to 2026. The dataset was constructed using a systematic keyword query combining terms related to visual identity, logo design, semiotics, graphic design, and brand/corporate/institutional identity. Indicators examined include annual publication trends, citation performance, prolific authors, leading source journals, contributing countries, subject area distribution, and dominant keywords. Publications grew substantially over the decade from 198 articles (2016–2018) to 344 articles (2022–2024), representing a 73.7% increase, with the highest recorded output in 2025 (n=161). Cumulatively, the corpus generated 11,951 citations. The United States (n=182), China (n=130), and the United Kingdom (n=100) led in productivity. Foroudi, P. was the most prolific author, and the *Journal of Product and Brand Management* was the leading outlet (n=29). Dominant keywords include branding, visual identity, semiotics, and social media, with emerging themes around sustainability and artificial intelligence. The findings reveal a maturing yet dynamic field, with accelerating attention toward AI-driven visual branding, digital institutional communication, and sustainable identity management. This study offers a structured intellectual roadmap to guide future interdisciplinary research at the nexus of visual logo innovation, institutional identity, and the imperatives of a sustainable digital society.

Keywords: *bibliometric analysis, visual identity, logo design, branding, semiotics, corporate identity, sustainability*

INTRODUCTION

The visual identity of an institution, anchored most prominently by its logo, functions far beyond mere aesthetics. It operates as a condensed semiotic system through which organisations communicate their values, mission, and cultural positioning to diverse stakeholders (Thøger Christensen & Askegaard, 2001). In the higher education sector, this function has become increasingly strategic: as competitive pressures mount globally, universities and academic institutions are actively redesigning their visual identities as instruments of differentiation, reputation-building, and community engagement (Siegel, 2017; Erjansola et al., 2021).

Logo design in institutional contexts is inherently multidisciplinary. Semiotically, a logo encodes layered meanings through colour, form, typography, and symbol that are interpreted through shared cultural and social codes (Dole & Saha, 2016; Yang, 2011). Scholars have drawn on Peirce's triadic sign model, Saussure's signifier-signified dyad, and social semiotic frameworks to decode how university logos simultaneously project Islamic values, local heritage, intellectual aspirations, and modernity (Fatin & Zulfah, 2024; Nurjannah & Zuhra, 2025; Riaz & Ushama, 2024). At the same time, semiotics has become an increasingly vital methodology within design practice itself, informing how meaning is constructed through visual artefacts for users and institutional stakeholders (Deni & Zingale, 2017; Vihma, 2007).

The corporate visual identity (CVI) literature extends this semiotic lens to examine how logos, names, and typefaces work collectively to build institutional brand identity. Wu and Cheong (2021) demonstrated that Chinese university logos employ sophisticated typographic and iconographic strategies as semiotic resources for corporate branding. Similarly, Pamungkas and Indrawan (2022) showed how even a corporate rebranding exercise as in the case of Meta encodes values of trust, flexibility, and technological ambition through deliberate design elements. These studies collectively confirm that logo design is not an isolated graphic decision, but a strategic communicative act embedded within broader institutional identity management.

Within higher education specifically, rebranding has emerged as a prominent institutional strategy in response to market volatility, enrolment competition, and the imperative to project a contemporary, credible image. Siegel (2017) documented how John Jay College of Criminal Justice undertook a comprehensive rebrand to strengthen its authentic identity in a rapidly evolving higher education market. Fitriani et al. (2025) found that a structured, research-based rebranding approach at Universitas Karya Husada Semarang significantly enhanced brand awareness among students and the public. Marques-Gutiérrez et al. (2023) further demonstrated that strategic rebranding elements can generate meaningful student engagement and strengthen institutional belonging. Importantly, Erjansola et al. (2021) revealed that new logos even when initially resisted can evolve into positive brand associations, becoming anchored in a university's corporate identity over time.

Brand identity in education extends beyond the visual. Pratiwi et al. (2025) proposed a conceptual model integrating internal institutional values, digital-affective communication, and community co-creation as pillars of authentic educational branding. Faizin et al. (2024) demonstrated that embedding Islamic boarding school values throughout university operations provides a strong, differentiated institutional identity. Mulyono et al. (2025) confirmed through structural equation modelling that brand image is the most significant contributor to university competitiveness, ahead of service quality and marketing strategy. Zhou et al. (2024) added an empirical dimension by examining how different types of brand symbol marks abstract, combination, acronym, concrete, and initial produce measurably different audience cognitive responses in terms of awareness and attention, providing design-strategic implications for university rebranding.

Despite this rich and growing body of work, the scholarly field of visual logo innovation and institutional identity remains fragmented across disciplines spanning marketing, semiotics, design studies, education management, and communication. No comprehensive bibliometric study has yet mapped the intellectual structure, thematic evolution, and global knowledge networks of this field, particularly in relation to the

twin contemporary imperatives of digital transformation and sustainability. Bibliometric analysis, as an established quantitative method for systematically mapping large bodies of literature, is well-suited to address this gap (Deni & Zingale, 2017; Wu & Cheong, 2021).

The growing joint of artificial intelligence and visual design represents one of the most significant shifts in how institutional identities are created and communicated in a digital society. Within the corpus of 1,026 articles examined in this study, Computer Science and Engineering together account for 20.5% of subject area classifications, reflecting a measurable technical turn in branding and visual identity research. AI-related keywords including artificial intelligence, deep learning, and machine learning recorded zero appearances in the corpus before 2018 but grew to eight keyword mentions in 2025 and four in partial-year 2026 alone, signalling accelerating scholarly interest in AI-driven visual identity innovation. This trajectory positions the present study directly within the thematic concerns of the International Conference on AI and Digital Innovations 2026 (AIDI2026), where the convergence of digital innovation, emerging technologies, and sustainability policy provides the intellectual context for examining how visual logo innovation and institutional identity are being reshaped by the demands of a sustainable digital society.

The present study addresses this gap by conducting a bibliometric analysis of 1,026 Scopus-indexed journal articles published between 2016 and 2026. By tracing publication growth, citation impact, prolific contributors, leading journals, dominant subject areas, and keyword co-occurrence patterns, this study maps the intellectual landscape of visual logo innovation and institutional identity scholarship. In doing so, it identifies foundational pillars of the field, documents emerging thematic frontiers including AI-assisted logo design and sustainability-oriented institutional communication and provides a structured knowledge roadmap for scholars, practitioners, and policymakers operating at the intersection of visual design, institutional branding, and the demands of a sustainable digital society.

METHODOLOGY

This study employs a bibliometric analysis approach to systematically examine the intellectual landscape of visual logo innovation and institutional identity research spanning 2016 to 2026. Bibliometric analysis is a well-established quantitative method used to evaluate and map large bodies of scholarly literature through measurable indicators such as publication output, citation patterns, authorship, source distribution, and keyword co-occurrence (Dole & Saha, 2016; Deni & Zingale, 2017). This approach is particularly suited to fields that are interdisciplinary and rapidly evolving, as it enables researchers to identify foundational knowledge structures, trace thematic trajectories, and reveal emerging research frontiers without being constrained by the subjective selection of individual studies.

Data for this study were retrieved exclusively from the Scopus database, one of the largest and most comprehensive peer-reviewed abstract and citation databases in the world, widely recognised for its wide disciplinary coverage and bibliometric reliability. The search query was thoroughly constructed to capture the full scope of the field by combining two thematic clusters of terms. The first cluster targeted visual and design-related concepts, around terms such as *logo*, *visual identity*, *corporate visual*, *semiotics*, *visual branding*, *graphic design*, *visual symbol*, *visual communication*, *corporate design*, and *brand design*. The second cluster targeted institutional and identity-related concepts, including *corporate identity*, *brand identity*, *institutional identity*, *organisational identity*, *corporate image*, *brand image*, *branding*, *brand management*, *corporate branding*, *reputation*, *higher education branding*, and *university identity*. The Boolean operator was applied between clusters, while used within each cluster to ensure comprehensive retrieval across terminological variations.

To ensure dataset accurate and consistent, the following criteria were applied. The analysis was restricted to the publication period from 2016 to 2026, a decade selected to capture current academic development in the field against the setting of accelerating digital transformation and growing sustainability necessities. Only journal articles were included, as this document type represents the most formally peer-reviewed and citable unit of academic knowledge. All 1,026 retrieved records were confirmed to be journal articles (document type: Article) published in journals (source type: Journal),

producing a dataset free from conference papers, book chapters, editorials, or other document types. No language restriction was imposed during retrieval; however, the dominant publication language was English, accounting for 948 out of 1,026 documents (90.8% of the quantity). The final dataset contained 1,026 journal articles drawn from a range of subject areas, with no further manual exclusion applied, as the systematic keyword query was designed to serve as the primary filtering mechanism.

The bibliometric analysis was conducted across several key performance indicators to provide a multi-dimensional view of the field's intellectual structure. Publication output over time was analysed to map annual productivity trends and identify periods of significant growth or acceleration. Citation analysis was applied using total citation counts (TC) and citations per paper (C/P) per year to assess the relative scholarly influence of publications across the study period. Author analysis identified the most prolific contributors based on total publication count (TP). Source journal analysis determined the most productive outlets by total article count. Country analysis mapped the geographical distribution of institutional affiliations to identify leading research nations and assess the global spread of scholarship. Subject area analysis examined the disciplinary composition of the amount to document the field's interdisciplinary character. Keyword analysis extracted the most frequently occurring author-assigned keywords to identify dominant thematic clusters and trace emerging research directions. All bibliometric indicators were derived directly from the Scopus-exported dataset and computed using the SciVal bibliometric framework attributed to the dataset tool (© 2021 Aidi Ahmi), which provided structured tabulations of TP, TC, C/P, citations per cited paper (C/CP), h-index, and g-index across all analytical dimensions.

While Scopus provides broad and reliable coverage, it is acknowledged that studies indexed solely in other databases, such as Web of Science or Google Scholar may not be captured in this dataset, which may introduce a degree of indexing bias. Additionally, the 2026 data represents a partial year at the time of retrieval (n=58, TC=15), and as such, citation-based indicators for 2026 are expectedly lower and should be interpreted with caution. The use of keyword-based search queries, while systematically constructed, is also subject to terminological variation across disciplines and languages, which may result in the exclusion of relevant studies that employ non-standardised vocabulary.

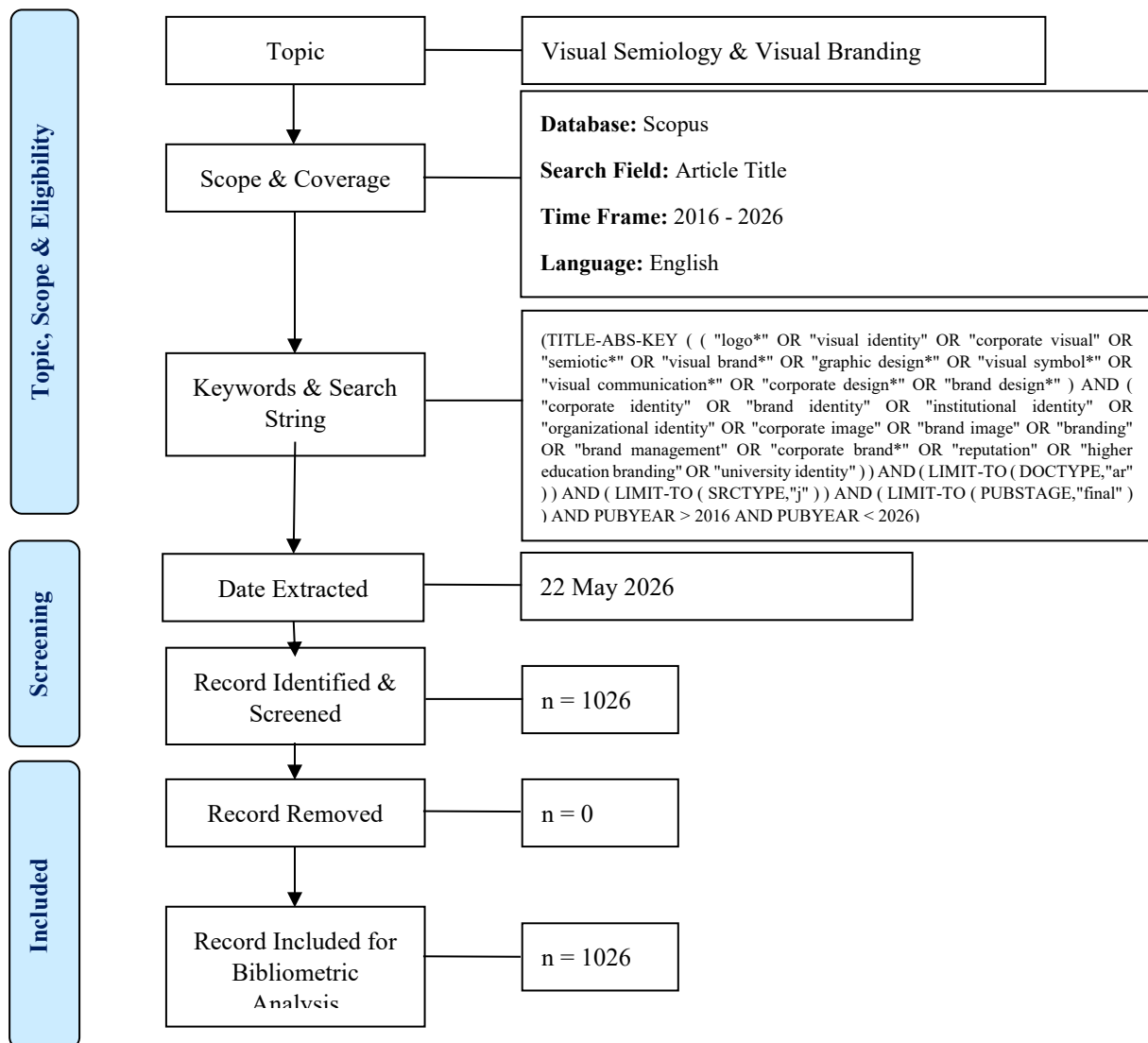


Figure 1. Flow Diagram Of The Search Strategy.

Unlike a traditional PRISMA-based systematic review, which depend on manual title and abstract screening to decide inclusion or exclusion of individual records, this study employed an automated database filtering strategy. All eligibility criteria document type, source type, publication stage, and publication year were embedded directly into the Scopus search string itself using Boolean operators and LIMIT-TO field restrictions (*see Figure 1*). Therefore, every one of the 1,026 records returned by the query already satisfied the full set of inclusion criteria at the point of retrieval, and no manual screening or exclusion step was required or applied (Record Removed, $n = 0$). This distinguishes the present approach from PRISMA-style systematic reviews, in which the number of records screened typically exceeds the number ultimately included; here, the search string itself functioned as the sole and exhaustive filtering mechanism.

FINDINGS AND DISCUSSIONS

Annual Publication Trends

The annual distribution of publications reveals a clear and sustained growth trajectory in scholarly interest toward visual logo innovation and institutional identity over the decade from 2016 to 2026. The corpus of 1,026 journal articles demonstrates that while early-period output was relatively stable, the field underwent a pronounced acceleration from 2019 onwards that continued through to the present.

In the early period (2016 - 2018), a total of 198 articles were published, with 67 articles in 2016, 64 in 2017, and 67 in 2018, indicating a relatively consistent baseline of scholarly activity. The mid-period (2019 - 2021) produced 265 articles, representing a 33.8% increase over the preceding three years, with output climbing from 87 articles in 2019 to 96 by 2021. The most substantial growth occurred in the late period (2022–2024), during which 344 articles were published, a further 29.8% increase over the mid-period and a cumulative 73.7% growth compared to the early period.

Publication volume reached its highest recorded output in 2025 at 161 articles, the highest single-year figure in the entire study span. This figure, however, should be interpreted with appropriate caution: 2025 represents the most recently completed full year of Scopus indexing at the time of data extraction (22 May 2026), and citation and indexing lag typically mean that the most recent years are undercounted relative to their final totals once late-indexed records are added. The 2025 figure is therefore better read as the current ceiling of indexed output at the time of retrieval, rather than a definitive historical peak in the field's actual publication trajectory, that may well continue to rise once indexing of 2025–2026 records is complete. The year 2026 reflects a partial year of data at the time of retrieval, with 58 articles recorded, and is excluded from any claim of trend reversal.

Table 1: Year of Publications

Year	Annual TP (Total Publications)	Cumulative TC (Total Citations)
2016	67	1526
2017	64	1054
2018	67	1390
2019	87	1755
2020	82	1780
2021	96	1489
2022	107	1047
2023	108	977
2024	129	715
2025	161	203
2026	58	15

Notably, annual citation performance tells a different but complementary story. The highest citations per paper (C/P) were recorded in 2016 (C/P = 22.78), 2020 (C/P = 21.71), and 2018 (C/P = 20.75), reflecting the greater accumulated citation impact of earlier publications relative to more recent ones a natural bibliometric phenomenon where older publications have had longer exposure to the scholarly community. In contrast, publications from 2024 (C/P = 5.54) and 2025 (C/P = 1.26) are still in their early citation accumulation phase. Across the entire dataset, the corpus generated a cumulative total of 11,951 citations, yielding an overall average of 11.65 citations per paper.

Table 2: Total Publications

Year	TP	TC	C/P	C/CP	h	g
2016	67	1526	22.78	40.16	21	37
2017	64	1054	16.47	30.11	17	30
2018	67	1390	20.75	33.90	21	35
2019	87	1755	20.17	39.00	19	39
2020	82	1780	21.71	34.23	25	40
2021	96	1489	15.51	24.41	22	34
2022	107	1047	9.79	17.16	19	27
2023	108	977	9.05	14.16	16	27
2024	129	715	5.54	11.00	11	23
2025	161	203	1.26	2.90	7	9
2026	58	15	0.26	1.36	2	2

Notes: TP=total number of publications; TC=total citations; C/P=average citations per publication; C/CP=average citations per cited publication; h=h-index; and g=g-index.

Prolific Authors

The analysis of authorship across the 1,026 articles identified a broad and distributed contributor base, reflecting the multidisciplinary nature of the field. Among the most productive individual scholars, Foroudi, P. emerged as the most prolific author with 10 publications, representing the only author in the dataset to reach double-digit output. This is followed by a cluster of authors with 5 publications (Melewar, T.C.) and a group of nine authors each contributing 4 publications, namely Celhay, F., Cheong, C.Y.M., Lee, H., Nguyen, B., Marine-Roig, E., Rossolatos, G., Trinh, G., Romaniuk, J. and a further group of authors with 3 publications each including Armannsdottir, G., Beal, V., Dzik, P., Foroudi, M.M., Hagtvedt, H. and others. The dataset's leading institutional affiliation is Middlesex University (n=11), followed by Middlesex University Business School (n=9), The Hong Kong Polytechnic University (n=8), Universidad Complutense de Madrid (n=8), and UniSA Business (n=8). The co-occurrence of Foroudi, P. and Melewar, T.C. among the top authors, both associated with Middlesex University suggests an active research cluster at that institution focused on corporate visual identity and brand management, consistent with prior work in this field (Wu & Cheong, 2021; Erjansola et al., 2021).

Table 3: Most Active Authors

Rank	Author Name	TP	%	TC	C/P	C/CP	h	g
1	Foroudi, P.	10	0.97	505	50.50	50.50	9	10
2	Melewar, T.C.	5	0.49	60	12.00	12.00	5	5
3	Celhay, F.	4	0.39	143	35.75	35.75	3	4
4	Cheong, C.Y.M.	4	0.39	29	7.25	9.67	2	4
5	Lee, H.	4	0.39	23	5.75	23.00	1	4
6	Nguyen, B.	4	0.39	78	19.50	19.50	4	4
7	Marine-Roig, E.	4	0.39	84	21.00	21.00	4	4
8	Rossolatos, G.	4	0.39	45	11.25	11.25	3	4
9	Trinh, G.	4	0.39	13	3.25	4.33	1	3
10	Romaniuk, J.	4	0.39	86	21.50	28.67	2	4
11	Armannsdottir, G.	3	0.29	32	10.67	16.00	2	3
12	Beal, V.	3	0.29	60	20.00	30.00	1	3
13	Dzik, P.	3	0.29	26	8.67	13.00	2	3
14	Foroudi, M.M.	3	0.29	65	21.67	21.67	3	3
15	Hagtvedt, H.	3	0.29	129	43.00	43.00	2	3

Notes: TP = total publications within this corpus; TC = total citations across those papers; C/P = average citations per publication; C/CP = average citations per cited publication (excludes uncited papers); h = corpus-level h-index; g = corpus-level g-index. All metrics computed directly from the study's own Scopus dataset (n = 1,026), reflecting each author's impact within this specific corpus rather than their overall career citation profile.

Individual-level citation metrics were computed directly from the underlying Scopus export by aggregating citation counts across each author's contributing papers within the corpus. Foroudi, P. recorded the highest impact among prolific contributors, with 505 total citations across 10 papers (C/P = 50.50, corpus-level h-index = 9), followed by Celhay, F. (TC = 143, h = 3) and Hagtvedt, H. (TC = 129, h = 2) despite lower publication counts, indicating high per-paper impact. Melewar, T.C. recorded 60 citations across 5 papers (h = 5). These corpus-level metrics (Figure 4) confirm that publication frequency and citation impact do not scale uniformly: authors such as Celhay, F. and Hagtvedt, H. achieve disproportionate influence from fewer papers, highlighting qualitative differences in scholarly impact beyond raw productivity counts.

Notably, citation impact and publication volume do not scale uniformly across the corpus. Celhay, F. (TC = 143, C/P = 35.75) and Hagtvedt, H. (TC = 129, C/P = 43.00) achieve markedly higher per-paper citation impact than several authors with equal or greater output, indicating that a small number of highly-cited contributions can exert outsized influence on the field's citation landscape. Foroudi, P.'s

position as both the most prolific (TP = 10) and most cited (TC = 505, h = 9) author within the corpus confirms a genuinely dominant contribution rather than productivity alone.

Leading Source Journals

The 1,026 articles were distributed across a wide range of journals, reflecting the field's span across marketing, design, communication, and semiotics disciplines. The *Journal of Product and Brand Management* was the most productive source outlet with 29 articles (2.83%), establishing it as the primary institutional home for research at the intersection of branding and visual identity. It was followed by the *European Journal of Marketing* and *Journal of Brand Management*, each contributing 14 articles (1.36%), and *Social Semiotics* with 12 articles (1.17%). *Asia Pacific Journal of Marketing and Logistics*, and *Archives of Design Research* each contributed 11 articles, while *Psychology and Marketing*, *Sustainability (Switzerland)*, and *Place Branding and Public Diplomacy* each contributed 10 articles.

The range of contributing journals is remarkable. Beyond the dominant marketing and branding outlets, significant contributions emerged from design-focused journals such as *Archives of Design Research* (n=11) and *Visual Communication* (n=9), semiotic journals including *Social Semiotics* (n=12), *Semiotica* (n=6), *Signs and Society* (n=6), and *International Journal of Marketing Semiotics and Discourse Studies* (n=5), and applied journals including *Sustainability (Switzerland)* (n=10) and *Frontiers in Communication* (n=6). The fact that visual logo innovation and institutional identity scholarship are genuinely connected across branding, design, communication, and semiotic studies rather than being restricted to a single disciplinary home is supported by the variety of sources (Deni & Zingale, 2017; Thøger Christensen & Askegaard, 2001).

Table 4: Most Active Journals

Rank	Source Journals	TP	%
1	Journal of Product and Brand Management	29	2.83
2	European Journal of Marketing	14	1.36
3	Journal of Brand Management	14	1.36
4	Social Semiotics	12	1.17
5	Asia Pacific Journal of Marketing and Logistics	11	1.07
6	Archives of Design Research	11	1.07
7	Psychology and Marketing	10	0.97
8	Sustainability Switzerland	10	0.97
9	Place Branding and Public Diplomacy	10	0.97
10	Visual Communication	9	0.88
11	Computer Aided Design and Applications	7	0.68
12	Frontiers in Communication	6	0.58
13	Semiotica	6	0.58
14	Signs and Society	6	0.58
15	International Journal of Marketing Semiotics and Discourse Studies	5	0.49

Country and Geographical Distribution

The geographical distribution of the 1,026 articles spans 87 countries and territories across six continents, confirming the global reach of research in this domain. The United States led with the highest publication output at 182 articles (17.74%), followed by China at 130 articles (12.67%) and the United Kingdom at 100 articles (9.75%). Spain ranked fourth with 72 articles (7.02%), and South Korea fifth with 41 articles (4.00%). Australia and India each contributed 51 articles (4.97%), followed by Italy (n=45, 4.39%), Malaysia (n=38, 3.70%), and Indonesia (n=36, 3.51%).

In terms of regional distribution, Europe collectively represents the largest contributing region when national totals are combined, followed by Asia and North America. The strong presence of Asian nations

including China, South Korea, Malaysia, Indonesia, India, and Japan is particularly notable and signals the growing centrality of Asian scholarship in the field, consistent with the broader expansion of higher education branding research in Asian contexts (Wu & Cheong, 2021; Faizin et al., 2024; Fatin & Zulfah, 2024). Malaysia's contribution (n=38) is especially relevant to the present study, given its importance to the AIDI2026 conference context and the growing body of Islamic institutional identity scholarship emerging from Malaysian institutions (Riaz & Ushama, 2024).

Although their output is significantly lower, developing and emerging economies like Indonesia, South Africa, Brazil, Russia, and several countries in Africa and South America are also included in the dataset, indicating potential for increased participation from these regions in upcoming research cycles.

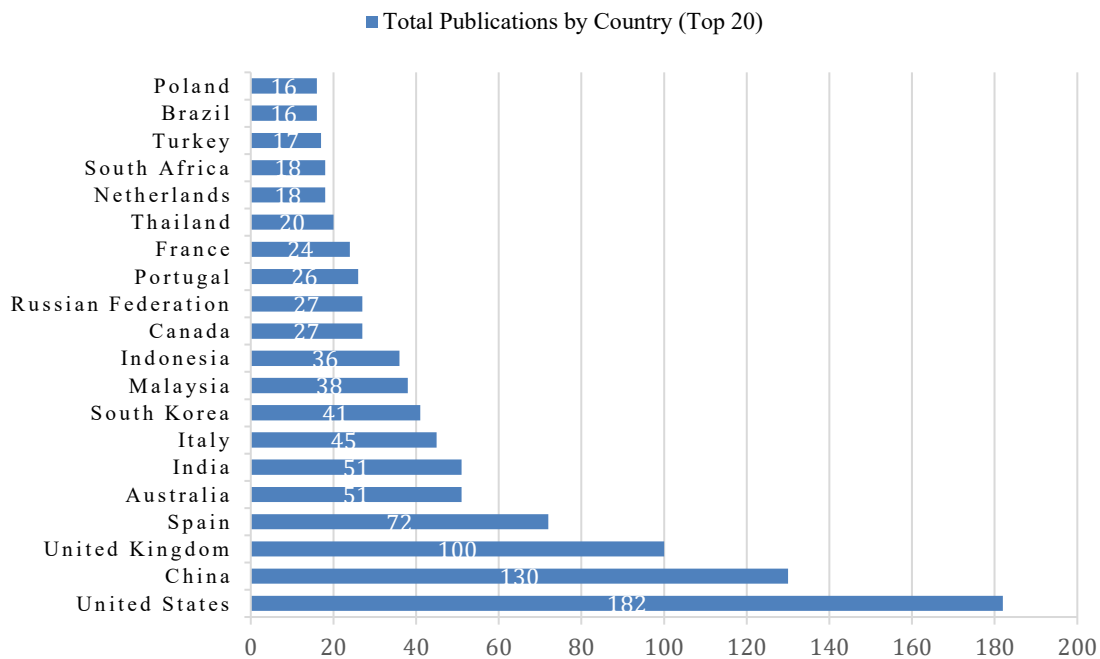


Figure 2: Most Active Countries

Subject Area Distribution

The subject area classification of the 1,026 articles confirms the strongly interdisciplinary nature of the field. Social Sciences constituted the largest subject area with 488 articles (47.6%), reflecting the dominant framing of logo and institutional identity research within sociological, communication, and educational perspectives. Business, Management and Accounting followed with 399 articles (38.9%), encompassing the core branding, marketing, and corporate identity literature. Arts and Humanities contributed 287 articles (27.9%), representing the design history, visual communication, and semiotic traditions within the corpus. Computer Science (n=109, 10.6%) and Engineering (n=102, 9.9%) reflect the growing technical dimension of the field, particularly research employing computational methods such as deep learning and computer vision for logo recognition and analysis. Economics, Econometrics and Finance contributed 71 articles (6.9%), while Psychology contributed 55 articles (5.4%), and Medicine contributed 54 articles (5.3%), the latter largely attributable to public health research on tobacco branding, packaging, and plain packaging policies.

It is important to note that articles may be classified under multiple subject areas simultaneously, so these percentages do not sum to 100%. The co-presence of Social Sciences, Business, Arts and Humanities, and Computer Science as significant subject domains encapsulates the field's multidisciplinary essence spanning humanistic inquiry into meaning-making and semiotic theory (Dole

& Saha, 2016; Vihma, 2007) on one end, and computational analysis of visual elements on the other (Zhou et al., 2024).

Table 5: Subject Area

Rank	Subject Area	Total Papers (TP)	(%)
1	Social Sciences	488	47.56%
2	Business, Management and Accounting	399	38.89%
3	Arts and Humanities	287	27.97%
4	Computer Science	109	10.62%
5	Engineering	102	9.94%
6	Economics, Econometrics and Finance	71	6.92%
7	Psychology	55	5.36%
8	Medicine	54	5.26%
9	Environmental Science	44	4.29%
10	Mathematics	27	2.63%
11	Agricultural and Biological Sciences	26	2.53%
12	Decision Sciences	24	2.34%
13	Materials Science	19	1.85%
14	Energy	15	1.46%
15	Multidisciplinary	13	1.27%

Keyword Co-occurrence Analysis and Thematic Clusters

Analytical Approach

Keyword co-occurrence analysis was conducted using VOSviewer on the full dataset of 1,026 articles. Author-assigned keywords were used as the unit of analysis. Of the 1,026 articles, 965 contained author keywords, producing a total of 3,555 unique keyword terms. A minimum co-occurrence threshold of five was applied, yielding 102 keywords with sufficient co-occurrence links for network mapping. VOSviewer's modularity-based clustering algorithm grouped these keywords into six thematic clusters based on the strength of their co-occurrence relationships across articles, rather than by manual categorisation. This makes the clustering objective and reproducible (Van Eck & Waltman, 2010; Donthu et al., 2021). In the network map, node size represents keyword frequency and link thickness represents co-occurrence strength between keyword pairs. Keywords unrelated to the scope of this study were excluded prior to finalising the map, consistent with standard bibliometric filtering practice (Donthu et al., 2021).

Table 6: Cluster Summary Table

Cluster	Colour	Key Keywords	Theme
1	Orange	branding, visual identity, semiotics, logo	Branding, Visual Identity & Semiotics
2	Blue	brand identity, brand image, logo design	Brand Identity & Logo Design
3	Yellow	visual communication, AI, deep learning	Digital & AI Innovation
4	Purple	sustainability, cultural heritage, communication	Sustainability & Cultural Identity
5	Cyan	corporate identity, corporate image, corporate reputation	Corporate & Institutional Identity
6	Red	social media, advertising, packaging	Consumer Visual Marketing

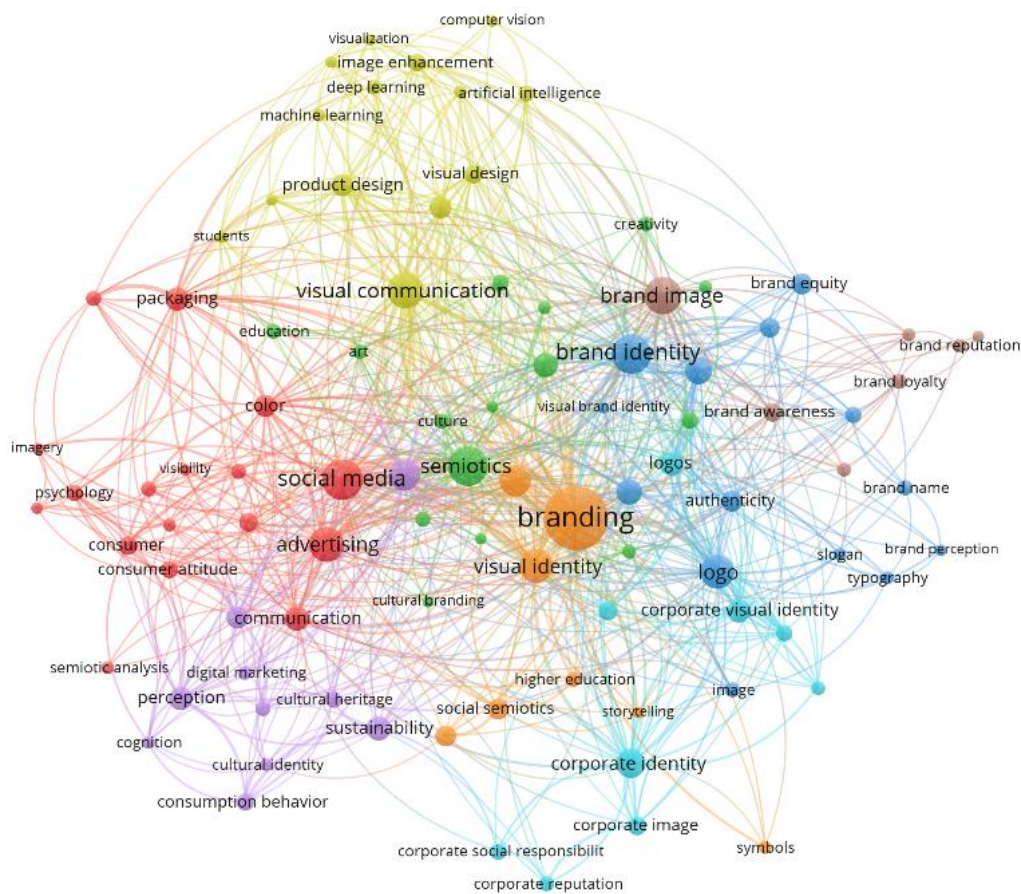


Figure 9: VOSviewer visualisation of a keyword co-occurrence network map

Cluster 1 : Branding, Visual Identity, and Semiotics (Orange)

This is the largest and most central cluster in the network, and the one most directly aligned with this study's focus. It is anchored by branding ($n=144$) the highest-frequency keyword in the entire corpus and includes semiotics ($n=53$), visual identity ($n=40$), logo ($n=38$), logos ($n=20$), corporate visual identity ($n=19$), social semiotics ($n=16$), authenticity ($n=16$), higher education ($n=9$), cultural branding ($n=5$), and storytelling ($n=5$). The co-location of branding, visual identity, logo, and semiotics in a single dominant cluster confirms that visual logo innovation is fundamentally a semiotic practice, one in which logos function as meaning-bearing signs that communicate institutional values to diverse audiences (Thøger Christensen & Askegaard, 2001; Dole & Saha, 2016). The presence of corporate visual identity and social semiotics within this cluster further reflects the theoretical depth of the field, drawing on both CVI frameworks (Wu & Cheong, 2021) and social semiotic approaches to decode how visual elements carry institutional meaning across cultural contexts (Deni & Zingale, 2017; Fatin & Zulfah, 2024). Notably, higher education appears within this core cluster, signalling that university and academic institutional branding is treated as an integral part of the broader visual identity discourse rather than a separate sub-field (Erjansola et al., 2021; Mulyono et al., 2025).

Cluster 2 : Brand Identity and Logo Design (Blue)

The second cluster is anchored by brand identity ($n=49$) and brand image ($n=39$), and includes logo design ($n=24$), brand equity ($n=16$), brand awareness ($n=12$), brand loyalty ($n=9$), creativity ($n=9$), brand name ($n=9$), brand reputation ($n=7$), typography ($n=6$), slogan ($n=6$), and brand perception ($n=5$). This cluster captures the design and brand management dimension of the field. The body of research that examines how specific visual design decisions, including logo form, typography, colour, and naming,

influence how audiences perceive and relate to a brand. The co-occurrence of logo design with brand identity, brand awareness, and brand equity confirms that logo design is not merely an aesthetic exercise but a strategic tool for building measurable brand assets (Zhou et al., 2024; Siegel, 2017). The combination of creativity and typography with brand perception further reflects the growing scholarly interest in the cognitive and emotional aspects of visual logo innovation that is, how audiences process and remember institutional identities as a result of creative and typographic choices (Fitriani et al., 2025; Marques-Gutiérrez et al., 2023). Together with Cluster 1, this cluster forms the theoretical and empirical backbone of the present study.

Cluster 3 : Visual Design Practice and Emerging Digital Innovation (Yellow)

The third cluster is led by graphic design (n=34), visual communication (n=30), and design (n=21), confirming that visual design practice forms the dominant theme of this cluster. Within the same cluster, emerging AI-related terms including artificial intelligence (n=7), deep learning (n=7), machine learning (n=6), and computer vision (n=5) appear at lower frequencies, reflecting an early but growing convergence between visual design practice and computational intelligence. This cluster is particularly significant for the present study's positioning within the AIDI2026 conference and its sustainable digital society framing. The terms "artificial intelligence," "deep learning," "machine learning," and "computer vision" are grouped with "visual communication," "brand design," and "visual design" to indicate a new area of study where computational and intelligent systems are being used for automated brand identity design, logo recognition, and AI-assisted visual communication. The field is making progress toward a combination of design practice and digital intelligence, as proven by the co-occurrence of visual communication as the largest node in this cluster with AI-related terms. This field is still in its early stages in the corpus, as shown by the relatively low keyword frequencies, but it is steadily expanding with the larger digital transformation of institutional communication (Zhou et al., 2024; Pratiwi et al., 2025).

Cluster 4 : Sustainability, Communication, and Cultural Identity (Purple)

The fourth cluster includes sustainability (n=14), communication (n=15), digital marketing (n=7), cultural heritage (n=7), semiotic analysis (n=6), and cultural identity (n=4). Despite being one of the smaller clusters in the network, it carries direct relevance to this study's sustainable digital society framing. The co-occurrence of sustainability with communication and digital marketing reflects a growing body of research that positions institutional visual identity as a vehicle for communicating environmental responsibility and social values to stakeholders (Faizin et al., 2024; Pratiwi et al., 2025). The grouping of cultural heritage and cultural identity with semiotic analysis within the same cluster is also noteworthy, it confirms that sustainability in institutional visual communication is not purely environmental but extends to the preservation and expression of cultural identity through logo and visual design, a theme especially prominent in studies of Islamic university branding and regional institutional identity (Fatin & Zulfah, 2024; Nurjannah & Zuhra, 2025; Riaz & Ushama, 2024).

At a design-practice level, this merging of sustainability and semiotic analysis in Cluster 4 points toward specific visual strategies through which institutions translate environmental and ethical values. Colour semiotics is one such mechanism: green and earth-tone palettes are conventionally associated with ecological responsibility and organic growth, while blue is more commonly linked to trust and institutional stability (Dole & Saha, 2016). Typography and iconography offer a second mechanism: organic, rounded letterforms and leaf-, tree-, or circular motifs are frequently deployed to signal renewal and sustainability, contrasting with the sharper, geometric forms historically used to project technological modernity. The co-occurrence of sustainability with cultural heritage in this cluster further suggests that sustainable institutional identity is communicated not only through ecological iconography but also through visual references to locally-rooted materials, motifs, or heritage symbols, a pattern consistent with Islamic and regional university branding literature (Fatin & Zulfah, 2024; Riaz & Ushama, 2024). However, no article in the corpus directly tests how stakeholders interpret these specific visual sustainability cues, which is precisely the gap this study formalises as RQ2.

Cluster 5 : Corporate and Institutional Identity (Cyan)

The fifth cluster is anchored by corporate identity (n=29) and includes corporate image (n=12), corporate reputation (n=8), corporate social responsibility (n=9), and visual brand identity (n=5). This cluster maps directly onto the "Institutional Identity" component of this study's title and represents the body of research concerned with how organisations including universities and public institutions manage, project, and protect their identities through visual and communicative means. The co-occurrence of corporate social responsibility with corporate identity and corporate reputation within this cluster is particularly meaningful, as it reflects the growing expectation that institutional identity is evaluated not only on visual and aesthetic grounds but also on the basis of ethical and social conduct (Faizin et al., 2024; Mulyono et al., 2025). The presence of visual brand identity further reinforces the link between this cluster and Cluster 1, indicating that corporate and institutional identity management is increasingly expressed and operationalised through deliberate visual brand choices (Thøger Christensen & Askegaard, 2001; Wu & Cheong, 2021).

Cluster 6 : Consumer Response and Visual Marketing (Red)

The sixth cluster is anchored by social media (n=48) and advertising (n=28), and includes color (n=5), consumer attitude (n=2), consumer (n=4), packaging (n=11), and art (n=4). This cluster is the most peripheral to this study's core focus. It primarily captures research on consumer-facing visual marketing, how visual stimuli including logos, colours, and brand imagery are deployed through advertising and social media platforms to influence consumer attitudes and behaviour. While adjacent to the institutional identity literature, this cluster addresses the demand-side application of visual design rather than the identity construction and management processes that are central to this study. It is noted here to acknowledge the full thematic breadth of the corpus and to confirm that consumer response to visual branding represents an active but distinct research strand within the wider field.

Table 7: Top 20 Keywords

Rank	Keyword	Cluster (Vosviewer)	TP	%
Cluster 1 Branding, visual identity & semiotics (Orange)				
1	Branding	Cluster 1	144	14.04%
2	Semiotics	Cluster 1	53	5.17%
5	Visual identity	Cluster 1	40	3.90%
7	Logo	Cluster 1	38	3.70%
16	Logos	Cluster 1	20	1.95%
17	Corporate visual identity	Cluster 1	19	1.85%
19	Authenticity	Cluster 1	16	1.56%
20	Social semiotics	Cluster 1	16	1.56%
Cluster 2 Brand identity & logo design (Blue)				
3	Brand identity	Cluster 2	49	4.78%
6	Brand image	Cluster 2	39	3.80%
13	Logo design	Cluster 2	24	2.34%
18	Brand equity	Cluster 2	16	1.56%
Cluster 3 : Visual Design Practice and Emerging Digital Innovation (Yellow)				
8	Graphic design	Cluster 3	34	3.31%
9	Visual communication	Cluster 3	30	2.92%
15	Design	Cluster 3	21	2.05%
Cluster 4 Sustainability, communication & cultural identity (Purple)				
19	Multimodality	Cluster 4	16	1.56%
-	Sustainability	Cluster 4	14	1.36%
Cluster 5 Corporate & institutional identity (Cyan)				
10	Corporate identity	Cluster 5	29	2.83%
-	Brand management	Cluster 5	20	1.95%
Cluster 6 Consumer response & visual marketing (Red)				

4	Social media	Cluster 6	48	4.68%
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Note: The themes "sustainability" (Cluster 4) and "brand management" (Cluster 5) are marked with "-" in the Rank column because they fall outside the top 20 keywords by global frequency. However, they are retained due to their analytical significance in the thematic interpretation presented in Section 3.6.

Summary

The six VOSviewer clusters reveal a field built around a dominant core of branding, visual identity, and semiotic scholarship (Cluster 1), extended by brand identity and logo design research (Cluster 2), and enriched by a visual design practice cluster with an emerging AI and digital innovation frontier (Cluster 3). Sustainability and cultural identity concerns form a dedicated thematic strand (Cluster 4), while corporate and institutional identity management constitutes its own distinct cluster (Cluster 5). Together, these five clusters map directly and comprehensively onto the three themes of this study, which are visual logo innovation, institutional identity, and the sustainable digital society. This automatically confirms both the intellectual depth and the contemporary relevance of the field. The sixth cluster, centred on consumer visual marketing, reflects the applied dimension of the corpus and situates the core themes within a broader practical context.

CONCLUSION

This study presents a bibliometric analysis of 1,026 Scopus-indexed journal articles published between 2016 and 2026, mapping the intellectual structure of visual logo innovation and institutional identity research in the context of a sustainable digital society. The analysis covered publication trends, citation performance, authorship, source journals, geographical distribution, subject areas, and keyword co-occurrence patterns using VOSviewer.

Publication output grew from 198 articles (2016–2018) to 344 articles (2022–2024), a 73.7% increase, with the highest output recorded so far in 2025 (161 articles). This number simply reflects that 2025 is the most recently completed year of indexing, not a confirmed slowdown or a true peak in the field's growth. The corpus accumulated 11,951 total citations with an overall average of 11.65 citations per paper. The highest citation impact was recorded in 2016 (C/P = 22.78), 2020 (C/P = 21.71), and 2018 (C/P = 20.75), confirming that foundational works from the early study period continue to shape current scholarship. The United States (n=182), China (n=130), and the United Kingdom (n=100) led global output, together accounting for over 40% of the corpus. The most prolific author was Foroudi, P. (n=10) and the leading journal was the Journal of Product and Brand Management (n=29). The corpus spans Social Sciences (47.6%), Business Management and Accounting (38.9%), Arts and Humanities (27.9%), Computer Science (10.6%), and Engineering (9.9%), confirming its strongly interdisciplinary character.

Six keyword clusters were identified via VOSviewer, anchored by branding (n=144), semiotics (n=53), visual identity (n=40), and logo (n=38) as the dominant conceptual core. Three findings stand out. First, the grouping of semiotics, visual identity, and logo in the dominant cluster confirms that logo design is fundamentally a semiotic practice. Logos translate institutional values and communicate them to stakeholders across cultural and digital contexts. Second, AI-related keywords such as artificial intelligence (n=7), deep learning (n=7), and machine learning (n=6), grew from zero mentions before 2018 to eight mentions in 2025 and four already in partial-year 2026, while sustainability (n=14) grew from one mention in 2016 to six in 2025, confirming both as genuinely rising research directions within the field. Third, higher education (n=9) and rebranding (n=10) appear consistently across the study period, confirming that academic institutional identity is an active sub-theme within the broader field but remains underdeveloped as a standalone research focus.

Future Research Directions

Despite the field's growth and maturity, this study identifies three concrete gaps that future research should address. These research questions are presented at the conclusion of the paper rather than the introduction, as they are derived directly from patterns and gaps identified through the bibliometric analysis itself, consistent with standard practice in bibliometric research (Donthu et al., 2021; Van Eck & Waltman, 2010). These gaps are grounded directly in the bibliometric findings and are expressed as explicit research questions to guide future inquiry.

The first gap concerns the convergence of artificial intelligence and institutional logo design. AI-related keywords are present in Cluster 3 of the network alongside visual communication (n=30), graphic design (n=34), and brand design (n=11), yet their frequencies remain low relative to the core branding vocabulary. No study in the corpus has examined how AI tools are applied specifically to institutional logo design or how stakeholders respond to AI-generated visual identities. This is a significant gap given the rapid growth of generative AI design tools and their increasing accessibility to institutions of all types and sizes.

RQ1: How are artificial intelligence and generative design tools being applied in institutional logo design, and how do stakeholders perceive AI-generated visual identities compared to those designed through conventional human-led processes?

The second gap concerns the relationship between sustainability and institutional visual identity. Sustainability (n=14) and corporate social responsibility (n=9) appear in a dedicated cluster alongside communication (n=15) and cultural heritage (n=7), yet they remain separated from the core logo and visual identity cluster. This means sustainability is discussed within the branding literature but has not yet been studied in direct relation to how logos visually encode and communicate sustainability values to stakeholders.

RQ2: How do institutions visually convert sustainability and social responsibility commitments through logo and visual identity design, and how effectively do stakeholders interpret these sustainability indications from institutional visual identities?

The third gap concerns the cultural and geographical diversity of the field. The United States, China, and the United Kingdom collectively account for over 40% of the corpus, while cultural heritage (n=7) and semiotic analysis (n=6) appear at low frequencies, suggesting that culturally grounded logo analysis from diverse regional and institutional contexts remains limited. Higher education institutions with their unique cultural, religious, and local identity obligations are particularly underrepresented as a focused research subject despite higher education (n=9) and rebranding (n=10) appearing consistently across the study period.

RQ3: How do cultural, religious, and linguistic contexts shape the semiotic design and stakeholder interpretation of institutional logos across diverse geographical settings, and what theoretical frameworks are most appropriate for analysing visual logo innovation in higher education institutions beyond Western and East Asian contexts?

This study provides a verified and structured intellectual map of visual logo innovation and institutional identity scholarship from 2016 to 2026. The findings confirm the field's sustained growth, interdisciplinary range, and emerging conjunction with AI-driven digital innovation and sustainability necessities. The three research questions presented above are grounded in the bibliometric evidence and are intended to guide the next generation of empirical, cross-cultural, and computational scholarship in this field. Together, they point toward a research agenda that is responsive to the evolving demands of a sustainable digital society, where visual logo innovation is not merely an aesthetic exercise but a strategic, semiotic, and socially responsible act of institutional communication.

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