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Before Digital Methods: A Decolonial Genealogy of Methodological Practices in Latin America

Raquel Recuero

raquel.recuero@ufpel.edu.br

Universidade Federal de Pelotas

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Abstract: The expansion of the internet and digital platforms has transformed the objects, data, and methodological conditions of social research. Although the systematization of Digital Methods has become an important reference point for understanding these transformations, dominant genealogies of the field tend to privilege practices that were subsequently named and institutionalized, rendering trajectories developed in other contexts less visible. This article investigates how the methodological repertoires used in Latin American research on digital objects were constituted and transformed between 2000 and 2019. From a genealogical and decolonial perspective, we analyze 911 articles selected from 2,361 unique records retrieved from Scopus, Web of Science, SciELO, and Redalyc. Using a mixed-methods approach, we identified the methods employed, their relationship to the digital, their relationships with different objects, and the ways in which they were combined. Longitudinal and network analyses were used to examine the emergence, persistence, and co-occurrence of methods. The results show that, although digital-native methods became more prevalent over the period, adapted methods remained predominant. At the same time, methodological hybridization and the articulation between adapted and digital-native repertoires increased. Methods that emerged in the earliest periods showed high levels of persistence, regardless of their relationship to the digital, indicating that new repertoires tended to accumulate rather than replace earlier ones. We therefore propose understanding the methodological trajectory of Latin American digital research through the articulation of three processes: emergence, sedimentation, and recombination, challenging linear narratives of a transition from adapted to digital-native methods.

Keywords: Digital methods; Latin America; Decolonial genealogy; Methodological hybridization; Digital research.

1. Introduction

The expansion of the internet and, subsequently, digital platforms transformed not only the objects of social research but also the conditions under which they could be investigated. Interactions that had previously been difficult to observe began to leave persistent and potentially collectable records, including hyperlinks, posts, comments, network connections, searches, shares, and other forms of digital traces. At the same time, the growing availability of large volumes of data and the development of tools for

collecting and analyzing them expanded the possibilities for observing social practices in digital environments. These processes not only generated new objects and data sources, but they also raised specific methodological questions focusing on how researchers should collect, organize, and analyze materials produced by devices and platforms whose properties differ from those for which many traditional social science methods were originally developed.

Part of the literature responded to these questions through proposing new adaptations to existing methods or proposing new methods specifically to the digital. Rogers's (2013) systematization of Digital Methods (particularly through the distinction between digitized and digital methods) became one of the most influential ideas in this debate. Yet the transformation of research practices in response to the digital extends beyond the emergence of a particular set of techniques. Different disciplinary traditions and research contexts have developed their own forms of methodological adaptation, experimentation, and combination for investigating digital objects.

These transformations, however, did not unfold under homogeneous conditions. The growing availability of data coexists with profound asymmetries in their production, access, and processing. In Latin America, researchers work under conditions marked by unequal access to infrastructures, tools, specialized training, and the data generated by platforms themselves. Recent studies show that global data abundance can coexist with locally produced forms of scarcity, as data generated by populations in the Global South are often extracted and controlled by infrastructures and companies to which researchers in the region have limited access (Chávez et al., 2025). These conditions matter because methods do not circulate independently of the material and epistemological contexts in which they are produced and mobilized. As Gómez-Cruz et al. (2023) argue, narratives of methodological novelty in digital research can reproduce epistemological hierarchies when they disregard the sites in which methods are produced, appropriated, and transformed.

In this context, reconstructing the methodological history of digital research from Latin America requires a shift in perspective. Rather than taking as a starting point what was later systematized as Digital Methods and looking for its adoption in the region, we ask: what trajectories, continuities, and transformations can be observed in the methodological practices of Latin American research on digital objects?

To answer this question, we propose a genealogy of the methodological practices employed in Latin American research on digital objects between 2000 and 2019. The study draws on 911 papers that use different methods to study digital objects retrieved from Scopus, Web of Science, SciELO, and Redalyc. We seek to analyze and systematize the methodological strategies employed by these researchers, focusing on which types of methods were used, how they were combined and which approaches persisted on time.

2. Methods Applied to Digital Objects

Before and alongside the consolidation of digital methods as a specific methodological program, different authors used distinct terms to discuss how methods were adapted and transformed in response to digital objects and environments. Explicit reflection on these methodological adaptations and transformations, however, was less common. In 2007, the term appeared in relation to the Digital Humanities, where it was defined in connection with the use of computational methods in the Humanities and Social Sciences (Hughes, Constantopoulos & Dallas, 2007). Hewson (2008) proposed "Internet-Mediated Research" (IMR), an approach to research involving data produced via the internet, emphasizing the importance of methodological combinations and mixed methods. Lee, Fielding, and Blank (2008), in the introduction to their Handbook of Online Research Methods, explicitly discuss the need to adapt existing approaches and address new challenges posed by the collection and analysis of digital data, referring to these practices as "online methods." Marres and Gerlitz (2016) later proposed the notion of "interface methods," suggesting that digital research takes shape at the interface among academic methods, digital devices, platforms, and social practices, allowing different research traditions and practices to intersect. Within qualitative research, Murthy (2008), discussing methods such as ethnography, examines how digital technologies reshape research relationships and how they can be combined with existing methods. Earlier, Hine (2000) had proposed "Virtual Ethnography," explicitly adapting ethnographic procedures to online spaces. Across these works, we find a sustained concern with the changes introduced by the digital and with the methodological adaptations required to address them.

It is primarily with Rogers's work (2009, 2013), however, that the notion of "digital methods" becomes associated with a specific methodological program for internet research. Although earlier work had already discussed the transformations and adaptations required to study digital objects and environments, Rogers establishes a conceptual distinction between digitized methods (pre-existing methods adapted to digital environments) and digital methods, approaches that seek to repurpose the characteristics and operations of digital media themselves for research. In this sense, digital methods operationalize properties specific to digital objects and devices, following the principle of "following the medium." In later work (Rogers, 2013, 2024), this perspective is developed through an increasingly systematized repertoire of objects, procedures, and research practices, consolidating a conception of digital methods centered on the methodological affordances of the medium itself.

Whereas Rogers's work focuses on repurposing operations and structures native to the medium for research, Marres (2017) broadens the question by asking how methodological practice itself is reconfigured through relations among researchers, devices, data, and digital environments. Rather than treating "digital methods" as a discrete class of native methods, she focuses on the multiple relations through which

research practices are constituted. This shifts the debate away from a simple opposition between “new” and “old” methods and toward the ways in which methodological practices are reconfigured. A key implication is that method is not merely an approach selected by the researcher; it is also deeply shaped by the infrastructures and contexts within which research takes place.

Along similar lines, Chavez et al. (2025) propose the notion of “cyborg methods” in the Latin American context. They suggest understanding methods applied to digital objects as cyborg assemblages structured through heterogeneous combinations of tools, researchers, forms of knowledge, infrastructures, and contexts. Like Marres (2017), they draw attention to the specific contexts and configurations that give rise to strategies of appropriation, adaptation, combination, and even “hacking” of available tools. In resource-constrained settings in particular, researchers may need to adapt to available conditions, sometimes developing innovative research practices in the process. Such methods should therefore not be understood as an earlier stage or a deficit in relation to digital-native methods, but as potentially creative and innovative ways of constructing methodological approaches. This perspective is important because it underscores that methods are not neutral, isolated tools that researchers simply “apply.”

The discussion so far shows that the notion of digital methods is not a historically stable category, but brings together different ways of understanding methodological transformations associated with the digital. Part of the literature emphasizes the adaptation of existing methods to online environments; another strand seeks to distinguish adapted methods from those constructed from the specific properties of digital objects. More recent perspectives, however, shift this opposition by understanding methods as situated sociotechnical practices constituted through relations among researchers, objects, tools, infrastructures, and local conditions of knowledge production. From this perspective, adaptation, appropriation, combination, and even methodological hacking no longer necessarily represent provisional solutions in the absence of 'digital-native' methods, but can be understood as forms of methodological production in their own right. This shift is particularly relevant to a genealogy of digital research in Latin America because it allows us to investigate not only when particular methods emerge, but how they are appropriated, transformed, combined, and stabilized under specific conditions of knowledge production.

3. The Context of Digital Research in Latin America

Studies of publications and methodological practices among Latin American researchers have pointed to the strong circulation of theoretical and methodological repertoires developed in the Global North (Siles et al., 2019), while also identifying processes through which these approaches are adapted and translated in local contexts (Sued, 2019). These studies highlight an important tension among circulation,

appropriation, and the situated production of methodological repertoires in Latin America. This tension raises a central question for our argument: if methods are not neutral tools, we must also examine which epistemologies they render visible and which they obscure.

This question becomes particularly relevant once methods are no longer understood as neutral tools. Ricaurte (2019) argues that contemporary digital data regimes produce knowledge and ways of ordering the world. Methods, therefore, cannot be separated from the epistemological regimes through which knowledge is produced.

Gómez-Cruz et al. (2023) advance this discussion by questioning the very genealogies through which digital methods were constituted as a field. For the authors, these genealogies do not merely describe methodological development; they also participate in retrospectively defining what comes to be recognized as methodological innovation. The history of methods used to study digital objects, they explain, is intrinsically anchored in perspectives that have received greater visibility, particularly those from the Global North. Thus, by associating new digital objects with the need for new methods and locating particular moments, publications, and academic centers as sites of their emergence, these narratives can make earlier practices or practices developed in other traditions and contexts less visible. Decolonizing digital methods therefore entails not only geographically broadening the cases studied, but reconstructing their genealogies from other traditions and conditions of knowledge production.

This discussion is not confined to Latin America. Schoon et al. (2020), for example, criticize a global knowledge system in which Western methods and intellectual approaches are treated as epistemologically superior, arguing that African digital experiences should be regarded as sites of knowledge production rather than simply as cases to which concepts and methods developed elsewhere are applied. Similarly, in a systematic review of data collection and analysis methods, Özkula and Reilly (2024) found a predominance of cases from the Global North and showed that this asymmetry is particularly pronounced in research using digital methods, echoing critiques made in relation to Latin America. Taken together, these studies point to an unequal geography both of the objects studied and of the repertoires recognized as constitutive of digital research.

But does this asymmetry allow us to conclude that Latin American methodological repertoires were constituted simply through the reproduction of traditions produced in the Global North? This question is particularly important because methodological repertoires in the Global South are constituted not only in dialogue with different epistemological traditions, but also under specific material conditions of knowledge production (Tavares & Tranjan, 2023). Methodological circulation, adaptation, and appropriation are therefore not necessarily equivalent to simple reproduction.

It is precisely this distinction that calls for a genealogical investigation. Rather than starting from what was later systematized as “digital methods” and looking for its presence in Latin America, we reverse the direction of inquiry: we examine the repertoires that Latin American researchers actually mobilized to investigate digital objects, how these methods emerged, persisted, and were recombined over time, and the extent to which these trajectories converge with or diverge from the field's established genealogies.

4. Genealogy as an Approach

For this study, we adopt a genealogical approach to investigate the methodological practices mobilized in Latin American research on the digital. Our aim is neither to reconstruct a linear trajectory of methodological development nor to assume that these practices necessarily converge toward what was later systematized as digital methods. Instead, we examine their different provenances, moments of emergence, continuities, discontinuities, and transformations.

The genealogical perspective adopted here draws on Foucault's (1971) formulation, in which genealogy rejects the search for a unitary origin and seeks to understand how configurations that later appear relatively stable are produced through heterogeneous elements, contingencies, and disputes. If knowledge production itself must be understood in relation to the historical and geographical conditions under which it occurs, the same principle can be applied to the methods that constitute our object of investigation. Methods do not emerge in an epistemological or material vacuum: they are appropriated, adapted, combined, and transformed under specific research conditions.

This perspective resonates with Gómez-Cruz et al.'s (2023) proposal for a decolonial genealogy of digital research in Latin America. Three elements of their approach are particularly relevant here: their critique of narratives of the “novelty” of digital research, which can obscure earlier methodological continuities, adaptations, and recontextualizations; the need to situate Latin American research practices within their specific conditions of production; and the reconstruction of these trajectories from a perspective capable of questioning the epistemological hierarchies that determine which practices come to be recognized as methodological innovation.

Building on these principles, we propose reconstructing the trajectory of methodological practices employed in Latin American research on digital objects without taking the category of digital methods as either the starting point or the necessary destination of that trajectory. Instead, we seek to observe which methods emerge, which persist, how they are transformed, and how they come to be combined over time. This perspective allows adaptation, persistence, and recombination to be

treated not as incomplete stages in a transition toward digital-native methods, but as historical phenomena to be explained.

5. Methods

To operationalize this genealogical approach in a way that addresses the article's central question (What trajectories, continuities, and transformations can be observed in the methodological practices of Latin American research on digital objects?) we designed a mixed-methods strategy for data collection and analysis.

5.1 Data Collection

For data collection, we conducted a systematic literature review across four databases: two based in the Global North (Scopus and Web of Science) and two Latin American databases (SciELO and Redalyc). They were selected for accessibility and to encompass a broader range of languages and publication venues.

Based on this review, we categorized trends and practices developed in Latin America from 2000 to 2019. The 2000–2019 time frame makes it possible to observe two decades of methodological transformations, spanning practices both before and after the consolidation of Digital Methods (Rogers, 2013) as a methodological program.

We considered works by researchers based at Latin American universities, published in Portuguese or Spanish, through 2019. The search strategy was organized around digital objects, platforms, and environments, including terms associated both with the Web and the internet in general and with specific, historically situated environments (see codebook).

We used the search interfaces available in Web of Science and Scopus, as well as Python scripts to collect data from Redalyc (whose interface did not allow the data to be downloaded) and from the available SciELO database, which was downloaded in full and then screened for the relevant terms. For each article, we collected authorship information, title, abstract, and keywords. The records were then deduplicated. From an initial set of 2,395 records, we obtained 2,361 unique records.

After deduplication, the original 2,361 records underwent a second screening stage guided by the explicit presence of digital objects. We included works whose title, abstract, or keywords explicitly identified a digital object, environment, corpus, interaction, or phenomenon, regardless of whether the method was explicitly named. This screening resulted in 911 records, which constituted the analytical corpus. Although the search covered 2000–2019, the resulting corpus effectively spans 2001–2019 because no record from 2000 met the inclusion criteria.

5.2 Analysis Strategy

After establishing the final set of records, we used content analysis (Krippendorff, 2013) to classify the corpus. The material was analyzed with regard to (a) the method mobilized in each article, using the title, abstract, and keywords jointly; and (b) the method's relationship to the digital. A method was classified as adapted when it existed independently of the digital object, and as digital-native when its existence or operationalization depended constitutively on digital data, objects, environments, or infrastructures (e.g., webometrics and web crawling). In multi-method articles, the presence of at least one digital-native method led the record to be classified as Digital-native on this dimension, because the variable was intended to capture whether the methodological strategy depended, to any extent, on constitutively digital operations. Combinations among methods were analyzed separately under the Configuration dimension.

Before the final classification, a random sample of 100 records was drawn from the corpus of 911 articles. The records were independently classified by two coders according to the codebook. Reliability was calculated before disagreements were adjudicated. For the Relationship to the digital dimension, overall agreement was 95% and overall Cohen's κ was .916; considering only the 94 records deemed in scope by both coders, agreement was 94.7% and κ = .903 (Table 1).

Kappa values by category were as follows:

Table 1: Agreement

Category	Agreement	**κ**
Adapted	95%	0.897
Digital-native	97%	0.908
Cannot determine	100%	1.000
Not applicable	98%	0.740
Out of scope	100%	1.000

Disagreements were subsequently discussed and adjudicated, and the resulting decisions were incorporated into the codebook. The revised codebook was then applied to all 911 records. Classification of the full corpus was conducted semi-

automatically following calibration and validation of the coding protocol. Based on the protocol consolidated through human coding, we developed a script that integrated Anthropic's Claude language model into the classification process. For each record, the model received the title, abstract, and keywords together with the categories, definitions, and decision rules established during calibration. The LLM was therefore not used to generate analytical categories inductively, but to apply at scale a classification protocol that had been defined, tested, and refined beforehand.

The results of the full classification are presented below (Tables 2 and 3):

Table 2: Classification by method type

Relationship to the digital	**N**
Adapted	416
Digital-native	320
Cannot determine	164
Not applicable	5
Out of scope	6

Table 3: Classification by number of methods

Configuration	**N**
Hybrid	456
Non-hybrid	280
Cannot determine	164
Not applicable	5
Out of scope	6

The category 'Cannot determine' was applied to records for which the available information did not allow the method employed to be identified; 'Not applicable' was applied to essays and theoretical articles that did not employ an empirical research method; and 'Out of scope' was applied to records that, after analysis, proved incompatible with the study's inclusion criteria.

To preserve the genealogical character of the study, the identified methods were initially retained at a relatively high level of granularity, avoiding the collapse of historically distinct categories. Specific cases were nevertheless harmonized (for example, “qualitative method” and “qualitative analysis,” or “virtual ethnography” and “digital ethnography”). This harmonization was necessary to avoid excessive granularity while preserving distinctions among different methodological traditions. We ultimately identified 74 distinct method labels and 26 types of digital objects, which form the basis of the analysis.
Finally, the harmonized methods were analyzed longitudinally to reconstruct their trajectories in the corpus. The analysis examined (1) the emergence of different methods over the period; (2) their persistence in the years following their first occurrence; (3) differences in these trajectories between adapted and digital-native methods; and (4) their processes of recombination over time.

To examine methodological recombination specifically, we constructed method co-occurrence networks. In these networks, each node represents a method and an edge connects two methods when both are mobilized in the same article. Edge weight corresponds to the number of articles in which that combination occurs. The networks were constructed by time windows, allowing us to observe longitudinally not only the growth in the use of multi-method approaches, but also which methods came to be combined and how these combinations changed over the period analyzed.

In addition to the co-occurrence structure, we used centrality measures to examine the positions occupied by different methods in these networks. In particular, betweenness centrality (Brandes, 2001) was used to identify methods occupying intermediary positions between different parts of the network. Higher values indicate methods that occur more frequently on shortest paths between other methods and that, in this sense, can be interpreted as 'bridges' between different sets of methodological practices. The measure was therefore used not as an indicator of a method's intrinsic importance, but as a way of observing its structural role in articulating different methodological repertoires. To identify communities of methods in the co-occurrence network, we used modularity analysis with the Louvain algorithm (Blondel et al., 2008), implemented in Gephi (Bastian et al., 2009), allowing us to identify groups of methods with a higher density of connections among themselves than with the rest of the network.

6. Discussion

From the genealogical perspective developed in this article, we analyze the data with the aim of understanding not only which methods were mobilized in Latin American research on digital objects, but also how these repertoires were constituted and transformed over time. We therefore examine relationships between methods and objects, the emergence of adapted and digital-native methods, the ways in which different approaches were combined, and their persistence throughout the period analyzed.

6.1 The Emergence and Diversification of Methods

We first examined how methods appeared over time in relation to research objects. To do so, we constructed three bipartite networks showing connections between methods and objects across three time windows (2001–2006, 2007–2011, and 2012–2019). The graphs below show these method-object connections.

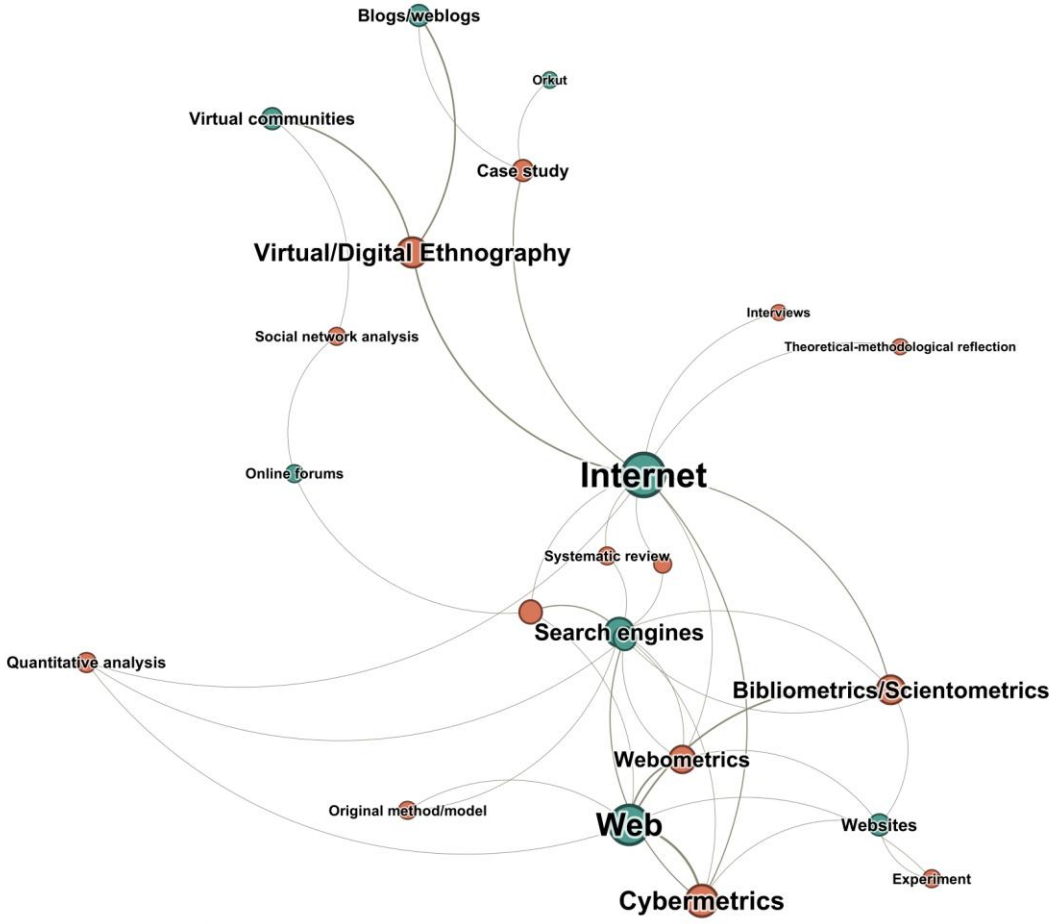


Figure 1: Network of objects and methods (2001–2006)

Data from the earliest years (Figure 1) show the main objects studied during the period. The Internet in general, the Web, search engines, and websites are the most frequently studied objects in the dataset, followed by virtual communities, blogs, online forums, and Orkut. These objects are addressed primarily through specific

methodological clusters. For example, the main cluster comprising webometrics, cybermetrics, and bibliometrics/scientometrics is directly connected to the Web, websites, and search engines, and accounts for the largest concentration of method-object connections in this period. At the same time, methods such as digital/virtual ethnography and case studies appear in research on the Web, blogs, and Orkut, while virtual ethnography and social network analysis are also connected to virtual communities. Interviews, theoretical-methodological reflections, and systematic reviews are more directly associated with the Internet in general. Even at this early stage, however, studies proposing original methodological approaches are already present. These data suggest that, in our dataset, the earliest studies employing digital-native methods are primarily associated with bibliometric and scientometric traditions focused on the Web and web pages.

These data show that methods regarded as digital-native, such as webometrics and cybermetrics, appear very early in the dataset. This indicates the presence of constitutively digital methods before the programmatic consolidation of Rogers's (2013) notion of “digital methods,” particularly within bibliometric and scientometric research traditions.

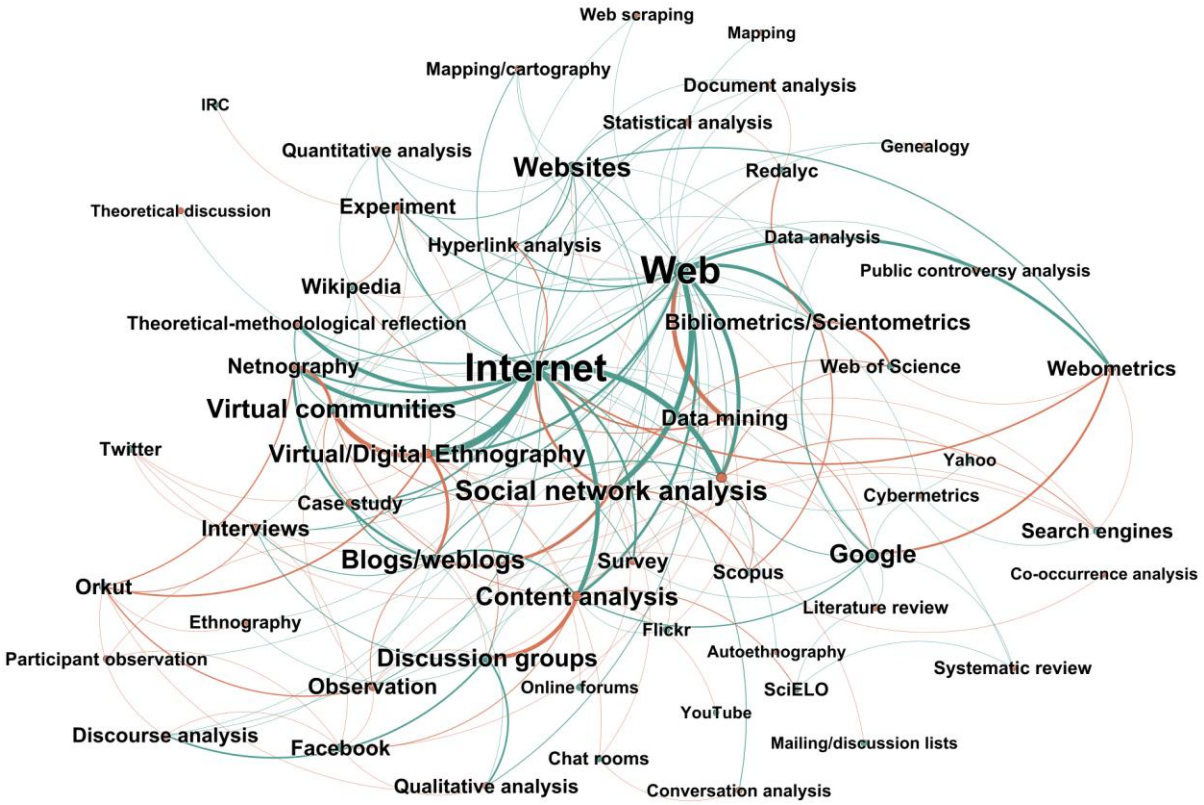


Figure 2: Network of objects and methods (2007–2011)

In the second period (Figure 2), the picture is markedly different. Research objects remain strongly centered on the Web, websites, virtual communities, and the Internet.

Blogs/weblogs, discussion groups, and online forums become more prominent, while new objects, including social networking sites such as Flickr and Facebook as well as YouTube and Wikipedia, begin to emerge. This diversification of objects is accompanied by greater methodological plurality. Earlier methods remain in use, while new approaches appear, including participant observation, netnography, conversation analysis, genealogy, cartography, and discourse analysis. Rather than separate clusters, we begin to see greater interconnection among methods. The map suggests a process of methodological "despecialization": methods become less tightly associated with a single type of object and circulate across different objects, while the same objects are increasingly approached through distinct methodological repertoires.

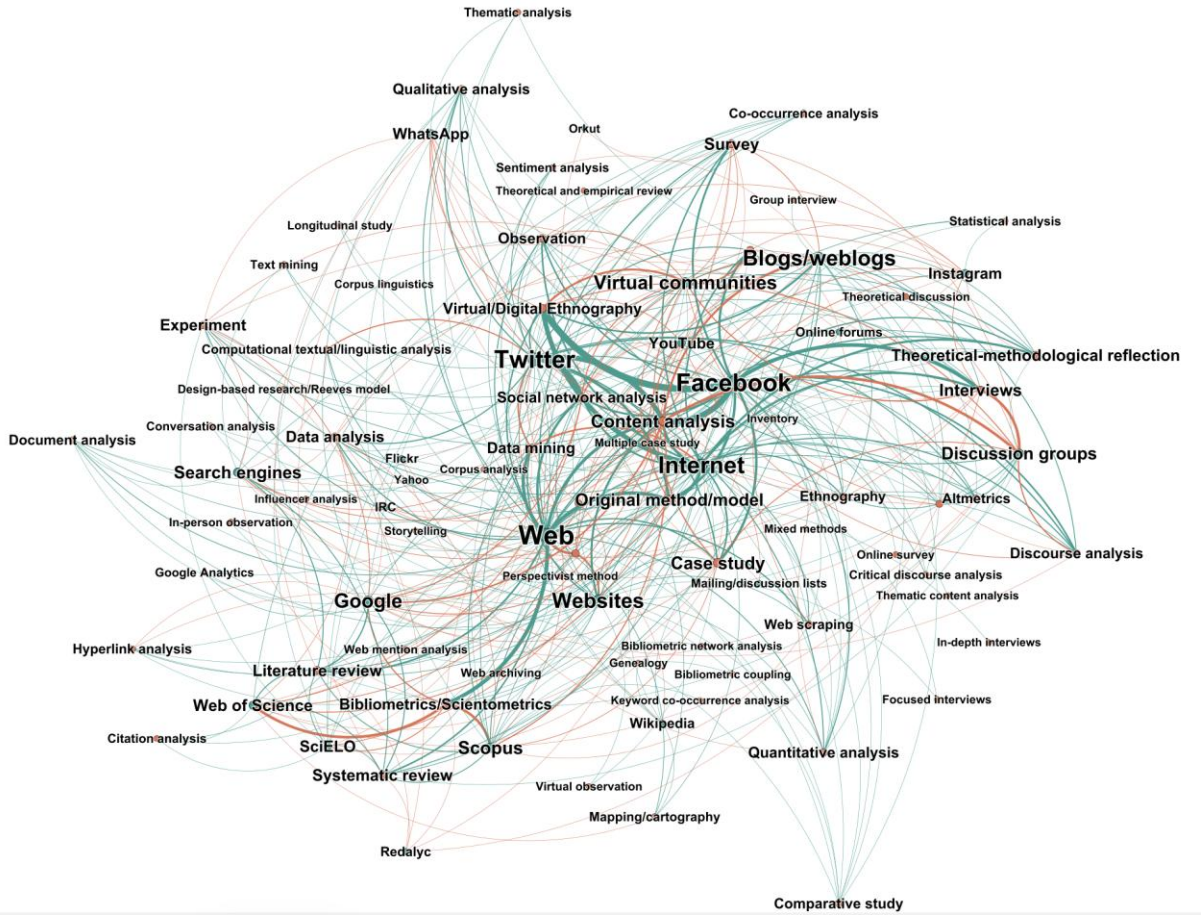


Figure 3: Network of objects and methods (2012–2019)

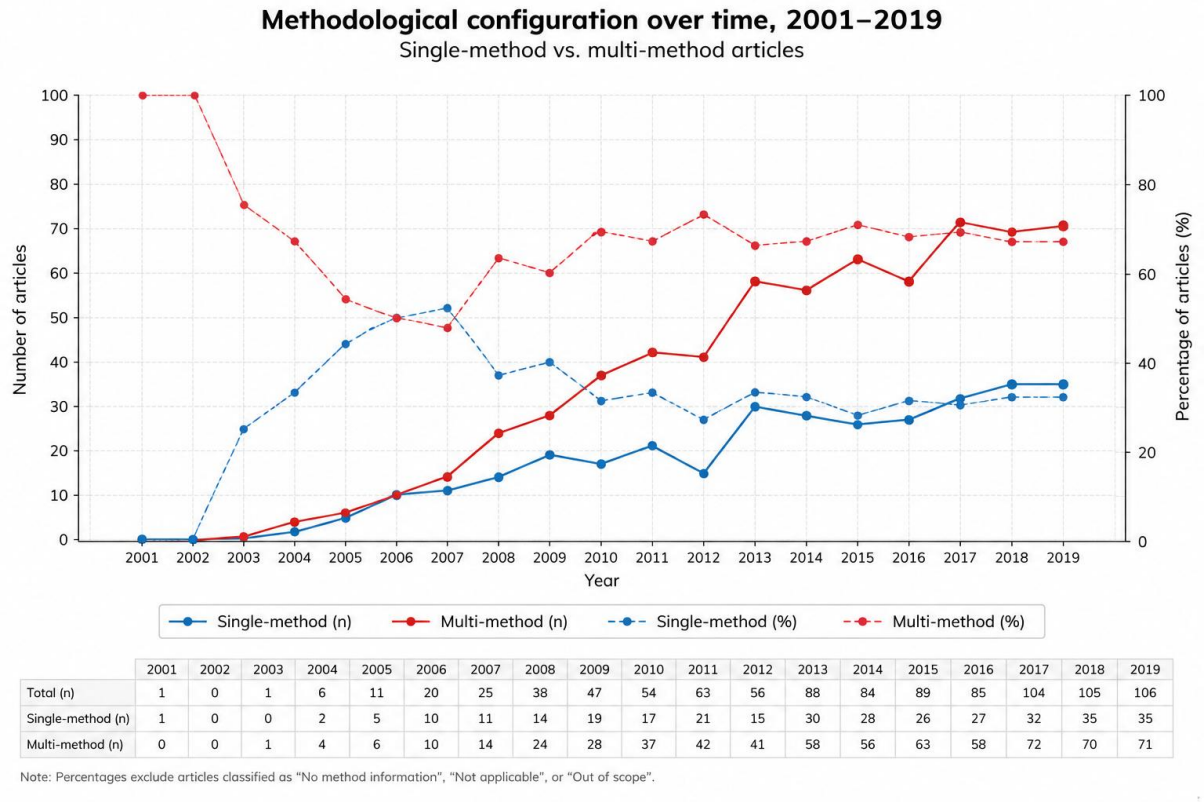
Finally, in the last period (Figure 3), additional objects emerge, particularly social media platforms such as Twitter, Facebook, and WhatsApp, while blogs become a more prominent focus of research. The trend observed in the previous period also continues and intensifies: both the number of methods and the connections among them increase, with mixed-methods approaches becoming more visible, in line with Hewson's (2008) observations. The category "original method/model" also becomes more prominent, indicating attempts to develop original methodological proposals.

Taken together, these data point to a transformation in the relationship between digital objects and methodological repertoires. In the earliest years, relatively specialized associations can be observed between particular objects and methodological traditions, such as the strong connection between the Web, websites, and search engines and methods such as webometrics, cybermetrics, and bibliometrics/scientometrics. In subsequent periods, as digital objects diversify, these relationships also become more distributed: methods are mobilized across different objects, while the same objects come to be investigated through more diverse methodological repertoires.

This trajectory does not appear to reflect a simple replacement of earlier methods by methods created for new objects. Rather, the data point to the coexistence of adapted methods, digital-native methods, and new methodological proposals, all of which circulate across different objects. The diversification of digital objects thus appears to be accompanied by an expansion and reconfiguration of the methodological repertoire available for investigating them, particularly through hybrid methodological designs.

To examine this trend, we analyzed the methodological combinations identified in each article (Figure 4). The results show clear growth in approaches combining two or more methods over the period analyzed. Methodological hybridization thus becomes progressively more frequent in the corpus. This finding resonates with studies that had already identified method combination as an important feature of internet-mediated research (Hewson, 2008; Murthy, 2008). The data, however, suggest a development that goes beyond the simple adoption of mixed-methods designs. As digital objects and environments diversify, so too do the possibilities for articulating different methodological traditions.

This trajectory is close to the notion of interface methods proposed by Marres and Gerlitz (2016), according to which digital research is constituted at the interface among social science methods, digital devices, methods embedded in platforms, and social practices. From this perspective, methodological combination does not merely represent the addition of different techniques, but can produce new research configurations through their articulation with the properties and infrastructures of digital environments. Thus, the growth in hybridization observed in the corpus can be interpreted as a process of recombination of the available methodological repertoire: methods not only coexist, but are increasingly articulated in new configurations for investigating digital objects.



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total (n)	1	0	1	6	11	20	25	38	47	54	63	56	88	84	89	85	104	105	106
Single-method (n)	1	0	0	2	5	10	11	14	19	17	21	15	30	28	26	27	32	35	35
Multi-method (n)	0	0	1	4	6	10	14	24	28	37	42	41	58	56	63	58	72	70	71

Note: Percentages exclude articles classified as "No method information", "Not applicable", or "Out of scope".

Figure 4: Methodological combinations over time

But what, specifically, is being combined? We also examined combinations involving digital-native and adapted methods. Digital-native methods were defined, as above, as methods whose existence or operationalization depends constitutively on digital data, objects, environments, or infrastructures, such as webometrics. Adapted methods were those that exist independently of the digital but are mobilized in studies of digital objects, requiring their recontextualization in relation to the specificities of those objects.

The data show that, despite the growth of digital-native methods, adapted methods remain predominant. This result echoes Rogers's (2009, 2013) distinction between digitized and digital methods, while showing that the emergence of digital-native methods did not displace pre-existing methodological repertoires. Our findings therefore converge with Siles et al. (2019) in showing the persistence of adapted methods. In other words, the Latin American trajectory identified here is not one of straightforward replacement of pre-existing methodological repertoires by methods derived from the properties of the medium.

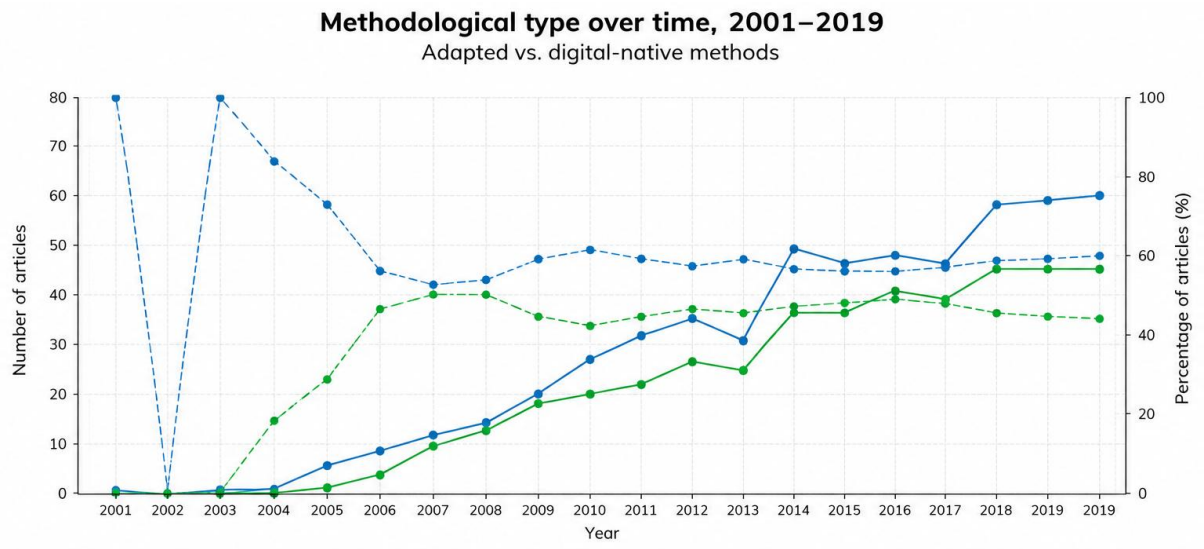
However, interpreting this persistence as an absence of methodological innovation would mean treating the creation of entirely new methods as the primary criterion of innovation. Marres (2012, 2017) and Marres and Gerlitz (2016) allow us to problematize this reading by showing how the digital reconfigures existing methodological practices and redistributes research operations among researchers,

devices, platforms, and data. The predominance of adapted methods therefore does not necessarily imply simple methodological continuity: a method may retain its affiliation with an earlier tradition while being profoundly transformed by the sociotechnical conditions under which it comes to operate. Gómez-Cruz et al. (2023) help us interpret this combination as experimentation and adaptation rather than as an intermediate stage toward 'more advanced' digital methods. The growth in hybridization observed in our corpus reinforces this interpretation, suggesting that part of methodological transformation occurs not through the replacement of existing repertoires, but through their adaptation and recombination.

Moreover, the growing use of hybrid methodological designs suggests an increasing complexity of approaches, which can be read in relation to what Chavez et al. (2025) call “cyborg methods.” In their empirical study, the authors identify strategies involving adaptation, improvisation, recombination, and methodological hacking as characteristic of situated forms of scientific production in Latin America.

6.2 Methodological Recombination

In this section, we examine how methodological hybridization occurs in the corpus. Of the 456 articles classified as hybrid, 395 named the methods they mobilized with sufficient specificity to allow their combinations to be analyzed. The remaining articles indicated the use of multiple approaches but did not provide enough information in the title, abstract, or keywords to identify the methods individually. Figure 5 presents the methods included in this analysis and their presence in the dataset over time. For readability, we include only methods with at least three occurrences in the dataset, resulting in 36 method categories. The figure shows that the number of methods involved in these combinations increases over time.



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total (n)	1	0	1	6	11	20	25	38	47	54	63	56	88	84	89	85	104	105	106
Adapted (n)	1	0	1	5	8	11	13	20	27	32	36	31	50	46	48	46	58	59	60
Digital-native (n)	0	0	0	1	3	9	12	18	20	22	27	25	38	38	41	39	46	46	46
Adapted (%)	100.0	0.0	100.0	83.3	72.7	55.0	52.0	52.6	57.4	59.3	57.1	55.4	56.8	54.8	53.9	54.1	55.8	56.2	56.6
Digital-native (%)	0.0	0.0	0.0	16.7	27.3	45.0	48.0	47.4	42.6	40.7	42.9	44.6	43.2	45.2	46.1	45.9	44.2	43.8	43.4

Note: Percentages exclude articles classified as "No method information", "Not applicable", or "Out of scope".

Figure 5: Types of methods over time

Among the 395 articles using more than one identifiable method, combinations of adapted and digital-native methods are the most common (n = 201, 50.9%), followed by combinations involving only adapted methods (n = 152, 38.5%) and, finally, combinations involving only digital-native methods (n = 42, 10.6%). Methodological hybridization, in other words, does not occur primarily within the digital-native repertoire. The time series also shows that combinations of adapted and digital-native methods become more frequent from 2008 onward and expand sharply after 2014. Combinations among adapted methods also increase over the period, whereas combinations among digital-native methods remain a minority.

Figure 6 shows method co-occurrences among methods with more than three occurrences in the corpus, a threshold chosen to improve the readability of the visualization. The figure indicates that not only does the proportion of hybrid articles increase, but the repertoire of methods participating in these combinations also becomes more diverse.

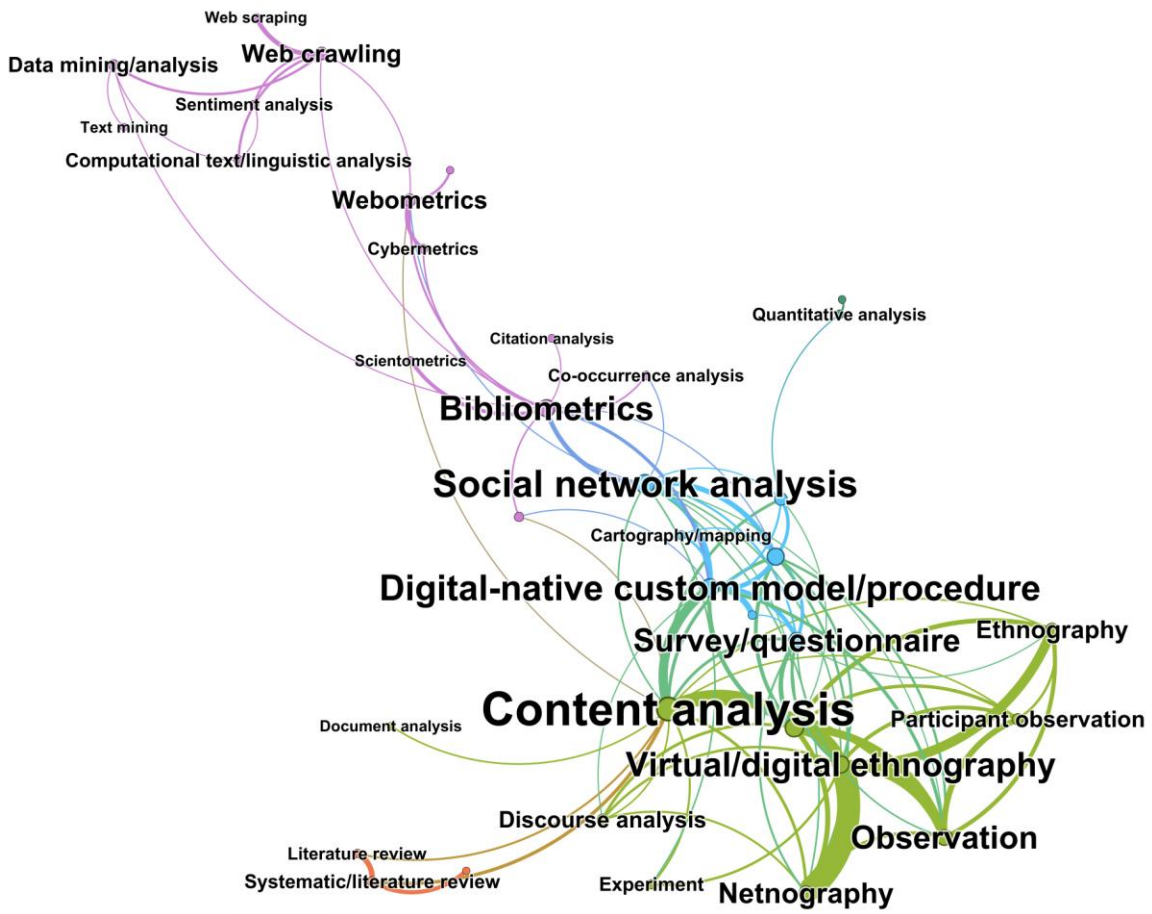


Figure 6: Method co-occurrence network (Size = frequency; Edge = joint co-occurrence; Colors = communities)

The most frequent method pairs are Virtual/Digital Ethnography + Netnography (55), Content Analysis + Interviews (31), Interviews + Virtual/Digital Ethnography (29), Virtual/Digital Ethnography + Observation (23), Ethnography + Virtual/Digital Ethnography (23), and Content Analysis + Digital-native custom model/procedure (22). Community detection (Blondel et al., 2008), in which clusters were identified structurally by the algorithm and then interpreted based on the methods they contain, reveals distinct groupings within the network. One cluster, shown in green at the bottom, predominantly comprises methods associated with qualitative traditions, including closely connected methods such as observation and virtual ethnography. Another, shown in pink at the top, is more strongly associated with quantitative, computational, and bibliometric methods. An intermediate cluster, shown in blue, connects methods associated with both qualitative and quantitative approaches, with social network analysis and cartography near its center.

We use the term bridging methods for methods that occupy intermediary positions between these different regions of the network. We examined this function using betweenness centrality (Brandes, 2001), which identifies nodes that occur more frequently on shortest paths between other nodes in the network (Figure 7). The methods with the strongest intermediary roles include Content Analysis, Bibliometrics,

and Web Crawling. These are not necessarily the most frequent methods in the corpus; rather, they occupy structural positions that connect different sets of methodological practices and thus function as bridges between otherwise distinct regions of the network.

Content Analysis is a particularly significant case. Although it predates the digital and is therefore classified in this study as Adapted, it is associated with qualitative, quantitative, and digital-native repertoires. Its position in the network shows how the persistence of a pre-existing method can coexist with new methodological functions produced through recombination with other methods. In this sense, innovation in the corpus lies not only in the emergence of new methods, but also in the capacity of existing methods to participate in new methodological configurations.

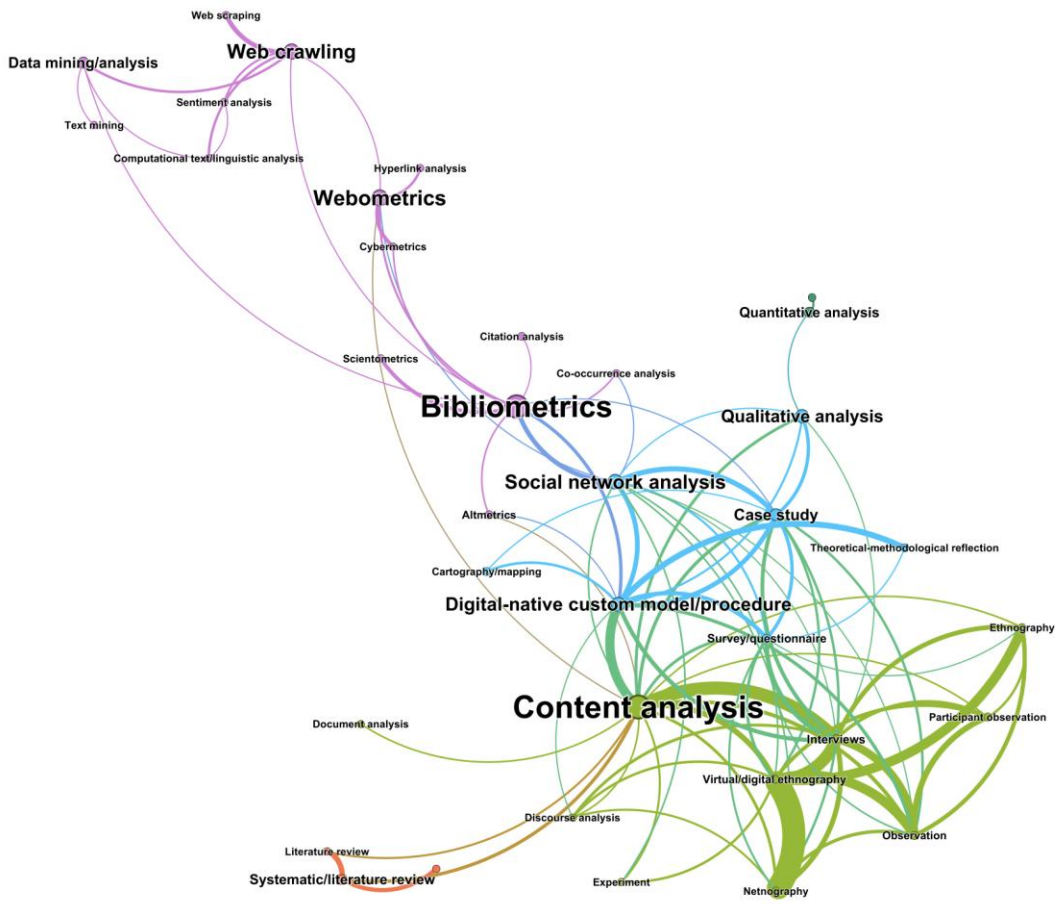


Figure 7: Bridging methods (Size = frequency; Edge = joint co-occurrence; Colors = communities)

Taken together, these results show that methodological hybridization involves more than an increase in the number of methods employed within a single study. Over the period analyzed, the diversity of combinations and the articulation among distinct methodological repertoires also increase. The presence of relatively specialized clusters connected by methods occupying intermediary positions suggests a structure in which methodological traditions persist while establishing new relationships with one another. This finding resonates with Marres and Gerlitz (2016) and Marres (2017), for

whom the digital does not simply produce new methods but reconfigures existing methodological practices and the relationships among methods, devices, data, and research objects. The transformation observed in the corpus therefore occurs not only through the emergence of digital-native methods, but also through the recombination of pre-existing practices and their incorporation into new methodological configurations. This trajectory also reinforces Gómez-Cruz et al.'s (2023) call to question narratives of innovation centered primarily on the emergence of entirely new methods. In the Latin American context, the persistence and recombination of repertoires may themselves constitute forms of methodological transformation.

6.3 Sedimentation of Methodological Repertoires

If the previous analysis shows that the methodological repertoire expands and that methods from different traditions are increasingly combined, the next question is what happens to these methods over time. Does the emergence of new approaches imply the abandonment of earlier ones, or do methods incorporated into the repertoire remain available for subsequent use?

To examine this question, we cross-referenced the period of each method's first occurrence with its presence in subsequent periods (Figure 8). Among methods with at least three occurrences in the corpus, we observe high temporal persistence. Content Analysis and Virtual/Digital Ethnography, for example, appear throughout nearly the entire period analyzed. Bibliometrics is present in 14 years, Social Network Analysis in 13 years, and Theoretical-Methodological Reflections also in 13 years.

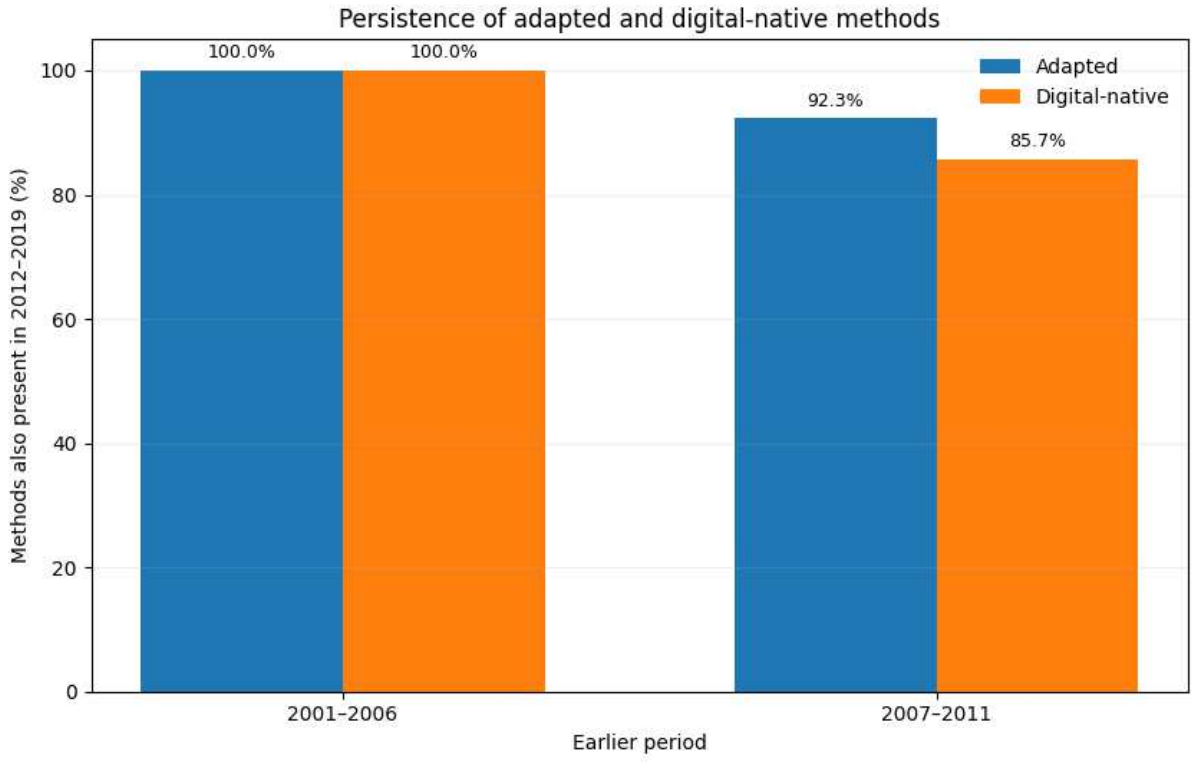


Figure 8: Persistence of methods

The pattern becomes even clearer when we examine persistence across the periods analyzed. All 14 methods present between 2001 and 2006 reappear in the following period. Of the 33 methods present between 2007 and 2011, 30 (90.9%) reappear between 2012 and 2019. These results do not point to successive “generations” of methods in which new repertoires replace earlier ones. Instead, we observe a predominantly cumulative process: new methodological practices are incorporated while methods already present remain available for use and recombination. This persistence is not restricted to adapted methods.
Among the methods present in the initial period (2001–2006), all ten adapted methods and all four digital-native methods reappear between 2012 and 2019. Persistence also remains high among methods present in 2007–2011: 24 of 26 adapted methods (92.3%) and six of seven digital-native methods (85.7%) reappear in the final period. We therefore find no evidence of a trajectory in which adapted methods are progressively replaced by methods derived from the properties of the digital medium. Nor, however, do we find only the reproduction of earlier methodological traditions: once incorporated into the repertoire, digital-native methods also tend to persist.

These data suggest not successive “generations” of methods or a process of method replacement, but rather the sedimentation of methodological repertoires. New approaches are incorporated without earlier ones necessarily disappearing. We propose understanding this process as methodological sedimentation. The metaphor describes a repertoire constituted through successive incorporations without assuming that each new layer eliminates those that preceded it. Adapted and digital-native methods remain available simultaneously and can later be mobilized in new configurations. The trajectory observed here therefore resembles less a linear process of innovation through replacement than a dynamic of accumulation, reconfiguration, and recombination of methodological practices.

This reading is particularly relevant to a decolonial genealogy of digital methods. If, as Gómez-Cruz et al. (2023) argue, dominant genealogies can make earlier or parallel practices less visible by privileging particular moments of methodological naming and institutionalization, our data show that the history of Latin American digital research can hardly be described as a transition from adapted to digital-native methods. What we find is a genealogy marked by coexistence: new repertoires emerge without eliminating earlier ones and themselves begin to sediment.

7. Conclusion

This article sought to understand what trajectories, continuities, and transformations can be observed in the methodological practices of Latin American research on digital objects. To do so, we reconstructed longitudinally the methodological repertoires

found in 911 articles by researchers based in Latin America, published between 2001 and 2019 and retrieved from four databases: Redalyc, Scopus, SciELO, and Web of Science.

The results show, first, that different methods emerge in association with specific objects and subsequently diversify and become more interconnected. Digital-native methods are present from the earliest period in the corpus. The emergence of what would later be systematized as digital methods (Rogers, 2013), therefore, can also be observed in Latin American scholarship. Over time, we also find extensive combination and recombination of methodological approaches, both adapted and digital-native. Methods that appear in the earliest periods tend strongly to persist into later ones, and this persistence occurs among both adapted and digital-native methods. We therefore find no clear succession of methodological generations in which new methods eliminate or render earlier ones obsolete.

The answer to our research question can thus be synthesized through the articulation of three processes: emergence, sedimentation, and recombination. New methods emerge and are incorporated into the repertoire; methods already present tend to persist, producing sedimentation over time; and practices from different provenances are increasingly mobilized together. The trajectory of Latin American research on digital objects therefore appears less as a linear transition from adapted to digital-native methods than as the cumulative and situated construction of an increasingly broad and interconnected methodological repertoire.

This finding also allows us to reconsider what counts as methodological innovation in digital research. If innovation is understood primarily as the creation of methods derived from the specific properties of the medium, the persistence of adapted methods may be interpreted as evidence of dependence on earlier repertoires. Yet such an interpretation makes less visible the transformations produced through the adaptation, appropriation, and combination of those repertoires. As suggested by Marres (2017), Marres and Gerlitz (2016), and, in the Latin American context, Gómez-Cruz et al. (2023) and Chavez et al. (2025), methodological practices can be transformed through their articulation with objects, devices, infrastructures, and specific conditions of knowledge production. Our results add a longitudinal dimension to this discussion by showing that adaptation and emergence are not mutually exclusive trajectories: adapted and digital-native methods emerge, persist, and become part of new methodological configurations, including under specific contextual conditions such as those described by Chavez et al. (2025).

It is in this sense that the genealogical and decolonial perspective adopted in this article offers a different reading of the history of digital methods. Rather than asking when Latin American research began to adopt what was later recognized as Digital Methods, we reconstruct the practices that researchers situated in the region actually mobilized when engaging with digital objects. This inversion brings into view

trajectories that may be obscured by histories retrospectively organized around categories that were institutionalized only later. The “before” that matters to this genealogy, therefore, is not merely chronological. It also refers to observing methodological practices before organizing them through a category that only subsequently acquired centrality in the field.

This does not mean claiming a form of Latin American methodological exceptionalism or suggesting that the repertoires identified here developed independently of methodological traditions circulating internationally. On the contrary, our data show the strong presence of these traditions. What the findings allow us to question is the equivalence between circulation and simple reproduction. The persistence, adaptation, and recombination observed here suggest that methodological production can also occur through the situated reconfiguration of existing repertoires, rather than exclusively through the creation of entirely new methods.

Finally, this study has important limitations. The genealogy reconstructed here is necessarily limited to what can be observed through the academic literature indexed in the databases used and through the information available in titles, abstracts, and keywords. It cannot recover the full diversity of methodological practices actually employed by researchers, especially practices that are poorly specified in metadata or published in venues not covered by the databases analyzed. Likewise, the first occurrence of a method in the corpus should not be interpreted as its historical origin, but as its first observable emergence under the collection conditions of this study. Future research could deepen these trajectories through full-text analysis, interviews with researchers, and the reconstruction of specific methodological traditions.

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AI use declaration

Anthropic's Claude was used to assist with the semi-automated classification of the corpus, as described in the Methods section. OpenAI's ChatGPT was used for language editing and the preparation and refinement of excel graphs used

in the manuscript. All classifications, analytical decisions, interpretations, and the final text were reviewed and validated by the author, who assumes full responsibility for the content.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- AppendixCodebook.docx