Comparative Studies of Internet Use:
A Review of SSCI-Indexed Journal Articles, 1969–2019

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To map out the state of the art of comparative studies of Internet use and recognize the contributions and shortcomings in the current literature, we have used a four-dimension framework to conduct a review of journal articles indexed in the Social Sciences Citation Index (SSCI) in the field of communication studies in the Web of Science core collection between 1969 and 2019. Our findings describe comparative studies of Internet use as an increasingly diverse topic in terms of its widespread publication outlets across different (sub)fields in communication studies, along with emerging dimensions of comparison. Meanwhile, conventional pitfalls and limits remain, including the easily ignored consideration and justification of equivalence and comparability in the research object and the analytical method, as well as the remaining dominant cross-territorial perspective and quantitative methods. We offer corresponding proposals to overcome pitfalls and advance future comparative studies of Internet use and, in a broader sense, comparative communication research.

Keywords: comparative research, Internet use, digital media use, review, equivalence, comparability

Comparative research has a long tradition in the social sciences, dating back to, for instance, Robert K. Merton's rectification, "From the time sociology crystallized as a distinct discipline, it has been committed to the comparative study of societies, cultures, and their institutions" (cited in Marsh, 1967, p. v; also see, for instance, Lasswell, 1968; Lijphart, 1971 in comparative politics). However, comparative communication research remains scarce and underdeveloped, with limited progress and a constrained influence in the field (Esser & Vliegenthart, 2017; Hallin & Mancini, 2019; Wang & Huang, 2016). An interest in comparative communication research, with its potential value of theoretical generalizability and transferability, persists

(e.g., Blumler, McLeod, & Rosengren, 1992; Edelstein, 1982; Esser & Hanitzsch, 2013b). As early as 1982, Edelstein (1982) advocated comparative communication research as a field of study within the discipline of communication, yet little exemplary comparative research endures (but see Hallin & Mancini, 2004, 2012; Peterson, Schramm, & Siebert, 1956; Rogers & Shoemaker, 1971). Meanwhile, the comparative endeavors have expanded in recent years, with reflective deliberations on theoretical and methodological concerns and proposals (e.g., Esser & Hanitzsch, 2013b; Hallin & Mancini, 2019; Jensen & Helles, 2015; Livingstone, 2003; Wang & Huang, 2016). As Livingstone (2012) indicated, comparative communication research is "no longer a choice but rather a necessity" (p. 1).

Among many comparative topics, interest in the Internet, and digital media more broadly, has abounded in recent decades (e.g., Anduiza, Jensen, & Jorba, 2012; Kluver, 2007; Livingstone & Haddon, 2012; Ragnedda & Muschert, 2013; Vaccari, 2013), spurred on by the ever-faster expansion, availability, and accessibility of digital communication technologies as a global and transnational media phenomenon. By its very nature, the Internet appears to be an emerging, promising medium for comparative research for at least two reasons. First, the Internet, or Internet-based media, is an increasingly common fixture in contemporary life in many parts of the world; as such, it is shaping societies worldwide in more profound ways than any conventional or legacy media has (Hallin & Mancini, 2019). Taking into consideration the diverse, if not disparate, institutional structures, media ecologies, and audience agency that underpin the trajectory of the Internet in a specific historical period at a specific geolocation (e.g., Balbi & Magaudda, 2018; Dutton, 2013b), comparative Internet research promises great opportunities to disclose whether the technology would amplify or diminish differences across the globe (Hallin & Mancini, 2019; also see Anduiza et al., 2012; Kluver, 2007; Livingstone & Haddon, 2012; Ragnedda & Muschert, 2013; and Hallin's deliberation on the path dependence and digital technology and Mancini's elaboration on "technology critical juncture" in this Special Section). Second, as a tool for research, the Internet enables easier and cheaper sampling techniques and data collection (e.g., online survey and electronic data collection as related to conventional paper-and-pencil surveys), as well as larger samples across territories (Fricker & Schonlau, 2002; van Selm & Jankowski, 2006). Thus, while a dearth of data partially constrains earlier comparative communication research, the Internet offers favorable conditions for boosting the probabilities of comparative inquiry.

In this article, we focus on the comparative study of Internet use as "the patterns of (non)use across different ICTs [information and communication technologies], social, and institutional contexts" (p. 4) proposed by Dutton (2013a) as one of three objects of Internet studies. Generally speaking, media use, also known as audience reception research, explores (changes in) audience practices and their societal and cultural implications. If earlier comparative analyses of Internet use focused on cases from "advanced Western democracies" (Kluver, 2005, p. 76), emerging research involves non-Western cases to explicate factors that predicate Internet use in different domains across contexts (e.g., Anduiza et al., 2012; Kluver, 2007). Yet a systematic review is rarely conducted to present a state-of-the-art overview of the topic. The lack of such a review prevents us from knowing both contributions and shortcomings in current literature, hindering the advancement of what more could have been done for future development. This article aims to fill the lacuna by carrying out a review of comparative studies of Internet use in journal articles indexed in the Social Sciences Citation Index (SSCI) in the field of communication studies between 1969 and 2019.

The article consists of four parts. Before turning to the framework for the review, it is essential to first understand what we mean by comparative communication research and comparative study of Internet use. We then turn to a discussion of the method and the framework of this review. Third, we present the review of the state of the art of comparative studies of Internet use between 1969 and 2019 with nuances of four dimensions, as developed based on Esser and Vliegenthart (2017)—the equivalence of the object(s) of analysis, the dimension of comparison, the number of cases, and the analysis strategy of comparison—with a critical reflection on the current status. Fourth, the article ends with discussions and proposed solutions for overcoming some of the limitations of present-day comparative studies of Internet use, which also helps to enrich and advance comparative communication research in general.

Literature Review and the Framework of Review

Comparative Study of Internet Use

As an inclusive term, *comparative research* entails a systematic and explicit comparison of various social entities in quantitative and qualitative ways (Mills, van de Bunt, & De Bruijn, 2006). As Mills et al. (2006) explained, in the search for similarity and differences among historically, culturally, or geographically defined social entities and phenomena, "comparisons . . . reveal unique aspects of a particular entity that would be virtually impossible to detect otherwise" (p. 621). In comparative communication research, Esser and Vliegenthart (2017) proposed a general guideline that comprises four criteria. First, comparison should be explicated as "a defining component of the research design" (p. 3). Second, as "an essential ingredient of the explanations comparativists offer" (Ragin, 1987, p. 7), the macro-level unit(s) of comparison—in some cases also known as "macrosocial units"—must be defined and delimited. Third, research should involve the comparison of at least one common "functionally equivalent dimension" of the object of analysis. Essentially, the equivalence of the object of analysis should be carefully selected, examined, and substantiated before moving into comparative inquiry. Fourth, comparative research entails a common theoretical framework with equivalent conceptualizations and methods. Following such criteria, the comparative study of Internet use involves an explicitly stated, well-justified comparative inquiry of the (non)use of the Internet and Internet applications, as well as their societal, cultural, and historical implications, in quantitative and qualitative ways.

The Framework of Review

In this article, we develop a review framework based on Esser and Vliegenthart's (2017) discussion of comparative research methods with four dimensions.

First, the equivalence of the object of analysis. The object of analysis asks "what" kind of communication phenomena comparative research compares. In essence, the comparability of communication phenomena encompasses the equivalence of the object(s) of analysis. As Schramm stressed (cited in Edelstein, 1982), more than absolute or language equivalence, comparative research should aim at identifying the functional or meaning equivalence of key concepts or objects of analysis—that is, similar, if not identical, functionalities. Speaking of cross-cultural comparison, Schramm elaborated that

translating a word is not necessarily achieving a conceptual equivalent, or a similar cultural feeling tone. Similar behavior in two cultures is not necessarily equivalent behavior. Difficulties like these are one reason why theory is scant in the comparative field. (cited in Edelstein, 1982, p. 11)

For instance, terms such as *race* (Gravlee, 2005) would vary significantly in different contexts and would therefore have to be validated before being applied to cross-context comparison so as to avoid a taken-for-granted consideration of its context-transcending quality. Failure to justify the equivalence of the object(s) of analysis consequently risks the danger of incommensurability (Wang & Huang, 2016). Notably, Ragin (1987) pointed out that "most comparativists are more interested in making comparisons than in defining the objects of their comparisons" (p. 6). Furthermore, Esser and Vliegenthart (2017) underlined that to "ensure equivalence . . . the ability to validly collect data that are indeed comparable between different contexts and to avoid biases in measurement, instruments, and sampling" (p. 3) is needed. In other words, equivalence also speaks to the equivalent instrument to measure analytical objects or constructs empirically. All in all, careful consideration and clear deliberation of the equivalence of the object of analysis do not just "separate comparativists from noncomparativists" (Ragin, 1987, p. 5) but also represent to what extent comparative speaking in communication studies evolves into a mature research field.

Second, the dimension of comparison. Traditionally defined as "a study that compares two or more nations with respect to some common activity" (Edelstein, 1982, p. 14), the dominant approach to comparative research is cross-spatial comparison—that is, to contrast different countries, territories, or groups of political systems in a way that allows researchers to compare the object of investigation at the same time. In line with such orientation, studies usually employ a more or less standardized research design that treats the country as the natural default setting, an approach taken in most early comparative studies (e.g., Ebbinghaus, 2005; Marsh, 1967; Mills et al., 2006; van de Vijver, Leung, & Leung, 1997)

Later scholars, such as Blumler et al. (1992) and Esser and Vliegenthart (2017), added the temporal dimension (longitudinal study) to supplement the traditional, cross-spatial dimension of comparison. As characterized by Blumler et al. (1992), comparison assumes "two or more geographically or historically (spatially or temporally) defined systems" in which "the phenomena of scholarly interest" are conceived to be "embedded in a set of interrelations that are relatively coherent, patterned, comprehensive, distinct, and bounded" (p. 7). The longitudinal comparison is valuable, but has been limited in its use— probably due to the unavailability of time-series data—because it takes into account the fact that macro-level units are not static, but instead constantly changing under the influence of a societal transformation process (see, for instance, Hallin & Mancini's 2019 discussion on media systems as not "static"). The third dimension of comparison, suggested by Caramani (2011; also see Esser & Hanitzsch, 2013a), is functional (cross-organizational or cross-process) comparison. Our review thus delves into which dimension of comparison has been taken in existing studies and whether a combination of two or three dimensions was considered (i.e., cross-spatial, cross-temporal, and cross-organizational or process), as has been suggested.

Third, the number of comparative cases. The number denotes whether a study involves a mono-national/single-national case study design, a small-N (two to nine) comparative analysis design, or a large-

N (with 10+ cases) comparative analysis design. As addressed, case selection or sampling remains one of the most critical issues in comparative research because it exemplifies a deliberate choice based on theory-driven or variable-based comparative methods (Ebbinghaus, 2005; Seawright & Gerring, 2008). Unlike some studies, such as Marsh (1967), that do not consider mono-national—or what the author called "intro-societal comparison"—as a comparative study, we follow Esser and Vliegenthart's (2017) suggestion to include this as one category in the third dimension.

Fourth, the analysis strategy of comparison. The analysis strategy considers the choice and combination, if any, of method(s). We look at whether the study employs a (1) mixed, (2) qualitative, or (3) quantitative method. In cases of a quantitative method, we further examine four types of statistical analyses in terms of Esser and Vliegenthart's (2017) typology: descriptive comparisons, basic explanatory analysis, comparison of relation, and comparative explanatory. Recognizing Hallin and Mancini's (2017) reminder that comparative research is "heavily dominated by quantitative methods" (p. 165), we especially want to investigate the diversity of different methods in the existing comparative studies of Internet use.

Method

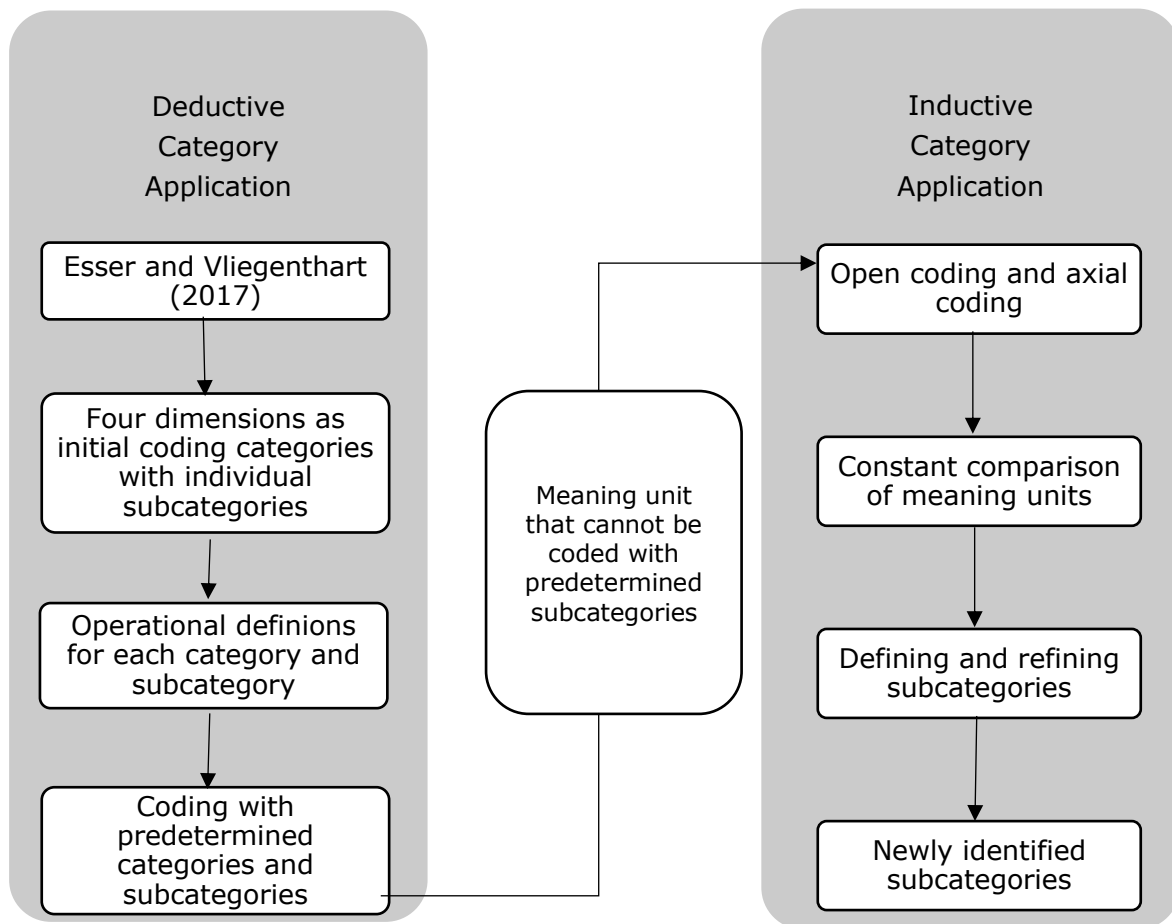### Sampling

As an initial step to assess knowledge relating to comparative studies of Internet use within the communication field, this study reviewed journal articles published in SSCI-indexed communication journals, of which there are 70. The publication years ranged from 1969 to 2019, because 1969 marks the birth of the U.S. Defense Department's Advanced Research Projects Agency Network, the precursor to the computer networks today known as the Internet (Balbi & Magaudda, 2018). The keyword-screening method was applied in the Web of Science databases on November 9, 2019, and the keywords "comparison" or "comparative" and "Internet use," "digital media use," or "social media use" were used in all fields, yielding 60 academic journal articles. Then we examined this list of articles and only included those that put comparison as a primary focus. In terms of our definition, articles that did not essentially address the comparative theme in their research questions, hypotheses, or propositions were removed from the list. This process resulted in a final sample of 45 articles published in 25 academic journals between 2000 and 2019 (list available from the authors).

Coding Process

The two authors served as coders for the sample articles. Two coders first coded the journals and published years. A combined deductive and inductive qualitative content analysis (Drisko & Maschi, 2015; Schreier, 2012) was then applied to the sample articles (see Figure 1). This coding began with the use of the deductive category. The sample articles were first coded under the proposed four-dimension framework presented in the preceding review. More specifically, two coders read and identified meaning units in the sample articles deductively using the four predetermined categories: (1) whether the study defines the equivalence of the object of analysis (yes/no and how); (2) the dimension of comparison (cross-territorial, cross-temporal, and cross-functional); (3) the number of comparative cases (mono-country as one case, 1– 10 cases, or more than 10 cases); and (4) the methodological choice (qualitative, quantitative, or mixed

method). Data that could not be coded were identified and analyzed through an inductive category (Mayring, 2004) to determine if they represented a new subcategory under the four predetermined categories. As these new categorizations emerged, they were in turn operationalized for reference in the coding framework. Consequently, all articles were categorized into the four-dimension framework with predetermined and emerging subcategories. The initial intercoder, measured by Cohen's kappa, was between 0.931 and 0.986. After that, the two coders resolved disagreements or discrepancies through joint discussions.


Deductive Category Application

- Esser and Vliegenthart (2017)
- Four dimensions as initial coding categories with individual subcategories
- Operational definions for each category and subcategory
- Coding with predetermined categories and subcategories

Meaning unit that cannot be coded with predetermined subcategories

Inductive Category Application

- Open coding and axial coding
- Constant comparison of meaning units
- Defining and refining subcategories
- Newly identified subcategories

Figure 1. A combination of deductive and inductive content analysis procedure.

Findings

In this section, we first present the general trend in comparative studies of Internet use in the review. Second, we explicate the state of the art of studies on comparative studies of Internet use in terms of the review framework.

Figure 2 shows the total number of comparative studies of Internet use by year in the chosen time span. Although our search uses 1969 as the starting year, comparative studies of Internet use arose after entering the 21st century and steadily grew between 2010 and 2016, with a peak (N = 10) in 2016, before dropping to two articles in 2017. As of November 9, 2019, the date we carried out the literature search, there were already five articles on comparative studies of Internet use in 2019, implying the second peak of this topic.
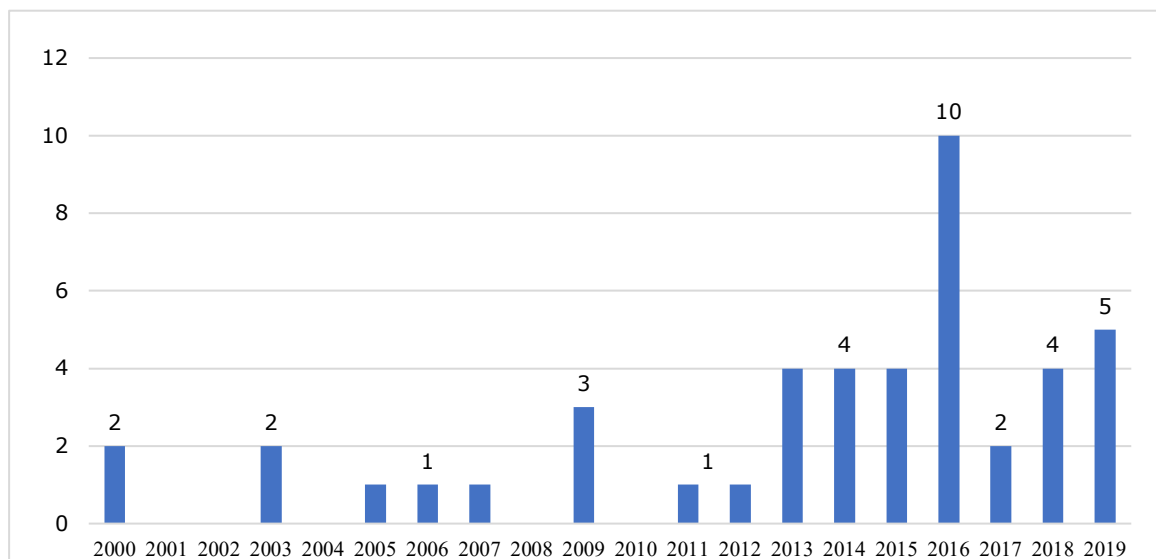
Figure 2. Total number of articles on comparative studies of Internet use by year, 2000 through November 9, 2019.

What journal(s) have published comparative study articles on Internet use? In total, 25 SSCI-indexed journals in the field of communication studies have thus far published articles containing comparative studies of Internet use. As Table 1 shows, *New Media & Society* (N = 5) and *Information, Communication & Society* (N = 4) are top among all journals in publishing articles on the topic. Following these, *CyberPsychology & Behavior*, *Digital Journalism*, and the *International Journal of Communication* published three articles, followed by *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, *European Journal of Communication*, *International Journal of Advertising*, *Journal of Broadcasting & Electronic Media*, *Journal of Computer-Mediated Communication*, *Journal of Health Communication*, and *Media International Australia*, with two articles on comparative studies of Internet use, respectively. The remaining 15 journals published one article on the topic.

Table 1. Total Number of Articles by Journal.

| Journals	Number of publications
New Media & Society	5
Information, Communication & Society	4
CyberPsychology & Behavior	3
Digital Journalism	3
International Journal of Communication	3
Cyberpsychology: Journal of Psychosocial Research on Cyberspace	2
European Journal of Communication	2
International Journal of Advertising	2
Journal of Broadcasting & Electronic Media	2
Journal of Computer-Mediated Communication	2
Journal of Health Communication	2
Media International Australia	2
Asian Journal of Communication	1
Chinese Journal of Communication	1
Communications: The European Journal of Communication Research	1
International Communication Gazette	1
International Journal of Mobile Communication	1
International Journal of Press-Politics	1
Javnost—The Public	1
Journal of African Media Studies	1
Journal of Language and Social Psychology	1
Journal of Media Psychology	1
Journalism	1
Journalism & Mass Communication Quarterly	1
Public Opinion Quarterly	1

The publication records of comparative study articles on Internet use in different journals illustrate the follow-up two characteristics. For one thing, the diverse publication outlets demonstrate that comparative studies of Internet use are spread widely in multiple fields and subfields in communication studies, including journalism, digitally mediated communication, media sociology, media psychology, international communication, and health communication. For another, whereas journals with a specific focus on digital technology, such as *New Media and Society*, *Information, Communication & Society*, and *Digital Journalism*, have tended to publish more comparative studies of Internet use so far, journals with an explicit comparative perspective, such as *International Communication Gazette* (which, in its "Aims and Scope," "seeks contributions comparing two or more countries or regions") and *International Journal of Press-Politics* (stating in its "Aims and Scope" that "the Journal encourages comparative, cross-national research from various theoretical and methodological approaches across the social sciences") have smaller publications records regarding these comparative studies. This by no means implies that the latter are less interested in publishing such comparative studies; rather, it sheds light on potential publication venues for Internet- or

digital-technology-related comparative studies in the future, which would specifically advance the well-established dialogue on comparative communication research in these journals.

The Equivalence of the Object of Analysis

In our sample (Figure 3), 62% of the articles (28 of 45) included the definition and justification of the equivalence of the research object before moving into empirical, comparative analysis. For instance, Jung (2008) defined "Internet connectedness" as a multidimensional approach with the three subdimensions of scope, intensity, and centrality to compare Internet use via PCs and mobile phones. Bossio and Holton (2019) expounded on key concepts such as "social media fatigue" as "the constant pressure to professionalize the often-personal contexts" due to always-on social media-related stressors and defined "disconnection strategies" as "the strategic ways users make social media work according to individual needs" (p. 4) before examining the different ways in which Australian and American professional journalists experienced and managed fatigue with disconnection strategies. Groshek and Christensen (2017) delimited the concepts of violent and nonviolent political conflicts, "emerging media," and "media system" in their cross-countries time-series comparison to delve into how levels of emerging media and press freedoms become predictors of nonviolent and violent conflict.
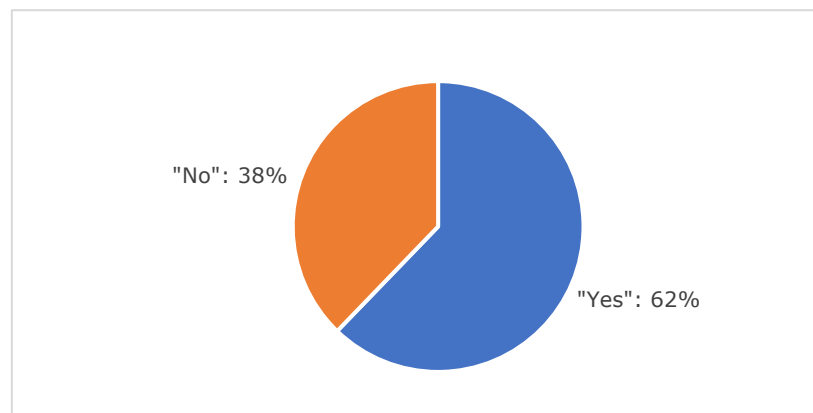

Figure 3. Numbers of articles with or without discussion on the equivalence of the object of analysis.

Nevertheless, 38% of the articles (17 of 45) did not include such a justification in their comparative studies. For instance, exploratory studies on journalists' use of social media in France and the United States (Powers & Vera-Zambrano, 2018), on social and psychological difficulty among Internet users (Modayil, Thompson, Varnhagen, & Wilson, 2003), and on civic and digital participation among young people in Italy and the United Kingdom (Mascheroni, 2017) engaged with rather open-ended questions regarding key terminologies in the study without delineating (the equivalence of) their meanings in advance. Similarly, explanatory studies on, for instance, the religious use of the Internet in Japan and the United States (Kawabata & Tamura, 2007) and news media use, press freedom, and political participation among individuals at various education levels (Ahmed & Cho, 2019) did not elaborate on whether their objects of analysis, such as online religious and political participation, could be applied to different territories.

The Dimension of Comparison

For the dimension of comparison (Figure 4), or the comparative perspective, cross-territorial comparison remains dominant in our sample of comparative study of Internet use, with 58% (26 of 45 articles). The second type, cross-temporal comparison, stands for 9% (four of 45 articles). The third type, cross-functional comparison, occupies 4% (two of 45 articles) and exemplifies cross-media research that scrutinizes the use of different media, such as television and the Internet (Hooghe & Oser, 2015), and mobile phones and PCs (Jung, 2008).
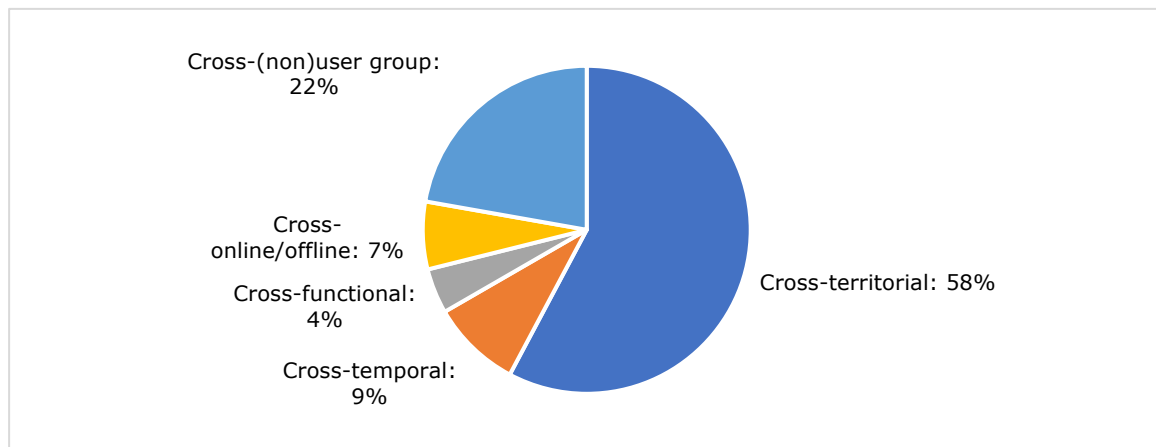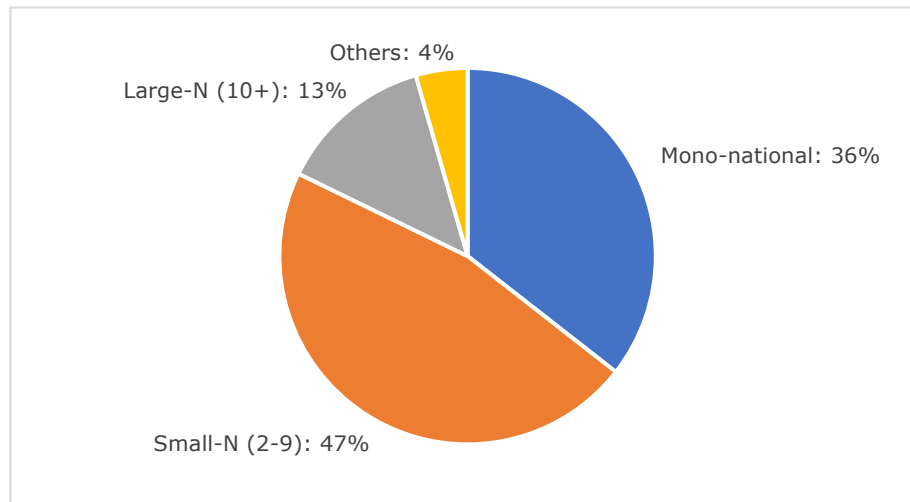

Figure 4. Number of articles with different dimensions of comparison.

Apart from these three predefined categories, we have further identified, using the inductive approach, two emerging categories in comparative studies of Internet use, which we have tentatively defined as cross-(non)user-group and cross-online/offline comparisons. For cross-(non)user-group comparison (22%, 10 of 45 articles), studies delve into (non)user properties to interpret their similarities or differences. The comparison has been conducted between users and nonusers of the Internet (Kent Jennings & Zeitner, 2003) or a specific platform (Mackson, Brochu, & Schneider, 2019), across different sociodemographics such as age (Kezer, Sevi, Cemalcilar, & Baruh, 2016), race (Jones, Johnson-Yale, Millermaier, & Pérez, 2009), gender (Jones et al., 2009; Kyun Choi, Kim, & McMillan, 2009; Weiser, 2000), or users' typologies (Fukamizu, 2007; Metzger, Flanagin, & Nekmat, 2015; Rosenthal, 2016). Next, as illustrated by its name, cross-online/offline comparison (7%, three of 45 articles) explores the differences between online and face-to-face situations (Lipinski-Harten & Tafarodi, 2012; Peter & Valkenburg, 2006).

The Number of Comparative Cases

Our findings on the number of comparative cases (Figure 5) shows that 47% of articles (21 of 45) have adopted small-N comparative analysis design with case numbers between two and 10. Mono-, or single-country designs make up 36% (16 of 45), while large-N comparative studies with more than 10 countries remain less common, at 3% (six of 45).
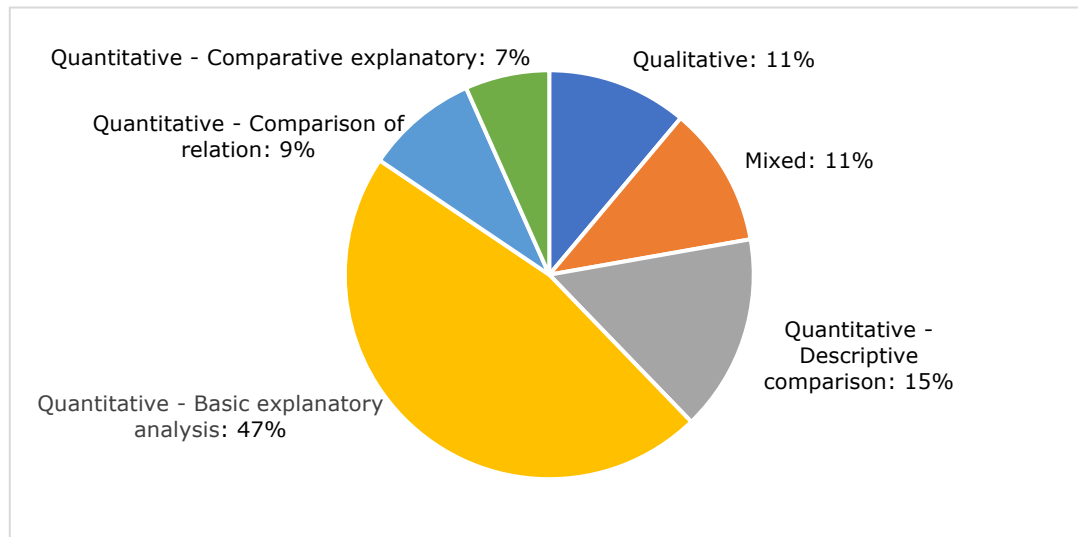
Figure 5. Numbers of articles with different numbers of cases.

Notably, we found it difficult to put 4% of the articles (two of 45) into the preceding three predefined categories. Both studies (Modayil et al., 2003; Weiser, 2000) compared a sample from an Internet-administered survey with a sample from a traditional survey. However, we considered it problematic to treat them as the small-N comparative analysis because the samples or cases were not equivalent or comparable. The phrase "comparing apples and oranges" implies differences between items that are incomparable or incommensurable. As Modayil et al. (2003) recognized, it is difficult to use the Internet-based survey to represent Internet users in general, so as to make further comparisons with a nationally representative sample. A comparison between a convenience sample (i.e., introductory psychology students) and an Internet-administered survey sample in Weiser's (2000) study raises a similar concern over the equivalence of cases and the validity of comparative results.

The Analysis Strategy of Comparison

In a reflection on research operationalizing concepts or testing the framework in their seminal *Comparing Media Systems,* Hallin and Mancini (2017) remarked on the domination of quantitative methods in comparative research. Our findings (Figure 6) draw a similar picture, displaying that articles with quantitative methods still occupy a significant majority, with 78% (36 of 45 articles). Studies with qualitative and mixed methods share the rest, both with 11% (five of 45), respectively.

Figure 6. Number of articles with different analysis strategies of comparison.

Most articles with qualitative approaches are explorative, with the interview used to generate insights into the meaning behind practices (Mackson et al., 2019; Mascheroni, 2017; Papa & Milioni, 2016; Powers & Vera-Zambrano, 2018). Other qualitative methods involve qualitative descriptive approaches (Kawabata & Tamura, 2007). The articles with mixed methods employ, for instance, ethnographic content analysis, which is "between quantitative content analysis and participant observation" (Lemke & Chala, 2016, p. 172), and a combination of quantitative and qualitative content analysis (Macnamara & Kenning, 2011, 2014).

If we then look into details of the studies with quantitative methods in terms of the typology proposed by Esser and Vliegenthart (2017), those conducting basic explanatory analysis, or examining "whether certain variables at the unit level impact other variables measured at the same level" (p. 13), constitute 47% of the total number of the sample (21 of 45 articles). For instance, Mackson et al. (2019) delved into psychological well-being between Instagram users and nonusers. Ragnedda, Ruiu, and Addeo (2019) probed the relationship among digital capital, the accumulation of digital competencies and digital technologies, and selected socioeconomic and sociodemographic patterns. Descriptive comparisons—that is, comparisons "to describe the occurrences of certain phenomena and how these occurrences vary between cases" (Esser & Vliegenthart, 2017, p. 12)—make up 15% (seven of 45 articles) of the total sample, including, for instance, a comparative network analysis and content analysis of social media use among Japanese and South Korean public diplomacy organizations (Park & Lim, 2014). This is followed by comparison of relation, or "investigating in different contexts the relationship between an independent and a dependent variable" (Esser and Vliegenthart, 2017, p. 15), which numbers 9% (four of 45 articles). For instance, Dutton and Reisdorf (2019) analyzed how different Internet cultures shape digital divides in Internet access and social media use, and Chu, Windels, and Kamal (2016) tested the influence of self-construal and materialism on the use of social media platforms in China and the United States. Last, comparative explanatory that "addresses explanations for different relationships across units" (Esser & Vliegenthart, 2017, p. 15) accounts for 7% (three of 45 articles; Hampton & Ling, 2013; Notten & Nikken,

2016). The findings suggest that, for one thing, statistical techniques such as multivariate analyzes have been increasingly adopted in comparative studies of Internet use. For another, according to Esser and Vliegenthart (2017), deeper comparative inquiries through comparison of relation and comparative explanatory (with multilevel models, for instance) remain scarce.

Discussion

In this section, we discuss and reflect on the findings from the review and their implications. We present three proposed suggestions not only to advance comparative knowledge in the ever-changing domain of Internet use, but also to move forward comparative communication study to be a mature field within the broad landscape of communication studies. Our suggestions identify both fundamental principles (what research should have), that is, equivalence and comparability, and the diversity of comparative perspectives and methodological complexity as advanced proposals (how research itself would be better).

The Delineation of Equivalence

Comparative research necessitates a deliberation and justification of the object of analysis to ensure its equivalence in comparisons. A careful consideration of the object thus illustrates strict comparative criteria that must be applied in research to make sure that the ideas, variables, and patterns found in one context are not uncritically extrapolated across varieties. Schramm reminded us of "the horrendous difficulty of trying to make comparable measurements in different cultures" (cited in Edelstein, 1982, p. 10). In the same vein, Edelstein (1982) reminded us, "If a concept has not been examined *comparatively*, one must be cautious about making inferences *across nations*" (p. 19, emphasis in original). In comparative studies among nations and cultures, for instance, Edelstein (1982) used Rogers and colleagues' study about innovation in Costa Rica and India to illustrate the question of equivalence; he asked,

> Was the meaning in the two languages (a Hindi dialect and Spanish) of an innovation such as a chemical fertilizer or a vaccination culturally equivalent? Languages will differ in their ability to reflect cultural differences in the expression of adoptive behavior. (p. 38)

The lack of defining, contextualizing, and justifying the equivalence of the research object easily draws the subsequent criticism of equivalence in later comparisons. In our review, Kawabata and Tamura's (2007) comparative study on religious Internet use in the United States and Japan would risk the danger of oversimplifying or even failing to capture a wide divergence of religious behaviors and the ways in which religious faith is manifest in the use of the Internet across contexts. For one thing, the authors acknowledged that the Japanese population holds "a narrow and generally negative view of religion" (p. 1002) and religious groups "as frightening institutions" (p. 1003), which causally leads to "little religious use of the Internet" (p. 1003). For another, as "the most religious nation on earth" (p. 1), in the words of Fuller (2001), the United States has a population in which more than 80% identify themselves with a specific religion while engaging with diverse spiritual and religious practices online (Jansen, Tapia, & Spink, 2010). To be clear, because Japanese and Americans hold significantly different understandings of what counts as "religion," to compare religious use of the Internet between these two countries without first scrutinizing the conceptual

and further meaning equivalence of the crucial term *religion* in different contexts risks the danger of naïve universalism and makes comparison problematic and controversial, even misleading readers.

The concern over the equivalence of the research object also requires a consideration of possible changes of even the same concept over time. Lijphart (1971) reminded us that even "the same country is not really the same at different times" (p. 689). The same applies to, for instance, cross-temporal comparison. An instructive example is Kezer and colleagues' (2016) research that compares privacy attitudes and management across different age groups. It explored privacy management, that is, "people's control over circulation of personal information, [which] comprises utilization of strategies (also called privacy rules) to control individual and/or group boundaries" (para. 4) However, the research examined privacy-related attitudes and behaviors while taking for granted the meaning equivalence of the key term *privacy* across age groups. In other words, it presupposed that no difference existed in the meaning of privacy—what privacy actually is—from one age group to another. Yet, as studies disclose (Steijn & Vedder, 2015a, 2015b), youth have an alternative conception of privacy that subsequently orients their privacy concerns differently from those of the older population. Analyzing privacy attitudes and management without an interrogation of the concept of privacy as the analysis object for equivalence across ages may thus problematize in this case the essence of comparability across age groups.

As illustrated, the concern over the equivalence of the object of analysis undoubtedly remains one of the serious fundamental issues in the topic of comparative studies of Internet use. The procedure of deliberating equivalence is imperative, yet not always easily attained, nor does it draw sufficient awareness among our sample. On a more concrete level, although more than 60% of the articles in the sample show awareness of, and hence consideration of, this issue before engaging in an empirical analysis, the remaining ones still suffer from the issue that no criteria of comparison were consistently applied to establish more than formalistic equivalences among the phenomena labeled with the same word. Failing to achieve valid equivalence across either cultures or times thus hampers the development and nature of comparative communication research.

Given that the equivalence of research object(s) is central to the practice of comparative research, it seems quite necessary that the lack of the consideration on the equivalence continue to draw scholars' attention within comparative study. Consequently, to overcome current shortcomings, comparative communication research necessitates that an equivalence-oriented interrogation and deliberation of central elements of comparison, conceptually and methodologically, especially the object of analysis, occur before the collection of data to prevent ad hoc analysis. The nature of comparative communication research can best be understood only when a study achieves equivalence in the first instance. As Schramm (cited in Edelstein, 1982) specified, this includes "equivalence in making comparisons in a case in point; equivalence of concepts, equivalence of meaning in language, equivalence of stimulus situations, data analysis, and reporting" (p. 10). We especially call for more equivalent-grounded object of analysis to expatiate on the rationale of comparative study; otherwise, comparative researches may fail to transcend the limited social, cultural, and temporal contexts of their studies.

The Deliberation of Comparability

Our findings also draw attention to an often overlooked aspect of case selection in a comparative study: a surprising lack of information about the comparability of the case, or "two or more items have not enough in common" (Sartori, 1970, p. 1035). As our illustrative cases exemplify, whether—and to what extent—an Internet-based sample is comparable with either a sample from a comprehensive survey (Modayil et al., 2003) or a convenience sample of university students in a specific major (Weiser, 2000) remains unjustified. Similarly, it becomes essential for a study to validate issues such as why and how— that is, why, and to what extent, cross-online/offline, cross-(non)user-group, or even an increasingly fashionable cross-platform (Alhabash & Ma, 2017) comparison is commensurable (Wang, 2014). For instance, in what sense are popular social media platforms like Facebook and Snapchat comparable conceptually and methodologically, apart from the oversimplified and reductionist fact that they can be characterized as social media or social networking sites? And how should we conduct such comparison in light of equivalence as discussed earlier? To select a "'comparable' case" consequently raises as an essential, yet less acknowledged, issue that, if taken carelessly, may lead to "dangerous equivocations and distortions" (Sartori, 1970, p. 1035).

Surprisingly, comparative literature rarely covers this issue because it might seem to have more to do with case selection than comparative methodology. This unfortunately leads to what Sartori (1970) criticized: "The taxonomical requisites of comparability are currently neglected, if not disowned" (p. 1036). With the metaphor that "stones and rabbits cannot be compared" (p. 1052), Sartori argued against what he considered "meaningless togetherness"—that is, putting incomparable or incommensurable cases together for comparison. Likewise, Lijphart (1971) underlined that comparability (of a cross-country study) in the case selection is not "a randomly selected set of countries" (p. 689).

A feasible way to address this issue is to involve precisely defined criteria of case selection to ensure the comparability of the case. To compare, as Sartori (1970) stated, is "'to assimilate,' i.e., to discover deeper or fundamental similarities below the surface of secondary diversities" (p. 1035). In other words, having a reasonably well-delimited case is a precondition for the comparative analysis of cross-case patterns. To do so, comparable cases should be intensively and systematically examined to ensure that they are comparable; they must belong first to the same class with a standard classification system. Case selection in small-N and large-N comparative studies should be sensitive to the issue of the level of the selected case(s), comparably speaking, before probing into empirical inquiry across otherwise incomparable cases. That is, the essence of comparison lies in that to carry out intensive and systematic examination in the selection of cases so as to recognize "similar in a large number of important characters (variables) which one wants to treat as constants, but dissimilar as far as those variables are concerned which one wants to relate to each other" (Lijphart, 1971, p. 687). Especially as digitally mediated phenomena develop, cases in comparative research increasingly integrate more features of the Internet. We have to face the challenge of considering the comparability between digitally mediated and face-to-face phenomena or among digitally mediated cases.

Toward the Diversity of Perspectives and Methodological Complexity

The scrutiny of the dimension and analysis strategy of comparison delineates two emerging phenomena among comparative studies of Internet use, but it also sheds relevant light on comparative communication studies in a general sense.

First, apart from what we could call "conventional" dimensions or perspectives, such as cross-national, cultural, territorial, temporal, and functional comparisons, studies have developed with new, diverse perspectives to carry out comparative inquiries in practice. In doing so, they downplayed or looked beyond variables such as nation-state and country as the "natural" default category of comparative analysis (Esser & Hanitzsch, 2013a); this allows us to observe the decline of distinction and its corollary cultural and social differences across a nation's territorial boundary and to establish new exploratory variables or schema accounting for the increasingly globalizing, but by no means homogenous, world. This move resonates with Lijphart's (1971) proposal in comparative politics that "nationality can simply be treated as an additional variable on a par with other individual attributes such as occupation, age, sex, type of neighborhood, etc." (p. 685). The widespread penetration of the Internet and, further, the digital platforms of social networking (e.g., van Dijck, Poell, & de Waal, 2018) call especially for a reconsideration and a revision of existing comparative perspectives to involve those emerging, diverse perspectives, largely shaped but not determined by technology, in the comparison. The comparison between online and offline populations addresses the long-existing issue of the digital divide (that is, the uneven distribution in the access to, use of, or impact of ICTs, and hence the exclusion from many of the benefits that ICT can bring) between distinct groups since the invention of the digital technologies, as well as its recent transformations (e.g., Norris, 2001; van Deursen & van Dijk, 2011; Warschauer, 2002, 2004). The comparison among (non)user portraits nuances how people with different properties select, navigate, and maneuver through a media-rich environment. These inquiries consequently mark unique contributions from communication research toward the comparison domain.

Second, comparative communication research should advocate methodological reflection and complexity in either the dimension of comparison or comparative methods as a way to encourage more inspiring comparative studies. For one thing, even though studies have already advocated combining cross-territorial and cross-temporal perspectives, our review reveals that research with a combined perspective remains vacant even though such "comparisons facilitate and qualify the interpretation of longitudinal data within particular cultural contexts" (Hasebrink, Jensen, van den Bulck, Hölig, & Maeseele, 2015, p. 453). In this case, Lerner's (1958) seminal work on the changing Middle East can be seen as an instructive example of comparison over both time and space rather than at one time or in one space. For another, diverse combinations of mixed methods are also needed to discover contextuality (Goodin & Tilly, 2006; Lasswell, 1968) and to advance the progress of comparative inquiry. Just as Downey points out in this Special Section, comparative communication studies in general, including comparative studies of Internet use, demands sustained methodological reflection that helps make such research more robust individually and systematic collectively—but such reflection may also serve to open up new ways of addressing empirical questions comparatively and more interdisciplinary lines of inquiry.

Conclusion

To map out the state of the art of comparative studies of Internet use, we have conducted a review with a four-dimension framework of SSCI-indexed journals in the field of communication studies in the Web of Science core collection published between 1969 and 2019. Our preliminary findings portray the comparative studies of Internet use as an increasingly diverse topic in terms of its wide-spreading publication outlets across different (sub)fields in communication studies, along with emerging dimensions of comparison. Meanwhile, conventional pitfalls and limits remain, including the easily ignored consideration and justification of equivalence and comparability in the research object and the analytical method, as well as the remaining dominant cross-territorial perspective and quantitative methods. We hence offer corresponding proposals to overcome pitfalls and advance future comparative communication research.

As a preliminary review of the fast-growing topic of Internet use, our article has several limitations. First, our sampling method covers a specific bounded data set—SSCI-indexed journals in the Web of Science core collection—and therefore does not cover, for instance, journals included in the Emerging Sources Citation Index, books, and book chapters. This leaves relevant publications out of consideration, such as Anduiza et al. (2012) and Vaccari (2013) on comparative study of the political use of the Internet, and Miller and Slater (2000) on comparative ethnographical study of Internet culture and consumption. Second, our sample is only based on the results of the keyword-screening method, which leaves out of consideration those articles that did not employ selected keywords, but nonetheless addressed comparative issues—for instance, Hasebrink et al. (2015). It is hereby recommended that the methodology be extended by searching the references of the articles identified in the initial search and searching for research that cites these articles in order to have a comprehensive overview of research on comparative studies of Internet use.

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