

## **Media Representations of Academia: Mapping and Typologizing News Coverage of All Swiss Higher Education Institutions**

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Higher education institutions (HEIs) are pivotal organizations in knowledge societies. A growing need for societal legitimation has led many HEIs to expand their media efforts—as news media are important sources through which both the broader public and stakeholders inform themselves about HEIs. Despite this importance of the news media–HEI nexus, few studies have analyzed it, and the scholarship has considerable gaps. Most studies focus on few news outlets, specific media types, or coverage of a few research universities. Therefore, this study provides a comprehensive picture of coverage of all Swiss HEIs across diverse media. Using data from quantitative content analysis of news articles ( $N = 5,732$ ), official statistics, and HEI websites, we conducted a hierarchical cluster analysis to map coverage. We identified 6 types of HEIs that differ from official distinctions of HEIs, are portrayed differently in news media, and exhibit different structural characteristics. Only 2 types receive a high amount of coverage, showing that few large and strongly resourced universities have great advantages in the competition for visibility.

*Keywords: media coverage, journalism, higher education, scientific organizations, public relations, mediatization of science, typology of media representations, quantitative content analysis*

Higher education institutions (HEIs) are pivotal organizations in contemporary “knowledge societies” (Frank & Meyer, 2007; Schäfer & Fähnrich, 2020; Stehr, 1994, pp. 9–11) in which all social spheres are penetrated by scientific knowledge. In past decades, the higher education sector has expanded

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Date submitted: 2020-12-28

<sup>1</sup> This research was funded by the Swiss National Science Foundation (SNSF) under Grant Agreement No. 174992. Data for content analysis were provided by the Forschungszentrum Öffentlichkeit und Gesellschaft (fög) of the University of Zurich.

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considerably in many countries, with growing student enrollment, newly founded colleges and universities, and rapid increases in research output (Denzler, 2014; Frank & Meyer, 2007; Lepori, 2008; Marginson, 2016; Weingart, 2001). Since the 1990s, a growing need for societal legitimation has led many HEIs to establish communication and marketing offices and professionalize their communication efforts on various channels, including the increasing proliferation of media releases and newsletters, websites, and social media (Atakan-Duman, Pasamehmetoglu, & Bozaykut-Buk, 2019; Engwall, 2008; Marcinkowski, Kohring, Fürst, & Friedrichsmeier, 2014; Rowe & Brass, 2011). News media have been, and still are, important sources through which the broader public, stakeholders, and decision makers inform themselves about HEIs (Donk, Gehrau, Heidemann, & Marcinkowski, 2019; Lehmkuhl, 2019; Kim, Carvalho, & Cooksey, 2007; Marcinkowski et al., 2014; Scheu, Volpers, Summ, & Blöbaum, 2014; Vogler, 2020; Wilkins & Huisman, 2013). Accordingly, scientists, scientific organizations, and HEIs strive to increase and enhance their public visibility by adapting their practices and communication efforts to the routines and news values of media outlets, a trend that has been called the mediatization of science (Marcinkowski, Kohring, Friedrichsmeier, & Fürst, 2013; Peters, Heinrichs, Jung, Kallfass, & Petersen, 2008; Scheu et al., 2014; Weingart, 2001).

Despite this importance of the news media–HEI nexus, the scholarship has considerable gaps, with only a few studies comprehensively investigating how HEIs are portrayed in news media (Friedrichsmeier, Laukötter, & Marcinkowski, 2015; Laukötter, 2014). Most studies focus on a small number of news media outlets and specific media types, particularly print newspapers and magazines (Aspara, Aula, Janne, & Tikkanen, 2014; Hegglin & Schäfer, 2015; Heyl, Joubert, & Guenther, 2020; Kim et al., 2007; Lee, Wanta, & Lee, 2015; McKenzie & King, 2016; Quartararo, 1978; Rudy & Ten Eyck, 2006; Sumner et al., 2014; Vogler & Schäfer, 2020b). Very few have analyzed how broadcast media report on HEIs (Machill, Beiler, & Schmutz, 2006). Moreover, while most studies examine the coverage of research universities (Hegglin & Schäfer, 2015; Lee et al., 2015; Sumner et al., 2014; Vogler, 2020; Vogler & Post, 2019) and are designed as case studies (Aspara et al., 2014; Heyl et al., 2020; Kim et al., 2007; Lynch, Bennett, Luntz, Toy, & VanBenschoten, 2014; McKenzie & King, 2016; Rudy & Ten Eyck, 2006; Vogler & Schäfer, 2020b), we know little about coverage of other HEIs and potential differences between them.

This article contributes to filling these gaps via a comprehensive picture of coverage of HEIs in Switzerland (all 44 of its research universities, universities of applied sciences, and colleges of education) and analyzing a broad media sample, including television, radio, online, and print.<sup>2</sup> Using data from quantitative content analysis, official statistics, and HEI websites, we conducted a cluster analysis to map how Swiss HEIs are portrayed and identify different types of media representation. In the following, we first review scholarship on media coverage of HEIs and then describe our methodological approach and results.

### **Literature Review: Media Coverage of Higher Education Institutions**

Numerous studies investigated the coverage of scientists and scientific knowledge (e.g., Elmer, Badenschier, & Wormer, 2008; Wien, 2014; for an overview: Schäfer, Kessler, & Fähnrich, 2020). They

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<sup>2</sup> Since September 2020, three universities of applied sciences (HSR Hochschule für Technik Rapperswil, FHS Fachhochschule St. Gallen, and NTB Neu-Technikum Buchs) have been merged into one HEI, leaving 42 Swiss HEIs.

found most news reports on scientists mention their university affiliation (e.g., Wien, 2014). However, only a few studies analyzed in detail how HEIs are represented in news media. While organizations have gained importance in science communication, both science communication and strategic communication research have paid little attention to scientific organizations. Therefore, Schäfer and Fähnrich (2020) argued "it is time for an organizational turn in science communication research" (p. 137) and called for more studies investigating media representations of scientific organizations. Studies on the organizational level, and specifically on HEI coverage, are crucial for understanding mediatization processes (Marcinkowski et al., 2014; Scheu et al., 2014). Similar to coverage of other institutions, that of HEIs can be analyzed by distinguishing three dimensions: visibility, evaluation, and topical focus (e.g., Laukötter, 2014; Vogler & Schäfer, 2020b). The few existing studies on HEIs have provided initial insights into these dimensions and added a fourth: the influence of organizational communication.

HEIs' *visibility* in the news is particularly relevant in light of the changes brought about by new public management as a mode of governance and the mediatization of science (Christensen, 2011; Fredriksson & Pallas, 2018; Marcinkowski et al., 2013; Marcinkowski et al., 2014). Since the 1990s, HEIs have gained autonomy, but are, in turn, increasingly expected to strengthen their public profiles and relationships with various stakeholders. The legitimation of HEIs is now associated with their societal impact and the public visibility of their research and teaching, leading to competition for visibility in the news media, since this is the arena where public legitimacy is negotiated and a broad range of stakeholders can be reached (Borchelt & Nielsen, 2014; Davies & Horst, 2016; Donk et al., 2019; Entradas et al., 2020; Friedrichsmeier & Fürst, 2012; Lafuente-Ruiz-de-Sabando, Zorrilla, & Forcada, 2018; Peters, 2013). That visibility, understood as "mere mention in the media as frequently as possible" (Peters et al., 2008, p. 83), has become a goal in itself and is often regarded internally as crucial for organizational reputation (Friedrichsmeier et al., 2015; Laukötter, 2014; Lehmkuhl, 2019).

Nonetheless, we know little about HEI media visibility, differences between HEI types, and the factors driving it. A study of Swiss media coverage analyzed 21,134 mentions of 10 research universities from 20 outlets, 2011–17, and found HEI size positively impacts visibility (Vogler, 2020). Similarly, an early U.S. study showed large, research-oriented HEIs received the most visibility in newspapers (Quartararo, 1978). A German project made an important contribution (Friedrichsmeier et al., 2015; Laukötter, 2014) by analyzing the visibility of 100 German research universities and universities of applied sciences in 10 outlets. It identified 78,220 media articles in 2010–14 and suggested size, type, and external funding of HEIs strongly impact HEIs' media visibility: Large research universities with high third-party funding and research in social sciences and humanities are more likely to receive intense coverage. The resources and activities of communication offices also influence media visibility. This is aligned with surveys indicating many universities have expanded their communication offices and encourage their academics to get in touch with journalists and draft media releases (Marcinkowski et al., 2013; Marcinkowski et al., 2014; Peters et al., 2008; Rowe & Brass, 2011).

However, existing studies do not allow a comprehensive assessment of HEI visibility. While we know "science-related content accounts for 1 percent to 3 percent of total media content" (Schäfer et al., 2020, p. 86; see also Vogler & Schäfer, 2020a), no extant studies indicate the amount of HEI coverage. Due to the predominant, often even exclusive, focus of prior research on large HEIs, knowledge is also lacking

about how different types of HEIs are covered in news media. Furthermore, few studies have compared HEI visibility between different media. A Swiss case study suggests tabloids report significantly less on HEIs than quality and weekly newspapers do (Vogler & Schäfer, 2020b).

Regarding *topical focus*, several studies found most HEI coverage focuses on research (i.e., empirical findings, scientific knowledge, and new studies; Engwall, 2008; Friedrichsmeier et al., 2015; Laukötter, 2014; Vogler & Post, 2019). Only 6% to 10% of news media coverage of HEIs deals with teaching and education (Engwall, 2008; Laukötter, 2014; Vogler & Post, 2019), while organizational matters—such as finances, personnel, strategies, and events—account for 3% to 33%, varying strongly between HEIs (Laukötter, 2014; Vogler & Post, 2019). Relatively little coverage discusses higher education policy and regulation (Hansen & Dickinson, 1992; Kristiansen, Schäfer, & Lorencez, 2016; Vogler & Post, 2019). Overall, we know little about how these topics differ between HEIs.

Furthermore, findings suggest HEI coverage is shaped by HEIs' proactive, strategic communication, indicating a strong *influence* of organizational communication. Studies comparing media releases and subsequent coverage of research universities in Switzerland (Vogler & Schäfer, 2020b), South Africa (Heyl et al., 2020), the UK (Sumner et al., 2014), and the United States (Lee et al., 2015; Lynch et al., 2014) demonstrated that universities' PR efforts strongly influence how they are covered. The same seems true for research institutions' video news (Machill et al., 2006). This is aligned with diagnoses of a shifting balance of power between science communicators and science journalists (Göpfert, 2007): While the number of PR practitioners is growing and HEI PR output increasing (Autzen & Weitkamp, 2020; Engwall, 2008; Entradas et al., 2020; Marcinkowski et al., 2013; Metag & Schäfer, 2017; Vogler & Schäfer, 2020b), resources for science journalism are decreasing, leading science news desks to be increasingly dependent on PR sources while producing less original content (Allan, 2011; Bauer, Howard, Romo Ramos, Massarani, & Amorim, 2013; Dunwoody, 2020; Guenther, 2019; Kristiansen et al., 2016; Lublinski, 2011; Schäfer et al., 2020). Coverage of science and HEIs is particularly affected by what has been described as a crisis of journalism, with cutbacks in newsrooms and a trend toward cut-and-pasting parts of news releases into coverage (Ashwell, 2016; Kristiansen et al., 2016; Lublinski, 2011), so-called churnalism (McKinnon, Howes, Leach, & Prokop, 2018, p. 564). Despite evidence that HEI PR efforts highly influence coverage, we know little about how this influence varies between different HEIs and media types.

The growing influence of HEI PR efforts, and decreasing resources of journalism in general and science journalism in particular, mean coverage likely contains less original journalistic content and mostly lacks critical and negative *evaluations* (Eisenegger & Gedamke, 2013; Göpfert, 2007). Critical evaluations seem to be most common when discussing issues of higher education policy, organizational reforms, and decisions (Aspara et al., 2014; Eisenegger & Gedamke, 2013; McKenzie & King, 2016; Rudy & Ten Eyck, 2006). Moreover, tabloids contain more negative coverage of HEIs (Eisenegger & Gedamke, 2013; Vogler & Schäfer, 2020b). A case study of a U.S. university (Kim et al., 2007) suggested HEI coverage can be strongly influenced by scandals, when organizational decisions, strategies, and reputation are predominantly covered, and universities are depicted negatively. However, negative evaluations of HEIs are generally rare (Laukötter, 2014; Vogler & Post, 2019). Most coverage is neutral or balanced; a minority is positive (Laukötter, 2014; Vogler & Post, 2019). By writing media releases emphasizing performance and using an affirmative tone, HEIs are more likely to receive positive coverage (Heyl et al., 2020; Lee et al., 2015;

McKinnon et al., 2018; Vogler & Schäfer, 2020b) and thereby enhance their reputation and, subsequently, funding (Borchelt & Nielsen, 2014; Vogler, 2020). So far, research has neglected possible differences in evaluations of HEIs.

The findings and gaps identified in the literature review inspire the following research questions:

*RQ1: How large is the share of media reports on HEIs in relation to the total news coverage?*

*RQ2: Which types of media representations of HEIs are found in news media coverage? How do these types differ in terms of visibility, evaluation, topical focus, and influence?*

*RQ3: How do the HEIs aggregated in these types differ in terms of structural characteristics?*

The first RQ is addressed with descriptive data. To answer the second, we provide a typology of HEI representations based on hierarchical cluster analysis. We enrich this typology and address the third RQ using structural data on HEI size, number of media releases, HEI type, and media types.

### **The Case of Switzerland**

We answer these RQs for Switzerland, one of the world's most innovative countries, with a strong research output; high dependence on an educated workforce; generally favorable political, socioeconomic, and cultural conditions for science and research (see State Secretariat for Education, Research and Innovation, 2020); and a broad support for science and research from the general public (Schäfer, Füchsli, Metag, Kristiansen, & Rauchfleisch, 2018).

Swiss HEIs are mainly government funded (Vogler, 2020). These include a range of mostly internationally renowned *research universities*: 12 cantonally funded universities and two Federal Institutes of Technology specializing in the natural sciences, technology, and engineering (ETH Zurich and EPFL Lausanne). The latter, as well as some of the cantonal universities (e.g., Bern or Zurich), regularly feature at the top of international rankings (Fumasoli & Lepori, 2011; Horta, 2009; Vogler, 2020). Most research universities cover a broad spectrum of disciplines and have a long tradition (Denzler, 2014).

*Universities of applied sciences* and *colleges of education* have been founded since the 1990s and are cantonal institutions specializing in applied research and teaching, addressing the needs of the regional economy, and providing teacher education (Altrichter, 2015; Denzler, 2014; Lepori, 2008). They cannot award PhDs. Their creation expanded the Swiss higher education system significantly: With 14 research universities, 12 universities of applied sciences, and 18 colleges of education, the Swiss system comprised 44 HEIs in 2019. Their size varies considerably. While colleges of education are rather small, around 80–3,600 students, research universities and universities of applied sciences are typically larger, around 500–27,000 students (Bundesamt für Statistik, 2020; see also Denzler, 2014).

Therefore, Switzerland is a typical case for the recent expansion and diversification of higher education systems around the world (Frank & Meyer, 2007; Lepori, 2008; Marginson, 2016). As in many

other countries (Christensen, 2011; Marcinkowski et al., 2014), new public management reforms have given Swiss HEIs more autonomy while also pressuring them to strive for societal legitimation and reputation in a more competition-driven system with less governmental core funding (Altrichter, 2015; Fumasoli & Lepori, 2011; Lepori & Fumasoli, 2010). However, core funding for Swiss HEIs is still high compared with other countries (Fumasoli & Lepori, 2011). We included all 44 Swiss HEIs existing in 2019 to capture the potentially diverse forms in which HEIs are represented in the news media.

Switzerland has a relatively small media market, segmented into German, French, and Italian language regions (Künzler, 2009), creating three relatively independent subsystems, with no media outlets having truly national reach (Puppis & Künzler, 2011; Udris, Eisenegger, Vogler, Schneider, & Häuptli, 2020). A few outlets also exist in Romansh, the fourth official language (Bonfadelli, 2008). The press is still comparatively important, as many media outlets have their roots in the press business and are operated by legacy media (Eisenegger, Schranz, & Gisler, 2017; Künzler, 2009). Therefore, a large variety of press outlets exist in Switzerland: Print and online versions, with daily paid newspapers, tabloids (including free commuter papers), and the weekly press are the most important types. Switzerland also features a strong public service broadcaster, SRG SSR, which covers all language regions with autonomous units (Bonfadelli, 2008; Künzler, 2009; Puppis & Künzler, 2011). As in most Western countries, Swiss news media are affected by significant economic constraints and staff cutbacks that recently led to increasing media concentration and decreasing media quality (fög, 2020).

### **Research Design: Data and Methods**

#### ***Sample and Data***

This study combines data from quantitative content analysis (Krippendorff, 2004) of Swiss news media in 2019 with official statistics regarding HEI size (Bundesamt für Statistik, 2020) and HEI's media releases as collected from their websites. The sample contains 25 outlets that have a high reach, belong to different media companies, and represent all four language regions in Switzerland (Bonfadelli, 2008). It covers different media types, including five news programs and four websites of public radio and television, four online editions of daily paid newspapers, six weekly newspapers and magazines, and six tabloids (see Table 3 in the appendix; <https://osf.io/dga5f/>). Moreover, the analyzed media outlets differ considerably in reporting quality, ranging from low to high quality news (fög, 2020; Udris et al., 2020).

We retrieved all news from all of these media published in 2019 and containing a reference to at least one Swiss HEI. We only coded articles including a substantial amount of information about an HEI, meaning the institution or its personnel had to be covered in at least one section or more than one-third of an article. For the latter assessment, the coder aggregated all sections of an article with information about the HEI. Some articles mentioned more than one HEI. Thus, our final sample had 5,732 substantial mentions of HEIs in 5,253 articles. We accessed print articles through the Swiss Media Database and TV and radio newscasts through the SRG SSR website. Trained coders with knowledge of the four analyzed languages conducted manual content analysis. Official statistics for the 44 HEIs were mainly derived from the Swiss Federal Office for Statistics (Bundesamt für Statistik, 2020). This includes the number of students and academic personnel for each HEI, which previous studies have used as indicators of their size (Denzler,

2014; Metag & Schäfer, 2017; Vogler, 2020). We also used the official statistics of the Swiss Federal Office to assess the relative importance of HEIs' third-party funding (share of private and public third-party funds compared with total funding). Rarely, when official statistics were missing, we contacted the respective HEIs for the data. Since previous studies found not only third-party funds (Friedrichsmeier et al., 2015; Laukötter, 2014) but also communication and media efforts influence coverage of HEIs (e.g., Heyl et al., 2020; Sumner et al., 2014; Vogler & Schäfer, 2020b), we researched the number of media and news releases of all Swiss HEIs in 2019 by visiting their websites or contacting their communication office. The data set is accessible through OSF (<https://osf.io/qde9b/>).

### **Measures**

This study investigates news media representations of all 44 Swiss HEIs. The unit of analysis is the HEI, meaning all data were aggregated at the organizational level. One university of applied sciences, Zürcher Fachhochschule, actually consists of three universities that have their own communication offices and are largely autonomous. We therefore distinguished 46 organizational units in the Swiss higher education system. Based on the measurements from studies analyzing HEIs' coverage, we coded four variables that capture the visibility, evaluation, topical focus, and influence of HEIs in Swiss news media:

1. *Visibility* was measured as the total number of articles in which an HEI was mentioned (Friedrichsmeier et al., 2015; Laukötter, 2014; Vogler, 2020).

2. Similar to prior studies (Kim et al., 2007; Laukötter, 2014; Vogler, 2020), we coded *evaluation* by distinguishing between positive, negative, balanced, and neutral evaluations of a given HEI. A positive or negative tone was coded when an HEI, its personnel, activities, or decisions were explicitly praised or criticized or it was featured in a positive or negative context (e.g., a report on university rankings and excellence in higher education). When positive and negative ratings co-occurred, the predominant tone was coded. Articles with balanced positive and negative ratings were coded as balanced and those containing no evaluations as neutral. Articles with balanced and neutral tones were aggregated for analysis. As in previous studies (Eisenegger, 2005; Vogler, 2020), evaluations were aggregated on the organizational level, meaning the number of reports with a negative tone was subtracted from the number of reports with a positive tone and then divided by the total number of articles, including those with a balanced/neutral tone.

3. For every HEI mentioned in an article, we coded the *topical focus* of coverage, distinguishing between three topics previous studies found most prevalent: (a) reference to research and scientific knowledge; (b) teaching and education; and (c) organizational matters and higher education policy (Friedrichsmeier et al., 2015; Laukötter, 2014; Vogler & Post, 2019).

4. We coded the *influence* of organizational communication on coverage, differentiating two forms: First, an HEI or its personnel can be the *main source* of information (e.g., university events, interviews with members of the administrative board, or researchers of the HEI present a study). Second, a report can be coded as *reactive or passive communication*, meaning the HEI or its personnel are not the main source of information. The HEI can then be a voice among others (as in critical reports on higher education with many voices, where a rector only contributes a short comment for the university) or merely the object of coverage

(it is not represented as a speaker or source of information and therefore has no influence on its representation in the news).

Intercoder reliability was measured with a random sample of 100 articles, processed by two coders. Krippendorff's (2004) alpha was satisfactory for the variables evaluation (0.82), topical focus (.94), and influence of organizational communication (.79).

### **Cluster Analysis**

To typologize how HEIs are presented in news coverage, we used hierarchical cluster analysis, a variant of multivariate classification analysis that groups objects in clusters that are internally homogenous, but externally different from other clusters. Cluster analysis has proven useful in communication science and studies of media coverage in general (e.g., Burscher, Vliegenthart, & de Vreese, 2016), and research on science and HEI communication in particular (Metag & Schäfer, 2017; Schäfer et al., 2018).

We used hierarchical cluster analysis to inductively identify types of media representations of HEIs.<sup>3</sup> For clustering, we aggregated the content-analytical data over the full year of 2019 for every HEI. The measures for HEIs were compiled out of all articles coded for an individual HEI and included (a) visibility, (b) evaluation, (c) topical focus—including the share of coverage focused on (c1) research, (c2) teaching, and (c3) organizational matters and higher education policy—and (d) the share of coverage influenced by HEIs as the main source of information (large influence).

We performed cluster analysis with the Ward method and employed Euclidean distance as the measure. All variables were z-standardized. Based on the commonly used "elbow method" (Burscher et al., 2016, p. 535), we identified a six-cluster solution as the best model. Table 1 shows descriptive statistics for the variables. To validate our cluster solution, we ran a discriminant analysis, which showed 93% of the cases were classified correctly.

## **Results**

### ***RQ1: How Large Is the Share of Media Reports on HEIs in Relation to the Total News Coverage?***

To assess the visibility of Swiss HEIs in news coverage, we divided the number of news articles with substantial mentions of HEIs by all published articles in 2019 ( $N = 408,972$ ). As multiple HEIs could be mentioned in one article, the number of articles ( $N = 5,253$ ) was lower than that of mentions of HEIs ( $N = 5,732$ ).

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<sup>3</sup> We excluded two HEIs from the cluster analysis because they did not receive any coverage throughout the whole year: the Neu-Technikum Buchs (NTB)—a small university of applied sciences, with 403 students in 2019—and a college of education in Rorschach (SHLR), which, with 80 enrolled students, is the smallest HEI in Switzerland.



The results show that 1.28% of all coverage substantially mentions HEIs. However, HEI visibility varies between media types. HEIs are most prominent in weekly newspapers (1.97%), followed by daily newspapers (1.75%) and public service broadcasting (1.47%). Visibility was lowest in tabloids (0.91%).

Not all HEIs were equally visible. Research universities (1.06%) were clearly more visible than universities of applied sciences (0.21%) and colleges of education (0.04%). The distribution was heavily skewed, with a few very highly visible organizations. ETH Zurich (0.29%) and the universities of Zurich (0.19%) and Bern (0.12%) were most visible. ETH Zurich alone accounted for more than one-fifth of all mentions—more than all universities of applied sciences and colleges of education combined.

***RQ2: Which Types of Media Representations of HEIs Are Found in News Media Coverage? How Do These Types Differ in Terms of Visibility, Evaluation, Topical Focus, and Influence?***

On average, each Swiss HEI was mentioned 130 times in Swiss media in 2019. About 85.5% of the reports are neutral or balanced, 9.1% are positive, and 5.4% are negative. Most (66%) deal with research and scientific knowledge. Around 20% of coverage addresses organizational matters and higher education policy, while 14% focuses on teaching and education. In many articles (45%), HEIs are the main source of information, strongly influencing coverage. In most cases (55%), however, HEIs are reactive or passive actors.

To identify types of media representations of HEIs, we conducted a hierarchical cluster analysis which resulted in six clusters:

1. Almost half of all Swiss HEIs belong to a group that, in accordance with cluster analysis in previous studies (Metag & Schäfer, 2017), may be labeled as *Mainstream Communicators* ( $n = 20$ ) because it is the largest cluster and exhibits average values for many characteristics. They receive an average amount of coverage that is practically neutral and mostly focuses on research. However, organizational matters play an above-average role, while their teaching is less often covered. Their influence on media coverage is average.

2. The *Active Research Communicators* ( $n = 7$ ) are the second largest group, accounting for 16% of Swiss HEIs. Coverage is typically characterized by a high intensity that is neutral to slightly positive. They are usually covered in relation to their research, whereas teaching and organizational matters receive very low attention. Coverage is characterized by a strong influence of HEI communication, meaning the high share of research topics is largely a result of the communication efforts by the HEIs and their personnel.

3. The *Unheard Communicators* ( $n = 7$ ) encompass 16% of all HEIs. They receive only occasional media coverage, which is slightly positive. Their research is the most important topic, whereas teaching and organizational matters are less important. In contrast to *Active Research Communicators*, they exert very limited influence on coverage, meaning it is usually initiated by journalists and not HEI communicators.

4. The *Praised Researchers* ( $n = 5$ ) include 11% of all HEIs. They receive the most extensive media attention and are evaluated most positively. Research topics dominate media coverage, but organizational

matters sometimes also play a role. In contrast, teaching activities are almost invisible. *Praised Researchers* also stand out for a large influence of organizational communication.

5. The *Invisible Educators* ( $n = 3$ ) are one of the two smallest clusters and account for only 7% of all HEIs. They receive almost no media attention, and when they do, it is neutral. This is the only cluster primarily covered in relation to teaching activities. Research plays a less important role, and organizational matters are not mentioned at all. Their influence on coverage is below average.

6. The *Occasionally Scandalized* ( $n = 2$ ) is the smallest cluster and encompasses 5% of Swiss HEIs. They receive little media coverage but very negative evaluations. Organizational matters are central, and the focus is on negative aspects with high news value. Research and teaching topics are less important. The *Occasionally Scandalized* exert very low influence on coverage. Membership in this group is—compared with other, more stable patterns—situational and driven by events and media logic. These HEIs most likely would appear in different clusters after the scandal.

**Table 1. Variables Used for Clustering.**

Cluster	<i>N</i>	Means					
	Cases ( <i>N</i> = 44)	Visibility	Evaluations	Topical focus: research	Topical focus: teaching	Topical focus: organiz.	Large influence (main source)
1 Mainstream Com.	20	77	-0.3	61%	10%	29%	48%
2 Active Research Com.	7	110	1.7	91%	3%	6%	65%
3 Unheard Com.	7	18	2.4	74%	18%	8%	15%
4 Praised Researchers	5	653	9.8	73%	3%	24%	62%
5 Invisible Educators	3	2	0.0	28%	72%	0%	39%
6 Occasionally Scandalized	2	8	-38.2	43%	10%	47%	19%

*Note.* Reading example: In 2019, HEIs in the *Active Research Communicators* cluster (Cluster 2) had an average visibility of 110 articles with an average evaluation of 1.7 (on a scale from -100 to +100). Further, on average, 91% of coverage about these HEIs focused on research as the main topic. HEIs in the *Active Research Communicators* cluster were, on average, the main source in 65% of all articles in which they appeared.

This typology can be enriched with structural data about the respective HEIs: their size, type, amount of third-party funding, number of media and news releases, and visibility in different media types. Table 2 shows the results for every cluster.

**Table 2. Descriptives for Variables Used to Describe Clusters (Means).**

Cluster	HEI size		HEI type			HEI activity		Media type			
	Students	Staff	RU (%)	UAS (%)	CE (%)	News releases	Third-party funds (%)	Tabloids (%)	PSB (%)	Daily press (%)	Weekly press (%)
1	4,645	645	25	30	45	130	14.1	32	26	34	9
2	7,873	861	29	71	0	142	15.3	40	24	28	8
3	2,031	267	14	29	57	101	16.1	23	19	51	7
4	18,993	4,173	100	0	0	542	26.4	38	18	32	12
5	932	75	33	0	67	8	0.3	0	71	29	0
6	915	136	0	0	100	35	8.9	19	38	38	6

Note. Staff = academic staff; RU = research universities ( $n = 14$ ); UAS = universities of applied sciences ( $n = 13$ ); CE = colleges of education ( $n = 17$ ). Reading example: HEIs in the *Active Research Communicators* cluster (Cluster 2) have, on average, 7,873 enrolled students and 861 academic employees; 29% of them are research universities. The average number of news and media releases they published in 2019 was 142, and third-party funding makes up 15.3% of their total funding on average. Tabloids publish most media reports (40%) about HEIs in the *Active Research Communicators* cluster.

### **RQ3: How Do the HEIs Aggregated in These Types Differ in Terms of Structural Characteristics?**

1. *Mainstream Communicators* are medium-sized organizations with more regional profiles. They contain all types of HEIs but mostly consist of colleges of education. They have a high output of news and media releases and a medium share of third-party funds. *Mainstream Communicators* are almost equally covered by Swiss tabloids, the daily press, and public service broadcasting. Typical cases are the Università della Svizzera italiana, the Lucerne University of Applied Sciences and Arts, and the college of education of the Grisons.

2. *Active Research Communicators* are relatively large HEIs that publish many news and media releases. They mostly consist of larger universities of applied sciences, but also include some smaller research universities with a national outlook and an average share of third-party funds. They are mostly covered by Swiss tabloids but also by the daily press and public service broadcasting. Typical cases are the Bern University of Applied Sciences or the University of Fribourg.

3. *Unheard Communicators* are mostly colleges of education that, despite their rather small size, produce a medium-sized amount of news and media releases and have a significant share of third-party funds. Media articles are usually found in the daily press. Typical cases are the colleges of education of Bern and Zurich.

4. *Praised Researchers* are exclusively large research universities with an international profile and the largest share of third-party funds. They produce the highest output of news and media releases compared with the other clusters. *Praised Researchers* receive above-average visibility in tabloid media and below-average visibility from public service broadcasting. Typical cases are ETH Zurich or the University of Geneva.

5. *Invisible Educators* are typically small colleges of education with very few news and media releases and nearly no third-party funds. When they are covered by the news media, it is usually the public

service broadcaster. A typical case is the college of education of Schaffhausen, one of the smallest Swiss cantons. The only university in this cluster, the Swiss Distance University Institute, is a special case: It is the only distance university in Switzerland and, thus, focuses on teaching and not research.

6. *Occasionally Scandalized* are small colleges of education with the second-lowest share of third-party funds and output of news and media releases. They are mostly covered by the daily press and public service broadcasting. In 2019, for instance, the college of education of the canton of Thurgovia was a typical case because of a personalized scandal that received some national coverage.

### Discussion and Conclusion

We contribute to research on media representations of HEIs in light of their increasing professionalization and orientation toward public communication and news media. Research has mainly examined media representations of universities and often focused on few selected cases only. Ours is the first study to systematically map and typologize news media coverage of all HEIs in an entire country, including all types, thus going beyond prior studies.

We set out to provide a comprehensive picture of media coverage of all HEIs in Switzerland. Our analysis revealed a relatively large amount of news media reports on HEIs. More than 5,250 articles—1.28% of total coverage in 2019—reported on domestic HEIs. This is considerable, especially given that we did not include short mentions of HEIs but limited our analysis to substantial references; this coverage level is similar to that of science in general (Schäfer et al., 2020; Vogler & Schäfer, 2020a) and reflects the growing importance of HEIs in society.<sup>4</sup> In line with previous studies (Vogler & Schäfer, 2020b), we found the lowest visibility of HEIs in tabloids (0.91% of total media content) and the highest in weekly (1.97%) and daily newspapers (1.75%). Public service broadcasting (1.47%) played a particular role in coverage of small HEIs, such as *Invisible Educators* and *Occasionally Scandalized*.

Our study revealed a high media visibility of large universities, strong focus on research topics, and significant influence of PR efforts. For most HEIs, reports on research accounted for more than half the coverage. The vast majority of reports were neutral; some were positive, and a few were negative. These findings are in line with recent studies on German and Swiss HEIs (Friedrichsmeier et al., 2015; Laukötter, 2014; Vogler, 2020; Vogler & Post, 2019; Vogler & Schäfer, 2020b).

To map coverage diversity in detail, we used hierarchical cluster analysis based on variables derived from content analysis. We identified six types, each describing how a certain set of HEIs are represented in Swiss media. These types differ from the official distinctions established by Swiss higher education policy—universities, universities of applied sciences, and colleges of education (Lepori, 2008)—and cluster together HEIs that receive similar amounts and kinds of media coverage.

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<sup>4</sup> The coverage of Swiss HEIs in Swiss news media is not identical with Swiss science journalism. The latter also includes science reporting with references to universities abroad or without mentioning universities, but the coverage of Swiss HEIs deals with issues of research, teaching, organizational matters, and policy-related changes at Swiss HEIs.

Cluster analysis revealed only two groups, comprising 12 institutions, are highly visible in Swiss media. Both the *Active Research Communicators* and *Praised Researchers* clusters consist of large HEIs that attract considerable media visibility, mostly due to their research output. The latter stand out for positive evaluations, while most other clusters are characterized by neutral coverage. This strong and positive coverage of *Praised Researchers* is likely the result of not only their research strength and high share of third-party funding but also their extensive PR efforts and influence. This shows the competition for visibility (Friedrichsmeier & Fürst, 2012) among HEIs is carried out with rather uneven means, and only a few, large, and strongly resourced universities are better able to gain and maintain a positive reputation and strong public profile by attracting media coverage. This finding is consistent with a previous study indicating large research universities with high third-party funding are more likely to receive extensive media attention (Friedrichsmeier et al., 2015).

In contrast, many HEIs, particularly smaller ones focusing on teaching, such as *Unheard Communicators* and *Invisible Educators*, receive little media attention. When small HEIs do attract attention, they can also end up with reports focusing on organizational matters and shedding a negative light on the whole institution, as the group of the *Occasionally Scandalized* illustrates. Since the news media are still the central forum for HEIs to reach their various stakeholders and gain reputation (Donk et al., 2019; Marcinkowski et al., 2014; Scheu et al., 2014; Vogler, 2020; Wilkins & Huisman, 2013), these HEIs have a clear disadvantage that is difficult to overcome via communication activities. However, the *Mainstream Communicators* cluster also indicates many HEIs receive a moderate amount of coverage that is practically neutral and often influenced by HEIs' communication. Overall, our typology shows a marked diversity in the news media profile of Swiss HEIs. Differences are considerable across all analytical dimensions and exist on both quantity and content of coverage.

In the future, we need to know more about media coverage of HEIs and, relatedly, the quality and ethics of HEIs' communication. The "crisis of (print) science journalism" (Guenther, 2019, p. 6) has contributed to an increased influence of PR efforts and media releases. Some scholars assume HEI communication is mostly concerned with strategic self-promotion and often tends to exaggerate or even hype scientific findings and is less committed to an ethics of public interest by accurately mediating knowledge and engaging in dialogue with society (Marcinkowski et al., 2013; Peters et al., 2008; Weingart & Joubert, 2019). However, the role of ethics and quality criteria is neglected in scholarship on HEI communication and professionalization (Autzen & Weitkamp, 2020) and deserves more attention in further research.

As any study, ours has limitations. Although Switzerland is a typical case of the mediatization of science, worldwide changes due to new public management, and a shifting balance of power between science communicators and science journalists, it is unclear to what extent our findings apply to other countries. Moreover, while we focused on only a small set of content-analytical dimensions and variables, more in-depth, qualitative descriptions of media coverage of HEIs or the HEI types identified here would certainly be instructive and could help combining the advantages of a quantitative mapping with qualitative, thick descriptions (similar to Koch, Saner, Schäfer, Herrmann-Giovanelli, & Metag, 2020). Since our content analysis addressed the organizational level, it does not allow for conclusions regarding the influence of individual, particularly visible scientists (see Davies & Horst, 2016, pp. 66–70). Furthermore, our analysis focused on only one year of coverage and did not include local media outlets. This allowed us to analyze

media coverage broadly and across all Swiss HEIs and shed light on recent patterns of coverage. Future studies should also examine local journalism and provide longitudinal analyses to determine whether the affiliation of particular HEIs to the identified clusters proves to be stable and consistent over time and whether general trends can be identified that hold true across clusters. Given the growing importance of universities and colleges and the strengthening of their communication efforts, such studies are important contributions to understanding the diverse media representations of academia.

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