

Assessing changes in the public communication of higher education institutions: A survey of leaders of Swiss universities and colleges

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Abstract

Over the past decades, higher education institutions (HEIs) across the world have institutionalized communication departments and played an increasingly important role in communicating science to the public. While a growing body of research has analyzed the practices and structures of central communication departments in HEIs, little is known about developments over time. This study examines perceived changes in HEI communication along different analytical dimensions and across HEI types. Conceptually, neo-institutional theory is used to derive the factors that foster this change, specifically the new public management reforms and the accompanying coercive, normative, and mimetic pressures on HEIs. The empirical study is based on a survey of 196 members of HEI leadership in Switzerland. The results show that, according to organizational leaders, HEI communication has diversified and intensified considerably over the last five to ten years. It has also become – albeit to a somewhat lesser extent – more professional and strategic. Multiple linear regression analysis reveals that the strongest predictors of perceived change in HEI communication are the goal to build public reputation, the perceived competition among HEIs for public reputation, and the observation of other Swiss HEIs. The study outlines implications for future research and for HEI communicators.

Keywords

university public relations, strategic communication, organizational goals, professionalization, neo-institutional theory, new public management, higher education research, Switzerland

1 Introduction

Public communication about science and science-related issues has grown in importance in recent years, and this importance has been further catalyzed by the COVID-19 pandemic (Massarani, Murphy, & Lamberts, 2020; Swiss Academies of Arts and Sciences, 2021). The role of organizations, particularly that of higher education institutions (HEIs), has increased considerably in this communication. Accordingly, a growing body of literature is focused on the communication of HEIs. Many scholars have noted that the importance of HEI communication has increased significantly in recent decades, with an intensification of public relations (PR) activities and an expansion of communication departments in many countries (e.g., Davies, 2020; Elken, Stens-

aker, & Dedze, 2018; Engwall, 2008; Marcinkowski, Kohring, Friedrichsmeier, & Fürst, 2013). Digitalization has led to an increase in the number of communication channels and changes in communication at the decentral level of HEIs (e.g., research institutes; Entradas et al., 2020) and in particular at the central level, where communication practitioners are responsible for the public representation of the whole organization (Koivumäki, Koivumäki, & Karvonen, 2021; Lažetić, 2019; Metag & Schäfer, 2017). However, few studies have focused on the changing practices and structures of HEI communication. Most findings are based on exploratory studies of central communication departments (e.g., Davies, 2020; Elken et al., 2018; Engwall, 2008) or examine the changing intensity of decentralized communication, for instance, the public outreach activities of



scientists in a research organization (Jensen & Croissant, 2007).

To date, no study has systematically distinguished and analyzed different dimensions of change in central communication departments of HEIs. Moreover, little is known about potential differences between HEI types, such as research universities and universities of applied sciences, about the factors driving changes in HEI communication, and about cross-national differences. While some evidence is available for Germany and the Nordic countries (e.g., Bühler, Naderer, Koch, & Schuster, 2007; Engwall, 2008; Koivumäki et al., 2021; Marcinkowski et al., 2013; Schwetje, Hauser, & Leßmöllmann, 2017), no comprehensive studies have been conducted on HEI communication in Switzerland.

Therefore, this study sets out to shed light on the Swiss case and provide data on different dimensions of change. We examine perceived changes in the structure, activities, and role of central communication departments and analyze potential differences between HEI types. The analysis is based on a study conducted in autumn 2020 that surveyed all members of the executive management in Swiss HEIs – a group that has gained importance due to the new public management (NPM) reforms but has been neglected in research on HEI communication (exceptions: Engwall, 2008; Marcinkowski et al., 2013). Subsequently, we use linear regression analysis to investigate which factors drive perceived changes in HEI communication. These factors are derived from characteristics of the NPM reforms that have led to more competition and a greater need for legitimation among HEIs (S. Lange & Schimank, 2007) and from neo-institutional theory (DiMaggio & Powell, 1983; Scott, 1994). The latter has proven fruitful in previous research on higher education in general and on HEI communication in particular (Elken et al., 2018; Engwall, 2008; Fähnrich, Kuhnhenh, & Raaz, 2019; Hasse & Krücken, 2009; Marcinkowski, Kohring, Fürst, & Friedrichsmeier, 2014).

In the following, we first summarize the state of research on changes in HEI

communication at the central level by distinguishing four trends: intensification, diversification, professionalization, and increasing strategic alignment (Section 2). We then outline the NPM reforms HEIs in many countries have undergone and introduce neo-institutional theory, along with its distinction between coercive, normative, and mimetic pressures, as the conceptual foundation of our study (Section 3). Next, we explain the study design (Section 4) and report the findings of an online survey of 196 Swiss HEI leaders (Section 5). Finally, we discuss the factors influencing recent changes in HEI communication and reflect on the implications of the results (Section 6).

2 Literature review: Changes in HEI communication at the central level

Research on HEI's public communication has grown in recent years, especially in German-speaking countries (Fähnrich, 2018; Fähnrich, Metag, Post, & Schäfer, 2019). However, HEI communication has been largely neglected both in research on science communication and on strategic communication (Schäfer & Fähnrich, 2020). Current scholarship has several shortcomings, three of which will be tackled here. First, most studies are based on semi-structured interviews with communication practitioners, offering rich insights into HEI communication (Elken et al., 2018; Engwall, 2008; Hauser, 2020; Kallfass, 2009; Lo, Huang, & Peters, 2019; Schwetje, Hauser, Bösch, & Leßmöllmann, 2020). However, few scholars have conducted standardized surveys of practitioners in central communication departments and provided larger data sets to shed light on the practices and structures of HEI communication (Bühler et al., 2007; Höhn, 2011; Marcinkowski et al., 2013; Schwetje et al., 2017). Second, most studies merely provide snapshots of the status quo of HEI communication rather than giving insights on how it has changed (exception: Engwall, 2008). Third, some studies focus on research universities (e.g., Elken et al., 2018; Hauser, 2020) or – if they in-

clude other, more recently emerged types of HEIs, such as universities of applied sciences – often do not report or discuss potential differences between HEI types (e.g., Marcinkowski et al., 2013; Schwetje et al., 2020).

The current study assesses perceived changes in the public communication of different types of HEIs. While the research field is young and studies on HEI's central communication departments are scarce (Davies, 2020, p. 228), previous studies can be used to tentatively reconstruct the developments in HEI communication. When considering and comparing the existing findings of various studies conducted at different points in time, four dimensions of change or trends can be distinguished: HEI communication in central communication offices has *intensified*, *diversified*, become *more strategic*, and *professionalized*.

One of the most significant changes many scholars have identified is an *intensification* of HEI communication. Communication departments in HEI's have a growing number of personnel, receive more financial resources, and produce more output. Previous studies found a slight increase in financial resources (Höhn, 2011) and an expansion of communication departments during the 2000s and early 2010s in HEIs in Germany (Bühler et al., 2007; Marcinkowski et al., 2013; Schwetje et al., 2017), Switzerland (Anderegg & Kunz, 2003; Russ Mohl, 2017), and the Nordic countries (Engwall, 2008). Accordingly, the volume of media releases by German HEIs increased significantly during this period (Serong et al., 2017). The expansion of communication departments and their output has occurred in universities of applied sciences (UAS) and even more so in research universities (RU) (Bühler et al., 2007; Marcinkowski et al., 2013; Schwetje et al., 2017; Serong et al., 2017). However, we do not know whether further intensification has taken place in recent years.

Several studies have shown that communication departments in HEIs use many different communication channels and address different target groups, such

as political and corporate actors, students, employees, or the general public (Bühler et al., 2007; Engwall, 2008; Marcinkowski et al., 2013). *Diversification* refers to an increase in the number of communication channels used and target groups addressed by HEI communication. Bühler et al. (2007) have shown that communication departments in German HEIs saw an increase in the number and importance of target groups in the early 2000s, with students, alumni, pupils, and corporations becoming more relevant. In addition to the traditional use of media releases and the organization of events (Bühler et al., 2007; Höhn, 2011; Kallfass, 2009; Lo et al., 2019; Marcinkowski et al., 2013), communication departments have started to use various online and social media channels to directly address their target groups (Hauser, 2020; Lo et al., 2019; Metag & Schäfer, 2017; Schwetje et al., 2017). However, little is known about the extent of these changes and whether they differ between different HEI types.

The comparison of findings of previous studies reveals a *professionalization* of communication departments in HEIs. Processes of professionalization can be attributed to a number of factors, including education, training, or self-organization in associations, and are usually associated with improved positioning and status of communication departments in organizations (Piecicka, 2008). While early studies on HEI communication reported a low proportion of employees with a university education or vocational training in the field of communication (Bühler et al., 2007; Höhn, 2011) – especially in UAS communication departments (Bühler et al., 2007), more recent studies have found a growing number of communication practitioners with such education (Schwetje et al., 2017). In a qualitative study of HEI communication departments in Sweden, Engwall (2008) reported similar developments. Professionalization also includes practices and measures that contribute to professionalizing the overall communication of the organization by empowering other organizational members to communicate (Zerfass & Volk, 2018). This is par-

ticularly important for HEIs, as they are “loosely coupled systems” (Weick, 1976) with complex communication structures, to which the scientific personnel from a wide range of disciplines contribute significantly (Engwall, 2008; Kallfass, 2009; Marcinkowski et al., 2014). Studies from Germany and Sweden suggest that communication departments support other organizational members and departments in their media contacts, offer media trainings, and establish communication policies that set rules for all organizational members when dealing with news media or the public (Engwall, 2008; Marcinkowski et al., 2014; Peters, Heinrichs, Jung, Kallfass, & Petersen, 2008). Such rules exert some influence, but they are not followed by all organizational members (Schwetje et al., 2017). While these studies only shed light on the status quo, Rowe and Brass (2011) revealed a growth of communication policies in Australian RU during the 2000s. However, we know little about developments in recent years, and there is a general lack of knowledge regarding the professionalization of HEI communication in Switzerland.

Increasing strategic alignment of HEI communication means a more strategic orientation in communication and a growing influence of communication departments on strategic decision-making processes. The former can manifest as a communication strategy and plan, which is derived strategically from overarching organizational goals, defines different communication goals and measures, and guides communication practitioners in their daily work (Bühler et al., 2007; Volk & Zerfass, 2018). The latter is concerned with communication departments taking on not only an operational management function but also a strategic one. With their specific expertise in media, communication, and public opinion formation, HEI communication practitioners can influence organizational decisions with strategic relevance and provide a consulting function for HEI leadership (Kohring, Marcinkowski, Lindner, & Karis, 2013). With respect to German HEIs in the 2000s and early 2010s, both aspects of strategic align-

ment were found to be rather low (Bräutigam & Ettl-Huber, 2013; Bühler et al., 2007; Höhn, 2011; Kohring et al., 2013). A study of Swiss RU in 2002 also revealed that few communication departments align their work to an overall communication plan (Anderegg & Kunz, 2003). However, we do not know whether the strategic alignment may have changed in recent years.

Overall, there is a lack of studies examining changes in HEI communication over the past few years (i.e., since the 2010s) and across HEI types. While some studies hint at differences between HEI types (Bühler et al., 2007; Höhn, 2011; Serong et al., 2017), a comprehensive analysis of such differences in relation to the four abovementioned trends is lacking. Despite this lack of evidence, however, scholars often describe changes in HEI communication as broad trends seemingly encompassing all HEIs (e.g., Borchelt & Nielsen, 2014; Väliverronen, 2021). Accordingly, we examine potential changes in HEI communication in recent years as perceived by HEI leadership and explore whether these trends hold true for different HEI types.

In doing so, we focus on Switzerland, where knowledge about communication structures and practices of Swiss HEIs is based on very few studies (Metag & Schäfer, 2017; Vogler & Schäfer, 2020), graduation theses (Anderegg & Kunz, 2003), general-interest books (Hafner, 2020), and an unpublished lecture (Russ Mohl, 2017).

We address the following research questions:

RQ1: How much has HEI communication in Switzerland changed in recent years from the perspective of HEI leaders?

RQ2: How do perceived changes in HEI communication differ across HEI types?

We answer these research questions based on a survey of all leaders of Swiss HEIs. We argue that this group is in a particularly good position to assess the changing nature of HEI communication, following previous studies in which HEI leaders (e.g., presidents, prorectors) have been

interviewed (Engwall, 2008) or surveyed (Marcinkowski et al., 2013) regarding the communication of their organization. The highest-level management in HEIs (e.g., members of the rectorate or executive board) is usually responsible for allocating resources to communication and often sets the goals for communication departments (Bühler et al., 2007; Elken et al., 2018; Engwall, 2008; Schwetje et al., 2020). We further argue that analyzing the perceived changes in HEI communication from the leaders' perspective is more interesting than surveying the communicators themselves, as the latter may overestimate their own importance and increase in relevance. Meanwhile, members of the rectorate are arguably in a more neutral position to assess changes in HEI communication. Moreover, HEI leaders have gained influence in recent decades due to the NPM reforms, which is outlined in more detail in the following section.

3 New public management reforms from a neo-institutional perspective

Similar to many other areas of public administration, the higher education sector has been permeated by the concept of new public management (NPM). In the course of the NPM reforms beginning in the 1990s, the state refrained from taking detailed control of HEIs and granted them more formal autonomy. At the same time, however, HEIs were required to legitimize themselves by proving their efficiency and the societal relevance of their performance (Krücken, 2021; S. Lange, 2008). Overall, NPM reforms in OECD countries, including Switzerland, are characterized by three basic features: increased external influences on their goals, increased competition, and centralization of decision-making power (Altrichter, 2015; Blümel, Kloke, & Krücken, 2011; Braun, 1999; S. Lange & Schimank, 2007).

First, HEIs must deal with *increased external influences on their goals*. The state or stakeholders mandated by the state, such as university councils, have established target agreements or performance

contracts with HEIs (S. Lange & Schimank, 2007; Leder, 2018). The latter decide on the appropriate measures to take but must align their operations with the agreed objectives. This management based on objectives (Braun, 1999) is intended to increase the efficiency and stakeholder orientation of HEIs. Target agreements can concern, for example, the number of enrolled students, amount of third-party funds, performance in technology and knowledge transfer, visibility in news media, or positioning in HEI rankings (Baschung, Benninghoff, Goastellec, & Perellon, 2009; R. Lange, 2010; Lanzen-dorf & Orr, 2006).

Second, NPM reforms are aimed at triggering *increased competition among HEIs*. Whereas previously it was mainly individual scientists who competed for reputation, the NPM reforms pushed the idea of intense competition between HEIs (Friedrichsmeier & Fürst, 2012; Krücken, 2021). Because of its public funding, "higher education remains a 'quasi-market' in which only partial market relations apply" (Marginson, 2004, pp. 181–182). However, basic public funding has been reduced in recent decades, while project- and performance-based funding (e.g., third-party funding, funding based on the number of graduates) has increased (Jongbloed, 2018; Krücken, 2021; Lepori, 2006). HEIs increasingly perceive competition at various levels: for financial resources, good students and researchers, and a good public reputation (Friedrichsmeier & Fürst, 2012; Krücken, 2021; S. Lange & Schimank, 2007; Meier, 2019).

Third, the NPM reforms contributed to strengthening the hierarchical power structures within HEIs, particularly to the *increased decision-making power of HEI leaders* (Blümel, 2016; S. Lange & Schimank, 2007). With this increased influence in the organization, HEI leadership is required to fulfill the established target agreements, advance the profiling and positioning of the HEI, address (potentially conflicting) societal expectations, and represent the organization in public (Blümel, 2016; Kleimann, 2011; Meier, 2019; Truniger, 2017). Their work involves diverse

tasks and strong uncertainties, as there are neither recipes for success nor uniform success criteria in a sector that is subject to strong transformations (Kleimann, 2011).

The most prominent approach for conceptualizing the potential effects of this fundamental change in the governance of higher education is neo-institutional theory (Marcinkowski et al., 2014, p. 58). It revolves around the idea that organizations first and foremost strive for legitimation. Therefore, organizations anticipate the expectations of their institutional environment and present themselves in accordance with these anticipated expectations (Fährlich et al., 2019; Friedrichsmeier & Fürst, 2013; Hasse & Krücken, 2009; Sandhu, 2012). This leads to homogenization processes – so-called isomorphism – within organizational fields. DiMaggio and Powell (1983) identified three mechanisms driving this isomorphism: coercive, normative, and mimetic pressures. These three mechanisms form the conceptual basis for this study. *Coercive pressures* are induced by governmental bodies through the use of legal regulations. *Normative pressures* arise from professional associations, which define best practices or contribute to the diffusion of standards or values that organizations such as HEIs are supposed to adopt. *Mimetic pressures* emerge when organizations observe other organizations within their field, meaning that “organizations tend to model themselves after similar organizations in their field that they perceive to be more legitimate or successful” (DiMaggio & Powell, 1983, p. 152). Coercive, normative, and mimetic pressures have fueled the implementation of NPM in HEIs.

In recent decades, the *external influence on the goals* of HEIs in Switzerland, as in many other countries, has grown and become increasingly diversified. The abovementioned objectives – recruiting more students, acquiring research funds, building a good reputation, engaging in knowledge transfer, and performing well in rankings – are the subject of formalized target agreements in many HEIs (Baschung et al., 2009; R. Lange, 2010; Lanzendorf & Orr, 2006) and are therefore

mainly pushed by the *coercive pressures* of legal regulations. In addition, professional associations also promote such objectives (e.g., Kostorz, 2020), thereby contributing to *normative pressures*.

Furthermore, the *increase of (a perceived) competition* among HEIs is the result of coercive and normative pressures. *Coercive pressures* come from cuts in basic public funding and the allocation of more money through competitions and sector-wide performance measurements (Jongbloed, 2018; Krücken, 2021; Lepori, 2006; Pasternack & Schulze, 2011). In recent decades, many associations and committees, such as the German Science Council or Swissuniversities, have exerted *normative pressures* by promoting the idea that increasing competition between HEIs would strengthen higher education systems (Friedrichsmeier & Fürst, 2012; Meier, 2019; Swissuniversities, 2005). Previous research has shown that German HEIs perceive growing competition and, along with it, a need to engage in image and reputation building (Friedrichsmeier & Fürst, 2012).

Mimetic pressures play an important role in times of change and situations of high uncertainty regarding how to manage and legitimize an organization (DiMaggio & Powell, 1983; Hasse & Krücken, 2009): Organizational actors observe other organizations within their field to get a sense of successful practices, for example, by monitoring their portrayal in news media or comparing HEI rankings (Engwall, 2008; Friedrichsmeier & Fürst, 2012; Krücken, 2021). Due to the *increase of decision-making power of HEI leaders*, their observations can have a significant impact. A survey of German HEI leaders showed that HEIs are indeed increasingly observing each other's practices and structures (Friedrichsmeier & Fürst, 2012). An exploratory interview study of Swedish HEI leaders revealed that observing the increasing investments of other HEIs in communication activities creates pressure, which results in a strengthening of one's own communication department (Engwall, 2008).

Taken together, these theoretical considerations and empirical findings show that coercive, normative, and mimetic pressures can affect the goals of HEIs, perceived competition with other HEIs, and the mutual observation of HEIs. We assume that these three factors – HEIs’ goals, competition, and mutual observation – could help explain perceived changes in HEI communication. Therefore, we pose the following research question:

RQ3: Which factors contribute to perceived changes in HEI communication?

4 Method and data

To answer these research questions, we conducted an online survey of the leaders at all Swiss HEIs as part of a larger research project investigating HEI communication in Switzerland (<https://c3h.ch/en>).

4.1 The Swiss HEI environment

The Swiss higher education landscape is culturally and institutionally diverse, with three main language regions and three different HEI types: “For a small country, it hosts a considerable number of higher education institutions” (Swiss Academies of Arts and Sciences, 2021, p. 20), which are often highly ranked globally and include research universities (RU), universities of applied sciences (UAS), and colleges of education (CE). Founded since the 1990s, UAS and CE specialize in applied research and the education of teachers, respectively (Denzler, 2014; Lepori, 2008; Truniger, 2017). Swiss RU typically have a long history and cover a broad spectrum of disciplines (Denzler, 2014; Pasternack & Schulze, 2011). The size of RU, UAS, and CE also varies considerably. While CE are rather small, with around 80 to 3400 students, UAS are typically larger, with 185 to 22000 students, and RU have up to 27000 students (Bundesamt für Statistik, 2020; see also Denzler, 2014). The three types of HEIs also differ strongly in terms of the share and total amount of third-party funding (Bundesamt für Statistik, 2020). Most RU have a high share of third-party

funding, ranging from 20 to 40 percent of total income. Most UAS have a share ranging between 11 and 23 percent, while the share for most CE ranges from zero to 14 percent. The maximum amount of third-party funding for an RU in 2019 was nearly 350 million CHF, whereas the maximums were 83 million and 23 million CHF for UAS and CE, respectively.

As Switzerland is one of the most innovative countries in the world and has a well-educated population (Griessen & Braun, 2008; SERI, 2020), it represents a typical case of the worldwide expansion and diversification of higher education systems (Frank & Meyer, 2007; Lepori, 2008; Marginson, 2016). Like many other countries, the Swiss higher education system was transformed by NPM reforms (see Section 3).

4.2 Surveying HEI leaders

A pretest was carried out to assess the quality and comprehensibility of the questionnaire. Fourteen participants, including former rectors and prorectors with many years of experience as well as heads of communication, communication officers, and scholars of higher education research and university communication, tested the measurements analyzed in this study. They were invited to fill in the questionnaire and make comments and suggestions, after which they were interviewed individually. After their feedback, question and item wording were partly changed, some questions and items were added, and further changes were made.

Ethics approval was obtained from the Ethics Commission of the University of Zurich. The online survey took place between September 1 and November 1, 2020. It was a whole-population survey of all Swiss HEI leaders, including 14 RU, 10 UAS, and 18 CE. Based on publicly available information on all 42 HEIs in Switzerland, we compiled a database with contact details encompassing all leaders of Swiss HEIs. This database, compiled in spring 2020, contains information on people at the highest level of executive management in all Swiss HEIs. Due to the heterogeneity of organizational structures in HEIs, the

selection of what we considered HEI leadership was operationalized through two criteria: the management unit a) should have a mandate for the entire organization and b) should be at the highest level in the executive decision-making chain. In cases of doubt, we also considered the organization and statutes of an HEI. The titles of HEI leadership units and their members vary greatly across HEIs in Switzerland, but two main groups form a substantial part: the “rectorate” and the “executive board.” A rectorate (typically in RU) includes a rector, vice-rector(s), and prorectors. In six cases, deans were also members of the executive management, accounting for 14 respondents in the sample. An executive board (typically at UAS and CE) includes a president, vice-president(s), and a number of directors. In four cases, HEI leadership also included advisory members without voting rights (e.g., chief of communications or general secretary). These positions were also included, accounting for 12 respondents in the sample.

Five hundred and eight contacts were invited by email to participate in an online survey programmed with EFS survey software. The questionnaire was available in German, French, and Italian, as the HEIs are located in all three main language regions of Switzerland. Twenty-seven leaders in our contact list could not be reached or no longer worked in their positions.

Of the 481 leaders successfully contacted, 276 participated in our survey. The response rate of 57 percent is slightly higher than in a previous survey of German HEI leaders (Marcinkowski et al., 2013) and very satisfactory compared to general response rates of online surveys (Hagenah, 2017; Hooker & Gil de Zúñiga, 2017). The current analysis includes all leaders who answered the questions on changes in HEI communication and worked in the rectorate / executive board of their HEI since at least 2017 (n = 196). The reason for excluding respondents who started working in their position after 2017 was that they could not provide valid information about changes in the structures and activities of the communication departments of their organization.

4.3 Measures

The analyses are based on 26 variables. The surveyed leaders replied on a seven-point scale from 0 = “not at all” / “not at all important” to 6 = “very much” / “very important” on most items.

Perceived changes in HEI communication: This dimension was measured with eight items (Table 2), representing the four theoretically identified dimensions of change in HEI communication: intensification, diversification, professionalization, and increasing strategic alignment. Two items were used to measure each dimension (for correlations between the items, see Table 7 in the supplementary material). We used a seven-point scale ranging from 0 = “not at all” to 6 = “very much” to capture the intensity of perceived change over the past five to ten years, assuming that all identified trends (e.g., professionalization) have increased rather than decreased in recent years. This assumption was based on the state of research (see Section 2) and has proven to be reasonable.¹ The eight items form an index of “perceived changes in HEI communication,” with a satisfactory Cronbach’s alpha value (= .79) that was later used as the dependent variable in a regression analysis to explain the drivers of perceived changes in HEI communication.

Goals of HEIs: We developed five items to measure the goal orientations of HEIs beyond ensuring high quality in research and teaching. With respect to the past five years, we asked leaders to rate the focus of the goals pursued by their organization, including the following: acquisition of research funding, good image and public

1 Only a vanishingly small number of respondents selected 0 = “not at all” for the items about perceived changes in HEI communication (between 1% and 3.5% of the respondents). The one exception was the item “influence on strategic decisions,” where 6.7% of leaders indicated that HEI communication had “not at all” gained influence. Overall, this leads us to believe that we have adequately captured changes in HEI communication by omitting decreasing developments and instead focusing on the potential increase of the four analyzed dimensions.

reputation, recruitment of more students, knowledge transfer and social impact, and good performance in rankings.

Competition among HEIs: Five items were used to measure perceived competition among HEIs. First, we asked leaders to rate whether competition among HEIs had increased over the past five to ten years. Second, we examined the perceived relevance of the fields in which HEIs compete with each other, namely, public funding, external funding, a good image and public reputation, and good students and employees.

Observation of other HEIs: Three items were used to analyze how leaders keep up with changes and developments of other organizations in the HEI landscape. We asked how closely they monitor other Swiss HEIs of the same type, all HEIs in Switzerland, or HEIs in other countries.

HEI type: The respondents were asked about the type of HEI they are working for, namely, RU, UAS, or CE.

Respondents' demographics: The respondents were also asked to indicate their age, gender, working years, and prior work experience at an HEI.

4.4 Sample description

Of the surveyed HEI leaders, 66 percent were employed in the executive management at a UAS, while 17 percent worked at a CE and 16 percent at an RU (Table 1). The small number of responses from HEI leaders of RU and CE reflect actual differences between the types of HEIs. The number of HEI leaders from UAS ($n=319$) is more than three times higher than those from RU ($n=101$) and CE ($n=88$). This is due to the fact that some Swiss UAS are subdivided into highly autonomous schools at different locations with their own executive management (Pasternack & Schulze, 2011).

The size of HEI leadership differs significantly among HEIs. On average, the leadership is largest for RU, with an average of 6.9 people in highest-level leadership positions. Among RU, the organization with the smallest management unit had only four seats, while the largest had twelve. For UAS, the average number was 5.8 people. However, the size of leadership

for UAS varies greatly. The smallest leadership unit included only two seats, and the largest had 18 seats. CE had the lowest average of 5.1 people; the smallest leadership unit had only two seats, and the largest had nine.

On average, the respondents had been working in their position since 2011 ($SD=5$). About 60 percent of the respondents reported having worked at their HEI prior to their current role in the executive management (e.g., as a professor, lecturer, or administrator), while nearly 40 percent reported having no previous experience at their HEI. We did not ask the respondents whether they currently work part-time in academia. In Switzerland, however, members of the rectorate or executive board generally do not or rarely work on the side academically, as working in the rectorate is a full-time position. The distribution of age and gender is typical for rectorate members: a strong male dominance (71.5%)² and a comparatively high average age of 55 years ($SD=6$) can also be found in other European countries (Blümel, 2016, p. 525).³

These demographic data on gender, age, and working years are not correlated with perceived changes in HEI communication.⁴

2 The dominance of men in our sample (71.5%) corresponds to the characteristics of the population contacted ($n=508$, 68% men).

3 A closer look at the demographics of the respondents in the three types of HEIs revealed some differences (see Table 5 in the supplementary material). For example, respondents in CE were more likely to be female, younger on average, and to have less prior work experience at the same HEI than respondents in UAS or RU. It was also noticeable that the respondents in UAS had been in the rectorate longer on average than respondents in RU and CE.

4 Pearson correlations with the index of "perceived changes in HEI communication" are as follows: Age ($r=.010$, $p=.886$); gender (dichotomized with male vs. female; $r=-.003$, $p=.968$); working years at rectorate ($r=-.108$, $p=.131$).

Table 1: Sample description of surveyed leaders in Swiss HEIs (n = 196)

Gender		Age		Working years at rectorate		HEI type	
Female	28 %	38–44 years	6 %	1993–2000	5 %	UAS	66.3 %
Male	71.5 %	45–50 years	20 %	2001–2005	9 %	CE	17.3 %
Non-binary	0.5 %	51–54 years	20 %	2006–2010	26 %	RU	16.3 %
		55–60 years	32 %	2011–2015	36 %		
		61–65 years	22 %	2016–2017	25 %		

Note: UAS=Universities of applied sciences (n=130); CE=Colleges of education (n=34); RU=Research universities (n=32).

5 Results

RQ1: How much has HEI communication in Switzerland changed in recent years from the perspective of HEI leaders?

HEI leaders were asked to assess the changes in HEI communication in Switzerland over the past five to ten years. The analysis shows that the surveyed leaders perceive considerable changes in all four dimensions (Table 2). Most importantly, they indicate that HEI communication has strongly *diversified*, with an increase in the number of communication channels (M=5.1) and target groups (M=4.1). HEI leaders also agree that communication has *intensified*, with an increase in personnel and financial resources (M=4.2) devoted to it, and more output produced (M=4.0). Further, HEI communication is perceived to have become more *strategic*, as evidenced by its alignment with communication strategies and plans (M=4.2). HEI communication departments have gained some influence in strategic decision-making in recent years (M=2.7) according to the surveyed leaders. However, this change is the least pronounced. Nevertheless, the respondents perceive that more communication practitioners are better trained (M=4.1) and that communication departments, albeit to a lower degree, are increasingly influencing how HEI members communicate publicly (M=3.7), suggesting that HEI communication has become *professionalized* over time.

RQ2: How do perceived changes in HEI communication differ across HEI types?

The data for the eight items measuring perceived changes in HEI communication are not normally distributed, and the number of respondents from the three HEI types vary considerably (Table 1). Thus, we used the nonparametric Kruskal–Wallis test (MacFarland & Yates, 2016, p. 177) to test for differences among the types of HEIs.

The analysis revealed no significant differences between UAS, RU, and CE (mean differences of the three types of HEIs can be seen in the supplementary material in Table 6). Interestingly, leaders across different types of HEIs have similar views on how the structures and practices of their communication departments have changed over the past decade in terms of intensification, diversification, professionalization, and increasing strategic alignment.

RQ3: Which factors contribute to perceived changes in HEI communication?

Multiple linear regression analysis was used to examine which of the three factors theoretically derived from neo-institutional theory and the literature on NPM reforms – goals of HEIs, competition with other HEIs, and observation of other HEIs – predict the perceived changes in HEI communication. The descriptive data revealed that these factors strongly characterize the management of Swiss HEIs (Table 3). HEI leaders strongly agree that their organizations focus on the goal of acquiring research funding (M=5.0) and a good public reputation (M=4.9). They perceive increased competition with other HEIs, particularly in terms of third-party funding (M=4.6), good students and staff (M=4.6), and a good public reputation (M=4.1). In their daily work, HEI leaders

monitor the practices and activities of other HEIs, especially those belonging to the same HEI type ($M=4.8$).

These potential factors were included as predictors of our dependent variable, the “perceived changes in HEI communication”

index ($\alpha=.79$; see Section 4.3). Our data set contains few missing values. Therefore, we used listwise deletion (complete-case analysis), as recommended in the literature (Urban & Mayerl, 2018).

Table 2: Perceived changes in HEI communication departments over the past five to ten years

Dimension	Item	N	M	SD	Agreement in %
Intensification	The department has received more personnel and financial resources	194	4.2	1.4	49
Intensification	The department produces more output	195	4.0	1.3	38
Diversification	The department uses more communication channels	195	5.1	1.0	81
Diversification	The number of target groups important to the HEI has increased	193	4.1	1.4	44
Professionalization	More employees of the department have had vocational training in the field of communication	190	4.1	1.3	38
Professionalization	The department has an increasing influence on how HEI members communicate publicly	193	3.7	1.3	26
Increasing strategic alignment	The department is increasingly guided by communication strategies and plans	194	4.2	1.3	42
Increasing strategic alignment	The department has more influence on strategic decisions of the HEI	194	2.7	1.4	8

Notes: Department is used here as a designation for the central communication office. Agreement in percent=share of respondents indicating *strong* agreement with the respective statement (answering 5 or 6 on a seven-point scale from 0=“not at all” to 6=“very much”). Reading example: 194 HEI leaders answered the question about whether it was true that the central communication department of their organization has received more personnel and financial resources over the past five to ten years. This resulted in an arithmetic mean value of 4.2, with a standard deviation of 1.4. Almost half of the respondents (49%) observed a strong or very strong change in this respect (indicating 5 or 6 on a scale from 0 to 6).

Table 3: Descriptive data for the independent variables

Factor	Item	N	M	SD	Agreement in %
Goals of HEI	Acquisition of research funds	194	5.0	1.1	72
	Recruitment of more students	194	4.0	1.7	46
	Good image and public reputation	195	4.9	1.0	74
	Knowledge transfer and social impact	194	4.8	1.2	70
	Good performance in rankings	193	2.2	1.7	11
Competition among HEIs	Increased competition with other HEIs	192	4.1	1.5	46
	For public funds	193	3.9	1.7	48
	For third party funds	192	4.6	1.5	66
	For good students and staff	195	4.6	1.4	61
	For a good image and public reputation	191	4.1	1.5	47
Observation of other HEIs	Other Swiss HEIs of the same type	196	4.8	0.9	66
	All HEIs in Switzerland	196	3.6	1.2	24
	HEIs in other countries	196	3.1	1.5	20

Notes: Agreement in percent=share of respondents indicating *strong* agreement with the respective statement (answering 5 or 6 on a seven-point scale from 0=“not at all” to 6=“very much”). Reading example: 196 HEI leaders answered the question about the extent to which they observe other Swiss HEIs of the same type. This resulted in an arithmetic mean value of 4.8, with a standard deviation of 0.9. Two-thirds of the respondents (66%) indicated a pronounced observation (answering with 5 or 6 on a scale from 0 to 6).

Table 4: Factors that contribute to perceived changes in HEI communication

Variables	b	SE	β	Significance
Constant	.794	.448		.078
Goals of HEI				
Acquisition of research funds	.022	.056	.030	.688
Recruitment of more students	-.003	.034	-.006	.933
Good image and public reputation	.196	.061	.232	.002
Knowledge transfer and social impact	.099	.051	.141	.055
Good performance in rankings	.005	.034	.010	.883
Competition among HEIs				
Increased competition with other HEIs	.088	.045	.156	.053
For public funds	-.038	.043	-.077	.383
For third party funds	.034	.052	.058	.514
For good students and staff	.015	.049	.024	.759
For a good image and public reputation	.100	.047	.173	.035
Observation of other HEIs				
Other Swiss HEIs of the same type	.045	.072	.049	.531
All HEIs in Switzerland	.109	.054	.155	.044
HEIs in other countries	.064	.040	.112	.117

Notes: Multiple linear regression analysis was used to determine the predictive variables for the “perceived changes in HEI communication” index (see Section 4.3). Missing values were handled through listwise deletion (n=181 HEI leaders). b=unstandardized regression coefficient; SE=standard error; β =standardized regression coefficient.

Table 4 depicts the results of the regression analysis. The model is significant ($F=6.257$, $p=.001$, adjusted $R^2=0.28$), and a considerable 28 percent of the total variance in the “perceived changes in HEI communication” is explained by the independent variables; this corresponds to a strong effect ($f^2=.366$) (Cohen, 1992).⁵

The most influential item is the *goal* of pursuing a good image and public reputation as an HEI ($\beta=.232$, $p=.002$), which significantly explains the variance in changes in HEI communication. Moreover, the perceived *competition* for a good image and public reputation ($\beta=.173$, $p=.035$) as well as the perceived overall increase in competition among HEIs ($\beta=.156$, $p=.053$) are also important predictors. Finally, the *observation* of all HEIs in Switzerland ($\beta=.155$, $p=.044$) is a substantial predictor.

6 Discussion and conclusion

Our study contributes to the growing body of research on HEI communication, focusing on its changes in recent years in particular. Scholars have recognized the increasing importance of HEI communication as well as the fact that it is changing considerably and in different dimensions. However, existing studies mostly provide snapshots of the status quo of HEI communication or focus on specific facets of change. While existing results suggest some differences regarding trends in HEI communication among the various types of HEIs – with RU leading the way when it comes to intensification and professionalization (e.g., Bühler et al., 2007; Rowe & Brass, 2011) – systematic analyses of these differences are lacking.

This is the first standardized study examining perceived changes in HEI communication and identifying factors that influence these changes across different types of HEIs. By surveying members of HEI leadership, it also enriches the scarce research on HEI communication from this

⁵ We also tested HEI size (number of students) and HEI research strength (share of third-party funding) as predictors in our regression analysis. Neither variable explained any additional variance, and thus they were both left out.

perspective (Engwall, 2008; Marcinkowski et al., 2013).

Results show that HEI communication in Switzerland – as assessed by organizational leaders – has diversified and intensified considerably. Swiss communication departments are using more communication channels, addressing more target groups, receiving more personnel and financial resources, and producing more output, similar to developments observed in Germany and the Nordic countries (e.g., Bühler et al., 2007; Engwall, 2008; Marcinkowski et al., 2013; Schwetje et al., 2017). This may point to an overarching trend in Northern and Western European countries. Leaders also perceive that HEI communication has professionalized in recent years, with communicators being better trained and having more influence within their organizations. Finally, leaders recognize increasing strategic alignment in HEI communication, with departments becoming more oriented toward communication strategies and plans. However, this does not necessarily translate into a greater influence on the strategic decisions of HEIs, as this perceived change is least pronounced, mirroring similar findings from Germany (Kohring et al., 2013).

As the data used for this study come from a larger research project that also surveyed HEI communicators working in central communication departments about their perceptions of change in HEI communication, we compared the data to identify potential biases in perceptions. Results of this additional analysis indicate that HEI leaders and communicators identify similar trends (Table 8 in the supplementary material). However, HEI leaders more strongly emphasize that communication departments have received more resources (leaders: $M=4.2$ vs. communicators: $M=3.5$). In contrast, communication practitioners agree more that their department has increased its influence on the strategic decisions of their organization (communicators: $M=3.5$ vs. leaders: $M=2.7$), increased its output (communicators: $M=4.7$ vs. leaders: $M=4.0$), and diversified its communication channels (communicators: $M=5.6$ vs. leaders:

$M=5.1$). The other four items regarding perceived changes reveal only slight differences between the two groups of respondents. Taken together, the differences in their assessments are minor and mainly revolve around the relation between resources and performance. We therefore conclude that our study on HEI leaders' perceptions is a valid approach to shed light on changes in HEI communication.

Overall, the identified trends in HEI communication seem to be far-reaching in the Swiss HEI landscape. The few prior studies suggested that RU are pioneers of these changes (Anderegg & Kunz, 2003; Bühler et al., 2007). Our study shows that during the past decade all four trends have been observed across all types of HEIs in Switzerland. However, while HEIs of all types perceive similar trends of intensification, diversification, professionalization, and increasing strategic alignment of communication, there are still considerable differences between their current communication resources, structures, practices, and responses. Compared to UAS and particularly to CE, RU typically employ more communication professionals, produce a larger output of news and media releases, and attract more media coverage (Fürst, Vogler, Schäfer, & Sörensen, 2021; see the notes in Table 8 in the supplementary material).

Neo-institutional theory and the literature on NPM reforms in the HEI sector helped to inform this study. The descriptive data show that the three derived factors – the goals of HEIs, competition with other HEIs, and observation of other HEIs – play an important role in the management of many Swiss HEIs. The results of the multiple linear regression analysis reveal that each of these factors, most importantly the goal of pursuing a good public reputation, contributes significantly to explaining the variance in perceived changes in HEI communication. This suggests that coercive, normative, and mimetic pressures influence how Swiss HEIs communicate and contribute to homogenization processes of the structures and practices of communication departments across HEIs. The sector-wide monitoring of other HEIs,

which was another strong predictor, might explain why changes in HEI communication occur across all HEI types.

As with any study, ours has limitations. First, the small number of responses from HEI leaders of RU and CE limits the significance of the results regarding differences between HEI types. In Switzerland, this problem can hardly be avoided, as a large proportion of HEI leaders work in UAS. Studies in countries with a larger or equally diverse HEI landscape, such as Germany, Poland, and Austria (Lepori, 2021), might provide a broader picture in this respect. Second, we analyzed changes in HEI communication by asking organizational leaders about the changes. However, while HEI leaders are in a privileged position to assess such changes, their responses still mirror their perceptions. Third, we measured the four dimensions of perceived changes with only two items each. More comprehensive measures (e.g., of professionalization or strategic alignment) could be used in future studies.

Future research should also test and extend our findings through longitudinal analyses of the output of HEI communication or of organizational charts and internal documents over time. It is important to look more closely at the mechanisms that stimulate change and growing isomorphism among HEIs, such as the role of competition and mutual observation among HEIs. Semi-structured interviews with both HEI leaders and communicators coupled with organizational data and document analysis could provide a better understanding of the major forces driving changes in HEI communication. It would also be valuable to repeat standardized surveys of both HEI leaders and communication practitioners (e.g., Marcinkowski et al., 2013) regularly and compare their perceptions over time.

In addition, research is needed to shed light on the pursuit of a positive public reputation and professional reputation management and their effects on HEI communication – specifically on stronger alignment between or imitation of other HEIs' communication. For example, content analyses could be used to examine the

extent to which HEIs' self-representations are becoming more similar over time, which HEIs have been the pioneers, and which are following suit.

Our study also has practical implications. For HEI communication departments, the small increase in strategic influence – compared to the other dimensions – points to a need for HEI communicators to better position or explain to organizational leadership how they contribute to achieving overall HEI goals. This could help central communication departments gain more strategic influence on organizational decisions in the future, which is typically associated with more resources and a better institutional standing. Professional associations, such as Swissuniversities and EUPRIO,⁶ can play an important role in promoting the professionalization of the field, for example, by developing best practices. From the perspective of HEI leaders, the findings highlight how important reputation building has become across the Swiss HEI landscape. Accordingly, the need for public communication and the importance of central communication departments have increased. Moreover, the strong mutual monitoring of Swiss HEIs suggests that future trends in HEI communication will gain further momentum, which in turn calls for more scholarly attention to this emerging field of research.

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⁶ For more information on EUPRIO (European Association of Communication Professionals in Higher Education) or Swissuniversities (the Rectors' Conference of Swiss Institutions of Higher Education), see <https://www.euprio.eu> and <https://www.swissuniversities.ch/en/>.

Conflict of interests

The authors declare no conflict of interests.

Supplementary material

Supplementary material for this article is available online in the format provided by the authors (unedited). <https://www.hope.uzh.ch/scoms/article/view/j.scoms.2022.03.3489>

References

- Altrichter, H. (2015). Governance in education: Conceptualisation, methodology, and research strategies for analysing contemporary transformations of teacher education. In D. Kuhlee, J. van Buer, & C. Winch (Eds.), *Governance in initial teacher education: Perspectives on England and Germany* (pp. 9–30). Wiesbaden, Germany: Springer VS. https://doi.org/10.1007/978-3-658-05894-4_2
- Andereg, L., & Kunz, S. (2003). *Public Relations der Schweizer Universitäten. Eine Untersuchung der Öffentlichkeitsarbeit als Organisationsfunktion an den kantonalen Hochschulen der Schweiz* [Public relations of Swiss universities: Analysis of public relations as an organizational function at cantonal higher education institutions in Switzerland] (Unpublished master's thesis). University of Zurich, Zurich.
- Baschung, L., Benninghoff, M., Goastellec, G., & Perellon, J. (2009). Switzerland: Between cooperation and competition. In C. Paradeise, E. Reale, I. Bleiklie, & E. Ferlie (Eds.), *University governance: Western European comparative perspectives* (pp. 153–175). Berlin, Germany: Springer. https://doi.org/10.1007/978-1-4020-9515-3_7
- Blümel, A. (2016). Hochschulleitung und Hochschulmanagement [University leadership and university management]. In D. Simon, A. Knie, S. Hornbostel, & K. Zimmermann (Eds.), *Handbuch Wissenschaftspolitik* (pp. 517–532). Wiesbaden, Germany: Springer VS. https://doi.org/10.1007/978-3-658-05677-3_36-1
- Blümel, A., Kloke, K., & Krücken, G. (2011). Professionalisierungsprozesse im Hochschulmanagement in Deutschland [Professionalization processes in the management of German higher education institutions]. In A. Langer & A. Schröer (Eds.), *Professionalisierung im Nonprofit Management* (pp. 105–127). Wiesbaden, Germany: VS Verlag. https://doi.org/10.1007/978-3-531-92664-3_6
- Borchelt, R. E., & Nielsen, K. H. (2014). Public relations in science: Managing the trust portfolio. In M. Bucchi & B. Trench (Eds.), *Routledge handbook of public communication of science and technology* (2nd ed., pp. 58–69). New York, NY: Routledge.
- Braun, D. (1999). Changing governance models in higher education: The case of the new managerialism. *Swiss Political Science Review*, 5(3), 1–24. <https://doi.org/10.1002/j.1662-6370.1999.tb00276.x>
- Bräutigam, Y., & Ettl-Huber, S. (2013). Potenziale von Social Media für die Medienarbeit in der externen Wissenschaftskommunikation [Potentials of social media for media relations in external science communication]. In S. Ettl-Huber, R. Nowak, B. Reiter, & M. Roither (Eds.), *Social Media in der Organisationskommunikation. Empirische Befunde und Branchenanalysen* (pp. 147–165). Wiesbaden, Germany: Springer VS. https://doi.org/10.1007/978-3-658-02329-4_8
- Bühler, H., Naderer, G., Koch, R., & Schuster, C. (2007). *Hochschul-PR in Deutschland. Ziele, Strategien und Perspektiven* [Public relations of German higher education institutions: Goals, strategies, and perspectives]. Wiesbaden, Germany: DUV. <https://doi.org/10.1007/978-3-8350-9148-1>
- Bundesamt für Statistik. (2020). Tabellen. Hochschulpersonal (SHIS-PERS), Hochschulfinanzen (SHISFIN) und Studierende und Abschlüsse der Hochschulen (SHIS-studex) 2019 [Tables. Personnel (SHIS-PERS), finances (SHIS-FIN), students and degrees (SHIS-studex) in higher education in 2019]. Neuchâtel, Switzerland. Retrieved from https://www.bfs.admin.ch/bfs/de/home/statistiken/kataloge-datenbanken/tabellen.html?-dyn_prodima=900782

- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155–159. <https://doi.org/10.1037/0033-2909.112.1.155>
- Davies, S. R. (2020). University communications as auto-communication: The NTNU “Challenge Everything” campaign. *Journal of Communication Management*, 24(3), 227–243. <https://doi.org/10.1108/JCOM-08-2019-0120>
- Denzler, S. (2014). *Integration of teacher education into the Swiss higher education system* (Doctoral dissertation). University of Lausanne, Lausanne. Retrieved from <https://edudoc.ch/record/112267?ln=de>
- DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48(2), 147–160. <https://doi.org/10.2307/2095101>
- Elken, M., Stensaker, B., & Dedze, I. (2018). The painters behind the profile: The rise and functioning of communication departments in universities. *Higher Education*, 76(6), 1109–1122. <https://doi.org/10.1007/s10734-018-0258-x>
- Engwall, L. (2008). Minerva and the media: Universities protecting and promoting themselves. In C. Mazza, P. Quattrone, & A. Riccaboni (Eds.), *European universities in transition: Issues, models and cases* (pp. 31–48). Cheltenham, UK: Edward Elgar.
- Entradas, M., Bauer, M. W., O’Muircheartaigh, C., Marcinkowski, F., Okamura, A., Pellegrini, G., ... Li, Y.-Y. (2020). Public communication by research institutes compared across countries and sciences: Building capacity for engagement or competing for visibility? *PLoS ONE*, 15(7), 1–17. <https://doi.org/10.1371/journal.pone.0235191>
- Fährnrich, B. (2018). Einflussreich, aber wenig beachtet? Eine Meta-Studie zum Stand der deutschsprachigen Forschung über strategische Kommunikation von Wissenschaftsorganisationen [Strategic communication of science organizations – A meta-analysis of the German field]. *Publizistik*, 63(3), 407–426. <https://doi.org/10.1007/s11616-018-0435-z>
- Fährnrich, B., Kuhnhenh, M., & Raaz, O. (2019). Organisationsbezogene Theorien der Hochschulkommunikation [Organizational theories of higher education communication]. In B. Fährnrich, J. Metag, S. Post, & M. S. Schäfer (Eds.), *Forschungsfeld Hochschulkommunikation* (pp. 61–94). Wiesbaden, Germany: Springer VS. https://doi.org/10.1007/978-3-658-22409-7_4
- Fährnrich, B., Metag, J., Post, S., & Schäfer, M. S. (Eds.). (2019). *Forschungsfeld Hochschulkommunikation* [Research field higher education communication]. Wiesbaden, Germany: Springer VS. <https://doi.org/10.1007/978-3-658-22409-7>
- Frank, D. J., & Meyer, J. W. (2007). University expansion and the knowledge society. *Theory and Society*, 36(4), 287–311. <https://doi.org/10.1007/s11186-007-9035-z>
- Friedrichsmeier, A., & Fürst, S. (2012). Neue Governance als Wettbewerb um Sichtbarkeit. Zur veränderten Dynamik der Öffentlichkeits- und Medienorientierung von Hochschulen [New governance as competition for visibility: On the changing dynamics of universities’ orientation toward the public and the media]. *Die Hochschule: Journal für Wissenschaft und Bildung*, 21(2), 46–64.
- Friedrichsmeier, A., & Fürst, S. (2013). Welche Theorie der Organisation für welche PR-Forschung? Ein Vergleich der situativen, neo-institutionalistischen und systemtheoretischen Perspektive [Which organizational theory for which PR research? A comparison of contingency approach, neo-institutionalism, and systems theory]. In U. Röttger, V. Gehrau, & J. Preusse (Eds.), *Strategische Kommunikation. Umriss und Perspektiven eines Forschungsfeldes* (pp. 59–101). Wiesbaden, Germany: Springer VS. https://doi.org/10.1007/978-3-658-00409-5_4
- Fürst, S., Vogler, D., Schäfer, M. S., & Sörensen, I. (2021). Media representations of academia: Mapping and typologizing news coverage of all Swiss higher education institutions. *International Journal of Communication*, 15, 3600–3620. Retrieved from <https://ijoc.org/index.php/ijoc/article/view/17103/3519>
- Griessen, T., & Braun, D. (2008). The political coordination of knowledge and innovation policies in Switzerland. *Science and Public Policy*, 35(4), 277–288. <https://doi.org/10.3152/030234208X310338>

- Hafner, U. (2020). *Forschung in der Filterblase. Die Wissenschaftskommunikation der Schweizer Hochschulen in der digitalen Ära* [Research in the filter bubble: The science communication of Swiss higher education institutions in the digital era]. Baden, Switzerland: hier + jetzt.
- Hagenah, J. (2017). Missing values and missing data. In J. Matthes, C. S. Davis, & R. F. Potter (Eds.), *The international encyclopedia of communication research methods* (pp. 1–12). Hoboken, NJ: Wiley-Blackwell. <https://doi.org/10.1002/9781118901731.iecrm0155>
- Hasse, R., & Krücken, G. (2009). Neo-institutionalistische Theorie [Neo-institutional theory]. In G. Kneer & M. Schroer (Eds.), *Handbuch Soziologische Theorien* (pp. 237–251). Wiesbaden, Germany: VS. https://doi.org/10.1007/978-3-531-91600-2_12
- Hauser, C. (2020). *Akteure und Organisationsweisen der Hochschulkommunikation. Eine Analyse der Akteurkonstellationen und Akteur-Struktur-Dynamiken an deutschen Hochschulen* [Actors and organizational practices in university communication: An analysis of actor constellations and actor-structure dynamics at German higher education institutions]. Wiesbaden, Germany: Springer VS. <https://doi.org/10.1007/978-3-658-29285-0>
- Höhn, T. D. (2011). *Wissenschafts-PR. Eine Studie zur Öffentlichkeitsarbeit von Hochschulen und außeruniversitären Forschungseinrichtungen* [Science PR: A study on public relations at higher education institutions and non-university research organizations]. Konstanz, Germany: UVK.
- Hooker, C. M., & Gil de Zúñiga, H. (2017). Survey methods, online. In J. Matthes, C. S. Davis, & R. F. Potter (Eds.), *The international encyclopedia of communication research methods*. Hoboken, NJ: Wiley-Blackwell. <https://doi.org/10.1002/9781118901731.iecrm0244>
- Jensen, P., & Croissant, Y. (2007). CNRS researchers' popularization activities: A progress report. *Journal of Science Communication*, 6(3), 1–14. <https://doi.org/10.22323/2.06030201>
- Jongbloed, B. (2018). Public funding of higher education, Europe. In P. N. Teixeira & J.-C. Shin (Eds.), *Encyclopedia of international higher education systems and institutions* (pp. 1–11). Dordrecht, The Netherlands: Springer Science+Business Media. https://doi.org/10.1007/978-94-017-9553-1_74-1
- Kallfass, M. (2009). Public Relations von Wissenschaftseinrichtungen – explorative Studie in Deutschland, Frankreich und Großbritannien [Public relations of scientific organizations – Explorative study in Germany, France, and the UK]. In H. P. Peters (Ed.), *Medienorientierung biomedizinischer Forscher im internationalen Vergleich* (pp. 101–175). Jülich, Germany: Forschungszentrum Jülich GmbH.
- Kleimann, B. (2011). Professionalisierung der Hochschulleitung? [Professionalization of university leadership?] In A. Langer & A. Schröer (Eds.), *Professionalisierung im Nonprofit Management* (pp. 201–226). Wiesbaden, Germany: VS Verlag. https://doi.org/10.1007/978-3-531-92664-3_11
- Kohring, M., Marcinkowski, F., Lindner, C., & Karis, S. (2013). Media orientation of university decision makers and the executive influence of public relations. *Public Relations Review*, 39(3), 171–177. <https://doi.org/10.1016/j.pubrev.2013.01.002>
- Koivumäki, K., Koivumäki, T., & Karvonen, E. (2021). Challenges in the collaboration between researchers and in-house communication professionals in the digital media landscape. *Journal of Science Communication*, 20(3), 1–21. <https://doi.org/10.22323/2.20030204>
- Kostorz, G. (2020). Editorial. *VSH-Bulletin*, 46(1), 2–3. Retrieved from https://vsh-aeu.ch/download/272/40191_VSH_Bulletin_April_2020_WEB.pdf
- Krücken, G. (2021). Multiple competitions in higher education: A conceptual approach. *Innovation*, 23(2), 163–181. <https://doi.org/10.1080/14479338.2019.1684652>
- Lange, R. (2010). Benchmarking, Rankings and Ratings [Benchmarking, rankings, and ratings]. In D. Simon, A. Knie, & S. Hornbostel (Eds.), *Handbuch Wissenschaftspolitik* (pp. 322–333). Wiesbaden, Germany: VS Verlag. https://doi.org/10.1007/978-3-531-91993-5_22
- Lange, S. (2008). New Public Management und die Governance der Universitäten [New

- public management and the governance of universities]. *der moderne staat – Zeitschrift für Public Policy, Recht und Management*, 1(1), 235–248. <https://doi.org/10.3224/dms.v1i1.12>
- Lange, S., & Schimank, U. (2007). Zwischen Konvergenz und Pfadabhängigkeit: New Public Management in den Hochschulsystemen fünf ausgewählter OECD-Länder [Between convergence and path dependence: New public management in the higher education systems of five selected OECD countries]. In K. Holzinger, H. Joergens, & C. Knill (Eds.), *Transfer, Diffusion und Konvergenz von Politiken* (pp. 522–548). Wiesbaden, Germany: VS. https://doi.org/10.1007/978-3-531-90612-6_22
- Lanzendorf, U., & Orr, D. (2006). Hochschulsteuerung durch Kontrakte – wozu und wie? Unterschiedliche Stellenwerte von Wettbewerb, Autonomie und Indikatoren im europäischen Vergleich [Higher education governance through contracts – what for and how? Differing importance of competition, autonomy, and indicators in European comparison]. *Die Hochschule: Journal für Wissenschaft und Bildung*, 15(2), 80–97.
- Lažetić, P. (2019). Students and university websites – consumers of corporate brands or novices in the academic community? *Higher Education*, 77(6), 995–1013. <https://doi.org/10.1007/s10734-018-0315-5>
- Leder, C. (2018). *Hochschulraum Schweiz: Analysen zum organisatorischen Entwicklungspfad im Spannungsfeld von Hochschulen, Staat und Gesellschaft* [The Swiss higher education area: Analyses of the organizational development in the field of tension between higher education institutions, the state, and society]. Retrieved from https://www.uzh.ch/blog/ife-hbs/files/2018/10/Leder_Synopsis_5_Punkte_okt_2018.pdf
- Lepori, B. (2006). Public research funding and research policy: A long-term analysis for the Swiss case. *Science and Public Policy*, 33(3), 205–216. <https://doi.org/10.3152/147154306781779019>
- Lepori, B. (2008). Research in non-university higher education institutions: The case of the Swiss universities of applied sciences. *Higher Education*, 56(1), 45–58. <https://doi.org/10.1007/s10734-007-9088-y>
- Lepori, B. (2021). The heterogeneity of European higher education institutions: A configurational approach. *Studies in Higher Education*. Advance online publication. <https://doi.org/10.1080/03075079.2021.1968368>
- Lo, Y.-Y., Huang, C.-J., & Peters, H. P. (2019). Do organizational interests interfere with public communication of science? An explorative study of public relations of scientific organizations in Taiwan. *East Asian Science, Technology and Society: An International Journal*, 13(4), 557–574. <https://doi.org/10.1215/18752160-8005617>
- MacFarland, T. W., & Yates, J. M. (2016). *Introduction to nonparametric statistics for the biological sciences using R*. Cham, Switzerland: Springer. <https://doi.org/10.1007/978-3-319-30634-6>
- Marcinkowski, F., Kohring, M., Friedrichsmeier, A., & Fürst, S. (2013). Neue Governance und die Öffentlichkeit der Hochschulen [New governance and the publics of higher education institutions]. In E. Grande, D. Jansen, O. Jarren, A. Rip, U. Schimank, & P. Weingart (Eds.), *Neue Governance der Wissenschaft: Reorganisation – externe Anforderungen – Medialisierung* (pp. 257–288). Bielefeld, Germany: transcript. <https://doi.org/10.1515/transcript.9783839422724.257>
- Marcinkowski, F., Kohring, M., Fürst, S., & Friedrichsmeier, A. (2014). Organizational influence on scientists' efforts to go public: An empirical investigation. *Science Communication*, 36(1), 56–80. <https://doi.org/10.1177/1075547013494022>
- Marginson, S. (2004). Competition and markets in higher education: A “glonacal” analysis. *Policy Futures in Education*, 2(2), 175–244. <https://doi.org/10.2304/pfie.2004.2.2.2>
- Marginson, S. (2016). High participation systems of higher education. *The Journal of Higher Education*, 87(2), 243–271. <https://doi.org/10.1080/00221546.2016.11777401>
- Massarani, L., Murphy, P., & Lamberts, R. (2020). COVID-19 and science communication: A JCOM special issue. *Journal of Science Communication*, 19(5), 1–5. <https://doi.org/10.22323/2.19050501>
- Meier, F. (2019). Trends der Hochschulentwicklung. Der Weg zur wettbewerblichen Organisation [Trends in higher education

- development: The path to competitive organizations]. In B. Fähnrich, J. Metag, S. Post, & M. S. Schäfer (Eds.), *Forschungsfeld Hochschulkommunikation* (pp. 25–38). Wiesbaden, Germany: Springer VS. https://doi.org/10.1007/978-3-658-22409-7_2
- Metag, J., & Schäfer, M. S. (2017). Hochschulen zwischen Social Media-Spezialisten und Online-Verweigerern. Eine Analyse der Online- und Social Media-Kommunikation [Universities between social media specialists and holdouts. An analysis of universities' online communication in Germany, Austria, and Switzerland]. *Studies in Communication and Media (SCM)*, 6(2), 160–195. <https://doi.org/10.5771/2192-4007-2017-2-160>
- Pasternack, P., & Schulze, H. (2011). Gestärkter Bund und selbstbewusste Kantone. Wissenschaftssystem und Föderalismus in der Schweiz [A strengthened federal government and self-confident cantons: Science system and federalism in Switzerland]. *Die Hochschule: Journal für Wissenschaft und Bildung*, 20(1), 73–94.
- Peters, H. P., Heinrichs, H., Jung, A., Kalfass, M., & Petersen, I. (2008). Medialization of science as a prerequisite of its legitimization and political relevance. In D. Cheng, M. Claessens, T. Gascoigne, J. Metcalfe, B. Schiele, & S. Shunke (Eds.), *Communicating science in social contexts: New models, new practices* (pp. 71–92). Dordrecht, The Netherlands: Springer. https://doi.org/10.1007/978-1-4020-8598-7_5
- Pieczka, M. (2008). Professionalization of public relations. In W. Donsbach (Ed.), *The international encyclopedia of communication* (Vol. 9, pp. 3912–3914). Malden, MA: Blackwell. <https://doi.org/10.1002/9781405186407.wbiecp108>
- Rowe, D., & Brass, K. (2011). “We take academic freedom very seriously”: How university media offices manage academic public communication. *International Journal of Media and Cultural Politics*, 7(1), 3–20. https://doi.org/10.1386/mcp.7.1.3_1
- Russ-Mohl, S. (2017). *The rise and fall of science journalism and the disinformation economy*. Lecture at the Università della Svizzera italiana in Lugano.
- Sandhu, S. (2012). *Public Relations und Legitimität. Der Beitrag des organisationalen Neo-Institutionalismus für die PR-Forschung* [Public relations and legitimacy: The contribution of organizational neo-institutionalism to PR research]. Wiesbaden, Germany: VS. <https://doi.org/10.1007/978-3-531-19304-5>
- Schäfer, M. S., & Fähnrich, B. (2020). Communicating science in organizational contexts: Toward an “organizational turn” in science communication research. *Journal of Communication Management*, 24(3), 137–154. <https://doi.org/10.1108/JCOM-04-2020-0034>
- Schwetje, T., Hauser, C., Bösch, S., & Leßmöllmann, A. (2020). Communicating science in higher education and research institutions: An organization communication perspective on science communication. *Journal of Communication Management*, 24(3), 189–205. <https://doi.org/10.1108/JCOM-06-2019-0094>
- Schwetje, T., Hauser, C., & Leßmöllmann, A. (2017). *Hochschulkommunikation erforschen. Hochschulkommunikatoren als Akteure: Ergebnisse einer Online-Befragung, 2. Welle* [Exploring higher education communication. Communication practitioners as actors: Results of an online survey, 2nd wave]. Karlsruhe, Germany: Karlsruher Institut für Technologie. Retrieved from <https://tinyurl.com/HSKerforschen>
- Scott, W. R. (1994). Institutions and organizations: Toward a theoretical synthesis. In W. R. Scott & J. W. Meyer (Eds.), *Institutional environments and organizations: Structural complexity and individualism* (pp. 55–80). Thousand Oaks, CA: Sage.
- SERI (State Secretariat for Education, Research and Innovation) (2020). *Research and innovation in Switzerland 2020*. Berne, Switzerland. Retrieved from <https://tinyurl.com/SERI2020>
- Serong, J., Koppers, L., Luschmann, E., Ramirez, A. M., Kersting, K., Rahnenführer, J., & Wormer, H. (2017). Öffentlichkeitsorientierung von Wissenschaftsinstitutionen und Wissenschaftsdisziplinen. Eine Längsschnittanalyse des “Informationsdienstes Wissenschaft” (idw) 1995–2015 [Public orientation of scientific institutions and disciplines: A longitudinal analysis of the

- “Informationsdienst Wissenschaft” (idw) 1995–2015]. *Publizistik*, 62(2), 153–178. <https://doi.org/10.1007/s11616-017-0336-6>
- Swiss Academies of Arts and Sciences. (2021). Science in the Swiss public: The state of science communication and public engagement with science in Switzerland. *Swiss Academies Reports*, 16(8), 1–103. <http://doi.org/10.5281/zenodo.4974312>
- Swissuniversities. (2005, April 21). *Hochschulautonomie – der Schlüssel zum Erfolg der schweizerischen Hochschulen* [Autonomy of higher education institutions – the key to success of Swiss higher education institutions] [Press release]. Retrieved from https://www.swissuniversities.ch/fileadmin/swissuniversities/Dokumente/Kammern/Kammer_PH/MeMi/2005_Medienmitteilung_Hochschulautonomie_de.pdf
- Truniger, L. (2017). Schlaglichter auf Entwicklungen und Differenzierungsprozesse in Hochschulen [Spotlights on developments and differentiation processes in higher education institutions]. In L. Truniger (Ed.), *Führen in Hochschulen. Anregungen und Reflexionen aus Wissenschaft und Praxis* (pp. 15–29). Wiesbaden, Germany: Springer Gabler. https://doi.org/10.1007/978-3-658-16165-1_2
- Urban, D., & Mayerl, J. (2018). *Angewandte Regressionsanalyse: Theorie, Technik und Praxis* [Applied regression analysis: Theory, techniques, and practice] (5th ed.). Wiesbaden, Germany: Springer VS. <https://doi.org/10.1007/978-3-658-01915-0>
- Väliverronen, E. (2021). Mediatisation of science and the rise of promotional culture. In M. Bucchi & B. Trench (Eds.), *Routledge handbook of public communication of science and technology* (3rd ed., pp. 129–146). Abingdon, UK: Routledge.
- Vogler, D., & Schäfer, M. S. (2020). Growing influence of university PR on science news coverage? A longitudinal automated content analysis of university media releases and newspaper coverage in Switzerland, 2003–2017. *International Journal of Communication*, 14, 3143–3164. Retrieved from <https://ijoc.org/index.php/ijoc/article/view/13498/3113>
- Volk, S. C., & Zerfass, A. (2018). Alignment: Revisiting a key concept in strategic communication. *International Journal of Strategic Communication*, 12(4), 433–451. <https://doi.org/10.1080/1553118X.2018.1452742>
- Weick, K. E. (1976). Educational organizations as loosely coupled systems. *Administrative Science Quarterly*, 21(1), 1–19. <https://doi.org/10.2307/2391875>
- Zerfass, A., & Volk, S. C. (2018). How communication departments contribute to corporate success: The communications contributions framework. *Journal of Communication Management*, 22(4), 397–415. <https://doi.org/10.1108/JCOM-12-2017-0146>