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From “minimalists” to “professional all-rounders”: Typologizing Swiss universities’ communication practices and structures

https://doi.org/10.1515/commun-2023-0147

Abstract: In the past two decades, the public communication of universities has become more important and received increased scholarly attention. While many studies have focused on individual university communicators (micro level) or all such practitioners in one country (macro level), our study analyzes organizational differences. It is the first-ever study to typologize universities’ communication practices and structures at the organizational level across an entire country. Based on a survey of communication practitioners in the central communication offices at all universities in Switzerland and using hierarchical cluster analysis, we classify 37 universities into four types of communicating universities: minimalists, well-resourced competitors, specialized strategists, and professional all-rounders. Those types are further characterized on the basis of official statistics. The analysis shows that the four types of universities differ considerably in their communication patterns and organizational characteristics and that the amount of resources available for communication is only loosely coupled with professional and strategic communication practices.

Keywords: university public relations, science communication, strategic communication, higher education institutions, cluster analysis

1 Introduction

A growing body of research has analyzed the relationship between universities and their publics in recent years. In many countries, higher education institutions (HEIs)

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strive to enhance their public visibility, reputation, and societal impact (Engwall, 2008; Entradas et al., 2023; Marcinkowski et al., 2014; Rowe and Brass, 2011).[1] With that public orientation, catalyzed by new public management (NPM) reforms beginning in the 1990s (Fredriksson and Pallas, 2018; Sultana, 2012), HEIs have gained autonomy but also been incentivized, if not pressured, to prove their legitimacy and compete with other universities for resources and reputation (Fürst et al., 2022; Krücken, 2021; Marcinkowski et al., 2014; Morphew et al., 2018). Added to their core tasks of research and teaching, universities are now increasingly expected to pursue a communicative 'third mission' "to connect directly to the external world" (Laredo, 2007, p. 441) and involve stakeholders and the broader public in science and its outcomes (Sörensen et al., 2023). As the role and importance of university communication have changed accordingly, communication offices have received more resources, produced more output, and used more channels to reach a more diverse spectrum of stakeholders (Autzen and Weitkamp, 2020; Engwall, 2008; Entradas et al., 2023; Fürst et al., 2022; Höhn, 2011; Schwetje et al., 2017). Their communication has professionalized and been increasingly guided by more explicit communication strategies (Bühler et al., 2007; Engwall, 2008; Entradas et al., 2023; Fürst et al., 2022; Schwetje et al., 2017).

However, the differences between universities, or types of universities, regarding their public communication and public relations at the organizational level remain largely unknown. While most studies on university communication have focused on individual communication practitioners at universities (e.g., Anani-Bossman, 2022; Lo et al., 2019; Volk et al., 2023) or on all such practitioners in one country (e.g., Höhn, 2011; Marcinkowski et al., 2013; Schwetje et al., 2017), few have compared universities as communicating organizations and analyzed the differences between them. To date, such analyses at the organizational level have been conducted on how universities communicate using social media (Metag and Schäfer, 2017; Sörensen et al., 2023) and are represented in news coverage (Fürst et al., 2021). However, to address the "organizational turn in science communication research" (Schäfer and Fähnrich, 2020), organizational-level analyses of the practices and structures of central communication departments are also needed.[2]

1 We use the terms *higher education institutions* (HEIs) and *universities* synonymously in this article. For Switzerland, both terms refer to research universities, universities of applied sciences, and universities of teacher education (sometimes also called "colleges of education").

2 Following the literature on public relations (e.g., Spatzier, 2017) and university communication (e.g., Entradas et al., 2023; Schwetje et al., 2020), we use the term *communication practices* to refer to the actual communication activities and measures of communicators within organizational structures.

In our study, we aggregated survey data at the organizational level and conducted a cluster analysis to map and typologize the communication practices and structures of Swiss universities (n = 37). On that basis, distinct types of communicating universities and their specific features can be identified, which provides a comprehensive, nuanced picture of the landscape of university communication in an entire country.

2 Literature review and dimensions of analysis

The analysis of university communication is an interdisciplinary field encompassing research on higher education, science and technology studies, organizational sociology, and communication studies with a focus on science communication, public relations, and organizational communication (Fähnrich, 2018; Schäfer and Fähnrich, 2020). Although scholarship on university communication has expanded in the past two decades, it remains a relatively small field (Fähnrich, 2018; Schäfer et al., 2020). Most studies have focused on universities' central communication departments and been based on semi-structured interviews with communication practitioners (e.g., Elken et al., 2018; Engwall, 2008; Kallfass, 2009; Lo et al., 2019; Schwetje et al., 2020), although some have involved standardized surveys of communication practitioners (Bühler et al., 2007; Entradas et al., 2023; Höhn, 2011; Schwetje et al., 2017) and university leaders, including (pro)rectors and (vice)presidents (e.g., Friedrichsmeier et al., 2013; Fürst et al., 2022; Marcinkowski et al., 2013). Those studies have provided data about four analytical dimensions of university communication: intensity, diversity, professionalism, and strategic orientation of communication.

Addressing the *intensity* of university communication, scholars have examined the resources that universities devote to communication, their communicative output, and their perceived competition with other universities. Early studies showed that such intensity was rather low at most universities and that only a few communication officers were employed (Bühler et al., 2007). However, more recent studies have revealed that many universities worldwide have expanded their communication teams and perceive increased competition with other universities for financial resources, excellent students and researchers, and a good public reputation (Anani-Bossman, 2022; Entradas et al., 2023; Krücken, 2021; Lafuente-Ruiz-de-Sabando et al., 2018; Marcinkowski et al., 2013; Marcinkowski et al., 2014). In Germany, the size of universities' central communication departments grew from (typically) one or two full-time positions in the mid-2000s (Bühler et al., 2007) to three or four in 2010 (Friedrichsmeier et al., 2013) and to five or six in 2017 (Schwetje et al., 2017). A cross-European study revealed that in the past five years, the staff

of communication offices has increased at more than half of all universities, so that eight communication professionals on average are now employed (Entradas et al., 2023). Such expansion has prompted an increase in output, including in terms of media releases (Serong et al., 2017; Vogler and Schäfer, 2020). Most universities now use various channels for public communication, including websites and social media platforms, for an altogether high intensity of communication (e.g., Entradas et al., 2023; Metag and Schäfer, 2017; Schwetje et al., 2017; Sörensen et al., 2023). Apart from those overarching trends, however, studies have also repeatedly suggested that considerable differences exist between universities, even within the same higher education systems. The number of communication practitioners, for instance, still varies considerably between universities depending on their size – that is, the number of students enrolled (Bühler et al., 2007; Schwetje et al., 2017). It is therefore important to analyze university communication not only at the micro level of communication practitioners (e.g., Lo et al., 2019) and the macro level of countries (e.g., Entradas et al., 2023) but also at the organizational level, with entire universities as the unit of analysis.

Another focus of research has been the *diversity* of university communication – that is, how many target groups are addressed and how many channels are used. A key feature of NPM is that universities have perceived an increased need for legitimacy vis-à-vis stakeholders. While until the 1980s, politicians were the central stakeholder group of universities and ensured their legitimacy, universities have since gained autonomy as a result of NPM reforms (Fürst et al., 2022; Krücken, 2021; Marcinkowski et al., 2014). As a result, today's universities are more accountable for their decisions and performance and feel an increased need to legitimize themselves in the eyes of various stakeholders. Accordingly, university communication has targeted more groups, including (prospective) students, alumni, employees, political actors, corporations, journalists and news media, and the general public (Bühler et al., 2007; Engwall, 2008; Lafuente-Ruiz-de-Sabando et al., 2018; Marcinkowski et al., 2013; Schwetje et al., 2017). Some studies have indicated the particular importance of news media, the general public, and students (Bühler et al., 2007; Entradas et al., 2023), whereas others have identified corporate and political actors as being especially important (Friedrichsmeier et al., 2013; Marcinkowski et al., 2013). However, little is known about how such a diversity of stakeholders varies across different universities and types of universities. The increase in stakeholder diversity has also diversified the use of communication channels. Nowadays, most communication offices use several online and social media channels to directly address target groups (Autzen and Weitkamp, 2020; Entradas et al., 2023; Lo et al., 2019; Metag and Schäfer, 2017; Schwetje et al., 2017; Sörensen et al., 2023). Even so, traditional media relations (e.g., issuing media releases and maintaining contact with journalists) and events remain essential, particularly to reach multiple target

groups at once and enable direct interactions (Anani-Bossman, 2022; Entradas et al., 2023; Lo et al., 2019; Marcinkowski et al., 2013).

Regarding *professionalism*, scholars have been particularly interested in the (continuing) education and experience of communication practitioners and whether they establish guidelines to support and direct public communication efforts in their departments and across their universities. Early studies revealed that few university communicators had higher education or professional training in communication (Bühler et al., 2007; Höhn, 2011). More recent studies, however, have shown a growing number of employees with such training (Schwetje et al., 2017). Indeed, a very recent cross-European study showed that "most communications staff have a background in communications, either at the undergraduate or postgraduate level" (Entradas et al., 2023, p. 9), and often many years of experience in their job. Professionalism also includes practices and measures that enhance communication within central communication offices and across universities by empowering other organizational members to communicate (Zerfass and Volk, 2018). Such practices and measures are particularly important for universities, which have been characterized as "loosely coupled systems" (Weick, 1976) and "multiple hybrid organizations" (Kleimann, 2019) with complex communication structures, including the public communication efforts of academic staff from a wide range of disciplines (Engwall, 2008; Kallfass, 2009; Kessler et al., 2022; Marcinkowski et al., 2014). Those efforts are supported by communication practitioners in central communication departments by, for instance, providing media training, helping academics to compose media releases, and establishing communication policies (Engwall, 2008; Marcinkowski et al., 2014; McKinnon et al., 2019). The vast majority of universities in Germany, Italy, Portugal, and the United Kingdom have been shown to have "a policy encouraging public communication of science and research" (Entradas et al., 2023, p. 7). Many guidelines also set rules for how university members should interact with news media or communicate on social media and with different publics. Although such rules have some impact, organizational members follow them to varying degrees and sometimes not at all (Anani-Bossman, 2022; Engwall, 2008; Peters et al., 2008; Rowe and Brass, 2011; Schwetje et al., 2017; Väliverronen et al., 2022). Regarding professional guidelines for how central communication department should handle issues, a study conducted in Germany has shown that some departments do not have guidelines for crisis communication (Schwarz and Büker, 2019). In general, however, we know very little about guidelines in communication offices, not least regarding the ethics of university communication.

Last, scholars interested in the *strategic orientation* of university communication have investigated whether communication activities align with an overall communication strategy guided by objectives and plans and optimized through

evaluation processes. Strategic orientation is thus linked to following strategic goals and achieving coherence between vision, objectives, and various communication measures and activities (Volk and Zerfass, 2018). Early studies showed that only 25-30% of communication offices in German universities were guided by a communication strategy (Bühler et al., 2007; Höhn, 2011). A recent cross-European study revealed, however, that two-thirds or more of all communication offices at universities have such a strategy (Entradas et al., 2023). Yet, evaluation practices remain in their infancy in many offices, which has resulted in lost potential to optimize communication measures and processes to achieve communication goals (Bühler et al., 2007; Höhn, 2011; Raupp and Osterheider, 2019; Sörensen et al., 2024). Studies have also shown that communication offices at universities have a variety of goals (Elken et al., 2018; Höhn, 2011; Schwetje et al., 2020), and it is important that those goals are clearly defined. After all, the more unclear or contradictory the goals, the less they can contribute to a communication strategy and guide communication activities and resource allocation (Kühl, 2020; Spee and Jarzabkowski, 2017; Volk and Zerfass, 2018). In many communication departments, university leaders heavily influence such goals and strategies (Bühler et al., 2007; Elken et al., 2018; Schwetje et al., 2020), including gaining and maintaining a good image and reputation (Bühler et al., 2007; Fürst et al., 2022) by, for instance, "monitoring communication to protect the reputation of the university against possible crises" (Sörensen et al., 2024, p. 105), developing plans for crisis management, providing media training for researchers and organizational leadership, and attracting high media visibility (Engwall, 2008). Some university leaders have also emphasized creating an organizational identity and a sense of belonging by strengthening internal communication with staff members and students (Elken et al., 2018; Engwall, 2008), while others "do not speak so much about strategies" or show "shifting priorities" (Elken et al., 2018, p. 1117).

Although most studies on university communication have furnished evidence concerning one or several of those dimensions, scholarship to date has at least three crucial gaps. First, studies have yet to include all four dimensions. Second, there is a lack of research comparing universities in terms of those dimensions, even though results have repeatedly hinted at considerable organizational differences. Third, scholarship has strongly focused on research universities but not on universities of applied sciences and/or universities of teacher education, so few studies have involved comparing communication across those different types of organizations (Bühler et al., 2007; Höhn, 2011).

To narrow all three of those gaps in research, in our study we used survey data representing all four analytical dimensions of communication – intensity, diversity, professionalism, and strategic orientation – as a basis for developing a typology of the communication practices and structures of Swiss HEIs, including different universities as well as different types of universities. We examined the following

research question: *How do communication practices and structures differ between universities in terms of intensity, diversity, professionalism, and strategic orientation, and which types of university communication can be identified?*

3 Research design: Methods and data

Drawing on the four above-mentioned dimensions – intensity, diversity, professionalism, and strategic orientation of communication –, we conducted a whole-population survey of communication practitioners working in the central communication departments at Swiss universities and aggregated the resulting survey data for each university at the organizational level. We subsequently employed cluster analysis using 10 indices and variables (see Table 1), reconstructed different types of university communication, and contextualized those types with official statistics.

Online survey and official statistics

Our study is chiefly based on data from a survey of communication practitioners working at universities in Switzerland. Swiss universities, primarily funded by the state, include several internationally renowned research universities that regularly perform well in global university rankings, including ETH Zurich, École Polytechnique Fédérale de Lausanne (EPFL), the University of Bern, the University of Basel, and the University of Zurich. Overall, Switzerland has 14 research universities, 10 universities of applied sciences, and 18 universities of teacher education. The latter two types of HEIs were established in the 1990s and 2000s and specialize in applied research or the education of teachers (Denzler, 2014). While universities of teacher education tend to be small (i.e., with 80 to 3,400 students), universities of applied sciences tend to be large (i.e., with 185 to 22,000 students). Research universities are even larger, with up to 27,000 students (Bundesamt für Statistik, 2020).

A pretest with 14 participants was conducted to assess and refine the quality and comprehensibility of our questionnaire (see Fürst et al., 2022, p. 521). Publicly available information was used to compile a list of all communicators working in central communication departments at all 42 universities in Switzerland. In turn, 552 contacts were identified and invited by e-mail to take part in a standardized online survey in the autumn of 2020. The survey was designed using EFS survey software and was available in French, German, and Italian in reflection of the three major linguistic regions of Switzerland. We sent two reminder e-mails, and the Swiss Universities Public Relations and Information Officers Conference (SUPRIO)

encouraged its members to participate as well; even so, 60 contacts could not be reached or no longer worked at the universities' communication offices. Of the 492 people successfully contacted, 203 ultimately participated in the survey, for a satisfactory response rate of 41%. Of the 203 respondents, 181 revealed the name of their university, which allowed us to aggregate data at the organizational level. All told, we received responses from 37 of the 42 universities in Switzerland – representing the bulk of Swiss HEIs – and were thus able to include them in our analysis.

We aggregated the survey data from individual respondents by calculating mean values at the organizational level in order to conduct a cluster analysis (see below) and contextualized the resulting types of universities with data from official statistics regarding each university's number of students, number of academic personnel, and amount of third-party funding. We obtained those data from the Swiss Federal Office for Statistics (Bundesamt für Statistik, 2020). In the rare cases in which official statistics were missing, we obtained the data from the universities themselves by e-mailing communication practitioners.

Survey measures

The surveyed communication practitioners responded to most items on a 7-point scale ranging from 0 ("not at all" / "not at all important") to 6 ("very much" / "very important") (see the Online Supplement for the original wording of the survey items in German and their English translations). Before aggregating the data, all indices described below were first tested at the individual level (data set with n = 203 communication practitioners) and showed sufficient or good Cronbach's α values between .65 and .82. Next, all data were aggregated at the organizational level, with the university as the unit of analysis, and had Cronbach's α values ranging from .58 to .75.

The *intensity* of university communication was measured with three indices and/or variables:

– Communication practitioners were asked to indicate the number of people currently employed by their department, usually called "Communication" or "Marketing and Events", as a measure of human resources (i.e., all employees, including part-time positions). We validated those numbers by comparing them with the information regarding communication staff on the respective university website.
– The amount of communicative output was measured by asking respondents to indicate the extent to which their communication department uses multiple communication channels. Eight items measuring such channels – traditional media relations, social media, website, university newspaper or magazine,

image brochures and image films, annual reports, exhibitions and events, and self-developed mobile apps – were combined to form a mean value index (Cronbach's α = .61).
– We used eight items to measure the intensity of perceived competition among universities and included them by calculating a mean value index (Cronbach's α = .69). Communication practitioners rated the areas in which their universities compete with others, including for public funding, external funding, good students and staff, and a good image and public reputation. Respondents further indicated the universities with which their organization competes: other Swiss universities of the same type (e.g., universities of applied sciences), all universities in Switzerland, and universities in other countries. Respondents were also asked whether the competition between universities had increased in the past five to ten years.

Next, the *diversity* of university communication was measured with two indices:
– Eleven items were used to assess the diversity of target groups. Respondents were asked to indicate the importance of each target group (i.e., university staff, students and prospective students, alumni, the general population, politicians and public administration at the cantonal level, politicians and public administration at the national level, small- and medium-sized corporations, large corporations, local and regional news media, national news media, and international news media). To assess the stakeholder diversity of each university, we used the Shannon diversity index (*H*); the greater the diversity of target groups, the higher the index.
– We also calculated the Shannon diversity index to measure the diversity of communication channels used, namely traditional media relations, social media, website, university newspaper or magazine, image brochures and image films, annual reports, exhibitions and events, and self-developed mobile apps.

The *professionalism* of university communication was measured with three indices:
– One indicator of professionalism was the existence of guidelines that establish standards and norms and guide communication processes. On that count, respondents were asked whether their department has clear rules and guidelines regarding its communication in organizational crises, the use of social media, the ethics of organizational communication, and gender-appropriate language. For cluster analysis, we aggregated those four items by calculating a mean value index (Cronbach's α = .67).
– Another indicator was whether communication departments establish rules and guidelines for how the organization as a whole, including its academic staff, communicates. We measured whether communication departments set

rules for how university employees should communicate on social media and with journalists and calculated a mean value index for those two items (Cronbach's α = .58).

– We calculated a sum index with a maximum of five points to account for education of the communication staff as part of professionalism. We asked respondents about their professional experiences in certain fields, including public relations, journalism, marketing, and university administration. Respondents indicated whether they studied such a field, had further education in it, and/or had many years of work experience therein. Based on aggregated data at the organizational level, we allocated 1 point for each. On a 7-point scale ranging from 0 ("not at all") to 6 ("very much"), we also asked respondents how strongly they kept up with professional developments and trends regarding social media, crisis communication, ethical guidelines for organizational communication, instruments of corporate communication, and changes in the media landscape. We calculated a mean value index for those five items and assigned one point to all values between four and six, meaning that communication practitioners of an organization agreed to keep up with professional developments to a substantial extent. Respondents also indicated their formal level of education, ranging from mandatory schooling to doctoral degree. One point was accredited for communication staff who, on average, had at least a master's degree, which was true for most departments. On the sum index, organizations achieved between two to five points, which indicated satisfactory variance.

Fourth and finally, the *strategic orientation* of university communication was measured with two indices and/or variables:

– We asked communication practitioners about the importance of communication strategies, plans, and evaluations at their department, including whether the department's work focuses on clear objectives, is evaluated to optimize communication measures and processes, and is guided by communication strategies and plans. Respondents were also asked whether the latter had increased in the past five to ten years. We combined those four items by calculating a mean value index (Cronbach's α = .75).
– In addition, respondents indicated whether the university leadership, including vice-rectors and presidents, set the communication goals for their department.

Cluster analysis

We aggregated survey data at the organizational level (n = 37) as mean indices. For five large universities with large communication offices, including the University of Zurich, the University of Geneva, and EPFL, we were able to include between 11 and 20 responses per university (i.e., employees of the central communication department who completed our survey). For most other universities (n = 19), we had between two and nine responses. For 13 universities, we had to rely on one response, mostly because they have very few staff members in the communication department – in some cases, only one. The respective responses came from communicators who had, on average, worked in their department for more than five years. Of those 13 respondents, five were leaders of the respective communication offices, and four were responsible for leading a team within the office. We can therefore assume that they provided very reliable information about their organization. Based on those data, we conducted a hierarchical cluster analysis: a multivariate classification analysis that groups objects into clusters that are internally homogeneous but externally distinct from other clusters. Cluster analysis has proven useful in communication research in general (e.g., An et al., 2018) and in research on science and university communication in particular (Metag and Schäfer, 2017; Schmid-Petri and Arlt, 2016; Volk et al., 2023). We used Ward’s method and employed Euclidean distance as a measure. All variables were z-standardized.

The widely applied elbow method to determine the number of clusters that provided the best model (Metag and Schäfer, 2017; Schmid-Petri and Arlt, 2016; Volk et al., 2023) did not suggest a clear solution. We therefore checked a range of solutions for statistical benchmarks as well as interpretability and decided to use a solution with four clusters, a typical number of clusters for small data sets such as ours (e.g., An et al., 2018; Kleinen-von Königslöw and Förster, 2016). Doing so allowed us to outline considerable differences between different types of universities and provided a solution in which universities were well distributed across the clusters, with each cluster containing at least five organizations. To validate our cluster solution, we ran a discriminant analysis, which showed that 100% of the cases were classified correctly.

4 Results

Descriptive results and overview

We first provide descriptive data concerning the variables used for clustering (see Table 1, final row). Regarding our measures of *intensity* of communication, Swiss universities were found to employ, on average, 16 communication practitioners in their central communication departments (M = 15.6; *median* = 10). However, human resources were reported to vary considerably between universities, ranging from 1 to 40 employees, except for one communication team with 85 staff members.[3] They were described as typically producing and disseminating a great deal of output (M = 4.3 on a scale ranging from 0 = "not at all" to 6 = "very much") and tended to perceive themselves as being in competition with other universities (M = 3.5). Swiss universities were described as typically addressing a diverse range of target groups (H = 2.3) and communication channels (H = 2.0).[4] They evinced a high level of professionalism regarding guidelines for the practices of communication offices (M = 4.3 on a scale ranging from 0 = "not at all" to 6 = "very much") but a lower level of professionalism regarding guidelines developed for communication practices within the university as a whole (M = 3.8). The staff members in communication departments were characterized as being relatively well-trained, with specialized expertise in different areas of communication and public relations (M = 3.3 on a sum index ranging from 0 to 5). Regarding *strategic orientation*, clear objectives and communication strategies were, on average, ranked high in importance in communication offices (M = 4.4 on a scale ranging from 0 = "not at all" to 6 = "very much") and were found to be strongly influenced by university leadership (M = 4.2).

Typologizing communication practices and structures at Swiss universities

Overall, substantial differences emerged between the universities. We therefore conducted a cluster analysis to develop a typology that would capture the communication practices and structures at Swiss universities and outline similarities and

3 The communication office's exceptional size (85 staff members) is somewhat due to the university's multiple locations, each of which employs communicators at the central level.

4 Calculations of the *standardized* Shannon index, which measures diversity on a 0–1 scale and allows comparing constructs measured with different numbers of items, revealed H = .96 for both diversity indices.

differences between the types. Hierarchical cluster analysis revealed four clusters of universities that differ in their communication (see Table 1).

1. One group of five universities stands out with low to medium scores across all dimensions; we therefore labeled it "minimalists". Those universities perceive themselves as being in competition with other universities but devote the least human resources to communication and produce the least output. Although the diversity of their target groups is average, they use a below-average number of communication channels. The *minimalists* score lowest in terms of the use of guidelines, both for the communication practices of the communication department and for the university as a whole. While their communication staff has above-average training and skills in communication, they score lowest in terms of the existence of objectives and communication strategies, not least because university leaders largely avoid setting clear objectives for communication.

2. The largest group is a cluster of 16 universities that we labeled "well-resourced competitors". They score particularly high with respect to the intensity and diversity of their communication. They have the largest communication teams by far, produce an above-average amount of output, and perceive the highest level of competition with other universities. *Well-resourced competitors* display the largest diversity of target groups and communication channels used. However, they demonstrate a below-average degree of professionalism, with a low level of communication skills and training among their communication staff and relatively little use of guidelines for the communication practices across the university. By comparison, the use of guidelines within the communication departments is more common. Although their university leaders tend to set clear objectives for communication, universities in this cluster score below-average regarding the existence of communication strategies.

3. Another group of nine universities shows an exceptionally strong strategic orientation and average degree of professionalism but scores relatively low in the other dimensions, hence its designation as "specialized strategists". They account for one-quarter of all Swiss universities included in the study and have low human resources, produce a comparatively low amount of output, and perceive the lowest level of competition with other universities. They also show the least diversity of target groups and below-average diversity in the use of communication channels. *Specialized strategists* have average scores for the use of guidelines for communication practices across the university and demonstrate a strong use of guidelines within their communication departments. In particular, they score very high on the existence of communication strategies and on being given clear communication objectives by university leaders.

4. Seven universities are in the cluster we called "professional all-rounders", because the group scores high or at least average in all dimensions and stands

out in terms of professionalism. Their communication teams are medium-sized, and their perceived competition with other universities is average. However, they produce and disseminate the largest amount of output and address quite a diverse range of target groups through a variety of communication channels. *Professional all-rounders* display the most pronounced professionalism by far, with the highest level of communication skills and training among their communication staff and with an outstanding use of guidelines, both for the communication practices of the communication department and for the university as a whole. They also score very high on the existence of communication strategies and are guided by clear communication objectives set by university leaders.

Organizational characteristics of the four types of universities

In the following, we enrich the above-described typology with structural data about the respective universities: their type, size (i.e., number of students and university staff), and amount of third-party funding in absolute and relative terms. Table 2 shows the results for each cluster.

1. The *minimalists* consist mostly of universities of teacher education that are rather small in terms of students and staff. They receive a comparatively low amount of third-party funds, even though the amount is an important part of their total funding.

2. The *well-resourced competitors* consist mostly of research universities but also of some universities of applied sciences. They are by far the largest universities in terms of students and staff. They also attract the highest amount of third-party funding, which is a significant proportion of their total funding.

3. The *specialized strategists* consist mostly of universities of teacher education that are very small in terms of students and staff. They attract the lowest amount of third-party funds, which is also only a small part of their total funding.

4. *Professional all-rounders* consist primarily of universities of applied sciences and universities of teacher education, both in equal proportion. They are rather small in terms of staff but have moderate numbers of enrolled students. They attract a relatively small amount of third-party funds, but it remains an important part of their total funding.

Table 1: Variables used for clustering.

Cluster	Intensity			Diversity		Professionalism			Strategic orientation	
	Human resources (*M*)	Output (*M*)	Competition (*M*)	Target groups (*H*)	Channels (*H*)	Guidelines for department (*M*)	Guidelines for university (*M*)	Training (*M*)	Goals and strategies (*M*)	Goals set by university leader (*M*)
1. Minimalists (*n* = 5)	6.2	3.3	3.4	2.30	1.85	3.5	3.5	3.6	3.7	2.6
2. Well-resourced competitors (*n* = 16)	26.6	4.5	3.9	2.36	2.02	4.2	3.6	3.0	4.1	4.3
3. Specialized strategists (*n* = 9)	6.5	4.1	2.9	2.10	1.92	4.7	3.8	2.9	4.9	4.6
4. Professional all-rounders (*n* = 7)	8.8	4.7	3.6	2.33	1.99	4.9	4.5	4.3	4.9	4.3
All (*SD*)	15.6 (16.34)	4.3 (0.62)	3.5 (0.64)	2.23 (0.13)	1.97 (0.09)	4.4 (0.68)	3.8 (1.13)	3.3(0.82)	4.4 (0.85)	4.2 (1.20)

Note. *H* = non-standardized Shannon diversity index; *M* = arithmetic mean; *SD* = standard deviation.

Table 2: Variables used to describe clusters (means).

Cluster	RU	UAS	UTE	Students	Academic staff	Leading scientists	Third-party funds	Proportion of third-party funding
1. Minimalists (*n* = 5)	20%	20%	60%	2,722	409	74	22,121,995	16.5%
2. Well-resourced competitors (*n* = 16)	63%	31%	6%	12,379	2,200	300	140,820,101	20.8%
3. Specialized strategists (*n* = 9)	22%	0%	78%	1,388	160	25	5,816,842	7.6%
4. Professional all-rounders (*n* = 7)	14%	43%	43%	5,518	535	90	32,580,043	15.3%
All (*SD*)	38%	24%	38%	7,102 (7,699)	1,147 (1,531)	163 (191)	72,543,429 (105,670,685)	16.0% (11.2%)

Note. RU = research universities; UAS = universities of applied sciences; UTE = universities of teacher education; Students = number of enrolled students; Academic staff = number of academic staff, in full-time equivalents; Leading scientists = number of professors/lecturers with leadership responsibilities, in full-time equivalents; Third-party funds = total amount of third-party funds; Proportion of third-party funding = share of third-party funds of total revenues.

5 Discussion and conclusion

In our study, to address the lack of research on university communication at the organizational level, we set out to identify distinct types of communicating universities and their organizational features. Using aggregated data from a survey of university communicators in Switzerland, we conducted a hierarchical cluster analysis to map and typologize the communication practices and structures of the entire country (n = 37 universities). In the process, we distinguished four analytical dimensions: intensity, diversity, professionalism, and the strategic orientation of communication. Regarding the first two dimensions, our findings indicate that many Swiss universities have well-staffed communication offices addressing diverse target groups. That situation mirrors the expansion of universities' communication offices shown in the literature (e.g., Entradas et al., 2023; Friedrichsmeier et al., 2013). In accordance with findings from Germany, Italy, Portugal, and the United Kingdom (Entradas et al., 2023), our data also reveal that many Swiss universities show a high degree of professionalism and strategic orientation in their communication.

However, we also found considerable differences between organizations across all four dimensions. Our analysis reveals four types of universities – the *minimalists*, *well-resourced competitors*, *specialized strategists*, and *professional all-rounders* –, which we further characterized based on official statistics:

1. The *minimalists* (n = 5) are mostly small universities of teacher education with a low level of intensity of their communication, comparatively low to moderate levels of diversity and professionalism, and the lowest level of strategic orientation.
2. The *well-resourced competitors* (n = 16) are primarily large research universities with strong third-party funding. Their communication is characterized by a high level of intensity and outstanding diversity, relatively low levels of professionalism, and a medium level of strategic orientation.
3. The *specialized strategists* (n = 9) are mostly small universities of teacher education with relatively low levels of intensity and diversity of their communication, a medium level of professionalism, and a very high level of strategic orientation.
4. The *professional all-rounders* (n = 7) are small to medium-sized universities of applied sciences and universities of teacher education with an overall moderate to high intensity of communication, high levels of diversity and strategic orientation, and by far the most pronounced professionalism.

Those types of universities differ considerably regarding, among other aspects, human resources, which we subsumed under the dimension of intensity and which served as a proxy for how well-resourced each communication office was found to be overall (e.g., Bühler et al., 2007; Schwetje et al., 2017). Two clusters – the *min-*

imalists and the *specialized strategists* – have rather small communication teams. Our study cannot answer the question of how their size might impact the quality of communication and whether the gap is widening or closing. However, a survey of university leaders indicated a general trend of increasing personnel and financial resources for communication across Swiss universities in the past five to ten years (Fürst et al., 2022).

Our analysis revealed that human resources alone do not always lead to a better performance in terms of the diversity, professionalism, or strategic orientation of communication. While the *well-resourced competitors* are overperformers in the dimensions of the intensity and diversity of communication, they score lower in professionalism and strategic orientation. By contrast, *specialized strategists*, with their rather low resources, show a medium level of professionalism and a very strong strategic orientation. Compared with the *well-resourced competitors* cluster, *professional all-rounders* have far fewer human resources but have accomplished exceptional professionalism and a strong strategic orientation in their communication. Because *well-resourced competitors* are primarily research universities, but *specialized strategists* and *professional all-rounders* are mostly universities of applied sciences and universities of teacher education, our typology also suggests that the latter are catching up with the communication standards and flagship position of long-established and far larger research universities (cf. Lepori and Kyvik, 2010; Sataøen and Wæraas, 2016). However, our results also suggest that the *minimalists*, which are mostly small universities of teacher education, struggle to keep up with other universities.

As with any study, our findings have limitations. First, to capture the landscape of university communication in an entire country and typologize universities, we needed to focus on standardized measurements and neglect nuanced insights and qualitative observations. It was also beyond the scope of this quantitative study to trace developments in the communication of different universities and types of universities over time. Future research could use the typology developed here to conduct qualitative studies that allow a more in-depth examination in that regard.

Second, our descriptions of the 37 universities relied on different numbers of survey responses. Previous research has relied on one response per university only (Entradas et al., 2023), and we did the same for some small universities. However, for most universities, we had between 2 and 20 responses available. Along those lines, future analyses at the organizational level could aim to include at least two responses from each university.

Third, although Switzerland is a typical case of the growing importance of university communication (e.g., Engwall, 2008; Entradas et al., 2023; Fürst et al., 2022; Marcinkowski et al., 2013) and global changes in higher education due to NPM (Braun, 1999; de Boer et al., 2007; Krücken, 2021; Morphew et al., 2018), it is also a

particular case due its generally very well-resourced universities and the rather young history of universities of applied sciences and teacher education (Braun, 1999; Fumasoli and Lepori, 2011; Swiss Academies of Arts and Sciences, 2021). Although it is unclear to what extent our findings apply to other countries, our work marks a start to moving beyond the individual level of university communicators and contributing to the organizational turn in research on science and university communication.

Funding acknowledgment: This research was funded by the Swiss National Science Foundation (SNSF) under Grant Agreement No. 184992.

Declaration of conflicting interests: The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Supplemental Material: This article contains supplementary material (https://doi.org/10.1515/commun-2023-0147)