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"The New Road to Success: Contributions of Universities towards more Resilient Societies"

# Resilient Research Universities for Resilient Societies

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## 1. Why resilience matters

With imminent environmental risks, the ongoing war in Ukraine and countries struggling with the aftermath of the coronavirus pandemic, societies worldwide are facing a multi-crisis situation. The pandemic in particular has revealed the dangerous fragility of prevailing socio-economic systems and the importance of resilience of both societies and organizations (Schaepman et al., 2022). The failure of building resilience to crises is very likely to entail high costs – both on societal and economic levels. New research by the World Economic Forum suggests growth differentials in a range between 1% and 5% of annual global GDP growth (WEF, 2022). But what does it take for societies to absorb shocks and to cope with multifactorial crises? And what role do universities play in this context?

It seems obvious that research and education are essential to increase the resilience of systems worldwide. Universities, on the one hand, contribute actively to solving global problems. For example, by developing new medicines or researching renewable energies. On the other hand, institutions of higher education also play an indirect "developmental role" (Gunasekara, 2006) as spaces for reflection and knowledge production and by educating the thought leaders of tomorrow. There is ample evidence that an educated population is an essential precondition for promoting resilience throughout society (WEF, 2022). Little research, however, has been conducted so far (e.g. Minocha & Hristov, 2022) on what competencies universities can teach their graduates that will help promote societal resilience, and what effective ways of teaching them might look like.

The aim of this article is, in a first step, to analyze different concepts of societal resilience to point out key elements of resilient societies, and to elaborate a working definition for the university context. In a second step, we will look at universities as resilient organizations and present some specific measures that universities can implement to foster resilience. Using the example of the University of Zurich (UZH), the initiatives presented include areas of governance, research, teaching, as well as individual competencies of university graduates.

## 2. Understanding resilience: key elements of building a resilient society

The term "resilience" in its common, non-academic use refers to the *ability to successfully cope with a shock and to return quickly to normal functioning* (Doorn, 2017; Brunnermeier, 2021). Over the past decade, the notion of resilience has found its way into academia and has been used in a variety of context and research areas, ranging from psychology, structural and engineering science to the body of knowledge on corporate strategy or the natural and social sciences. Across disciplines, however, slightly different definitions of resilience have emerged, as several studies point out (e.g. Doorn, 2017; Folke, 2006; Sharma, Tabandeh & Gardoni, 2018). For an overview of often cited conceptions of resilient systems see Bahadur et al. (2010). Furthermore, the units of analysis differ across disciplines and from one conceptualization of resilience to another.

In *psychology*, for instance, resilience is generally seen as *the capacity of people to withstand stress*. Thus, resilience is analyzed at the level of the individual. In *engineering* science, resilience is understood to be a *capacity of infrastructure or buildings*, whereas in the field of *corporate* strategy, resilience is seen as a *capacity of enterprises or organizations* in general. In the *social sciences*, resilience is mainly analyzed in *relation to communities or socio-ecological systems, emphasizing the interconnectedness of societies and their environment* (Bahadur, 2010). In addition, the understanding of the term "resilience" has also shifted over time (Doorn, 2017). While the theoretical ecologist Crawford Stanley Holling referred to resilience in the 1970s as the ability

of an ecosystem to *return to a stable state after a disturbance* (Holling, 1973), recent literature emphasizes less the aspect of stabilization than the importance of *flexibility* and *adaptation to new circumstances* after a disruptive event (Doorn, 2017; Norris, 2008). Brunnermeier (2021), for example, states that "if we are able to adapt and change, we will strengthen our resilience". As Doorn et al. (2019) note, the conception of *resilience as a system's capacity to adapt, learn and reorganize* is among the most widely supported nowadays. Resilience is thereby often used in a normative way and seen as a desirable quality of a system.

In this article, we argue from a *university management* perspective and refer to resilience as an adaptive capacity *enabling an organization or a community to successfully get through crises and to use disruptive events for advancing* – a concept also referred to as social-ecological resilience (Robinson & Laycock Pedersen, 2021). In the following, we will focus on the following three units of analysis: The university itself – as an institution constituting an essential part of the infrastructure of a community and contributing to its stability –, on communities in which public universities are embedded, and on the individuals constituting these societies. (We do not, however, consider mental or emotional capacities but concentrate mainly on job-related skills.)

*How to strengthen societal resilience: key factors*

What does it take for societies to become more resilient? As Benedikter and Fathi (2017) note, there is not yet a convergent definition of a resilient society. During the past decade, however, several authors have suggested a set of overlapping characteristics to describe resilient groups, communities or societies. Benedikter and Fathi (2017), for example, outline four current lead concepts of resilient societies. First, they identify a resilience idea, dominant in the Anglo-American world, which is closely associated with the security discourse and defines societal resilience as emergency preparedness and the ability to systematically mitigate damage thanks to enhanced infrastructure and technology. The second school of thought is "innovation-oriented", focusing on

adjustment and transformation, encouraging network approaches and experimental thinking. The third school analytically assesses the capacity of regions or cities to act flexibly. The fourth strand of thought originates from the future discourse of Silicon Valley and highlights the importance of general access to technology and knowledge for the resilience of societies.

In addition to the four concepts summarized above, research on the topic mentions a range of factors contributing to societal resilience. Based on their comprehensive analysis of scholarly literature on resilience, Bahadur et al. (2010) have established the following key characteristics of resilient communities:

- High level of diversity (regarding the voices included in policy processes, but also the resources available to the group),
- Effective governance and institutions that are decentralized, flexible and enhance social cohesion,
- General acceptance of uncertainty and change, community involvement (participation) and inclusion of local knowledge in policy processes,
- Preparedness, planning and readiness – which includes "planning for failure", to make sure that breakdowns of infrastructure, for example, do not cause the system to collapse,
- High degree of social and economic equity, strong social values and structures,
- Acknowledgement of non-equilibrium systems dynamics (meaning that strengthening resilience should in any case be rather about managing change than returning to a status quo),
- Continual and effective learning, and finally
- Adoption of a cross-scalar perspective on events, as resilience is built through networks reaching from a local to a global scale.

Similarly, Brunnermeier (2021) lists qualities such as fairness, social norms, equality, flexibility, adaptation, and a culture of open communication as essential to societal resilience. In addition to the enabling factors already mentioned by the authors cited above, Brunnermeier also emphasizes the importance of trust in scientific and rational reasoning as well as room for dissenting opinions,

especially in times of increasing uncertainty: "Critically, a resilient social contract must leave space for mavericks and dissenters. They are the ones who might create unexpected solutions to unexpected shocks".

Finally, we would like to cite also the capacity and principles for resilience-building in communities listed by the United Nations in their "Guidance on Helping Build Resilient Societies", which was published in 2020 and is based partly on scholarly literature (e.g. Cutter et al., 2008; Béné et al., 2017), partly on practical experience of UN Teams. The following resilience capacities are mentioned:

- Absorptive capacity, i.e the ability to preserve basic infrastructure and functions after a shock as well as the capacity to recover from disruptive events,
- Adaptive capacity, meaning the ability to adjust to disruptions in order to continue functioning without major qualitative changes,
- Anticipative capacity, meaning the anticipation of potential threat and taking early action,
- Preventive capacity, which is mainly the (early) reduction of existing risks, and
- Transformative capacity, meaning the ability to create a totally new system if necessary.

When it comes to the principles informing the assessment, planning and implementation of resilience-building activities, the United Nations also stress the importance of equality, non-discrimination and participation from all stakeholders involved, especially full respect for human rights under all circumstances. Furthermore, it is noted that resilience approaches must be flexible and sustained, assessing not only immediate risks or needs, but considering also the "root causes" (United Nations, 2020) of risk, such as poverty, vulnerability, human suffering, while acknowledging at the same time the various interdependencies among political actors, civil societies, and institutions.

Considering the factors assessed in scholarly literature and understanding resilience as an ability to adapt, learn and reorganize in crises, we identified the following key aspects characterizing resilient societies:

- Flexibility, i.e the ability to adapt, change and reorganize, but also transformative capacities as mentioned in the UN guidance on resilience,
- Diversity,
- Equality,
- Participation,
- Preparedness (including anticipation and prevention),
- Learning and Education,
- Open communication,
- Scientific reasoning, and
- Room for dissenting opinions.

These characteristics form the basis of the following discussion about the potential of universities in shaping resilient societies.

## 3. The potential of universities in shaping resilient societies

As outlined above, flexibility, diversity, or equality, among others, are key capacities for building a resilient society. The question we address in this section is how universities can contribute to strengthening these capacities, and thereby take an active part in shaping the transformation towards a more resilient society.

The section is divided into two parts. In a first step, we look at the university and its organizational structure. We argue that the university, as a complex system, is inherently a resilient organization and thus plays an important role in building resilient communities. It can be shown that key factors identified as characteristic for resilient societies are equally important in the context of higher education institutions.

In a second step, we go beyond general assessments and look at specific initiatives fostering resilience at the University of Zurich, the authors' home

institution. The examples include areas of governance, research, teaching, services, and knowledge transfer. They highlight the variety of actions aimed at empowering society and individuals in a time of multiple global challenges.

*The university as a resilient organization*

It is widely acknowledged that universities play a central role in society: as knowledge generators, educators but also as driving forces in social transformation processes, for example, through the promotion of sustainability or engagement in diversity and inclusion (Bartusevičienė et al., 2021). Furthermore, current global disruptions like the COVID-19 pandemic have highlighted the importance of scientific research in the management of crisis. In other words, and as pointed out by Lisa Gibbs et al. in relation to the challenges posed by climate change: universities generate knowledge that helps societies in crisis to take immediate action and to deal with long-term consequences. Consequently, the authors see universities "as part of the critical infrastructure of society" and they highlight their "role and their resilience as a public good" (2022).

By virtue of its status as key player in society, it seems logical that universities, as well as other educational systems, must be resilient institutions with the ability to "respond to a crisis and continue to provide uninterrupted services through adaptation and adjustment" (Bartusevičienė et al., 2021). Or, as expressed pointedly by Bartusevičienė et al., "the idea of resilience […] will become a matter of survival for higher educational institutions" (2021). But what is it that makes a university a resilient organization?

According to Pinheiro and Young, universities are resilient organizations by their very nature: "In many respects, the history of the university as an institution, going back to the medieval era, is an example of resilience in the face of enormous socio-economic, political, and technological changes" (2017).

Universities are seen as complex organizations (Robinson & Laycock Pedersen, 2021) that are "characterized by many sub-entities and multiple connections or linkages between them" (Pinheiro & Young, 2017). In a figurative sense, Pinheiro and Young compare the university to a coral reef, "since both are

multi-level systems, that is, both are actors as well as function as arenas for other actors" (2017). An older, but still frequently mentioned concept in the literature on organizational resilience in the university context is that of "organized anarchy" (Cohen, Olsen & March, 1972; Selmer-Anderssen, cited in Karlsen & Pritchard, 2013). Basically, this organizational form points to the multiple goals and decision arenas and to "a structural decoupling" (Pinheiro & Young) within universities. Pinheiro and Young argue that decoupling, together with organizational redundancy and diversity are key features that strengthen the organizational resilience of universities: "By allowing the system to emerge and evolve rather than trying to steer it into a given direction or predisposed outcome, self-adaptability to new environmental dynamics is enhanced. This, in turn, increases the system's ability to overcome or absorb major disturbances, resulting in enhanced resilience […]" (2017).

Nevertheless, in recent years, because of a process of rationalization, scholars have identified a tendency – enforced also by the European Commission – to "couple the internal structures, strategies, and value-systems (cultures) within universities". Pinheiro and Young criticize this tendency of "formalization" and "managerialism" in higher education, arguing that this makes universities more vulnerable to shocks (2017). Other authors, too, have claimed that universities should preserve their identity as complex systems (Gibbs et al., 2022), and withstand "increasingly business-orientated models of governance" (Robinson & Laycock Pedersen, 2021).

Another tendency influencing the organizational structure of universities is mentioned in the report on university autonomy by the European University Association. Especially during the Corona pandemic, policy interest and state intervention in universities have increased, leading in some cases to "[…] overuse of steering instruments, or ad hoc interventions" (Bennetot Pruvot et al., 2023). This ultimately leads to reduced autonomy and – alongside the aforementioned trends – complicates the preservation of universities' core mission, that is, value-free, basic research.

In summary, higher education scholars identify a tension between efficiency and resilience, arguing that streamlining organizational structures is always at the expense of diversity and buffering capacity leading to increased vulnerability in case of disasters. Diversity, as pointed out earlier in relation to society, is a key value also for organizational resilience, or, as highlighted by Pinheiro and Young, "the level of internal variety – in terms of structures, skills, knowledge, people, etc. – needs to match the variety present in the external environment if the organization is to survive and prosper" (2017).

In the following section, we will take a closer look at the following capacities that strengthen resilience: diversity, community involvement and flexibility. Looking at the University of Zurich, we will present a selection of processes, projects and values that promote resilience on different levels – organizational and individual – and in the different core areas of the university.

*Building resilience – the example of the University of Zurich*

*Diversity at UZH – a core value*

Diversity plays a crucial role in the functioning of the university on very different levels. First, we think of diversity in the social context and of diversity policies. Through its "Diversity Policy: Promoting, Practicing, and Benefiting from Diversity", the University of Zurich (UZH) is committed to the active and systematic promotion of diversity and prevention of discrimination. As Switzerland's largest education and research institution, active in Europe and worldwide, UZH embraces diversity as a central value.

UZH is a comprehensive university with seven faculties covering more than 100 different subject areas thus embracing diversity at its core. With approximately 28'000 enrolled students and almost 10'000 employees, UZH is the largest university in Switzerland. One key asset of comprehensive universities are so-called "small subjects", which, contrary to the broad public perception as "niche" disciplines, have proven to represent fields of knowledge that contribute to the understanding of issues or events that in a fast-changing world come to the

fore in often unpredictable circumstances. At UZH, such is the case with Japanese Studies, for example. As a result of the growing importance of Asian countries in world politics, this study program has become more and more popular with students in recent years (see also Däppen & Schaepman, 2021).

However, the existence of a broad variety of subjects or study programs alone is not a resilience factor. In research, the university increasingly focuses on interdisciplinary collaboration. This makes it possible to address an even broader range of current issues and complex challenges. For instance, UZH has established University Research Priority Programs, which create academic networks across disciplinary borders and advance knowledge in areas of research that benefit society: Digital Religion(s), Dynamics of Healthy Aging, Evolution in Action, Equality of Opportunity, Human Reproduction, Financial Market Regulation or Language and Space, to name a few. In a context of increased disaster exposure, knowledge production must take place in a networked context.

Finally, there is room for diversity at the operational level, too. For example, UZH has committed itself to a reduction in actual flight emissions of at least 53% by 2030. The faculties and organizational units of the university can develop different approaches for the reduction of air travel, according to their size, academic culture, and mission. Diverse models, instead of a universal approach, do not only strengthen participation of organizational units, but also their commitment to sustainability through self-responsibility.

*Community involvement: dialogue, hands-on research, and global solidarity*
Along with the critical role of universities in society goes a social responsibility. As a public university, knowledge transfer and involvement of communities and players from outside academia – often referred to as "third mission" – are part of UZH's tasks. Engagement with communities is happening at a local as well as at a global level. At a local level, the University of Zurich promotes knowledge transfer and dialogue with the public. Exhibitions, talks, or open lectures are organized on a regular basis with the aim of discussing current issues and sharing

promising initiatives for a positive societal impact. Formats of exchange and platform for debates are encouraged by central services such as the Communications Office, as well as by individual faculties and institutes.

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**Community Involvement and Outreach at UZH – A Selection**

➢ *Ringvorlesungen*
➢ *Talk im Turm*
➢ Children's University
➢ Europa Institute at the University of Zurich
➢ Sustainability Lecture Series
➢ UZH Museums and Collections
➢ Competence Center Citizen Science (together with ETH Zurich)
➢ *Scientifica* – Zürcher Wissenschaftstage (together with ETH Zurich)

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As mentioned by Gibbs et al., citing the "Sendai Framework for Disaster Risk Reduction 2015-2030" of the United Nations, it is the role of academia to "support action by local communities and authorities; and support the interface between policy and science for decision-making" (2022). At UZH, high priority topics, such as digital transformation, are addressed by a community involving researchers of local higher education institutions but also by practitioners and decision-makers at the communal or cantonal level. An example is the Digitalization Initiative of the Zurich Higher Education Institutions (DIZH), run by the four partner higher education universities of the canton of Zurich. In a network of researchers, students, and practitioners from the sectors of business, engineering, training, or public administration, DIZH promotes solution-oriented cooperation on digitalization issues. The project "DSS_Embrace", for example, aims at developing decision-making instruments for businesses or city planners, who are dealing with deep uncertainties in the context of climate risks.

Finally, community involvement takes place at a global level, too. Thanks to more than 1'000 partner institutions worldwide, UZH is part of a dynamic global network that strengthens meaningful engagement in education and research. As a member of the League of European Research Universities (LERU), Universitas

21 or Una Europa, the University of Zurich is collaborating with like-minded institutions to achieve common goals such as cross-border research and innovation partnerships. Furthermore, UZH assumes its responsibility towards society by providing unbureaucratic assistance in current crisis. During the Corona pandemic, some students experienced financial hardship. With the lockdown, they lost their part-time jobs and could no longer pay their rent or health care costs. For them, the university set up an emergency aid and paid out amounts between 1'000 and 6'000 Swiss francs in a fast and efficient way. In the case of the war in Ukraine, one measure taken by UZH is to offer free visiting study programs for Ukrainian students.

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**«Shaping Resilient Societies»: A Multisectoral Initiative for Sustainable Development**

Taking the COVID-19-led situation and the "2030 Sustainable Development Strategy" of the Federal Council of Switzerland into account, the University of Zurich and the University of Geneva in collaboration with the Swiss Federal Department of Foreign Affairs, launched the "Shaping Resilient Societies" initiative in 2020. With a transversal and multi-stakeholder approach, the initiative is dedicated to building resilient and sustainable societies to future shocks. More specifically, it aims at better understanding crises response mechanisms in Switzerland and beyond. Believing that global resilience and sustainability are only achieved through a cross-sectoral and cross-societal approach, the Shaping Resilient Societies community is both diverse and interdisciplinary: it is composed of 60 experts, ranging from scholars to private and public sector practitioners to governmental and non-governmental officials.

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*Flexibility in a rapidly changing environment*

Self-organization, organizational flexibility, or, as mentioned above, "self-adaptability" are further key factors that contribute to the resilience of the university. Autonomy is a core element of UZH's identity as a university, and it is an enabling force in the continuous adaptation of management structures.

In 2020, the new governance program "Governance 2020⁺" was launched with the aim of empowering faculties by giving them more organizational and management responsibility in their core businesses: research, teaching, continuing education and services. In turn, improved managerial competencies, ethical behavior and transparency of the leadership was requested and

implemented along with a more collaborative management approach. Two years after the implementation, a survey has shown that the increased flexibility and decision-making power are highly appreciated among the faculty members. It enables them to set their own targets and has a positive effect on networking within the units. Cooperation between faculties and university leadership has improved, but collaboration and appreciation of co-leadership remain to be optimized.

Also in research, the university should strive to achieve a maximum degree of flexibility. In professorial appointments, the university must be able to react to new questions society is facing and to adapt the technical focus of a professorial chair. Medical science provides a good example of this. Research has shown that women and men get sick in different ways. They can develop different symptoms with the same diseases or react differently to medications. Nevertheless, medical research has been mainly focused on men, resulting in medical malpractice or failure to recognize diseases in women. Because more attention should be given to gender in medical research, UZH has established a chair in gender medicine – the first in Switzerland for this discipline. Finally, UZH has several competence centers that address current challenges and thus strengthen the resilience of society and its institutions. The Center for Crisis Competence, for example, serves as a lab for interdisciplinary research and is working on new solutions for an integrated crisis management.

*From the organization to the individual – and vice versa?*
It has already been suggested that resilience must be considered at different levels. Looking at diversity, flexibility, or open communication, it seems obvious that these key factors for the resilience of a community or organization are just as important for the individual. It has been pointed out in scholarly literature that only resilient organizations can contribute to resilient communities: "[…] if organizations are not sufficiently prepared to mitigate impacts and effectively respond to crises, neither will the communal- or supra-systems to which they belong" (Shaya et al., 2022). We argue that this is true also regarding the

individual: If individuals do not have the competencies to cope with crises, neither can the organizations of which they are part of. Therefore, the question is: how can universities promote competencies that graduates need to successfully enter the workforce?

Recently, several higher education experts have drawn attention to the global talent mismatch as well as to the "urgent need to integrate workforce development requirements into our current creation and dissemination models in Higher Education" (Minocha & Hristov, no date). The same authors – with a focus on the United Kingdom – criticize that "employability is a buzzword on most campuses, but in reality, relegated to the offer from Career Services or through the provision of extracurricular programs or guest lectures by Employers."

UZH has recognized this need and has launched various teaching initiatives considering also new labor market requirements. For example, UZH is using its Una Europa membership to co-develop and test micro credentials to make education more flexible. Another example is the School for Transdisciplinary Studies, founded in 2021, that acts as a hub for promoting inter- and transdisciplinary studying and teaching.

In addition to these new initiatives, however, there are some key competencies that universities have taught their students since their foundation and that continue to be valid in today's workplace. As described in the Future of Jobs Report of the World Economic Forum, critical and analytical thinking, complex problem-solving or active learning strategies have been topping the list of skills since the first report in 2016 (WEF, 2020). These are "classical" competencies that students learn at a university, and that continue to be central not only on the job, but also as basic mindsets that enable a constructive culture of debate in times of societal division.

Finally, it is worth mentioning that resilience is important for every employee, but indispensable in leadership. The Center for Leadership in the Future of Work at the University of Zurich focuses on the future of work and offers lifelong learning programs on people-centered leadership. Its aim is to create an ecosystem of current and future leaders who understand the value of people in

and for business. New ideas and expertise by various stakeholders such as civil society, government, start-ups, and corporate partners are integrated.

## 4. Conclusions

Resilience matters, today more than ever. In the context of a world full of crises, societies worldwide are challenged to strengthen their adaptability as well as their capacity to learn and reorganize themselves in a rapidly changing environment. Scholarly literature from different disciplines and theoretical backgrounds consistently points out that high levels of flexibility, diversity, social and economic equity, as well as community involvement and a broad participation in political processes are key elements of resilient societies. Open communication, room for dissenting opinions as well as effective learning and advanced levels of education are further capacities that foster resilience.

As has become clear from the selection of examples from the University of Zurich, universities have a high potential to help shape resilient societies. On the one hand, they are themselves diverse and adaptive organizations and thus resilient by their very nature, which makes them a part of a critical infrastructure supporting the resilience of the community in which they are embedded. On the other hand, in particular diverse research universities such as UZH contribute to empowering communities through their teaching and research activities and by addressing current challenges, but also by promoting community engagement in fields of high societal relevance, such as sustainability or digitalization. In addition, universities often serve as platforms for debates, where dissenting opinions can be expressed and discussed in a constructive manner. Last, but not least, universities provide their graduates with skills that are crucial for adapting to rapidly changing circumstances: analytical and critical thinking, advanced problem-solving skills and learning strategies. In this way, too, universities contribute to resilience-building within communities. To define in which ways or with which kinds of measures universities can foster societal resilience most

effectively, more research, particularly more specific data, would be needed. Currently, universities generally educate 'by design' for resilience, but resilience as a core competence or even part of a strategic plan are generally absent. It might be worthwhile to assess a transition from serendipitous, ad hoc resilience competencies to building overarching and strategic resilience competencies.

Further, it is evident that if universities wish to effectively contribute to building societal resilience in the future. Hence, they should maintain and strengthen their own organizational resilience, too. As scholarly work on university resilience points out, universities must make sure that their own organizational structures meet the growing complexity of contemporary challenges while at the same time preserving their autonomy and remain true to their core missions of value-free, basic research and teaching, despite growing pressures from outside. Finding a balance between maintaining traditional values and structures and adapting to new requirements will remain a challenge in the years to come.

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