



# RESEARCH ORGANISATION AND RESEARCH STRATEGIES AT UNIVERSITIES OF APPLIED SCIENCES (UAS) IN THE TENSION TRIANGLE BETWEEN POLITICS, RESEARCHERS, AND INTERNAL DECISION MAKERS – A CASE STUDY EXAMPLE OF THE IMC KREMS IN AUSTRIA

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## ABSTRACT

This study examines the circumstances and unique features of research activity at Austrian Universities of Applied Sciences (UAS), highlighting the various demands and interests of various stakeholders. Utilizing a case study approach based on an extensive literature review, data was gathered regarding the preferences and expectations of various UAS stakeholders, both present and future, in order to identify any gaps or conflicting needs that need to be taken into account in an all-encompassing research strategy. Guideline-based interviews with experts, the management board and researchers at the IMC Krems were conducted.

The findings demonstrate how competitive and dynamic the UAS sector is, with a focus on applied research and teaching activities. UAS are characterised by a relatively broad range of research topics with moderate relative specialisation, application orientation and close collaboration with local stakeholders. The majority of research funding at UAS comes from third-party funds or commissioned research, because the institution lacks basic research financing. Main opportunities for UAS are seen in dissertation rights for this sector and basic funding from the federal government to have more open-topic research. The findings of this study should encourage UAS to critically evaluate their research organisation and align it with their core mission: teaching and applied research.

**Keywords:** research organisation, research strategy, applied research, University of Applied Sciences, teaching and research

## ABSTRACT – DEUTSCH

Diese Studie analysiert die Bedingungen und Besonderheiten der Forschungsaktivitäten an Fachhochschulen (FHs) in Österreich mit einem Schwerpunkt auf den unterschiedlichen Interessen und Anforderungen verschiedener Interessengruppen. Unter Verwendung einer umfassenden Literaturanalyse wurde ein Fallstudienansatz gewählt, um Informationen über die aktuellen und zukunftsbezogenen Präferenzen und Erwartungen verschiedener Interessengruppen an FHs zu sammeln und mögliche Lücken oder widersprüchliche Anforderungen zu identifizieren, die in einer umfassenden Forschungsstrategie berücksichtigt werden müssen. Leitfadenbasierte Interviews mit Expertinnen und Experten, dem Management und Forschenden an der IMC KREMS Hochschule für angewandte Wissenschaften wurden durchgeführt. Die Ergebnisse zeigen, dass der FH-Sektor dynamisch und kompetitiv ist und einen starken Schwerpunkt auf angewandte Forschung und Lehraktivitäten legt. FHs zeichnen sich durch eine breite Palette von Forschungsthemen mit mäßiger relativer Spezialisierung und eine enge Zusammenarbeit mit lokalen Interessengruppen aus. Da keine Basisfinanzierung für Forschung an FHs besteht, wird die Forschung größtenteils durch Drittmittel oder Auftragsforschung finanziert. Entsprechend den gesetzlichen Anforderungen des Fachhochschulgesetzes (FHG) liegt der Fokus der Forschung auf der Anwendungsorientierung. Die größten Chancen werden in Promotionsrechten für den FH-Sektor und eine Basisfinanzierung durch die Bundesregierung gesehen, um mehr themenoffene Forschung zu ermöglichen. Die Ergebnisse sollten FHs dazu ermutigen, ihre

Forschungsorganisation kritisch zu bewerten und sie mit ihrer Kernmission in Einklang zu bringen: Lehre und angewandte Forschung.

**Stichwörter:** Forschungsorganisation, Forschungsstrategie, angewandte Forschung, Fachhochschule, Lehre und Forschung

## 1 INTRODUCTION

As the name “Universities of Applied Sciences” already implies, these institutions should be considered as having a research claim (Sichler & Heimerl, 2012). Austria’s UAS sector is still in its infancy and is being formed by numerous entities with different agendas (Burkert, Heller-Schuh, Leitner, & Zahradnik, 2018). “Does research at Universities of Applied Sciences even exist?” was a question posed just over 20 years ago (2020, Rössler). It is legally required of UAS in Austria to carry out application-focused research and development (R&D). This is significant because, in the long run, only research can guarantee a high-quality university education. The phrase “Teaching without research is empty” is frequently used in this context. It can be guaranteed that education will continue to evolve and become more relevant and application-focused through research and development.

### 1.1 CURRENT SITUATION

The creation of R&D-related courses during the founding phase of Austrian UAS after 1994 was an important characteristic of R&D. Since then, UAS have developed the ability to meet the growing need for R&D in the region (Kastner, 2012), because of increased societal and business engagement, which can also foster open innovation. It is important to recognize the impact that research can have on a university’s visibility. In the competitive environment of higher education, this visibility affects not only prospective students but also staff members and partner institutions (Sabbatini & Kastner, 2020). Additionally, R&D at UAS expands research activity toward SMEs in terms of dealing with their reality and concerns, shifting research activity away from large dominant companies (Bobik, 2012).

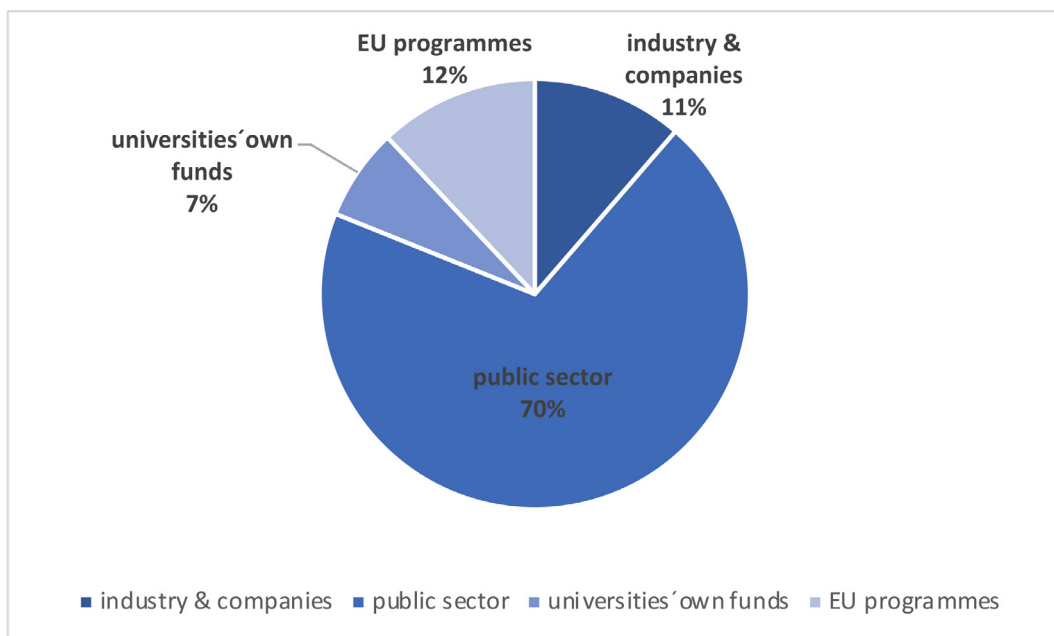
From the perspective of UAS staff, R&D enables employees to develop not only professionally but also personally (Kastner, 2012). It typically has a significant motivating effect on teaching staff when they can engage with current, profession-related topics and develop solutions according to their discipline. This allows the staff member a high degree of content-related autonomy (Ragossnig,

2012). This, in turn, has a positive effect on employer attractiveness and thus on the retention of good research personnel (Sabbatini & Kastner, 2020).

In principle, UAS should focus on application-oriented research that is aligned to the needs of the regional economy. However, it can be difficult to make a practicable distinction between basic and application-oriented research. Especially in the social sciences, there is a lack of concepts regarding what characterises application-oriented research (Lepori, 2008). Often the boundaries between basic and application-oriented research become blurred, so that a strict separation can no longer be maintained (Burkert, Heller-Schuh, Leitner, & Zahradnik, 2018).

According to Statistik Austria (2021), UAS are the fastest growing higher education sector in terms of research, with the largest R&D turnover after public universities. In 2021, UAS invested around €165 million (+32 million/+24% compared to 2019) in R&D with around 1,477 (+291/+25% compared to 2019) full-time equivalent researchers.

The composition of investments in R&D in 2021 is the following:



**Figure 1:** Funding of R&D at UAS in 2021

source: Statistik Austria, 2021

- €115 million (70%) project and programme funding from the public sector, primarily the federal government, federal states and municipalities
- €19 million (11%) industry and companies
- €20 million (12%) EU programmes and other international programmes
- €11 million (7%) from the universities' own funds

In July 2023, the FHK announced that in the period 2020-2023 around 8,000 publications resulted from UAS research (FHK, 2023).

The structure of the higher education sector in Austria is the result of an evolutionary development, which has so far not been embedded in overarching higher education development policy or overarching science development policy. Research at UAS initially developed as “piggyback research”, i.e. research that is carried out and legitimised by its added value for teaching (Schüll, 2019). Because even though the preceding paragraphs clearly illustrate not only the benefits but also the necessity of research at UAS, despite the legal mandate for research, there is no sustainable federal funding. Research at UAS is therefore third-party funded, with the strongest funding agencies being the FFG, FWF, CDG, and EU (Sabbatini & Kastner, 2020). This puts UAS in a dilemma: research will only be possible if resources are diverted from education, and that is in a context where education costs are already under pressure. This is not only politically unacceptable but would also undermine the most important marketing argument in UAS education, namely, the specific vocational training in small groups (Lepori, 2008). Enormous resources are necessary for writing third-party funding applications with uncertainty about the outcome of the submitted research project. The absence of doctoral rights further complicates the establishment and higher qualification of human resources (Sabbatini & Kastner, 2020). Due to funding pressure, UAS often engage in contract research. However, this development should not be accepted without concern. Contract research is problematic for UAS to the extent that these often represent small-scale services without structurally effective knowledge and expertise development at UAS (ibid.) Therefore, this study analyses how UAS can fulfil their research mission under the given conditions and how to deal with limited resources.

## 1.2 RESEARCH OBJECTIVES AND METHODOLOGY

This article provides insights into how R&D at UAS is organised and how they deal and cope with the given conditions. A special focus is placed on the Department of Business at IMC Krems in Austria, and how research activities are managed, supported and experienced by employees who are active in research in different ways.

Drawing on a comprehensive literature review, a case study approach was taken to gather information about the current and future preferences and expectations of different stakeholders at the IMC Krems. The main objectives were to identify possible gaps or contradictory requirements which must be considered in a comprehensive research strategy. Finally, a SWOT analysis provides a summary of the findings as a basis for practical implications. Guideline-based interviews with research staff, management board and researchers (n = 8) were conducted, and the results processed by means of content analysis.

# 2 RESEARCH ORGANISATION AND STRATEGIC ALIGNMENT AT IMC KREMS

## 2.1 UNIVERSITY PROFILE

IMC Krems was founded in 1994 as the International Management Center (IMC). In 2002 it was awarded the status of "University of Applied Sciences". Since then, there has been strong growth. IMC currently offers 17 Bachelor programmes, 10 Master programmes and three training courses – 50% of which are taught in English. The range of degree programmes covers three key areas: business, health and science & technology (IMC Krems, 2024a). The university management consists of the executive and the academic management.

The strategic direction and positioning of IMC Krems is developed jointly, between employees, academic board and management. One of the managing directors chairs the Executive Board. The second managing director is responsible for research and innovation and the international orientation of IMC Krems. The Academic Head, who leads the academic board, is responsible for the implementation and organisation of teaching and examination. Currently, the Board is made up of the Academic Head, the Deputy Academic Head, degree programme directors, representatives of teaching and research staff as well as students (IMC Krems, 2024b). The mission of IMC is as follows: "We are

an Austrian university of applied sciences with an international orientation. In our core tasks, education and research, we develop and implement innovative and sustainable solutions that create regional, national and global benefits.” (IMC Krems, 2024c).

Over 3,000 students are studying Bachelor’s and Master’s programmes at IMC Krems. Since its foundation, more than 12,500 degrees have been awarded. The Department of Business is the largest department with 14 programmes, also in terms of the number of degrees (Business: 9,280, Health Science: 2,257, Science & Technology: 1,589) (IMC Krems, 2024d).

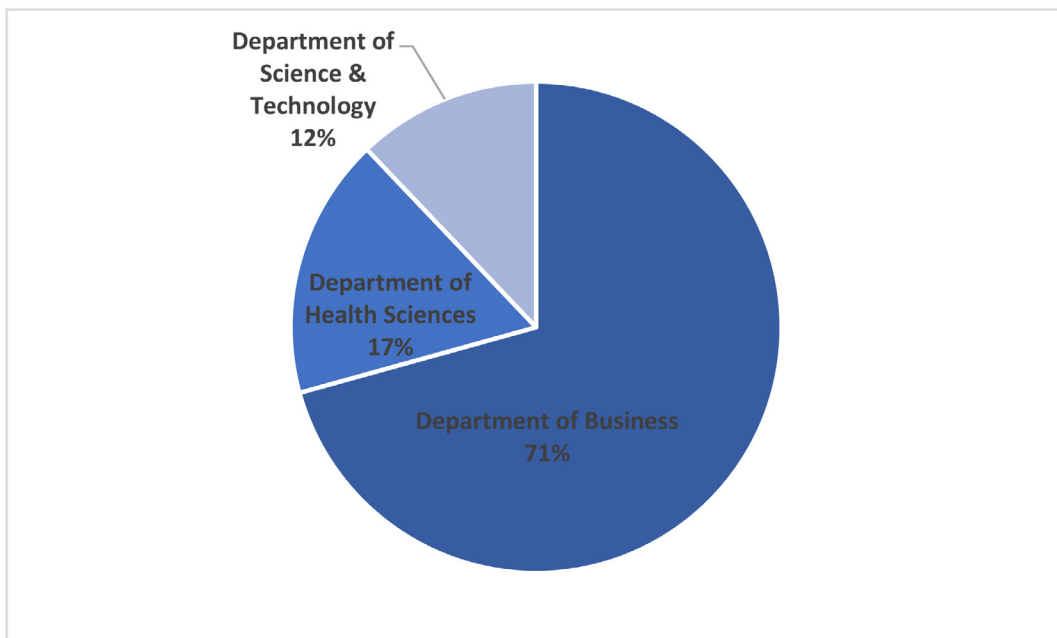


Figure 2: Distribution of degrees by Departments

source: IMC Krems, 2024d

The research priorities address future topics, have a long-term orientation and are continuously developed through national and international cooperation with business, society, and other academic institutions, especially universities and UAS (IMC Krems, 2024e). The research priorities are financed through the successful acquisition of regional, national and international research funding as well as through contract research projects. Research results are published in peer-reviewed journals, as papers or posters at international scientific conferences and original works intended to advance the theory, practice, and/or teaching of business and management. Popular scientific contributions and media

appearances increase the visibility of IMC Krems as a research institution. The research portal “Pure” of IMC Krems provides a comprehensive overview of all the research achievements of the academics at the UAS. The research portal promotes the networking of subject experts and contributes to the increased visibility of public research activities.

## **2.2 RESEARCH STRATEGY AT THE DEPARTMENT OF BUSINESS – INSIGHTS FROM THE INTERVIEWS**

Research activities in the Department of Business focus on topics ranging from innovation and digitalisation to entrepreneurship and tourism. The department comprises four institutes: Business Administration & Management, Health Management, International Trade & Sustainable Economy, and Tourism, Wine Business & Marketing. Research is focused on the respective core areas. These are evaluated on an ongoing basis and may be revised, or new fields may emerge. Several of the strategic objectives of IMC focus on research. However, research also plays an indirect role in many of the other objectives. Naturally for a university, research is one of the core processes at the IMC.

Based on the expert interviews we found that the majority of research at IMC Krems is applied research, but there are also basic research-oriented funding streams. According to one of the interviewees, the proportion of contract research, financed by industry or companies, is rather small but growing. Research funding is a mix of regional, national and international funding with a predominance of national and regional, but the balance towards international is growing. Most of the research is financed by national research/funding programmes. There is a change in funding channels: from state-funded to more federal and EU-funded projects. These funding channels are significantly more competitive but lead to higher quality research.

Research activities are supported by an in-house Research and Innovation Services Centre. Enhanced support to undertake research in a time and financially constrained environment is provided through teaching reductions (for participation in research projects), small state funding, start-up funding for project submissions, and research professorships for each department (since academic year 2023/24).

In general, UAS are challenged to reconcile teaching and research. Writing funding applications is very time-consuming, and success is not guaranteed. Researchers find it a great challenge to carry out other activities at the same time as writing grant applications. Within the projects that receive funding,



although the time is usually well calculated, there are instances where the efforts exceed estimations, leading to reduced time for other activities. One of the most difficult aspects to reconcile is balancing fluctuating research and teaching responsibilities. There are phases in which fewer research projects are processed. In these phases, there is a teaching obligation of up to 17 hours per week, which is perceived as very demanding. "Teaching is something very special and not assembly line work", one of the interviewees said.

## **OUTPUTS/IMPACTS OF R&D RESULTS**

Between 2020 and 2023, a total of over 170 research projects were/are ongoing at IMC Krems. The award rate for submitted research projects for the last two completed academic years is very high (30%). Over 110 applications have been submitted in the last three academic years. The number of research projects at IMC is constantly increasing, in 2023 there were 24 ongoing projects in the Department of Business. As the core business of the UAS is applied research, the impact of this research on the economy and society plays a very important role. IMC research covers 16 of the 17 Sustainable Development Goals (SDGs), based on thematic research fields.

Regarding publications, one interviewee experienced that practical handbooks that have emerged from research receive more attention in the media and in politics than academic publications, which also applies to participation in panel discussions, says one of our interview partners. Numerous conference papers and journal publications, also internationally, make the academic research visible. Participation in research forums, especially within the UAS sector, is also an important part for researchers to share their results and receive feedback.

## **INTERACTION BETWEEN TEACHING AND RESEARCH**

The general requirement for UAS is to integrate research results into teaching. According to our interviews this is partially achievable, particularly in Master's programmes, but sometimes not, especially if the research is too specific. It is important to improve collaboration among colleagues on how to better integrate research findings into teaching because, among other things, students perceive it as highly valuable to hear study results from their own institution, fostering a sense of pride in their university.

Most UAS operate with a certain "silo thinking", meaning each individual conducts research and teaches within their own domain. An open-source strategy among different UAS would be beneficial, allowing everyone not only to access

colleagues' materials but also to reuse them (with proper citation). In the long term, it will be difficult in the competitive environment of the UAS sector if every lecturer or researcher "cooks their own soup" without relying on a collegial exchange, says one of our interviewees.

Regarding the fundamental resource-related tension between research and teaching, some interviewees stated that there should be more opportunities for staff to focus fully on either research or teaching. After all, there is hardly anyone who excels equally in both areas. However, it is possible that such a focus can be achieved through cooperation. What was also mentioned in this context is that operational goals should be tailored individually to each employee.

### **2.3 SWOT ANALYSIS RESEARCH STRATEGY AND ORGANISATION**

Based on the findings of the guideline-based interviews with researchers, management board and research staff at the IMC Krems, the authors conducted a SWOT analysis<sup>1</sup> including the key messages, transferable to other UAS. The greatest strengths of research at UAS are the high practical orientation in combination with the proximity to local stakeholders. The most significant weakness is the lack of resources, which is due to the lack of state funding on the one hand, and the lack of right to award doctorates on the other. Especially the latter significantly hinders UAS in various ways: Without the ability to confer doctoral degrees, UAS may struggle to attract top academic talent—both students and faculty. Furthermore, doctoral research is often a key driver of innovation and advanced scholarship. The inability to award doctorates could stifle the development of cutting-edge research at UAS, potentially limiting their contributions to applied sciences and industry partnerships. Moreover, the ability to grant doctoral degrees is typically associated with higher academic prestige. This can affect the reputation of UAS, making them less competitive on both national and international levels. It may also impact their ability to form partnerships with industry or other research institutions that prioritize collaborations with doctoral-granting universities. The results also showed opportunities, such as financial support for UAS research from foundations, non-profit organisations or companies and industry partners. The fact that UAS have high potential in terms of scientific development is confirmed by an increasing number of scientific publications. However, this also makes it

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<sup>1</sup> A SWOT analysis is a strategic planning tool used to identify and evaluate strengths, weaknesses, opportunities and threats related to a business, project or situation. It helps organisations to understand internal as well as external factors that could impact their objectives.

necessary to reduce the bureaucracy involved in funded research projects, that is required by the grant providers. Concerning the threats, the emphasis was on the difficult resource allocation between teaching and research, as well as the increasing competition with universities because there are fewer UAS-specific funding calls at both the national and supranational level.

To conclude, structural adjustments are needed that affect the entire UAS sector. Specifically, this includes basic funding for research at UAS, which is essential in order to be able to provide high-quality teaching and at the same time fulfil the research mandate.



**Figure 3:** SWOT analysis of research at IMC Krems

source: Authors

## 3 CONCLUSIONS

### 3.1 SUMMARY

This article provides insights into how R&D is organised at UAS and how they fulfil their research mission under the given conditions.

Methodologically, based on a literature review, a case study approach focusing on the business faculty of IMC Krems was chosen with the aim of identifying gaps and contradictions in the research strategy and deriving practical implications. Using guided interviews, insights from various stakeholders were collected and a SWOT analysis drawn up.

IMC Krems currently offers a wide range of Bachelor and Master programmes in three fields: business, health and science & technology. The Department of Business at IMC Krems, the largest department, focuses on research areas such as innovation, digitalisation, entrepreneurship, and tourism. Organised in four institutes, the research priorities are continuously evaluated and revised, with a focus on applied research. While most of the research funding comes from national funding sources, there is an increasing trend towards international cooperation and funding, which is much more competitive and therefore contributes to higher quality research. Research activities at IMC Krems are supported by an internal Research and Innovation Services Centre. Nevertheless, there are challenges in reconciling teaching and research tasks, particularly in coping with high teaching loads and fluctuating research requirements. Despite these challenges, IMC Krems has a significant number of ongoing research projects, with a focus on applied research that contributes to regional development and addressing societal challenges.

The interaction between teaching and research is seen as essential, although there is also an opinion that integration here can still be improved, especially in the Master programmes. The SWOT analysis highlights strengths such as the opportunities to engage with a research field over the longer term, or the proximity to practice and local stakeholders, but also weaknesses such as the lack of basic funding and the balancing act between teaching and research. Opportunities include the promotion of interdisciplinary research between different departments and the promotion of cooperation with universities, while threats include the high teaching load and the lack of right to award doctorates. Overall, the research organisation at IMC Krems demonstrates a commitment to applied research with a focus on developing practical solutions for social and economic challenges.

For the UAS sector, it can be said that UAS have undergone an astonishing development. Not only have student numbers risen steadily, but research output has also increased steadily, as evidenced by an impressive number of publications. Although UAS must contend with a number of institutional challenges that make it difficult for them to fulfil their mission of research and teaching in equal measure, they are meeting them very well. Now is the time to set the political agenda to enable UAS to realise their full potential.

### **3.2 NECESSARY POLITICAL DECISIONS**

Research at universities is not conducted for its own sake, but rather serves the benefit of society. UAS particularly adhere to this principle, as they not only engage in applied research but also support SMEs in research and innovation due to their proximity to local businesses. Political actors must be aware that SMEs are under tremendous international competitive pressure, which can only be adequately addressed through innovations, which often derive from applied research.

What the UAS sector urgently needs is a basic funding for research to prevent brain drain from UAS, and to enable continuity in terms of personnel resource planning and sustainable competence building. Furthermore, more open-topic calls for research programmes are necessary, which are financially accessible – it must be considered that SMEs often do not have large budgets available for research purposes. Basic as well as application-oriented research should no longer be viewed separately, but rather as an “ecosystem of research”, bringing together different actors, each contributing their strengths to achieve a research goal.

The history of UAS in Austria has been a success story so far – despite challenging conditions. One can imagine how this success story could become even more successful if the urgently needed institutional adjustments were initiated by politics. Teaching needs research, companies need research and research requires resources.

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