


Article

Third Mission Activities at Austrian Universities of Applied Sciences: Results from an Expert Survey

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Abstract: This article looks at third mission activities as an integral part of universities of applied sciences (UAS) and sheds light on the wide portfolio of third stream initiatives at the Austrian applied higher education sector. In a pilot study, this research explores how the sector (consisting of 21 UAS) perceives its role as an enabler for prosperity, innovation and knowledge transfer in the local areas. In addition, we sought to identify the wide range of potential rationales behind regional engagement, attempted to differentiate between concepts that primarily target the traditional roles of universities (teaching and research) and seek to integrate third mission elements (Entrepreneurial University, Triple Helix, Mode 2) with an eye on economic gains and those that foreground additional responsibilities at the tertiary level for societal purposes. In this sense, we sought to carve out to what extent institutions also engage in third mission activities predominantly for non-economic reasons (Engaged University, Regional Innovation Systems, Sustainable University). Such a differentiation may have the potential to outline the paradigms for third mission activities in a more systematic and structured way. In addition, this analysis may allow Austrian UAS to make more informed decisions along the lines of third-stream initiatives that are based on their strategic positioning and profile.

Keywords: third mission; university of applied sciences; Austria; higher education; expert survey; entrepreneurial university

1. Introduction

As an umbrella term that “refers to a wide variety of principles and strategies for economic and social development” [1], third mission (TM) gives a name to those activities that alongside teaching and research have—especially in the context of applied institutions of higher learning—become the third pillar of higher education institutions (HEIs). From the 1980s onwards, a substantial increase in studies has been observed, dealing with the roles and impact of universities on society, pointing towards the growing need of TM activities [2]. Consequently, the entrepreneurial university model entered the academic discourse and with it, the TM debate, which has gradually become a component of the European higher education landscape. Today, no university, be it applied or research-oriented, can afford to ignore activities along the lines of technology transfer, innovation, lifelong learning and social and regional engagement. Consequently, and in view of the pressing needs of such a perspective, discussions have become more diversified regarding what to incorporate into the definitional scope, ranging from cultural, social, political and economic elements [3–7]. There are also a number of critical voices who claim that the term remains unclear and multi-interpretable [8]. While some define it in rather narrow terms as “technology transfer” [9] or “university–business cooperation” [10], others describe TM along the lines of continuous professional development [11] and social responsibility [1] and foreground open innovation and exchange with society in terms of transdisciplinary cooperation and scientific communication.

To further stimulate the debate, Trencher et al. [12,13] have introduced an additional function, which may be referred to as the fourth mission of higher education and theorized as “co-creation for sustainability”. They argue that the entrepreneurial model has evolved to a transformative one where a multi-stakeholder platform is “engaged with society in a continual and mutual process of creation and transformation” [12] (p. 158). This merging of paradigms and the integration of sustainable development values lead to societal transformations in the goal of materializing sustainable development in a specific location, region and societal subsector [12]. It is for these purposes that an analysis of the rationales behind third-stream activities may be particularly interesting in the context of Austrian UAS, which—in contrast to Austrian research universities—are not strategically embedded in the performance agreement. Consequently, within this specific university sector TM is neither regulated nor monitored by the state. Yet, every seven years all Austrian UAS are legally required to undergo an audit of their quality management systems and according to these audit guidelines each HEIs has to give evidence of their societal commitment and their active involvement with various stakeholders.

To find out more about the motivating forces behind third-stream activities may be even more relevant in view of the global massification trends of higher education [14] and the emergence of the knowledge economy, which have been driving the steady rise for societal commitment of higher education institutions (HEIs). In the myriad of today’s complex world, HEIs find themselves in the middle of economic, social and political pressures and are increasingly required to take on conflicting roles as civic, regional, national and global entities with differing orientations, priorities and outlines [15].

To meet the sustainable development goals (SDGs) set by the United Nations, they are encouraged to cooperate in interdisciplinary and international teams and engage in a more democratic discourse to tackle the grand challenges. At the same time, they are increasingly required to take on industry-experienced teaching staff that have close industrial ties and educate for enhanced graduate employability. Irrespective of the adopted perspective, what they all have in common is that their TM mandate is targeted towards a societal contribution, either with regard to teaching, learning, applied or fundamental research activities or with regard to social responsibility [16]. Current developments point to high expectations set towards HEIs to be more responsive, more effective and more efficient and willing to transform their institutional identities and constitutive logic [17].

Either way, due to growing societal demands on universities, a more systematic reporting on TM activities most certainly has the potential to yield additional legitimization towards public opinion and political decision makers [18]. For this reason, this pilot study sets out to discuss the differing rationales behind third-stream activities at the Austrian sector of universities of applied sciences. In the following section, the influential concepts in the area of third mission and sustainability are presented. These aspects are incorporated into the study design.

2. Differing Perspectives on Third Mission

In view of the diversified picture in which TM is portrayed, it may be helpful here to briefly touch on the distinguishing characteristics. For one, there are concepts that primarily target the traditional roles of universities (teaching and research) and that seek to integrate TM elements in a broader scope of these core functions (Entrepreneurial University, Triple Helix, Mode 2).

Then, there are concepts that have appeared only recently on the university agenda and appear to go far beyond traditional core missions of HEIs (Engaged University, Regional Innovation Systems, Sustainable University). Looking at these concepts from another perspective, they can also be distinguished along the lines of their predominantly economic focus (Entrepreneurial University, Triple Helix, Mode 2, Regional Innovation Systems) and their non-economic lens (Engaged University, Sustainable University).

At the same time, it needs to be critically stated that TM is heavily confronted with the “mission overlap” phenomenon, where activities with regard to technology transfer and innovation, continuing education and social engagement flow into one another [19]. Despite or precisely because of these blurred boundaries, we attempt to briefly sketch the definitional scope of each of these concepts.

2.1. Entrepreneurial University

After the so-called “first academic revolution” with the aim to incorporate research as an academic mission [20] throughout the 20th century, the so-called “second academic revolution” was seen as a further step of development in higher education [21]. This transformation led to the emergence of entrepreneurial universities where institutionalized industry–university connections, rationalized academic structures and a growing financial pressure for accountability and graduate employability became an integral part of higher education (HE) policies. In this context, the aim was to translate “research findings into intellectual property, a marketable commodity, and economic development [22] (p. 219) which has resulted in an entrepreneurial transformation of universities [23] and substantially changed the nature of academic labor [24]. In other words, public funding for university research has increasingly become dependent on “the perception of whether it will make a direct contribution to the economy” [4] (p. 319).

Undoubtedly, this has bridged the former divide between investigation and utilization and has made obvious that both theoretical and practical impetus to scientific research are required to advance and capitalize knowledge [4]. Consequently, numerous new modes of interactions between industry and academia were created—from contract research via vocational trainings to technology transfer and knowledge-based start-ups and spin-offs. Traditional teaching and research agendas were enriched by and integrated with economic and social developments. By introducing the concept of Entrepreneurial University, Etzkowitz was also the founding father of the so-called Triple Helix model, which elaborates on the interplay of university–industry–government relations [4].

2.2. Triple Helix

In the analysis of new modes of science policymaking [25] a further form of knowledge infrastructure was identified. The Triple Helix model consisted of overlapping institutional spheres where hybrid organizations emerged at the surfaces. It is argued that systems can be expected to remain in transition due to interlocking dynamics such as institutional transformations, evolutionary mechanisms and the ever-changing position of the university.

What is foregrounded here is the endeavor to advance innovation through a cross-sectional cooperation between government, academia and industries. In other words, a Triple Helix of university–industry–government interactions is regarded as the key component of innovation in product and process in increasingly knowledge-based societies [26]. This approach requires enhanced organizational structures that offer incentives for innovative capacity in the form of technology transfer offices at institutional, cooperate and governmental levels. It also needs both a normative and cognitive change towards more inter- and transdisciplinary thinking.

2.3. Mode 2

The changing mechanisms of production of knowledge have also driven the rationale behind the Mode 2 concept where new contexts of knowledge take center stage. While the traditional form of knowledge production of Mode 1 was mainly generated within the frame of the scientific system, the Mode 2 concept started to challenge this rigid paradigm of scientific discovery, given that it was “socially distributed, application-oriented, transdisciplinary, and subject to multiple accountabilities” [27] (p. 179).

What Gibbons calls context-sensitive science is the attempt to “incorporate society into science learning to gain knowledge that is reliable not only inside but also outside the laboratory” [28] (p. 161). Such a multi-directional knowledge exchange requires close interaction between multiple stakeholders where “society speaks back to the academic communities” [29] (p. 27).

In this vein, science becomes increasingly contextualized with blurred and hybrid boundaries where transdisciplinary, heterogeneous, heterarchical and transient lenses are adopted. This entails numerous interactions between a wide field of experts, multiple forms of knowledge and differing

perspectives. Here, utility, sustainability and social acceptability were found to be central criteria in the evaluation of quality [29].

2.4. Regional Innovation Systems (RIS)

Regional innovation systems (RIS) can be described along the lines of social and economic interactive learning processes between stakeholders that span the public and private sectors with the aim to enhance the innovative output within regions in the context of the global knowledge economy. Such a constellation of industrial clusters that is embedded in the regional innovation system requires the interplay of multiple actors in a collective and interactive fashion. One of them being HEIs that adopt a crucial role in learning processes that emerge from these interactions and dynamic and systemic interdependency of knowledge generation and knowledge exploitation [30,31].

Arguably, RIS structures differ significantly between different types of regions [31,32] ranging from “territorially embedded RIS” (localized learning processes and local university–industry interactions) over ‘networked RIS’ (specific network of universities, firms and learning institutions) to ‘regionalized RIS’ (regional specialization and global-local links). Apart from commercialization activities, RIS draw on additional knowledge transfer mechanisms, namely consulting, contract research, research and development (R&D) cooperation and unpaid knowledge transmission. It was found that these knowledge transfer mechanisms are more frequently applied than patents and licenses [33,34].

2.5. Engaged University

An engaged university is broadly defined as an institution that is “committed to direct interaction with external constituencies and communities through the mutually beneficial exchange, exploration and application of knowledge, expertise and information” [35] (p. 7). In this vein, engagement is understood as a “set of activities through which the university can demonstrate its relevance to the wider society and be held accountable” [1] (p. 313).

While TM is frequently used as a synonym for technology transfer, it can also be defined along the lines of “communities engagement” [36] (p. 3) in which HEIs need to act as “transformative institutions”. In this initially Australian discourse, issues such as the social dimension, equity and social justice have increasingly been addressed for a non-traditional student body that becomes more and more diverse. This population needs to be educated in line with the latest trends and labor market requirements. In this environment, a growing proportion of students was identified to be adult part-time workers that tend to act as demanding customers [29]. Consequently, community engagement at the tertiary level includes a contribution to both the socio-economic regional development and an equitable society, the creation of social capital and education for democratic and responsible citizenship [37].

Especially in the German-speaking context, it was found that societal engagement of HEIs is still in an early phase [38]. A number of possible fields of activity are discussed that reach from civic engagement over community outreach to community service. In addition, service learning, social entrepreneurship and widening participation were found to be integral parts of an engaged university [39] (pp. 45–46). It is argued that a public debate that underlines the necessity of HEIs for societal engagement would help to raise awareness for such a paradigm shift and lead to more appreciation for topics that go beyond financial gains [40].

2.6. Sustainable University

The sustainability discourse is inherently complex and can be defined as a so-called wicked problem given that it attempts to balance social, ecological and economic aspects [41] and thus seeks to integrate the three high level considerations of people, planet, profit [42]. In addition, it looks at long-time horizons with hard to quantify impacts [43]. In this sense, it is not only ill defined, but also cuts across boundaries with conflicting values and multiple solutions. It is understandable then that numerous models of a sustainable university point to differing strategic and operational activities; from the development of a sustainability vision and mission to the implementation of a sustainability

committee and strategic action that embrace education, research, outreach, partnership and campus sustainability [44–48].

In other words, a sustainable university sets environmental, economic and social concerns as its key priority and “walks the talk” with regard to its sustainability agenda [49]. It seeks to lead by example and minimize the negative environmental, economic, societal and health effects generated in the use of their resources [45] (p. 812). In doing so, it encourages a sustainable lifestyle in all its functions—teaching, research, outreach and campus operation [50]. Based on these considerations, Lukman and Glavic take a further step and include environmental protection, economic performance and social cohesion in the concept of a sustainable university [46]. Consequently, the knowledge produced at the tertiary level shall help to address today’s ecological, environmental, economic and social challenges. Examples for such an engagement are resources and energy conservation, waste reduction, efficient environmental management, promotion of equity and social justice, which need to be communicated by a sustainable HEI across all societal levels [51]. With this in mind, it becomes obvious that universities have a special societal responsibility to serve as an example and educate responsible citizens that are capable of ensuring a sustainable future.

3. Third Mission and the Austrian Sector of Universities of Applied Sciences

By passing the UAS Studies Act in 1993, with the intention to create an “alternative draft” to the traditionally established university system and to implement a new form of HE governance, a new sector, namely, the one of Universities of Applied Sciences was founded in Austria. Against the backdrop of international developments, the monopoly of the state as a provider of HE was abolished, and in line with various reform expectations, the UAS Studies Act was originally stipulated as a framework legislation with the aim to generate innovation in a new form of a HE public–private–partnership governance system [27,52,53]. In this vein, Austrian UAS institutions were established based on the ideas of new public management, which embraces a more educational marketization and intra-sectoral competitive orientation, which is an essential component of the Austrian UAS sector. Competition is realized by the obligation to apply for public funding and for the permission to accredit additional study programs. Competition is also characterised by the possibility to participate in research funding programs, which focus on applied research, development in co-operation with industry as well as representative organizations that are addressed by professional topics of the offered study programs and their vocational field orientation [34]. An additional key characteristic of the Austrian UAS sector is its profile as a HE provider, which focuses on science-driven, vocational-oriented teaching and applied research. As for the curriculum and the didactic implementation, UAS study programs are based on in-depth demand- and market-acceptance analysis. The competence portfolio of both Bachelor’s and Master’s degree graduates is developed in accordance with all relevant vocational field stakeholders. This special form of cooperation between UAS and the—predominantly local—vocational field assures enhanced graduate employability and counteracts unemployment. Furthermore, the UAS sector addresses the increasing demands of our global knowledge economy with its pressing need for life-long learning. This can be seen in its wide portfolio of both full-time and part-time study programs and in view of its diversified educational offers that range from practice-oriented modules for young and (more) mature students.

Rounding off the specific mandate of UAS institutions, they also have to fulfil certain demands that come from the regional innovation systems. They are asked to address challenges that drive industry and the vocational fields and conduct applied research and development activities—mostly in engineering, management, social and healthcare and touristic areas—with the aim to boost innovation and knowledge transfer [54]. These co-operations allow Austrian UAS institutions to diversify their funding and financing, to build important infrastructural resources and to participate in both national and international research funding programs. With respect to Mode 2 and/or Triple Helix models, such research endeavors meet the need to closely interact with the local industry and to integrate practice-oriented research findings in teaching, learning and innovation processes as both consumers

and prosumers. This, it is argued, has the potential to meet the current demands of today's knowledge economy and is in line with the intensively discussed requirements of a TM portfolio of a UAS [55,56].

In other words, due to a new governance approach with the aim to spur intersectional competition, UAS place a greater emphasis on vocational-orientated education and applied research per se [7,54], while traditional research universities are more concerned with basic research and academic sciences. Although some critical concerns have been raised that TM activities turn HEIs away from conducting basic research [57], hardly any university—no matter if research-oriented or applied—can afford to ignore third-stream initiatives these days.

Arguably, UAS draw on a much broader portfolio of third-stream activities. Thus, it was found that German UAS have a higher potential to fulfil the tasks of TM regarding regional knowledge transfer via heads and in view of their stronger focus on private industry employment [58] (p. 95). It was identified that UAS generally tend to align their educational curriculum more intensively to the employment demands of the private industry than traditional universities, except for technical universities that—similar to UAS—are more inclined to align their educational curriculum to the needs of technology-oriented industry. Further, it was found that UAS offer many college places in the field of engineering, in the areas of languages and cultural studies, medicine/sports science, and mathematics and natural science while traditional universities tend to educate their students more according to national needs.

4. Research Questions

Based on a comprehensive literature review, it was found that no studies have addressed third mission activities of Austrian universities of applied sciences so far. Against this backdrop, the present contribution represents a current situation analysis of this educational sector. The purpose of this research is to find out about

- the rationales behind third-stream activities at the Austrian UAS landscape
- the most important stakeholders of Austrian UAS regarding third-stream activities
- factors that support and impede TM activities at the Austrian UAS sector

In addition, the authors wanted to explore if

- the investigated Austrian UAS were familiar with the TM concept and how do they express their attitudinal stance towards third-stream activities?
- Austrian UAS were content with the existing legal and HE policy frameworks regarding TM?

5. Methods

Surveys are the most common form of empirical social research for collecting facts, knowledge, opinions, attitudes or evaluations of social structures [59]. In the present case, an expert survey with knowledgeable UAS experts involved in third-stream activities was conducted. Given that surveys tend to measure beliefs and not necessarily actions, they are subject to various response biases. To minimize this bias, both structured and open-ended questions were asked. The risk that specific survey questions may be misunderstood was countered by follow-up telephone interviews. If someone left a remark or question mark in one of the open question boxes, the authors called that person for further clarification.

In the following, the study population, the survey design as well as its limitations are described in more detail.

5.1. Study Population

Based on a previous study with the aim to identify those agents whose occupational fields and institutional roles are in line with TM activities at Austrian UAS, the participants for this research were purposefully selected. Arguably, with a purposive sampling approach addressing a pre-selected expert cohort, cognitive and systemic biases are more likely to occur. For one, non-probability sampling

draws on the subjective judgement of the researchers. In addition, the participants that represent the phenomena of interest may have been biased to provide predominantly positive responses. On a positive note, all identified persons have particular experience in the investigated topic and draw on a variety of knowledge sources (academic, semi-formal, informal, tacit) that allow them to provide knowledgeable answers to all relevant questions and to make informed decisions about who to address in case of doubt.

In sum, the selected third-stream experts consisted of knowledgeable informants working at an Austrian UAS in the fields of quality management and diversity management with close ties to the management, teaching and research staff of the respective institution. In total, an online expert survey comprising 15 groups of questions was sent to 42 pre-selected persons of all 21 Austrian UAS. Participants received this survey and an explanatory cover letter in March 2019 and a maximum of two follow-up e-mails spaced three weeks apart to encourage participation. A total of 14 individuals from 13 UAS completed this survey, which is a response rate of 34%; this represents nearly two thirds of the entire Austrian UAS sector. Participation of UAS from an urban area, rural region and city was 54%, 23% and 23%, respectively. A total of 46% of the institutions have a student population of 3000–5000 students, 31% have a student body of 1000–3000 students, 15% educate more than 5000 students and 8% have fewer than 1000 students. The remaining UAS did not participate for reasons of workload, timing and institutional frameworks with regard to disclosure policy.

It should be noted here that almost all informants (13 out of 14) were female, which may be due to the departments where the key informants operate, namely diversity management and quality management.

5.2. Survey Design

An expert survey was performed via an online questionnaire with both closed and open questions. In addition, some follow-up telephone interviews were conducted for further clarifications. Respondents were asked to provide information about their professional background, size and location of the respective UAS. This information was used to situate the findings within the broader context of the Austrian UAS landscape. Through a literature review and an in-depth analysis of previous TM surveys [40,60,61], 15 groups of questions with specific criteria generally addressed in TM discourse were identified. They were grouped into the broad categories of terminological, attitudinal, economic, educational, social, environmental, regional and stakeholder questions. For questions 8, 9 and 13, respondents were asked to choose the top five activities, stakeholders and reasons for TM. For questions 10 and 11, participants were asked to rate factors that promote and inhibit TM on a five-point Likert scale with endpoints ranging from very appropriate to not appropriate. In addition, it sought to identify the impact that TM initiatives leave on the local communities and potential avenues for further third-stream activities.

Arguably, the small sample size does not allow for a full breath of views and limits the robustness of our analysis. It needs to be stated here that this investigation represents a preliminary, purely descriptive data analysis, which may form the basis for further analysis with a richer data set and a larger sample. In view of the relatively recent TM discourse at Austrian UAS, it is to be expected that further research will yield a more diversified picture. Although the findings of this research are not representative, they may still shed some initial light on the context in which third-stream activities occur in the Austrian HE sector. Hence, this contribution needs to be understood as a concept paper of the Austrian UAS sector based on a pilot study with initial results that point towards a specific direction.

6. Findings

The following paragraphs summarize the outcomes obtained by the above-described survey with the identified experts. The different groups of questions are touched on individually in the sections below.

6.1. Institutional Position on Third Mission

With this group of questions, respondents were asked to indicate their familiarity with the notion of TM and the institutional stance towards third-stream activities. In addition, they were asked about the responsible party for TM activities and about institutional plans to set up a special TM department (e.g., a transfer center).

All respondents indicated that they were personally well-informed about TM, which came as no surprise in view of the purposive sampling. As to its institutional embedding, all experts agreed that TM was considered a cross-sectional matter at their HEI, in need of addressing by a variety of stakeholders. At the same time, a number of participants recognized that despite various third-stream activities carried out at their institution, the wording had—in view of the recent debate—not expanded to the mid-section of their UAS yet. Nevertheless, 85% of the informants stated that their institution adopted a positive attitude towards TM, the rest had a more reluctant stance. In terms of awareness, it was expressed by 69% of the participants that TM had been on the institutional agenda for more than three years. Additionally, 15% stated that third-stream activities had been of topical interest for HE management for about three years and the rest replied that it had only been taken on with a hesitant approach within the last year. All respondents indicated that no transfer center exclusively dedicated to TM activities was in place or planned for the near future.

6.2. Third-Stream Activities

This group of questions had to do with specific third-stream activities conducted at each UAS, which were subdivided into the fields of further education/knowledge, transfer/social or regional commitment. In this context, it is interesting to note that also those respondents that stated that they did not know whether TM activities took place at their HEI (8%) and those who thought that TM was not an issue at their institution (8%) answered all questions and were able to name precise activities.

As to further education, the three most rated TM activities were those offered for special groups such as teachers and senior citizens (77%), followed by vocational training with certificates (62%) and post-degree courses (62%).

The three most frequently mentioned activities in the field of knowledge transfer were R&D cooperation with companies or other research institutions (85%), followed by student internships and thesis projects in companies (69%) and career days (62%) designed to connect students and employers in meaningful ways.

In terms of activities in line with social and regional engagement, it was found that 85% of the respondents see their UAS heavily involved in regional development (e.g., urban development projects). Two thirds of the participants stated that their institution participated in the promotion of intercultural dialogue, mainly due to internationalization efforts in terms of exchange mobility. Additionally, 62% of the respondents indicated that their HEI offered childcare programs (e.g., children's university, holiday care) and assumed social responsibility by addressing issues that benefit the common good.

6.3. Stakeholders and Cooperation Partners

The following group of questions was aimed at identifying the most significant stakeholders and cooperation partners with regard to TM.

A total of 92% of the participants rated public partners (respective province, city, municipality, authorities) as the most relevant stakeholders for third-stream activities, followed by companies from the respective region (77%). Other HEIs and the Austrian Chambers and Associations accounted for 69% and 62%, respectively. With 54%, non-government organizations (NGOs) and schools were on equal footing with regard to TM cooperation. What is interesting in this respect is that despite the great significance attached to R&D cooperation with companies in the previous question, the priority of cooperation partners stated in this group of questions does not reflect this picture.

6.4. Impact Factors

In the following, we sought to identify impact factors that either promote or inhibit TM activities. In the survey, the participants were provided with a list of possible factors and asked to select from this list in addition to an open question, which allowed for the inclusion of further aspects.

6.4.1. Promoting Factors

The factors that have the potential to promote TM activities at Austrian UAS were named as follows: 69% of the participants stated that existing networks had a positive impact on opportunities for cooperation, followed by a “culture of enabling” and a supportive institutional environment. In this context, it was outlined that a good infrastructure where students and staff get equally involved (both 28%) was essential. In addition, 31% of the respondents considered existing support structures at an administrative level equally important as the appreciation and recognition for third-stream activities along the lines of teaching and research.

Table 1 outlines the factors that promote TM activities at UAS in more detail.

Table 1. Positive impact factors on third mission (TM) activities.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Specified
Existing networks	69%	31%	0%	0%	0%
Clear task definition of TM	8%	31%	15%	46%	0%
Administrative support	31%	54%	15%	0%	0%
Defined responsibility for TM	0%	38%	8%	54%	0%
Institutional support	38%	38%	15%	8%	0%
Time flexibility for TM project	23%	31%	31%	15%	0%
Student involvement is promoted	38%	62%	0%	0%	0%
Existing infrastructure	38%	38%	15%	8%	0%
TM activities are appreciated (next to teaching and research)	31%	46%	23%	0%	0%
TM is part of institutional strategy and guiding principles	23%	23%	31%	23%	0%
TM activities are actively encouraged by institution	23%	54%	8%	15%	0%

6.4.2. Inhibiting Factors

Lack of time resources (31%) was identified by the respondents as the most inhibiting factor for TM, followed by too much additional administrative effort (23%) and insufficient incentives from government departments, politics and funding agencies (also 23%).

For a more detailed examination, see Table 2.

Table 2. Negative impact factors on TM activities.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Specified
Lack of interest beyond one's core activities	8%	8%	38%	46%	0%
Lacking time resources	0%	31%	46%	15%	8%
Lack of equipment and infrastructure	15%	38%	46%	0%	0%
Lack of staff	8%	62%	8%	23%	0%
Lacking administrative support	0%	8%	38%	46%	8%
Limited financial resources	8%	54%	15%	23%	0%
Additional red tape	23%	38%	15%	15%	8%
Excessive length of projects	8%	8%	38%	38%	8%
Unclear aim and purpose of TM	8%	8%	38%	46%	0%
Students can or may not be part of TM	0%	8%	38%	54%	0%
Lacking incentive of politics and funding agencies	23%	31%	23%	15%	8%

In the open-question section, comments were made about the significance of awareness raising measures and third-stream activities also at curriculum, didactic and organizational levels. In addition, it was stated that more financial resources would positively influence the lack of time available for TM.

6.5. Motivation and Impact

The informants unanimously stated that the key drivers for TM were visibility and reputational gains for their institution of higher learning, which was closely followed by the wish to assume social responsibility (92%). Also, 77% pointed to obvious advantages for their student population in terms of enhanced graduate employability and a more practice-oriented orientation. In a similar vein, 62% said that teaching practices benefit from elements that are more practical and in tune with the times.

When it comes to the possible impact that third-mission activities may achieve, it was stated by 77% that the societal acceptance for research and science would increase due to closer interaction between academia and society. This would also lead to more sustainable and long-lasting cooperation. A total of 69% pointed to the benefits of a broad public dialogue with regard to knowledge and innovations generated by HEIs. At the same time, they feel that the economic area of the respective region is strengthened by third-stream activities (69%).

6.6. Future TM Development

The final series of questions asked about perceived institutional developments with regard to TM and looked into whether Austrian UAS were content with the existing legal and HE policy frameworks in terms of TM.

In this respect, 85% of the respondents stated that third-stream activities of their respective UAS would remain at the same (relatively high) level in future, while 15% said that their institutions intended to get more involved. Possible avenues for improvement were identified in terms of awareness raising initiatives, closer cooperation with stakeholders and more intensified social and regional engagement.

As to the question of whether TM should be strategically embedded in the development and financing plan of Austrian UAS, it was stated by 62% that this should be self-regulated in accordance with the institutional possibilities and resources at hand. In that respect, 31% were of the opinion that a comprehensive TM strategy equally applicable to all 21 Austrian UAS would have its advantages. Only 7% expressed their wish for the establishment of uniform guidelines on the part of education policy.

In sum, all participants called for financial incentives and more time resources for third-stream activities while maintaining their autonomy in terms of institutional priorities and profile of TM.

7. Conclusions

In this pilot study, it was investigated how TM activities are perceived and conducted in the participating Austrian UAS. In addition, we sought to find out what stakeholders are the biggest players concerning third-stream activities and what factors foster or impede TM. The authors also looked at the attitudinal stance of the institutions involved with regard to TM in general, and the existing legal and HE policy frameworks in particular.

The initial findings point to a trend towards entrepreneurial activities and collaboration with communities for meaningful social transformation. This tendency has been linked to a growing awareness of commercialization missions, strong ties to the industry and an active role in the promotion of regional knowledge transfer. At the same time, the majority of the investigated UAS was found to draw on a wider field of TM operation where societal impact, social purpose as well as a pronounced regional identity as enablers for transformations were foregrounded. While certain institutions lean towards a specific TM model in their third-stream agenda, it was impossible to carve out the previously described distinctive characteristics from the evidence base. This was partly due to terminological reasons (e.g., sustainability was not explicitly outlined in the questionnaire) and blurred boundaries between these concepts.

The most important collaboration partners regarding TM activities were found to be the public sector, followed by regional companies. The factor that most positively affects TM was the use and further extension of existing networks; the one that appears to impede TM most was found to be the lack of time and financial resources. In general, all informants of the investigated UAS stated that their institutions were prepared to stay actively involved or engage even more in third-stream activities. The majority of the respondents concluded that their HEI was satisfied with the given framework conditions for TM and stated that they wished no interference with the institutional autonomy.

8. Discussion

Over the past decades, HEIs have been heavily restructured and undergone significant transformations, predominantly based on the Anglo-American model of higher education with phenomena such as massification, privatization, diversification and accreditation taking center stage. In addition, knowledge-based societies have increasingly shaped the role of higher education, which further promoted the concept of entrepreneurial universities. This has led to a focus on economic development, graduate employability and a more dynamic academic identity that consists of elements of teaching, research and TM.

With this context in mind, the initial findings of this pilot study seem to reiterate the global developments within the higher education landscape. Overall, it was found that the Austrian UAS were well aware of the concept of TM, which was largely associated with activities along the lines of knowledge transfer, further education activities and social engagement. The self-image of the participating UAS in terms of third-stream activities was perceived as positive, which is little surprising due to the sector's practice-oriented mission of teaching and research. What was interesting was that a vast majority of the investigated experts wished no binding integration of TM into the development and financing plan of Austrian UAS, which pointed to more institutional freedom of decision-making without state regulation.

The tendency towards entrepreneurial activity and socially engaged initiatives may seem contradictory at first sight. However, on second thought it may fit well to the model of an entrepreneurial university [62]. In this vein, it promotes the multiple missions of teaching, research and entrepreneurial activities to serve as a conduit of spillovers for economic and social developments. It is hence in the interest of such HEIs to contribute to the social, economic and cultural well-being of their regions and overcome contradictions between global competitiveness and community engagement.

On top of that, current and future alignments to the SDGs require universities to take over proactive roles and become agents of change. In this sense, HEIs need to drive economic, political and societal transformation. To successfully implement the SDGs, they will need to put even more emphasis on the creation and stimulation of stakeholder dialogues, on their brokering and bridging roles to generate knowledge together with their national and international networks for the benefit of all.

This first analysis of the Austrian UAS landscape with regard to TM activities may be helpful in multiple ways. First, it may serve as a reference point from which to understand different contextualized reasons for economic, social and environmental engagement. Second, it may help to carve out specific rationales behind third-stream activities and contribute to the creation of distinctive profiles for UAS. It can further be used to identify and eliminate obstacles on the way towards third-stream activities but also to foster factors that create a supporting environment.

For the next step, we seek to conduct follow-up research with more institutional informants and more participating UAS. By taking account of additional teaching and research staff, a more systematic analysis of Austrian UAS with regard to their TM activities can be undertaken.

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