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## Requirement for Skilled Labour of the Upper Austrian Economy Trends and Prospects

**P**olicies related to vocational and continuing education and training (VET and CET) need reliable data about the current situation in the regional education sector and labour market. The objective of this study was to analyse the economy's requirement for skilled labour and the prospects for VET and CET programmes provided by companies. As well as analyses of educational and occupational statistics and other research, a written survey was conducted among companies in the respective province. Therefore this study explored the need for qualifications by building on verifiable trends and the companies' demand for qualifications.

According to microcensus data for 2010, around 82 percent of the Upper Austrian workforce had a formal educational qualification above the nine-year period of compulsory schooling. Of these, some 57 percent had an ap-

prenticeship diploma or a VET school qualification, about 13 percent upper secondary (but not academic) qualifications, and roughly 12 percent qualifications from higher education (HE) institutions or related establishments.

TABLE 1:

**Change of the formal qualification structure in Upper Austria, in %**

Highest educational attainment	2001*	2010**
University, HE institution	5.8	8.9
HE-related establishment	2.8	2.8
VET college (including post-secondary VET course)	7.5	10.2
Secondary academic school	2.9	3.2
VET school	12.1	12.2
Apprenticeship training	45.1	44.5
Compulsory schooling	23.7	18.3
Total	99.9	100.1
In absolute figures	655,060	710,400

\* workforce according to the subsistence concept, based on the census

\*\* economically active population according to the microcensus

Source: Statistics Austria, censuses; microcensus; own calculations

The trend analysis based on a comparison of occupational structures in 2001 and 2010 reveals a growth for academic professions (from 6.4 to 8.5 percent) and for professions in technology as well as non-technical intermediate professions at a comparable level (from 18.8 to 21.7 percent); a growth in distributive and personal services; unchanged values for the crafts and trade sector;

and a decline for industrial occupations ('plant and machine operators and assemblers': from 9.3 to 7.4 percent) and unskilled workers (from 13.6 to 12.3 percent). This means that the service occupations gained overall in relative terms at all qualification levels in the Upper Austrian occupational structure between 2001 and 2010 and showed increasing employment rates on the whole. To

assess the requirement for qualifications, it is probably essential in this connection that at least 75 percent of all jobs should currently be accessible via VET pathways. Employment levels in academic occupations have increased (from 6.4 to 8.5 percent in the period under observation) and will rise further thanks to developments in the education and employment sectors.

### Current labour market demand in print media

A differentiation of job ads in print media by major occupational groups provides empirical evidence of job-specific demands for qualifications. Of special interest, for example, is the demand for qualifications in the major occupational group ‘technology, science, research’, which reflects the fact that not only higher education graduates are still boasting good employment prospects but also holders of VET qualifications.

TABLE 2:

#### Job vacancies in print media in major occupational groups by qualification level (not including ‘qualification not recognisable’), Upper Austria, 2011; % (line)

Major occupational group with more than 1,000 job ads in 2011 (selection)	HE institution	Upper sec. certificate / ‘college’	VET school	Apprenticeship / master crafts-person diploma	Compulsory schooling / no VET qualification	Sum total: absolute (ranking)
Machinery, motor vehicles, metal	0.2	2.2	0.4	79.5	17.7	10,975
Tourism and catering	0.0	0.7	1.1	70.5	27.7	9,538
Commerce, sales and advertising	2.2	4.1	1.1	64.1	28.5	8,953
Construction, wood	0.4	3.9	1.1	70.7	23.9	8,466
Office, business	5.9	26.1	17.0	43.0	7.9	7,851
Traffic, transport and delivery services	0.0	0.0	0.6	8.3	91.1	6,561
Electrical engineering and electronics	0.2	1.1	0.0	86.6	12.0	5,628
Other elementary occupations	0.0	1.2	0.0	4.8	94.0	4,911
Cleaning and housekeeping	0.0	0.0	1.6	5.6	92.8	3,912
<b>Technology, science, research</b>	<b>17.4</b>	<b>33.9</b>	<b>5.2</b>	<b>43.5</b>	<b>0.0</b>	<b>2,673</b>
Healthcare / medicine	16.0	1.4	27.8	46.5	8.4	1,836
<b>EDP, telecommunication and new media</b>	<b>10.0</b>	<b>30.4</b>	<b>8.6</b>	<b>26.8</b>	<b>24.2</b>	<b>1,215</b>
Total	2.7	6.3	3.6	53.6	33.9	77,091

Source: Kostera, AMS March 2012

### Apprenticeship training: dual challenge

The demand for holders of the apprenticeship diploma is continuing in Upper Austria as shown by the analysis of job ads and company surveys. Apprenticeship training is the subject of recurring debates, on the one hand due to the verifiable skilled workers shortage, on the other hand due to the difficulties young people encounter when searching for an apprenticeship post.

In the crafts and trade occupations with a technical focus it is currently hardly possible to foresee necessary new developments because future technological changes can be anticipated only with difficulty. A total of 84 percent of the questioned companies completely rejected the statement “We would need a new apprenticeship occupation”. Once again it has turned out that the major problem encountered by training companies is the entry qualifications of apprenticeship beginners, even though the

picture is fairly diversified in this respect: the statement “The entry qualifications of many apprenticeship applicants are deficient” is rated as “applies fully” by 38 percent, as “applies to some extent” by 54 percent, and as non-applicable by 8 percent.

The development of new apprenticeship occupations has been a topic of discussions because of the development of occupational structures (and partly based on comparisons with Switzerland and Germany) in the following areas: healthcare and care for the elderly; environmental technology; security (such as security and surveillance specialist); and IT and media. As opposed to other countries with an apprenticeship training system where hardly any school-based VET programmes are provided, it must be noted that a large number of full-time school-based programmes can be found in the healthcare and nursing professions in Austria.

**Skilled workers shortage**

As part of this study, companies were asked about their assessment of the demand for skilled workers, the labour market situation in their sector, region, province, and at

supra-regional level. One question was about difficulties in staff recruitment last year. Companies stated they most frequently encounter difficulties in recruiting holders of the apprenticeship diploma.

TABLE 3:

**Frequent difficulties in recruitment last year\* broken down by economic branches, in %, 2011**  
*The three types of skilled workers with the highest values per column are highlighted*

Qualification	Crafts and trade n=2,679	Industry n=618	Wholesale and retail trade n=1,277	Transport n=471	Tourism and leisure industry n=592	Information and consulting n=468	Banks and insurance enterprises n=139
Apprenticeship diploma (all specialisations)	43	28	34	38	56	10	27
<b>Engineering</b>							
University with a technical focus	3	23	2	0	0	32	0
University of applied sciences with a technical focus	5	21	3	3	0	32	0
College of engineering	13	28	6	2	4	26	0
VET school with a technical focus	20	19	8	7	6	10	0
<b>Business administration</b>							
University with a business focus and similar	1	1	4	2	0	14	5
University of applied sciences with a business focus and similar	1	4	1	2	0	14	5
College of business administration	1	2	6	5	0	8	32
Business school	3	0	12	2	4	10	27
<b>Others</b>							
Other upper secondary schools**	1	3	2	0	6	11	5
Other VET schools**	7	6	8	3	18	3	0
Compulsory school (plus induction period)	33	17	27	37	54	10	27
Employees by branch, 31.07.2010	140,376	102,667	80,027	32,458	28,797	22,324	14,533

\* Did your company encounter difficulties in finding suitable staff last year? Frequently – rarely – never – does not apply.

\*\* e.g. tourism

Source: Company survey in Upper Austria (companies with 10 employees or more), March/April 2011

The breakdown by branches is informative. Branch-specific patterns of skilled workers shortage and thus also of the requirement for qualifications come to light where qualifications above the basic level are concerned. It is obvious that it is by no means only the search for higher education graduates with a degree in technology that is difficult. Industrial enterprises, for example, clearly more often have problems recruiting employees with an engineering college diploma than graduates of a univer-

sity (or university of applied sciences) with a technology focus.

Growths in productivity of agricultural and manufacturing branches are due to upstream and downstream knowledge-based services. The survey reveals the specific recruitment problems and need for qualifications in the branch 'information and consulting'. But the qualifications appropriate for the information and knowledge-based

services are far from sufficient for ensuring a suitable mix of human capital across all branches.

### **VET colleges and universities of applied sciences**

When looking at senior technical qualifications it comes to light why pronounced bottlenecks can be found in this field. Substantial growth rates are not only expected by companies in industry but also by the crafts and trade sector and by service providers in technical knowledge, apart from that the public and semi-public sectors also show continuing strong demand for people with higher technical qualifications due to increasing computer penetration in the spheres of administration and communication. The technicians' gap is therefore also the consequence of the varied employment opportunities of related graduates in the different economic sectors.

This shows clearly that employers see growth potential concerning the higher qualified in VET colleges and HE institutions. The number of VET college locations was raised considerably in Austria between 1970 and 1990, and the year 1994 saw the introduction of the university of applied science (or *Fachhochschule*) sector, which has developed rapidly since that time.

### **Outlook**

Due to the increasing internationalisation of the business sphere and the labour markets, the supra-national projections of the EU research institute are of particular importance as a benchmark for the qualification strategies pursued in the nation states. It can be assumed with high probability that in 2020 some 65 to 70 percent of qualified jobs will also be accessible via VET and CET pathways.

The statement: "In Upper Austria there should be more focus on skilled workers' qualifications for young adults (e.g. intensive training for skilled labour)" meets with the full approval of 59 percent and with partial approval in 38 percent of cases. Based on projections of Statistics Austria, the number of employees in the typical apprenticeship age will decline from around 42,600 to below 32,000 by 2020. If employment continues to rise and the number of young people entering the labour market for the first time stays relatively low, the efficiency of IVET and CVET, supraregional recruitment, and the promotion of the educational and labour-market related integration of the population with a migration background will become more and more important. In 2010, 15 percent of the Upper Austrian population had a migration background, of which almost three quarters were immigrants of the first generation. German language skills for new immi-

grant adults and children are the key to their participation in educational programmes and the labour market.

A sound basic education for all is more important than ever. The survey shows that last year companies also frequently had problems recruiting staff for on-the-job training activities. With the growth in the services sector it is also possible to observe continuous employment rates for unskilled workers ('elementary occupations') and semiskilled labour. However, the type of unskilled work in the services sector compared to activities in the agricultural sector or in the manufacturing sector has also changed in so far as informally acquired basic qualifications of a socio-communicative nature, the ability to work in teams, customer orientation and sound compulsory school knowledge (arithmetic, German, elementary computer skills) are often required. Employability requirements at the entry level in the service economy have increased for low-qualified jobs in the agricultural and manufacturing sectors.

Setting the course towards technical occupations at all levels – from apprenticeship to higher learning – in order to enable individuals to enter technical training programmes at all remains one of the top priorities of educational policy-makers. This trend has to be strengthened as early as in the schools for 10- to 14-year-olds by providing qualified specialist instruction which promotes interest among young people. Since 2001 the share of HE graduates has risen from 6 to 8.5 percent in Upper Austria and the share of VET college graduates from 7.5 to over 10 percent. Unless the lack of technicians will impede growth in the future, there will be a further increase in employment of formally highly qualified staff.

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The entire study is available in print (ibw Research Report No. 168, ISBN 978-3-902742-50-6) or [online](#).