
Qualification requirements and recruitment strategies at the European Space Agency (ESA)



Professional Education for International Organizations

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Contents

	page
1 Introduction and objectives of the research project	4
2 ESA	6
2.1 Mission and structure	6
2.2 Personnel structures	8
2.3 Recruitment strategies	10
3 Qualitative Study: Research Methods and Data Foundation	15
4 Interview results.....	18
4.1 Personnel requirements	18
4.1.1 Academic background.....	18
4.1.2 Language skills	21
4.1.3 Experience abroad	23
4.1.4 Internships.....	25
4.1.5 Professional experience	26
4.1.6 Expertise, key qualifications, and personal qualities	28
4.1.7 Other recruitment criteria.....	32
4.1.8 Interviewees' perspective: Reasons for employment	34
4.1.9 Recommendations for future applicants	36
4.2 Entry-level positions and career opportunities in the ESA	38
4.2.1 Typical career paths in the ESA	38
4.2.2 Applicants' ways and motivation for application.....	41
4.2.3 Career opportunities within ESA.....	44
4.3 Germans at ESA.....	49
4.4 Remarks on university education	53
5 Conclusion.....	58
6 References	62
Appendix: Generic Competency Model	63

List of tables and figures:

page

List of tables

Table 1:	Member states and cooperating states.....	6
Table 2:	Personnel structure of ESA	8
Table 3:	Statistics: Interview partners.....	16
Table 4:	Educational backgrounds of interview partners	19
Table 5:	Language skills (minimum level “ability to communicate”)	22
Table 6:	Language skills of the interview partners.....	22
Table 7:	Important key qualifications and personal qualities.....	32
Table 8:	Motivation for applying to the ESA	42
Table 9:	Strengths and weaknesses of German applicants.....	52
Table 10:	Positive and lacking qualification services of universities	55

List of figures

Figure 1:	Staff members of member states and cooperating states.....	10
Figure 2:	Career paths in the ESA.....	41

1 Introduction and objectives of the research project

Since July 2004, the Erfurt School of Public Policy has been carrying out a research project called “Professional Education for International Organizations“, or PROFIO for short, with financial support from the German Federal Ministry for Education and Research.

Taking into consideration the continual increase in international integration and Germany's great responsibility in foreign political affairs, the question arises as to what extent Germany is prepared to become effectively involved in international cooperation and to provide qualified personnel that fulfills the requirements of international leadership positions. In order to find an answer to this question, the research project PROFIO examined educational programs, requirements profiles, and success determinants for careers in international organizations. The main goals of the project are as follows:

- an analysis of the recruiting techniques of a sample of international organizations with regard to the qualification profiles and success determinants of applicants and staff,
- an analysis of the educational and professional backgrounds of employees in the professional category at these international organizations,
- an examination of German and foreign educational opportunities that successfully educate junior employees for international organizations,
- the creation of a model for the ideal educational offering, including extracurricular success determinants.

In connection with Germany's low representation of personnel in international organizations, this project aims to contribute to a medium- to long-term solution of this junior employee problem (“Deutsche Delle“¹).

In the scope of this research project, qualitative as well as quantitative research methods are used. One central tool of qualitative methods is conducting semi-structured interviews with human resources personnel and other professional staff of different international organizations as well as with staff responsible for the relevant educational programs. Furthermore, online surveys are conducted with employees in these international organizations are conducted in the scope of the quantitative part of the study. This should help to gain a broader understanding of their educational background, professional experience, and qualifications.

¹ Synonym for deficiencies of the German personnel policy for international organizations. Cf. Berliner Initiative (ed.): Deutsche Personalpolitik für internationale Organisationen: Empfehlungen und Anregungen an Bund, Länder, Wirtschaft, Wissenschaft und Zivilgesellschaft – November 2002. http://www.toennissteiner-kreis.de/pdf/aktivitaeten/bi/2002_ergebnisse.pdf (February 23, 2005).

The study of the European Space Agency (ESA) should present the recruitment process for professional staff and their typical personal, academic, and professional qualifications.

There are two reasons why ESA is of special interest to the research project PROFIO. First: According to our insight, research on international organizations is still mainly concentrated on political or economic institutions. Therefore, it was our goal to examine a technical organization in the research project PROFIO in order to at least attempt to represent the diversity of international organizations. Second: Germany remains underrepresented in terms of the number of its professional personnel at ESA in relation to its budgetary contribution. Since Germany's personnel underrepresentation in international organizations is an essential factor of our research project, the ESA is highly relevant to our study. Last but not least, we hope that the results of this study will be of use for future applicants, relevant educational institutions and human resources personnel of ESA.

We explicitly state that this study has *not* been commissioned by the ESA, but it is rather an independent research project. The results of this study will be combined with those of the other studies in the PROFIO research project and should provide information about the extent to which certain career paths and qualifications can be considered as helpful determinants for a career in international organizations.

In the first section, the ESA and its recruitment strategies will be presented. Subsequently, the qualitative study will follow, in which the formal qualifications of the interviewees as well as their perspective of the application process and the requirements for candidates will be described. Furthermore, career opportunities and entries to ESA will be discussed and strengths and weaknesses of German applicants and staff as well as lacking educational performances of universities will be exposed. This will be done from the perspective of professional staff from different departments (former applicants) and members of the selection committee (human resources personnel).² At the end, a short conclusion will be drawn.

² Please note that whenever only masculine grammar structures are used in this text, they refer to both males and females.

2 ESA

2.1 Mission and structure

The European Space Agency as it exists today has a history of more than 30 years. As a subsequent organization of ELDO (European Launch Development Organization) and ESRO (European Space Research Organization), the ESA was established in 1974 by 11 European states, including the Federal Republic of Germany. After the end of the aerospace competition between the USA and the Soviet Union in the 1970s, the ESA played a more and more important role in international aerospace issues. Today, the organization has 17 member states and had a budget of 2.977 billion EUR in 2005.³

Table 1: Member states and cooperating states

Member states: Belgium, Denmark, Germany, Finland, France, Greece, Great Britain ⁴ , Ireland, Italy, Luxembourg, Netherlands, Austria, Portugal, Sweden, Switzerland, Spain
Cooperation states: Canada, Czech Republic, Hungary

Source: ESA website (www.esa.int; ESA facts and figures), December 2005.

Even though the budget of ESA is four times less than that of the National American Space Agency (NASA), ESA is in second place of all international space agencies with regard to the size of its budget. Its budget clearly exceeds that of the Japanese Space Agency JAXA (approx. 1.6 billion EUR), which is in third place.⁵ ESA is a regional international organization. Its mission is to coordinate and advance the development of European aerospace exclusively for peaceful means. According to its own website⁶, its objectives are:

- the conceptual design and the implementation of the European aerospace program;
- the exploration of the earth, its direct environment, the solar system and the universe;
- the development of satellite supported technologies and services; and
- the advancement of different European high-tech industries.

³ Cf.: www.esa.int (accessed: November 16, 2005).

⁴ The term Great Britain (that comprises England, Scotland and Wales) is used to refer to the "United Kingdom of Great Britain and Northern Ireland" in this study.

⁵ Cf.: <http://en.wikipedia.org/wiki/ESA> (accessed: November 16, 2005).

⁶ http://www.esa.int/esaCP/GGG4SXG3AEC_index_0.html.

The headquarters of the ESA are in Paris. The headquarters with the office of the general director are especially concerned with administrative issues as well as making decisions for future projects.

Furthermore, ESA has several branch offices in different member states. The most important centers of ESA are:

- ESTEC (European Space Research and Technology Centre) is located in Noordwijk (Netherlands). Most of the ESA's spacecrafts are constructed at ESTEC, and approximately half the ESA staff members work at this site.
- ESOC (European Space Operations Centre) is located in Darmstadt (Germany) and is above all responsible for the monitoring of the ESA's satellites.
- ESRIN (European Space Research Institute), in Frascati (Italy), is where satellite data are collected and distributed and research is done on information technologies, amongst other things.
- ESAC (European Space Astronomy Centre) located in Villafranca (Spain).
- EAC (European Astronauts Centre) in Cologne (Germany).

Furthermore, ESA has a large number of smaller receiving earth stations and associated offices in other countries. The take-off the European launch vehicle takes place at the European space center in French Guyana, in which ESA is directly involved.

The top decision-making body of the European Space Agency is the ESA Council. This body, in which all the member states are equally represented, makes the fundamental decisions concerning the development of the European space program. The ESA Council also elects the Director General. In cooperation with the directorates, he is responsible for the implementation and control of the decisions made by the ESA Council.

The number of the ESA staff, slightly more than 1,900 employees, has remained relatively stable during the last three years. After a decrease in the late 1990s, it has again reached a level comparable to that in 1995. About 1,500 staff members are currently employed in the professional category.⁷

The annual budgetary contribution (compulsory share) of the ESA member states depends on the countries' gross value added of the last three years. The principle of geographical return is applied when using the funds. In other words, the ESA invests in industrial orders for aerospace projects in the member states according to the budgetary contribution of each country.

⁷ Cf.: ESA – Annual Report 2004. ESA Publications Division, Noordwijk.

In addition, the member states can take an interest in optional ESA programs by their own choice. In 2005, the three main contributors were France (29.3%), Germany (22.7%), and Italy (14.2%).⁸

2.2 Personnel structures

As this study aims to present the recruitment strategies and qualifications of staff members at ESA, an understanding of the organization's personnel structures is required.⁹

The classification of a position in a certain salary class depends on the duties and the responsibility of that specific position. Furthermore, formal qualification criteria, e.g., the university degree, are consulted for the classification.

Table 2: Personnel structure of ESA

Salary grade	class/	Sub classes	Explanation	Category
HC (Hors Class)		DG / D	<i>Director General</i> and 9 <i>Directors</i>	<i>Professional</i>
A		A5/6	<i>Division (A5) or Department (A6) Head</i> , mainly responsible for management issues.	<i>Professional</i>
		A2/4	So called <i>grade band</i> that comprises 3 levels: A2, A3, and A4. Depending on the <i>grade</i> , it includes <i>Engineers/Professionals</i> up to <i>Section Head (A4)</i> . In certain cases, A4 are also <i>Senior Engineers</i> and other outstanding positions.	<i>Professional</i>
		1	Junior employees with university degree without significant professional experience.	<i>Junior Professional</i>
B		B4/6	<i>Grade band</i> , mainly responsible for secretarial issues, technical support or administration.	<i>Administrative Staff</i>
		B2/4	<i>Grade band</i> , mainly responsible for secretarial issues, technical support or administration.	<i>Administrative Staff / Technician</i>
L		L2/4	<i>Grade band</i> in the field of translation; corresponds to the salaries of A2/4.	<i>(Professional) Translator</i>
C		1, 2, 3, 4		<i>Driver, etc.</i>

Own presentation (sources of information: www.esa.int; Human Resources Department, ESOC).

The vast majority – almost 80 percent - of the positions correspond to the professional category, of which most of them are in grade band A2/4.¹⁰

The formal requirement for all positions within the professional categories as well as the L positions is usually a university degree at a Master's level.¹¹ This shows that ESA is an organization with a high percentage of highly qualified personnel.

⁸ Information on the ESA budget and the main contributors was retrieved from <http://eu.spaceref.com/news/viewsr.html?pid=15342> (accessed: November 14, 2005) and on the ESA website (www.esa.int).

⁹ The following information is mainly based on interviews with human resources personnel at ESA, the website, and internal *Recruitment Regulations* of ESA.

¹⁰ Cf.: ESA Annual Report 2004, p. 117.

All of the ESA employees start with a contract that is limited to four years with a probationary period of six months.¹² The contract can be extended afterwards. Employees in salary classes B and C can then have an unlimited contract, whereas employees in A and L positions can receive another contract that is usually limited to six years before their contract can be extended without limitation. Citizens from Canada, the Czech Republic, and Hungary – citizens of cooperating states – can generally only receive limited contracts.

Almost all ESA employees stay in the organization until their retirement, which the agency supports. In this context, ESA is also considered a *golden cage*.¹³ Concerning the potential length of employment, ESA can be considered a career organization. This is where it differs from some other international organizations, such as the OSCE.

Based on the principle of contribution equity, ESA follows an employment policy of geographical return. This means that the space agency tries to employ a number of staff from the member states and cooperating states that corresponds proportionally to the budgetary contribution of the single states. However, this principle only applies when there are enough qualified applicants for vacant posts from the particular states. The Recruitment Regulations of ESA indicate the following:¹⁴

“Staff shall be recruited on the basis of their qualifications, taking into account an adequate distribution of posts among nationals of the Member States.”

The geographical distribution, however, is not to be considered a definite quota regulation, as the following quote of an employee in the human resource department of ESA shows:

“There has been a fundamental decision for many years that it is not applied as a quota system but that we simply increase the numbers by means of a ‘soft hand’ – more marketing here, less marketing there.”

Since there are not always enough qualified applicants from all states or candidates from some countries cannot establish themselves in the recruitment process, the problem of under- or overrepresentation of staff from certain countries arises. Germany is underrepresented with a budgetary contribution of 22.7 percent and a staff proportion of 19.1 percent (May 2005), whereas Italy is overrepresented with a budgetary contribution of 14.2

¹¹ This corresponds to the Diplom, Magister, 2. Staatsexamen in (previous) German university degrees (full-time study period of five years). A Bachelor (B.A.) that is usually acquired after three or four years of study is insufficient – except for a few exemptions such as long-term professional experience.

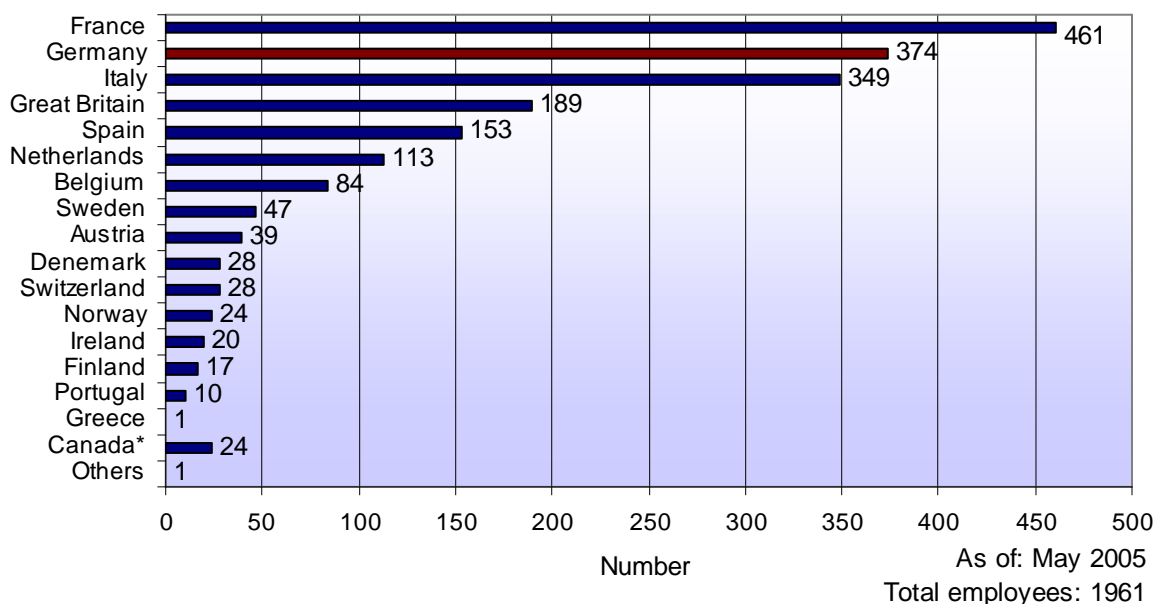
¹² The *Advanced Recruitments* are one exemption for ESA employees. They are initially employed for a maximum of two years. The contract cannot be extended afterwards. However, there is a possibility to get a regular contract (four years) subsequently. Cf.: http://www.esa.int/SPECIALS/Careers_at_ESA/SEMMEDXO4HD_2.html (accessed: November 10, 2005).

¹³ This term was mentioned by several employees of ESA in the interview.

¹⁴ Cf.: Regulation 7; Reg. 1 – 4; § 7.3 (source: Human Resources Department, ESOC).

percent and a staff proportion of 17.8 percent. This proportion remains equal when comparing only the staff in professional categories with the budgetary contribution.¹⁵ The following figure breaks down the personnel structure at ESA according to nationalities.

Figure 1: Staff members of member states and cooperating states



Source: Human Resources Department, ESOC (* = co-operation partner).

2.3 Recruitment strategies

The recruitment strategy of ESA is a formalized process. It is usually done in the following steps:

- a) Advertisement of a post and incoming applications,
- b) Developing a list of qualified applicants (short listing) and sending invitations for the job interviews,
- c) Developing a criteria and question catalog by the Interview board,
- d) Conducting the interviews (using additional tests or at an assessment center if necessary),
- e) Composing interview reports and recruitment recommendations,

¹⁵ According to information of the German Aerospace Center (DLR), the following states were very underrepresented (personnel A1 - A4 positions) in November 2003: Germany, Great Britain, Switzerland, France, and Belgium (in order of the absolute shortage of staff). In A5, A6 and HC positions (in total), Germany and France are especially underrepresented. Cf.: Jörg Wehner (DLR): Sachstand deutsches ESA-Personal. (Documents received from the Office for Foreign Affairs of the Federal Republic of Germany). The numbers of staff for the individual grades can also be found in the ESA Annual Report 2004 (p. 117).

f) Decision by Director General.

As already mentioned above, the recruitment policy of the ESA is based on geographical distribution and other factors. In the scope of the recruitment process, ESA by its own account pays attention to the following aspects¹⁶:

- Recruitment of staff that contributes actively to the realization of the organization's objectives;
- Professional qualification, knowledge, expertise, and personal qualifications, including a candidate's ability to adapt and develop on a long-term basis;
- Fair, balanced, and transparent recruitment criteria;
- Fair representation of staff concerning nationality and gender;
- Consideration of a staff member's (short-term) flexibility and international mobility and the attention to (long-term) requirements regarding organizational changes as well as personal development.

All vacant posts available to external applicants are published on the ESA website.¹⁷ Vacant posts for internal candidates can be found on the ESA intranet. Positions for the salary classes A5 and A6 are always advertised internally and externally. When necessary, vacant posts are also published in newspapers, magazines, commercial job-agencies, etc. However, this is not the norm.

Furthermore, ESA is also present at job fairs or at universities directly in order to create interest for employment at ESA and to achieve a higher level of attention in underrepresented staff groups, e.g., women in the field of engineering or people of a certain nationality.¹⁸

The application process is carried out online on the ESA website. It is only possible to apply for advertised posts. Unsolicited applications are not considered.

After the closing date for applications (typically four weeks after the posting date) the so-called short listing of candidates begins. This is the creation of a list of all candidates who shall be invited to an interview. When developing this short list, the first step is to sort out all applicants who:

- a) are not citizens of the member states or the cooperating states,

¹⁶ Cf.: http://www.esa.int/SPECIALS/Careers_at_ESA/SEMMEDXO4HD_2.html (accessed: November 11, 2005).

¹⁷ http://www.esa.int/SPECIALS/Careers_at_ESA/index.html (accessed: November 20, 2005).

¹⁸ For example, ESA undertook a "promotion tour" to several German universities supported by the Office for Foreign Affairs, the German Aerospace Center (DLR), and the German Aerospace Industry in order to provide information for students and other potential employees.

- b) do not have a university degree that is equivalent to a Master's degree,¹⁹
- c) are older than 55 years (maximum age at the time of recruitment).

After these formal requirements have been examined, an applicant's merits and nationality (if applicable) are the decisive factors for an invitation to an interview. Candidates from underrepresented member states usually have an edge over those candidates from overrepresented candidates, as the latter tend to be rejected.

"We cannot be the European Space Agency if we do not represent all the member states, but we cannot be the European Space Agency if we do not have the best people either. If you have two candidates who are equally good and one is from an overrepresented country, most likely we will take the other one." (employee of the ESA human resources department)

"We also look at the nationality aspect, because we have underrepresented and overrepresented countries. For the moment we are not hiring Italians, Spanish, and Dutch and we are very interested in Germans, Swiss, and any persons from the Nordic countries." (employee of the ESA human resources department)

The demand for an adequate personnel representation can possibly be even used as a political means of pressure.

"It is very political in a way. The Germans for instance are always putting pressure on ESA to hire Germans because there is underrepresentation." (employee of the ESA human resources department)

This list of candidates is created by the management of the hiring department together with the human resources department. The "short listing" should be finished after about two weeks. In an ideal case, the interviews take place after two more weeks.

The qualified candidate for a vacant post is selected through the interview. In some rather rare cases, additional written tests can be conducted or the candidates must go to assessment centers. Written tests are most likely to be conducted when selecting candidates for junior positions (entry level) and ordinary administrative posts, whereas assessment centers are rather used for positions that require a high level of social competence. However, assessment centers can also be used for trainee positions.

"We especially use the assessment center for positions that [...] strongly require the ability to work in a team, to communicate and all these 'social skills'." (employee of the ESA human resources department)

¹⁹ Exceptions may be made for applicants with very long and relevant professional experience.

Whether a written test or an assessment center is necessary depends on the opinion of the hiring manager and the recommendations of the human resources staff.

However, interviews are always conducted when selecting personnel and cannot be replaced by another procedure. The interview is conducted by an interview board of usually four to five people.²⁰

The interview board normally consists of the hiring manager and his superior (head of department, etc.), one representative of the human resources department as well as one representative of another directorate with relevant experience but a rather limited direct reference to the vacant post. An interview board with a diverse composition concerning personal involvement with the staff member to be hired, nationality, and expertise should contribute to highly objective decisions.

The interview board already meets prior to the scheduled interview in order to decide on selection criteria and to develop a question catalog. Human resources staff members describe the procedure as follows:

“You meet there as a board, take the job advertisement, and develop the exact requirements the candidate should meet for this specific job advertisement.”

“It is like this: we formulate the criteria on how the different candidates should be evaluated at first according to the job advertisement but then again once more in the interview board. [...] What kind of expertise and administrative competences should people have? If it is a leading position, what leadership skills should the person have? And also what kind of behavior and cognitive competences should the person have?”

Before the planning meeting, the jointly agreed requirements are registered in the interview report. With the help of an interview guideline and the interview recruitment tools, concrete questions are prepared and assigned to the members of the interview board according to the content of the questions (either related to expertise or personality). The ESA applies the so called behavior-based interviewing²¹.

“You usually assign the points of interest to the board members so that each board member should cover either one specific or two to three fields.”

“We have a ‘behavior-based interview approach’. We prefer going into previous work experience. That means, we try to draw conclusions from the past to the future.”

²⁰ For applications for the *Young Graduate Trainee-Program*, the interview board only consists of two people who are usually the hiring manager and one member of the human resources department.

²¹ In *behavior-based interviewing*, the applicant must answer questions concerning specific situations or project that he or she had to master in the past. A great deal of attention is paid to details. For information on how applicants can prepare for this interview technique, see e.g.: http://www.jobweb.com/resources/library/Interviews/How_to_Behave_in_a_59_01.htm (accessed: November 29, 2005).

Furthermore, the ESA has developed a *Generic Competency Model* for successful employment in the organization that can be used as a basis for interviews as well as for the future evaluation of employees. The model is currently only available for cognitive and behavioral competences.

A comparable model for professional competences is still being developed. The *Generic Competency Model* covers four different categories for behavioral requirements of which each one comprises four dimensions of attributes. Thus, this model states a total of 16 specific requirements, e.g., integrity, problem solving, ability to work in a team or goal orientation, that have to be met by a candidate more or less depending on the requirements for a specific position.²²

Usually, all interviews for a certain position are conducted the same day in order to guarantee a high objective comparability of the applicants.

For each position between four to eight candidates are invited to an interview.²³

"We usually always conduct the interviews at the same day so that you can remember all the candidates." (employee of the ESA human resources department)

The interview usually lasts about 45 to 60 minutes. The questions in the interview board are asked in turns, meaning that each member of the board asks questions according to his or her field. They often start with professional or technical questions before they come to questions related to personality. The interview is conducted in English or French, one of the two official languages at the ESA.

After the interview, each candidate is evaluated according to the agreed criteria. When all applicants for a specific position have been interviewed, the interview board gives a consolidated recruitment recommendation for one candidate. If the interview board cannot agree on one candidate, a minority report will be composed. However, according to a staff member of the human resources department, this happens "rather seldom". The recruitment recommendation of the interview board is then forwarded to the Director General. He or she will make the final decision, at least formally, on who should fill the post.

"I have hardly ever experienced that the recommendation was not followed."
(employee of the ESA human resources department)

²² For further information on the *Generic Competency Model* see the ESA website: Appendix or http://www.esa.int/SPECIALS/Careers_at_ESA/SEMYRSXO4HD_2.html (accessed: November 10, 2005).

²³ According to several staff members, the number of applicants can vary between 30 and 200. For the Young Graduate Trainee Program in 2004, about 1,600 people applied for about 100 advertised positions.

3 Qualitative Study: Research Methods and Data Foundation

The main focus of this research lies on the recruitment strategy of the European Space Agency and the requirements applicants and professionals must meet.

In order to find information on these issues, semi-structured interviews were conducted with human resources staff members as well as other professional staff of the European Space Agency. All interviewees were asked similar questions, whereas an extended interview topic guide with additional questions was used for the human resources staff.²⁴ Prior to the interview, all interview partners had the opportunity to read about the research project PROFIO as well as the contents of the interview topic guide.

Additionally, we intended to conduct an online survey asking all ESA professionals about their academic and professional background as well as further personal qualifications. However, due to internal considerations of ESA, we were only able to realize the qualitative part of our research project. Therefore, this report is solely based on the one-on-one interviews with ESA employees. In this respect, the results of this study cannot be generalized in the sense of statistical representativeness, as the underlying data only represent a very limited sample of the population²⁵. However, this shall not reduce the validity of the study. Representative conclusions can be also drawn through theoretical plausibility.²⁶ As we will show, the gathered data will allow for a substantial level of plausibility.

The interviews were conducted at two locations of ESA: At the European Space Operations Centre (ESOC) in Darmstadt and at the European Space Research and Technology Centre (ESTEC) in Noordwijk. There are two reasons for the selection of these two sites. First of all, ESTEC and ESOC belong to the three largest ESA locations considering the number of professional staff.²⁷

This is considered an advantageous precondition for finding interview partners. Second of all, these two sites cover the highest level of diversity in duties and occupational fields within the ESA. Thus, the spectrum of activities within the organization can be represented comparably well through the selection of interview partners. The selection of interview partners was subject to research economical and organizational limitations.

²⁴ All staff members were asked about their career and qualifications, their current employment, recruitment criteria, career opportunities at ESA, and recommendations for future applicants or suggestions for improving education or this field of work. Furthermore, human resources staff members were asked in greater detail about recruitment and promotion strategies, qualification requirements for applicants, and their evaluation of German applicants and staff.

²⁵ In qualitative research, the term "field" is often used instead of the term "population".

²⁶ In qualitative research, representativeness is not a meaningful criterion anyway. Cf.: Cornelia Helfferich: Die Qualität qualitativer Daten. Manual für die Durchführung qualitativer Interviews. VS Verlag für Sozialwissenschaften. 2. Auflage. Wiesbaden. 2004 (p.153 f.) et al.

²⁷ ESTEC is the largest ESA site by far. ESTEC ranks third behind the headquarters in Paris, which is almost exclusively responsible for administration.

Besides the limitation of number and length of the interviews, this means above all that to a large extent a self-selection of interview partners occurred by considering the following factors²⁸: occupational field, years of employment with the ESA, position, nationality, and age. Finally, an acquired medium-sized sample with a total of 22 interviews conducted – including two *Young Graduate Trainees* (YGTs)²⁹ – seems to be adequate for the research objective. The length of the interviews was 25 minutes on average. Prior to each interview, the interview partners were informed once again about the objectives of the research project, the contents of the upcoming interviews, data protection concerns, and the voluntary manners of their participation in the interview and their replies. The interviews were conducted either directly at their workplace or in an unattended room provided specifically for the interviews. In any case, the interview partners were able to answer all questions frankly without having to fear any consequences.

Table 3: Statistics: Interview partners

Occupational field	n	ESA: affiliation	n	position	n	Nationality	n	Age** (years)	n
Human resources	5	< 3 years	7	A2	4	British	4	< 26	0
others	15	3 - 10 years	8	A3	4	German	4	26 - 35	4
		11 - 20 years	5	A4	7	French	4	36 - 45	11
<u>Thereof:</u>		> 20 years	0	A2-A4*	5	Canadian	2	46 - 55	5
technical staff	13					Belgian	2	56 - 60	0
Non-technical staff	7			A5, A6, HC	0	Spanish	1		
				L, B, C	0	Italian	1		
						Swedish	1		
						Swiss	1		

+ 2 *Young Graduate Trainees*

* exact position not to be classified (mostly A2 or A3)/ ** partly estimated

As can be seen in table 3, the interview partners are not representative for the personnel structure of the ESA. However, they have diverse characteristics concerning the given factors.

As intended, human resources staff members and other professional staff members were interviewed. The professional staff mostly belonged to various professional departments. At the time of the interview, the majority of the interviewees had been employed at ESA for more than three years.

²⁸ Potential staff was either asked – within ESA - by phone or via e-mail whether they would like to participate in the interview. Prior to the interviews, all participants were provided with information about the contents of the interview and the research project PROFIO.

²⁹ ESA's Young Graduate Trainee Program enables young university graduates to gain work experience in the aerospace field for one to two years. However, the *Young Graduate Trainees* do not belong to the official staff of the ESA. Therefore, but also for reasons of privacy, they are indicated separately in table 3.

Except for both trainees, all interview partners were employed at A2 to A4 positions among which the individual hierarchy levels are relatively equally spread. British, Germans, and French citizens were represented most frequently with four interviewees each.

The age of the people interviewed, again excluding the trainees, was between 26 and 55 years, whereas the age group between 36 and 45 years is most strongly represented. 11 male and 11 female employees (including both female trainees) were interviewed.

The data show that the sample consists of enough typical as well as specific cases.³⁰ However, it is also obvious that the criterion 'position' does not allow a generalization of the results of the study to the entire ESA staff. The definition of the group must be conceptualized more narrowly. The original objective of this research was to provide information about the professionals. This objective and the significance of the information have to be restricted. The target group that actually allows representative statements based on this study are the professionals in A2 to A4 positions as well as, with limitation, trainees. In other words: The research results cannot claim any representative significance for staff in A5, A6, HC, and L positions. It was not intended for staff in B or C-positions in the first place. Due to the fact that a vast majority of the positions for professionals at ESA are in A2 to A4 positions³¹, the influence of the restricted significance on the original research objective is rather insubstantial.

All interviews were recorded with a digital voice recorder and fully transcribed at a later point in time. The interviewees' statements were for the most part transcribed true to the original. Only pauses in sentences, redundancies, sayings that do not work in written language, filler words, and interjections (e.g., "well", "just") were eliminated. The quality of the transcripts, meaning their conformity with the recorded verbal material, was subsequently tested in samples.³² In the scope of the data analysis, a category system or grid was developed. The categorization is initially based on the interview guidelines. In a second step, by using the interview transcripts, the practicability of this grid was then tested, specified empirically, and tested on its intra-coder reliability. Due to the comparably easily manageable and at the same time effective categorization, we set aside a specification of the category system that determines the definition and creates a concrete coding plan.

³⁰ Particularly the overrepresentation of human resources staff members, staff members that are employed less than three years at ESA and women is atypical. These groups are definitely less represented in the field than in the sample.

³¹ In 2004, 70.4% of all ESA staff* (1,343 employees) were employed in A2 to A4 positions (a total of 80% of all ESA staff (1,543 employees) – including A5, A6, HC, and L – were so-called professionals). The total number of staff in 2004 was about 1,908. Cf.: ESA Annual Report 2004, p. 117.

* This calculation is based on the assumption that ESA employs a total of about 200 staff members in A5 and A6 positions (these figures are based on the information of ESOC human resources department).

³² 50% of the transcripts (11 out of 22) were selected at random. Three minutes of the interview between the fifth and the tenth interview minute of the transcribed material were tested on its conformity. The degree of conformity – considering the abovementioned tolerance – was almost 100%.

Instead, the coding of the interview transcripts was effected by the roughly structured analysis grid, meaning that the categorization of the interview statements was mainly done on the basis of the personal interpretation of the encoder.³³ For statements that could not be clearly classified in a certain relevant category, the statements were classified to a number of potential categories. However, in the course of the analysis, multiple coding was the exception.

After this analysis, all relevant interview statements were placed in a clearly arranged table for the further processing of this report.

4 Interview results

4.1 Personnel requirements

The following presentation is based on the sequential analysis of the conducted interviews. The main focus on the one hand are the requirements regarding different qualifications human resources personnel have created for evaluating applicants and staff. These will be discussed from the perspective of human resources personnel as well as of other staff. On the other hand, it will be examined as to what extent the academical, professional, and personal qualifications or qualities of the interviewees actually correspond to the given scheme.

4.1.1 Academic background

The absolute prerequisite for a successful application at the ESA is a Master or an equivalent university degree in a relevant field. In exceptional circumstances, applicants with a Bachelor or an equivalent university degree may also be considered if they have gained highly relevant professional experience over many years. In some fields such as research, a doctorate can also be required in some cases.

For a majority of the posts at the Space Agency, a degree in engineering or natural sciences is required. The following two quotes of ESA human resources staff make that clear:

³³ All Interviews were encoded by one person.

“About 70 percent of our staff come from the field of engineering or natural sciences. The main subjects we hire are [...] mechanical engineers, electrical engineers, information scientists, physicists, mathematicians, and in the field of aerospace, astronomers, astrophysicists.”

“Any kind of engineers, physicists, mathematicians, astronomers, and information scientists are our main clientele.”

Furthermore, ESA also offers diverse opportunities to work in non-technical fields. The large number of posts at ESA in the field of administration opening numerous possibilities to work for economists, jurists, sociologists, arts scholars, and other experts should not be underestimated.

“Most of the time, these are graduates in business management but in some cases also economists, jurists. [...] We also have communications scientists who do PR work. At the interface, we also have relatively considerable numbers of industrial engineers.” (employee of the ESA human resources department)

The presented pattern can also be found concerning the educational background of the interview partners. As already shown in table 3, 13 out of 20 interviewees have a technical education (meaning engineering or natural science) and work in this field. However, the non-technical graduates are slightly overrepresented in this research (7 out of 20 interviewees), as a comparably high number of human resources staff members - who usually do not have a background in engineering or natural sciences - was interviewed. (One of the interviewed trainees had an educational background in engineering and the other trainee had a non-technical background.) Table 4 shows the main subjects the interview partners studied.

Table 4: Educational backgrounds of interview partners

Field of study	frequency*
Electrical engineering, mechanical engineering / aeronautics and aerospace, economics (incl. personnel management and MBA),	4
Physics, computer science	3
Law	2
(Tele-)communication technology, process engineering, materials, psychology, political sciences	1
+ 2 <i>Young Graduate Trainees</i> (1x engineering, 1x social sciences)	

* In total 24 fields of study mentioned (some interview partners mentioned more than one degree)

This confirms the dominance of studies in engineering and natural sciences, especially in electrical engineering, mechanical engineering (including aeronautics and space travel), computer science, and physics. However, at the same time it is clear that an economical, legal, or non-technical educational background is relevant for certain positions at the ESA.

The highest degree of the majority of the interview partners (15 out of 20) is a Master's (or a degree equivalent to a Master's). Four out of 20 interviewees even earned Ph.D.s. In one case, the interviewed person only had a Bachelor's degree.

Among the interviewees, four people acquired two further Master-equivalent degrees. (Both of the trainees also have a Master's degree which is the absolute minimum requirement for participating in the program.³⁴)

The reputation of the university from which the degree was acquired is of less importance in the selection of personnel. It seems as though other factors are of much greater importance in this respect. This is confirmed by the opinion of ESA human resources staff (*"We really do not look at that very much."*) as well as by looking at the universities where the interview partners studied. Institutions that are especially helpful for beginning a career at the ESA cannot be identified. On the one hand, well-known universities are mentioned as well as less-known universities. On the other hand, only two of the interview partners studied at the same university.³⁵

However, attending the International Space University (ISU) can potentially be considered as helpful for a career at ESA. This is an educational program for the further qualification of graduates and junior employees in aerospace-relevant fields. The lecturers are experienced aerospace experts. Besides special workshops and courses, the ISU offers a two-months summer program and a one-year Master's program. Special importance is placed on internationality, intercultural diversity, and multidisciplinary. The main campus of the ISU is in Strasbourg. There are also further sites worldwide. Although the education at the ISU is comparably expensive, some scholarships are available.³⁶ Among those interviewed, two (younger) people indicated having participated in the ISU's summer program and expressed great satisfaction with the offerings.

According to the interview partners from the human resources department, the quality of one's final grades does not have a great influence on whether an applicant will be invited to an interview and hired afterwards.

"[...] It is very difficult to say what grades are good when you have staff from 17 member states. [...] We prefer forming our own impression of the candidates' qualifications and pay less attention to their final grades." (employees of the ESA human resources department)

³⁴ However, in the interviews it was criticized that the ESA website for the Young Graduate Trainee Program does not clearly stress that a Master's or equivalent degree is an absolute requirement for applying: *"It really doesn't say this on the website very clearly"* (trainee).

³⁵ Due to reasons of data protection, single institutions are not specified.

³⁶ For further information on the International Space University, see: <http://www.isunet.edu> (accessed: December 2, 2005).

4.1.2 Language skills

The official languages at the ESA are English and French. It is therefore highly recommended for applicants as well as staff to master both languages at the highest level possible. However, it is sufficient to have good to very good knowledge of at least one of these languages. Which one it should be depends on the field and place of work. Whereas knowledge of French tends to be required for positions at the headquarters in Paris where mainly administration matters are dealt with, English is required at the technical sites, such as Noordwijk, Darmstadt, Frascati, etc.

“At technical sites, English is the primary language but in our headquarters in Paris, for example, French is the main language.” (employee of the ESA human resources department)

Language skills in the official language of the specific country of the site are not required for employment.

“In fact, it is already more than fair enough if you are able to communicate in one of the two official languages.” (employee of the ESA human resources department)

“If you are able to speak the language of the country, it is all the better, but it is not required.” (employee of the ESA human resources department)

The quality of the required language skills depends on the vacant posts. On principle, however, it should be possible to communicate in the relevant language.

“You should for example at least be able to speak English at a level that allows you to master the daily routine at work. We do not expect perfect language skills from ‘Young Graduate Trainees.’” (employee of the ESA human resources department)

Also non-human resources employees of ESA stress the importance of language skills. Here, the opinions about the number of required languages slightly differ, as the following quotes show. In fact, it can be assumed that for success in most positions, apart from the French-speaking sites, a high level of English is an absolute requirement.

“Language skills are valuable, very valuable, because this is an international organization, so if you can speak two or three languages it will help you to communicate.”

“You have to speak several languages.”

“I would say English is enough.”

Concerning language skills of the interview partners, it can be said that they speak mostly one or two languages fluently. Some interviewees even say they speak three or four languages at least at a basic level of communication. The amount of languages the interview partners master according to their own statements are indicated separately according to the educational background in table 5. Here, it becomes obvious that the educational background (technical vs. non-technical) does not have a clear influence on the number of languages they speak.

Table 5: Language skills (minimum level “ability to communicate”)

Number of foreign languages	Number of interviewees (technical education background)	Number of interviewees (non-technical educational background)	Number of interviewees (total)
0	1	0	1
1	5	3	8
2	3	1	4
3	3	1	4
4	1	2	3
+ 2 <i>Young Graduate Trainees</i> (at least 1 foreign language)			

All interview partners had very good English skills. This could be expected regarding the particular ESA sites (ESTEC and ESOC) where English is the main working language and the fact that the interviews were conducted in English (or German). The interviewees indicated further languages in which they are at least capable to communicate as can be seen in table 6. They mentioned 12 different languages in total.

Table 6: Language skills of the interview partners

Mentioned languages	Number of (respective) speakers
English	20
German	10
French	9
Dutch	5
Italian, Swedish, Norwegian, Spanish	2
Chinese, Danish, Russian, Serbo-Croatian	1
+ 2 <i>Young Graduate Trainees</i> (at least one language besides English)	

Two factors must be considered when studying this listing: First, the examined sites (English as main language, Dutch or German as language of the country) and second, the nationality of the interview partners. Especially the spread of German and Dutch would be probably smaller without these two factors. However, this result stresses the importance of English skills.

4.1.3 Experience abroad

At the ESA, prior experience abroad is required for employment. This is confirmed by human resources staff as well as other personnel who were interviewed in the scope of this research. At the same time, the interview partners continuously stressed the advantage of experience abroad when applying for a position with an employer such as the ESA. The following quotes are statements from human resources personnel at ESA.

“Stays abroad are certainly not a disadvantage because they just [...] show a certain orientation that you are interested in working or settling in a multinational environment. But they are not necessarily required. However, once you are there, the ability to settle in a multinational working environment is required.”

“We definitely see if somebody has lived in another country before. Because then, when they get there, they will not go through the usual family issues and such kinds of things.”

“Experience abroad increases one’s chance for success, but it is not consistently a success factor or an important factor for the selection process.”

“If you graduated from a German university, have always worked for a German company, and have always lived in Germany, you will not be the same person as if you spent two years in the U.S. It is obvious, but I think people underestimate how much of a difference it makes, just the way you see yourself, the way you see your background, your experience, and your ability to interact with people from different backgrounds.”

It proves that experience abroad is less of a formal evaluation criterion and more of an indirect criterion for personality development. People who have many years of experience abroad at the same time have a number of important characteristics that are important for working in an international organization such as ESA. This includes language skills and intercultural competences as well as the awareness about problems of mobility. Experience abroad obviously forms the way a person sees oneself and the world in a manner that usually has a positive influence on working in the international field and is, therefore, also helpful for the recruitment process.

However, and there are also examples of this, the importance of experience abroad should not be over estimated. It is helpful but not necessary.

“My experience is that [experience abroad] it is usually never a big problem.” (ESA employee with experience as a member of the Interview board)

“You do not have to have the experience beforehand. Sure, it helps, but it is not required.” (ESA employee with experience as a member of the Interview board)

Other factors, primarily expertise, are of much greater importance. Dealing with other nationalities, languages, tasks of an international dimension, etc. can also be learned in other ways. Having lived abroad for some years neither guarantees nor is it an exclusive characteristic feature for competence in international issues. Therefore, it is the interview that differentiates between actually existing and formally indicated competences instead of implicitly trusting the label “experience abroad”.

The depiction of experience abroad as a helpful but not necessarily required prerequisite can be empirically supported when considering the interview partners’ personal experience. It should be noticed that the vast majority of those interviewed (15 out of 20) had experience abroad before their employment at ESA.³⁷ Of them again, the majority (9 people) spent more than three years abroad, the minority (6 people) between one and three years. Four interview partners did not have any long-term experience abroad prior to their employment at ESA. However, each of these four people indicated having worked in positions with a strong international orientation and, therefore, having often been in contact with languages or colleagues from other nations. The two interviewed trainees also lived abroad for some years before working at ESA.

Most interview partners indicated Great Britain, Germany, USA, France and the Netherlands as the locations of their stays abroad before ESA. This listing shows that the indicated countries are either countries in which the working languages of ESA are the official language or countries where the interview partner currently works.

To sum up, it can be said that something like ‘international experience’ seems to be important for a successful application at the ESA. Whether the experience dealing with foreign languages, other nationalities, or cultural differences was acquired through several years abroad, work experience of an international dimension, successful training programs, an open and ambitious personality, or even through multinational experience in a circle of friends is of minor importance.

Here are two closing statements from ESA staff about their own experience abroad:

“An international experience definitely counts a lot, whether you had training or studied with the European programs like ERASMUS [...], it is very important.”

“It is nice to have a kind of international work exposure first, so that you understand that not everyone will speak in the same ways like you, and people go about problems totally differently.”

³⁷ In this respect, there is no guaranteed information about one out of these 20 interview partners.

4.1.4 Internships

For the recruitment of professionals as well as for the actual experience of the interviewees, internships are of rather minor importance. As this section will show, the applicants' professional experience (long-term) is far more decisive during the recruitment process than internships they have been done during their studies. At the same time, however, the importance of internships is not to be underestimated. This particularly applies to younger applicants or candidates for a trainee position. Due to lacking or comparably little professional experience, the relevance of indicators such as their suitability in practice, expertise and initiative increases especially for young applicants. Internships can then be a good point of reference.

"For [Trainees and Young Professionals] we need people who are quite mature for their age and for their level of exposure. If they have had very good summer placements throughout university then, of course, that really helps because you see that they have really grown a lot during those periods. It means they have a lot more to offer." (employee of the ESA human resources department)

"My tutor at ESA was really looking if people had just tried to work for their own accord; not because they had to, because of their studies, but because they wanted to and it was their initiative." (Young Graduate Trainee)

Beyond that, internships can be a good recommendation for the applicant even in the sense that they enable insight into the world of employment and thus, contribute for example to the development of consolidated career plans and indicate their dislike of certain activities. Of course, this also has a positive effect on the acquisition of additional professional and personal qualifications that can be helpful for an application.

Among the interview partners, only the minority stated having done internships. This was either on a voluntary basis or on a compulsory basis at university.³⁸

This sort of practical experience is most often found in the professional background of younger people and especially trainees. These people thus share the opinion that internships are not only important for their own further qualification but also for a successful application. In contrast, the older interview partners view internships as less important for being recruited. However, one reason for that could be that these people already had many years of professional experience before their employment at ESA and generally did not apply for junior positions.

In summary, concerning the recruitment strategy of ESA, the results can be interpreted in summary to the effect that for the majority of the vacant posts, being the professionals,

³⁸ Especially for technical degrees, internships (in industry) are a compulsory part of the studies in some cases.

internships are of rather minor relevance for recruitment decisions (e.g. for being invited to an interview). However, for vacant junior posts where applicants either have little or no professional experience, the reference of good internships in one's C.V. can be a positive selection criterion.

4.1.5 Professional experience

In almost all enterprises and organizations, an applicant's professional experience is an important criterion for recruitment. That also applies to the European Space Agency. Apart from candidates for internships, for the Young Graduates Trainee Program or for the Postdoctoral Research Fellowship Program, all applicants are required to have professional experience in a relevant field.

"Usually, we require some years of professional experience, even in junior positions."
(employee of the ESA human resources department)

"The industry experience, I think, is very important because we are distributing money towards industry. [...] If people have never been exposed to industry, they do not know what industry is about." (employee of the ESA human resources department)

"Of course, the preferred people are people with experience. [...] If you can show some experience about any of the subsystems, this counts in the interview; technically speaking." (technical employee of ESA)

Ideally, the professional experience prior to employment at ESA should be between five and ten years. Here, the relevance of the experience is very important; thus, it should usually be relevant in the aerospace field. Practical experience in an industrial enterprise in the field of aeronautics and aerospace or in a national space agency is often sought. However, this differs depending on the vacant post.³⁹ The criterion of professional experience often seems to be more important for the recruitment process at ESA than one's educational background.

"We like to see anywhere from five to fifteen years industrial experience, typically in the space industry." (employee of the ESA human resources department)

"If the applicants have been working, say, as an electrical engineer or a mechanical engineer in a completely unrelated environment to space or aeronautics, it will be quite difficult for them to come in and do the job. So a lot of them will have to come from the space industry, usually the national space industry." (employee of the ESA human resources department)

³⁹ For staff in a non-technical field, such as the legal or personnel department, the focus is placed on different professional experience than for technical staff.

“To handle a technical as well as non-technical post in ESA, you should have experience in the space industry. That is more important than academic qualifications.” (ESA technical employee)

Obviously, the criterion of professional experience is not of the same relevance to all fields of work in ESA. An interview partner from the technical field is of the opinion that professional experience can even be obstructive to employment. Therefore, it can be assumed that in specific fields in ESA the decisive factors are rather technical understanding or merits in theory and academic knowledge. However, this is certainly not the rule.

“Practical experience, we currently made this experience, is almost detrimental. [...] Nothing against practical work, but lately the experience is that the foundation tends to be forgotten above that. One will learn here on the job. We actually do not require anything.”

Again, the interview statements can be supported empirically. Out of 20 interviewed employees 11 stated that they had between five and ten years of professional experience prior to their employment at the ESA. Another six interviewees could even look back at more than ten years of professional experience before working at the ESA. Concerning the remaining three interview partners, there is no clear information available in this respect. Only the two trainees stated that they had less than five years of professional experience prior to their employment at ESA. Professional experience is not required for these positions. Beyond that, the interview partners all had professional experience in the field in which they were employed in ESA at the time of the interview. Here, the majority thought that it was precisely their professional experience that was the decisive factor in their recruitment (also see section 4.1.8). Among the interviewees, the vast majority (15 out of 20) worked for two to four different employers prior to their employment at the ESA. These were mostly internationally-oriented organizations or enterprises.

Thus, the ESA is not an employer for university graduates – as long as it does not concern the Young Graduate Trainee Program.

“Very, very rarely we recruit somebody fresh out of university. We are really looking for people who have three to five years experience minimum.” (employee of the ESA human resources department)

4.1.6 Expertise, key qualifications, and personal qualities

In the interviews, the interview partners were asked to provide information about the requirements in the recruitment process and the ideal qualifications for applicants. Besides academic background, language skills, and practical experience, several factors were mentioned that are crucial in the recruitment process.

Even though the interview partners were not expected to rank the different recruitment criteria – the questions were open and descriptive – it can be easily concluded by the emphasis of the content and the frequency of the answers that expertise is the most important recruitment criterion as long as the formal requirements are met. Depending on the field of work, either technical or administrative skills are the decisive selection criteria not only for the short-listing of the candidates but also during the interview.

“Under no circumstances will we recruit somebody if he or she has several qualities or skills but not any technical or administrative competences.” (employee of the ESA human resources department)

“First and foremost we require the background in the specific discipline, besides the ‘soft skills’ and the language skills.” (employee of the ESA human resources department)

“[The candidate] should intensely understand what he learned at university.” (ESA employee with experience as a member of the interview board)

However, it should be considered that the criterion ‘expertise’ is principally based on two factors: one’s academic background and the professional experience one has gained. These two factors affect the acquired expertise to a great extent.

Of course, the required qualifications that can mostly be classified as ‘soft skills’ or key competences are also influenced by one’s academic background and professional experience, though usually to a lesser extent than the expertise. Often, a variety of experiences in one’s life history - that cannot and should not be examined in detail at this point - have an influence on the development of these skills. Here, it should only be pointed out that these key qualifications are rather additional qualifications that are acquired in a less formal manner than expertise and are not as easy to identify in application materials. One could expect that the ESA attaches great importance to the necessary expertise when pre-selecting and recruiting new staff. Thus, the message is clear: No applicant can be hired without any relevant expertise. However, the following question arises: Which further qualifications or skills of applicants determine which candidate will be hired when all candidates have comparable expertise? In this respect, the interview partners indicate an entire list of essential skills.

However, the significance of single qualifications differs depending on the range of duties of a vacant post so that neither a general profile for applicants nor a list of priorities can be developed.

"It depends a lot on what job they are going to do." (ESA technical employee)

"This cannot be answered in general, not at all, not at all." (employee of ESA human resources department)

Specific duties require specific qualifications. However, typical recruitment criteria can be classified for typical duties. A number of selection criteria for positions at the ESA will now be presented.

We will start with the key qualifications.⁴⁰ Most frequently, the interview partners state some form of 'intercultural competence'⁴¹ as a prerequisite for being hired by an international organization such as the ESA.

"In ESA, we would like to have people who [...] have an international orientation; who like to deal with people who come from different cultures; who also understand that people who come from different cultures might have different approaches." (employee of the ESA human resources department)

"You should accept a Finnish person like a German person. But that requires real openness and flexibility of mind." (ESA technical employee)

"[An applicant] should not have any difficulties working with many foreign colleagues." (ESA technical employee)

"We are working with all kinds of countries and, of course, it is better if you can get somebody who can understand the way other cultures work." (ESA technical employee)

Almost as frequently as intercultural competence, the interview partners mentioned social skills, or more precisely, the ability to work in a team as an important criterion for working at the ESA. This particularly applies to those interview partners who work in the technical field. Teamwork obviously seems to be of especially great importance in these fields of work.

⁴⁰ For the purpose of better comprehension, an artificial differentiation of key qualifications and personal qualities will be made at this point – even though they cannot always be easily distinguished from one another. The definition of the difference between both categories is as follows: 1. consistency and flexibility of time (key qualifications can be trained more easily than personal qualities) / 2. degree of activity (key qualifications can be incorporated more directly than personal qualities that rather present a fundamental disposition of behavior).

⁴¹ To be understood as the ability to deal with people from different cultural backgrounds.

“Teamwork is very important; it is becoming even more important.” (ESA technical employee)

“The ability to work in a team definitely has to be there [...] because otherwise getting along together would be simply impossible.” (ESA technical employee)

“[Important is] that you can see from one’s competences that the candidate is willing to deal with other people, to work with them. I do not need anyone who works for himself and keeps things for himself and does not share with the others.” (ESA employee with experience as a member of the interview board)

Beyond that, the interview partners often stressed the importance of communication skills⁴².

“Communication is a need, the ability to make an appointment and to express yourself in a good way.” (employee of the ESA human resources department)

“You have to be very good when you talk to people.” (ESA technical employee)

“If you had two guys who have technical expertise that is similar, the guy who would probably get the job is the guy who is capable of communicating with other people, managing other people, and having an understanding of culture.” (ESA technical employee)

The last quote shows that leadership competence can be a significant selection criterion as well.

Another qualification that can be helpful for entering ESA is management skills⁴³. Even though this is more relevant to candidates that applying directly for leadership positions, it is also becoming more and more important in other positions or of advantage to have these skills.

“Now, more and more, especially for some positions, managerial knowledge is important. In fact, even accounting knowledge is now starting to be important in some positions.” (ESA employee with experience as a member of the interview board)

“Planning and organization is very important.” (employee of the ESA human resources department)

According to the interview partners, another important key qualification is problem-solving. However, besides the so called key qualifications, certain personal qualities are also relevant to the recruitment process.

In this respect, the interviewees particularly stressed the willingness to move locations, the ability to learn and develop, and self-confidence as important recruitment criteria of the ESA.

⁴² To be understood as presentation skills and oral and written expression.

⁴³ To be understood as administrative skills, including organizational talent and time management.

Mobility: *“Willingness to change in another country. Willingness to accept, that if they move you to another establishment of the organization, you are willing to go even if it is not the best place in the world to live in.”* (ESA technical employee)

Ability to learn and develop: *“I need to have people who can still learn. [...] Nothing stands still here. You have to be prepared to learn new things permanently.”* (ESA employee with experience as a member of the interview board)

Self-confidence: *“Self-confident appearance. If you have the professional background, you are definitely allowed to say that.”* (employee of the ESA human resources department)

Further important qualities for working at the ESA that were mentioned quite frequently by the interview partners are a level of independence at work as well as a sense of responsibility.

Independence (and management skills): *“We are really looking for people who have the ability to run things independently. [...] You really have to be able to look after yourself. You need to be able, it sounds simple, to manage this huge amount of emails that comes through, figure out of these five different paths where you go along with your project. And be able to get hold of information and things that they will make your job easier and use the people that might have some knowledge.”* (employee of the ESA human resources department)

Sense of responsibility: *“[A candidate] should be prepared to work very seriously and responsibly in the job because we carry a large amount of responsibility, each one of us.”* (ESA employee with experience as a member of the interview board)

Some other important personal qualities that qualify a candidate for the work in ESA were mentioned in the interviews (table 7). Beyond that, many other key qualifications and personal qualities that an employer like the ESA could ask for are possible but were not mentioned in the interviews.

As was already mentioned in section 2.3, the most important behavioral dispositions and personal qualities can be found in the Generic Competency Model.

“If you consider this ‘competency model’ [...], you can clearly see what qualities we appreciate the most in our organization.” (employee of the ESA human resources department)

The requirements presented in this model correspond to a large extent to the presented results here.

These interview results, referring to important key qualifications and personal qualities for successful employment, are summarized in the following table.

Table 7: Important key qualifications and personal qualities

Key qualifications (soft skills)	Personal qualities	n (times mentioned in total)
Intercultural competence, communication skills	Mobility	> 5
Ability to work in a team, management skills	Learning aptitude and development potential, self-confidence, independence, sense of responsibility	2 – 5
Problem-solving competences, leadership skills, result- and customer-orientation	Motivation for ESA, ambition, patience, creativity, innovation, dynamic, flexibility, honesty, pleasure at work	1

As mentioned at the beginning, these results must always be considered in relation to specific fields of work. However, besides formal recruitment requirements, one primary qualification criterion is always expertise. That means that if a candidate's expertise is adequate, compromises regarding additional qualifications are possible in the recruitment process but not vice versa.

“Good presentation skills help of course, although there you should be able to differentiate those who can sell good smoke from those who have some substance.”
(ESA employee with experience as a member of the interview board)

“We have not rejected anyone so far because he or she cannot give a decent presentation. But we have rejected people who gave good presentations but did not understand them.” (ESA employee with experience as a member of the interview board)

4.1.7 Other recruitment criteria

Besides expertise, key qualification, and personal qualities, the interviewed ESA staff also mentioned further criteria that are considered in the scope of the recruitment process or can be decisive for successful recruitment. As these criteria can neither be classified as formal nor as qualification-related recruitment factors, they are presented specifically at this point.

In this context, the interviewed ESA employees mentioned the following aspects:

- ideal recruitment age,
- gender,
- duration of study,
- quality of the application materials,
- the candidate's preparation for the interview.

As the ideal recruitment age, they mentioned an age between 30 and 40 years.⁴⁴ Especially due to the comparably high age distribution within ESA – the majority of the employees stay until their retirement – younger applicants with similar skills and qualifications are preferred.

“If it is an A2 – A4 position, we check that the candidates are not older than 35. There, we will not hire anyone who is 45 or 50. Unless it might be a Section Head Position or... It really depends on the position, the management responsibility that comes along with the position, the prior experience we require.” (employee of the ESA human resources department)

“It is an aging population within the agency; nobody leaves. It is called the ‘golden cage’. The DG [Director General] wants, and this is clear to everyone in the agency, a younger population for the future of the agency.” (employee of the ESA human resources department)

Even one's gender can be decisive. ESA pursues a personnel strategy of gender balance. Among others, they try to increase the number of female staff within the organization, especially in the fields of engineering, natural sciences, and management positions. For that reason, female applicants, provided they have similar skills and qualifications, are preferred. Thus, female applicants with a technical background have very high chances of success.

“ESA is a ‘quota’ organization. They make sure that men and women are treated in an equal way. [...] You will not face questions about planning a family. It is forbidden here. The fact that one is a female does not stop one; it can even be an advantage, especially in the technical field.” (ESA technical employee)

Another criterion that is important for the selection of personnel is, e.g., the duration of study. Applicants who dragged out their education unnecessarily long must expect to be at a disadvantage compared to other candidates with similar qualifications.

“What I do not appreciate is a long course of studies.” (ESA employee with experience as a member of the interview board)

Concerning application materials, applicants can also differentiate themselves from their competitors. This factor should not be ignored even then when an applicant's academic and professional background is quite good.

“The quality of the CV is an important issue.” (ESA technical employee)

Furthermore, the necessity of good preparation for the interview should be mentioned. Being informed about the duties and projects of the ESA and being prepared to answer questions

⁴⁴ Young Graduate Trainees should usually not be older than 32.

about the career and work projects listed on one's own CV can help to improve one's self-confidence and the impression one leaves at the interview board.

"One thing that I do not like when I go to interviews is to see people who did not even attempt to prepare for the interview." (ESA employee with experience as a member of the interview board)

"You walk into the [interview] room, you look everybody straight in the eye, you shake their hands firmly. You are confident in what you are doing and you are honest about what you know and what you do not know." (employee of ESA human resources department)

As anywhere, appearance and personality are also important in general. In other words, the 'chemistry' has to be right.

"I also must say that the first impression is important." (ESA employee with experience as a member of the interview board)

"It is a fine line between technical contribution, fit in the team, both technically and personally, and the chemistry between the manager and the candidate." (employee of the ESA human resources department)

4.1.8 Interviewees' perspective: Reasons for employment

In the preceding passages, many factors were mentioned that are important in the scope of the recruitment process. Furthermore, the answers of the interview partners were compared with their own qualification profile if possible. This allows us to observe a high level of correspondence between the assessment of importance (opinions of the interviewees concerning recruitment criteria) and the actual situation (information of the interviewees concerning their own academic or professional background).

However, the interview topic guide included another control variable that should allow us to draw conclusions about the general recruitment criteria at the ESA. Thus, the interview partners not in charge of personnel were asked to give the reasons why they were hired. The interviewees' assumptions can be considered indicators for the actual recruitment criteria and can be compared with the results presented so far.

First of all, the majority of the interview partners were convinced that their own qualification profile corresponded well with the requirements of the job description. One interview partner made it very clear:

"The job description was exactly a copy of my CV."

A number of interview partners even said that they had been waiting for some time for a job description in ESA that corresponded with their own profile before they seriously thought submitting an application.

"In fact, it took quite a while because, of course, a post had to be advertised or published where you think it would be something that, first of all, applies to me and, secondly, I am interested in. It has to be both of them."

The importance of the match between the requirements of ESA and the qualification profiles of the candidates is a fact this study has not stressed directly so far even though it seems to be quite obvious. If the ESA were really very strict in this respect, this would mean that applicants with a general education or career changers would not have very high chances of success as a rule. However, this is not a big surprise for a technical organization with highly specified fields of work.

The interview partners thought that their own application success could be contributed to: professional experience, expertise, experience abroad, intercultural competence, language skills, own potential of development as well as less frequent, experience with ESA, communication skills, references and their own presence at relevant conferences or workshops. In order to focus on the essential criteria, only the most frequently stated criteria will be illustrated with quotes of technical and non-technical staff at this point.

Professional experience / expertise: *"Having worked in the industry and having worked in scientific institutes made me a very good candidate for this position, because I know both ways of work and thinking, where they match each other, and where they are completely different."*

Professional experience / expertise: *"In fact, I had more experience than many people who were here. [...] This accumulated knowledge, I think, was fundamental at the time when I got the position at ESA."*

Experience abroad: *"Without being in the States I would not have got the job here."*

Intercultural competence: *"Any questions with regard to multicultural awareness, or ability to adopt in a different country were a piece of cake for me to answer."*

Language skills: *"I attended the Erasmus-Program. [...] And I have to be honest that this helped me to be recruited afterwards, because you are really able to talk in two languages at least."*

Own potential for development: *"[Because the] potential or more the experience I offered at that time fit to the vacant position they were searching a person for."*

An exact ranking regarding the degree of importance of the single factors cannot be created due to the applied methodology, and is not really useful for hypothetical assessments.

However, in the interviews it became clear that key qualifications or certain personal qualities are comparably less relevant to recruitment than criteria such as knowledge or professional experience.⁴⁵ This can be interpreted at least by the low number of statements in this respect.

Furthermore, the quotes above concerning professional experience and expertise show that the single factors cannot be viewed – and partly not be acquired – in isolation in reality; many of them are (inter)dependent. This applies for example to the criteria of academic background, professional experience, and expertise as well as for the experience abroad, language skills, and intercultural competence.

However, the reasons why the employees assume they were hired show that the statements correspond to the results of this study in general so far and, therefore, the ESA's basic recruitment criteria should be identified as far as it is possible in an abstract manner. At the same time, it should be clear that it does not depend on having all the presented qualities and experiences in order to be successful at the ESA. The necessary qualification requirements are first of all to be identified in correspondence with a specific position and only then with the rather general requirements of the organization.

4.1.9 Recommendations for future applicants

The requirements ESA places on applicants for vacant positions or the Young Graduate Trainee Program were presented and discussed to a great extent in the preceding passages. Furthermore, the interview partners were also asked to give some specific recommendations that could be useful for future applicants. The recommendations are almost identical with the results so far and, therefore, indicate once more that the main recruitment criteria for ESA applicants were identified. Applicants should consider the following aspects if they want to prepare themselves in the best possible way for a career at the ESA:

Acquire specific expertise

“First of all, you really have to target your knowledge on what the Agency needs. And in this house this is an engineering background.” (ESA technical employee)

“I think it is easier to decide really fast at university that you want to work in the field [of space] in order to then gain the specific experience or work in that direction.” (ESA technical employee)

⁴⁵ A comparable result can be found in the PROFIO study about the recruitment strategy of the OSCE (cf.: www.profio.de: Careers in a non-career organization. A study on recruitment strategies and qualification requirements at the OSCE, p. 23).

Profit from internships offered by ESA

“We also have a stage-scheme which is for people who still have not finished their university degree. [...] People come anything from 2 –6 months. That is a good opportunity for people just to get a feeling of what we do and how it all works. We do have quite a few people who come in for a stage, who might then apply for a young graduate program or apply later in their career for a staff position.” (employee of ESA the human resources department)

Learn languages

“Languages: learn them, learn them, learn them; it is very, very important!” (employee of the ESA human resources department)

Gain experience abroad

“Take advantage of any opportunity to be abroad, also to do a longer internship.” (employee of the ESA human resources department)

Gain professional or industrial experience

“The best employees are the ones who come from the real world. Because ESA is a bubble and people need to know how it is outside the bubble.” (employee of the ESA human resources department)

“Industrial experience is very, very valuable and is certainly a plus. I have talked to many people who appreciate it if you have industrial experience. (ESA technical employee)

Improve key competences (above all social and communication skills)

“Just really look for very specific opportunities to also get this ‘interpersonal skills training’. There are possibilities at the universities or perhaps in other faculties; that you look at what the graduates in business management, psychologists or political scientists, whoever, are doing. [...] Just keep on working on it so that you improve your presentation skills, your interpersonal techniques; that you can deal with problems more easily.” (employee of the ESA human resources department)

Show initiative, willingness to learn, flexibility and openness for new experience

“Really open up your mind from the beginning as much as possible. [...] I am convinced if you want to go international you cannot have the perfect education presented by any university at a given time. You need to find the open mind in yourself.” (ESA technical employee)

“So, not being stubborn and thinking, well, I have studied chemistry now and my life as a chemist is completed.” (ESA technical employee)

“If you are showing initiative [...], I think that helps. They think, this person is enthusiastic, he or she wants to learn.” (Young Graduate Trainee)

“You have to study all your life. This is the message. The message is do not stop studying!” (ESA employee with experience as a member of the interview board)

Bring mobility

“It is not negative when you are mobile. You always learn something new and, therefore, you should consider it as something positive.” (ESA technical employee)

Show interest for ESA or aerospace

“It helps if you are very interested. It is not necessary but it makes work more fun.” (ESA technical employee)

Pursue networking early

“Make yourself known. It is a network issue, as always.” (ESA non-technical employee)

Define a target (place, activity)

“You have to really think if you want to work here or if you want to work in other centers, because ESA is big [...] you to select a target.” (ESA technical employee)

Prepare for the interview

“If somebody has an interview: prepare, prepare, prepare!” (employee of the ESA human resources department)

“Very important to think of examples of what you have achieved, so you can present them when you are asked.” (employee of the ESA human resources department)

Think about the consequences of going abroad in advance

“You should be aware of the fact that most of the time you cannot get there [home] quickly and you cannot help out or take care of a sick child or whatever. That does not work. This can perhaps cause difficulties.” (ESA technical employee)

Definitely apply!

“Once you have the information that is needed, you know the technical background needed, and you know how interviews are done, and then get prepared for that. And then apply. But apply!” (ESA technical employee)

“Even if your own background does not correspond to the job description 100 percent, you should still try.” (ESA technical employee)

4.2 Entry-level positions and career opportunities in the ESA

4.2.1 Typical career paths in the ESA

There are different ways to achieve one goal. That also applies to university graduates or working people who are interested in employment at the European Space Agency. A universally applicable path that leads from university to employment at the ESA does not

exist. What the ideal career path for a candidate is depends, amongst other things, on one's professional background.

As ESA normally does not recruit graduates coming directly from university; practical experience should at first be acquired at one (or several) employers.

After a successful university degree, ESA offers three promising opportunities to interested people that can subsequently lead to a permanent employment in the space agency:

- a) collecting professional experience in a national space agency
- b) collecting professional experience in the space industry
- c) participating in an educational program (*Young Graduate Trainee-Program*⁴⁶, *Postdoctoral Research Fellowship Program*, etc.) at the ESA

"There are different possibilities. They can come from university and go to the DLR (German Aerospace Center), they can go into industry or they can come to ESA in the scope of the Young Graduate Trainee Program. All these ways can lead to a permanent position in ESA afterwards." (employee of the ESA human resources department)

However, the third opportunity, the Young Graduate Trainee Program, rather promises success indirectly. Since an employment through the trainee program is limited to one year, the professional experience gained is usually not enough in order to qualify sufficiently for a permanent position at the ESA. Thus, the ESA only employs graduates of the trainee program in exceptional cases directly after their participation in the program. However, it is a very good opportunity to acquire initial experience in this field directly after one's university degree and, thus, to improve one's chances on the labor market and to be in a good position when applying for a permanent position in ESA in the future.

"Well, the chances are not really high that they take you on right after the trainee program because most of the time one year of practical experience is not enough in order to fully work here with us. [...] The regular case is that the trainees leave us, work in the industry and apply again after some years; or that they start working in one of your contractor companies." (employee of the ESA human resources department)

Furthermore, many former trainees are taken over by contractor companies of ESA that work on certain projects in cooperation with the space agency.⁴⁷ With it, more professional experience can be gained and the proximity to the ESA can be maintained.

⁴⁶ The posts for the YGT-Program are advertised in fall/winter on the ESA website. Work starts in spring of the following year. One applies to a specific post. That means, one does not run through the entire organization or an entire department as is usually the case in regular industrial trainee programs.

⁴⁷ Staff members employed by contractor companies are called *contractors* at the ESA.

Also, ESA itself is interested in maintaining a connection to good former trainees. Thus, after a certain period of time in one of these contracting companies, one is in a promising position for an application for a permanent post with the ESA.

“Really, the Young Graduate Trainee Program is one way to get in because you have the opportunity to work here and you have the opportunity to show how good you are.” (ESA technical employee)

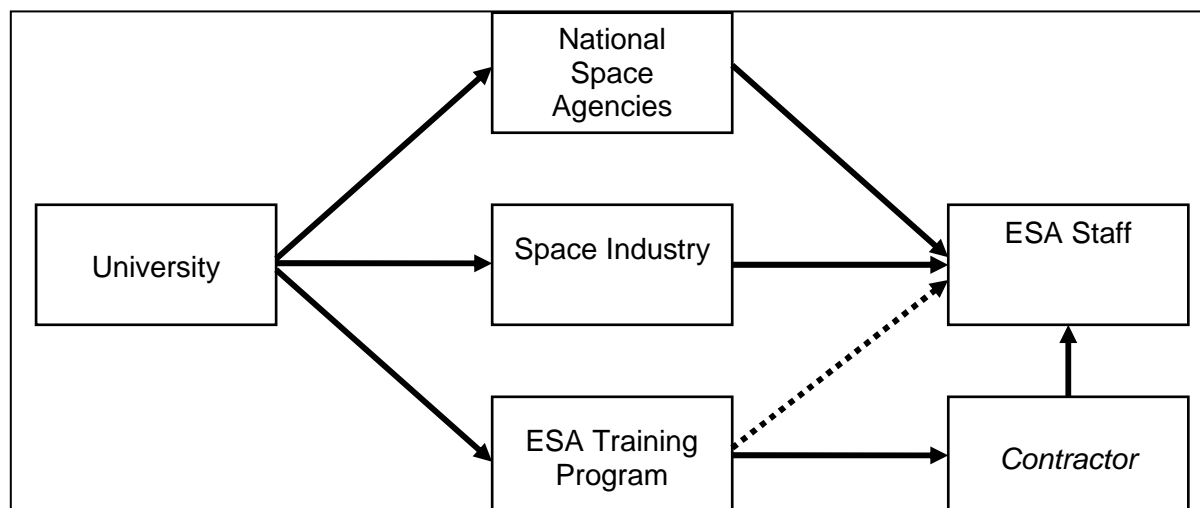
“Many of the contractors, and I was a contractor before, we ended up being staff members. And the way to get that is you have to work very hard.” (ESA non-technical employee)

However, entering the ESA by first being a trainee and then a contractor cannot be recommended in all cases. What seems promising in an individual case can be detrimental to the organization as a system if this kind of recruitment is pursued too often. The ESA also needs people who have collected experience outside the immediate ESA environment in order to stay in touch with the real world. The following quote illustrates the problem.

“There is a tendency for a lot of YGTs [trainees] to become a contractor afterwards and then afterwards to be recruited. If people have never been exposed to industry, they do not know what industry is about. They do not even know what unemployment is about they think it is all cheerful and good salaries because they have already very high salaries as YGTs. So, this is one of the weakest points in our recruitment policy. [...] I personally would not encourage a career path like this.” (employee of the ESA human resources department)

Of course, there are further ways besides the presented opportunities that can lead to a permanent position at the ESA. For example, in highly specialized and predominantly theoretical fields, the path can also lead directly from university or another research institution to ESA without any industrial experience if the necessary knowledge is there (usually through Ph.D. and research projects). However, these tend to be exceptions.

The career paths already described are more common. Figure 2 shows them once again graphically:

Figure 2: Career paths in the ESA

Source: ESOC, Human Resources Department (slightly changed by the editor).

The ESA also offers a limited number of internships. Even though these are less relevant when applying for a permanent position, they can be of advantage, for example in the scope of an application for a Young Graduate Trainee position. The length of an internship should usually be about three to six months and the application should be submitted about one year in advance if possible. Unlike for permanent posts, unsolicited applications for internships are not only possible but necessary.⁴⁸

4.2.2 Applicants' ways and motivation for application

Among all interview partners besides the trainees, there was only one person who had not gained any professional experience prior to his or her employment at the ESA. All the others referred to professional experience of many years mostly gained in the industry or, in some cases, also as contractors or in national space institutions. Both of the trainees had only done internships or casual jobs before their employment at the ESA. To this extent, the career paths of the interview partners correspond to those identified as typical in the preceding passage. Furthermore, the interview partners were asked about their motivation for applying for a post at the ESA and how they became aware of the vacant post.

Concerning the motivation, it can be said that the majority of the applicants were looking for jobs but still had a position with another employer when they applied at ESA.

Thus, they were not unemployed. In most cases, they did not concentrate on finding jobs in general but rather more attractive positions than the one they had at that time.

⁴⁸ Usually, internships are not advertised. Thus, applications should be directly addressed to the department where one intends to do the internship.

Some of the interview partners, however, were also looking for an initial position or were in a situation that forced them to look for another employer.

Both groups were interested in ESA as an employer for the following reasons (see table 8):

Table 8: Motivation for applying to the ESA

Reasons	(n) Mentions in total
Interest in aerospace/space research	> 5
Attractive post advertised	2 - 5
Post advertised that corresponds with one's own qualification profile	
Desire to go abroad or work in an international environment	
ESA very interesting as an organization	
Not many career opportunities in aerospace field	
Place of work close to family	
Good career opportunities	1
General interest in international organizations	
Advice from friends	
Coincidence	

Here, the number of responses can only be considered as soft indicator for the importance of the single factors as the interviewees responded more or less in-depth to the open question and there were no criteria given. However, it is obvious that at least the motivation 'interest in aerospace and space research' was of greater importance in the scope of the interviewees' application than for example the motivation 'advice from friends'. The intrinsic interest of the interview partners in an attractive position in the space industry was certainly a major reason behind the application of a large number of ESA staff members, especially in the technical field. It is the same attractiveness of the ESA as an employer combined with the limited working options in the aerospace industry⁴⁹ that also increases the competition among applicants. In this respect, it is interesting to see that none of the interview partners mentioned the financial incentive as a direct reason for motivation even though the ESA might be especially attractive in this aspect.

The career path to the ESA begins with a job advertisement. In this context, it might be of interest to future applicants through which information channels the interview partners became aware of their initial position in the space agency. As already presented in section 2.3, vacant posts are usually advertised on the ESA website and only in special cases in other publications. For the majority of the interview partners, however, the internet was not the main source of information, but rather the advice of friends within the organization.

⁴⁹ According to a human resources staff member, there are about 40,000 jobs in the aerospace industry in the EU.

"It was not my idea. One evening, a staff member came to me and said that there was a vacant position I should apply for." (ESA technical employee)

"I had frequent contact with ESA. So they told me that there would be vacancies and they said, 'why do you not apply?'" (ESA non-technical employee)

This is not contradictory in the sense that it is, of course, justified that friends inform each other about these kinds of issues, the interested people then look at the ESA website and apply there online. That many interview partners had already friends within the organization before their application to the ESA can be explained, among other things, by the fact that some of them have already worked for a contractor company of the ESA or other industrial partners. Neighbors, former fellow students, or family members in the ESA were also mentioned. Particularly the aspects concerning a contractor activity or connections to ESA through the former employer were mentioned quite frequently as a source of information for a vacant post in ESA. About half of the interviewees had contacts to the space agency through friends, an activity in a contractor company, or a former employer. All in all, personal networks seem to be very helpful in this respect.

However, it should be pointed out that many of the interview partners have been already employed by the ESA for more than ten years – thus, a time, when job advertisements on the internet might not have played a major role.

Other sources of information for the identification of suitable positions in ESA were: the ESA website, job advertisements in magazines, lecturers at the International Space University, the job pool of the German Federal Foreign Office. For one interview partner, a 'coincidence' was even helpful:

"I saw the position at ESA by coincidence. To be honest, I did not know what ESA was standing for." (ESA non-technical employee)

However, this information channel certainly is a major exception.

Altogether, the results show the following: Personal networks are an important means of identifying suitable posts at ESA. Nevertheless, there is also enough transparency for interested people without such contacts. The ESA's publication policy concerning vacant posts requires to a great extent, however, the activity of applicants as they must keep themselves informed on the website unless their personal contacts inform them. Other forms of publication are an exception. As long as the ESA can recruit enough qualified personnel through these channels, there is no need for the organization to change anything about it. Future junior employees who are interested in working at the ESA are urged to view the ESA website regularly.

4.2.3 Career opportunities within ESA

The ESA is an organization that enables its staff to make a career. Usually, new staff is recruited on a level between A2 and A4.

“That is usually A2 if you have already worked for a few years. A3 if you have a considerable amount of experience. In rare cases you can also be recruited in A4.”
(ESA technical employee)

In general, staff can be promoted to a higher grade within a certain grade band (like A2 to A4) on a superior’s suggestion. According to human resources employees, it is possible to be promoted due to one’s ‘outstanding performance’ as well as a certain period of affiliation with the organization.

“For that, there are certain prerequisites in the ‘Rules and Regulations’. You should have worked for the ESA for a certain period of time and then the promotion should be justified, of course; be it through additional responsibilities that have been taken over.” (employee of the ESA human resources department)

An annual merit process of the staff by the superiors is planned but not achieved in all cases.⁵⁰ The Promotion Board decides on promotions, which the Director General then must approve. However, the number of promotions is rather limited and one does not have the automatic right to be promoted. The Director General decides on the promotion quota.

“There is a quota which is designed by the DG.” (ESA non-technical employee)

As the vast majority of staff stays in the organization until their retirement, competition for promotions is fierce.

“Job opportunities are quite rare. [...] Concerning promotion, it is similar to a pyramid.”
(ESA technical employee)

“There are some career prospects, but I think in terms of promotion [...] you have to be realistic and realize that there are very limited numbers of posts available. You cannot expect to receive a rapid promotion in that sense.” (ESA non-technical employee)

“Here the turnover is really limited, plus people tend also to make the full career in the Agency. [...] You cannot really give a promotion to all the people who deserve it.”
(ESA technical employee)

⁵⁰ One technical staff member said in an interview that this merit process is only undertaken every three to four years. *“Every three or four years a kind of assessment takes place. [...] You are supposed to have objectives and you are measured in respect to these objectives.”*

That the staff members are so loyal to the organization is also an indicator of attractive work conditions. At the same time, it is evidence that dissatisfaction with one's own career cannot be significant because otherwise they would change jobs and work elsewhere in the industry. Besides the promotion to a higher grade, there are automatic career steps. Within a certain grade, staff members automatically climb up one step. In justified cases, several of these steps can be skipped at the same time.⁵¹ Within one grade there are about 11 of these career steps.

For positions above the category A5, promotions cannot be approved. An application is required for these posts.

"Above A4 you do not get a promotion. You apply to a division or the head of department." (ESA employee in an A4 position)

Apart from the career steps, the promotion from A1 to A2 happens quite automatically. However, the number of staff that is recruited in A1 is rather small.

Furthermore, the individual career prospects depend on the size of the department, the turnover of staff within the department, and the kinds of new projects within and outside of the department.

"The career prospects are a little bit variable because it depends on the projects coming up. So, normally, you have a career prospect if you have a new project coming up." (ESA technical employee)

Besides being promoted, it is also possible to apply for a higher position or a position with more prospects in another department of ESA in order to boost one's career.

"The advantage of this organization is that you can change departments or divisions quite easily." (ESA technical employee)

It is obviously usually the case that most employees are promoted at least once to a higher position during their employment with the ESA and retire as A3 or more often as A4 professionals.

"There are quite a large number of colleagues who retire in A3 positions. But it is more common that you make it to A4 during your career. However, this is not a promise." (ESA technical employee)

⁵¹ In the beginning, the automatic movement to the next higher step is annual. From a certain step on, however, it only takes place every other year.

According to one interview partner, the career prospects for technical staff are slightly better than for staff without technical experience.

"If you are looking for a rocket-like career, you should be an engineer for obvious reasons." (ESA non-technical employee)

This was the official career policy at the ESA. However, the interviews showed that, in reality, the career system does not always meet the official regulations and requirements. Quite often, promotions go according to age rather than based on performance criteria. ESA and human resources personnel are well aware of that problem. In the future, they intend to focus more on merit in order to prevent frustrations of deserving but non-promoted staff and to establish fairness of performance.

"In a perfect world [the promotion criterion] would be excellent consistent performance. But it is not a perfect world. Sometimes it is based n whether somebody has been in a job for a certain amount of years, etc. One thing we have to move forward to is to become a performance based organization. We are getting there, but it is still the mentality of seniority." (employee of the ESA human resources department)

"To be quite frank, I believe from every kind of aspect it is very much based on seniority, really not on merit or whatever." (ESA administrative employee)

"In fact, a lot of the granting system is based on seniority. [...] You cannot have an A4 until you are 40." (ESA technical employee)

In one interview, even the gender discrimination in the personnel policy of the ESA was criticized. According to that, it is harder for women to be promoted than it is for men.

"I would say that the system, how it exists now, is not entirely fair. [...] There is still too much gender difference. For the men it is still much easier to go on than for women." (ESA technical employee)

Different statements were made concerning the influence of political pressure of the member states on the promotion decisions in the ESA. However, the political influence on the majority of the decisions seems to be rather limited. According to one interview partner, political calculation has almost no effect on personnel decisions, at least for the A4 positions. Other staff members see a certain political will behind some of these decisions. However, this is only articulated very generally and is not directly contradictory to the statements of the human resources staff.

"I think once you are in the organization, have your standing and are established as a professional among professionals, it [the political aspect] does not play a big role anymore." (employee of the ESA human resources department)

"The decision making processes are sometimes a little bit complicated in the ESA because you still have to consider the political aspects." (ESA technical employee)

"In international organizations there is a lot of politics playing in it." (ESA technical employee)

The interview partners who do not work in the human resources department were also asked about their satisfaction with the personnel policy and their own career opportunities in ESA. Here, the opinions of the interviewed were very mixed, regardless whether they were in the technical or the administrative field. Whereas some part of the interviewees were satisfied with their own prospects, others were rather critical regarding the lacking merit-based promotion process, flexibility, restricted promotion opportunities, or the difficulties concerning family planning.

"I think the method here is really conservative. Let's say it is a classical method. I mean, the recognition is only by responsibility and has nothing to do how well you do your job technically. [...] Personally, I still do not like it very much. [...] Seniority is still a heavy weight here."

"It is not flexible, because [the system] is quota-based."

"The career development is a big shock when you start here."

"A career plan, a family plan... that is the difficult part when you are abroad, in terms of organization. Your family is also dislocated; I mean it is kept from its roots."

The automatic step increase within the single grades, the extensive transparency of the system, the possibility to switch departments, and even the offer of options for further training were mentioned very positively by the non-human resources personnel.

"The good thing is that you get an extra step every year. So you think: Great, I get an extra step every year, financial increase that is fantastic. Nowhere in the private sector would you get this."

"I am happy that I know the system. If you know the system, you can decide whether you like it or not."

"It is very good, because basically we are divided into different departments and each department is almost like a separate unity. [...] You can move to a different department and get a job you wanted somewhere else."

"Regarding further training, this is really a good place."

In summary, it may be said that regarding the career opportunities within the ESA, individual merits can be awarded to a limited extent. More often, however, a person's age is more decisive for a promotion than his or her performance. Due to the low turnover and the high amount of ambitious staff in the organization, individual career progress is rather restricted and one must really struggle for it. However, the latter is not a typical feature of the ESA. For women it might perhaps be more difficult to progress in their careers than for male staff members. Regarding the official gender policy of men and women that the ESA follows, this result is not surprising. However, this criticism of discrimination was only mentioned in one interview and cannot be supported by additional factors in this study. In a technical organization such as the ESA, people with a technical background have advantages in terms of promotion compared to their colleagues without this experience.

In total, staff members seem to be satisfied with their career prospects within the ESA but sometimes desire more flexibility and a stronger merit-based promotion system. The working atmosphere, especially the tasks and the salary, compensates for some of the restrictions regarding self-realization in terms of promotion so that staff members are very loyal to the ESA.

4.3 Germans at ESA

In the scope of the interviews, human resources personnel of the ESA were asked to assess German applicants or staff. Here, the primary objective was to find out to what extent German candidates or staff differ from their colleagues from other countries, meaning what strengths and weaknesses they usually have. This was the potential to help determine possibly the reasons for Germany's above-mentioned personnel underrepresentation in the European Space Agency.

In advance, it should be pointed out that these assessments refer to personal perceptions of single ESA staff members in human resources as well as staff from other departments who happened to mention this issue. All general tendencies observed will be presented but not generalized to say that ALL Germans have or lack certain qualifications or experience or not. Besides cultural differences, individual differences are also to be considered.

Most of the statements of the interview partners refer to the qualification and recruitment criteria mentioned in section 4. However, there were no statements regarding the courses of study and internships German applicants or staff completed before they came to work for the ESA.

The most conspicuous deficit of German candidates seems to be their long period of education or study. Almost all the interview partners mentioned this disadvantage compared to candidates of other nationalities. It has been a well-known problem for quite some time now that has already been criticized as an obstacle for a successful German personnel policy in international organizations in the *Stuttgarter Appel*.⁵² The long period of education in German universities is one reason for the fact that German applicants are often older than candidates from other countries. This entails along two disadvantages in particular: First, compared to competitors of the same age from other countries, Germans have less professional experience. Second, the lack of certain key qualifications results from the lacking professional experience. Furthermore, due to the above-mentioned demographic structure of its personnel, the ESA endeavors to fill vacant positions with young *and* experienced candidates.

“Generally speaking, trainees but also other German applicants, especially for junior positions, are usually much older than the average. This is due to the long education. It starts with their high-school education and continues with their studies at university.”

⁵² Cf.: Robert Bosch Stiftung (ed.), (1999): *Stuttgarter Appell an Bund und Länder, Wissenschaft und Wirtschaft: Für mehr Internationalität in Bildung, Ausbildung und Personalpolitik*. Internet: www.berlinerinitiative.de/materialien/1999_stuttgarter_appell.pdf (accessed: November 11, 2005)
This is a joint declaration of the German Council on Foreign Relations, German Institute for International and Security Affairs, and the Robert Bosch Foundation with recommendations on how to improve the international focus of schools and universities as well as the German presence in international organizations.

“In general, the education system in Germany is old-fashioned. Old-fashioned because people get their degrees very late. [...] If you consider that we are looking for people with first experience, then already there we have got a problem. [...] It is a disadvantage for the Germans because they start later.”

“I have made the experience that some – e. g., Germans – come here at 30 years of age and still have not worked at all. Here, they compete with French and British candidates who got their degree when they were 22 and are now prepared to take on more responsibilities. There, the Germans are at a disadvantage.”

Therefore, a long period of study and an advanced age with comparably less professional experience are important obstacles for a successful recruitment of German candidates.

Regarding the language skills and experience abroad of applicants and staff, Germans seem to be average. They are characterized as ‘neither outstanding nor poor’ or as ‘average’.

The assessment of the Germans’ expertise is more positive. This is rated as ‘very good’ by a member of the human resources department. However, at the same time, this evaluation is put into perspective when they point out the overall connection:

“In terms of expertise [the Germans] are very good. But, nevertheless, you have to consider on the other hand that this is a competition. If other people can present themselves stronger than it is the case here, you can say as many times as you want that the candidates from Germany are good. So, the others then have the better hand and that becomes apparent then.”

The quote above indicates another weakness of German applicants – communication skills. Especially regarding presentation skills and the ability to ‘sell’ oneself, Germans obviously show clear deficits. Besides the lack of professional experience that was already mentioned, the German university education can also be considered as one reason for the lack of communication skills. It was mentioned in at least one interview that the training of communication – and to a certain extent of social skills – is obviously a larger component of education at universities in other countries.

“You can really tell that they spend more time on developing the communication skills of students in [England and France]. Be it in terms of ‘public speaking’ [...] or in terms of group situations where you have to solve problems, etc.”

“Germans are very modest and often do not understand how to sell themselves as good as applicants from other member states do. This is really a pattern that you can notice over and over again – misunderstood modesty.”

Besides expertise, the strengths of German applicants and staff are characterized above all as organizational skills and personal qualities such as reliability and trustworthiness. However, the consequence of that is a lack of flexibility.

“Germans are extremely well organized, very structured, slightly inflexible as a result, very reliable, very trustworthy. Most Germans, if they say they are going to do something, they do it.”

Thoroughness and being structured can be probably considered as some reasons for the fact that the Germans usually come well prepared to the interview.

One of the most frequently mentioned deficit is the Germans' lack of mobility. In some cases, this is a main reason for the low numbers of German applicants, especially at the foreign ESA sites.

“Unfortunately, German applicants very often lack the willingness to go abroad or to go abroad with the organization.”

“The mobility of the Germans is not as high as, for instance, that of the Italians.”

“But, unfortunately, compared to other countries, the Germans are a bit lethargic and want to be in Berlin or Hamburg but not in Darmstadt. This is really kind of strange.”

At this point, it is only possible to speculate on the reasons for their unwillingness to move. One interview partner mentioned the comparably high salaries in industry in (western) German enterprises in the aeronautics and aerospace sector and the living standard as a reason for the Germans being ‘tied to their roots’.⁵³ This point of view was also shared by the personnel manager of ESA, Jean Claude Spérisen, in an interview with a Swiss newspaper.⁵⁴

“Qualified Swiss and [...] Germans find good jobs in their countries after university that they do not like to give up again.”

However, it is certain: besides the long period of education, the issue of mobility is one of the main factors for the comparably low representation of German staff in ESA.

The strengths and weaknesses of German applicants compared to those of candidates from other member states of ESA mentioned by the interview partners are once again summarized in table 9.

⁵³ On the website of the research project PROFIO (www.profio.de), you can find several reasons for the low representation of Germans in international organizations – of which mobility is one. These reasons can be divided into subjective and objective reasons. Subjective reasons are above all to be seen in the insufficient qualifications of German applicants, whereas objective reasons are rather to be considered as the lacking incentive that positions in international organizations have for qualified German applicants.

⁵⁴ See: Neue Züricher Zeitung: Die ESA sucht Bewerber aus der Schweiz. October 19, 2005 (internet: <http://www.nzz.ch/2005/10/19/ma/articleD8M4V.html>).

Table 9: Strengths and weaknesses of German applicants

Criteria	Explanation	Rating
Studies	Length of study	-
Language skills		+/-
Experience abroad		+/-
Professional experience	(Beginner)	-
Expertise		+
Key qualifications	Communication skills	-
	Problem-solving skills	-
	Organization skills	+
Personal qualities	Reliability / trustworthiness	+
	Flexibility	-
Others	Mobility	-
	Age when entering the ESA	-

4.4 Remarks on university education

One of the primary objectives of the research project PROFIO is to identify particularly good, already existing curricula for careers in international organizations and to develop an 'ideal' set of curricular contents that can then be used in practice for the qualification of junior employees. For this purpose, successful educational programs for careers in the international field are examined first of all. Second, the education of staff in international organizations is also considered and the evaluation of successful applicants regarding relevant educational aspects is stressed.

As already presented in section 4.1.1, a certain pattern in terms of the educational background of ESA staff cannot be determined. Both the subjects as well as the places of education where the interview partners have studied are quite diversified. Beyond that, the interview partners were also asked about the extent to which university education qualified them for their current work; in other words, which educational components at university especially helpful or which qualifications or services were lacking. It was also asked what universities could improve in order to prepare candidates as well as possible for activities in the ESA.

Many interview partners mentioned the acquisition of learning tools as a positive service of the study programs they attended. This qualification enables the interview partners to adapt successfully to new and changing working conditions and responsibilities.

"I managed very, very quickly to jump into the subject and I managed to learn very, very quickly. And this is what I think is important." (ESA employee with technical university background)

"The methodology of how you learn something and how you acquire knowledge, that is what it was important for." (ESA employee with technical university background)

Furthermore, the acquisition of expertise was praised quite often and considered as a helpful basis for the current position. The majority of these statements referred to the learning of engineering and natural science facts. But also other, non-technical expertise was mentioned as being significant for the current work. At the same time, several people pointed out that the knowledge mentioned is mostly fundamental components that do not suffice for managing the duties at work. Specific expertise is, above all, acquired after university.

"If it comes to learning the trade, at least the university I come from, is very good." (ESA employee with technical university background)

“Here it is like working in foreign affairs, because you deal with different cultures. [...] My Master’s definitely helped me to understand what is special about ESA, what is special about multinational organizations. If your goal was to work in foreign affairs, you understand it very well.” (ESA employee with non-technical background)

“Most of the knowledge you gain is in industry because it is so specific that you cannot really teach it at university.” (ESA employee with technical university background)

Furthermore, the acquisition of the ability to think critically as well as problem-solving competences were mentioned several times as being important for one’s current work or as being helpful for one’s career. However, not all interview partners who mentioned this qualification acquired this competence at university.

“I was trained to question technical issues or facts or just to make sure that we have a sound base, or that whatever decision we take is based on correct information.” (ESA employee with technical university background)

“At least you kind of know how to start, how to go about things, problem solving, things like this.” (ESA employee with technical university background)

“Lawyers are very often trained to identify problems and rarely to find solutions.” (ESA employee with non-technical university background)

Other elements of education that were positively evaluated on one hand and lamented as lacking on the other hand were presentation skills, reference to practice, and multidisciplinary. The lack of reference to practice was the most frequently criticized element that universities do not implement sufficiently.⁵⁵

“Of course, at university you are far away from the real world. You are rather prepared for a research career and less for one in industry.” (ESA employee with technical university background)

One person who acquired his or her degree at an American elitist university praised, above all, the internationality and multidisciplinary of the education, the training of presentation skills, the procurement of the ability to work in a team through group work as well as the reference to practice by means of case studies for example as being very helpful for his or her future career.

“I really loved this international environment and all the interactions I had with my field students and professors.” (ESA employee with technical university background)

⁵⁵ This mostly applies to those interview partners who studied in Germany.

The statement of one person who acquired his or her degree at a British university should be presented as a final example for educational services that are beneficial to one's career. This is about the support for the career planning, especially in terms of application material and the presentation in an interview. Even though this service is not a direct component of an academic education, it can be of great help especially when looking for one's first job after university.

"In England they actually provide students with a lot of support, in writing CVs and how to present yourself in interviews." (interview partner with a non-technical university background)

Table 10 presents a summary of the positive or lacking elements of education or services mentioned by the interview partners.

Table 10: Positive and lacking qualification services of universities

Positive qualification merits or components	Lacking qualification merits or components	Number of times mentioned in total (n)
- Analytical skills (acquisition of learning tool)		> 5
- Expertise (technical education) - Analytical skills (critical judgment) - Problem-solving skills	- Practice-oriented - Specific expertise - Management skills (organization skills, project management) - Communication skills (PRESENTATION TECHNIQUES)	2 - 5
- Good contact person - Communication skills (<i>writing skills</i> , innovative presentation techniques), - practice-oriented - <i>International focus of education</i> - Expertise (<i>functionality of international organizations and international relations</i>) - <i>Support for applications</i> - International study environment (many nationalities) - Multidisciplinarity of education and working groups - Social skills (team work)	- Leadership skills (personnel management) - General communication skills - Analytical skills (problem-solving skills) - Flexibility - Multidisciplinarity	1

* Presentation of contents: **Bold** (mentioned as a positive as well as a lacking element of education) / *Italic* (mentioned by interview partners without a technical university background) / CAPITAL LETTERS (mentioned by interview partners with and without a technical university background)

Since many work areas at the ESA require different expertise, key qualifications, or personal qualities, general deductions for improvement of educational practice based on these results can only be made up to a certain point.

Especially for educational programs that prepare students for international careers, the above mentioned aspects – apart from relevant expertise – of internationality (multinational working groups, intercultural training, language training), the ability to work in intercultural teams, and communication skills are of importance. Furthermore, the aspect of career support by means of application training seems to be an advisable additional service universities could offer.

The interview partners also gave some specific recommendations. In order to prepare their graduates as well as possible for a career in international organizations or with the ESA, universities should, above all, consider the following points:

Impart expertise, support team work, and conduct practical projects
<i>“The background I think is important, but also to be able to work in teams. [...] In the universities they should more emphasize on building teams to work on projects. For example in the last year before the career, you designate several teams and they have to design a project. And they have to really sell the project and try to compete with any external company who is providing similar projects. [...] It helps you to start working in teams, because you always have weak points in the team, you have strong points in the team, and you have different people with different characters. And the entire environment forces you to [...] create a product at the end of that. [...] In fact I would suggest [...] that the teachers sometimes should be acting as directors of a company, and try to evaluate the work not so much academically but in terms of value, other value.”</i>
Mind general practice orientation
<i>“I think that universities should make sure that the link between the real life and the university is highlighted during the studies.”</i>
Impart learning strategies
<i>“What is important in the university is first to give us the background and second to teach us the tools so that we can learn faster.”</i>
Support social and interpersonal competences
<i>“If something in interpersonal skills could be added it would be good.”</i>
Support intercultural competence
<i>“I think it is important for the students to be able to get the opportunity to work with people from other countries, and remove all these stereotypes that the Spanish are like that and the Germans are like that and the British are like that.”</i>
Support professional experience and experience abroad as well as language skills at university
<i>“I think if the universities can do something in particular then it would definitely be to give the students the opportunity to have some placements as part of the course and not necessarily in the same country if possible, within industry, or even exchanges with universities for six or three months.”</i> <i>“When you are preparing a course, you should think about putting people in different countries so that they get the cultural and the language backgrounds that they need. That is what I would suggest.”</i>
Recruit guest lecturers from ESA and offer joint (learning) projects with the space agency
<i>“It would be good to get more guest speakers from ESA in. Just to encourage ESA to come and make presentations.”</i> <i>“I think the better way to prepare students is really to try to have more projects</i>

combined with ESA. So that you have really integrated them, and that is motivating for the student and also for the people of ESA.”

Spark students' interest in international careers early on

“I do not believe it is like switching on the light. One day you wake up and think: ‘Okay, you go international.’ It has to be brought in, element by element. And it is good, if universities can bring that in early in the studies. [...] Not all the students already know that they want to have an international career. They need to be triggered at some point. And the earlier the trigger comes, the more time they have to look for what they want.”

Advertise ESA and its educational programs and inform students about the variety of possible fields of application

“ESA should be much more present at the universities, much more. [...] So that people realize that there are many opportunities or projects.”

This once again stresses the importance of expertise, language skills, and key qualifications such as intercultural competence or the ability to work in a team. As previously mentioned, there are different possibilities for universities in order to provide the relevant qualifications to their students. The realization of projects that are relevant for practice and linked with practice – also in connection with ESA⁵⁶ – working in groups, the integration of semester-long internships and student exchange programs into regular educational programs or also the recruitment of guest lecturers from the European Space Agency are highly recommended. For the latter, interested universities could, e.g., address the *Education Office* of ESA that replies to inquiries and supports projects of that kind. Indirectly, the methodology of case studies as a teaching method is also recommended (see first quote).

Beyond that, an early sensitization of students for international issues, studies abroad, international organizations, etc. and career opportunities and fields of work is a very important and necessary responsibility of relevant educational programs, especially in terms of a responsible national personnel policy.

⁵⁶ For example, one interview partner recommended that universities should take part in more projects such as ‘SSETI’ (Student Exploration and Technology Initiative). In this project, students from different universities have developed in cooperation with ESA a research satellite that was transported with a launch vehicle in the earth’s orbit in 2005. (See also: www.sseti.org).

5 Conclusion

This study provides a comprehensive insight into the recruitment practices of the European Space Agency. The interviews with human resources staff as well as other employees of the ESA enabled the identification and presentation of the requirements the European Space Agency places on its applicants and staff members. Beyond that, the specific situation of German candidates as well as the specific performances and deficits of university education in this field were considered. However, due to the methodology applied, the presented results can only claim validity to a restricted circle of people, namely that of (potential) staff in A2 to A4 positions and trainees.

It was shown that ESA applies a formalized recruitment strategy that usually covers the entire process from the post advertisement on the internet, the pre-selection of candidates, the development of a criteria catalogue by the selection board and the conducting of the interview (and further tests if required) up to the final decision by the Director General.

The following criteria were identified as essential recruitment requirements for positions between A2 and A4: nationality of an ESA member state, certificate of a Master's or equivalent university degree, relevant expertise, professional experience of some years, sound skills in English and partly also French, and specific key competences and personal qualities depending on the position. Furthermore, it is as to whether an applicant comes from an over- or underrepresented member state of ESA (number of personnel from a member state according to the budgetary contribution) as well as the age and – also for reasons of proportional representation – gender of a candidate. However, the reputation of a university, final grades, and completed internships are of less importance when filling professional positions. As was shown, experience abroad is also not a formal selection criterion. However, it is a convincing indicator for a certain frame of mind and personality building, language skills, intercultural competence, and the willingness to relocate; so the acquisition of experience abroad is highly recommended. Similar criteria apply to trainee positions, whereas less attention is paid to professional experience than to completed internships.

Currently, people from underrepresented member states such as Germany, Switzerland, and France, especially when female with a degree in engineering or natural sciences, have extremely good chances of being recruited if they meet the professional requirements and further requirements depending on the position. The following answer of a human resources staff member of the ESA to a question regarding the ideal candidate illustrates this:

“An ideal candidate is somebody who has five to ten years of industrial experience, internationality, which is attractive for us, who has enough experience to bring a needed skill to the agency, and has the potential to grow. [...] An ideal candidate would be a female German, I am not kidding, between thirty to forty-two, who is a senior engineer or potential section head, who could grow into a department head or even higher.”

Besides the requirements made to applicants, this study also pointed out recommendations future candidates should consider when planning their career. Here, the specific acquisition of expertise and language skills, the collection of experience abroad and relevant professional experience were mentioned as well as, for example a solid preparation for the interview, the ability to present several key qualifications, initiative and willingness to learn, the maintenance of networks, and the awareness of positive and negative consequences of the necessity of one's mobility.

A degree in engineering or natural sciences can be generally considered a very promising component in a technical organization such as the ESA. As was shown, about 70 percent of the positions in ESA require a qualification of that kind. But the ESA is also looking for a large number of graduates from rather polyvalent subjects such as economics, law, or certain social science subjects.

However, since the ESA staff members usually stay with the organization until their retirement, the turnover of personnel is comparably low. In the past couple of years, an average of only 100 posts per year had to be filled. Thus, the possibility to obtain a permanent post at the ESA is restricted and the competition for vacant posts is fierce. The low turnover of personnel as well as the following statement of a technical staff member reflects the attractiveness of the ESA as an employer:

“ESA [...] provides a very good work environment, but also a very good topic. I feel myself to be in a very limited group of just a few percent – probably less – of people in the world who got to work and like what they are doing.”

Taking-up a position as a contractor at an industrial partner of ESA, cooperating in an national space agency, or the participation in the Young Graduate Trainee Program can increase the chance of success when applying for a permanent post in the European Space Agency. On the one hand, direct contacts to ESA are useful as a reference for the quality of one's own work and performance but on the other hand also for the information about vacancies. A large number of ESA staff members found permanent posts this way. For the interview partners, personal networks were the most important information channel for vacant posts besides post advertisements on the ESA website.

Regarding career opportunities, the interviews showed mixed results. Even though almost all the interview partners were relatively satisfied with their career paths so far as well as their future prospects, a major part complained about the low level of flexibility and the strong focus on seniority of the career system in practice. A stronger merit-based process is favored. The human resources staff is aware of that fact and is currently working on several changes in this respect. In general, the interview partners considered the career system to be transparent.

This study also pointed out the strengths and weaknesses of German applicants or staff in the ESA. Here, it was shown that Germany's underrepresentation in the personnel of ESA is partly a 'homemade' problem. Especially the long education in connection with the late start of a career or the lack of professional experience compared to candidates of the same age from other countries represents an obstacle for recruitment. As a consequence, Germans also acquire other important key qualifications later than their competitors from other countries that have already proven themselves in professional life and trained important competences such as communication skills and the ability to work in a team. Even though the expertise of German candidates are usually evaluated as competitive by human resources personnel in ESA, the Germans do often worse than their competitors when it comes to the comparison of all qualifications. In addition to this Germans are often not willing to be mobile and to relocate their place of residence or work to other countries and, thus, do not apply at all. Besides, ESA offers its employees a comprehensive mobility support that does not only cover financial incentives but also additional holidays and further services and support.

"The support you get, also from colleagues here, is tremendous. [...] They do not leave you alone with any kind of problems."

In the sense of a farsighted and responsible personnel policy of a state that is politically and economically as strongly involved in the international system as is the Federal Republic of Germany, the identified deficits should be actively remedied. The results of this study can contribute by taking the necessary steps on the basis of the presented recruitment criteria and considering the recommendations made. This does not only require the initiative of junior employees but above all for universities and other educational institutions (and, of course their sponsors).

The acquisition of learning strategies and key qualifications, a stronger practical reference in study programs, the integration of international exchange programs and study groups, the invitation of experts from the field, the assimilation of study projects in interdisciplinary teams, and the active support of students' application efforts are only a small selection of important services universities could offer in order to prepare junior employees successfully for an

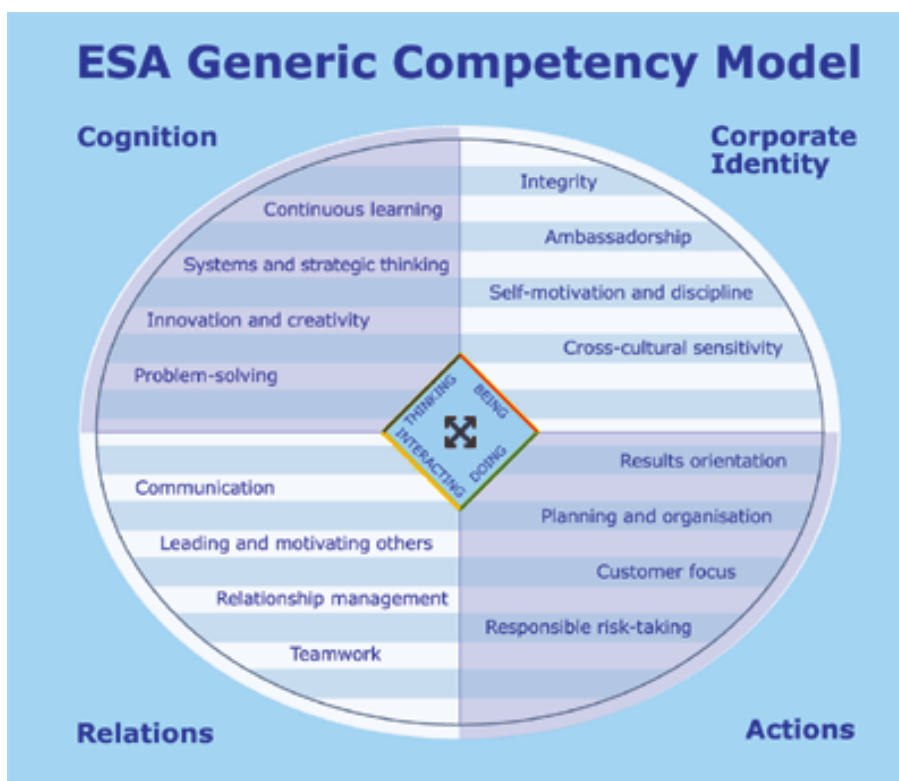
international career. Even though the acquisition of expertise has still priority, it is not enough to guarantee graduates success in the international talent competition.

From that point of view, the results presented in this study can be a means of orientation for interested junior staff or future applicants in ESA, universities and other educational institutions as well as the organizers of the relevant general conditions (especially in politics).

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Appendix: Generic Competency Model



Source: http://www.esa.int/SPECIALS/Careers_at_ESA/SEMYRSXO4HD_0.html.