



**CQAB**

Course Quality Advisory Board

ERASMUS MUNDUS ASSOCIATION

# MATHMODS-Mathematical Modelling in Engineering. Theory, Numerics, Applications

*Report was generated by Mikhail Balyasin on 01 Apr 2016*

*Primary analyst: Bishnu Sarker, secondary analyst: Chengjia Wang.*

## Contents

<b>1 Foreword</b>	<b>4</b>
<b>2 Introduction</b>	<b>5</b>
2.1 Course Quality Advisory Board . . . . .	5
2.2 Introduction to the current report . . . . .	5
<b>3 Supporting services</b>	<b>8</b>
3.1 Support received before the start of the Erasmus Mundus course . . . . .	8
3.1.1 Consortia . . . . .	8
3.1.2 University of Hamburg, Germany . . . . .	9
3.1.3 University of L'Aquila, Italy . . . . .	10
3.1.4 University of Nice Sophia Antipolis, France . . . . .	10
3.2 Support received during the orientation program . . . . .	11
3.2.1 Consortia . . . . .	12
3.2.2 Gdansk University of Technology, Poland . . . . .	13
3.2.3 University of Hamburg, Germany . . . . .	13
3.2.4 University of L'Aquila, Italy . . . . .	14
3.2.5 University of Nice Sophia Antipolis, France . . . . .	15
3.3 Helpfulness of units and people . . . . .	15
3.3.1 Consortia . . . . .	16
3.3.2 Gdansk University of Technology, Poland . . . . .	17
3.3.3 University of Hamburg, Germany . . . . .	17
3.3.4 University of L'Aquila, Italy . . . . .	18
3.3.5 University of Nice Sophia Antipolis, France . . . . .	19
3.4 Support received on various issues . . . . .	20
3.4.1 Consortia . . . . .	21
3.4.2 Gdansk University of Technology, Poland . . . . .	21
3.4.3 University of Hamburg, Germany . . . . .	22
3.4.4 University of L'Aquila, Italy . . . . .	22
3.4.5 University of Nice Sophia Antipolis, France . . . . .	22



<b>4</b>	<b>Assessment and feedback</b>	<b>23</b>
4.1	Module assessment . . . . .	23
4.1.1	Consortia . . . . .	24
4.1.2	Gdansk University of Technology, Poland . . . . .	26
4.1.3	University of Hamburg, Germany . . . . .	26
4.1.4	University of L'Aquila, Italy . . . . .	27
4.1.5	University of Nice Sophia Antipolis, France . . . . .	27
<b>5</b>	<b>Teaching/learning and supervision</b>	<b>29</b>
5.1	Teaching/learning . . . . .	29
5.1.1	Gdansk University of Technology, Poland . . . . .	29
5.1.2	University of Hamburg, Germany . . . . .	30
5.1.3	University of L'Aquila, Italy . . . . .	30
5.1.4	University of Nice Sophia Antipolis, France . . . . .	31
5.2	First supervisor . . . . .	31
<b>6</b>	<b>Internship/field experience and personal development</b>	<b>33</b>
6.1	Personal development . . . . .	33
6.2	Internship . . . . .	35
<b>7</b>	<b>Acknowledgments</b>	<b>36</b>



# 1 Foreword

The present report was compiled by the Course Quality Advisory Board (CQAB) of the Erasmus Mundus Student and Alumni Association (EMA) with the main purpose of providing Erasmus Mundus Joint Master Degree (EMJMD) courses with customized student feedback that emerged from the 2015 edition of the Course Quality Student Services (CQSS) survey. This feedback can aid courses in their quest of **improving student services**, and **benchmark** against other course in the Erasmus Mundus umbrella.

The CQSS survey reached its **second edition**. The current edition of the survey brings a number of improvements. Many of these **improvements emerged from the feedback provided by EMJMD consortia** following the release of the previous CQSS survey reports, and **Erasmus Mundus students**. At the recommendation of EMJMD consortia, the course reports now include **comparative information** about each course in relation to the other EMJMD courses that received a sufficient number of responses. At the suggestion of survey respondents, the 2015 CQSS survey edition was released at the end of the academic year, to ensure that all respondents have completed at least two EMJMD semesters before being asked to evaluate their experience. Additional changes have been made to the 2015 edition of the CQSS survey to streamline the survey experience, to facilitate the data analysis process, and to capture information about key subpopulations among EMJMD students. For further reference, a **full description of the methodology** behind the creation of the 2015 edition of the CQSS survey and the analysis procedures behind the CQSS reports has been published in the academic journal **Education Studies Moscow** (<https://vo.hse.ru/en/2016--1/178804999.html>).

Due to our responsibility towards the entire EMJMD community and the over 2000 students and alumni that fully completed our lengthy survey, **the results emerging from the 2015 edition of the CQSS survey will be made available to the broad public on an interactive online platform**. The online platform will contain the graphical information included in this report, and be made available online shortly after the distribution of course reports to EMJMD consortia. By making this information public, CQAB does not aim at classifying or creating rankings among EMJMD courses, but to add transparency to our data analysis, and offer current and prospective students the ability to better prepare for what CQAB considers to be an invaluable educational experience.

The work of CQAB would not exist and could not continue **without the support of numerous committed volunteers spread all across the world**, driven by a strong motivation to help improve the quality of EMJMD courses. During the last 18 months, over 40 volunteers were involved with different stages of the CQSS project, from analyzing feedback received following the 2013 edition of the CQSS survey, to coding qualitative data, interpreting graphical information. **CQAB is grateful, humbled and proud to have supported the CQSS project fully through volunteer work**, and thus without external interference.

Among the CQAB volunteers, two stand out: Mikhail Balyasin and Luis Carvalho. Mikhail is responsible for the substantial improvements to the design and content of course reports, has skilfully generated the graphical information made available in this report, and created the CQSS interactive online platform. Luis coordinated the process of analyzing the vast qualitative data that emerged from the CQSS survey, rethought the architecture of the CQSS survey and helped streamline the survey experience for respondents.

CQAB is grateful for the ongoing support received from the **Erasmus Mundus Student and Alumni Association, and its leadership structures**. We are indebted to representatives of the **European Commission**, and **EMJMD course coordinators** whom we consider allies in a joint quest of consolidating the excellence brand of EMJMDs.

CQAB is eager to receive further feedback from each course coordinator and other stakeholders on how future CQSS reports and their contents may be improved in order to maximize their usefulness. We understand that courses themselves are best suited to address quality concerns, and we strongly suggest that the information in this report, with its limitations, is triangulated with internally available data at the level of each course.

Please address all questions and remarks about this report to Georgiana Mihut at [cqab.chair@em-a.eu](mailto:cqab.chair@em-a.eu).

With gratitude and hope for a fruitful future collaboration,  
**Georgiana Mihut**, Chair of the Course Quality Advisory Board



## 2 Introduction

### 2.1 Course Quality Advisory Board

CQAB is an independent advisory body that operates on a voluntary basis as part of the Erasmus Mundus Student and Alumni Association. Its members have not and do not receive financial benefits as a result of their CQAB related activities. Membership to CQAB is assured through a competitive recruitment process among EMA members. Internally, CQAB has three main separate structures:

1. Management of the e-mail account **em.feedback@em-a.eu**, that assists students with pressing quality issues;
2. **Survey Team**, tasked with conducting the CQSS survey;
3. **Communication Team**, a newly created structure aimed at facilitating the promotion of CQAB activities.

CQAB was created as a result of the pressing and constant concerns of EMA members about the quality of the student experiences as part of an Erasmus Mundus course. Internally, CQAB has a variety of tools to capture student concerns and to interact with student representatives from various programs, but the CQSS survey represents its most comprehensive and systematic initiative focused on quality assurance. The inception and design of the CQSS survey is enrooted in the complexity of the EMJMD student experience and driven by two distinct factors: the perceived systemic yet unique issues around quality across joint degree courses, and the general underrepresentation of students in the systemic evaluation of the EMJMD program.

### 2.2 Introduction to the current report

This report introduces three distinct sources of information. First, it aims to bring to your attention the **63 responses** received from current or past students of MATHMODS-Mathematical Modelling in Engineering. Theory, Numerics, Applications. The respondents represent **36 distinct nationalities**. Collectively they have spent more than **1002 hours** answering and thinking about the survey questions. The responses are introduced in graphical form for each indicator and dimension captured in the CQSS survey that received 10 or more responses. The graphical information follows the structure illustrated in Figure 1, where the name of the dimension (and often the name of the survey question) appears as a figure header (**Overall satisfaction**), and each indicator is displayed on a separate row. The figure illustrates the proportion of respondents that selected each of the four Likert scale options available. Figure 1 illustrates overall satisfaction of respondents with the course.

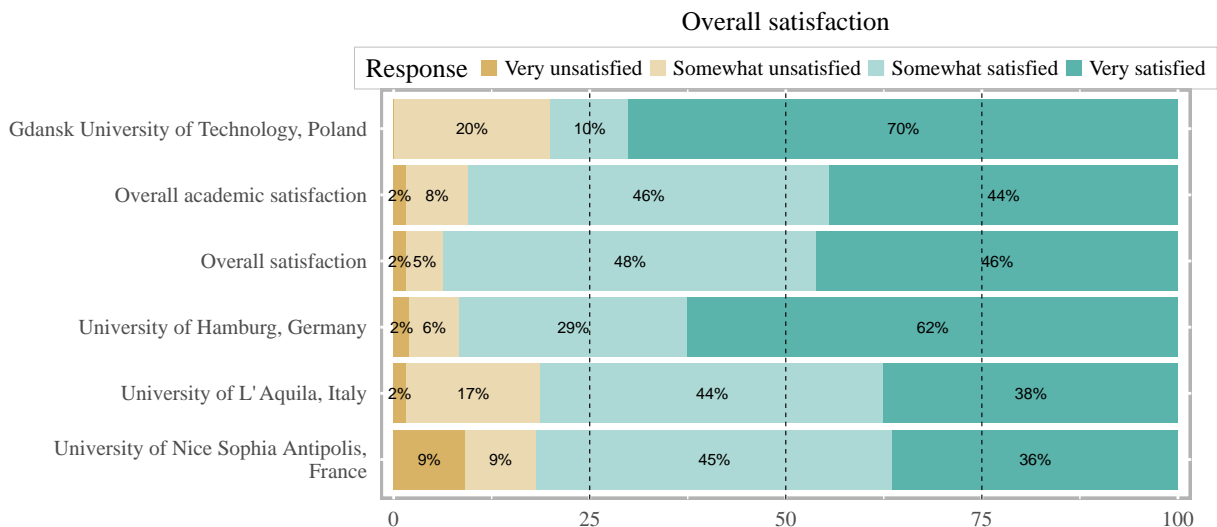


Figure 1: Example of graphical distribution of survey responses

Second, for each indicator evaluated through the CQSS survey, comparative data on the aggregated performance among all EMJMD courses with 10 or more responses is introduced (see Table below).

	n	Mean	EM mean	0% - 25%	25% - 50%	50% - 75%	75% - 100%
Course content	62	3.23	3.21	2.54 - 3.06	3.07 - 3.23	3.24 - 3.40	3.41 - 3.70
Enrolling in classes	61	3.69	3.44	2.57 - 3.25	3.26 - 3.45	3.46 - 3.62	3.63 - 3.92
Evaluation methods	62	3.21	3.06	2.23 - 2.88	2.88 - 3.06	3.07 - 3.21	3.22 - 3.76

Each row in Table above represents a distinct indicator evaluated as part of the CQSS survey. Each table includes all indicators which received 10 or more responses and compose a dimension. Tables include

- The number of responses received for each indicator (n);
- The mean for each indicator corresponding to MATHMODS-Mathematical Modelling in Engineering. Theory, Numerics, Applications (Mean);
- The aggregated mean for the respective indicator across all EMJMD courses (EM mean).

Additionally, the table provides information about the distribution of means across all EMJMD courses with 10 or more responses. The distribution of means is displayed as ranges of means in quartile increments. As such, 25% of all EMJMD courses with 10 or more responses will be found in each of the four columns. The quartile corresponding to the course profiled in each report is highlighted. This display facilitates an easy comparison between a given program and its peers. The means displayed in the comparison tables are obtained by converting Likert-scale survey responses to numeric values. CQSS respondents were asked to evaluate each indicator on a four point Likert-scale, from “Very unsatisfied” or “Disagree” to “Very satisfied” or “Agree”. For the purpose of the means utilized in this report, each Likert-scale option corresponds to the following numeric values:

- “Very unsatisfied” or “Disagree” = 1;
- “Unsatisfied” or “Somewhat disagree” = 2;
- “Satisfied” or “Somewhat agree” = 3;
- “Very satisfied” or “Agree” = 4.

Therefore, the average score for any given indicator in a table ranges from a minimum of 1 to a maximum of 4, where 4 represents a perfect score for an indicator.

Third, few of the sections of the report introduce an overall description of the qualitative analysis of relevant open ended questions the CQSS survey asked. These selected sections do not pertain solely to the qualitative answers received for MATHMODS-Mathematical Modelling in Engineering. Theory, Numerics, Applications, but instead offer the range of positions and issues discussed freely by respondents **across all EMJMD courses**.

The information introduced in this report follows the structure employed by the CQSS survey. Through its design, the CQSS survey aims to capture both the **overall experience** of students within an EMJMD, and the experience students had independently at **each institution attended**. To reflect this dichotomy, each section of the report displays both the **overall evaluation of an indicator**, as reflected by respondents, and **the evaluation of the same or comparable indicator in the context of different universities attended**. The most extensive section of the report focuses on providing information about the **supporting services available to students**. The evaluation of the quality of supporting services available to students is broken down between the following components:

- Support structures received before the start of the EMJMD program;
- Support structures received during the orientation program;



3. The general helpfulness of various units and individuals;
4. Support received on various specific student issues.

Additionally to including information about your course, this report tries to offer consortia an insight into the qualitative data received during the CQSS survey. Unfortunately, we were unable to extract exclusively the open responses received from your students. We also felt that in many cases confidentiality could have not been assured if we were to share with you these comments. In return, throughout the report, boxed texts that reflect a general analysis of the open answers received from all CQSS survey respondents are included. These blurbs of text are clearly marked and are not necessarily representative for your course, but they do bring light on some of the challenges faced by EMJMD students in general.

Over 20 volunteers were involved in creating the text accompanying the graphs displayed as part of 78 distinct course reports. Together, these volunteers have written almost 100.000 words. Most of these volunteers, including the coordinating team, are not native english speakers. Despite our best effort to ensure a proper editing and proofreading process, this was simply outside of our capacity. As such, **you may encounter spelling and grammar errors**. At times, the formulation might seem sloppy. We apologize for this. Due to high number of volunteers involved, we were also unable to check the accuracy of all percentage points displayed in the text throughout this report. **You may identify inconsistencies between the written text and the graphs in the report. In all cases, the figures displayed in graphical form are accurate.**

Do not hesitate to contact CQAB if you have any concerns, questions or feedback about the information displayed in this report by writing an e-mail to [cqab.chair@em-a.eu](mailto:cqab.chair@em-a.eu).



### 3 Supporting services

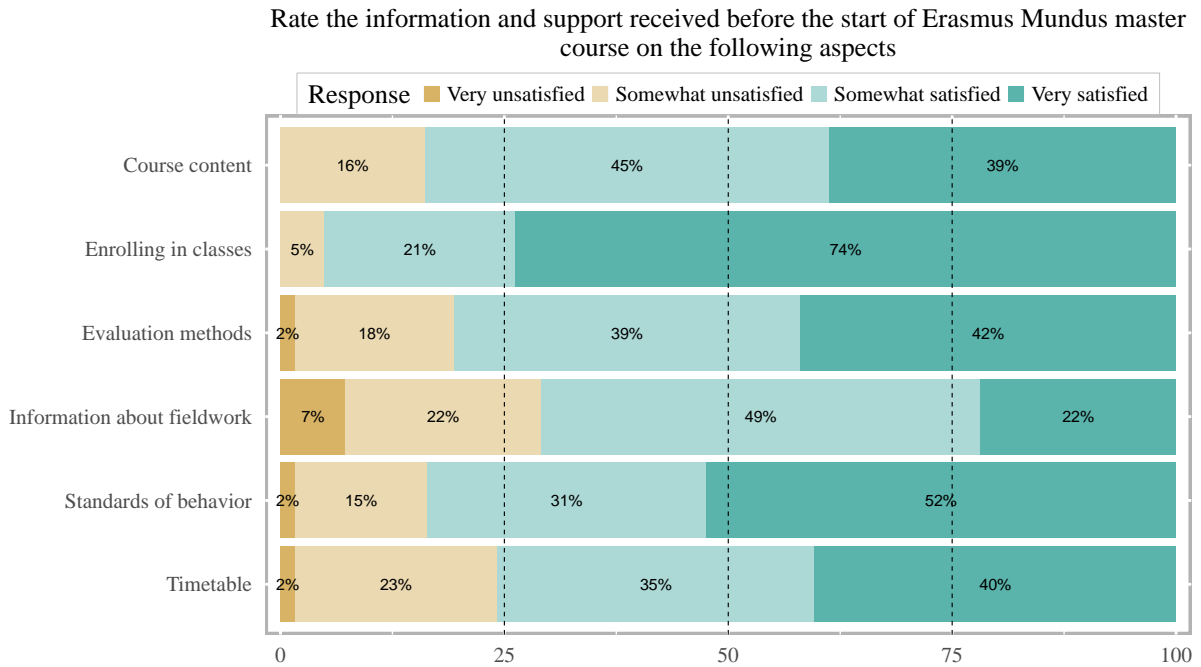
#### 3.1 Support received before the start of the Erasmus Mundus course

In general, most respondents are either “very satisfied” or “somewhat satisfied” with the support they received before the start of the Erasmus Mundus Course. For most of the indicators, this course is placed in second quartile. For the indicators “Evaluation methods” and “Enrolling in classes” are placed in third and fourth quartile respectively. A significant percentage of respondents also have shown dissatisfaction regarding the indicators “Information about fieldwork” (29%) and “Timetable” (24%).

Respondents from different universities have very different experiences regarding the support they received before the start of the Erasmus Mundus course. For example, respondents from University of Hamburg gave positive feedbacks on the support they received. In fact, most of them are very satisfied in all indicators. A small percentage of respondents (18%), said they are either “very unsatisfied” or “somewhat unsatisfied” regarding the indicator “Accommodation”.

In case of University of L’Aquila, most respondents are very satisfied with the support received. However, 46% of students said that they are either “very unsatisfied” or “somewhat unsatisfied” with support received regarding “Local transportation”. The graph below shows that respondents have negative experiences in relation with almost all indicators at University of Nice Sophia Antipolis. Respondents were either “very unsatisfied” or “somewhat unsatisfied” with the following indicators: 66% regarding “Accommodation”, 44% regarding “Banking”, 50% regarding “Estimation of living expenses”, 23% regarding “Health insurance”, 41% regarding “Language courses”, 24% regarding “Local transportation” and 25% regarding “Visa issues”.

##### 3.1.1 Consortia

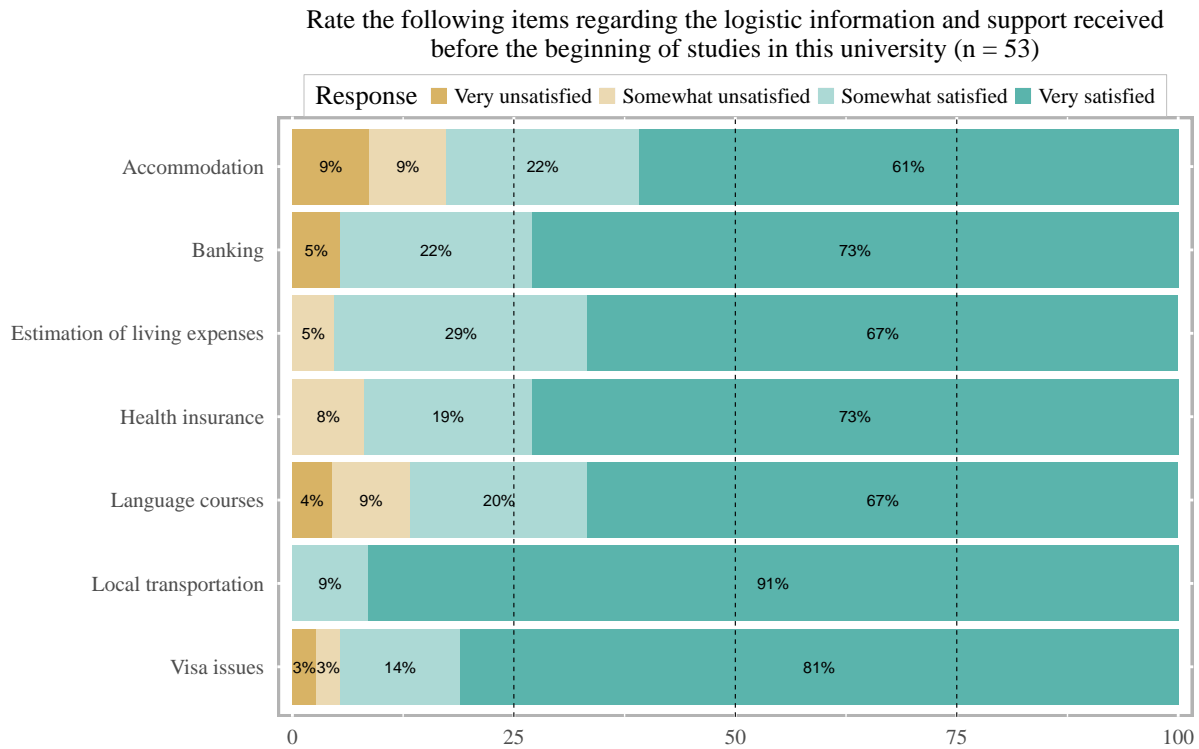




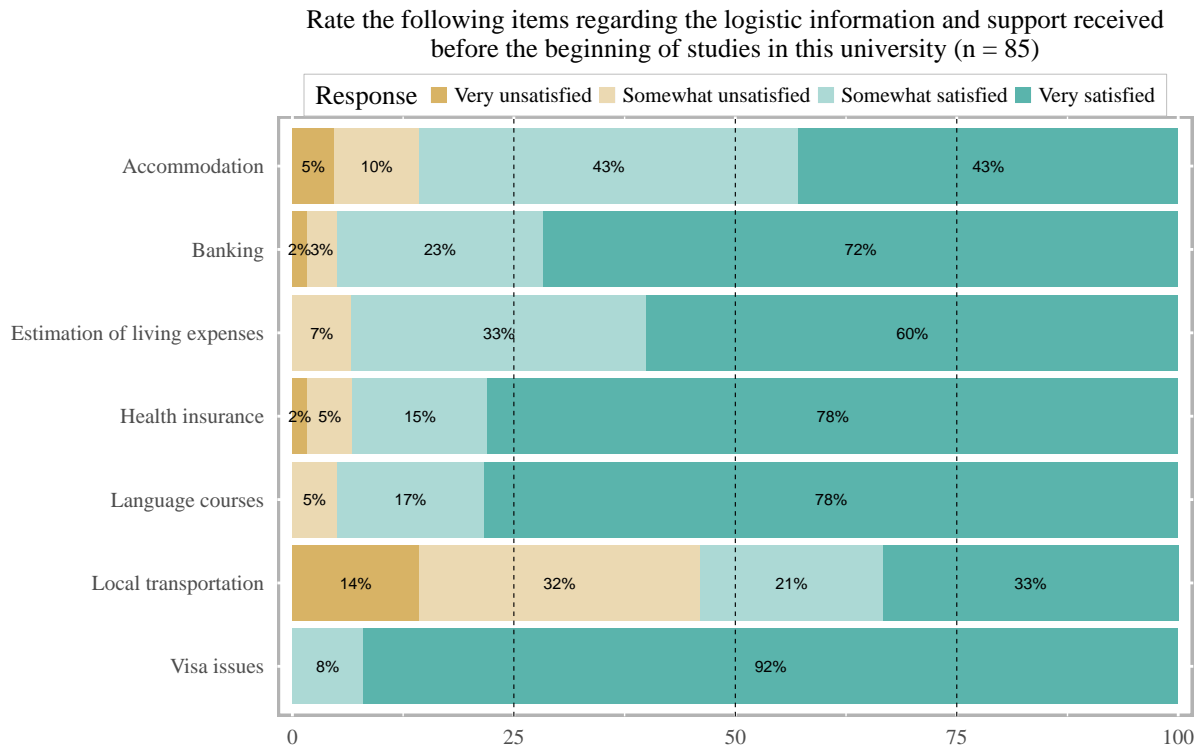
	n	Mean	EM mean	0% - 25%	25% - 50%	50% - 75%	75% - 100%
Course content	62	3.23	3.21	2.54 - 3.06	3.07 - 3.23	3.24 - 3.40	3.41 - 3.70
Enrolling in classes	61	3.69	3.44	2.57 - 3.25	3.26 - 3.45	3.46 - 3.62	3.63 - 3.92
Evaluation methods	62	3.21	3.06	2.23 - 2.88	2.88 - 3.06	3.07 - 3.21	3.22 - 3.76
Information about fieldwork	55	2.85	2.98	2.00 - 2.80	2.81 - 3.00	3.01 - 3.19	3.20 - 3.57
Standards of behavior	61	3.34	3.45	2.77 - 3.29	3.30 - 3.42	3.43 - 3.63	3.64 - 3.90
Timetable	62	3.15	3.15	1.94 - 2.96	2.97 - 3.20	3.21 - 3.33	3.34 - 3.80

Table 1: Summary statistics

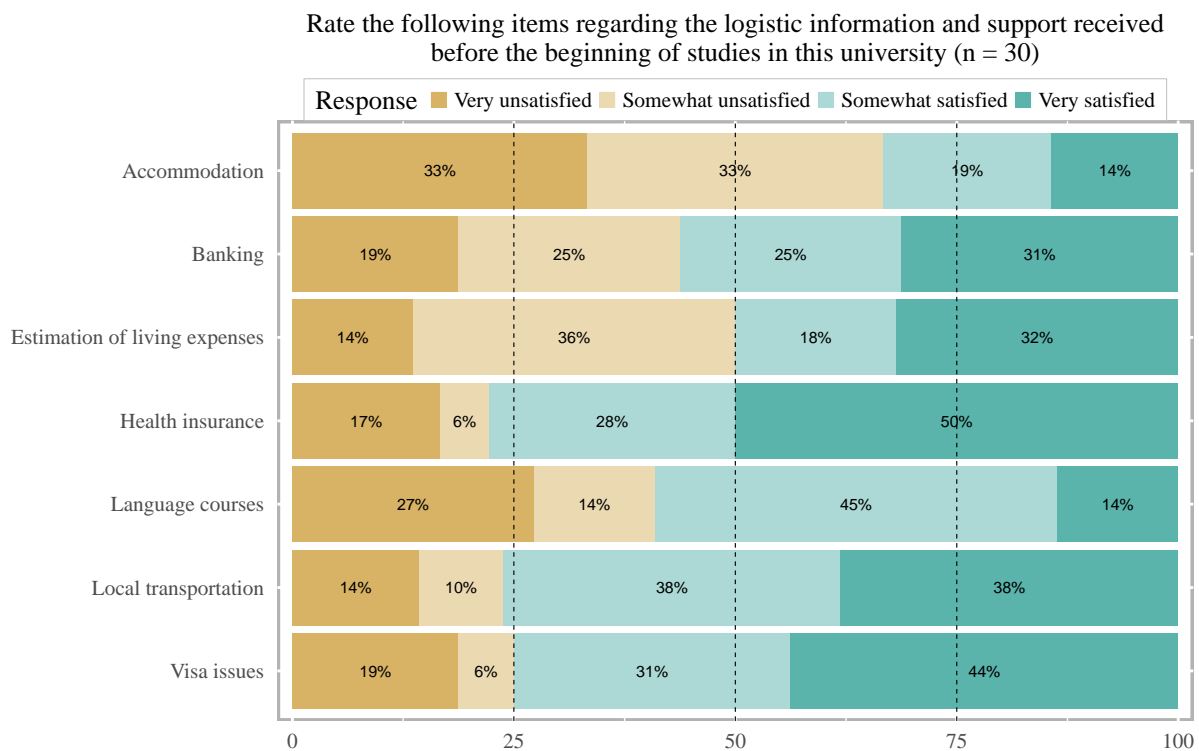
### 3.1.2 University of Hamburg, Germany



## 3.1.3 University of L'Aquila, Italy



## 3.1.4 University of Nice Sophia Antipolis, France



**Open answers by CQSS respondents to the question: "Please comment on any other aspect relevant to family relocation throughout Erasmus Mundus Course" (n = 23)**

Thirty-nine percent of CQSS respondents considered the family relocation assistance offered by their program administration inadequate due to the lack of help from staff regarding travelling arrangements. Almost half of the respondents reported they have received no assistance at all, and a smaller fraction emphasized financial difficulties faced during their family relocation. Second, 26 percent of the students highlighted the lack of support received from administration staff in securing family accommodation and health insurance. Finally, 17 percent of respondents mentioned that obtaining a visa for family members was problematic. Visa rejections, challenges in visa extension, and lengthy issuing processes were cited as some of the difficulties encountered.

### 3.2 Support received during the orientation program

In general, most respondents are either "very satisfied" or "somewhat satisfied" with the support they received during the orientation program. Three indicators fall in first quartile: "International Student Office", "Library" and "University facilities", three indicators that fall in second quartile, and two indicators secured a position in the third quartile.

Among respondents, 26% have reported they are unsatisfied with the support from "Buddy or tutor system", "International Student Office" (28%), "Library" (28%), and "Student associations" (26%).

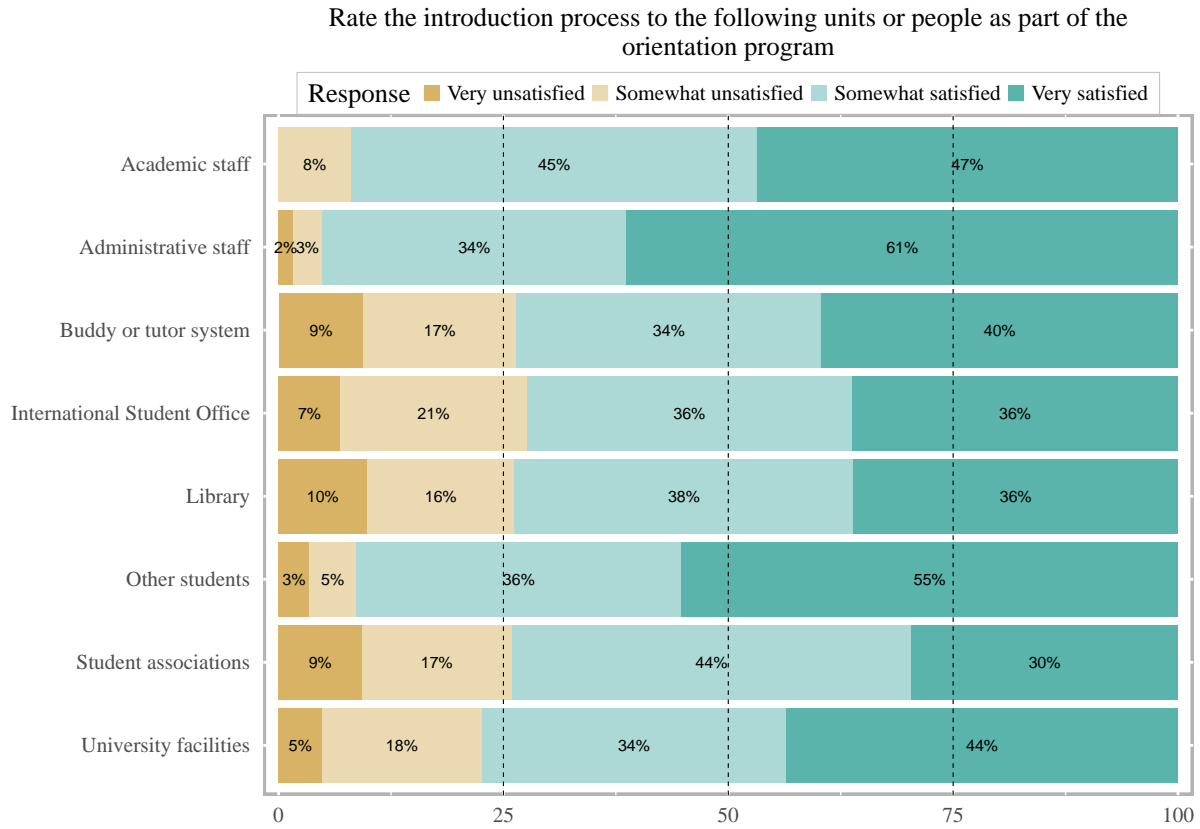
Moreover, respondents from different universities have very different experiences regarding the support they received during the orientation program. For instance, respondents from University of Hamburg are quite satisfied with the support they received.

At University of L'Aquila, most respondents are satisfied with the support received. However, students said they are either "very unsatisfied" or "somewhat unsatisfied" regarding: "Library" (37%), "Student associations" (25%), and "University facilities" (35%).

The graphs below show that respondents have mixed experience with almost all indicators at University of Nice Sophia Antipolis. Respondents were either "very unsatisfied" or "somewhat unsatisfied" with "Administrative staff" (41%), "Buddy or tutor system" (33%), "International Student Office" (39%), "Other students" (25%), "Student associations" (43%). Respondents are mostly satisfied with the support they receive from Gdansk University of Technology. However, 30% of respondents said they are "somewhat unsatisfied" with the support received from "Academic staff".



## 3.2.1 Consortia

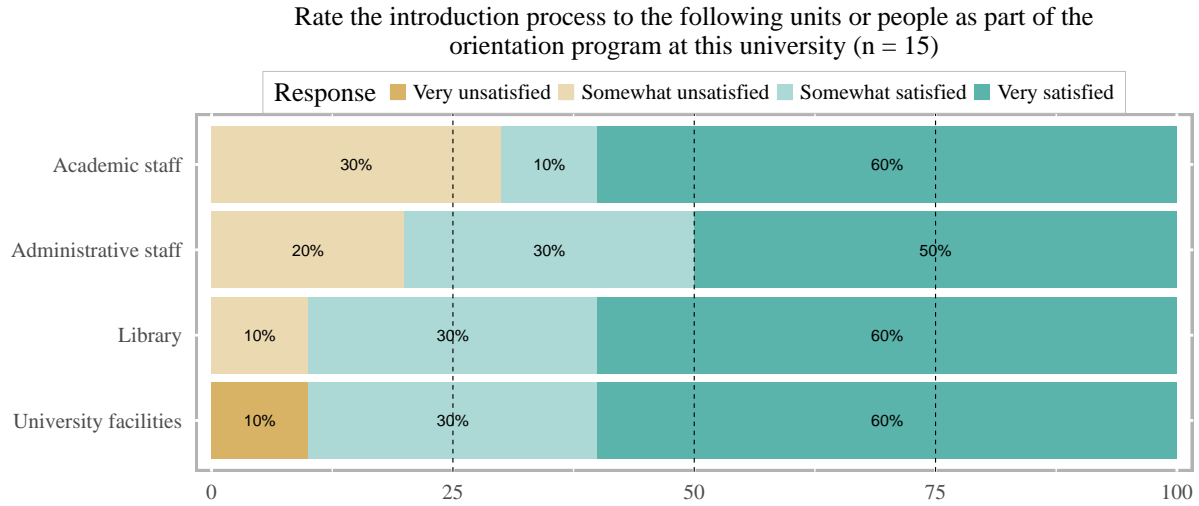


	n	Mean	EM mean	0% - 25%	25% - 50%	50% - 75%	75% - 100%
Academic staff	62	3.39	3.46	2.40 - 3.29	3.30 - 3.47	3.48 - 3.63	3.64 - 3.92
Administrative staff	62	3.55	3.40	2.30 - 3.20	3.21 - 3.43	3.44 - 3.62	3.63 - 3.93
Buddy or tutor system	53	3.04	2.97	2.00 - 2.88	2.89 - 3.06	3.07 - 3.20	3.21 - 3.64
International Student Office	58	3.02	3.23	2.47 - 3.04	3.05 - 3.27	3.28 - 3.48	3.49 - 3.90
Library	61	3.00	3.37	2.50 - 3.20	3.21 - 3.35	3.36 - 3.58	3.59 - 3.91
Other students	58	3.43	3.33	2.36 - 3.18	3.19 - 3.36	3.37 - 3.47	3.48 - 3.86
Student associations	54	2.94	2.99	1.92 - 2.76	2.77 - 3.02	3.03 - 3.22	3.23 - 3.62
University facilities	62	3.16	3.39	2.40 - 3.21	3.22 - 3.39	3.40 - 3.57	3.58 - 3.92

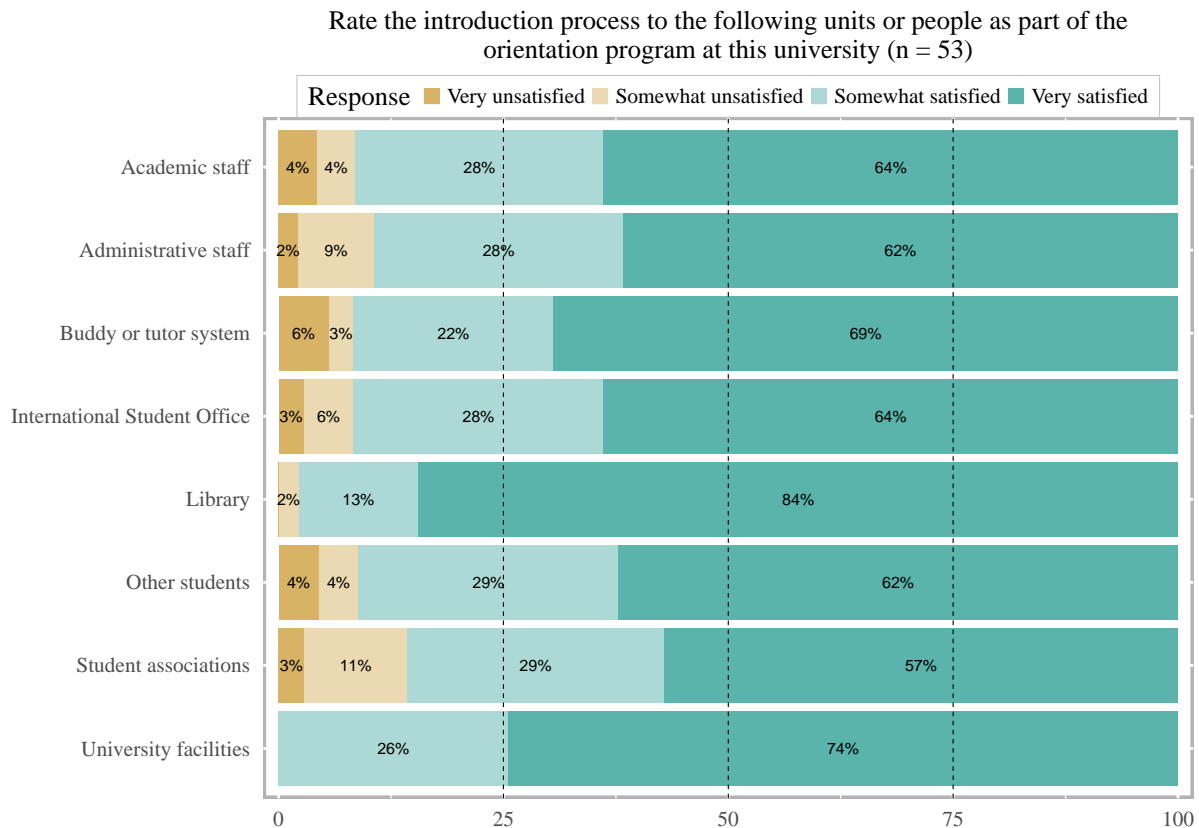
Table 2: Summary statistics



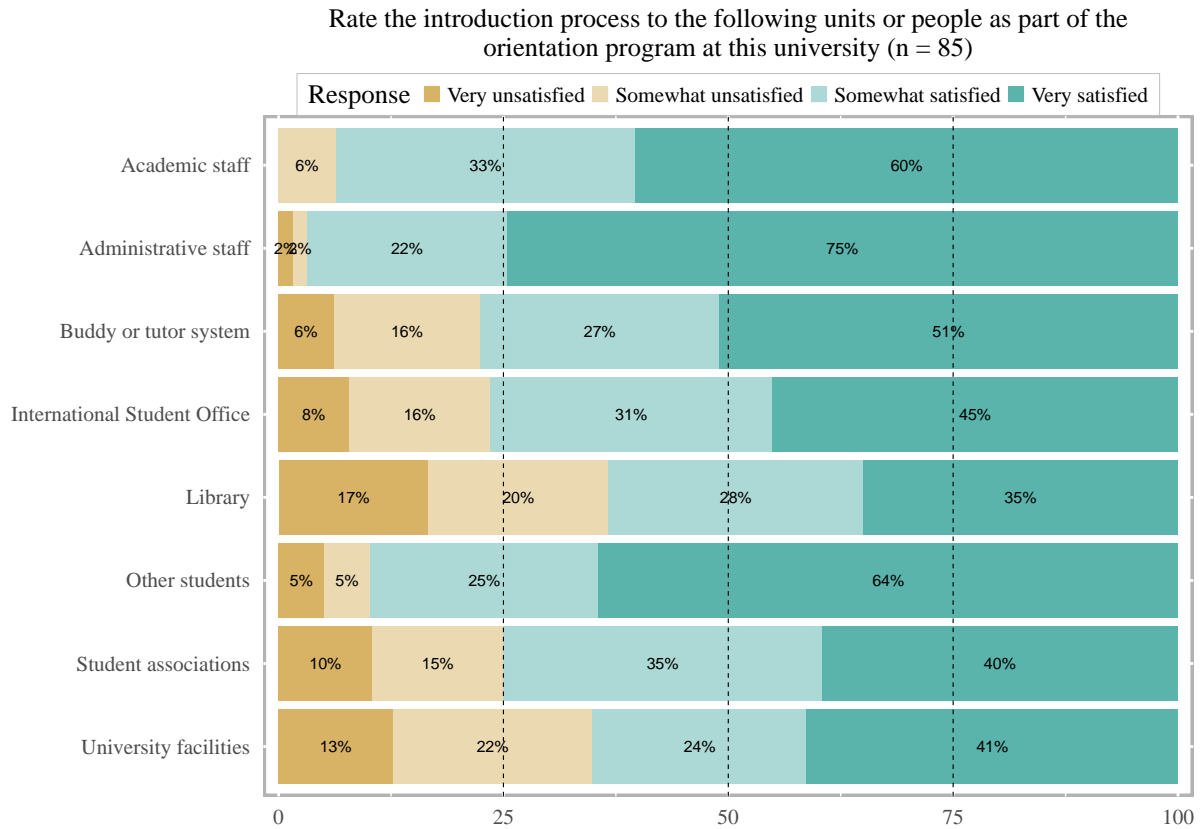
### 3.2.2 Gdansk University of Technology, Poland



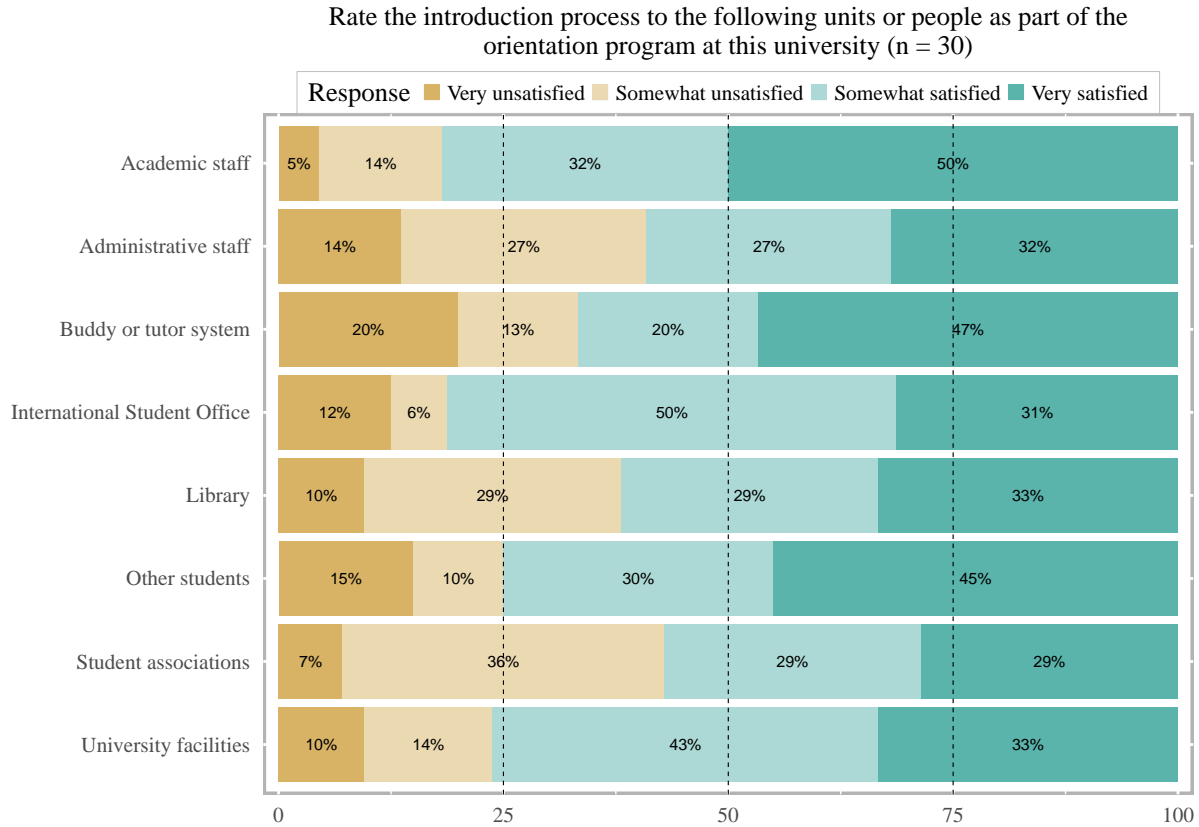
### 3.2.3 University of Hamburg, Germany



## 3.2.4 University of L'Aquila, Italy



### 3.2.5 University of Nice Sophia Antipolis, France



#### Open answers by CQSS respondents to the question: "Please comment on any other aspect relevant to the accommodation of disability throughout Erasmus Mundus" (n = 8)

Regarding support to accommodate respondent's disabilities, 37% of respondents highlighted the inadequacy of administrative assistance. Problems related to finding accommodation, poor standard of housing, complicated registration at universities, and lack of organized support from course coordinators constituted the critical issues raised.

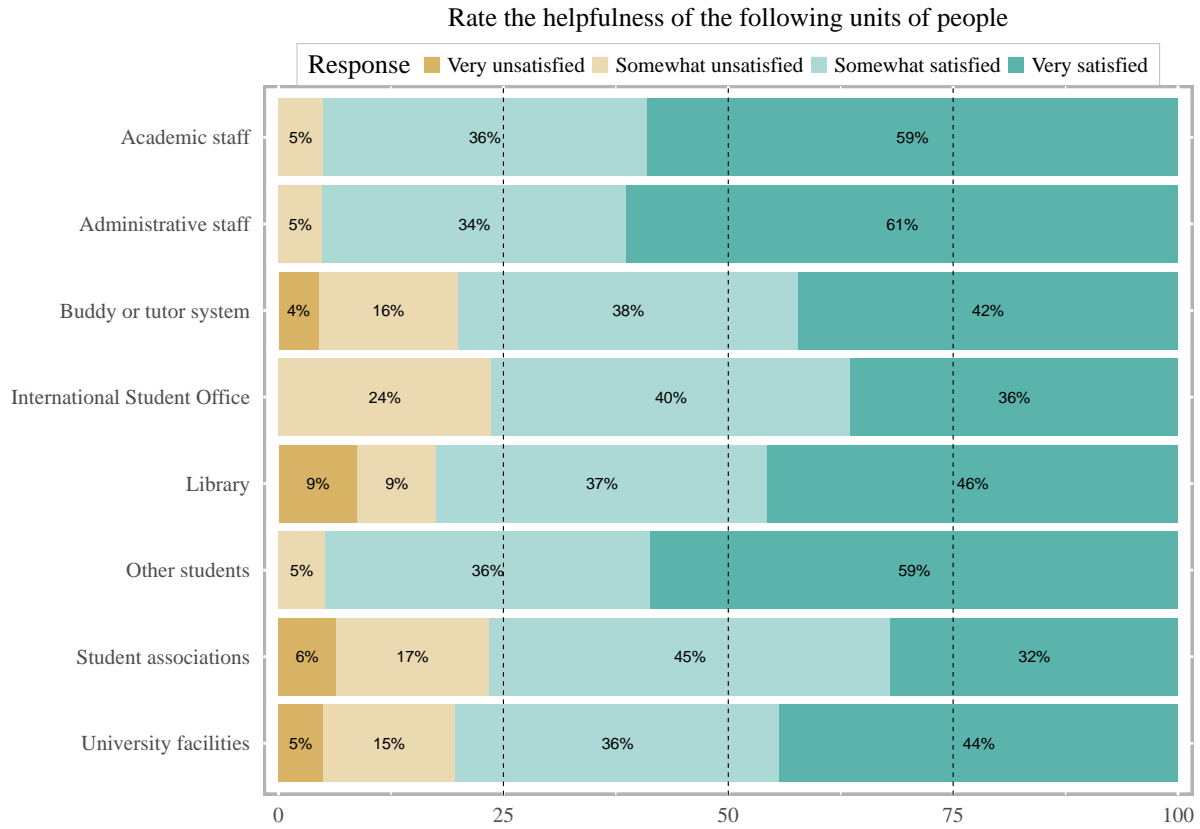
## 3.3 Helpfulness of units and people

In general, most respondents are either "very satisfied" or "somewhat satisfied" regarding the helpfulness of units and people. This dimension also has two indicators that fall in first quartile: "Library" and "University facilities". Two indicators fall in second quartile and four indicators secured position in third quartile. Among the respondents, a small percentage of students reported dissatisfaction on the indicators "Buddy or tutor system", "International Student Office", and "Student associations".

Respondents from different universities have very different experiences concerning the helpfulness of units and people. Respondents from University of Hamburg are quite satisfied with the support they received. At University of L'Aquila, while most respondents are overall satisfied with the support received, 28% of students said they are either "very unsatisfied" or "somewhat unsatisfied" on the indicator "Library". The graph shows that respondents have mixed experience with almost all indicators at University of Nice Sophia Antipolis. Respondents are either "very unsatisfied" or "somewhat unsatisfied" with the service they received during orientation program on the following indicators: "Administrative staff" (41%), "Buddy or tutor system" (33%), "Health services" (30%), "International Student Office" (36%), "Library" (35%), "Student associations" (31%). Respondents are mostly satisfied with the support received at Gdansk University of Technology.



## 3.3.1 Consortia



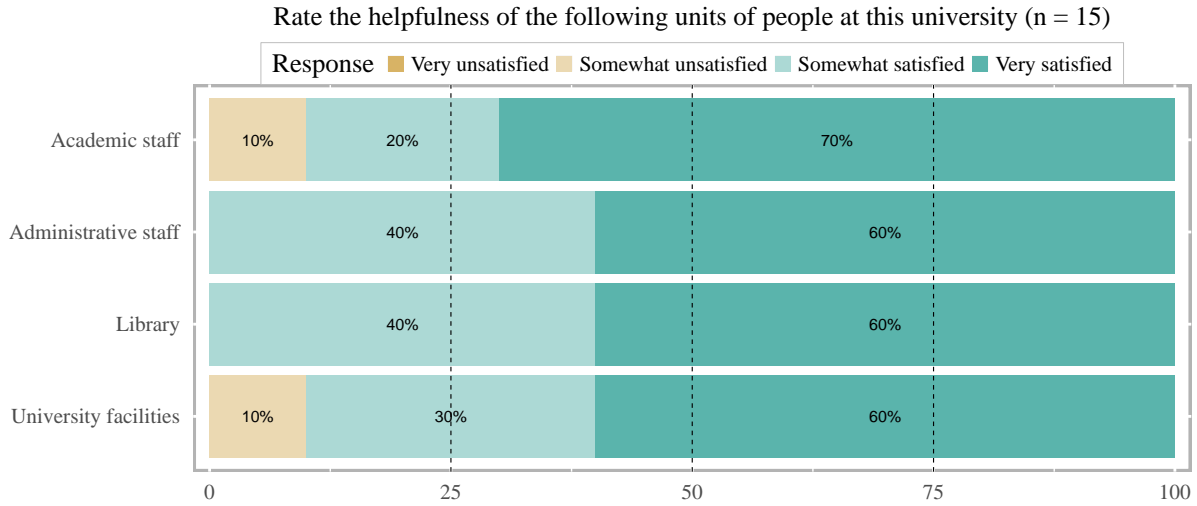
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Academic staff	61	3.54	3.47	2.50 - 3.30	3.31 - 3.46	3.47 - 3.62	3.63 - 4.00
Administrative staff	62	3.56	3.36	2.10 - 3.18	3.19 - 3.45	3.46 - 3.61	3.62 - 4.00
Buddy or tutor system	45	3.18	3.03	2.20 - 2.90	2.91 - 3.06	3.07 - 3.20	3.21 - 3.73
International Student Office	55	3.13	3.24	2.45 - 3.09	3.10 - 3.27	3.28 - 3.50	3.51 - 3.71
Library	57	3.19	3.41	2.80 - 3.20	3.21 - 3.44	3.45 - 3.60	3.61 - 3.93
Other students	58	3.53	3.40	2.45 - 3.21	3.22 - 3.39	3.40 - 3.55	3.56 - 3.85
Student associations	47	3.02	3.05	2.10 - 2.92	2.93 - 3.08	3.09 - 3.24	3.25 - 3.68
University facilities	61	3.20	3.42	2.71 - 3.27	3.28 - 3.48	3.49 - 3.63	3.64 - 3.86

Table 3: Summary statistics

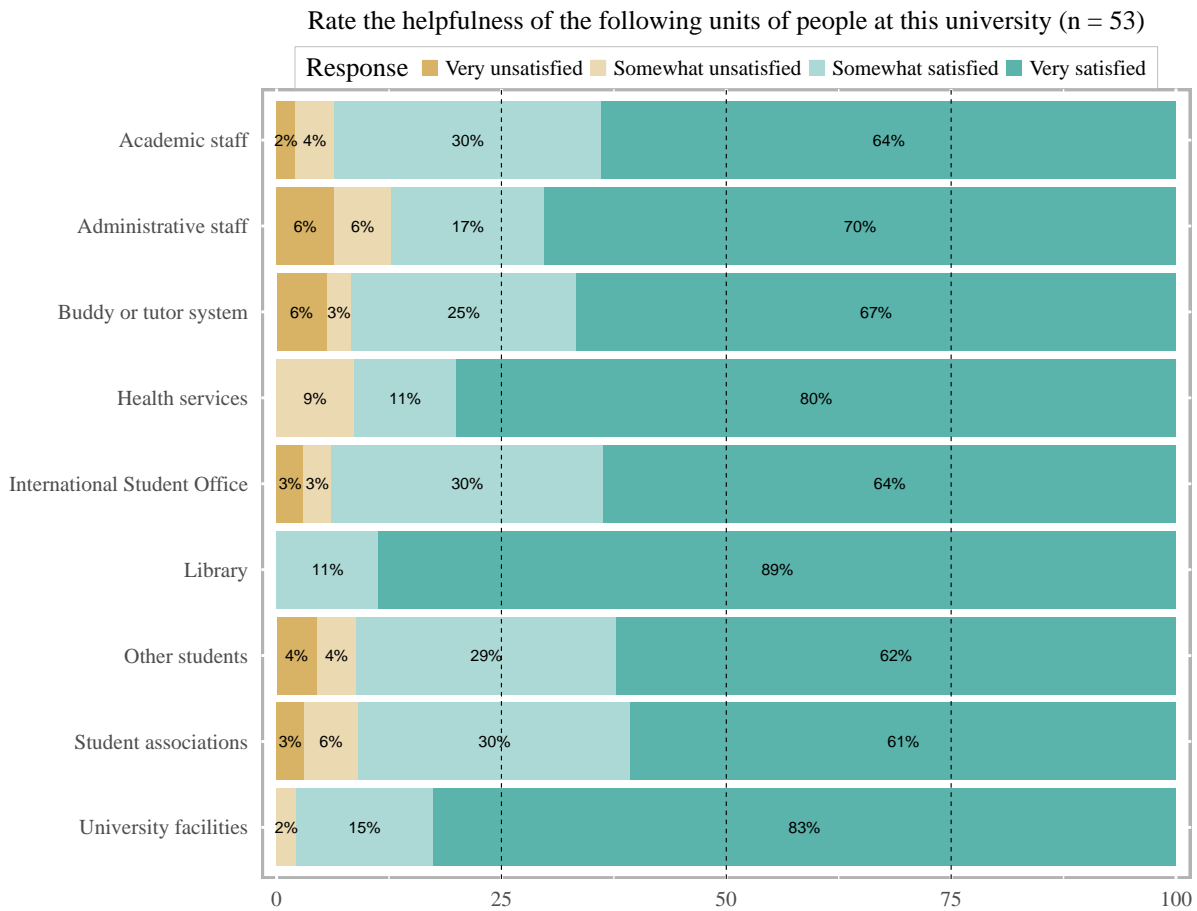




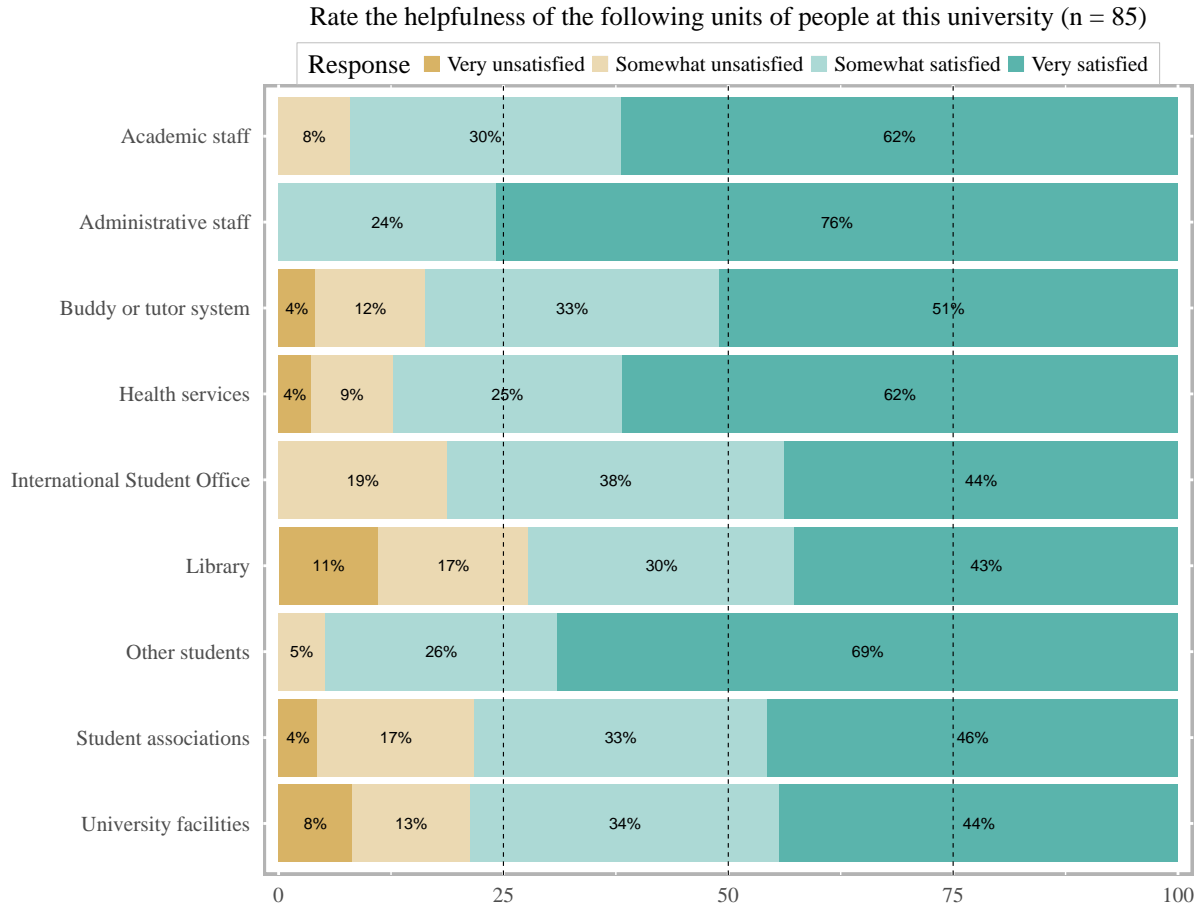
## 3.3.2 Gdansk University of Technology, Poland



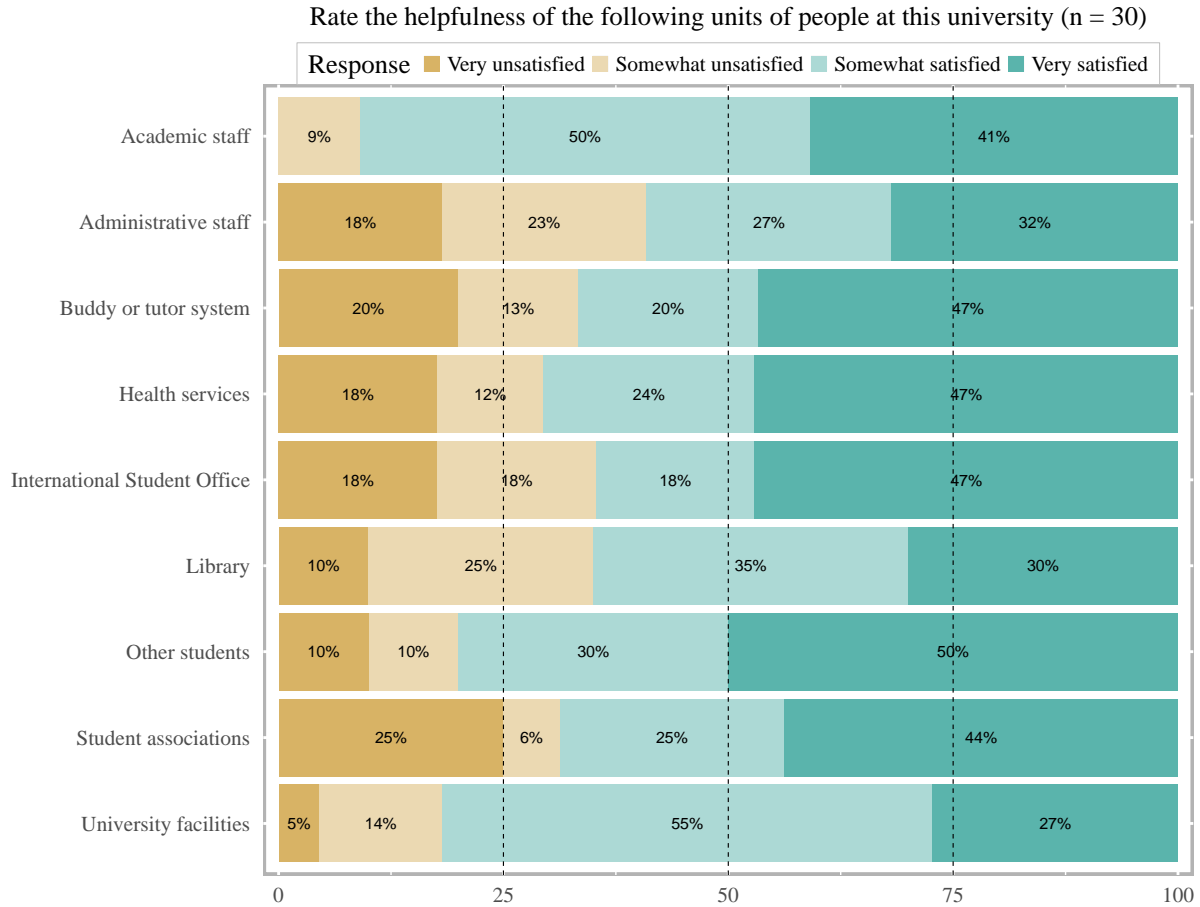
## 3.3.3 University of Hamburg, Germany



## 3.3.4 University of L'Aquila, Italy



## 3.3.5 University of Nice Sophia Antipolis, France



### Open answers by CQSS respondents to the question: "How could orientation and integration experience have been improved" (n = 1443)

The most common suggestion given by respondents (19 %) in response to this question was that each of the universities should offer a **comprehensive international student orientation program**. The orientation program should involve information on health services, transportation, as well as guided sessions to campus facilities, such as library, gym, food courts, and a city tour in the first few days upon arrival. It was suggested that a **complementary Erasmus Mundus focused orientation program** should be provided. This additional orientation session should introduce the academic and administrative personnel, draw expectations, and give an overview of the program structure. Students who arrived after the start of the program due to visa issues, and thus missed the orientation sessions, emphasized the importance of a **special orientation arrangement** for their integration. Additionally, students recommended that their programs **provide an information booklet upon arrival**.

Concerns regarding **administrative assistance** were mentioned by 14 percent of participants. Students requested **better assistance with accommodation and student housing services** on campus. Their responses stated that absence of pre-arrival housing information and arrangements by the program administration reduced the students' chances of finding affordable and conveniently located housing. **Administrative assistance for an efficient visa application processes** was also mentioned. Dealing with visa processes without proper administrative assistance was described to cause distraction from studies. Some respondents particularly emphasized the need for **further administrative assistance** for students that are coming from **non-EU/overseas countries**, and those who are travelling abroad for the first time. Students stressed the importance of **assistance with services which involve bureaucratic processes and paperwork**, as in health services, banking, and local registration upon arrival. Last, students suggested that the program administrations should organize more **social events** and extracurricular activities for students and staff to facilitate integration among program participants.

Third, 10 percent of the respondents drew attention to **challenges faced in communicating with administrative staff**. The responses suggested that the communication flow between students and staff is almost non-existent in some contexts. In some cases staff was not well informed about the nature of the specific master's course, nor prepared to support international students. Longer working hours for existing personnel and recruitment of professional full-time staff are two of the recommendations made by the participants. **Promptness in correspondence** was the second most mentioned improvement area. The students emphasized timely communication of clear and accurate information as crucial for the facilitation of integration. Finally, responses indicated the importance of a qualified administrative staff, responsive to student needs and questions without any language barriers. Students expressed that **insufficient English language** skills of the contact persons at times caused discomfort and stress in their interactions with administrative staff.

Another key issue mentioned by 9 percent respondents was the need for more **interaction and integration with local non-Erasmus Mundus students** through **attending courses together and participating in extracurricular or social activities**. Some respondents mentioned that **residing in campus accommodations** close to local students could play a role in establishing better integration. Respondents also suggested the need for host universities to arrange platforms that create opportunities and facilitate the active engagement of Erasmus Mundus students in their institutions.

Some respondents (6%) also indicated the need to introduce or **strengthen the buddy and tutor support services** in order to assist the smooth integration of students into the new university, city and country. Respondents particularly emphasized the significance of **assigning English speaking tutors**.

## 3.4 Support received on various issues

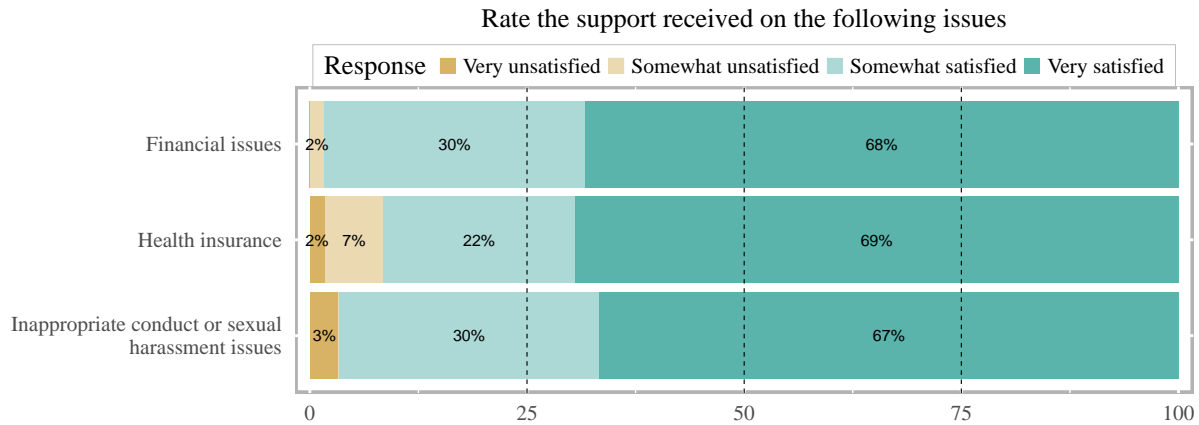
Respondents were generally satisfied on all evaluated indicators, especially "Financial issues", "Health insurance" and "Inappropriate conduct or sexual harassment issues". The indicators "Financial issues" and "Health insurance" fall in the fourth quartile and "Inappropriate conduct or sexual harassment issues" is



placed into the third quartile.

Overall, Gdansk University of Technology and University of Hamburg have received positive response. At the same time, University of L'Aquila and University of Nice Sophia Antipolis has received negative response regarding "Availability of extracurricular activities" and "Quality of extracurricular activities".

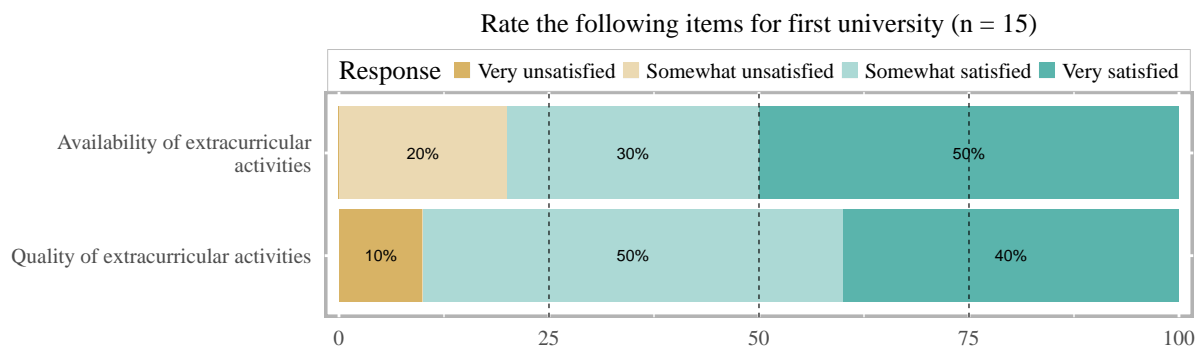
### 3.4.1 Consortia



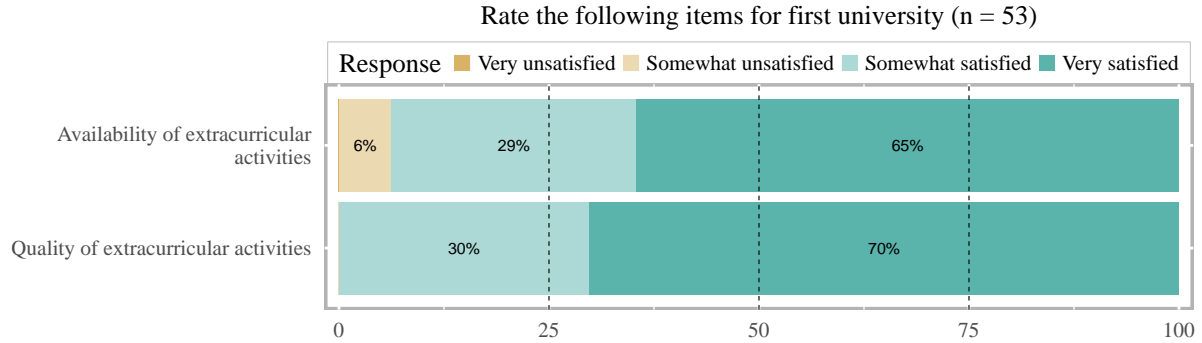
	n	Mean	EM mean	0% - 25%	25% - 50%	50% - 75%	75% - 100%
Financial issues	60	3.67	3.34	2.50 - 3.19	3.20 - 3.40	3.41 - 3.57	3.58 - 3.90
Health insurance	59	3.59	3.37	2.54 - 3.25	3.26 - 3.38	3.39 - 3.56	3.57 - 3.84
Inappropriate conduct or sexual harassment issues	30	3.60	3.54	3.22 - 3.50	3.51 - 3.60	3.61 - 3.72	3.73 - 3.76

Table 4: Summary statistics

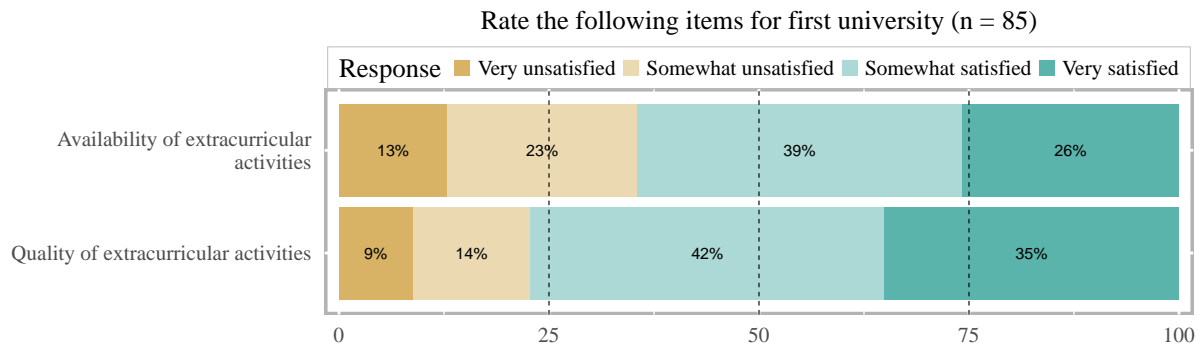
### 3.4.2 Gdansk University of Technology, Poland



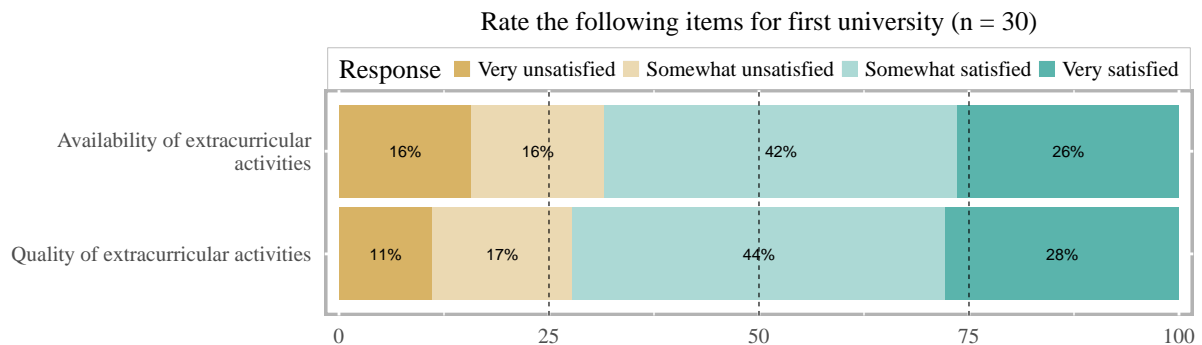
### 3.4.3 University of Hamburg, Germany



### 3.4.4 University of L'Aquila, Italy



### 3.4.5 University of Nice Sophia Antipolis, France



## 4 Assessment and feedback

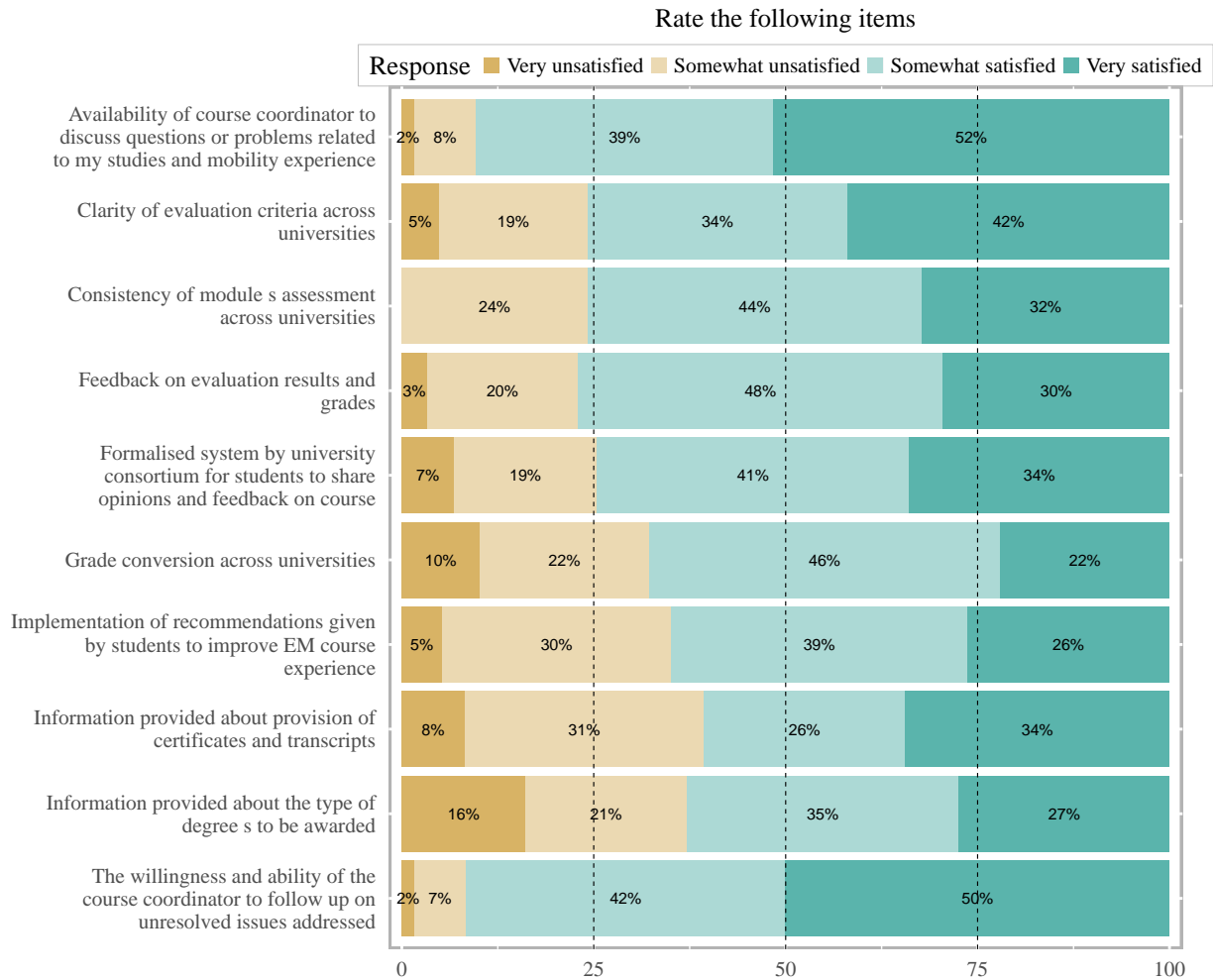
### 4.1 Module assessment

In general, most of respondents are somewhat satisfied with all indicators of module assessment. However, more than 25% of respondents said they are either “very unsatisfied” or “somewhat unsatisfied” regarding the indicators “Formalised system by university consortium for students to share opinions and feedback on course”, “Grade conversion across universities”, “Implementation of recommendations given by students to improve EM course experience”, “Information provided about provision of certificates and transcripts” and “Information provided about the type of degrees to be awarded”. Moreover, for most indicators, this program is placed mainly in third and fourth quartile. Only three indicators namely “Information provided about the type of degrees to be awarded”, “Grade conversion across universities” and “Information provided about provision of certificates and transcripts” are placed in first or second quartile.

In case of Gdansk University of Technology, 20% of respondents have said they are either “very unsatisfied” or “somewhat unsatisfied” regarding all of the indicators. For University of Hamburg, in general, students show a high level of satisfaction on this dimension. Twenty-five percent of students said they are either “very unsatisfied” or “somewhat unsatisfied” regarding “Implementation of recommendations given by students to improve EM course experience”. For both University of L’Aquila and University of Nice Sophia Antipolis, around 25% respondents are “very satisfied” whereas more than 25% respondents are either “very unsatisfied” or “somewhat unsatisfied” regarding most indicators.



## 4.1.1 Consortia



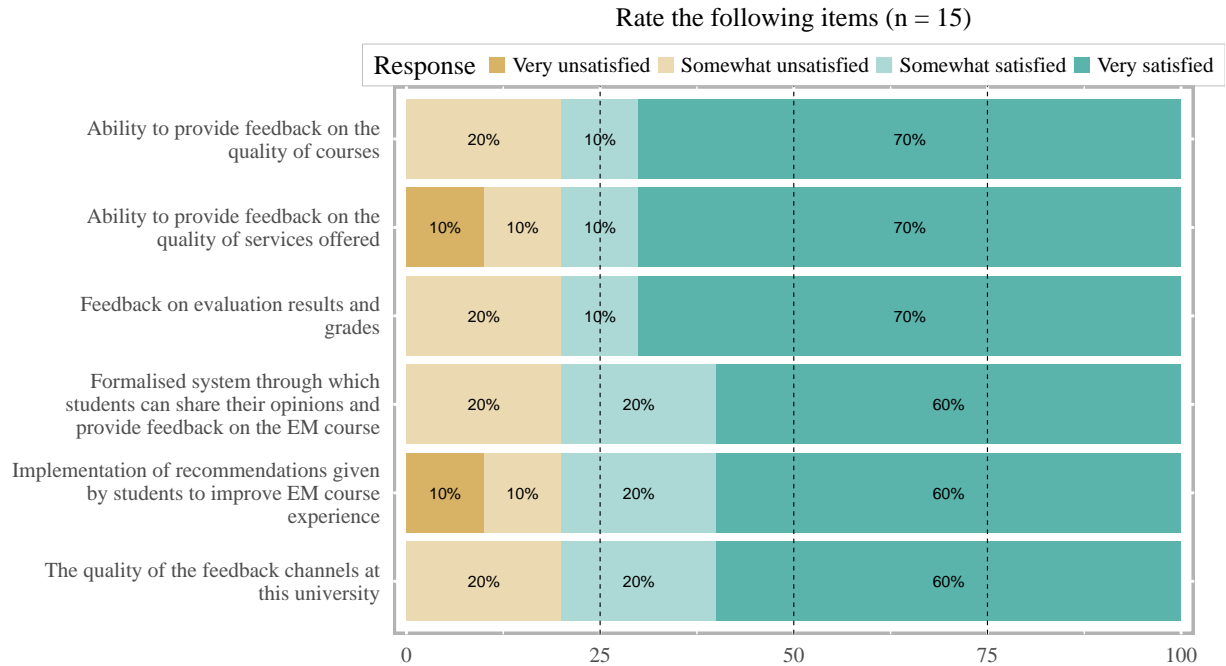


	n	Mean	EM mean	0% - 25%	25% - 50%	50% - 75%	75% - 100%
Availability of course coordinator to discuss questions or problems related to my studies and mobility experience	62	3.40	3.30	2.10 - 3.12	3.13 - 3.33	3.34 - 3.49	3.50 - 3.90
Clarity of evaluation criteria across universities	62	3.13	2.78	1.90 - 2.55	2.56 - 2.79	2.80 - 3.00	3.01 - 3.60
Consistency of module s assessment across universities	62	3.08	2.82	1.89 - 2.58	2.59 - 2.79	2.80 - 3.01	3.02 - 3.50
Feedback on evaluation results and grades	61	3.03	2.78	1.70 - 2.57	2.58 - 2.83	2.84 - 3.00	3.01 - 3.60
Formalised system by university consortium for students to share opinions and feedback on course	59	3.02	2.95	1.75 - 2.73	2.74 - 2.97	2.98 - 3.19	3.20 - 3.55
Grade conversion across universities	59	2.80	2.86	2.17 - 2.71	2.72 - 2.83	2.84 - 3.00	3.01 - 3.56
Implementation of recommendations given by students to improve EM course experience	57	2.86	2.84	1.58 - 2.62	2.63 - 2.86	2.87 - 3.15	3.16 - 3.44
Information provided about provision of certificates and transcripts	61	2.87	3.04	1.96 - 2.85	2.86 - 3.07	3.08 - 3.27	3.28 - 3.67
Information provided about the type of degree s to be awarded	62	2.74	3.14	2.40 - 2.95	2.96 - 3.16	3.17 - 3.35	3.36 - 3.70
The willingness and ability of the course coordinator to follow up on unresolved issues addressed	60	3.40	3.27	1.80 - 3.00	3.01 - 3.32	3.33 - 3.47	3.48 - 3.92

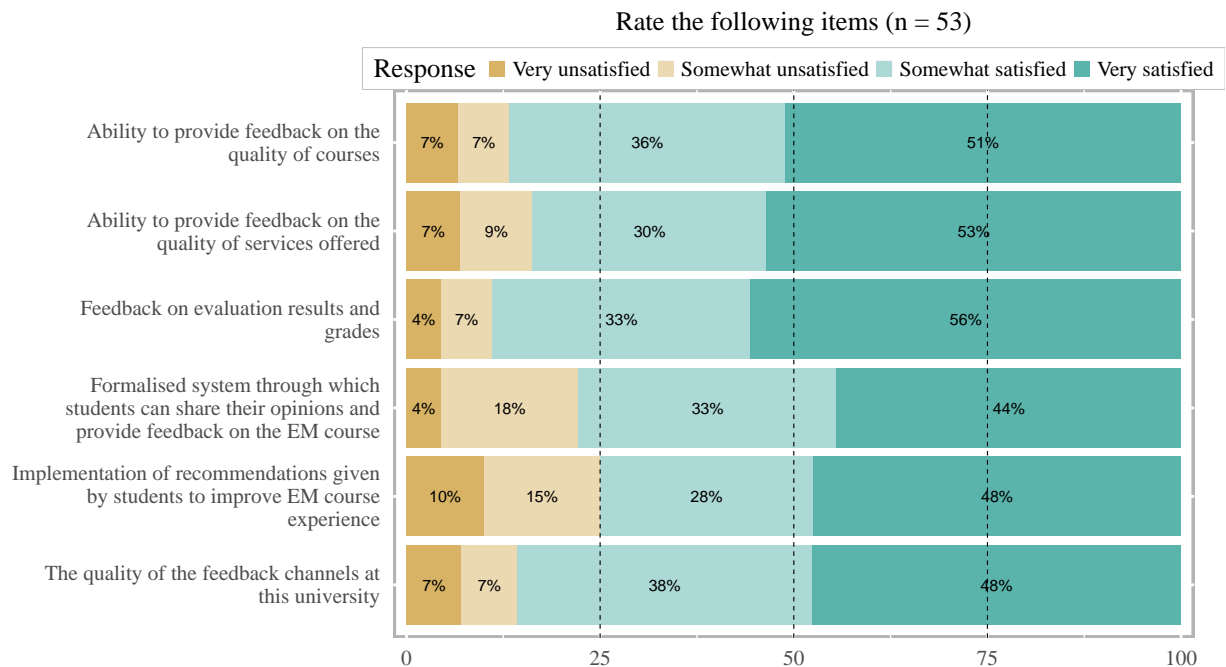
Table 5: Summary statistics



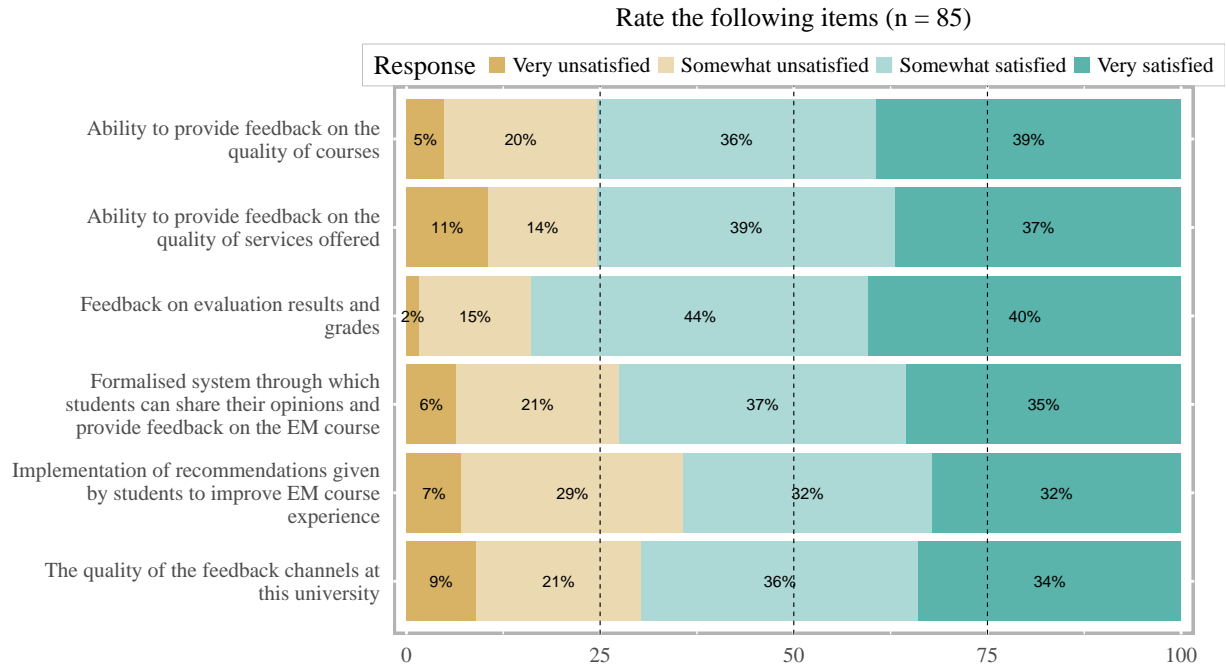
## 4.1.2 Gdansk University of Technology, Poland



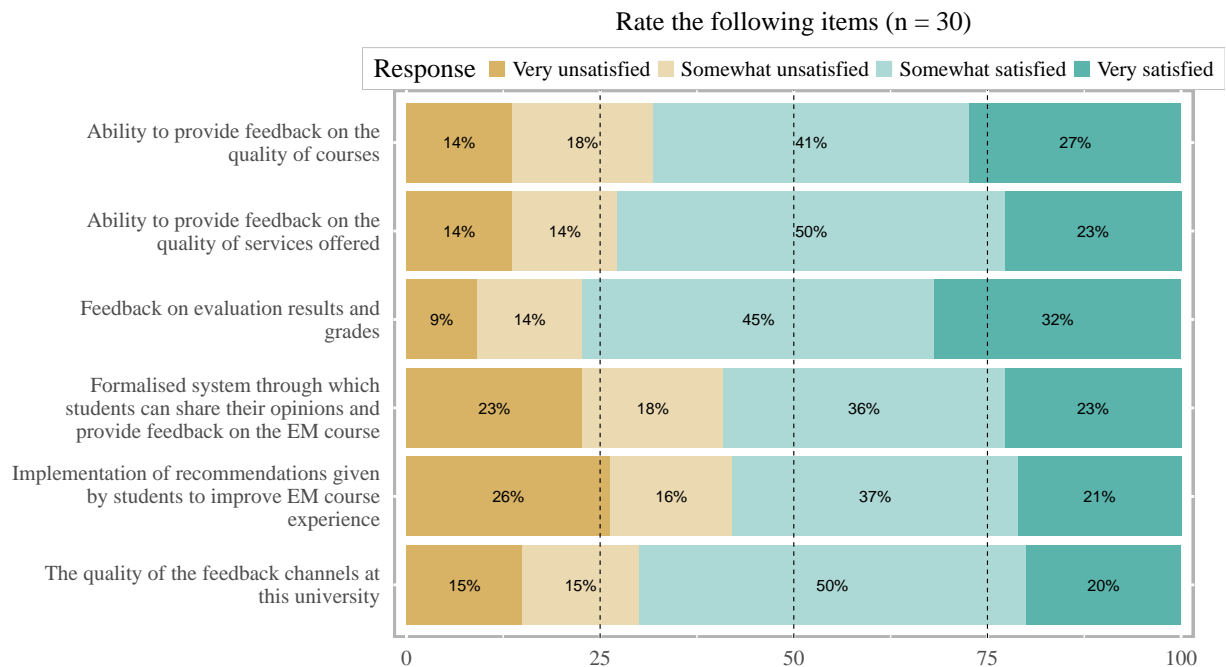
## 4.1.3 University of Hamburg, Germany



## 4.1.4 University of L'Aquila, Italy



## 4.1.5 University of Nice Sophia Antipolis, France



**Open answers by CQSS respondents to the question: "What recommendations would you give to build or improve student feedback channels at the university?" (n = 540)**

The following recommendations to improve **feedback mechanisms at the level of the course** were suggested by 30 percent of respondents.

1. **Face-to-discussions**, in the form of group meetings, either in the end of each semester, or regularly during the academic year. Respondents mentioned that these spaces for open discussion could be held in the presence of professors, but also administrative staff, especially course coordinators.
2. **Formalized feedback system**. This plea for having a formal system to collect feedback suggests that at many institutions such systematic mechanisms still do not exist. This does not mean that students cannot express their suggestions or complaints, but that they need to rely on ad-hoc initiatives, often through staff members that assume the responsibility of collecting feedback individually.
3. Implementation of **surveys** as a preferred way to provide feedback.
4. Presence of **online platforms** to centralize the collection of feedback. Some respondents mentioned the possibility of having online surveys, blogs, forums or even an online chatroom.
5. Broaden the focus of assessment during course evaluation.

Eighteen percent of students discussed the quality of **feedback provided by teachers on student's academic performance**. Several students voiced their urge to receive more comments, suggestions and criticism on their academic work. Their replies clearly stated that in many cases they did not receive any **qualitative feedback** focused on improvement in addition to a quantitative grade. Students also expressed the need to have **more detailed evaluation criteria** (e.g., rubrics), in order to have a more transparent grading system. In some cases, students also indicated that the feedback on their work was **overdue**. Lastly, students mentioned a desire to **discuss face-to-face** their examinations and other assessment procedures with their teachers.

Additionally, respondents (13%) mentioned the necessity to receive feedback on "their own provided feedback". Responses suggested that despite the existence of feedback mechanisms, where students could voice their needs or concerns, it was very **uncommon that feedback would produce any effects**.



## 5 Teaching/learning and supervision

### 5.1 Teaching/learning

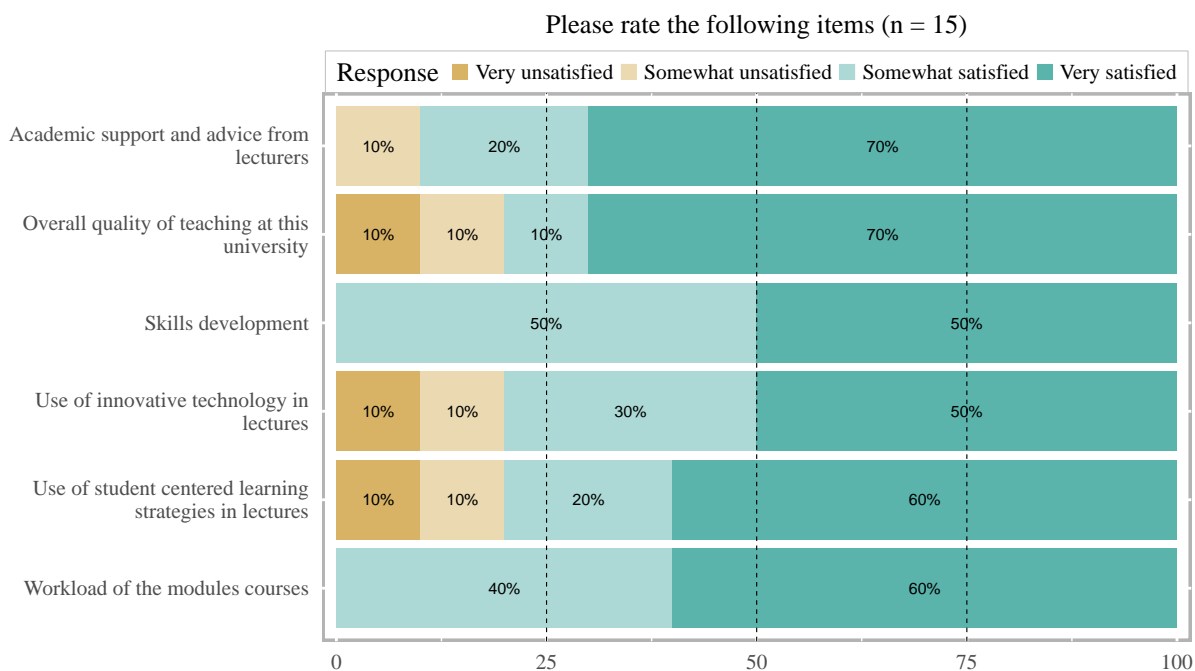
In general, all universities performed well on the dimension teaching and learning. For instance, Gdansk University of Technology has received quite positive response regarding all indicators. In fact, around 60% of the respondents are very satisfied.

At University of Hamburg, around 90% respondents said they are either “somewhat satisfied” or “very satisfied” about teaching and learning in this university.

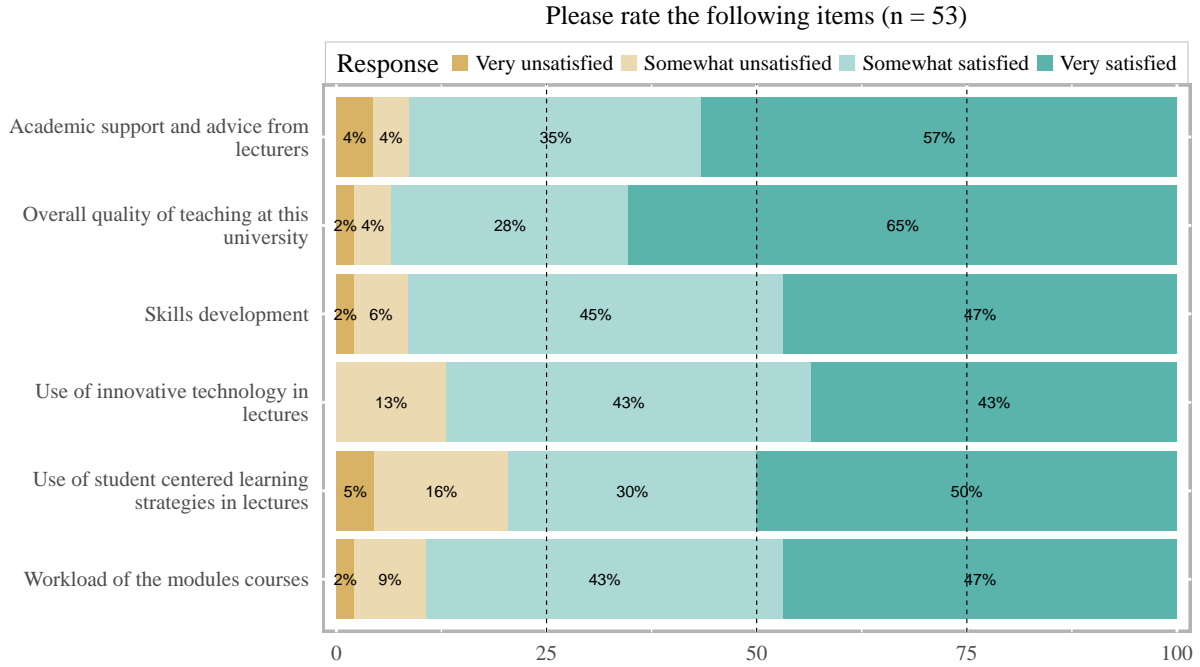
University of Nice Sophia Antipolis has received positive responses on this dimension. About 75% of respondents have said they are either “somewhat satisfied” or “very satisfied” with the teaching and learning at this university. However, 25% respondents were less satisfied regarding “Academic support and advice from lecturers”, “Use of innovative technology in lectures” and “Use of student centered learning strategies in lectures”.

Except for the indicators “Use of student centered learning strategies in lectures” and “Use of innovative technology in lectures” where around 50% respondents said they are unsatisfied, respondents are pleased with teaching and learning environment they have in University of L’Aquila.

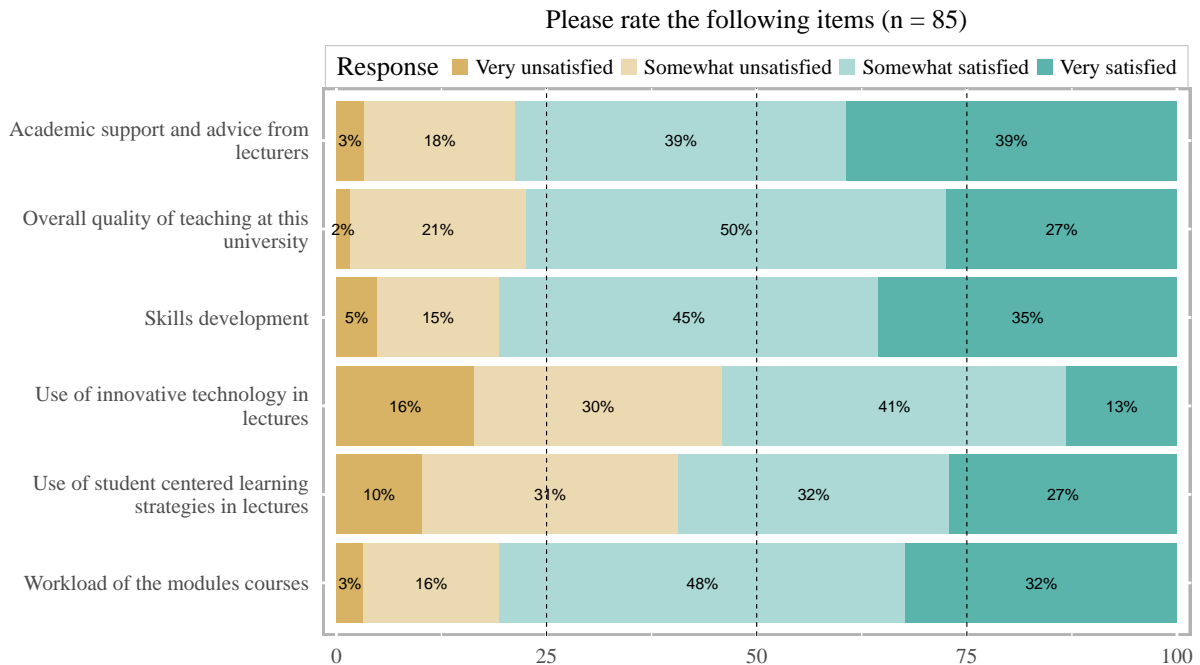
#### 5.1.1 Gdansk University of Technology, Poland



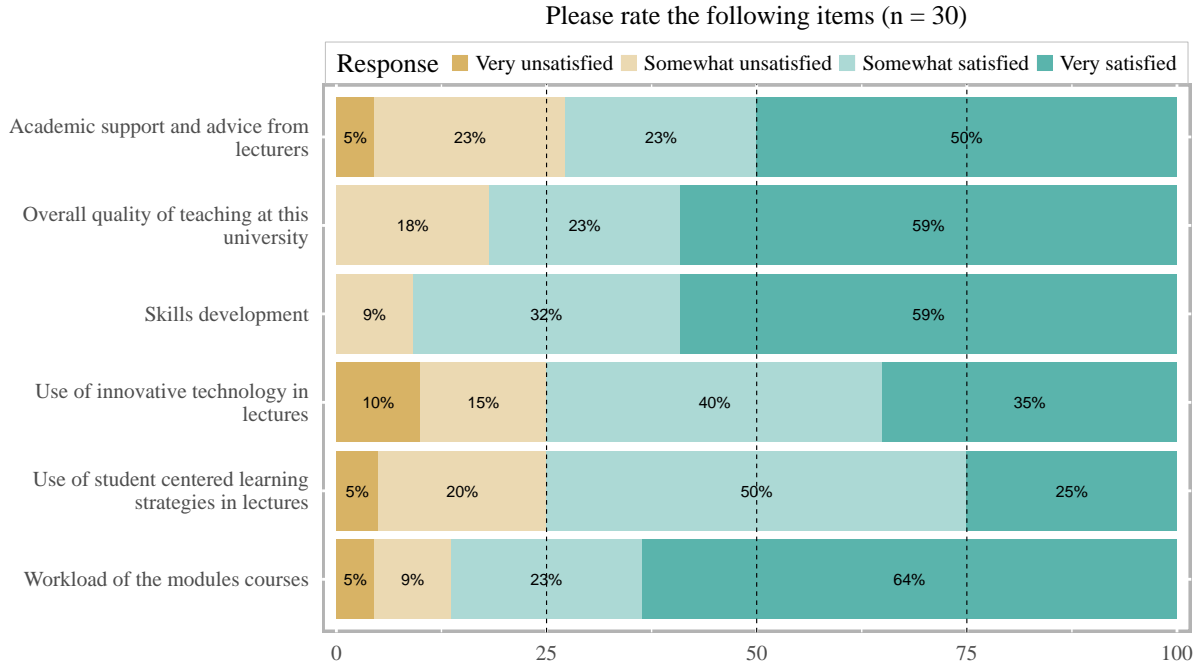
## 5.1.2 University of Hamburg, Germany



## 5.1.3 University of L'Aquila, Italy

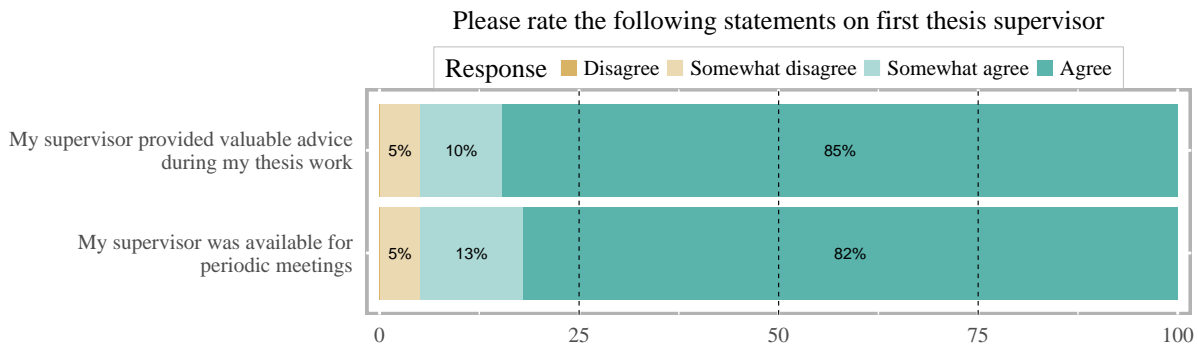


## 5.1.4 University of Nice Sophia Antipolis, France



## 5.2 First supervisor

Participants have provided positive feedback on this dimension. Around 90% of the respondents “agree” or “somewhat agree” with the statements: “My supervisor provided valuable advice during my thesis work” (placed in fourth quartile) and “My supervisor was available for periodic meetings” (placed in third quartile).



	n	Mean	EM mean	0% - 25%	25% - 50%	50% - 75%	75% - 100%
My supervisor provided valuable advice during my thesis work	39	3.79	3.52	2.64 - 3.43	3.44 - 3.60	3.61 - 3.75	3.76 - 4.00
My supervisor was available for periodic meetings	39	3.77	3.55	2.79 - 3.46	3.47 - 3.62	3.63 - 3.80	3.81 - 4.00

Table 6: Summary statistics



**Open responses by CQSS respondents to the question: "Please explain your answer regarding the academic satisfaction with course" (n = 650)**

The majority of respondents (52%) related their academic satisfaction or dissatisfaction to the **curriculum** of their courses. Many respondents (145) reported being satisfied with curriculum. However, 193 responses stated that the curriculum of their program could be improved. The majority of those who commented negatively on curriculum aspects referenced the low academic level of the program. Some respondents felt that the curriculum they were exposed to did not advance adequately their subject knowledge. They emphasized the lack of practical orientation of the curriculum and the inflexibility in the choice of modules they could take.

Some respondents (13%) addressed the efficiency of coordination between various consortium members and the **consistency of standards across attended universities**. Several respondents were concerned with **significant differences in the quality of teaching** between consortium universities. They suggested that **overlap in contents** between different institutions made some courses redundant. Another major concern was a **difference in assessment methods** among the consortium members which seemed confusing for some of the respondents. A small number of respondents underlined the **lack of administrative coordination and communication** between universities which made mobility between institutions somewhat difficult.

Importantly, 10% of responses emphasized the **positive impact studying as part of an Erasmus Mundus Master's course had on their personal growth** mentioning positive changes in their behavior, having had gained invaluable personal skills and confidence, and referred to their Erasmus Mundus course as a 'life changing experience'.





## 6 Internship/field experience and personal development

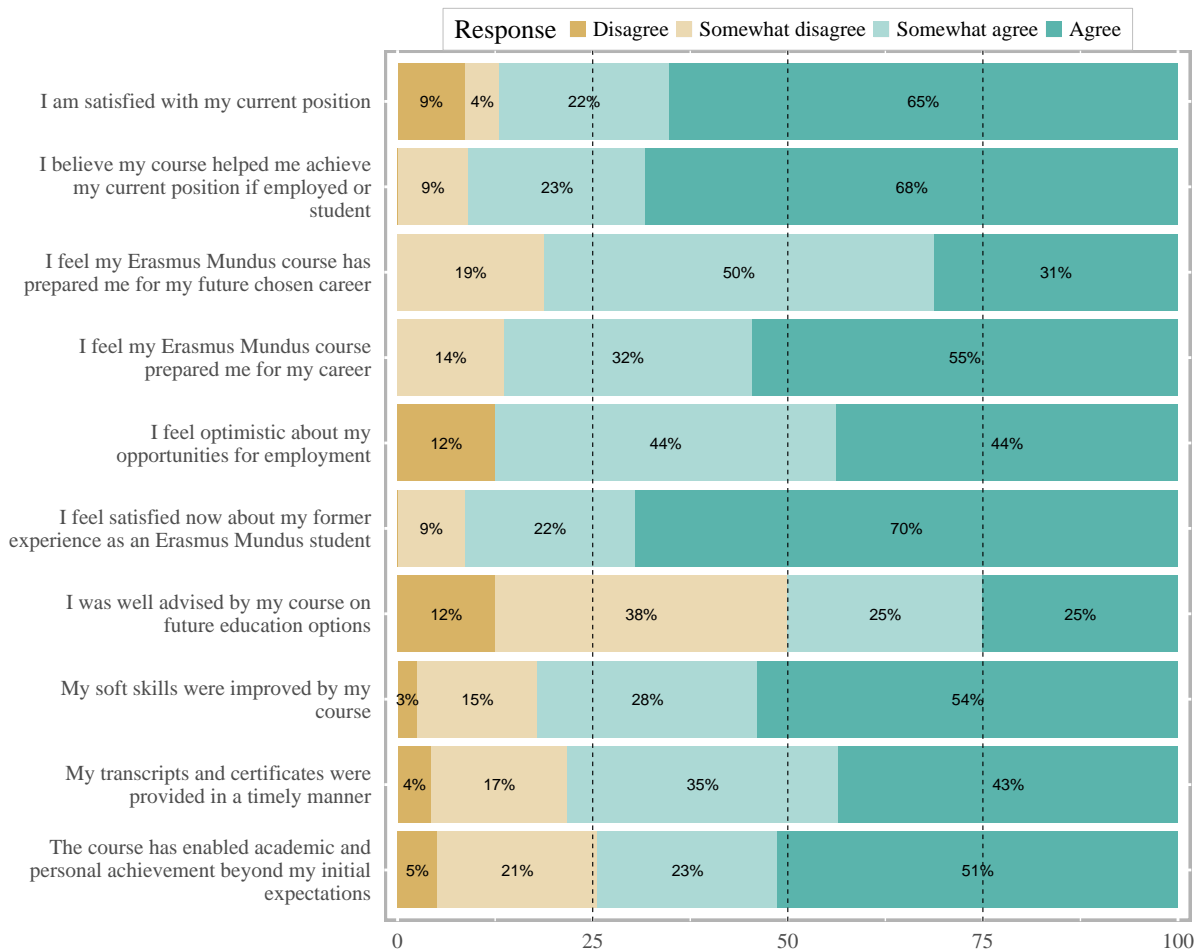
### 6.1 Personal development

This section depicts how students think about their personal development following graduation. In most cases, respondents felt positive about their course.

However, 25-40% respondents have said that they disagree with the statement “I was well advised by my course on future education options” and “The course has enabled academic and personal achievement beyond my initial expectations”.

MATHMODS is placed in the second quartile for most indicators for personal development. Two indicators: “I feel my Erasmus Mundus course has prepared me for my future chosen career”, and “My soft skills were improved by my course” are placed in first quartile. Also, the indicators “I believe my course helped me achieve my current position if employed or student”, and “I feel my Erasmus Mundus course prepared me for my career” are placed in third quartile.

Rate the following statements regarding personal development during EM course

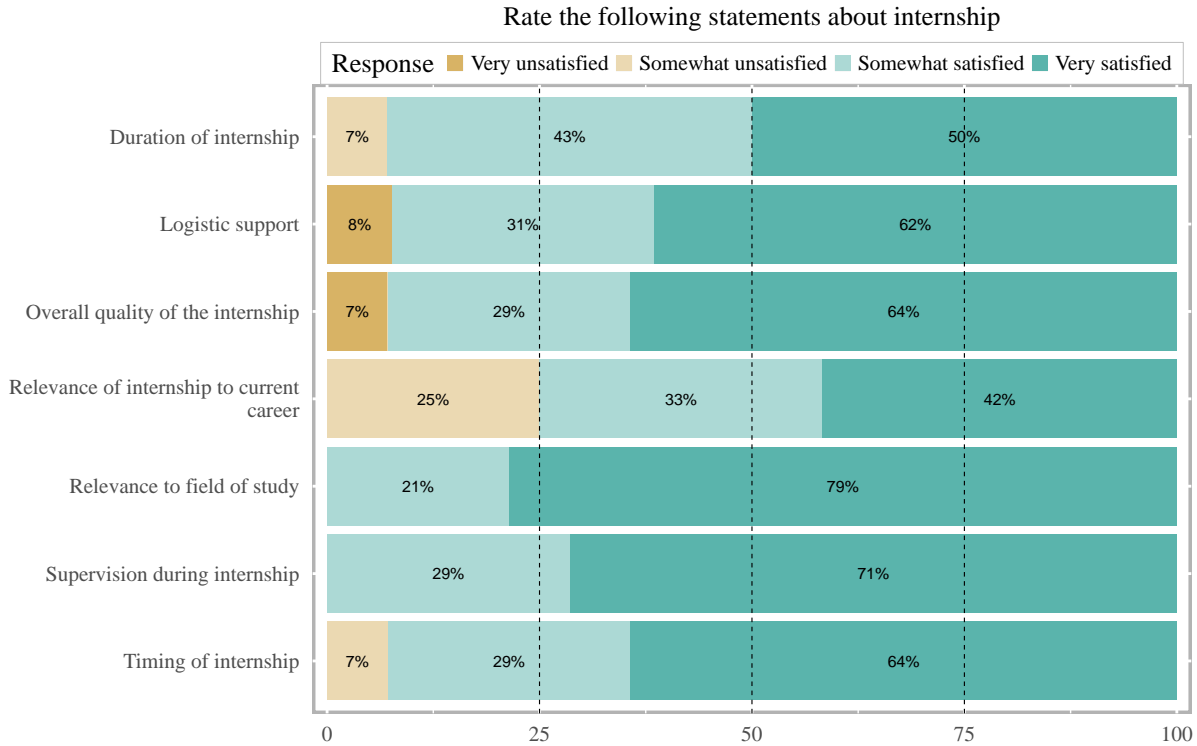


	n	Mean	EM mean	0% - 25%	25% - 50%	50% - 75%	75% - 100%
I am satisfied with my current position	23	3.43	3.39	3.00 - 3.25	3.26 - 3.44	3.45 - 3.62	3.63 - 3.79
I believe my course helped me achieve my current position if employed or student	22	3.59	3.47	3.00 - 3.43	3.44 - 3.56	3.57 - 3.72	3.73 - 3.95
I feel my Erasmus Mundus course has prepared me for my future chosen career	16	3.12	3.40	2.43 - 3.17	3.18 - 3.35	3.36 - 3.54	3.55 - 4.00
I feel my Erasmus Mundus course prepared me for my career	22	3.41	3.36	2.64 - 3.28	3.29 - 3.33	3.34 - 3.54	3.55 - 3.88
I feel optimistic about my opportunities for employment	16	3.19	3.27	2.50 - 2.95	2.96 - 3.29	3.30 - 3.50	3.51 - 3.71
I feel satisfied now about my former experience as an Erasmus Mundus student	23	3.61	3.65	3.36 - 3.61	3.62 - 3.69	3.70 - 3.79	3.80 - 4.00
I was well advised by my course on future education options	16	2.62	2.93	2.31 - 2.62	2.63 - 2.80	2.81 - 3.20	3.21 - 3.55
My soft skills were improved by my course	39	3.33	3.50	2.90 - 3.40	3.41 - 3.56	3.57 - 3.71	3.72 - 4.00
My transcripts and certificates were provided in a timely manner	23	3.17	3.21	2.36 - 2.93	2.94 - 3.36	3.37 - 3.62	3.63 - 4.00
The course has enabled academic and personal achievement beyond my initial expectations	39	3.21	3.31	2.46 - 3.20	3.21 - 3.37	3.38 - 3.56	3.57 - 3.91

Table 7: Summary statistics



## 6.2 Internship



	n	Mean	EM mean	0% - 25%	25% - 50%	50% - 75%	75% - 100%
Duration of internship	14	3.43	3.47	3.00 - 3.35	3.36 - 3.59	3.60 - 3.71	3.72 - 3.90
Logistic support	13	3.46	3.24	2.41 - 3.09	3.10 - 3.25	3.26 - 3.56	3.57 - 3.80
Overall quality of the internship	14	3.50	3.46	2.30 - 3.29	3.30 - 3.50	3.51 - 3.71	3.72 - 4.00
Relevance of internship to current career	12	3.17	3.39	3.00 - 3.07	3.08 - 3.17	3.18 - 3.48	3.49 - 3.92
Relevance to field of study	14	3.79	3.66	2.70 - 3.53	3.54 - 3.68	3.69 - 3.79	3.80 - 4.00
Supervision during internship	14	3.71	3.32	2.60 - 3.18	3.19 - 3.30	3.31 - 3.65	3.66 - 4.00
Timing of internship	14	3.57	3.58	2.90 - 3.59	3.60 - 3.67	3.68 - 3.79	3.80 - 4.00

Table 8: Summary statistics

### Open responses by CQSS respondents to the question: "In what way could your course have supported you better to find a job" (n = 37)

When asked about the ways in which their EMJMD course could improve students' prospects of finding a job, 35% of respondents mentioned that **internships** may represent one of the most significant addition to their Erasmus Mundus experience.

Additionally, respondents (27%) highlighted the need to have more **opportunities to engage and network with representatives from the industry and labour market** (e.g. campus activities for recruitment, establish specific networks and partnerships with companies).

Other tangible suggested actions include **the establishment of alumni networks, access to online platforms with job vacancies, mentoring for teachers on career preparation and more practical emphasis as part of the course curriculum.**



## 7 Acknowledgments

The work of CQAB would not exist and could not continue without the **support of numerous committed volunteers spread all across the world**, driven by a strong motivation to help improve the quality of EMJMD courses. During the last 18 months, over 40 volunteers were involved with different stages of the CQSS project, from analyzing feedback received following the 2013 edition of the CQSS survey, to coding qualitative data and interpreting descriptive graphical information. **CQAB is grateful, humbled and proud to have supported the CQSS project fully through volunteer work**, and thus without external interference.

**Georgiana Mihut** was responsible for the challenging task of coordinating the 40 CQAB volunteers. She managed the problems and troubles that unavoidably arise during the work of such a diverse group while working on a very demanding task. Georgiana lead and organized all major steps and tasks during the re-design, implementation and data analysis of the survey.

**Mikhail Balyasin** is responsible for the substantial improvements to the design and content of course reports, has skilfully generated the graphical information made available in this report and all others, and created the CQSS interactive online platform. **Luis Carvalho** coordinated the process of analyzing the vast qualitative data that emerged from the CQSS survey, rethought the architecture of the CQSS survey and helped streamline the survey experience for respondents. **Waqas Ahmed** kindly provided ongoing support with tasks that needed a last minute volunteer. **Patrik Punco** and **Haneen Deeb** worked tirelessly to create the online version of the CQSS survey, and became SurveyMonkey experts in the process. Additionally, **Hannen** was involved in the process of restructuring the survey together with Luis. The new version of the CQSS survey benefited from the proofreading skills of **Tugce Schmitt** and **Chiara Dalla Libera**. **Chiara** has graciously facilitated our internal communication before the creation of a communication team. **Kristina Jaksa**, **Zhanna Saidenova**, **Sayeeda Amber Sayed**, **Rediet Tesfaye** and **Hacer Tarcanli** brought an invaluable contribution to the analysis of the qualitative data emerging from the 2015 CQSS survey. Completing the qualitative analysis was far from being a simple task, and their attention to detail, team effort and systematic approach under the coordination of **Luis** serve as an example of good practice in analyzing large sets of qualitative data.

In the fall of 2015, CQAB conducted a new recruitment process to consolidate its volunteer basis. The new CQAB members provided invaluable contributions towards finalizing the products emerging from the CQSS survey, including the 78 course reports CQAB generated this year. **Aferdita Pustina**, **Eias Hausen**, **Felix Donkor**, **Jacob Sydenham**, **Joanna Dziadkowiec**, **Marsela Giovani Husen**, **Mattia Gusella**, **Pouneh Eftekhari**, **Rishikesh Ganjwe**, **Thuy Van Truong**, **Tiana Vekic**, **Tijana Maksimovic**, **Ana Godonoga**, **Bishnu Sarker**, **Chengjia Wang**, **Daniel Prasetyo**, **Elizabeth Humberstone**, **Habtamu Diriba Garomssa**, **Kseniia Goroshko**, **Nuoya Chen**, **Xinyu Wang**, and **Sonja Song** offered meaning and provided text to the numerous graphs that emerged for each course from the quantitative analysis of the CQSS survey. Combined, these volunteers wrote 91,163 words, or 1169 customized words for each report. Each of them wrote an average of 4144 words.

*Primary analyst* for that report is **Bishnu Sarker** and *secondary analyst* is **Chengjia Wang**.

**Muhammad Sohaib Aslam**, **Wei Wang**, **Wenjie Shi**, and **Yemi Adeyeye**, members of the newly formed CQAB Communication Team provided support on communication tasks, proofreading and more. **Catherine Lourdes Dy** joined the CQSS task force by provided last minute proofreading help.

