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Information behaviour and practices of PhD students

Thea Marie Drachen, Asger Væring Larsen, Eystein Gullbekk, Hilde Westbye,
Karin Lach

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Information behaviour and practices of PhD students Appendices

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1. June 2011

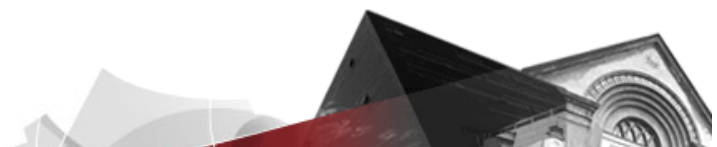


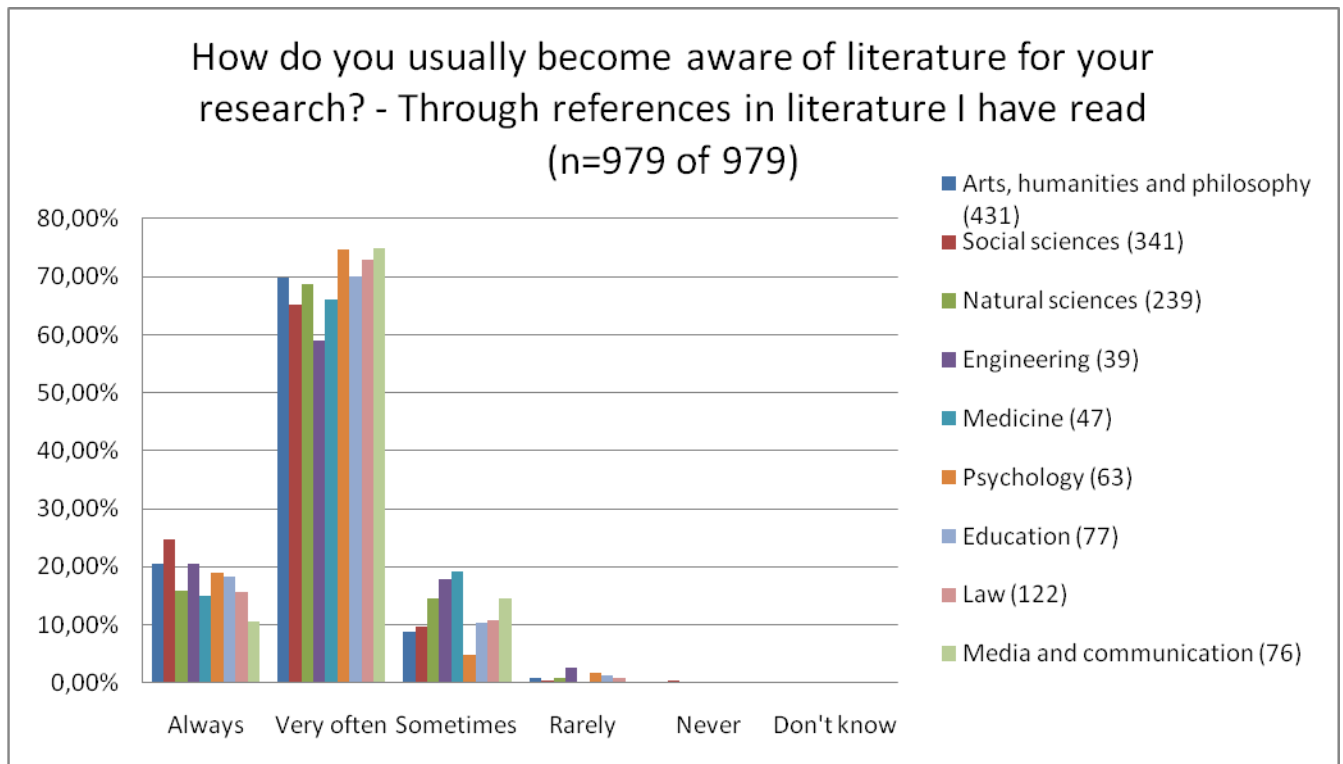
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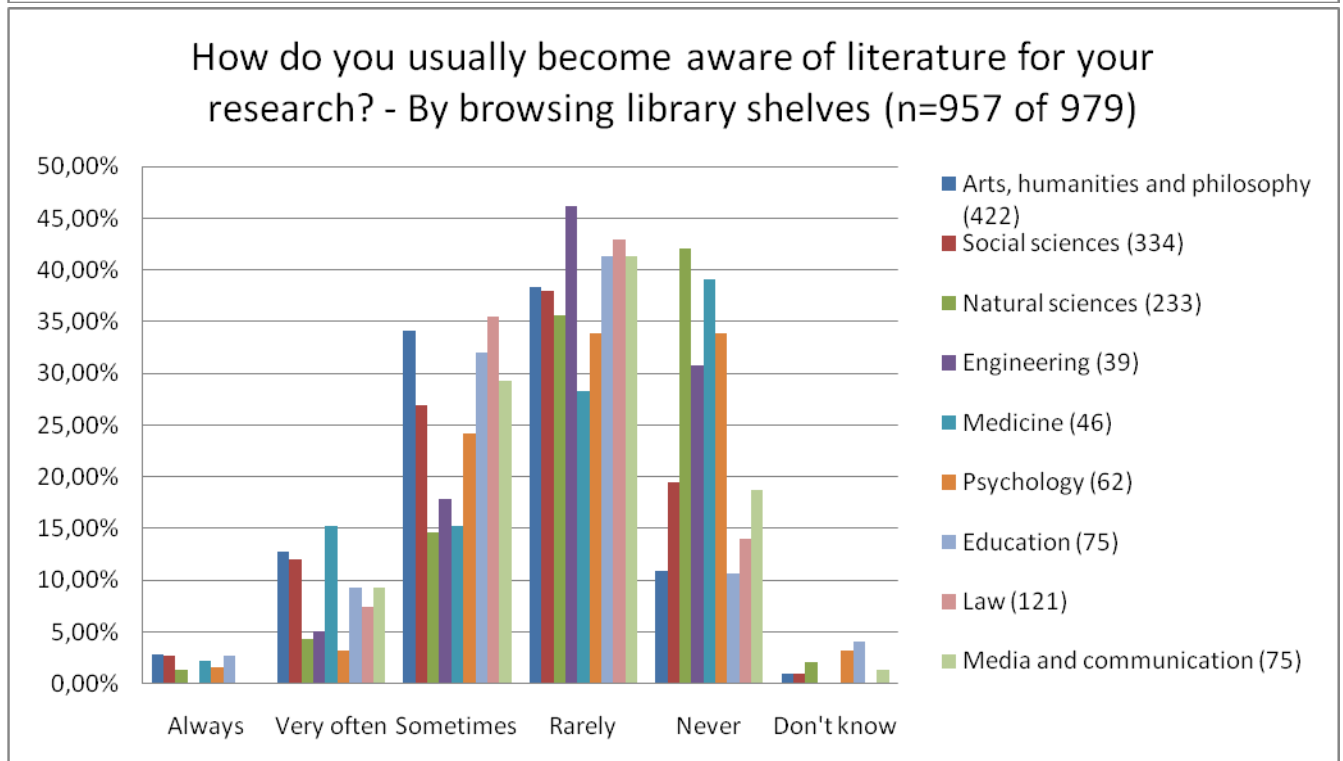
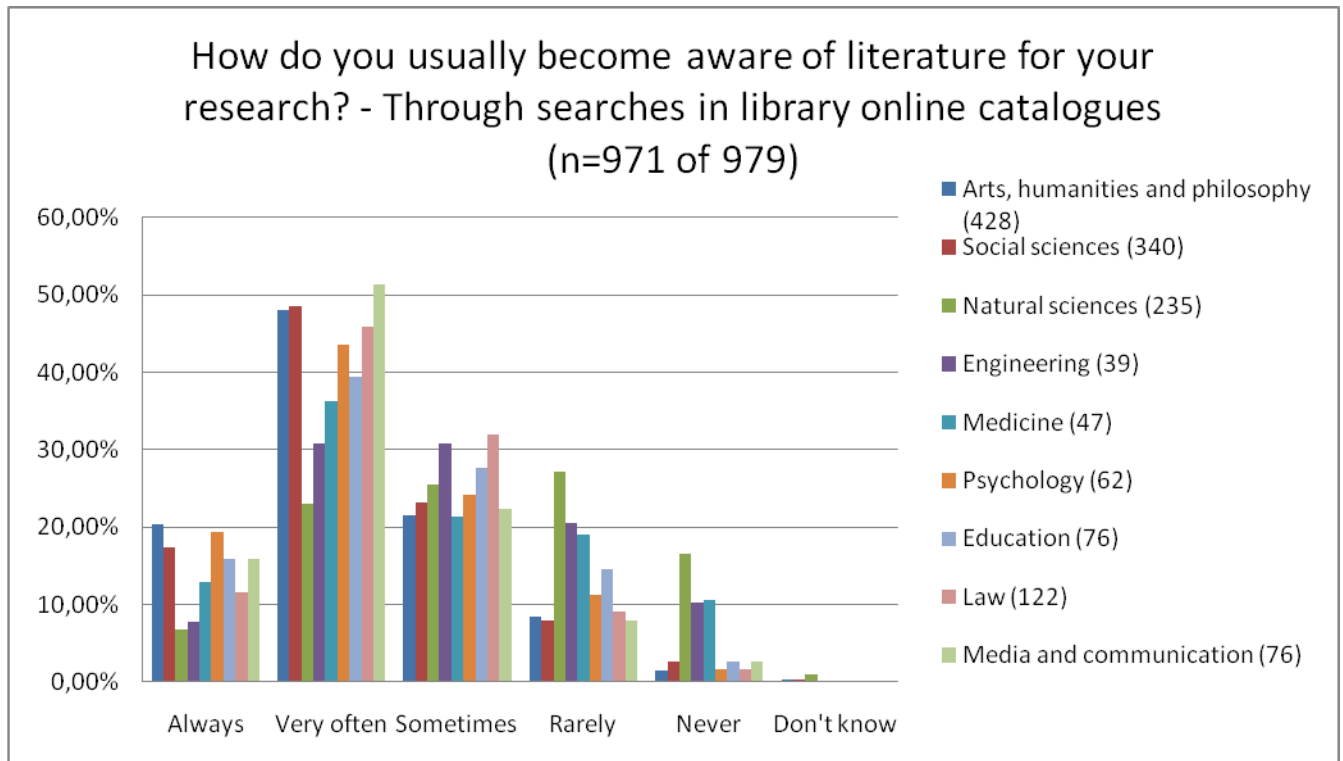
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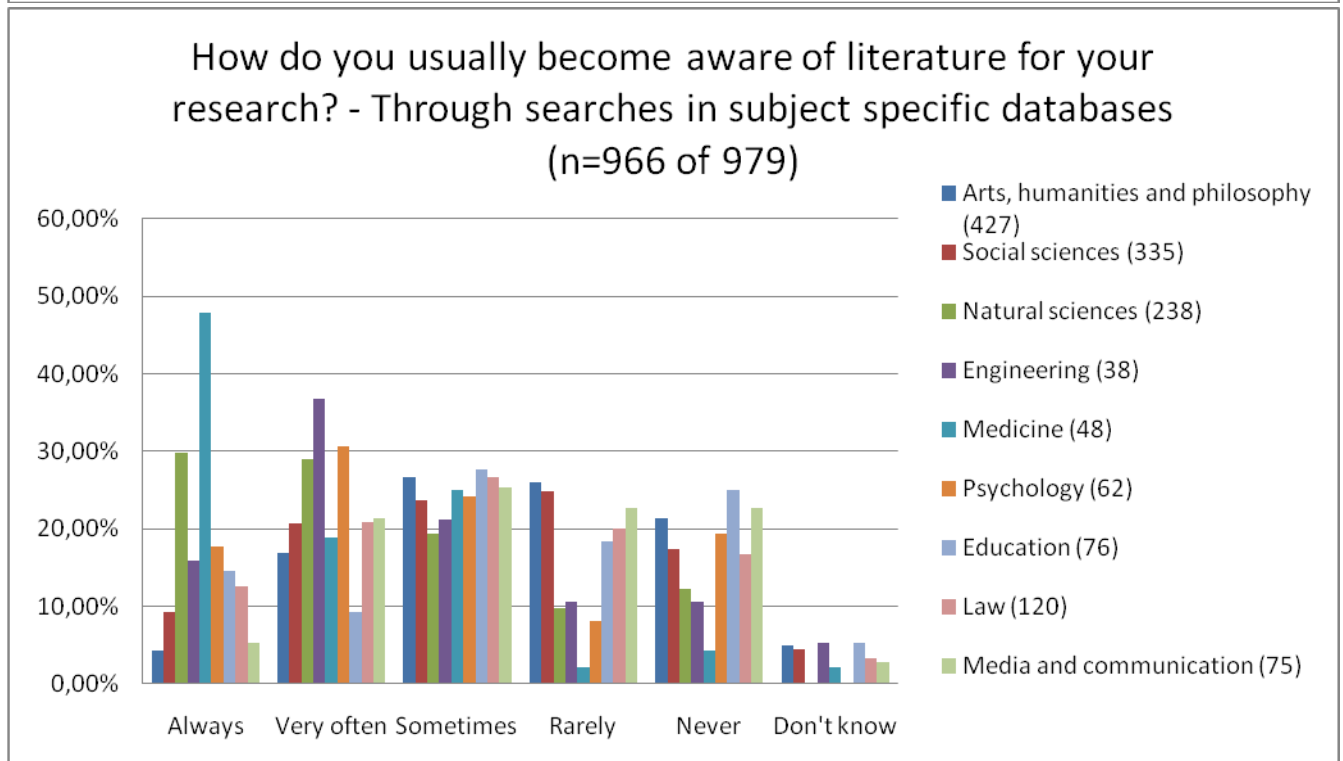
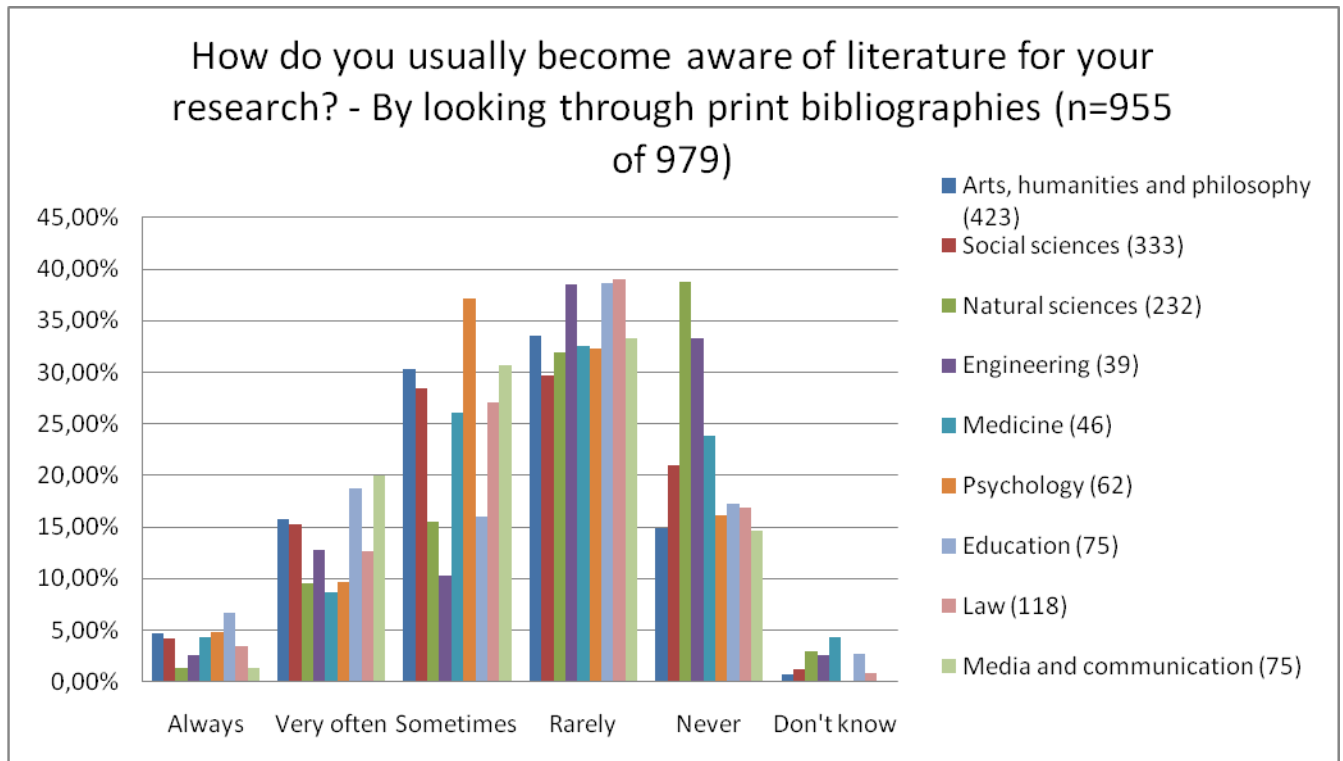
Appendix A. Graphic representation of the survey responses

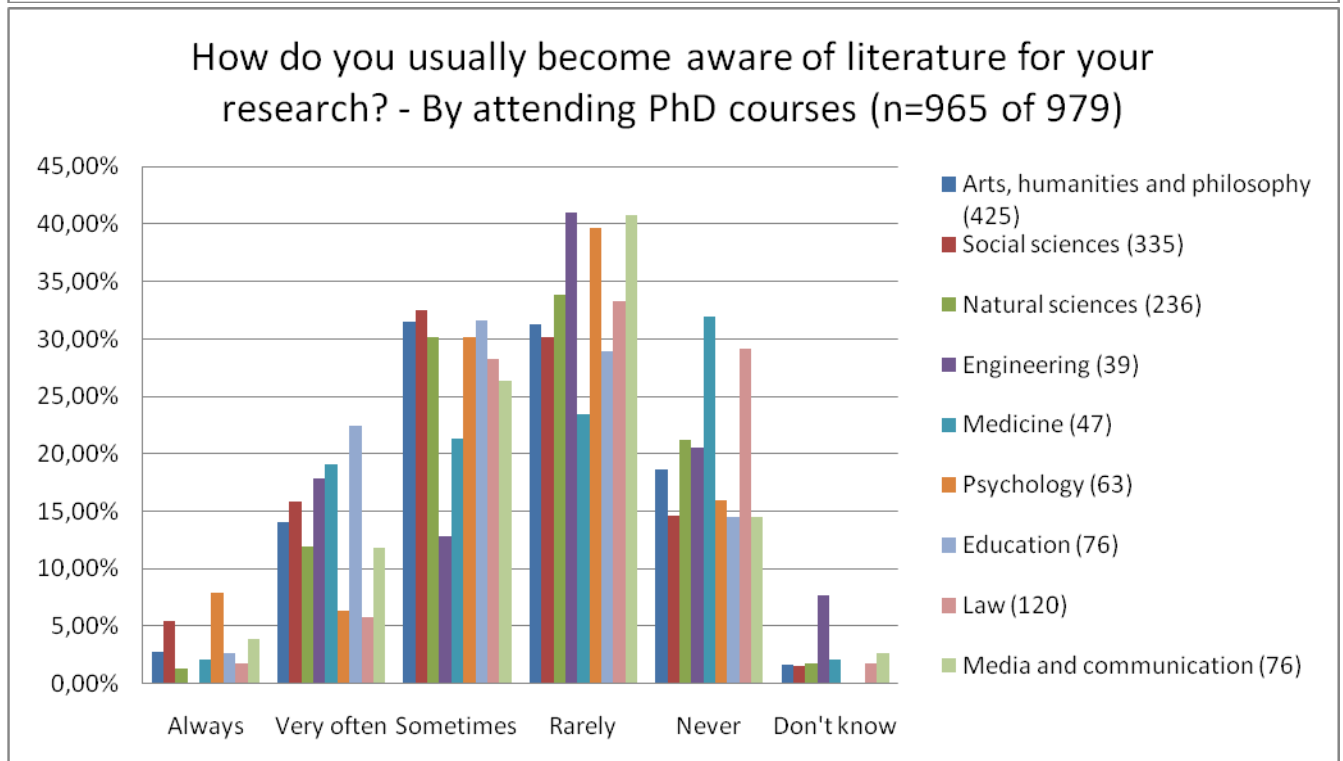
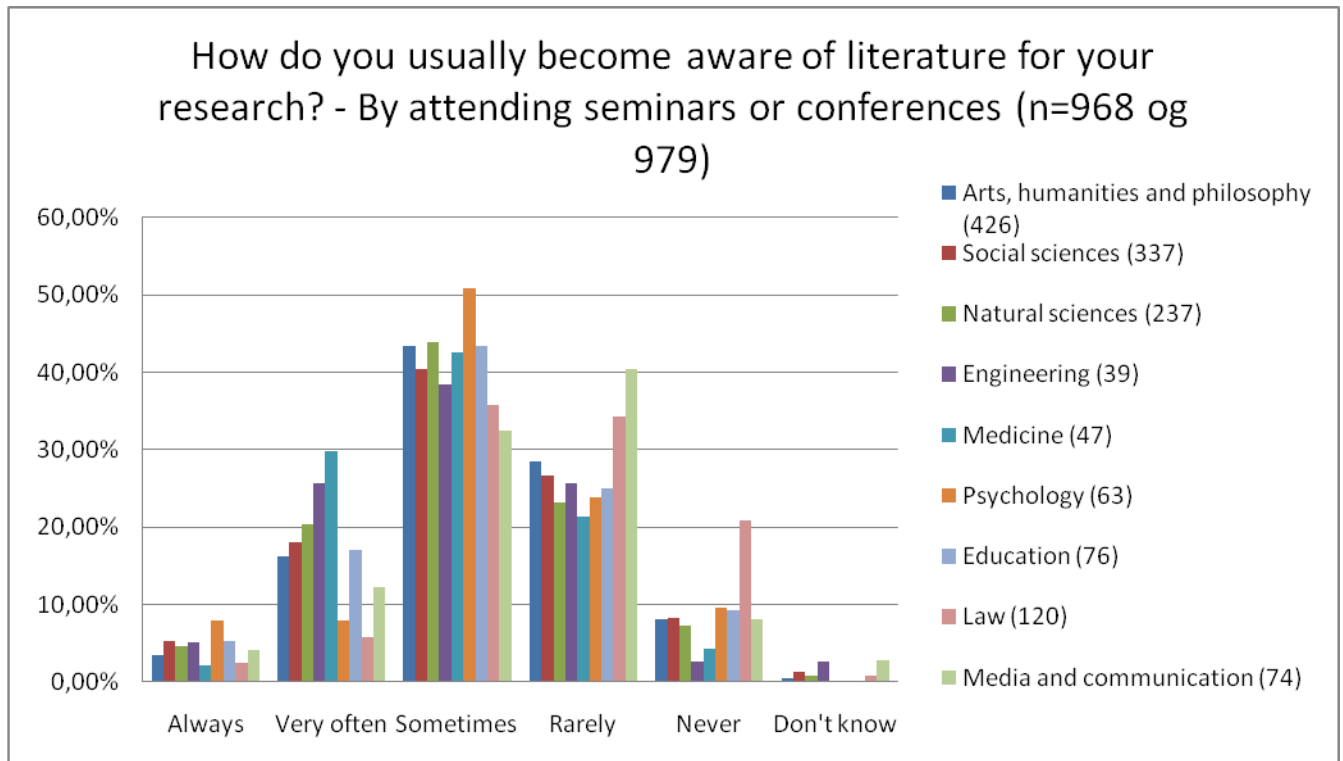
Vienna PhD students survey responses

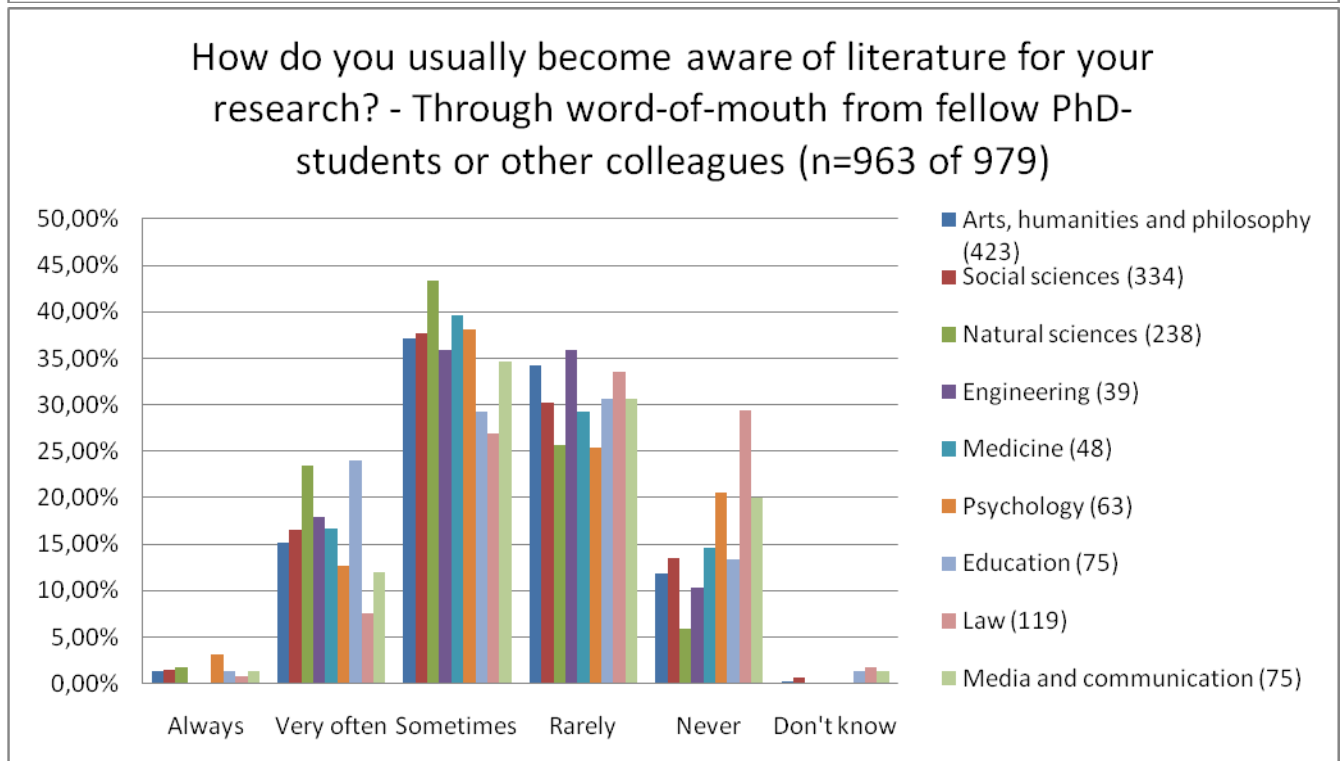
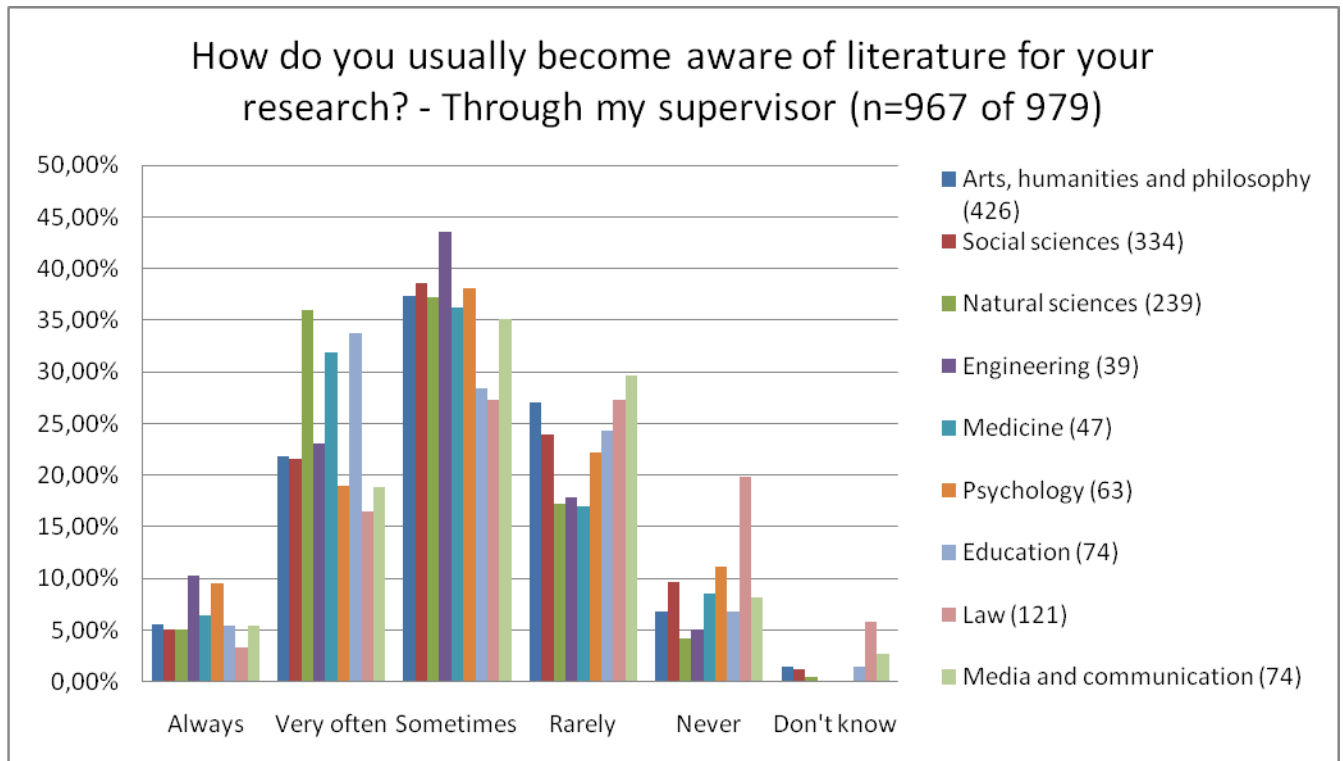
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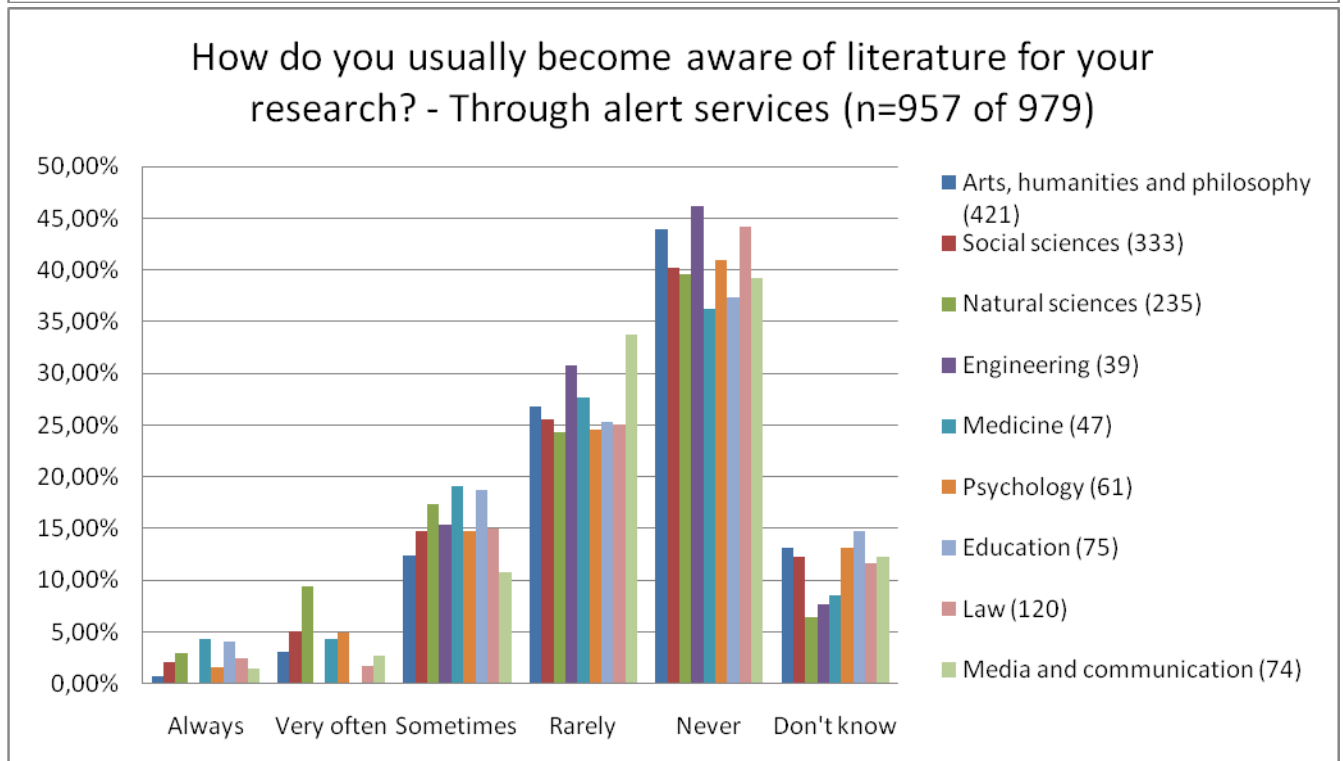
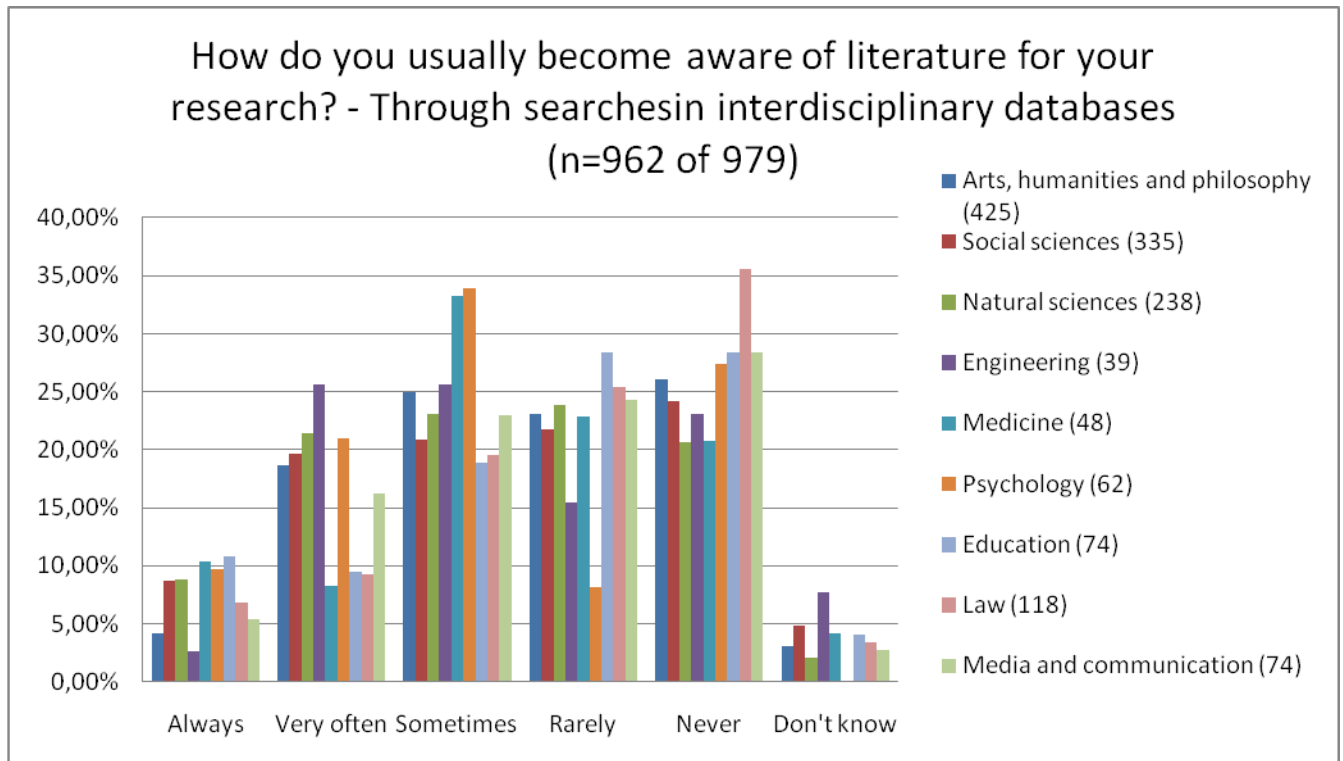


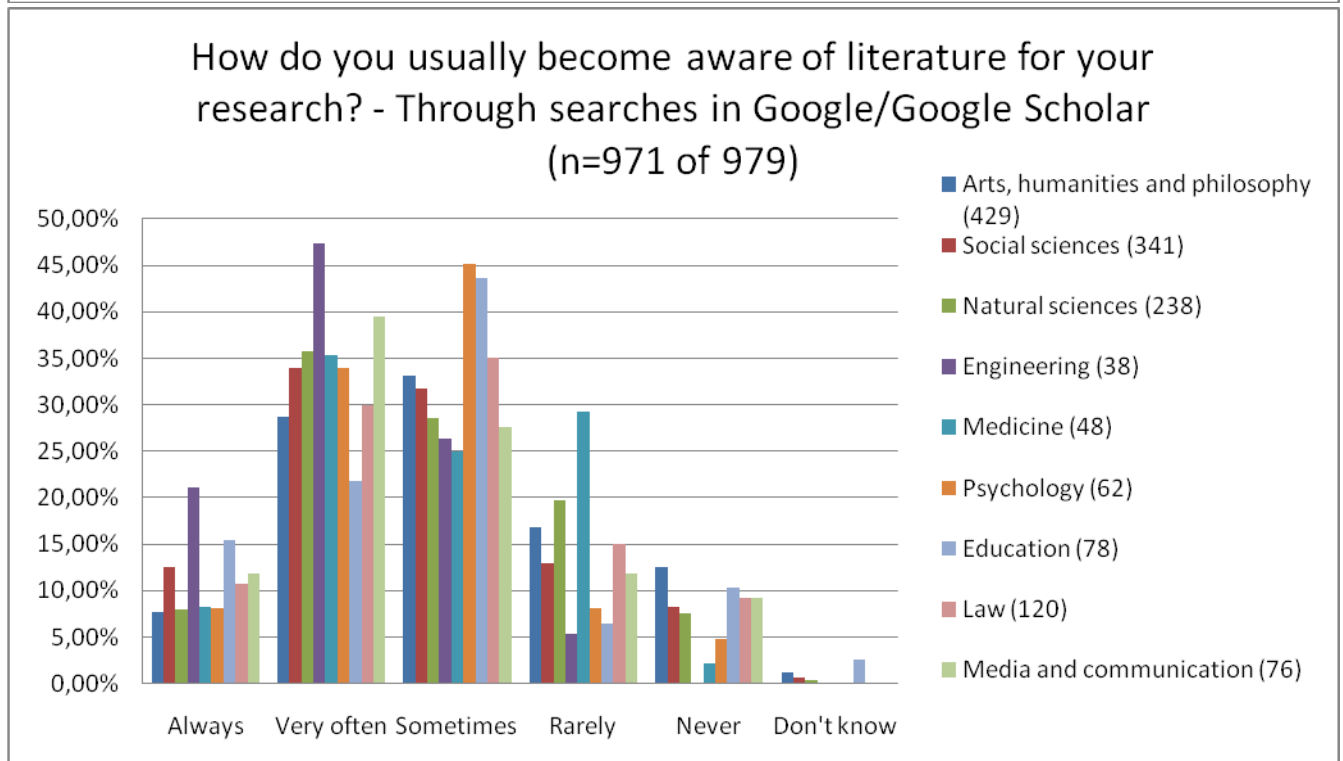
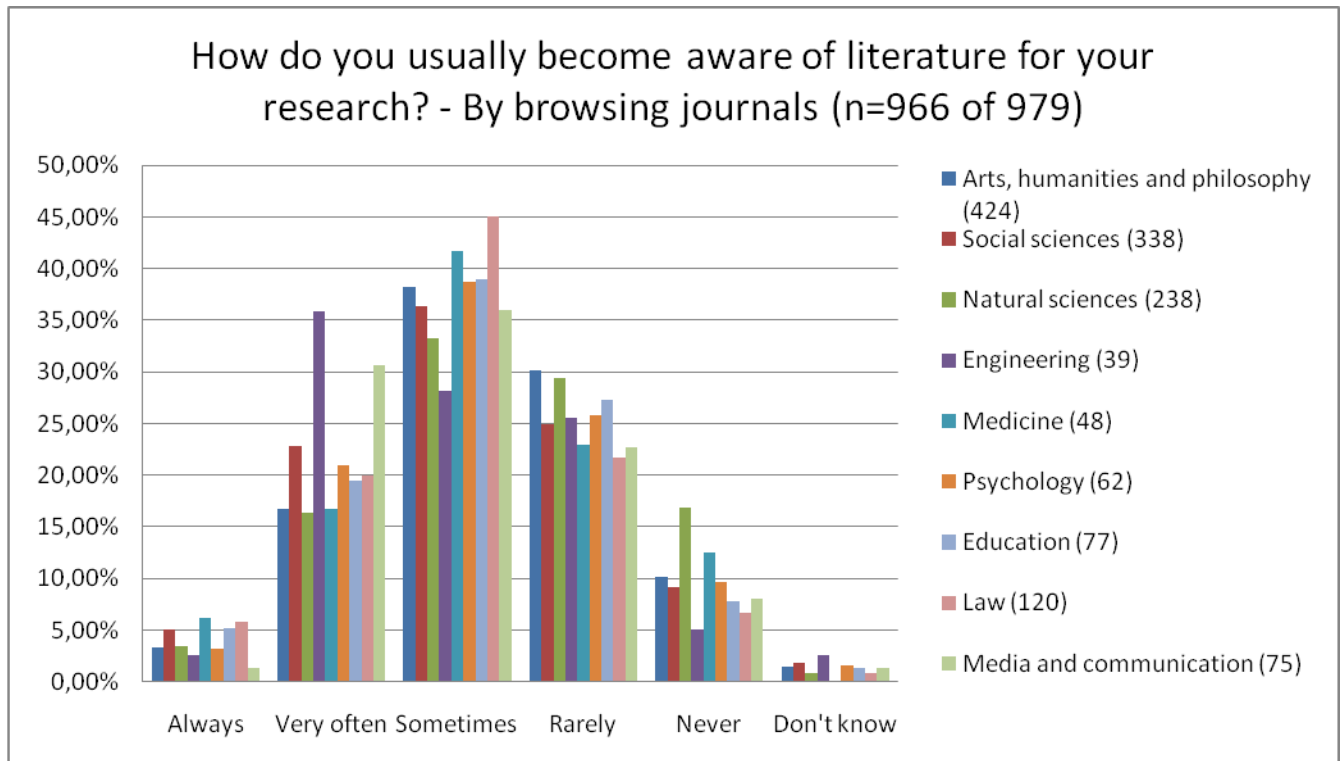


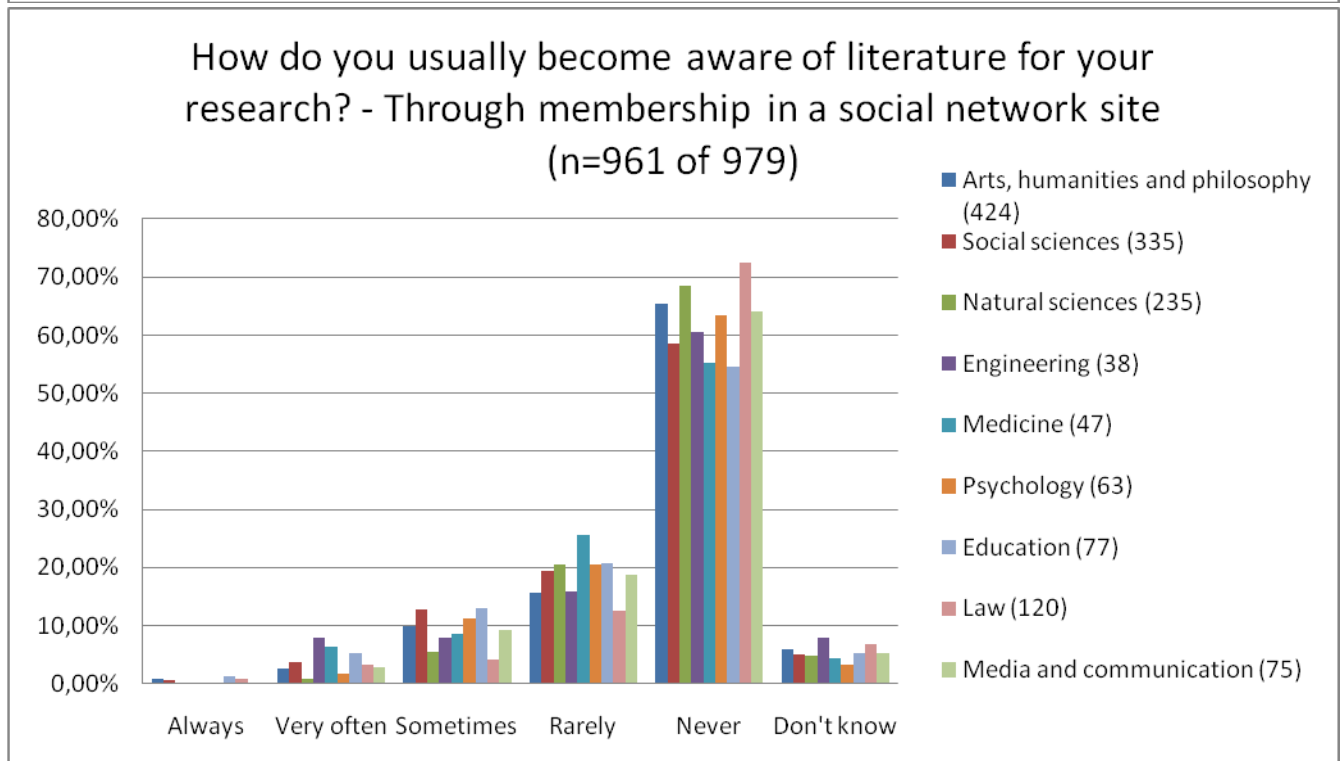
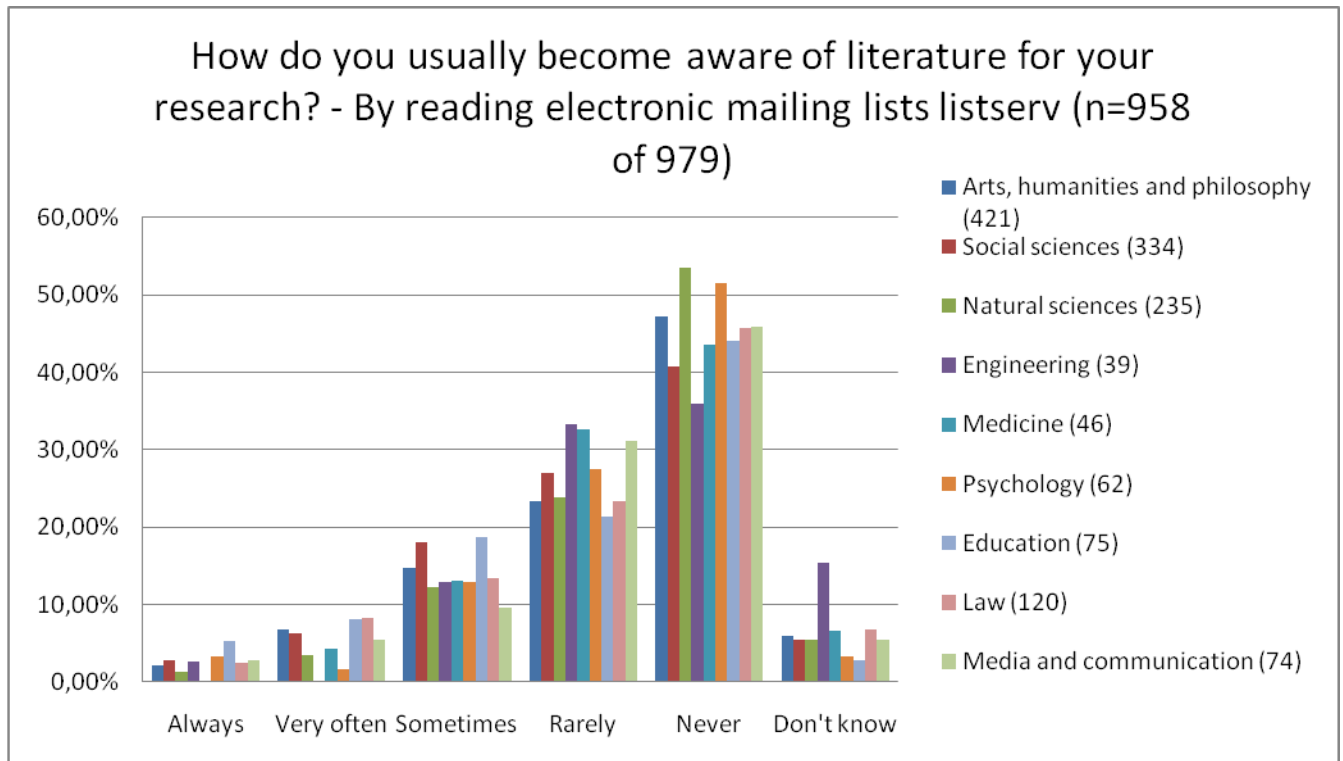


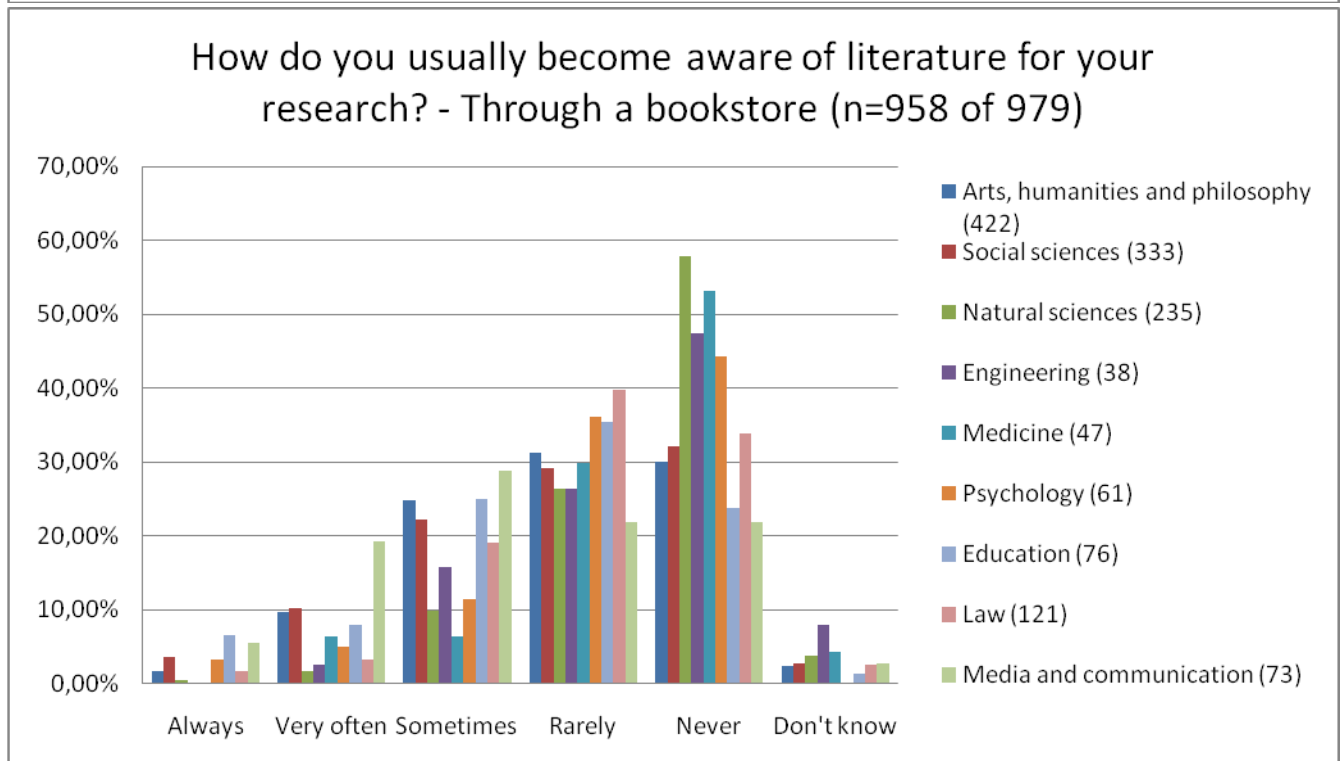
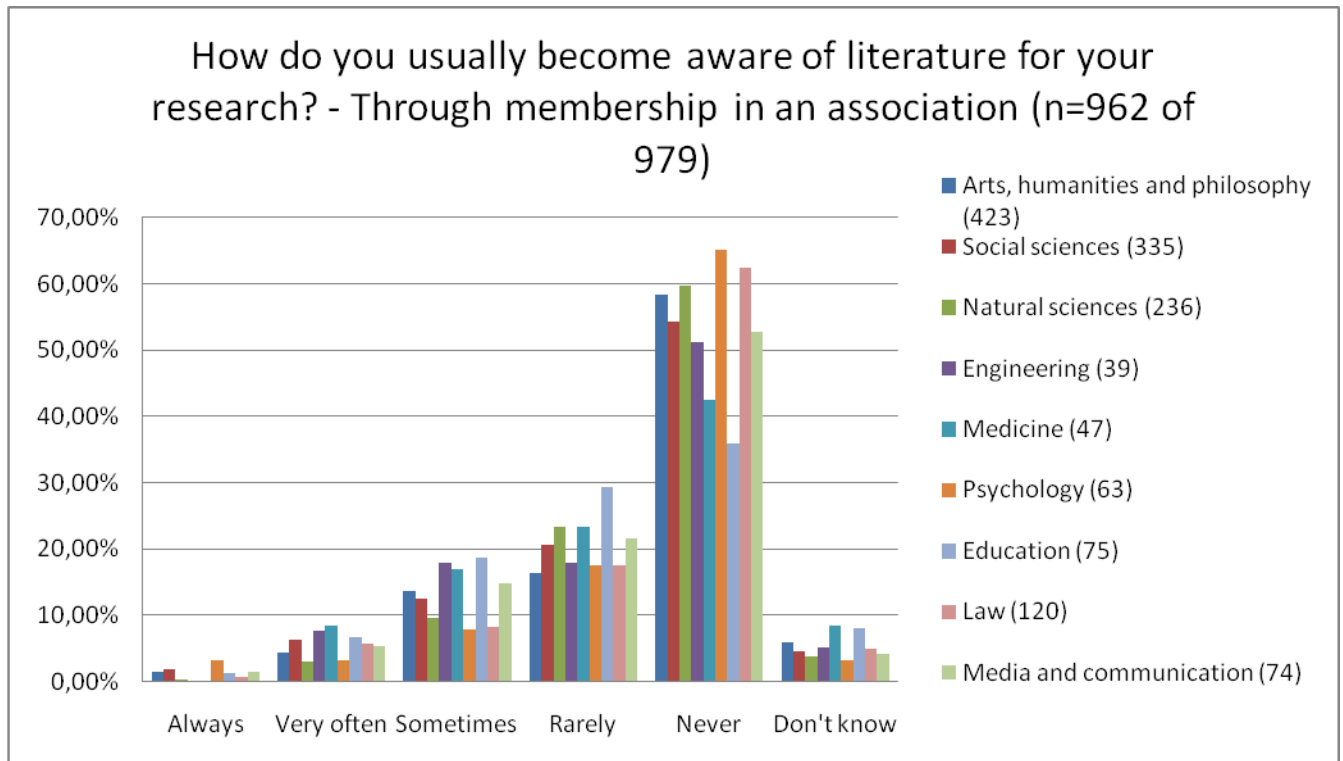




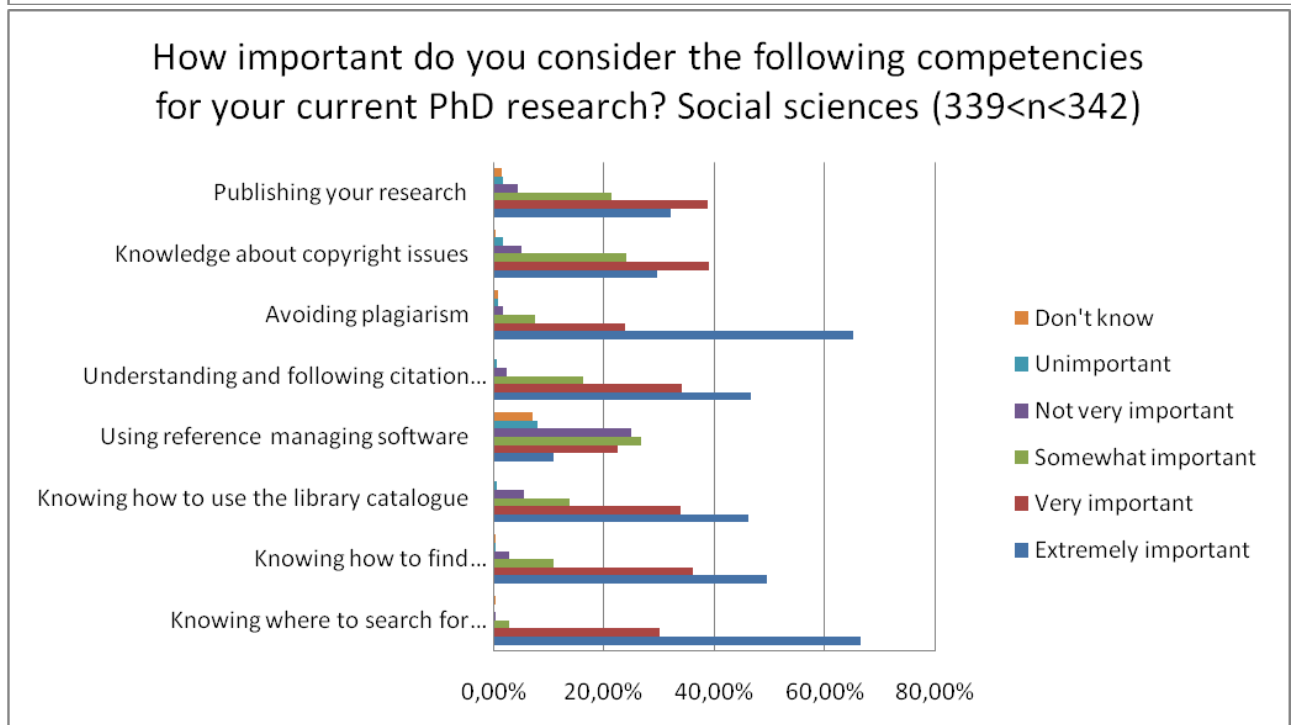
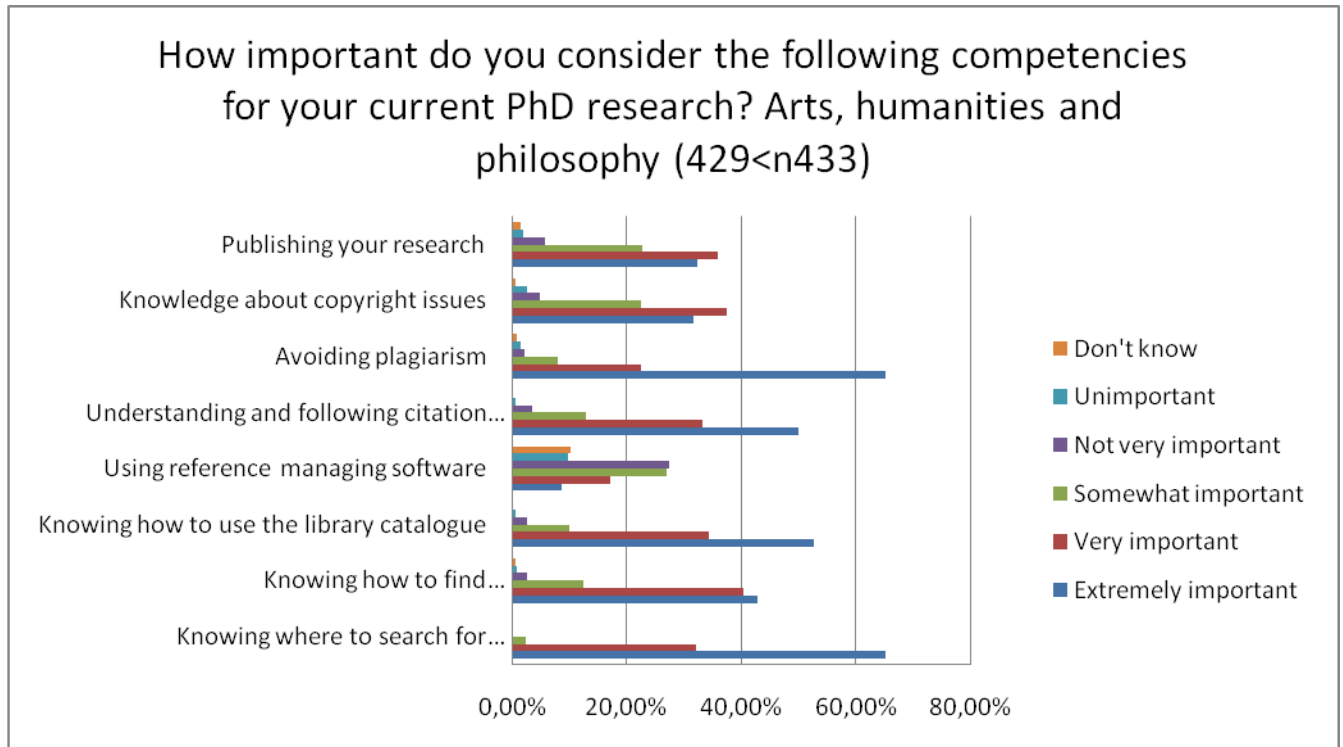


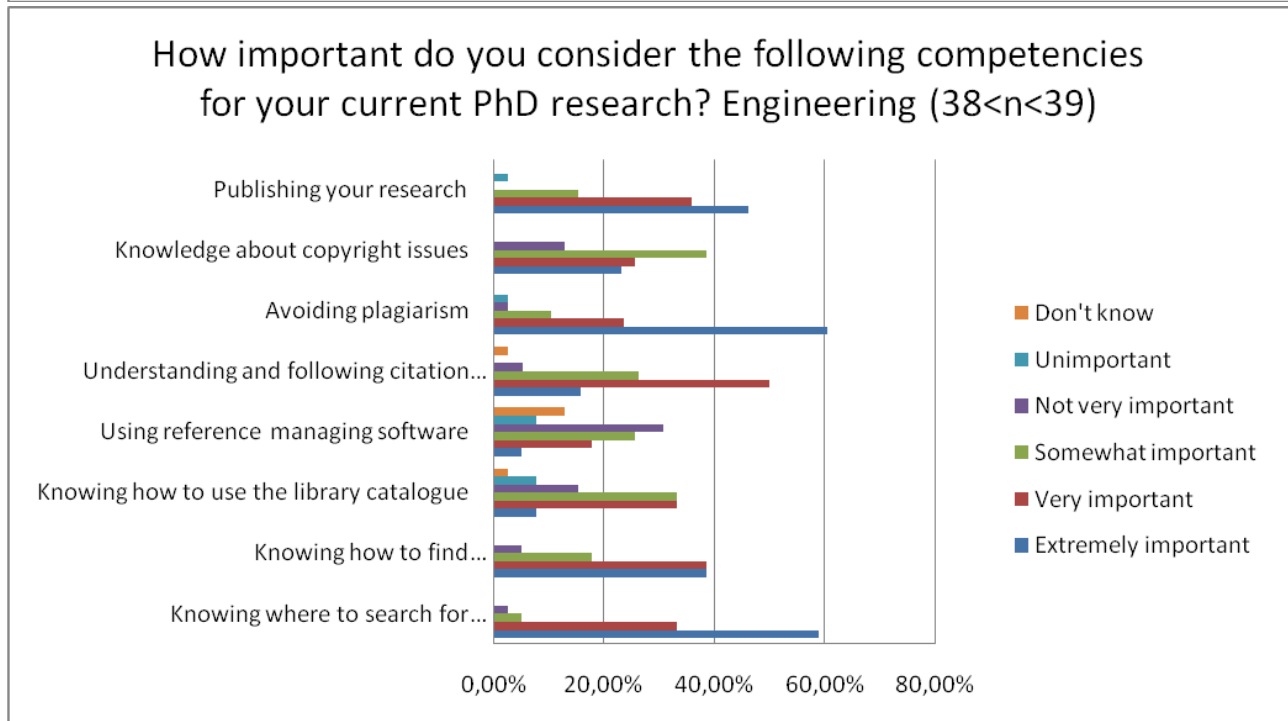
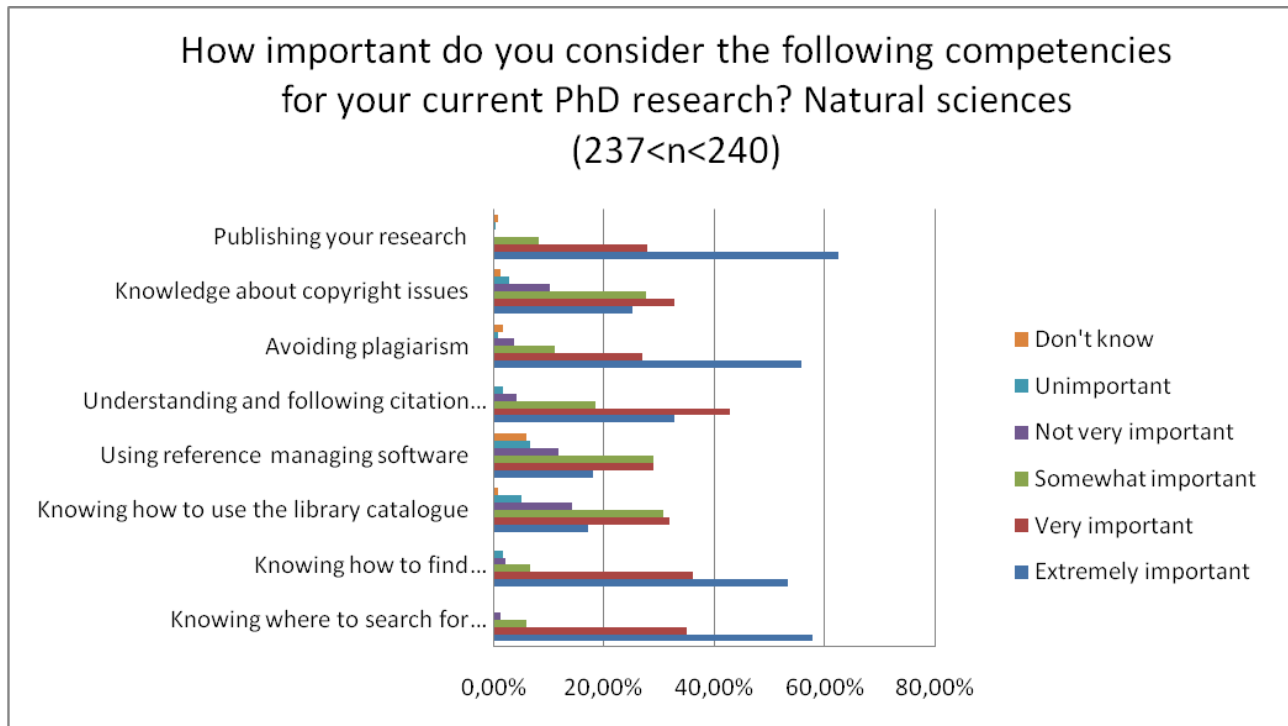


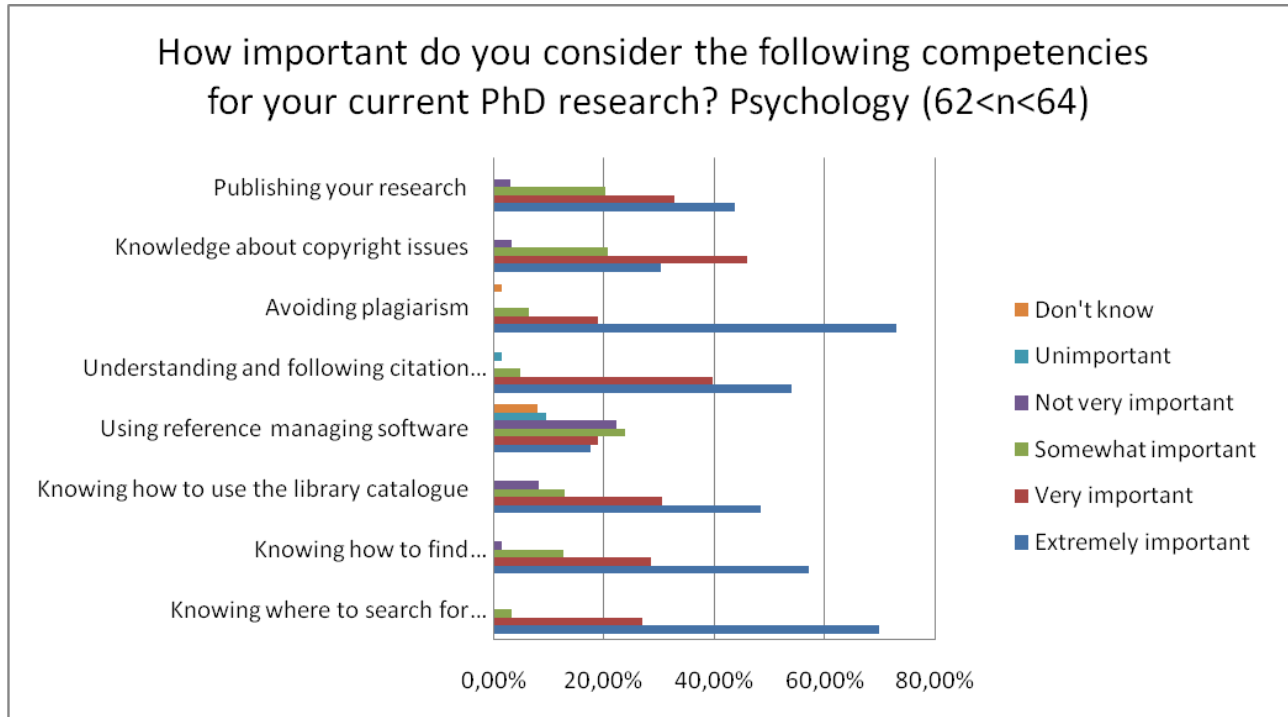
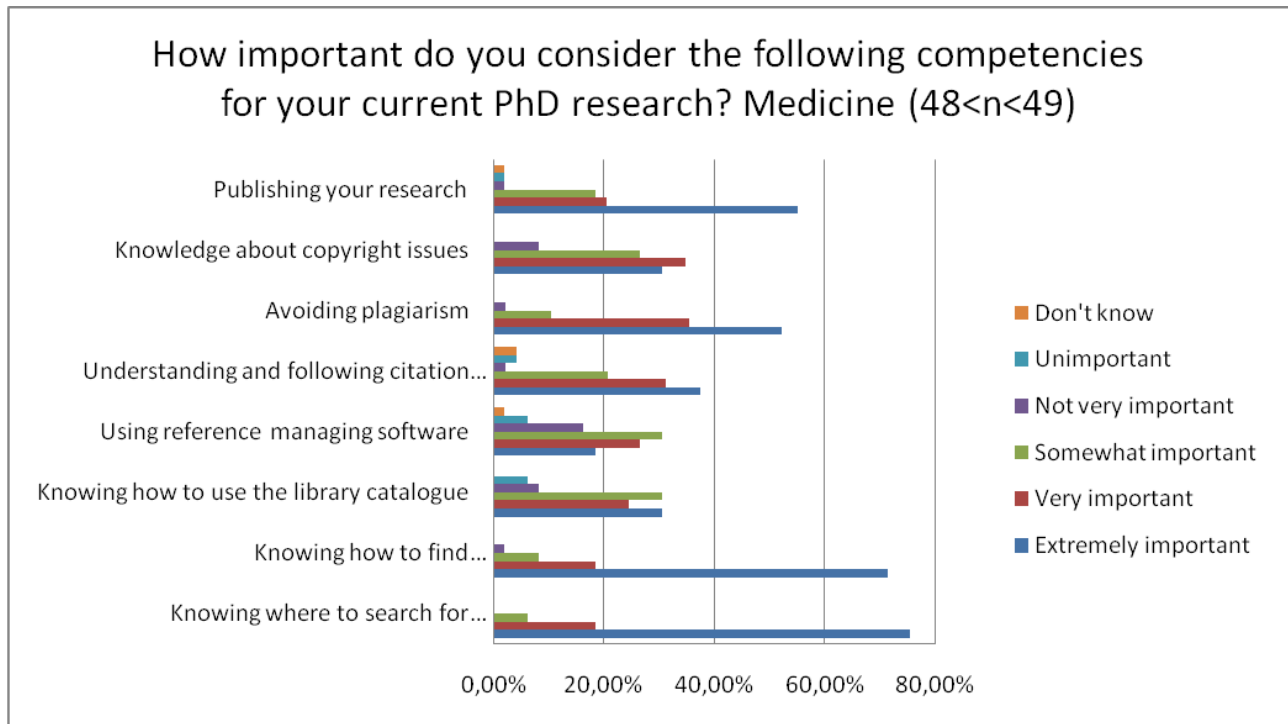


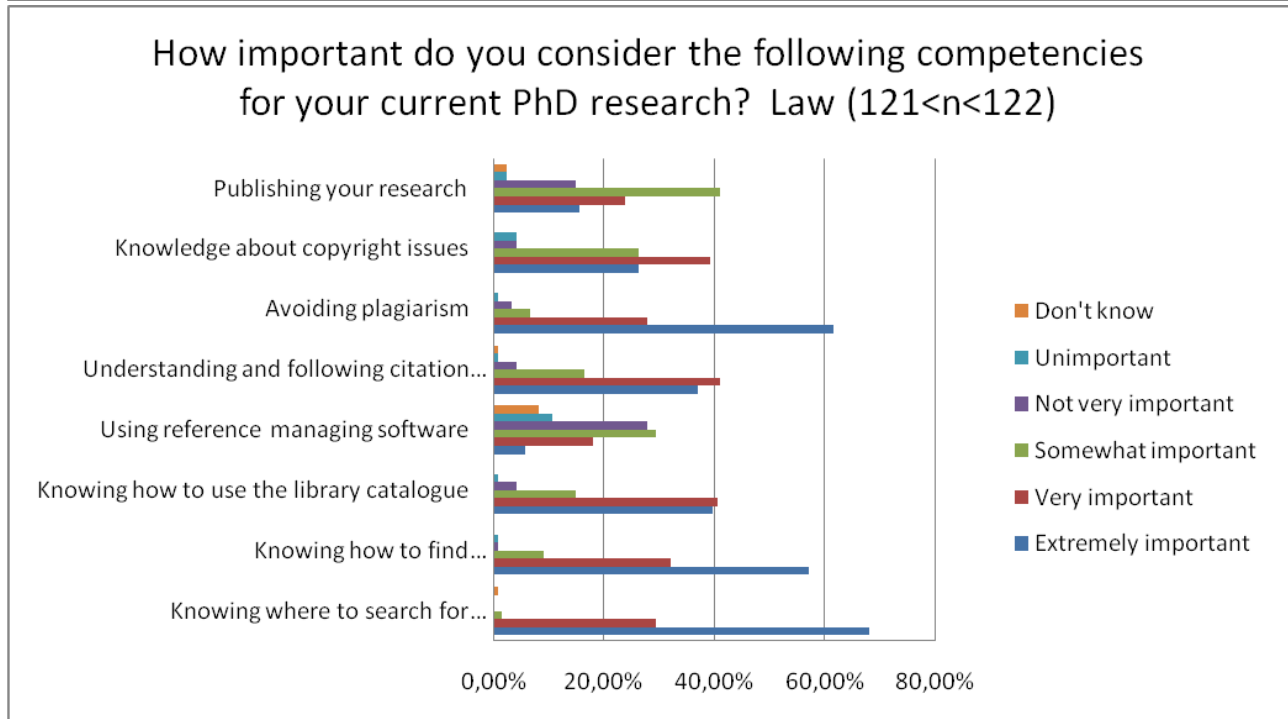
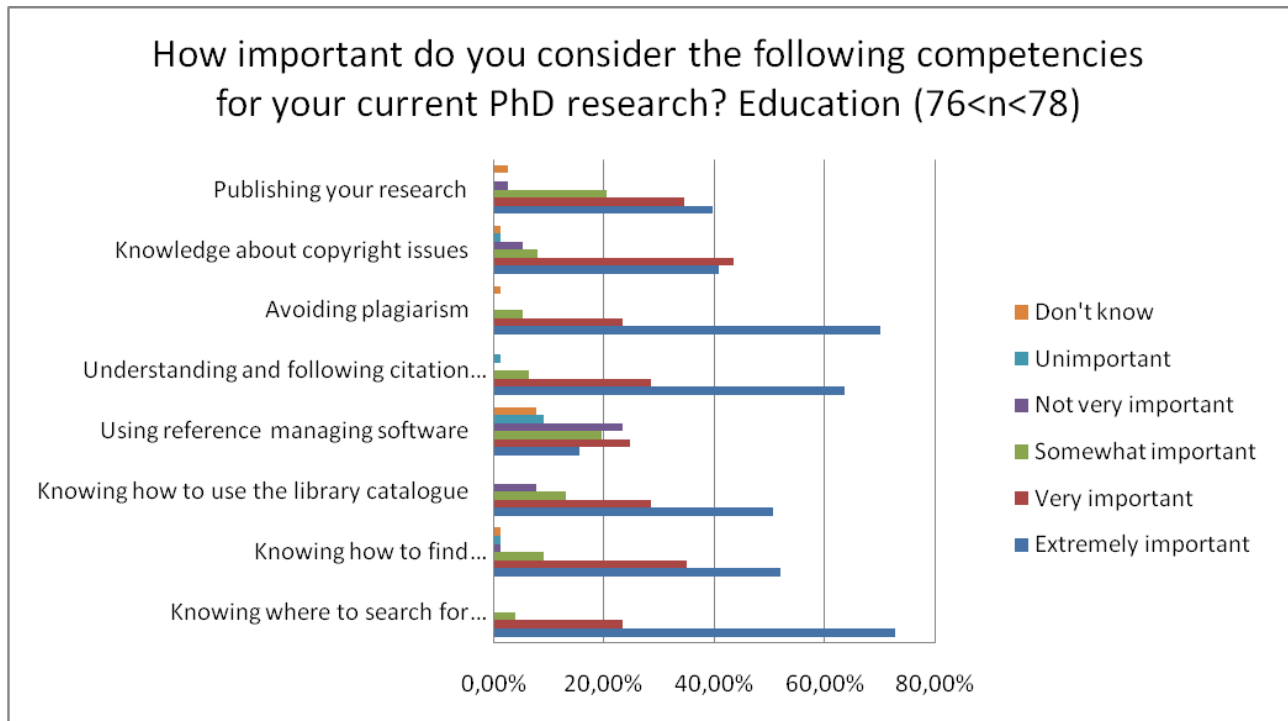


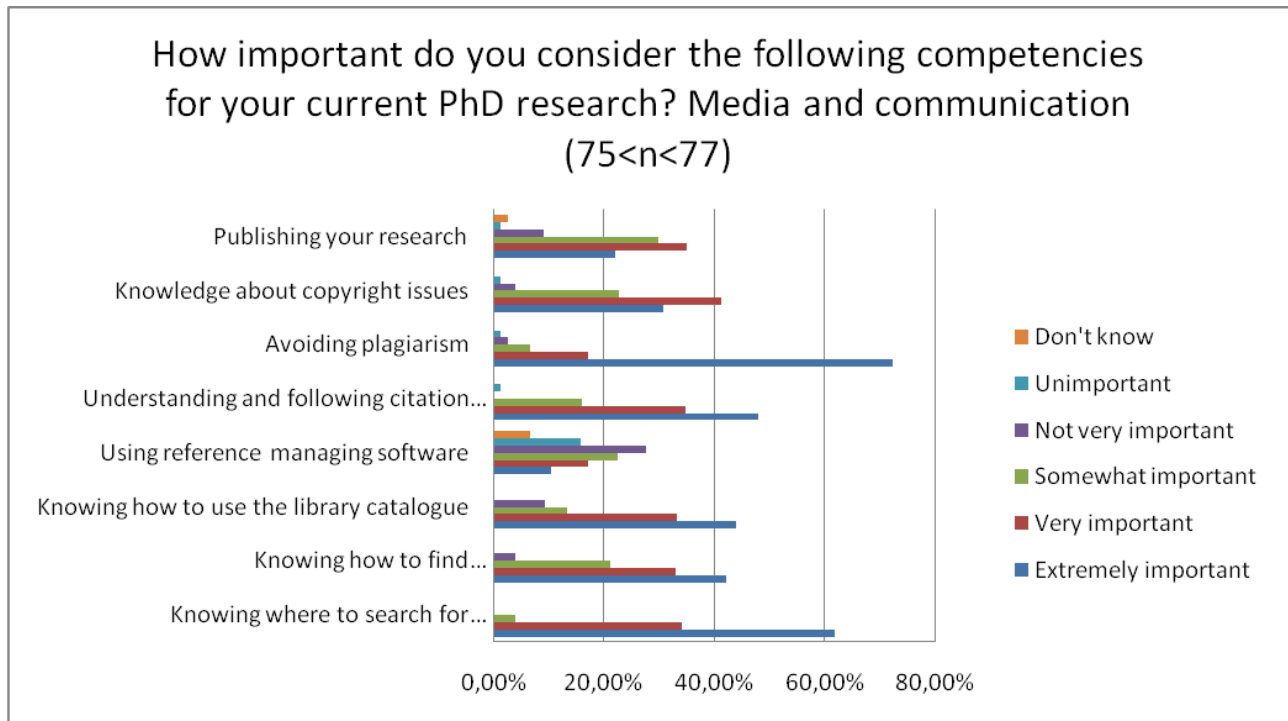
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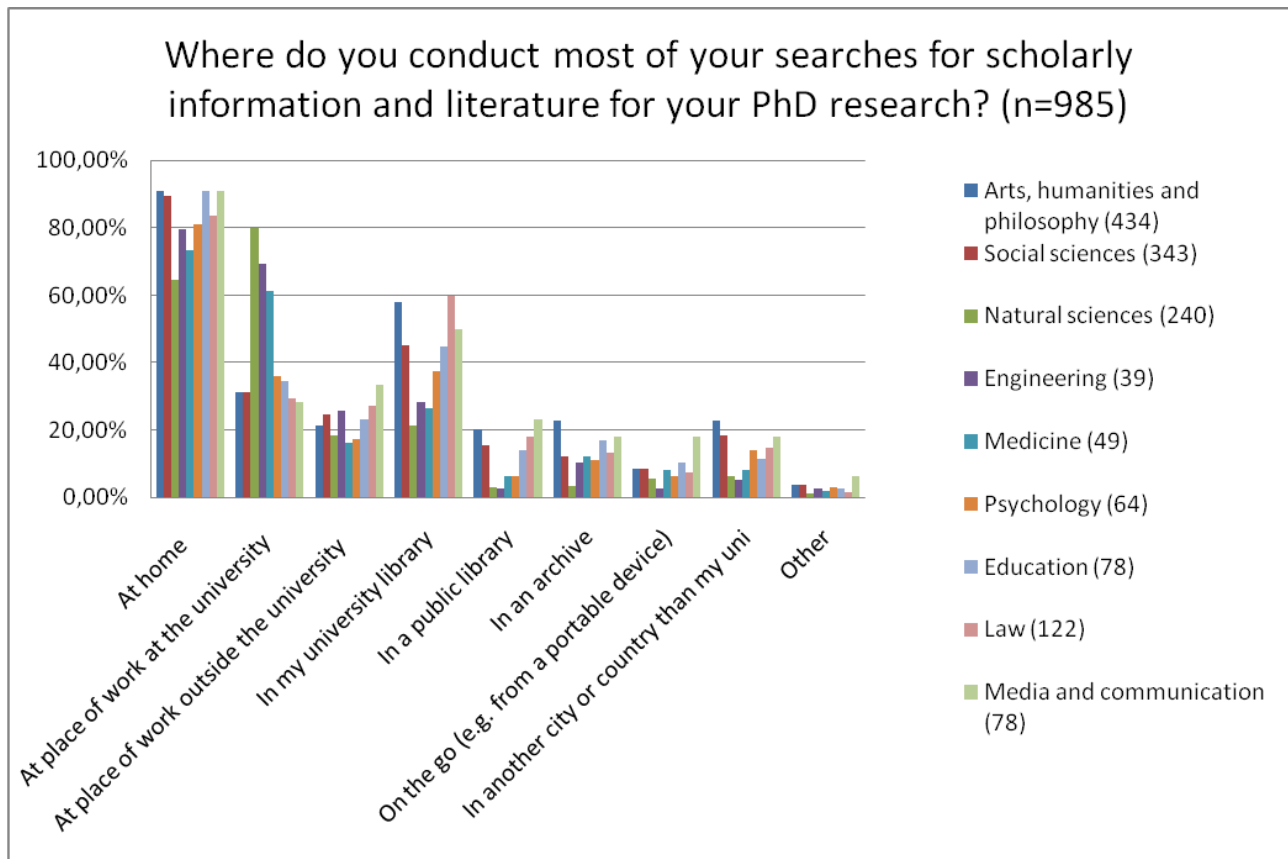




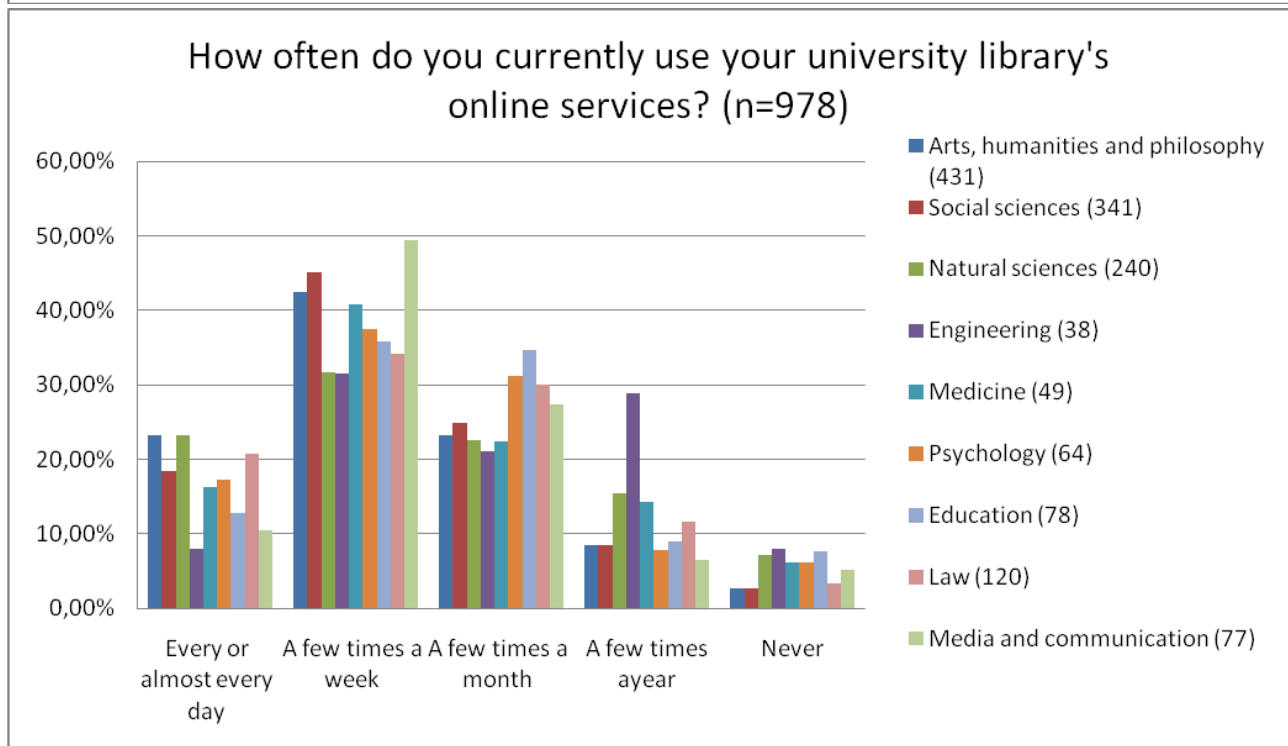
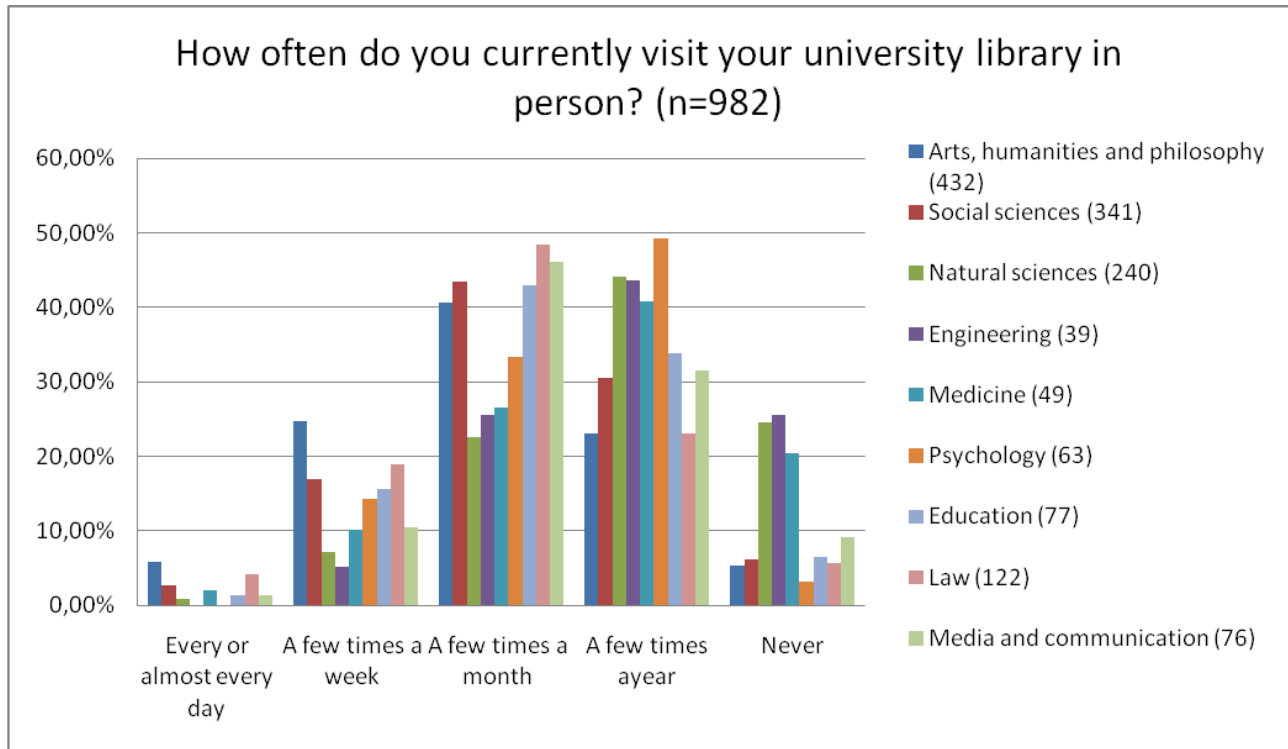




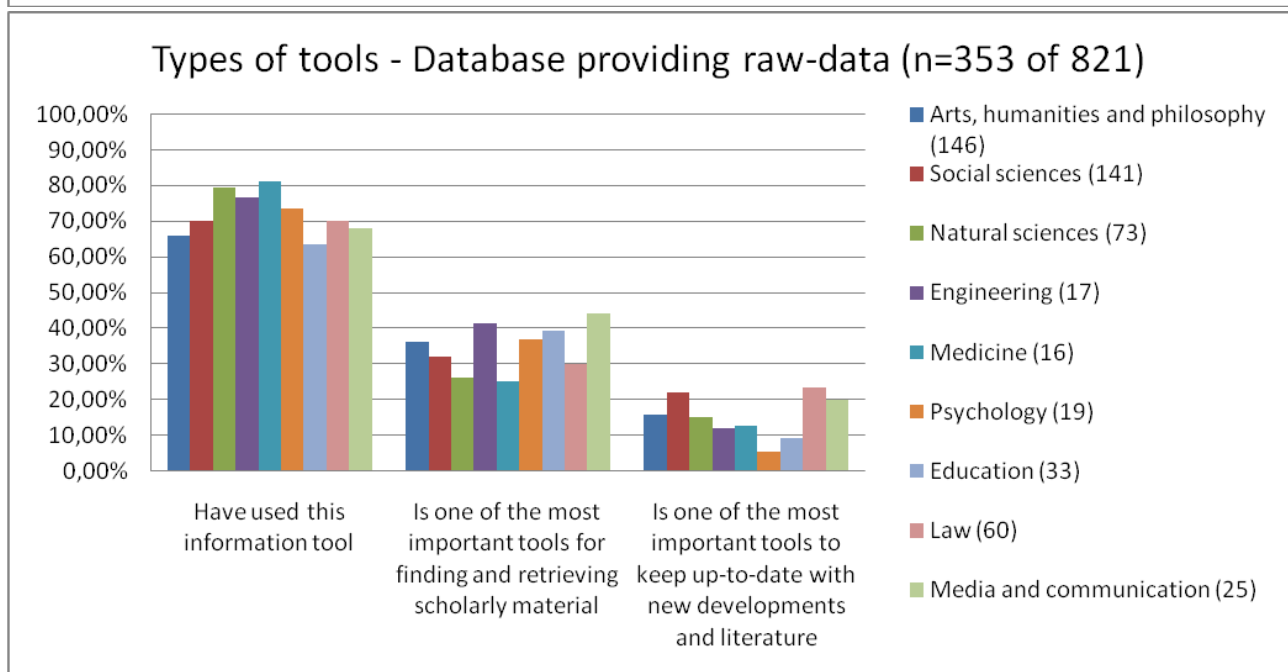
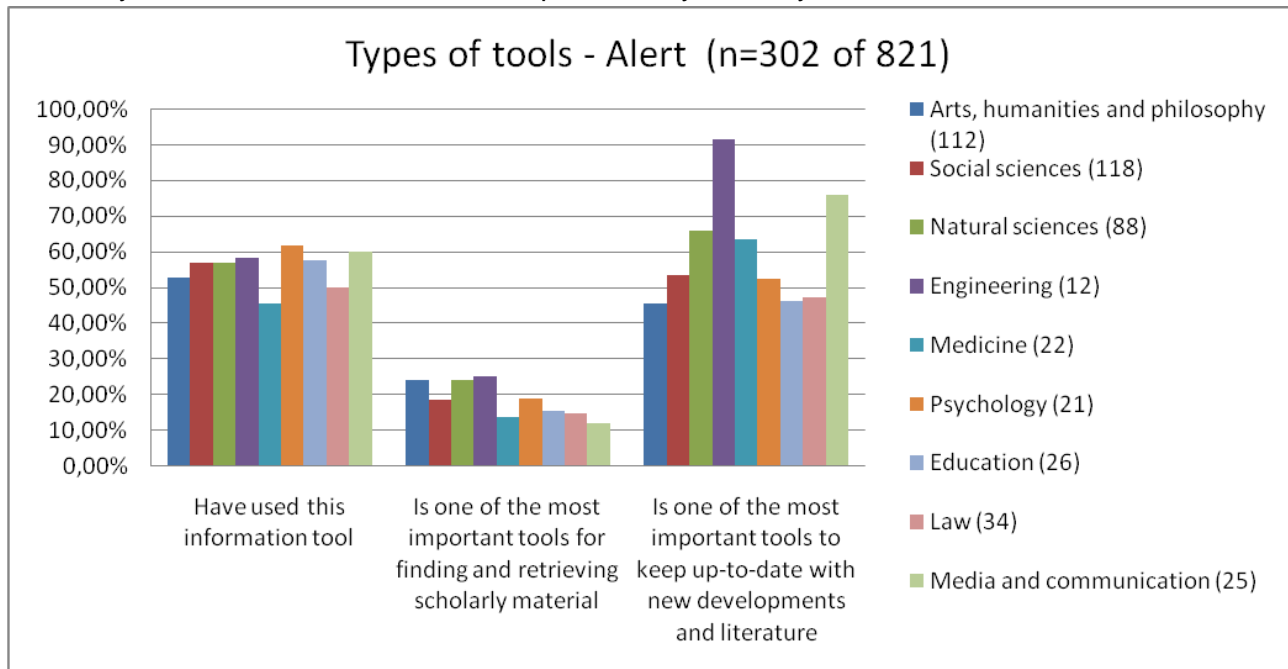
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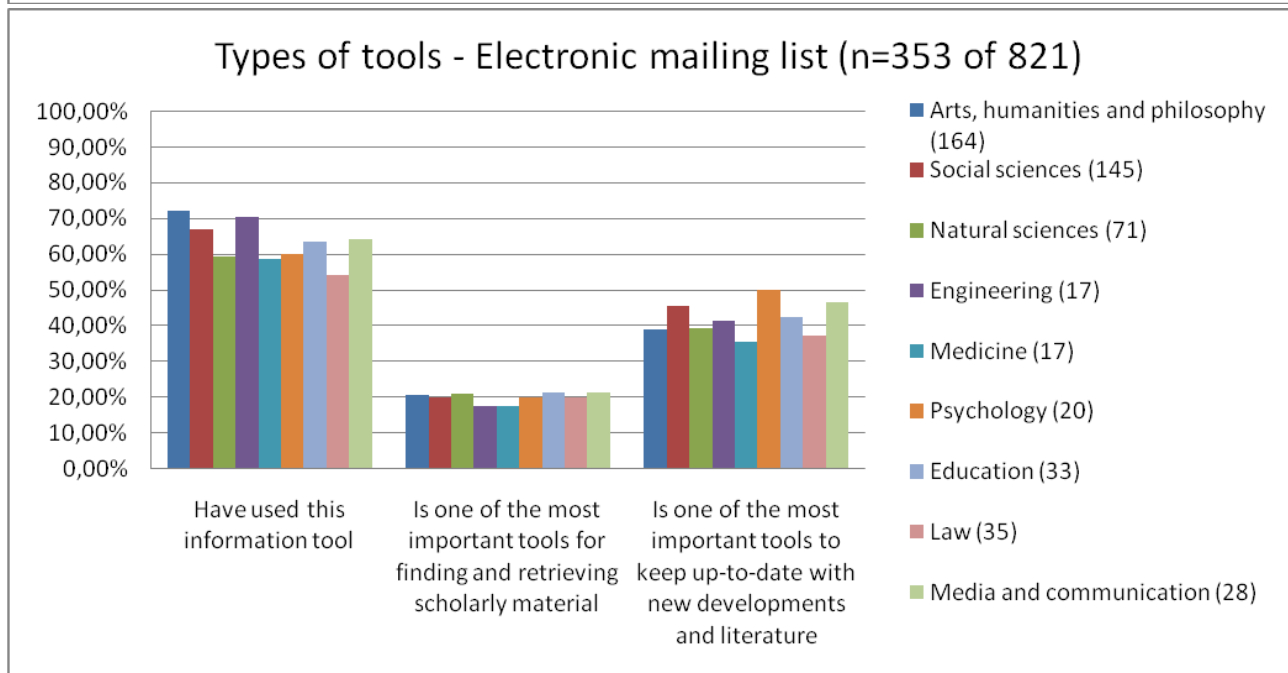
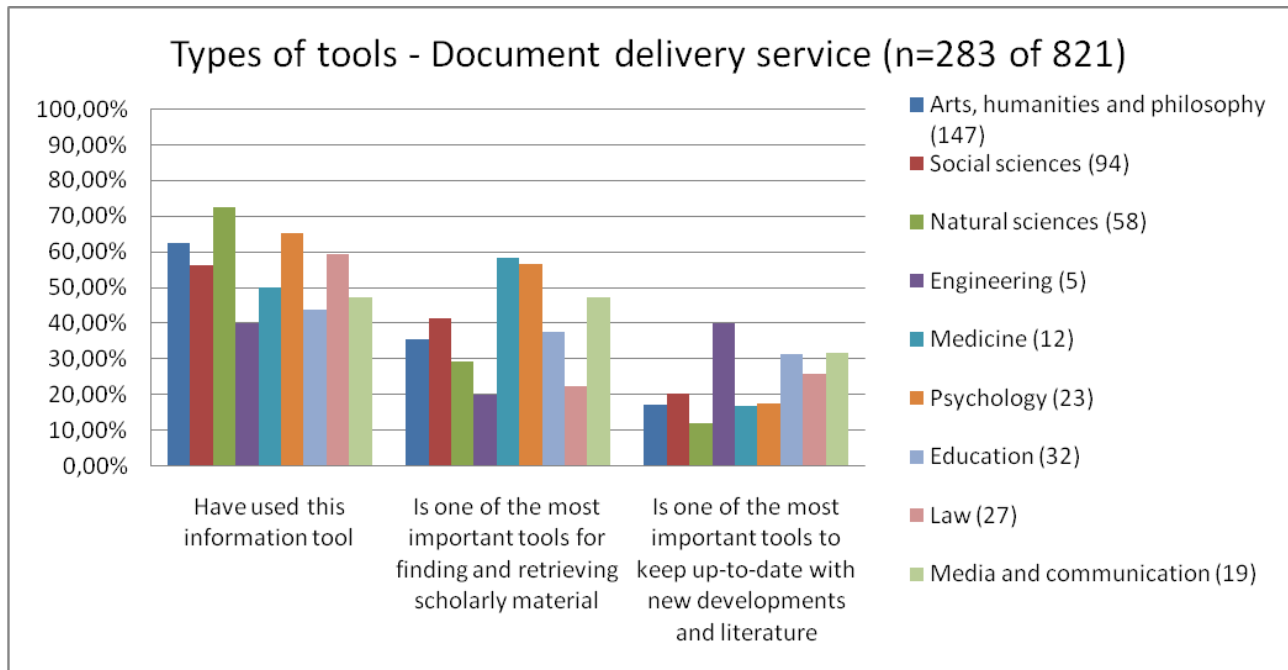


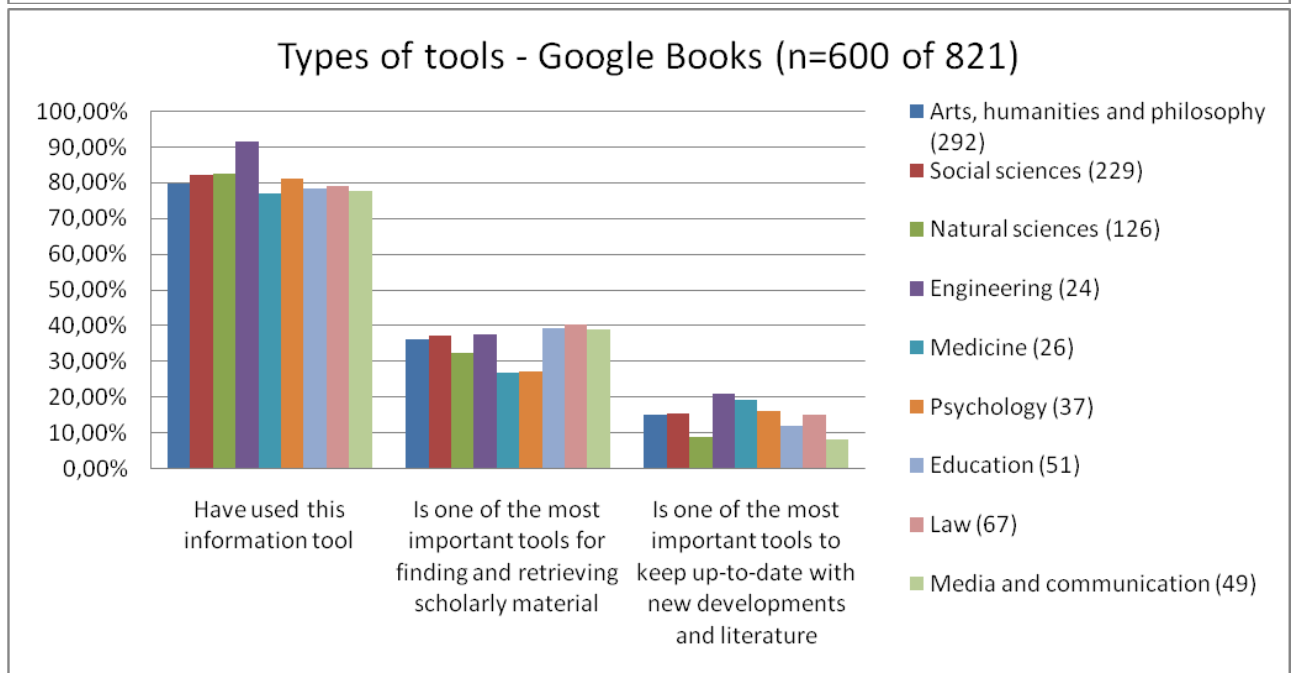
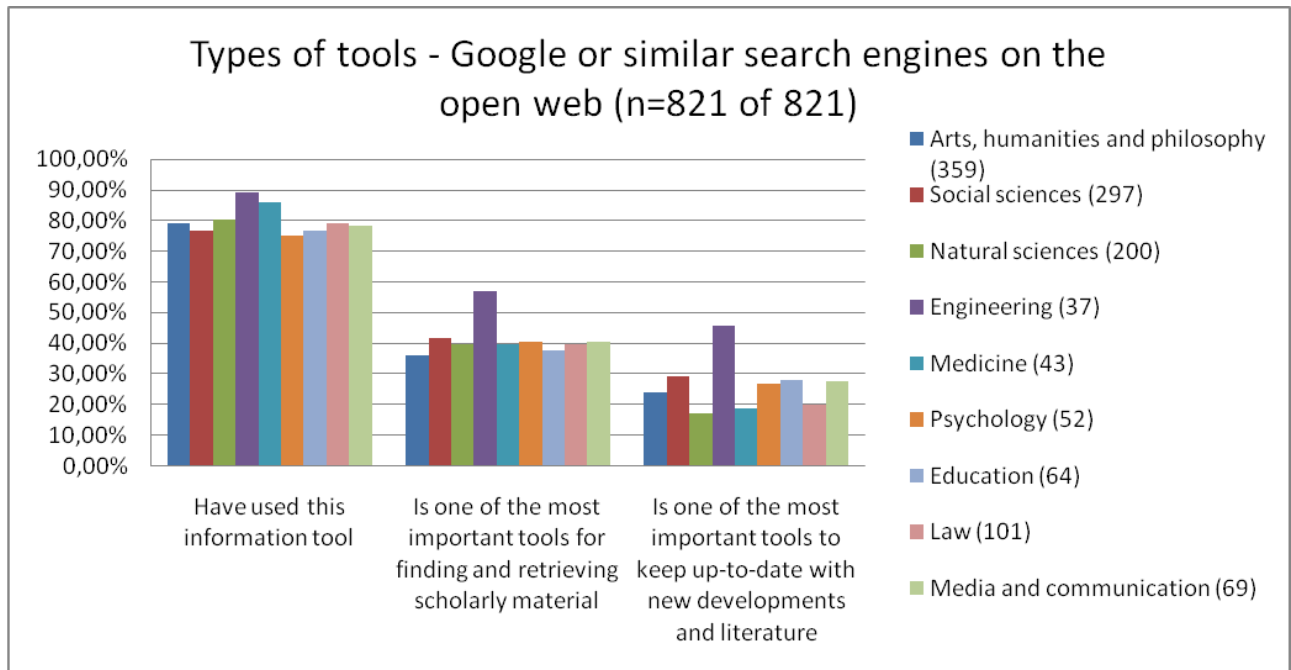
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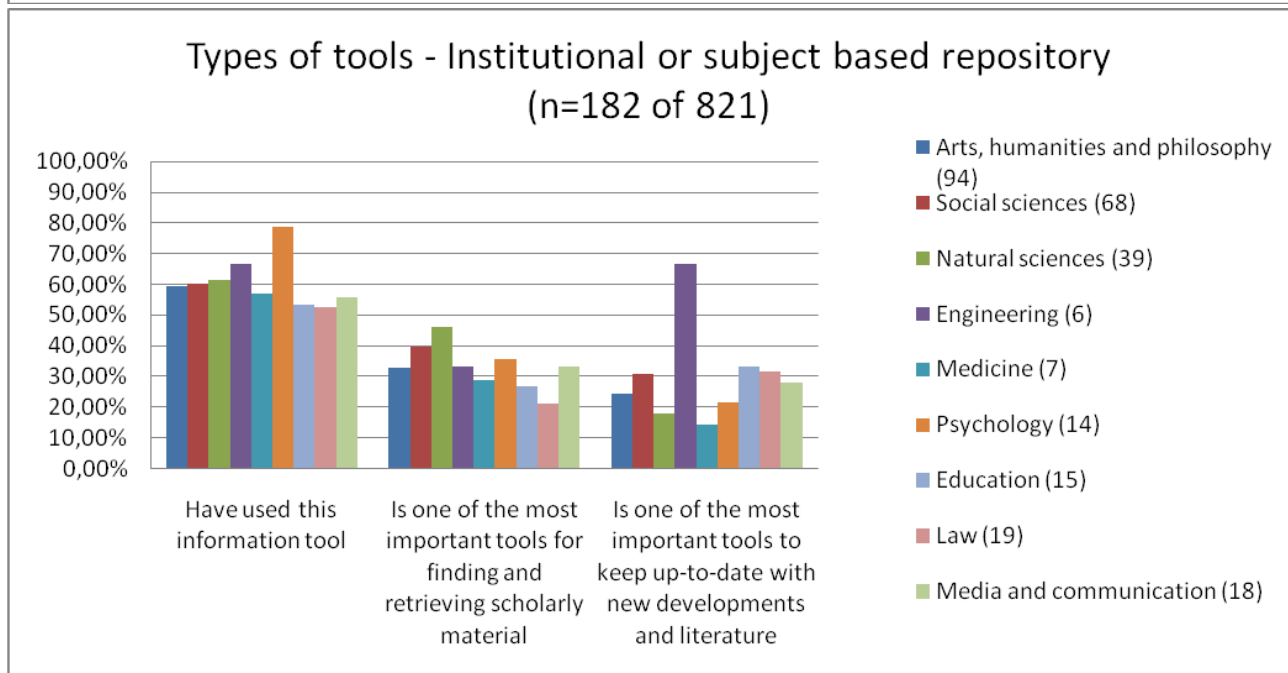
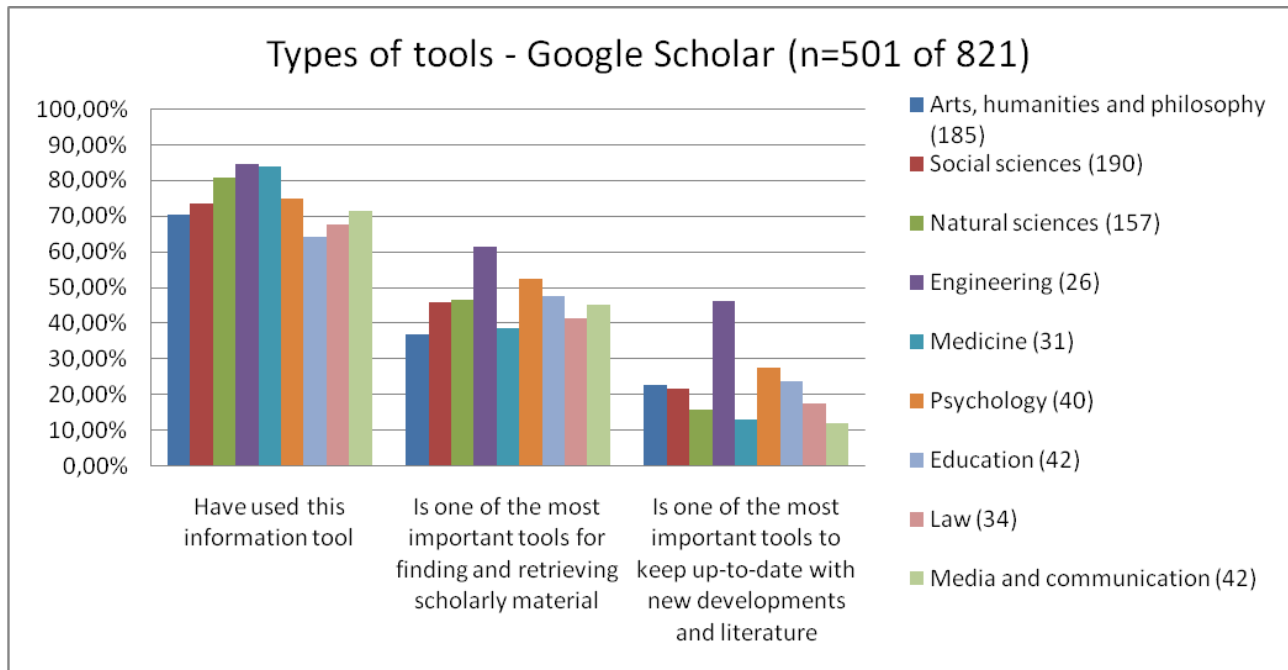


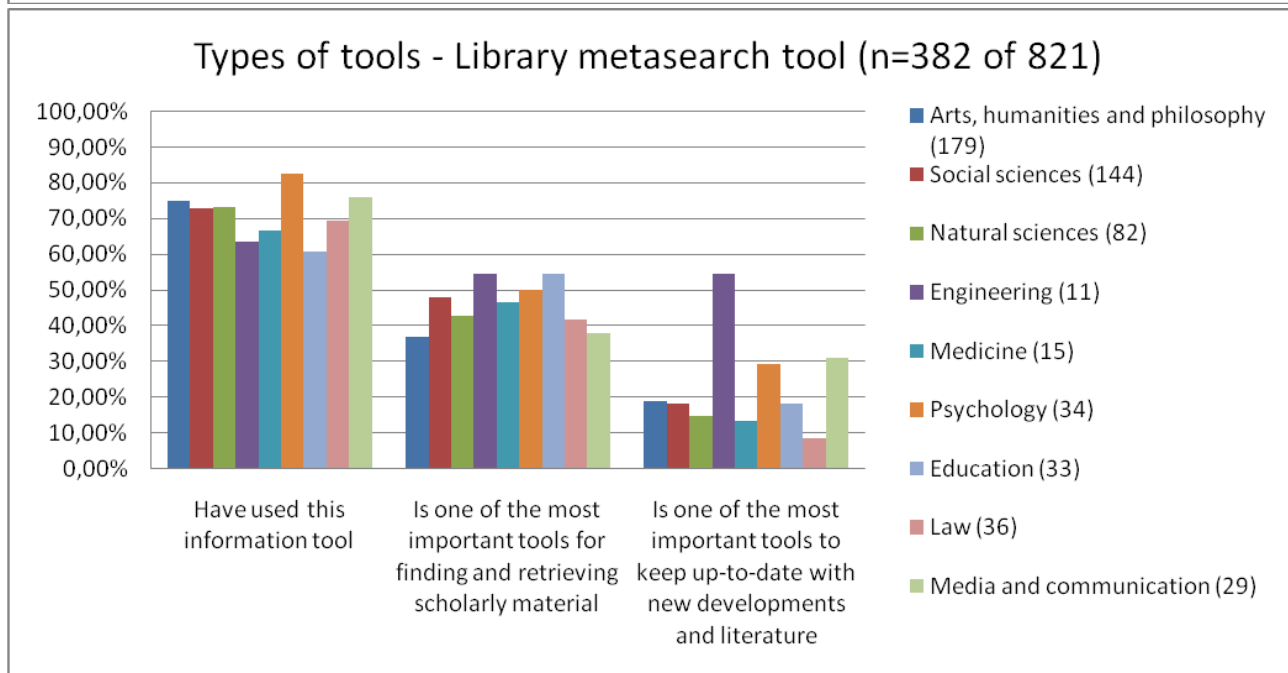
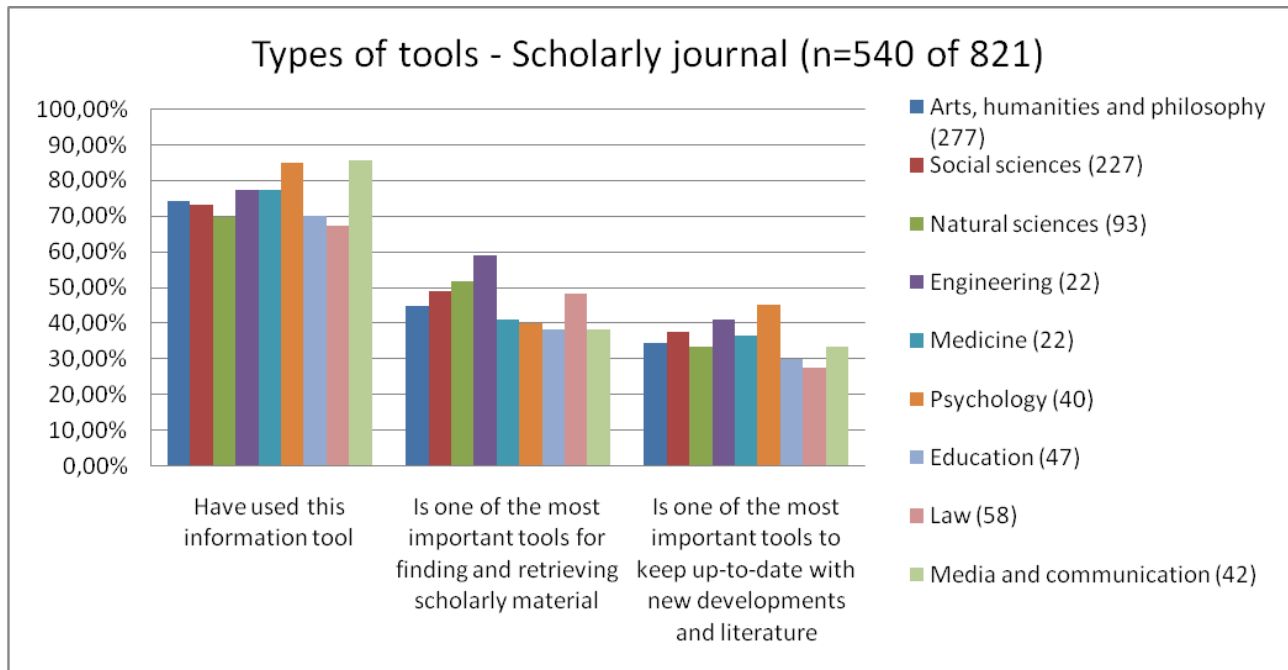
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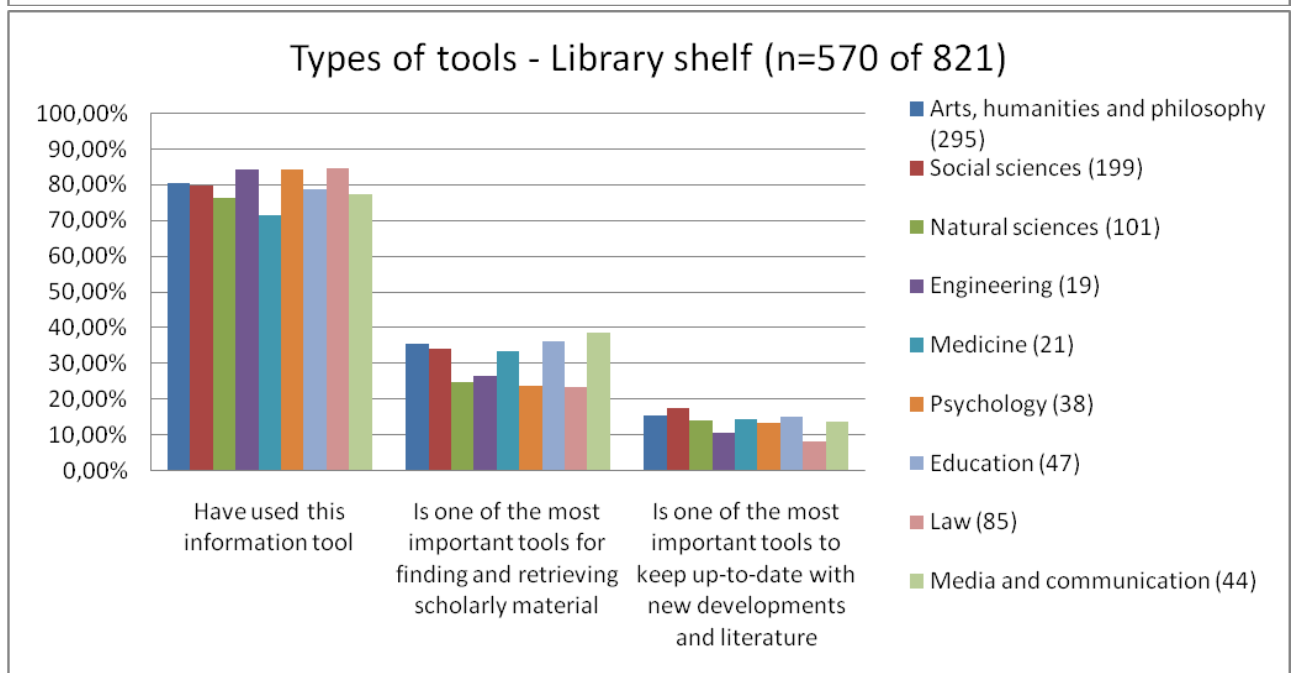
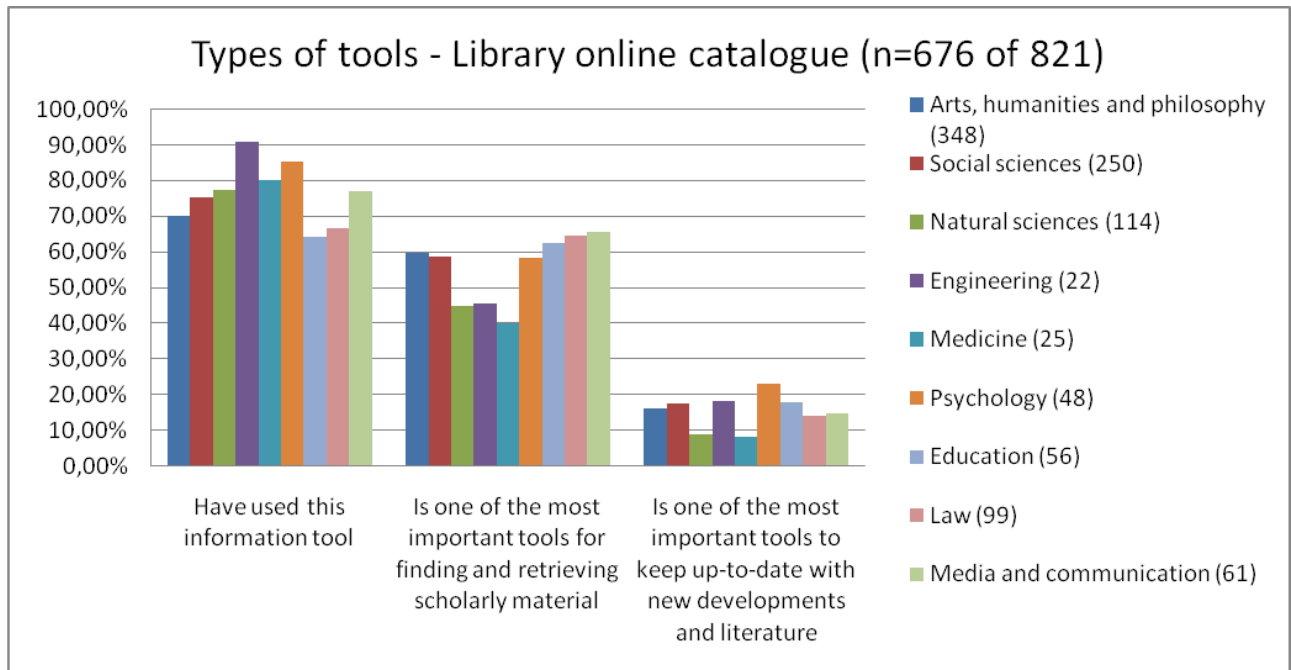


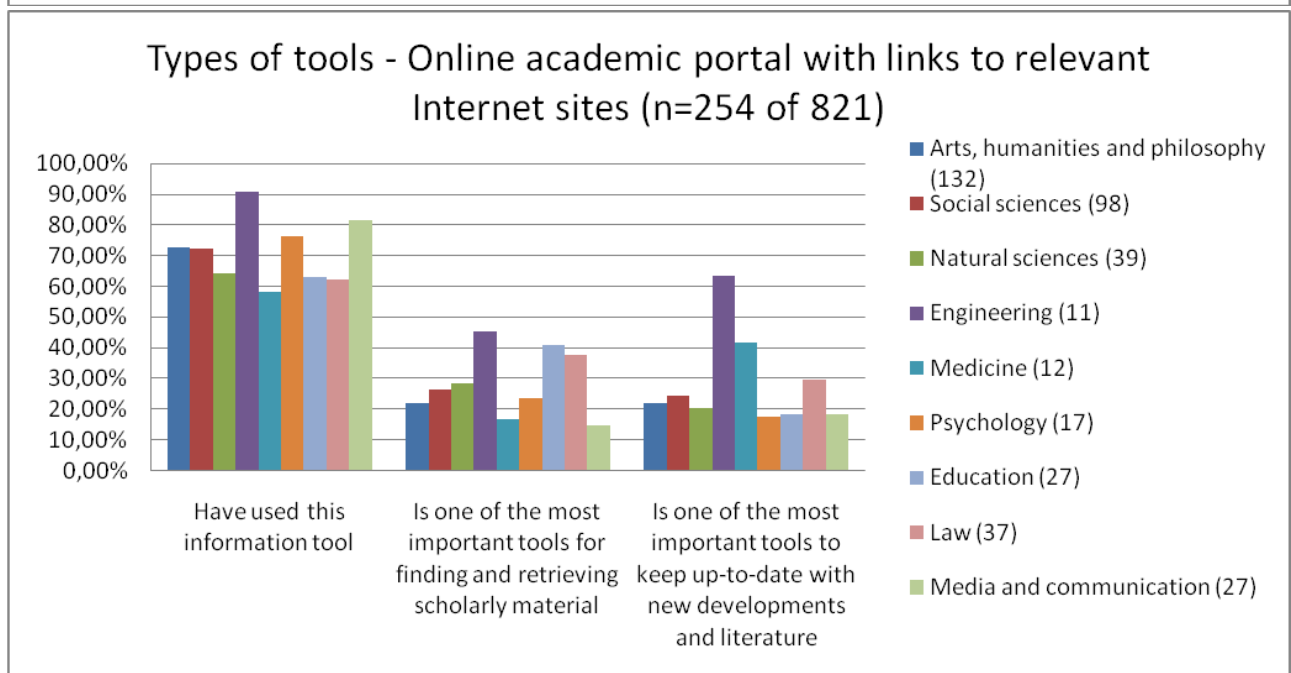
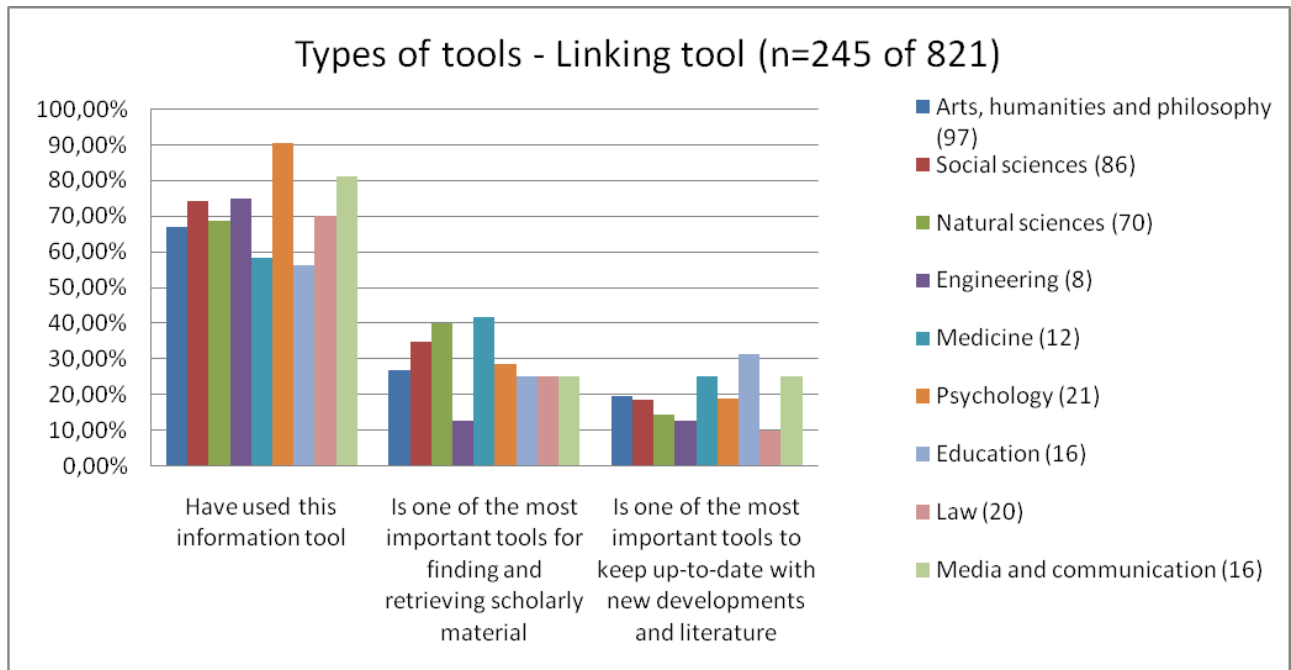


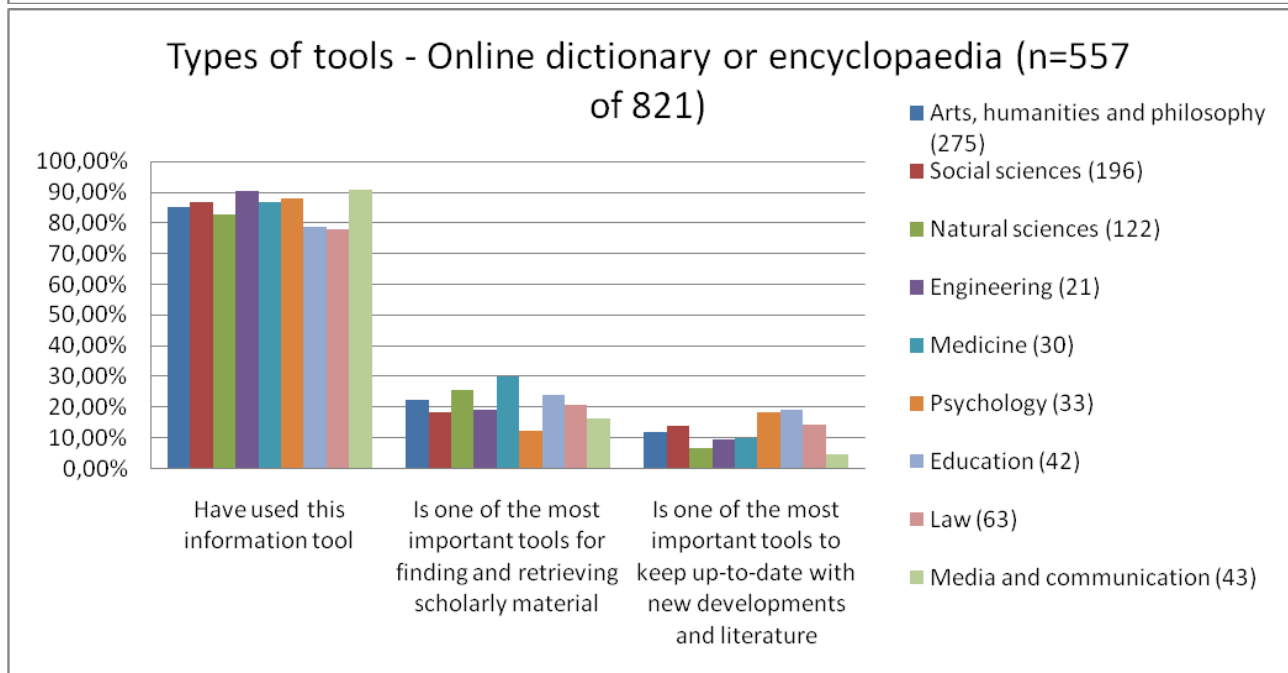
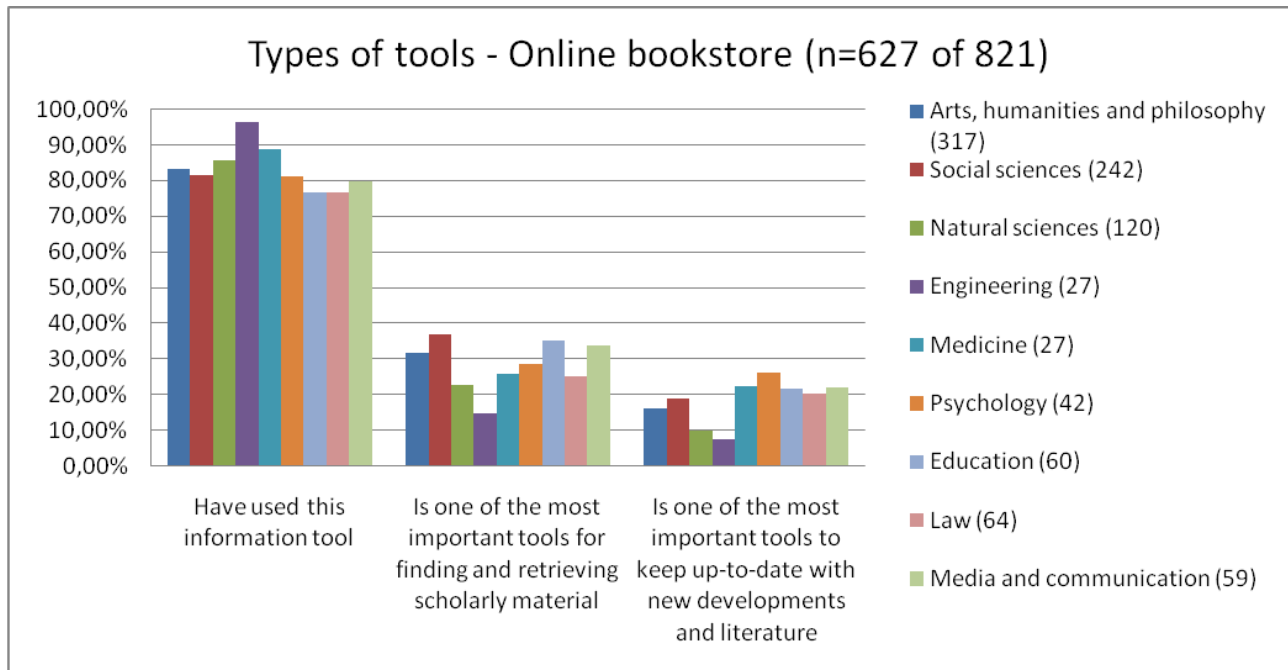


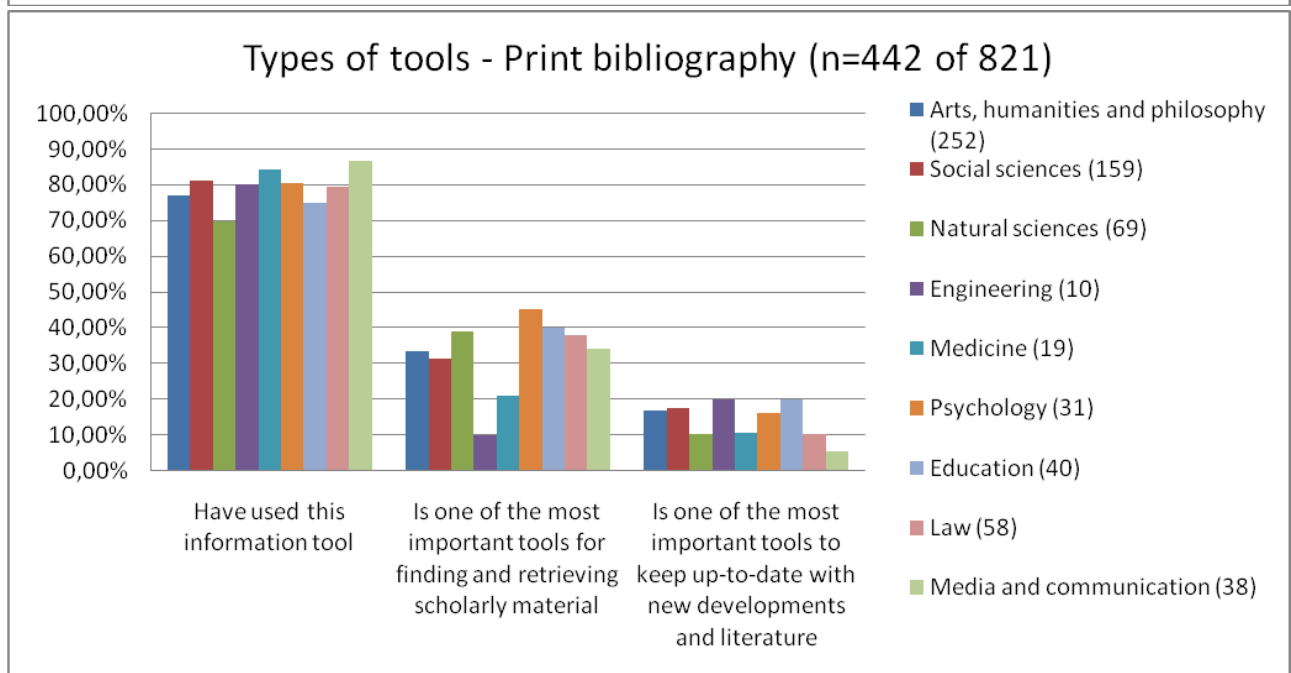
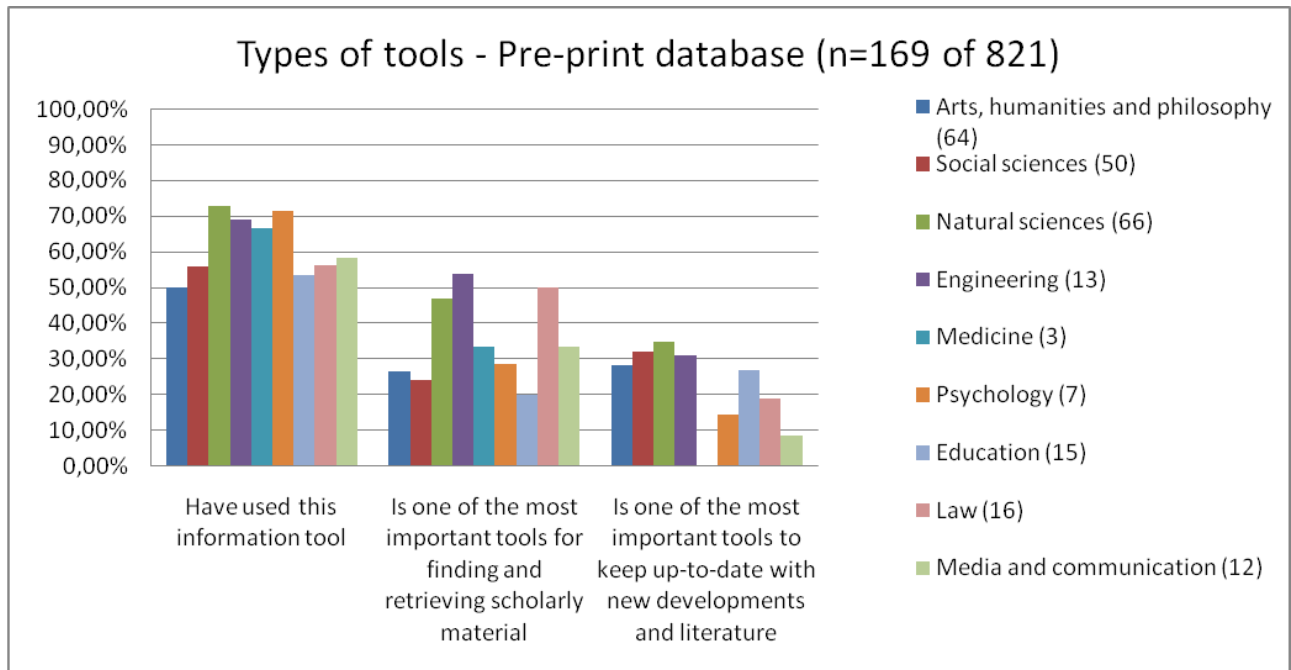


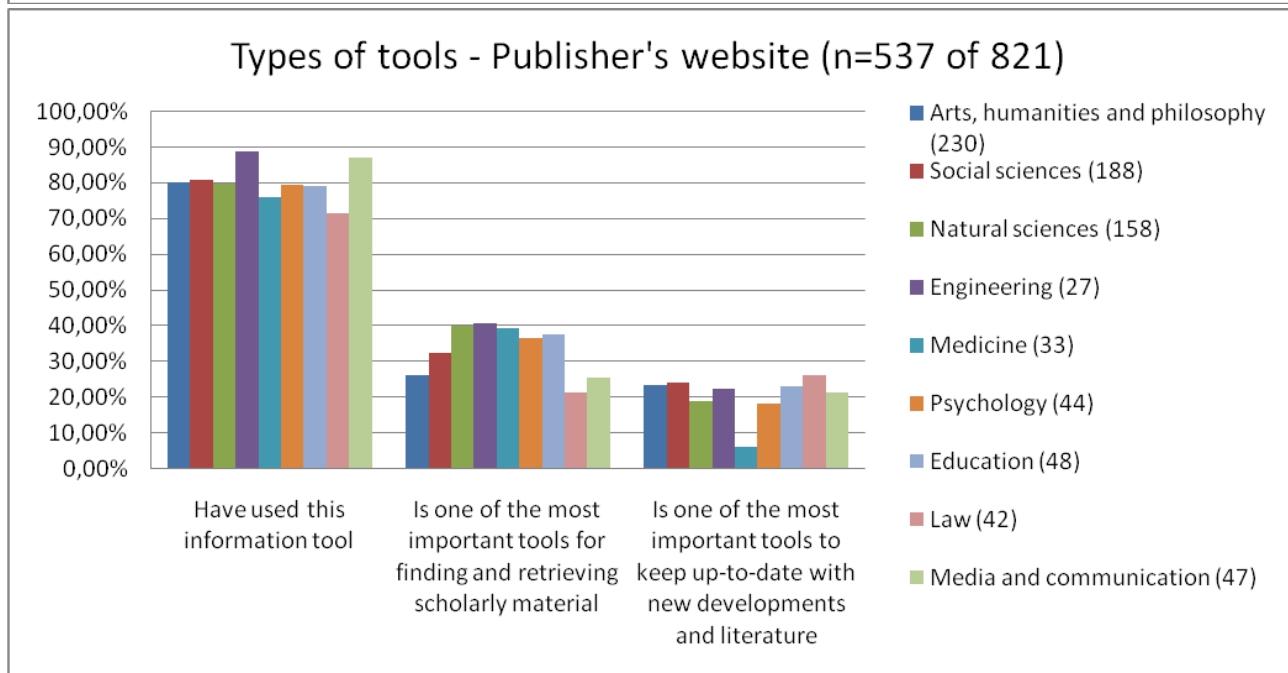
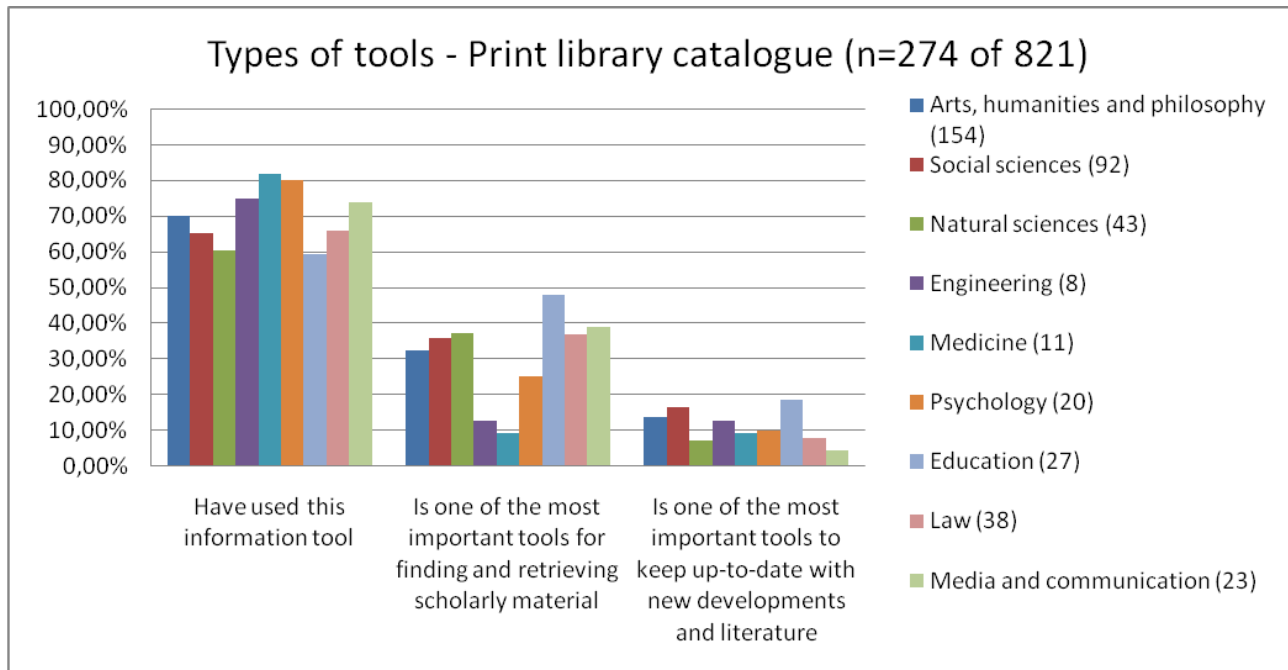


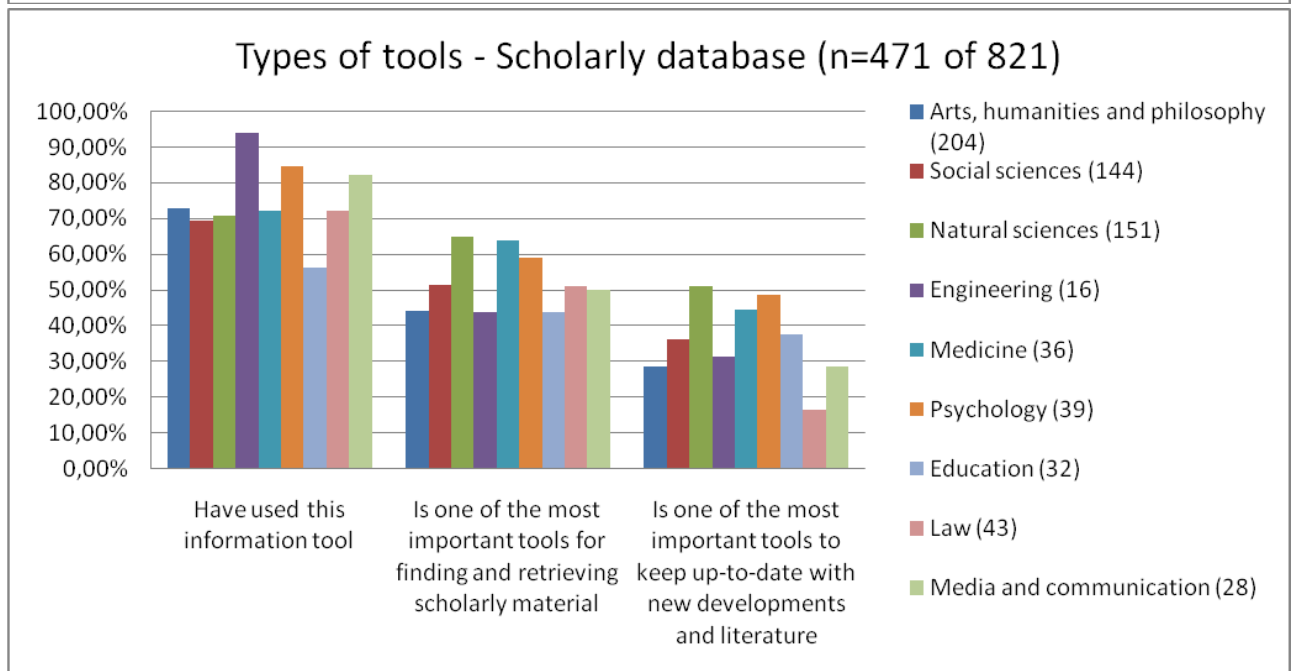
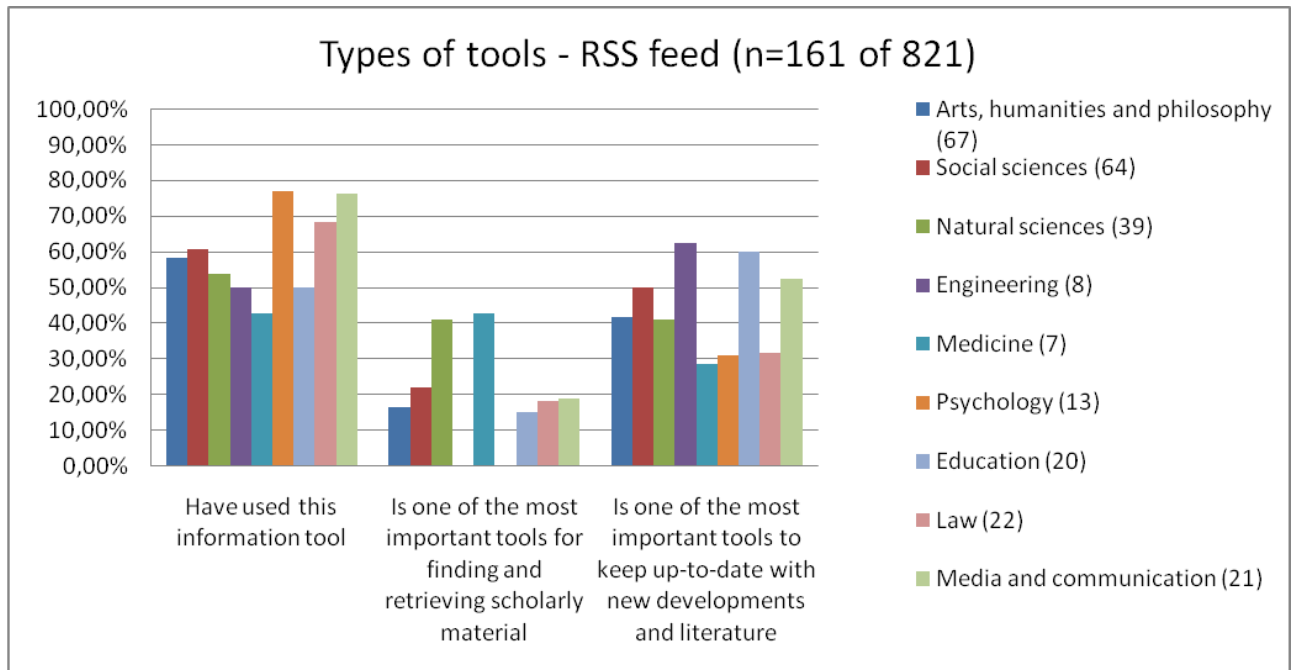


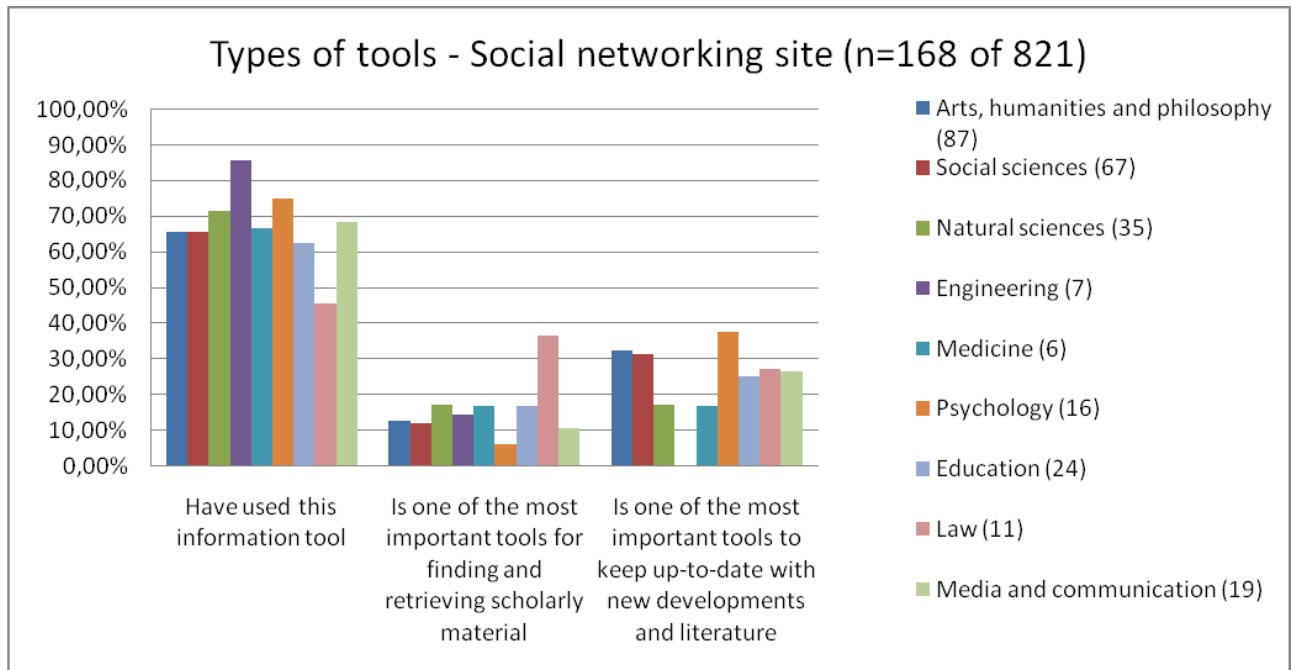




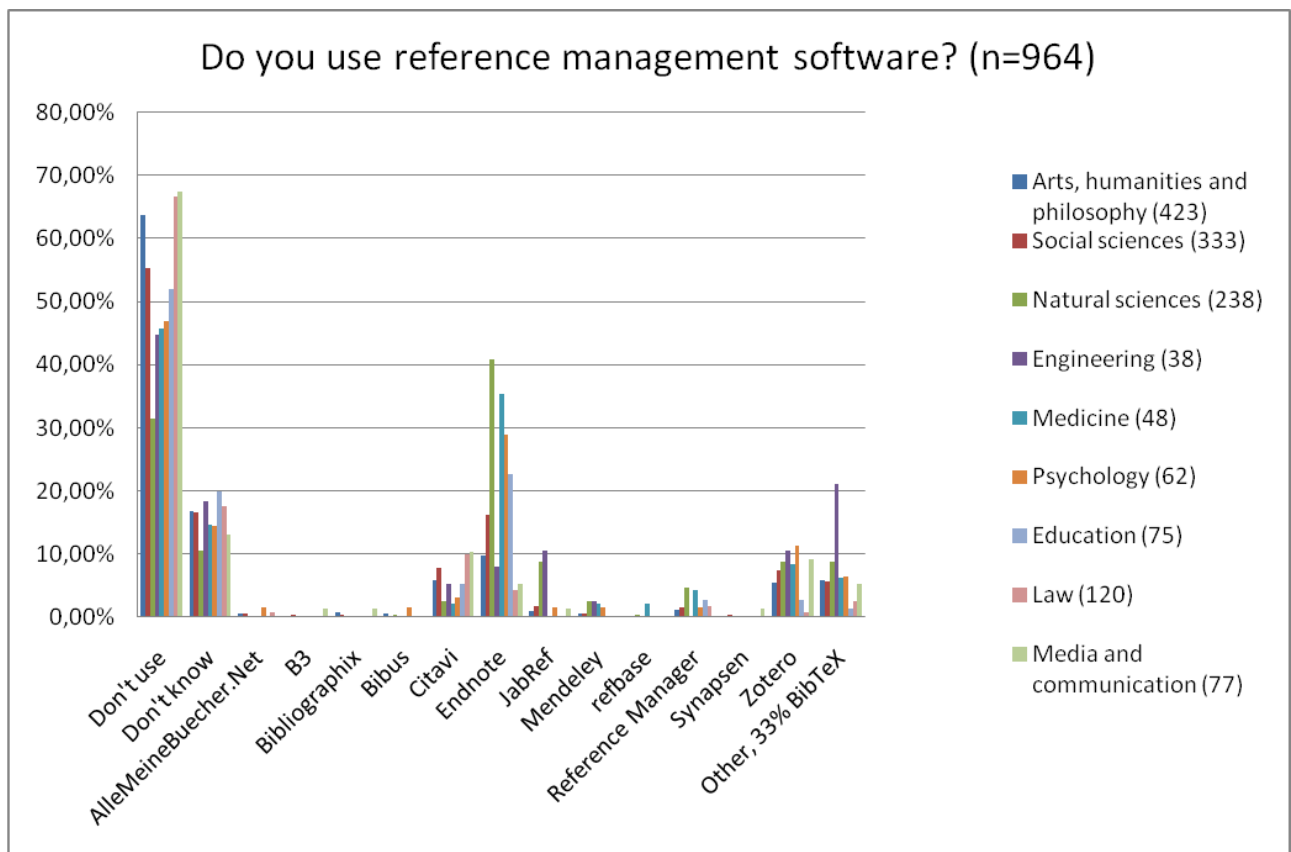




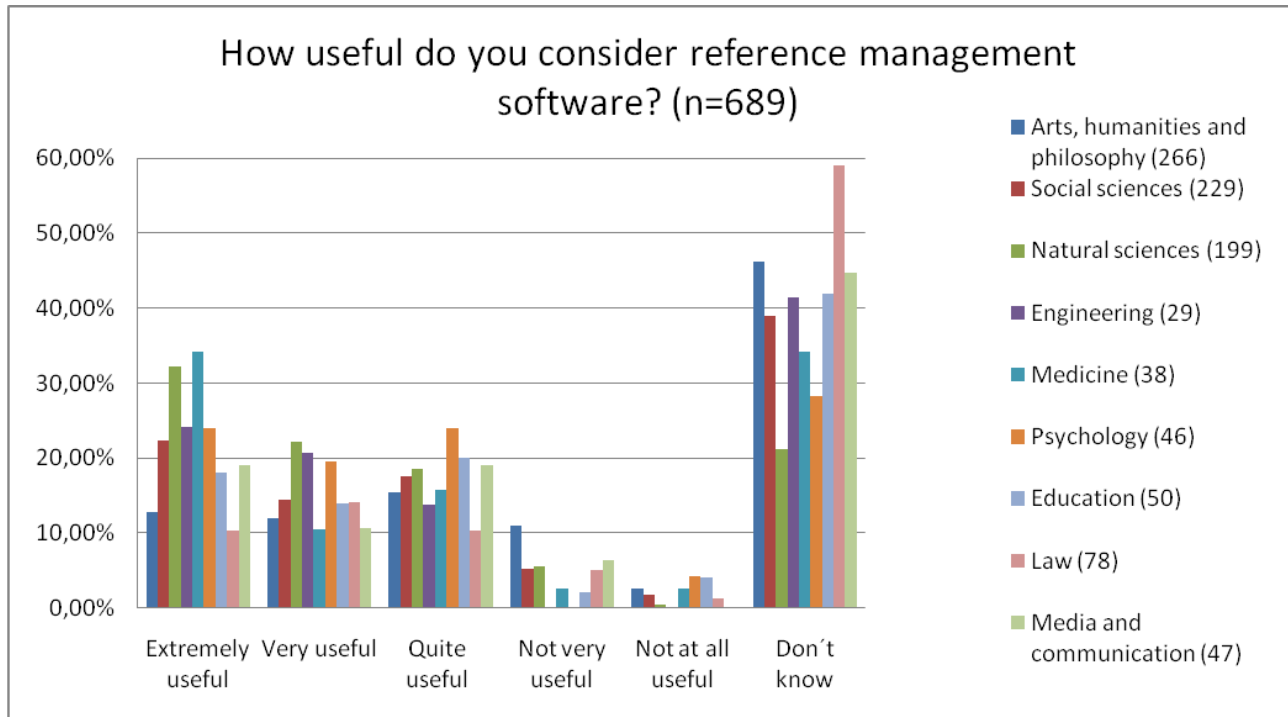




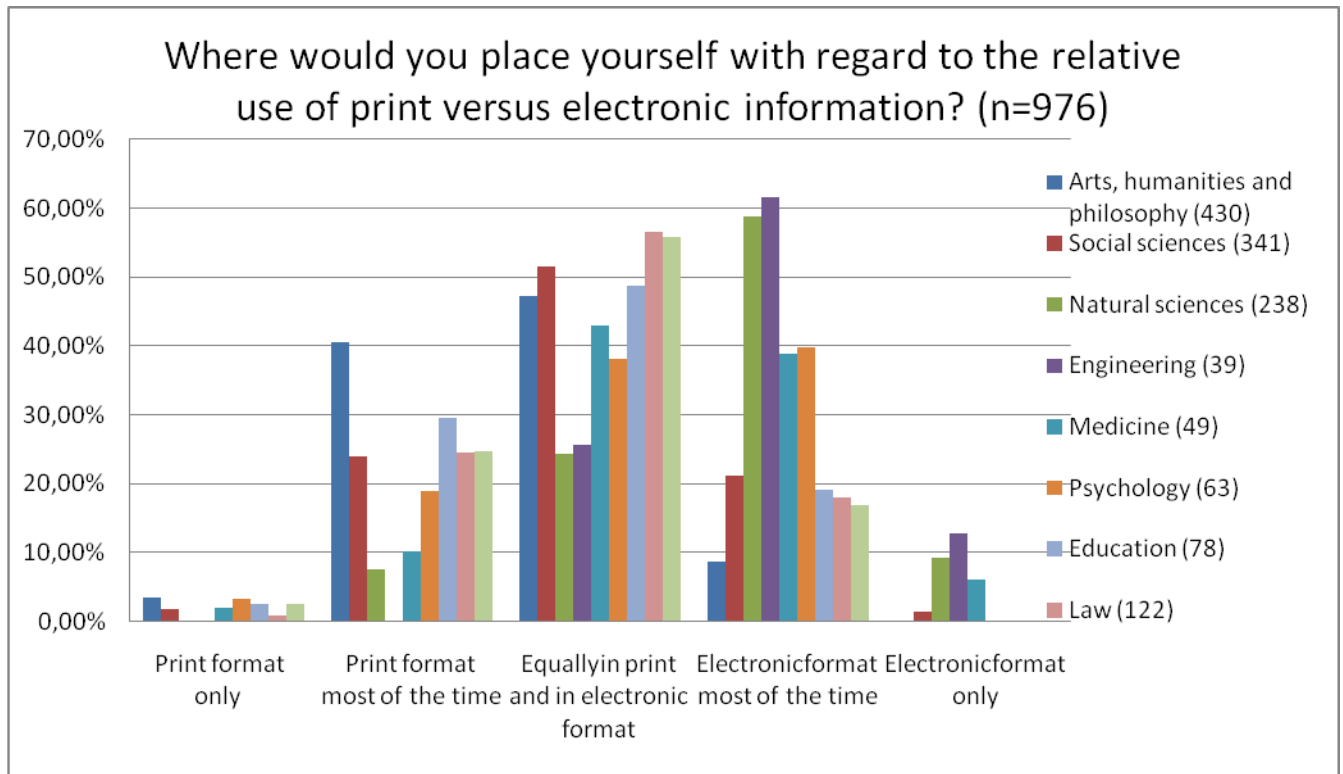
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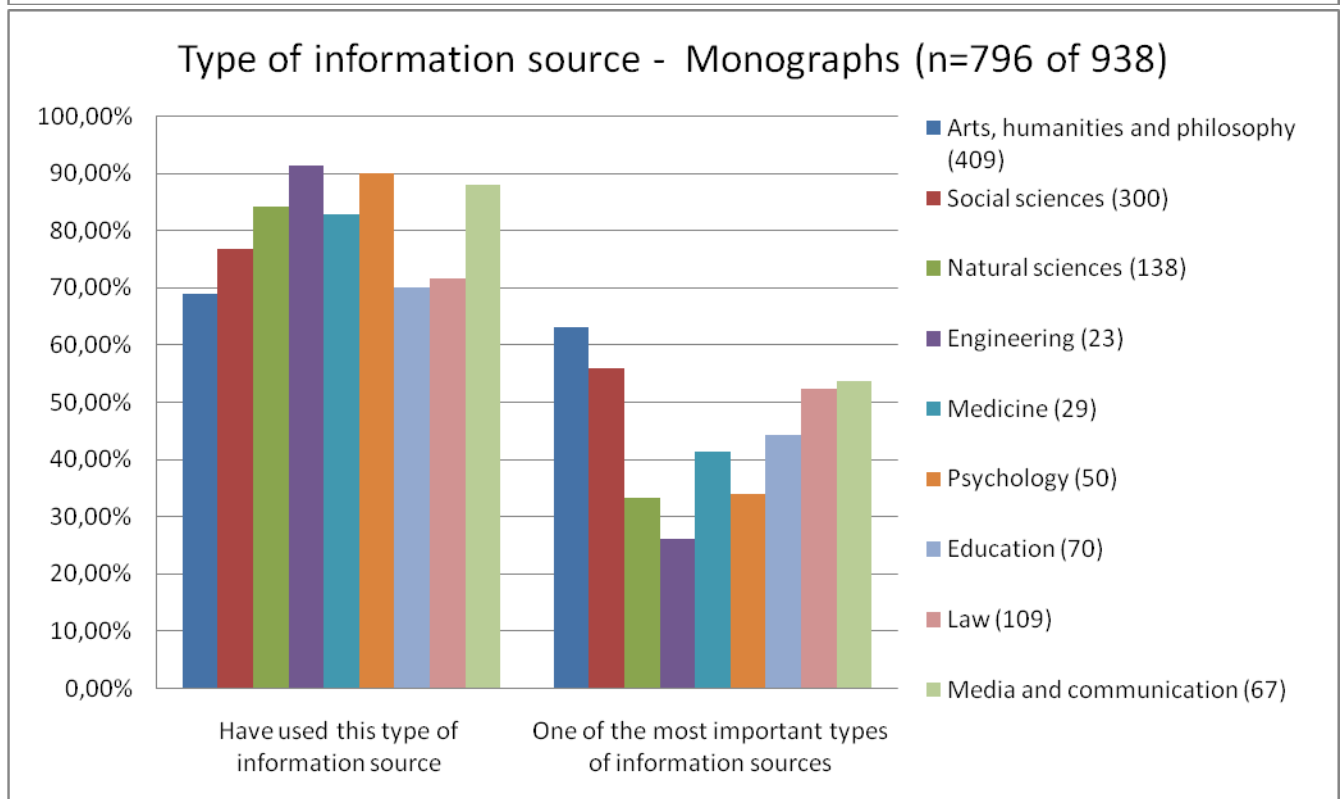
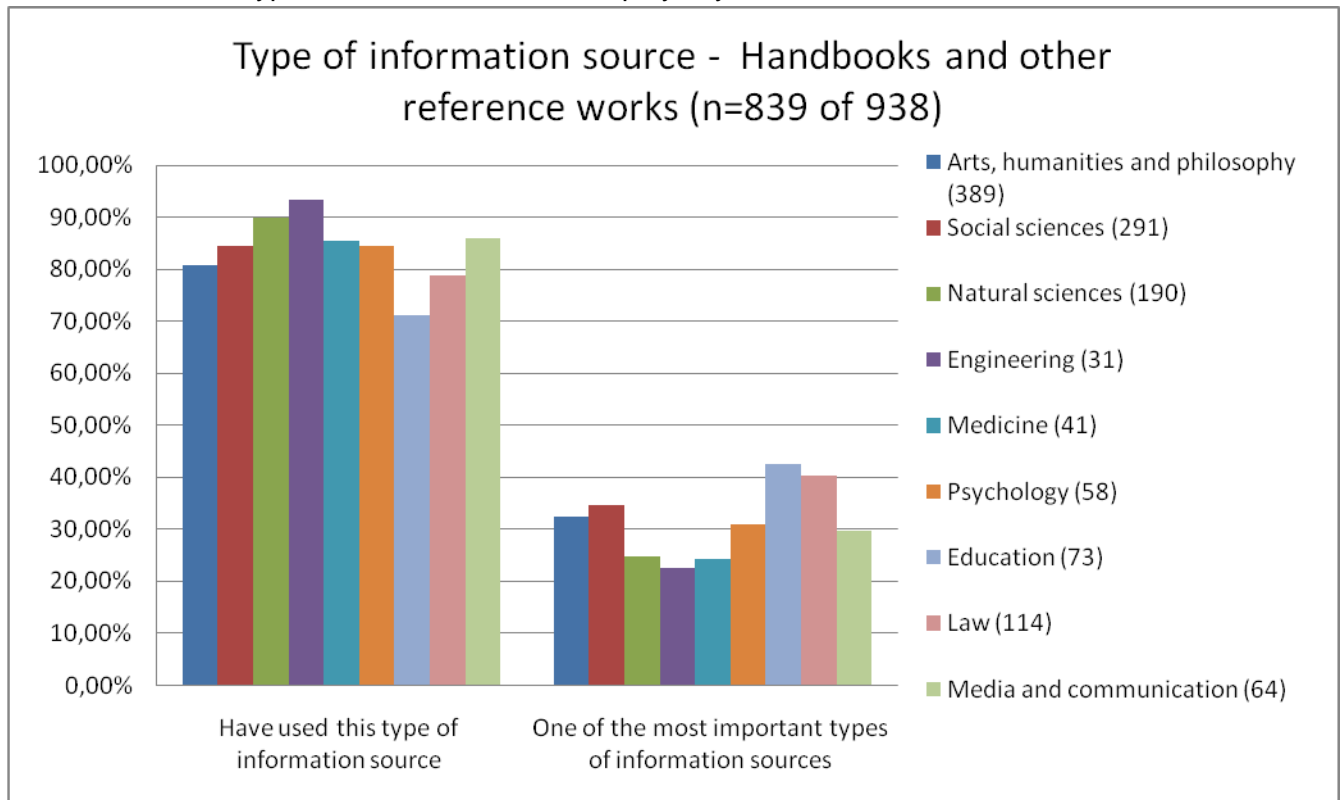
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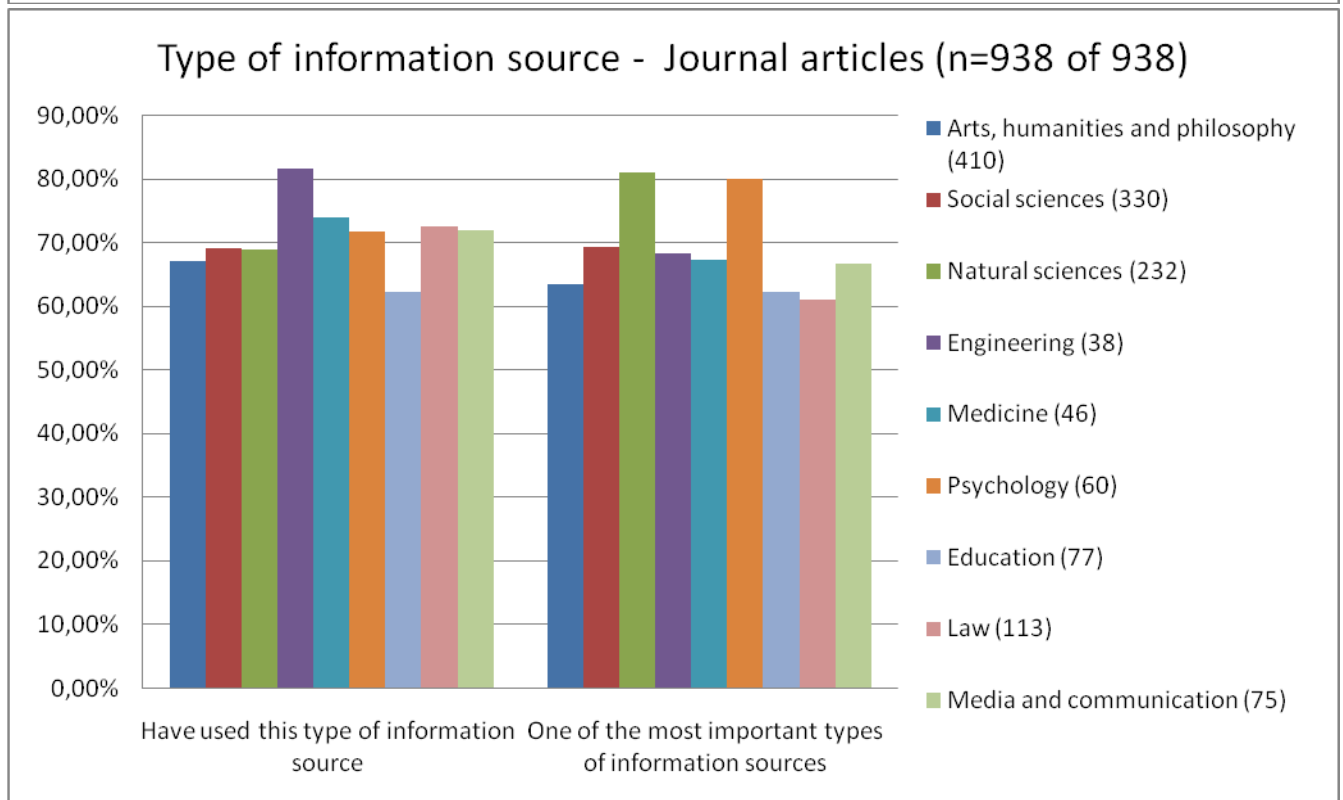
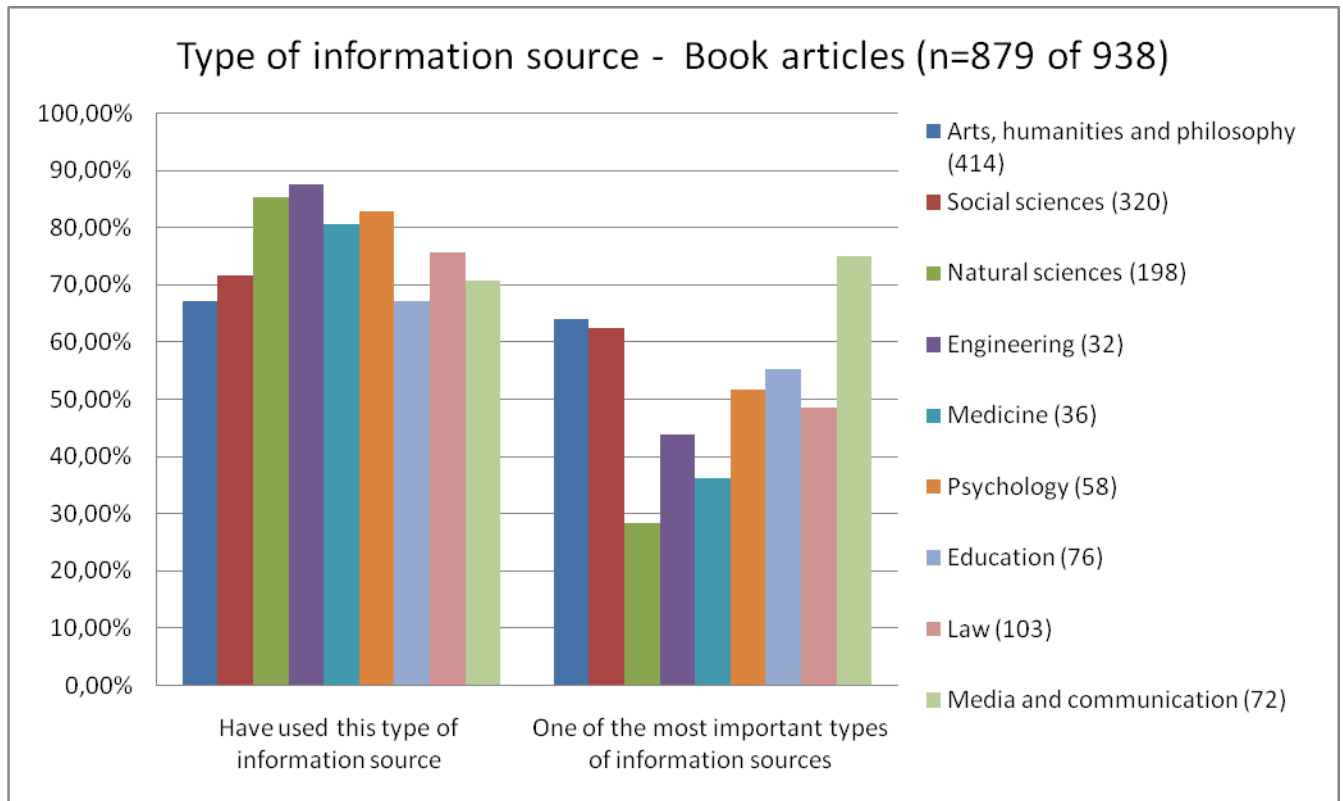


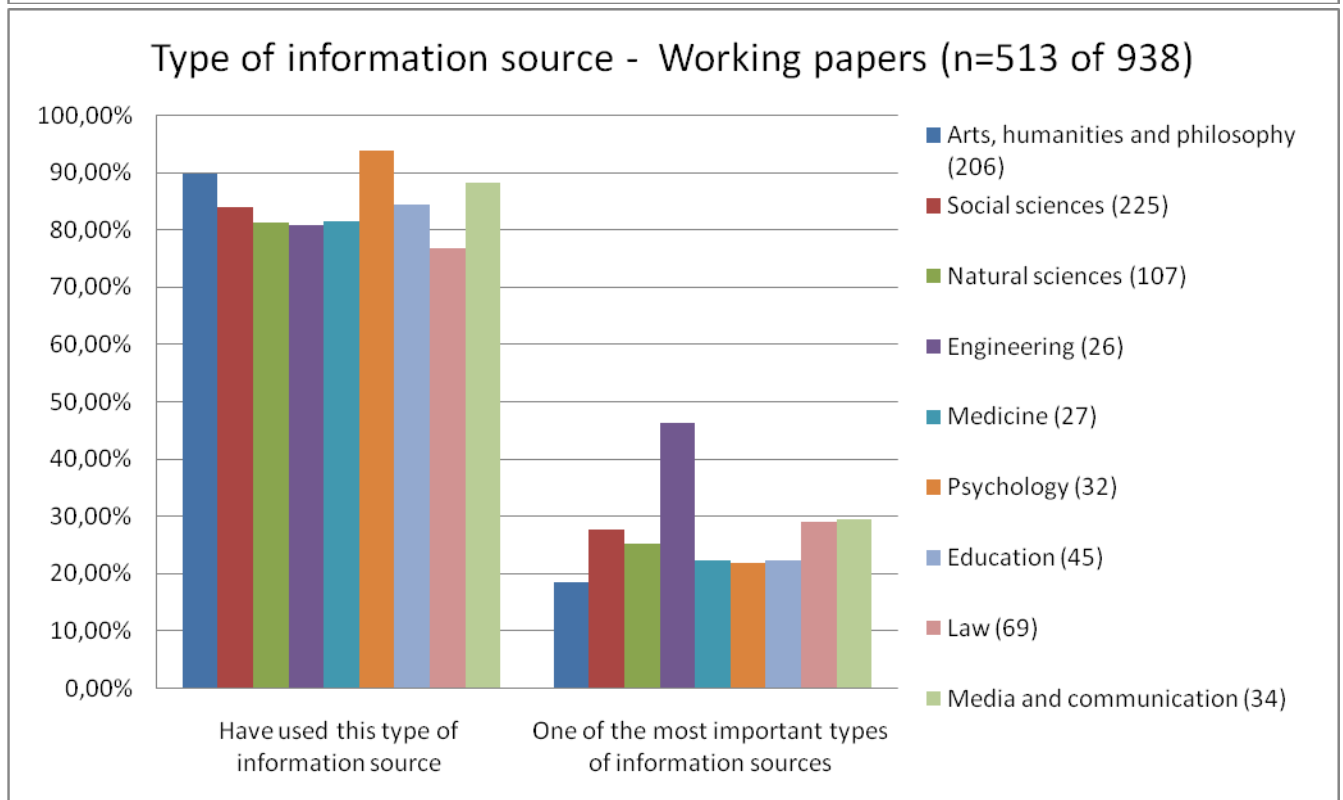
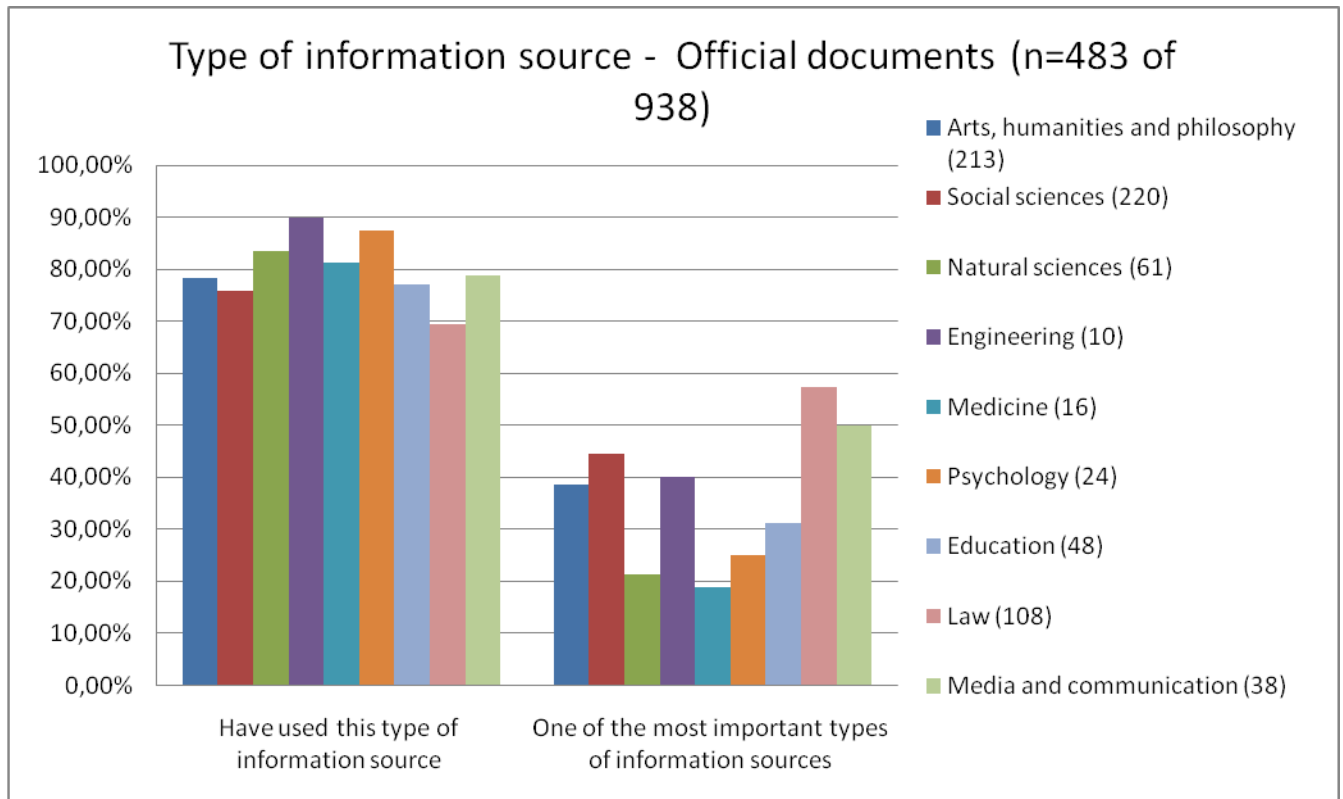
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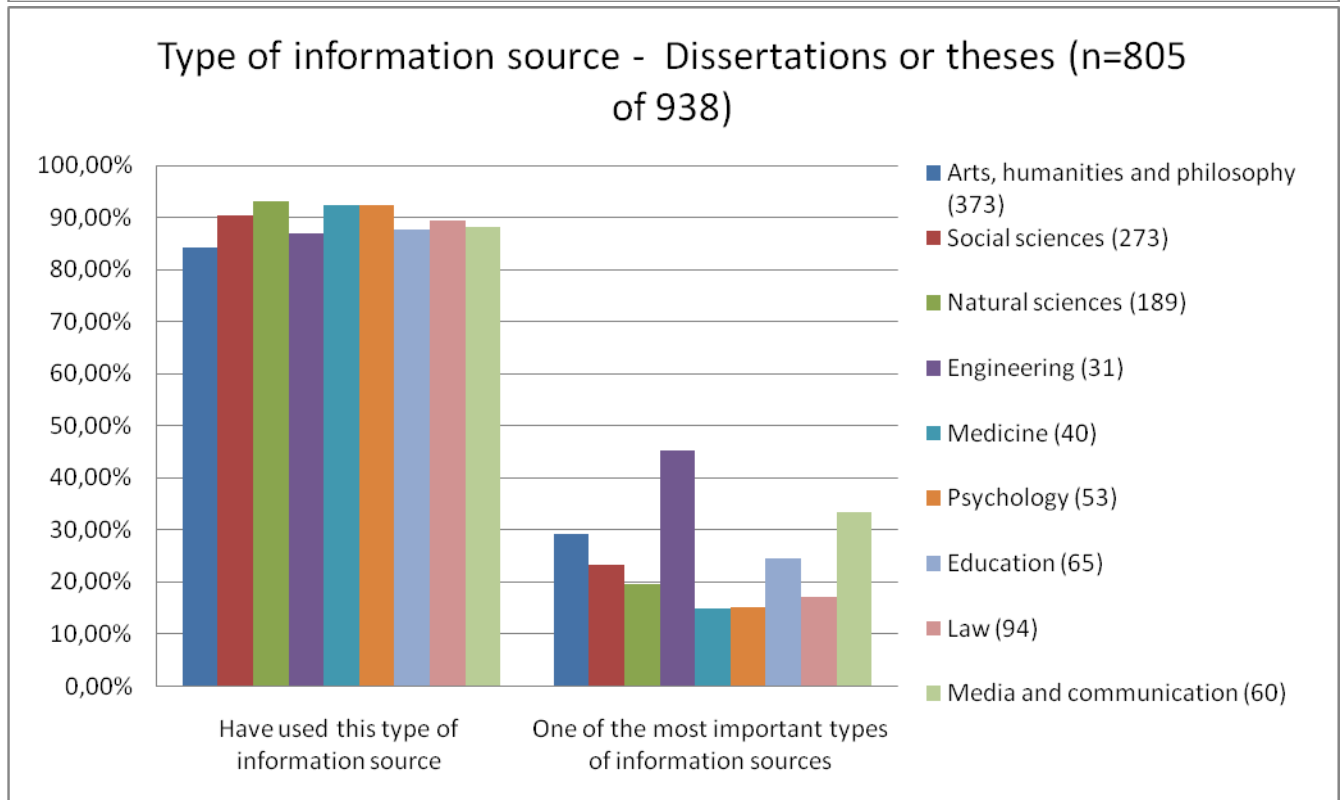
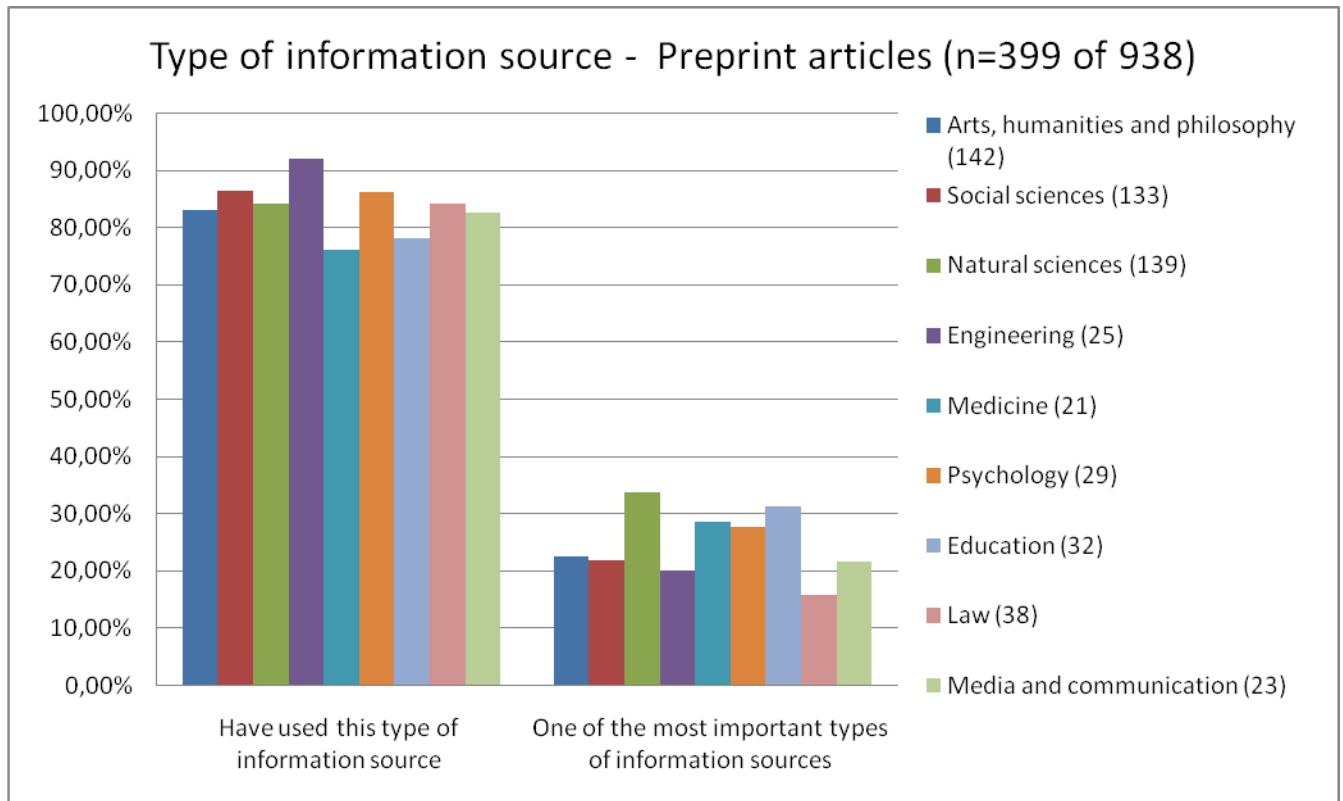


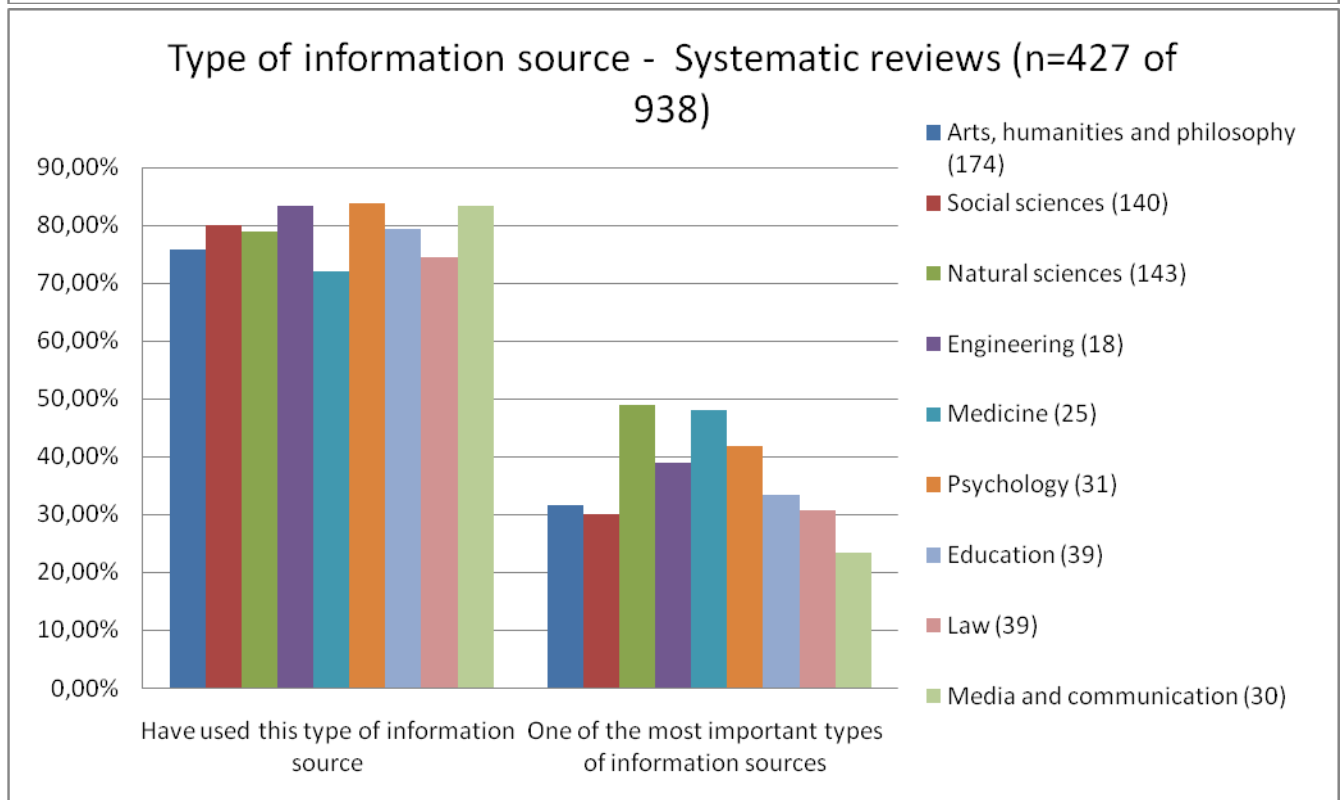
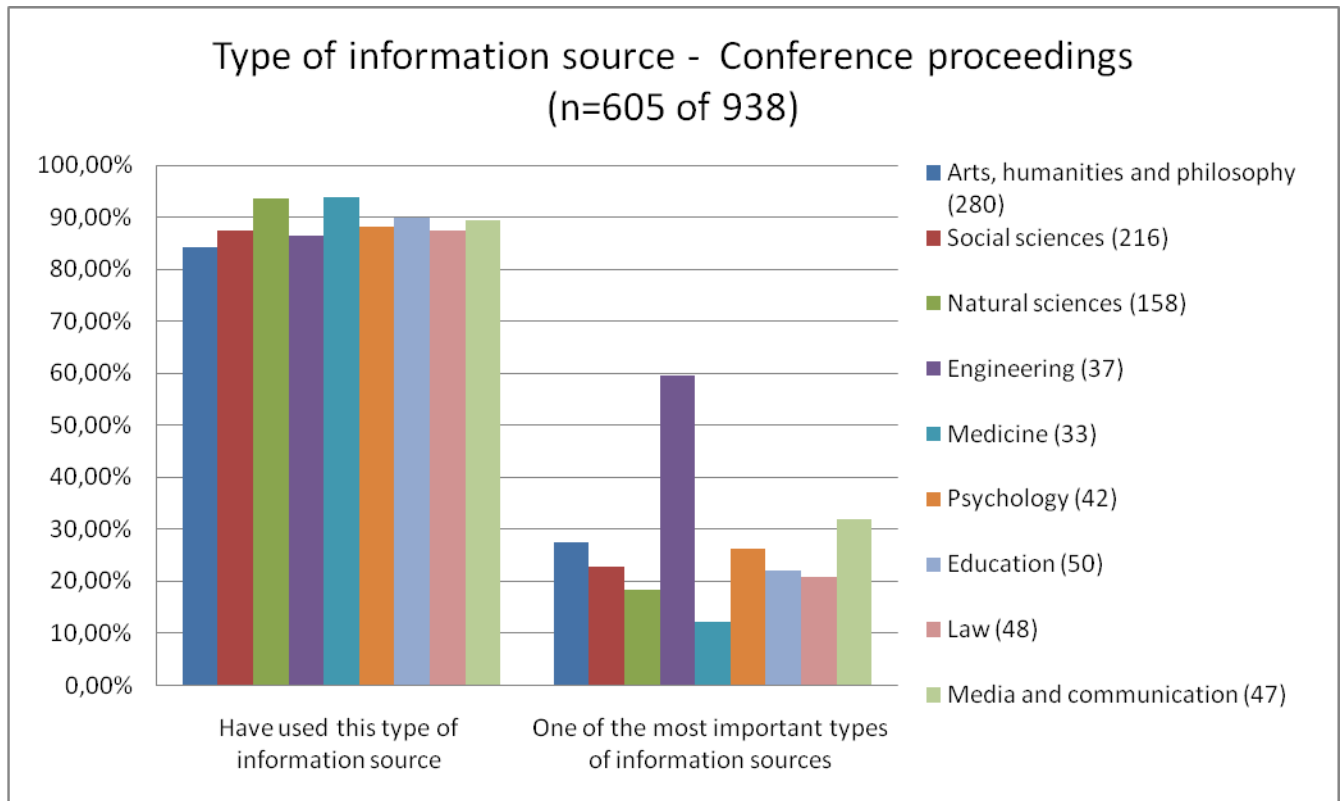
au c2 f7 u - Different areas of research require different types of information sources. Consider what role different types of information sources play in your PhD research

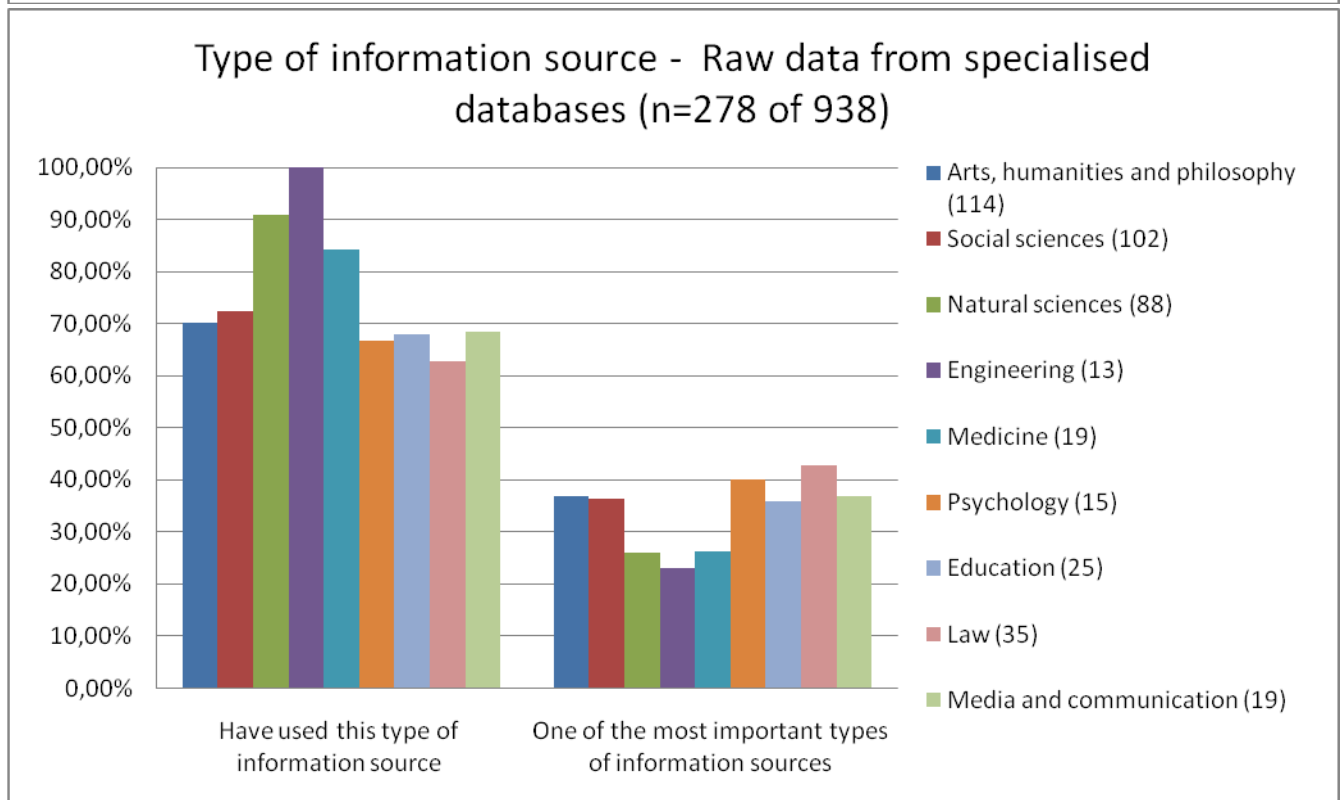
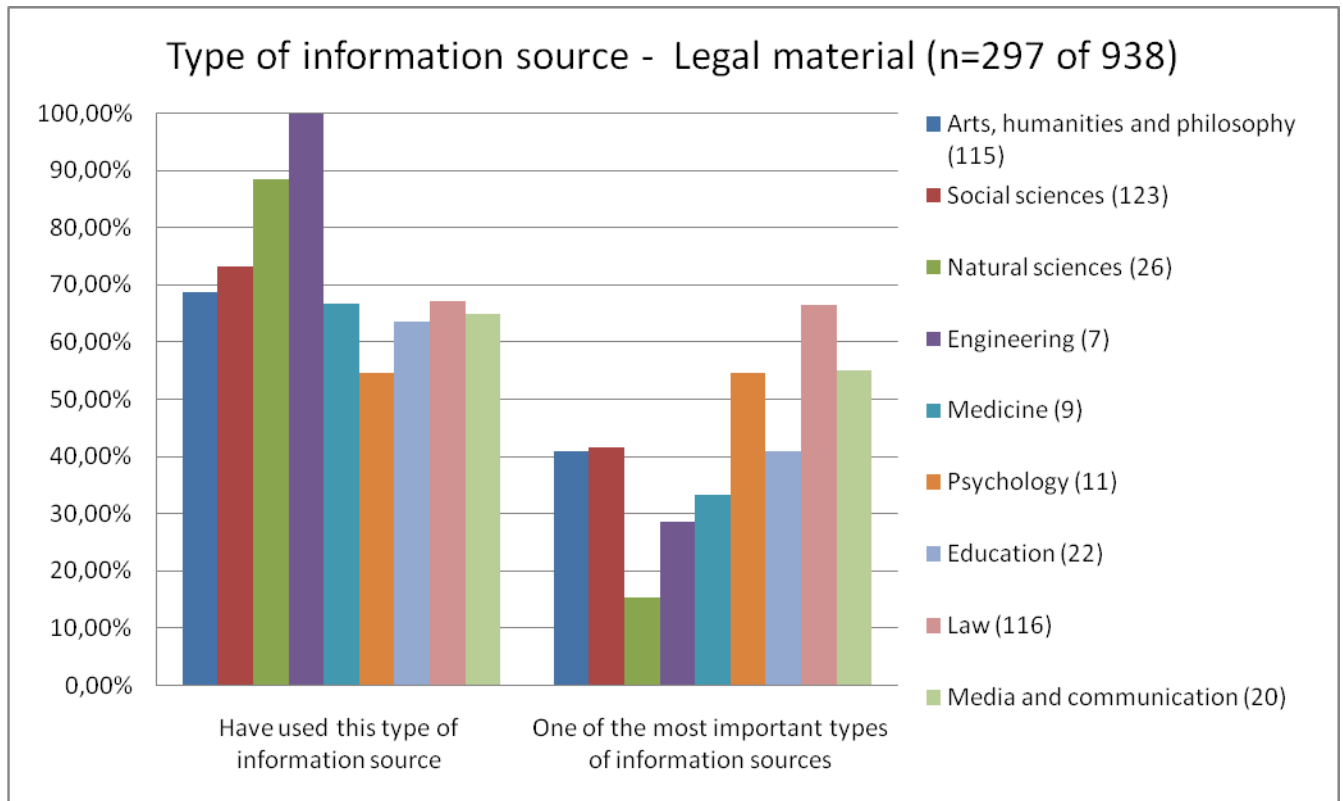


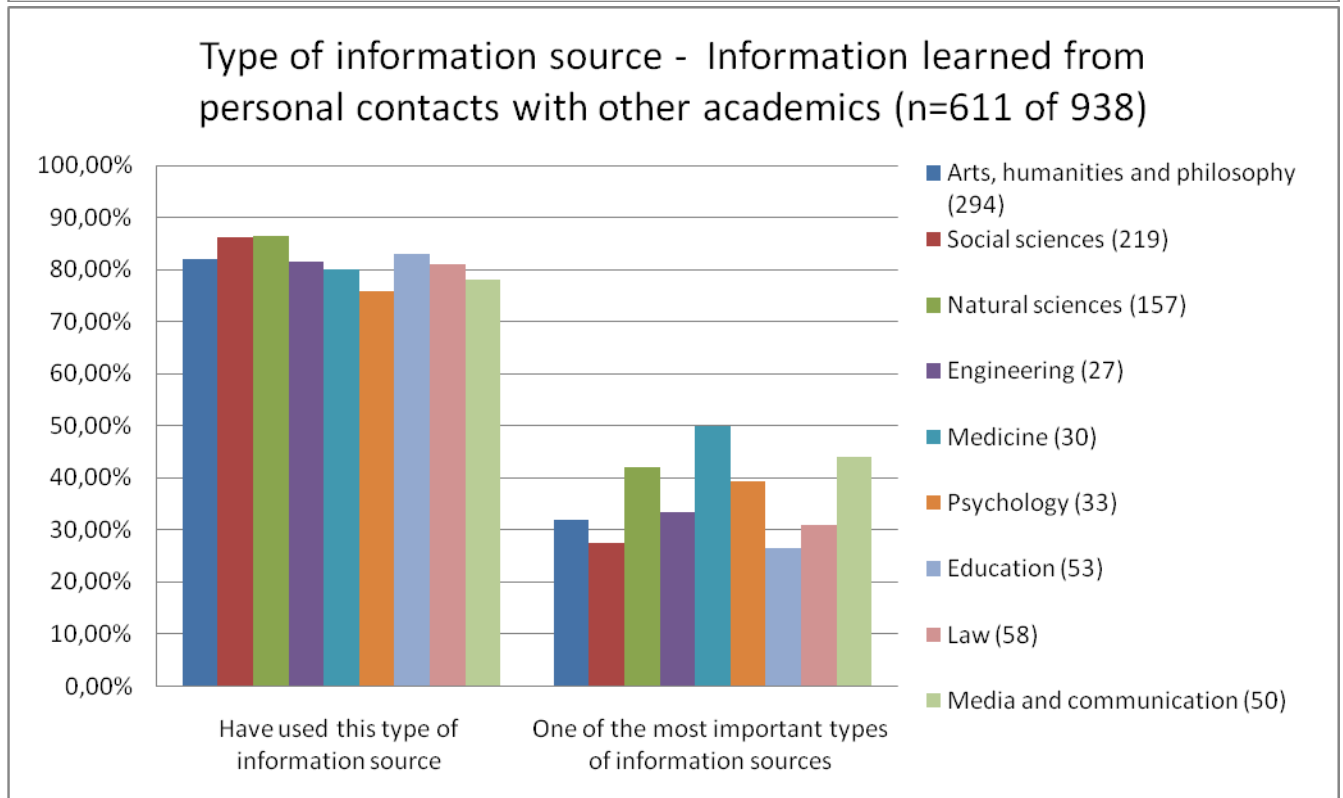
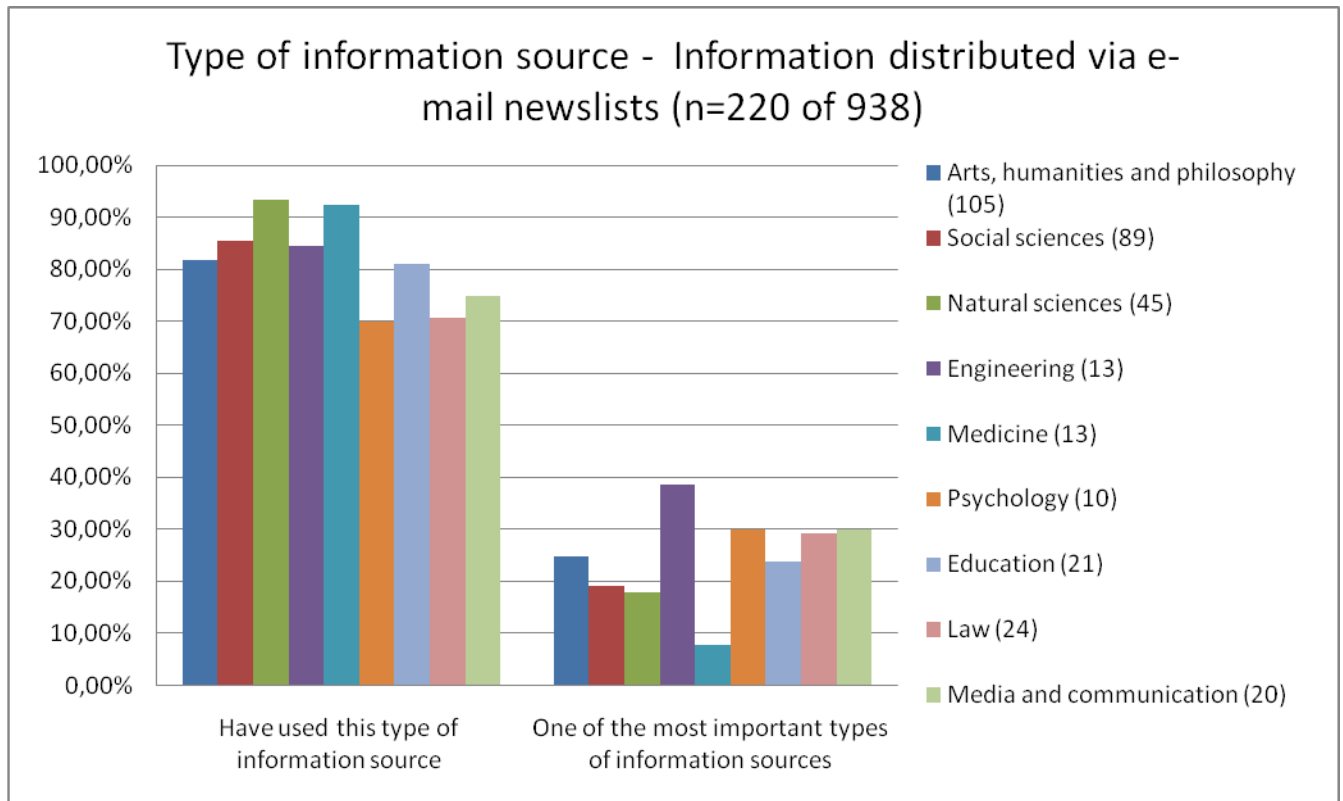


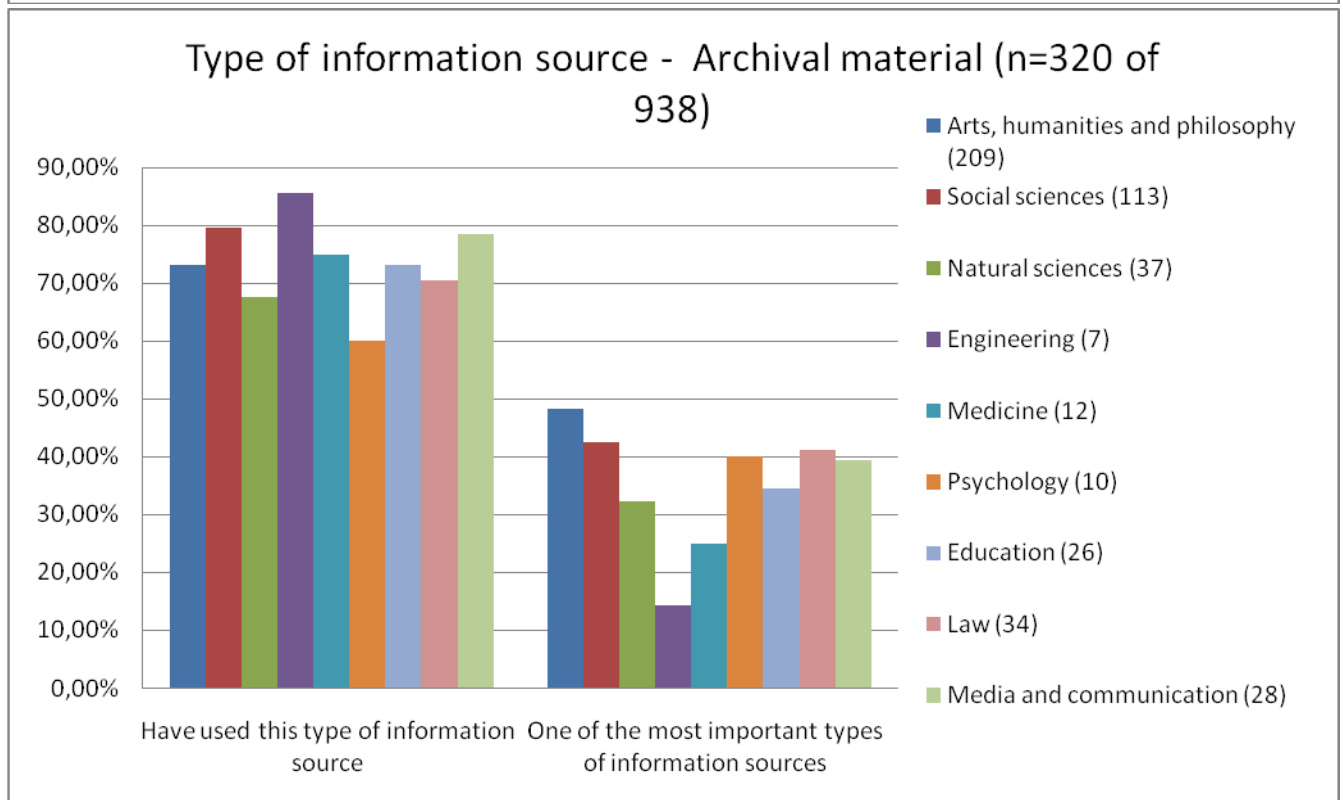
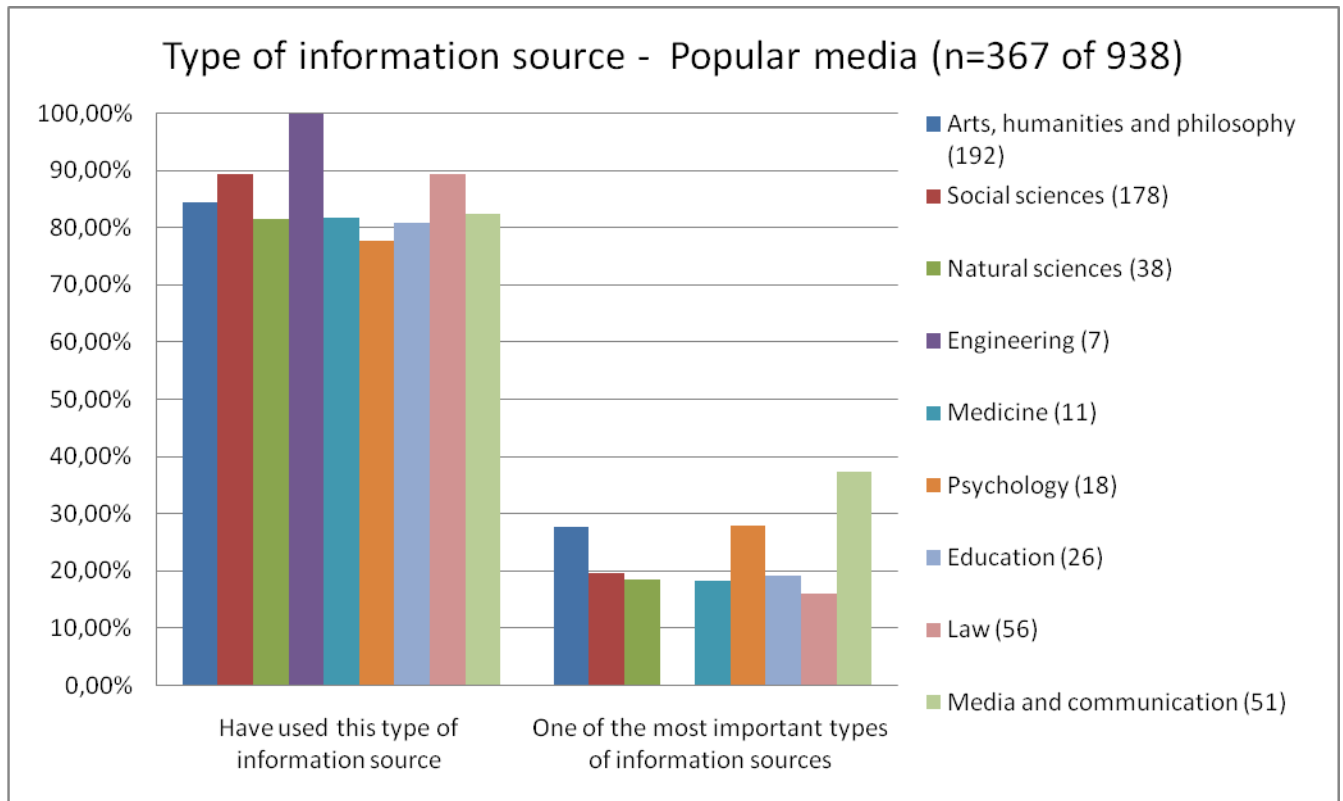


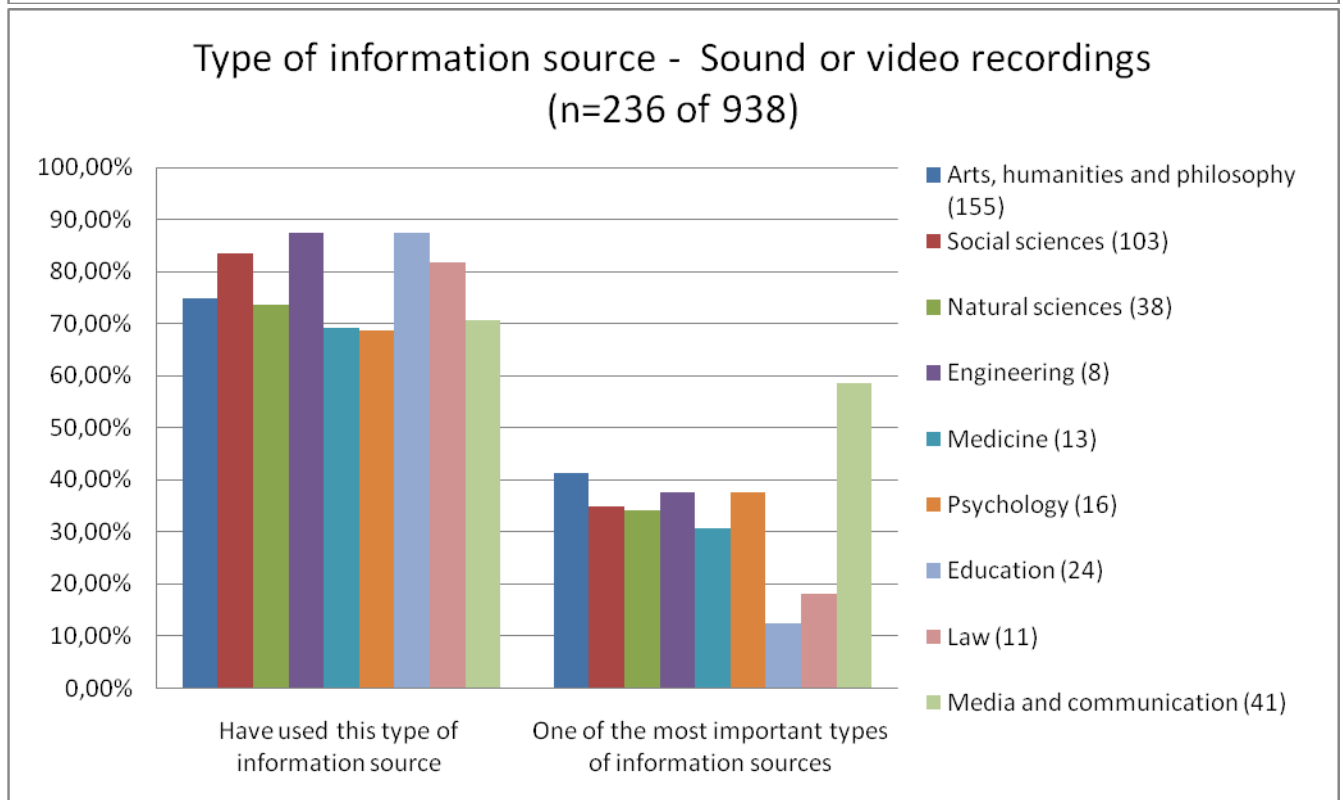
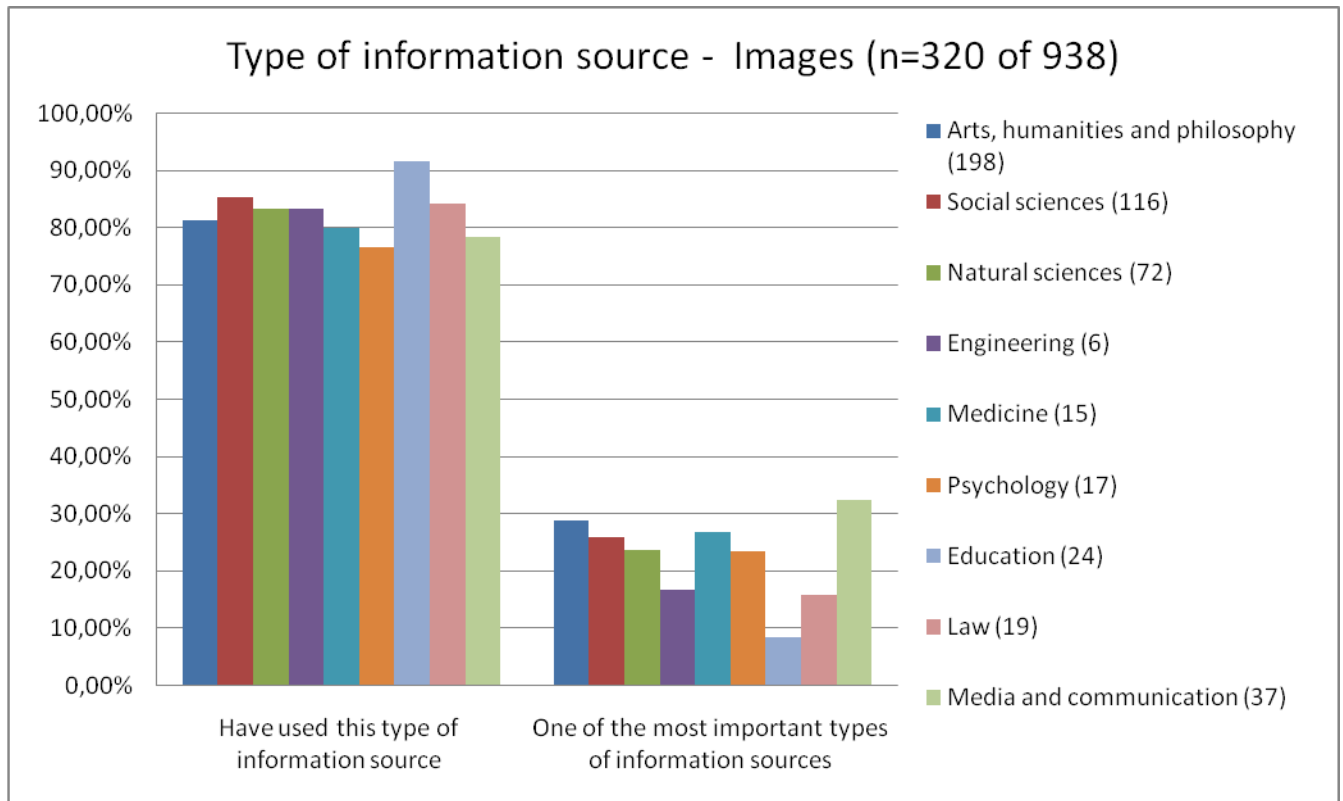




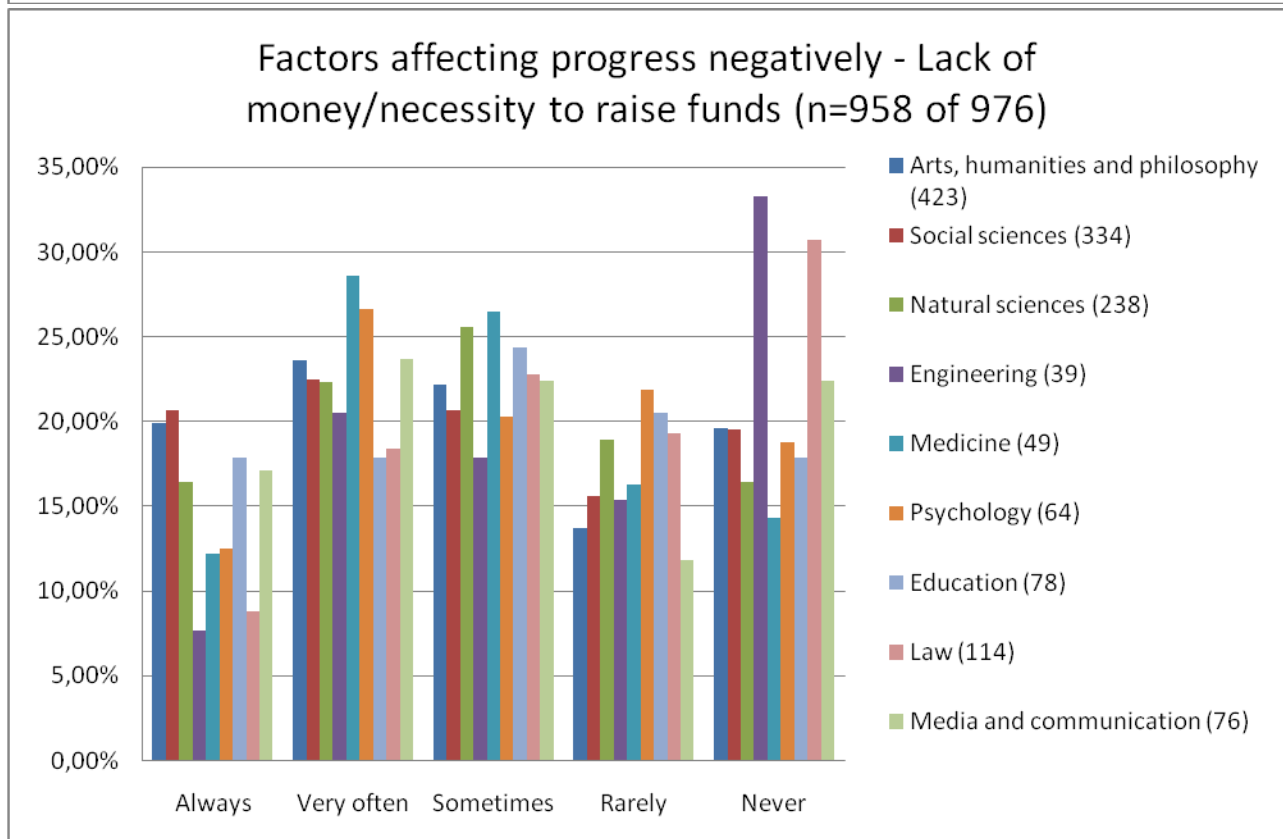
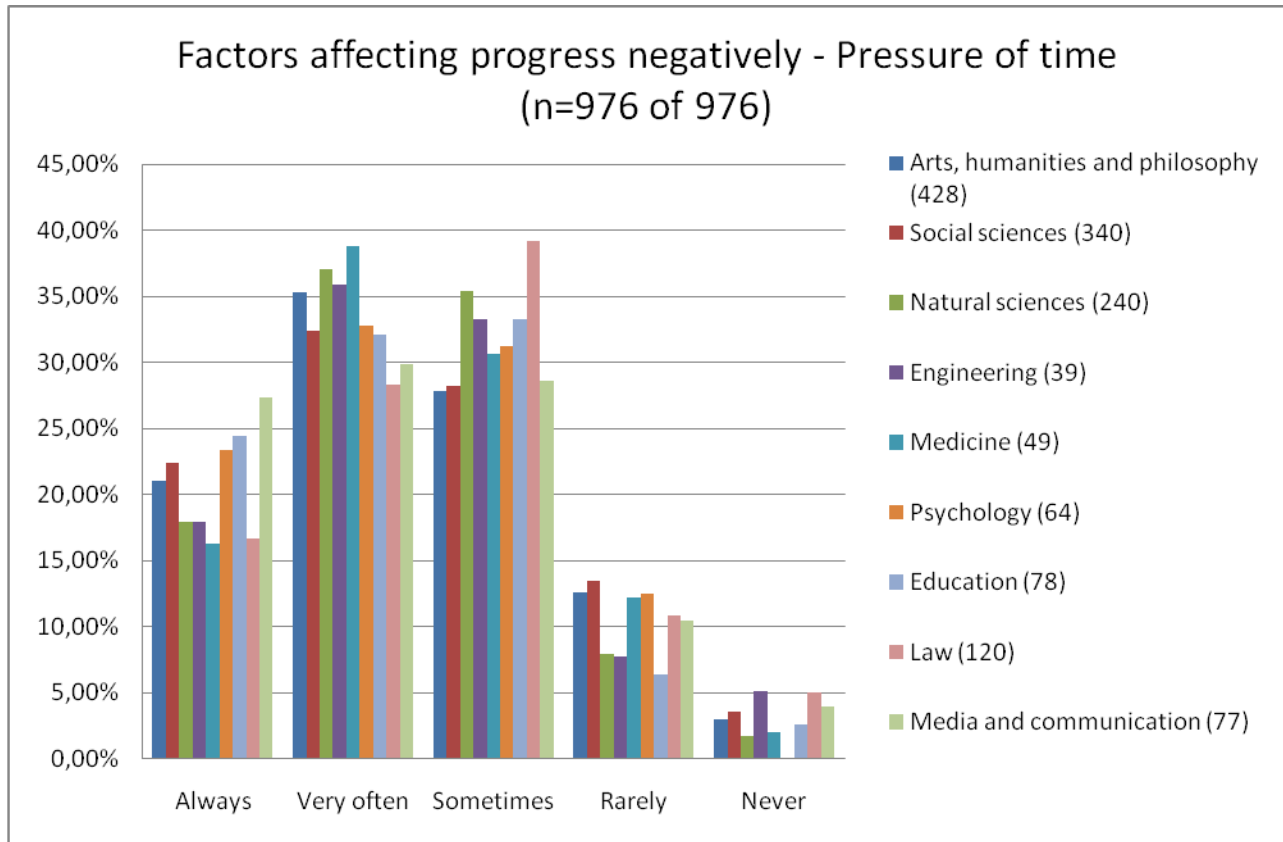


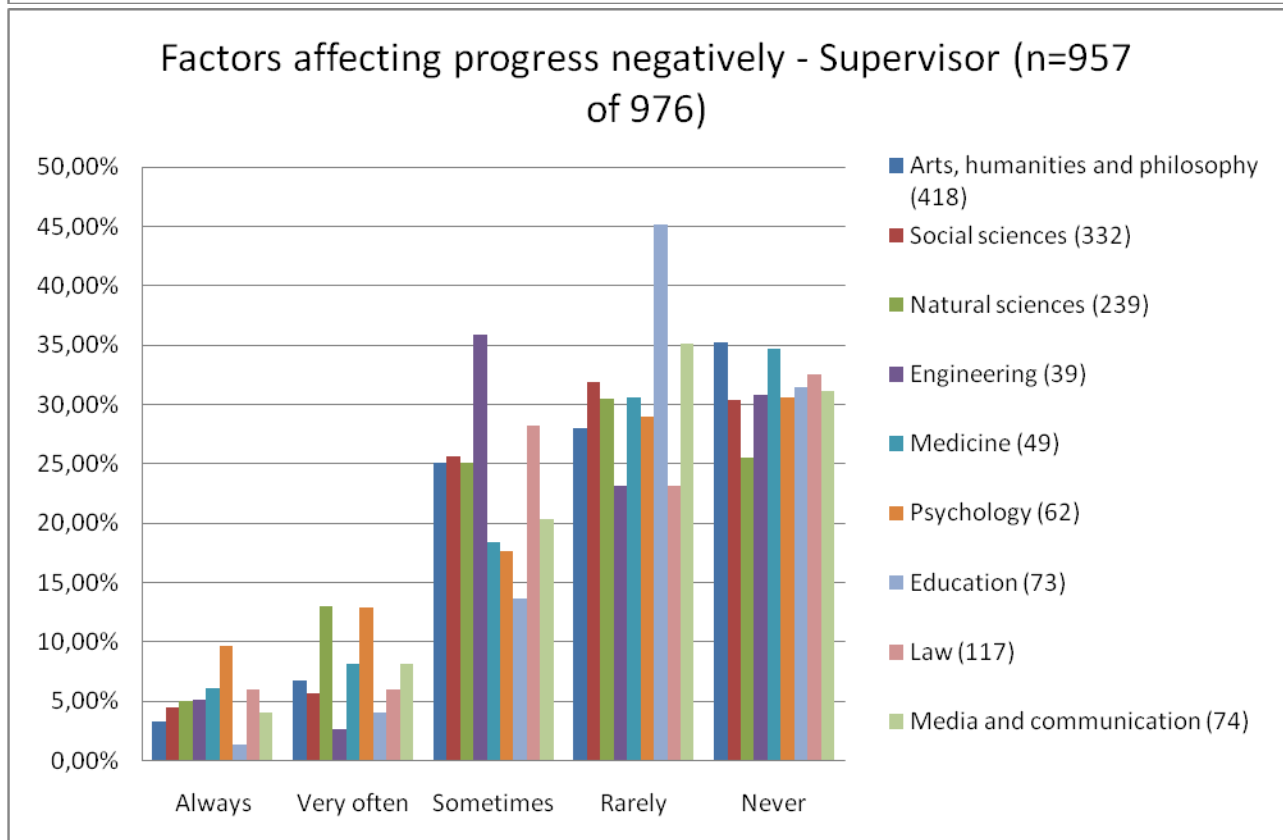
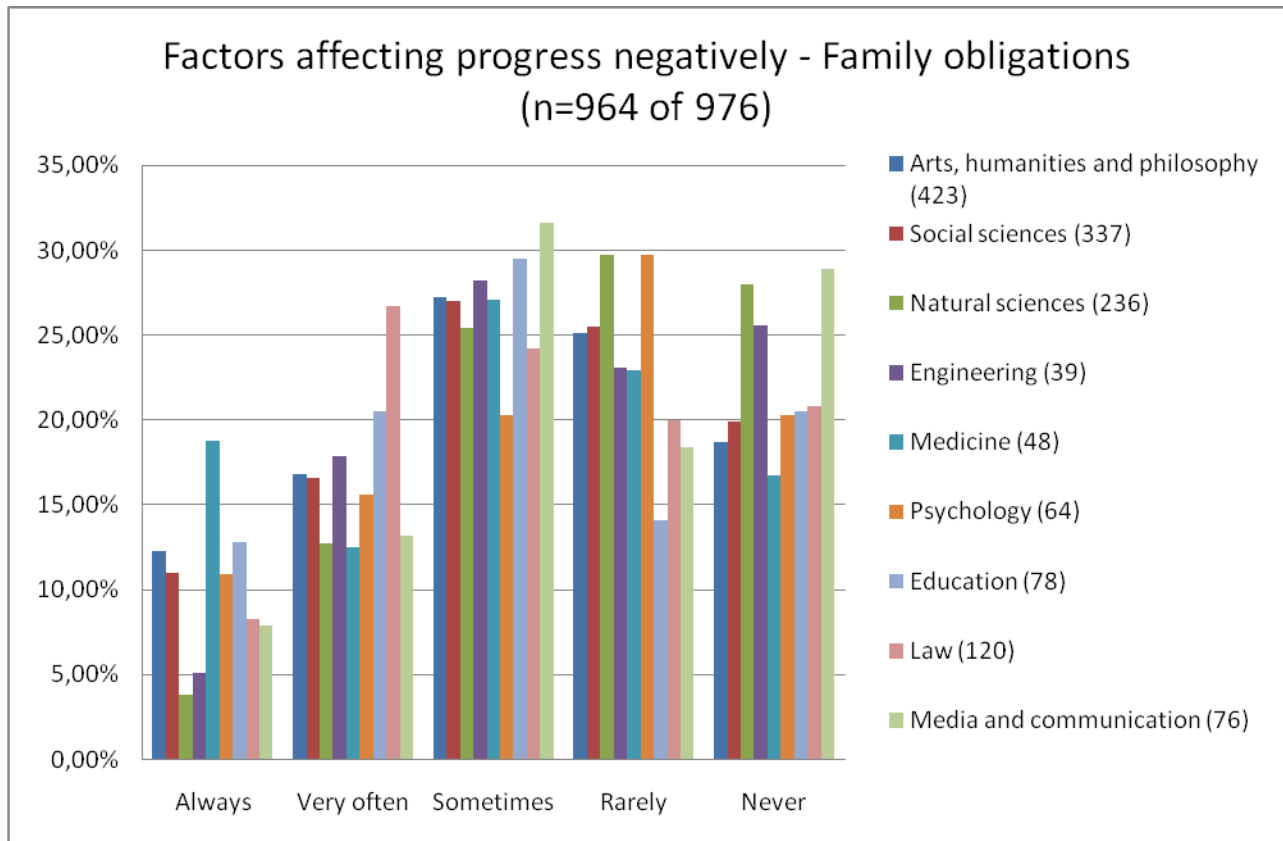


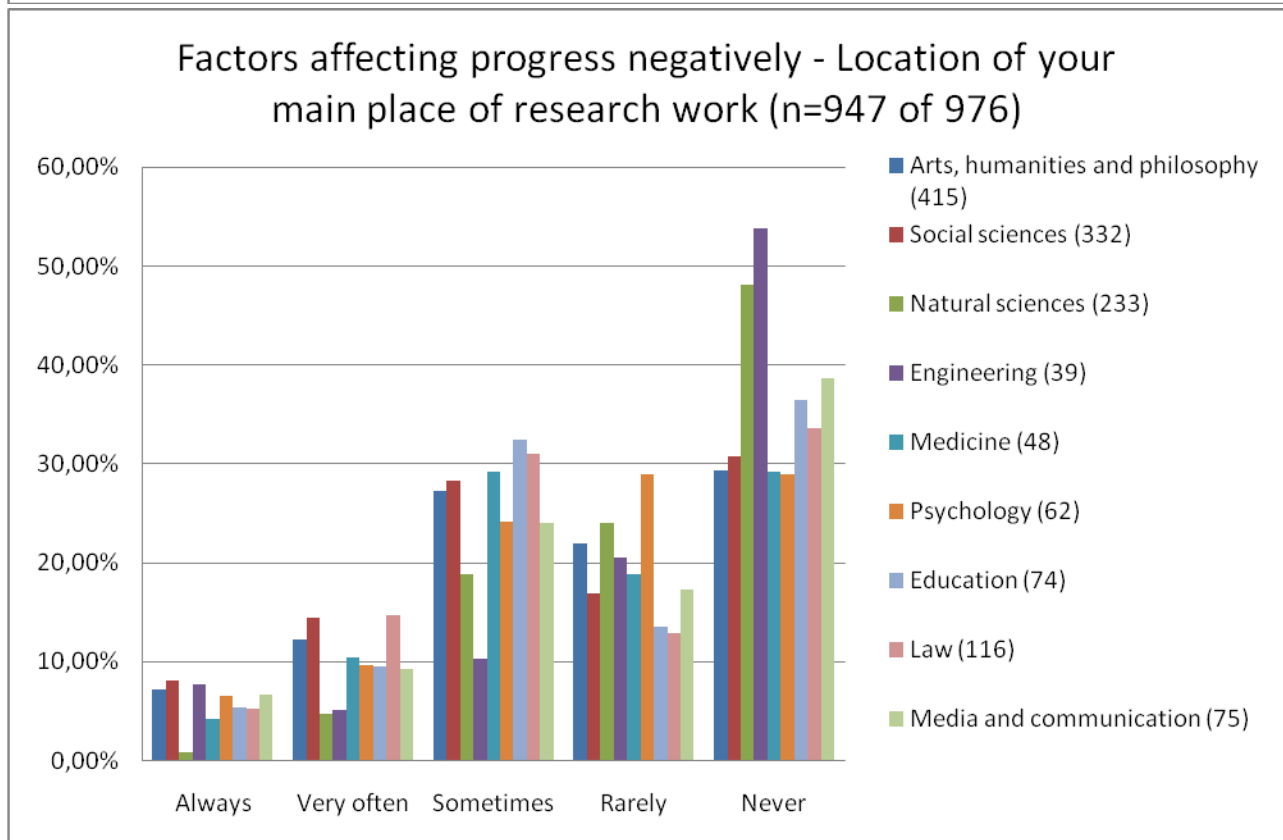
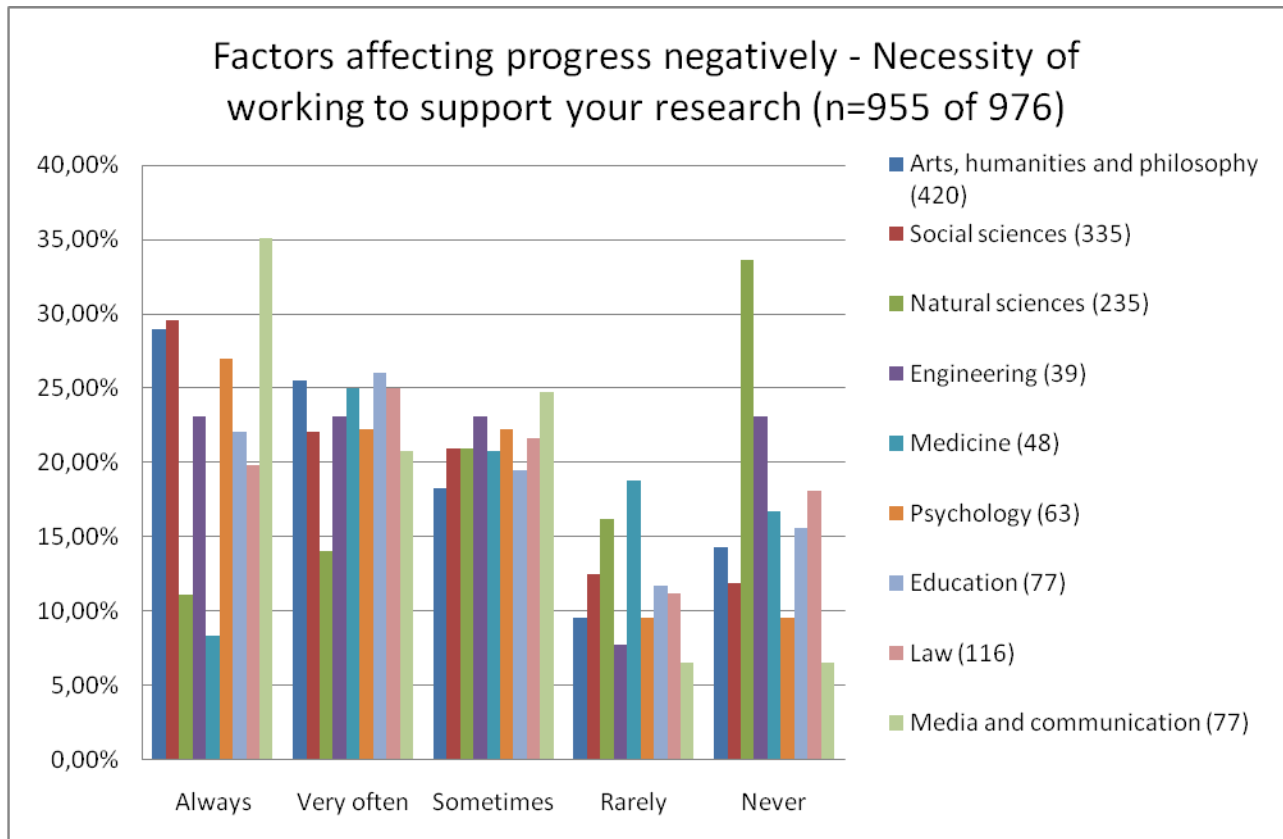


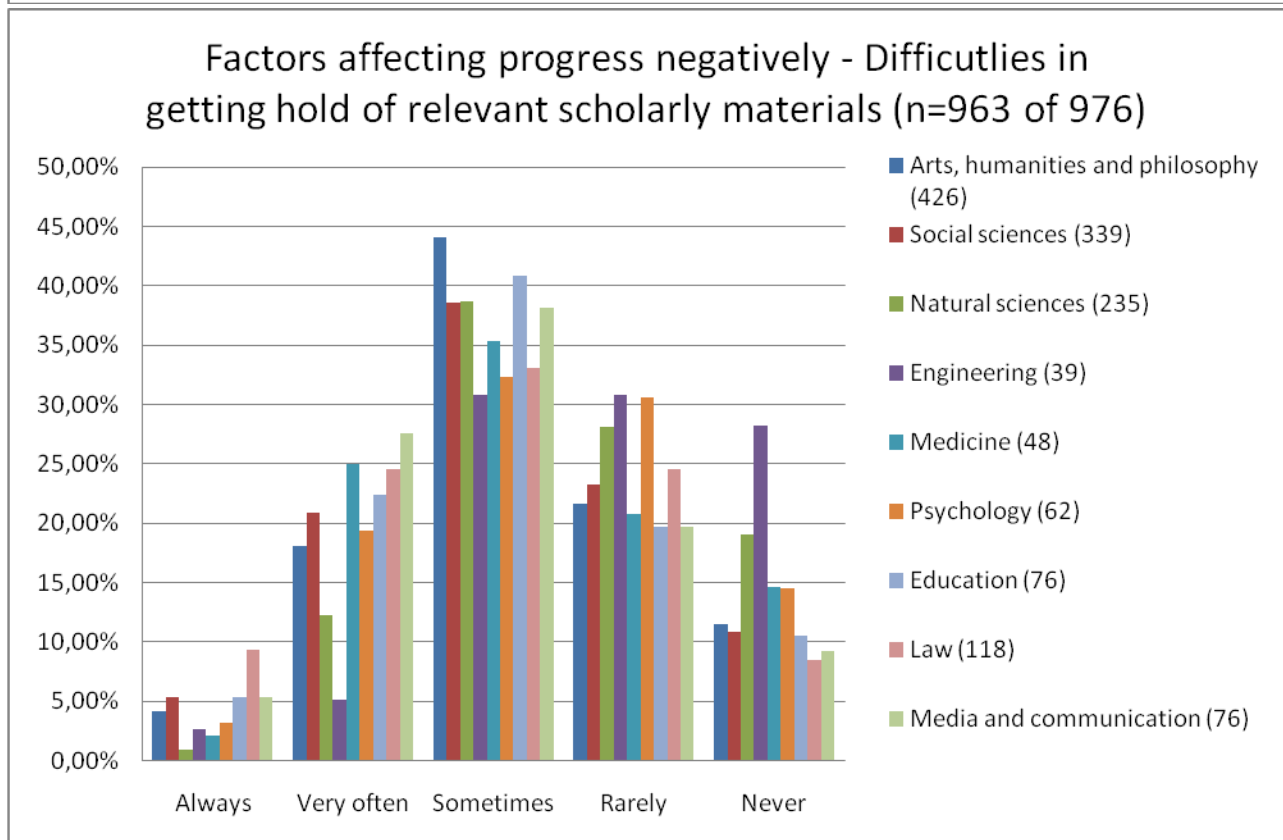
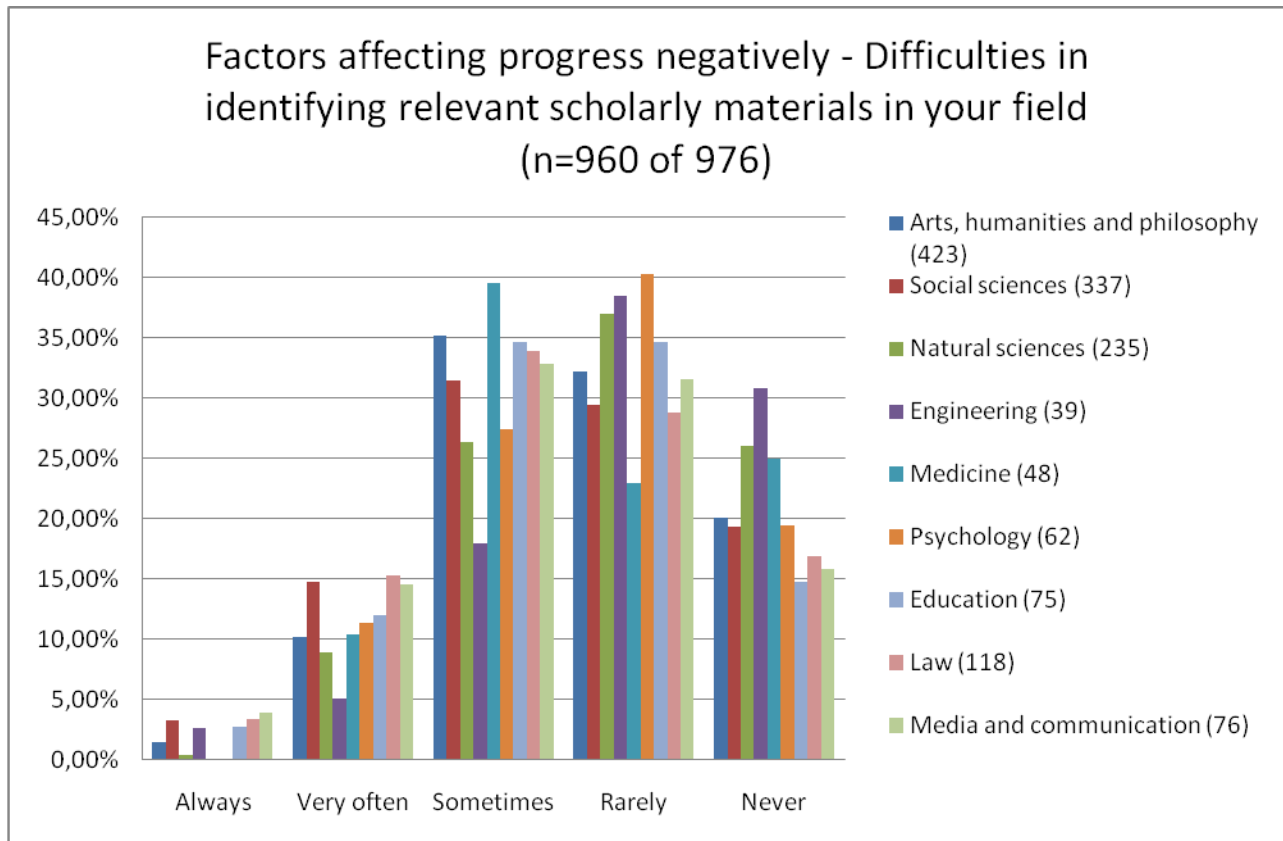


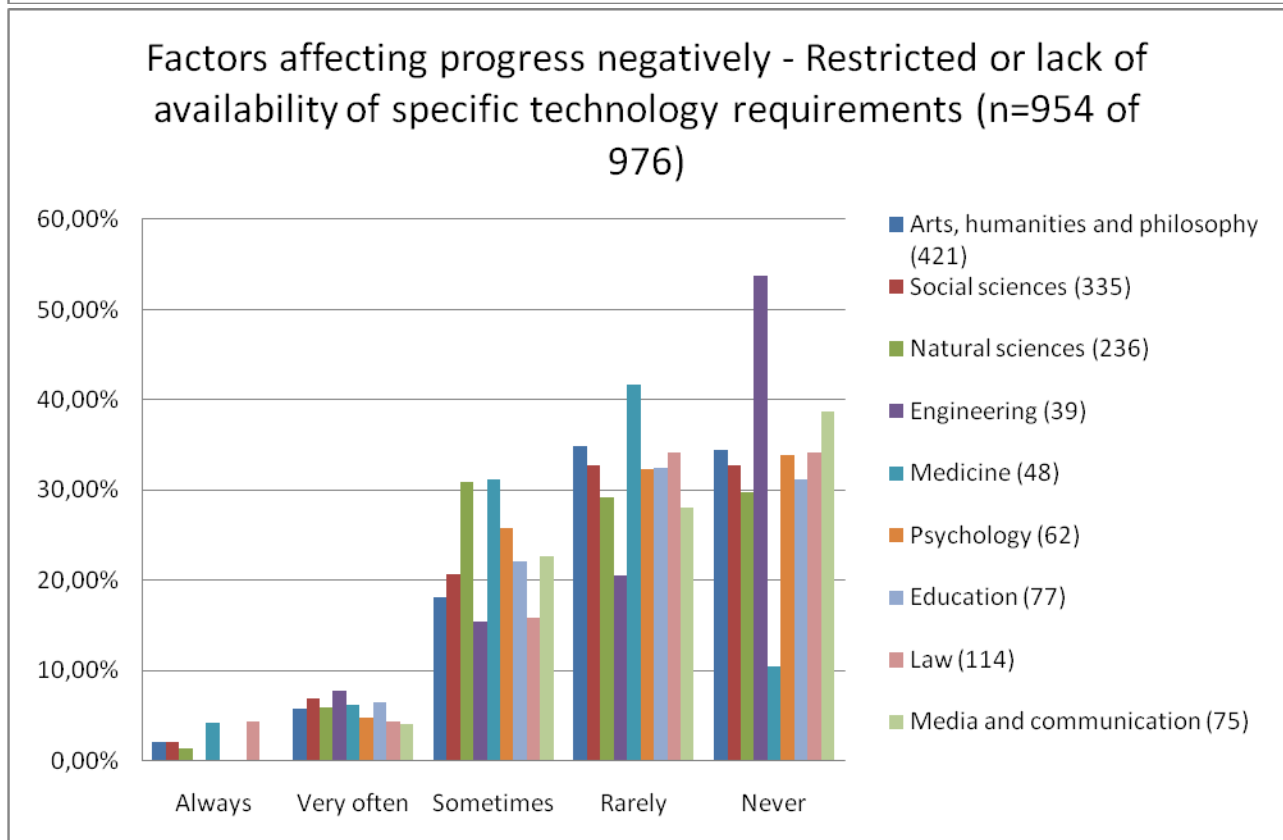
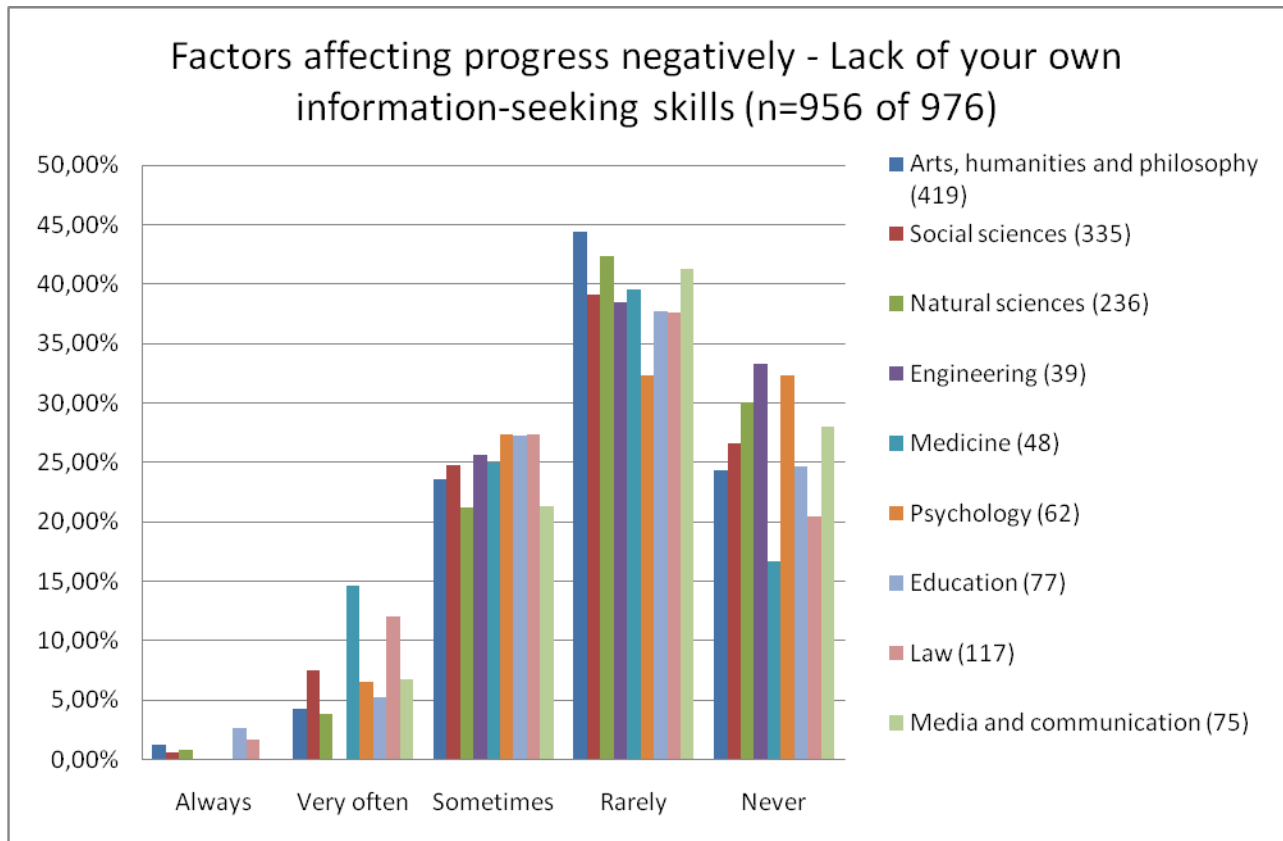
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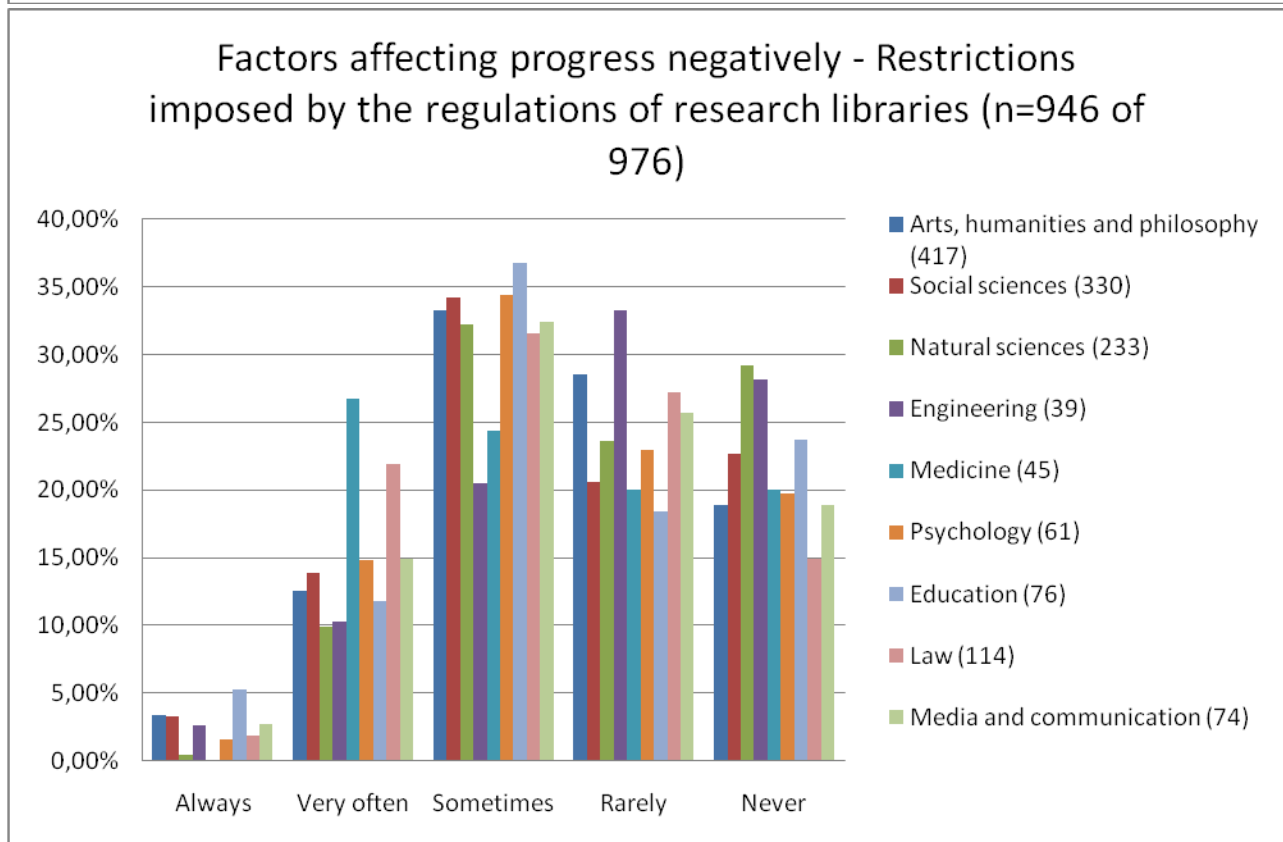
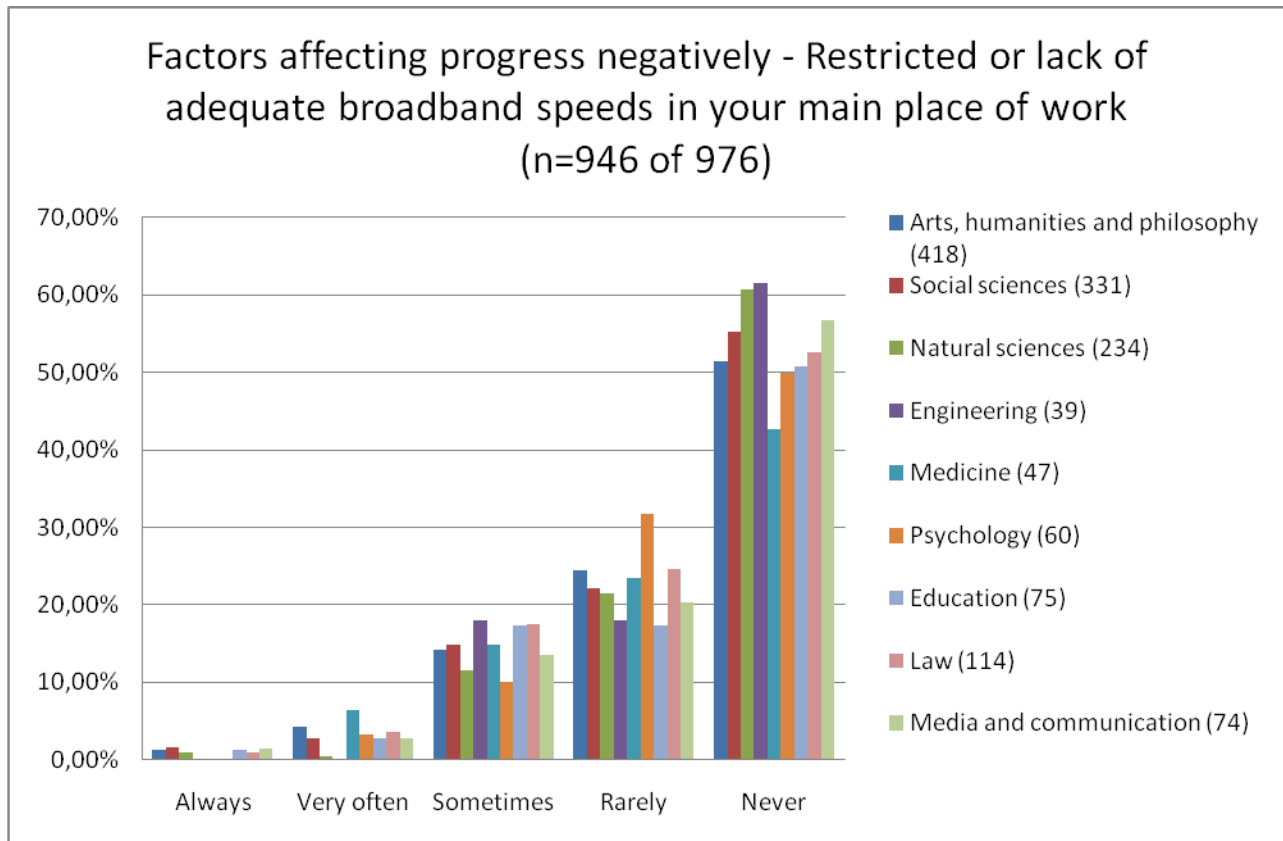


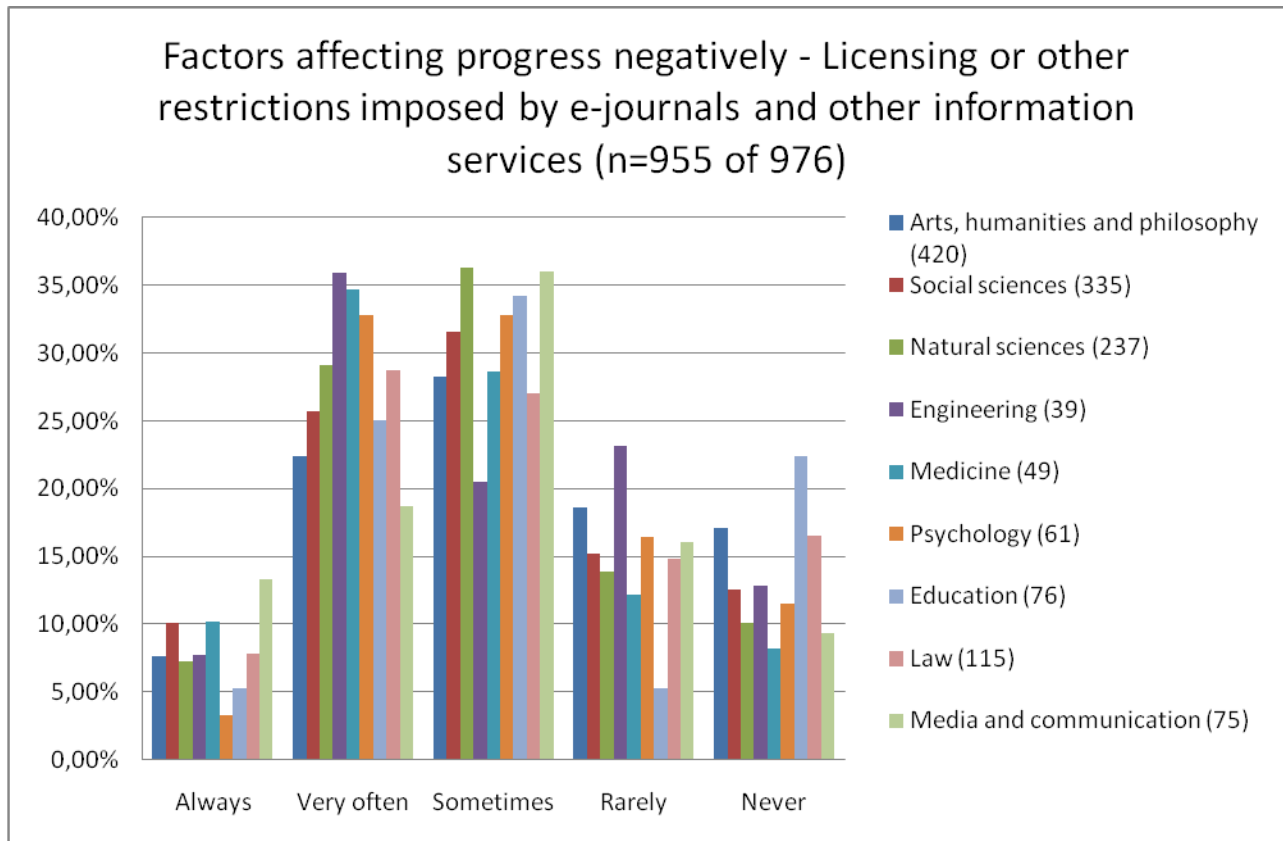




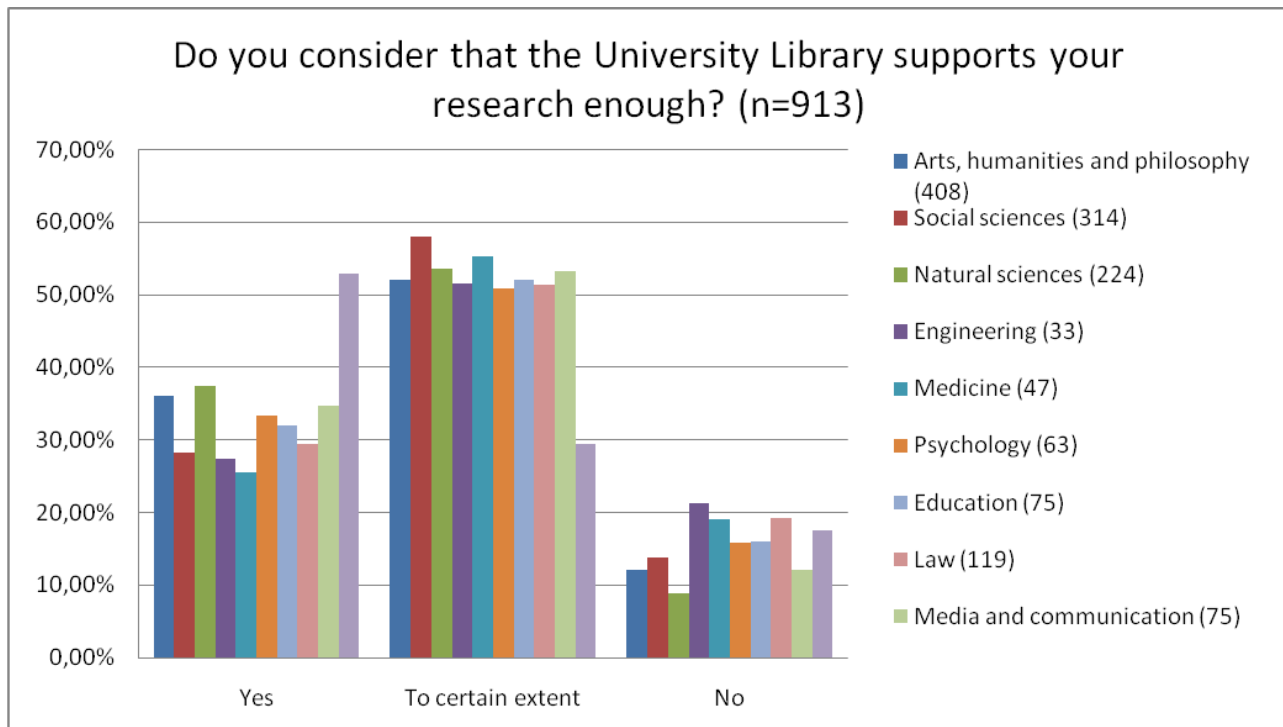




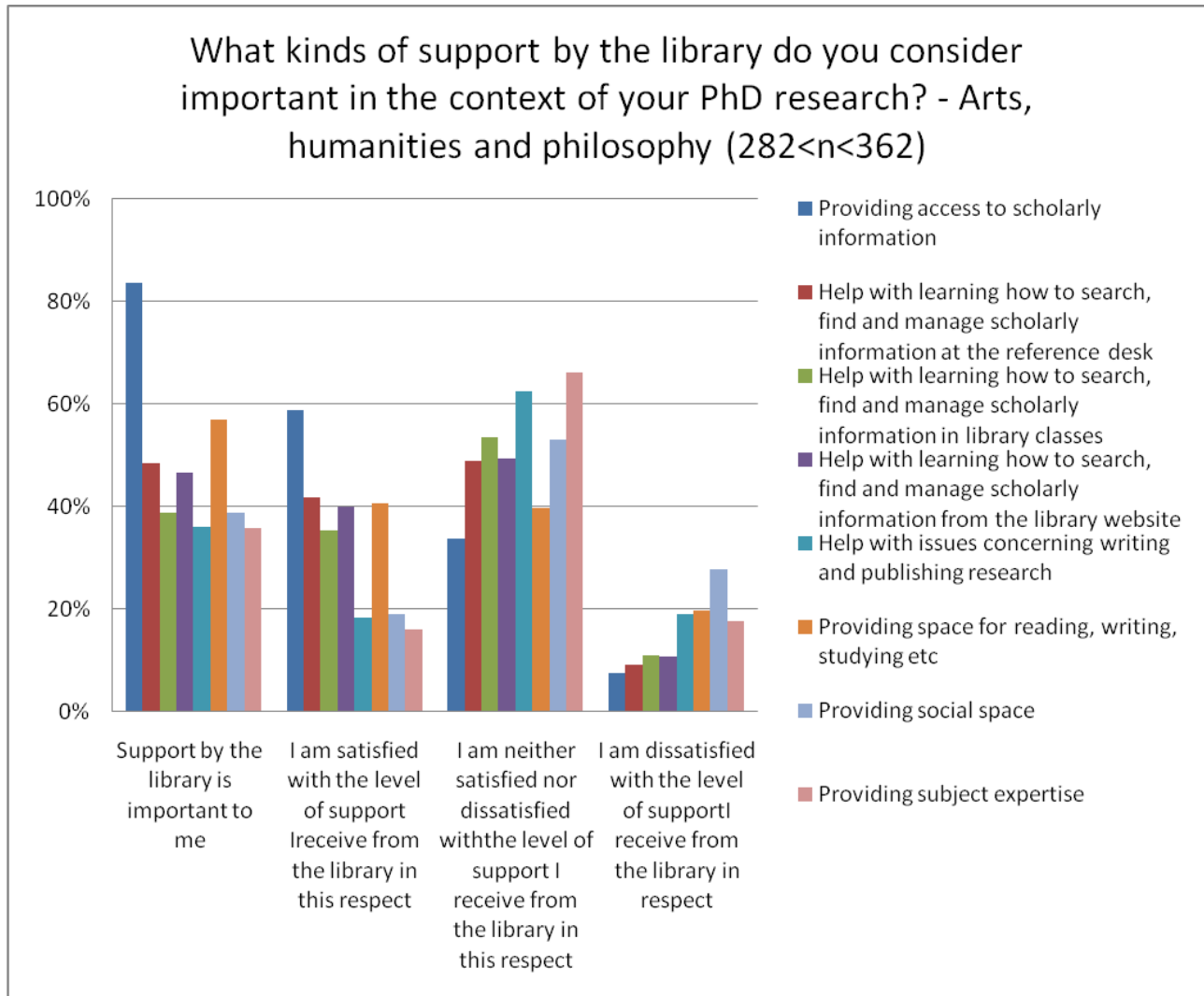


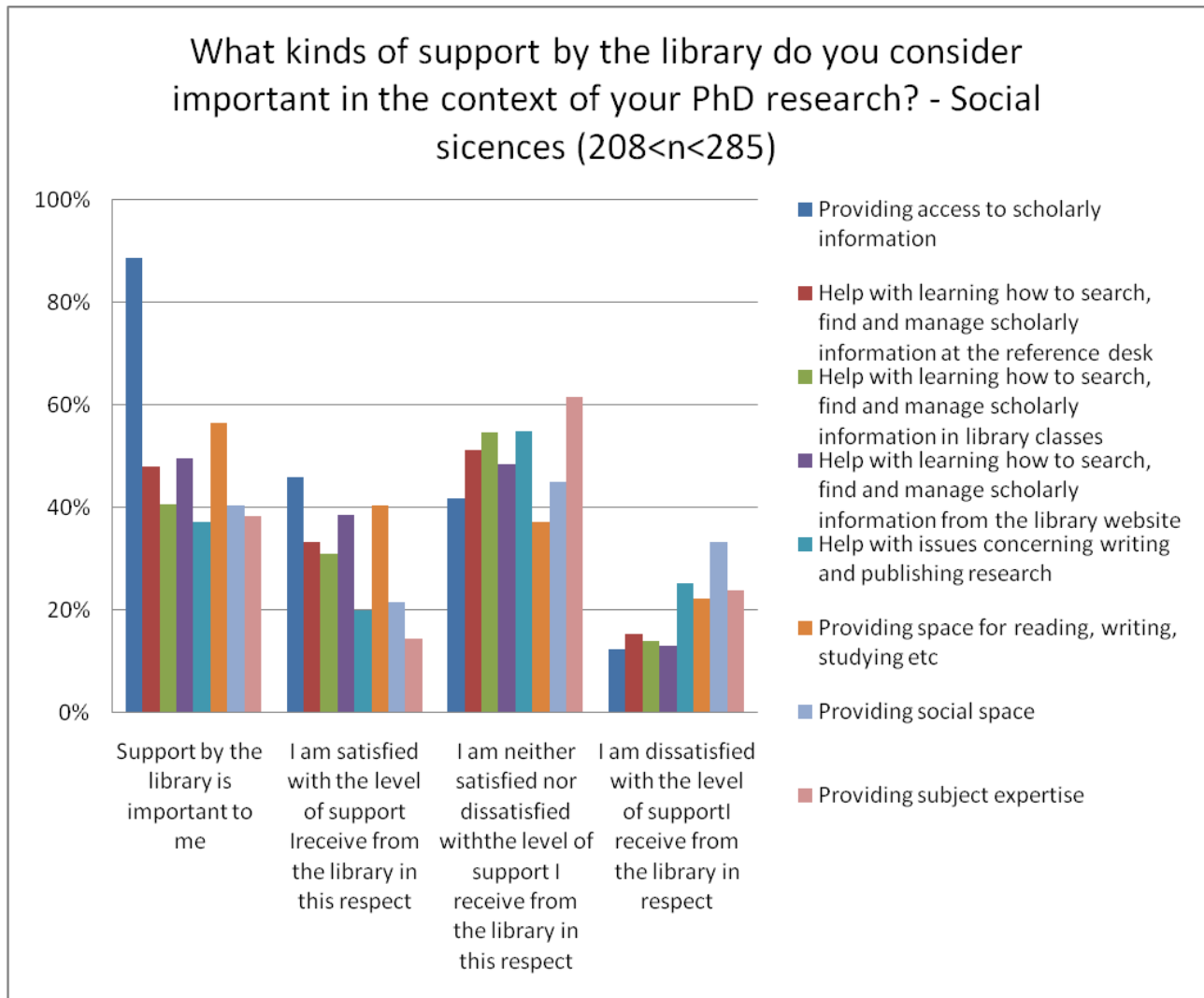


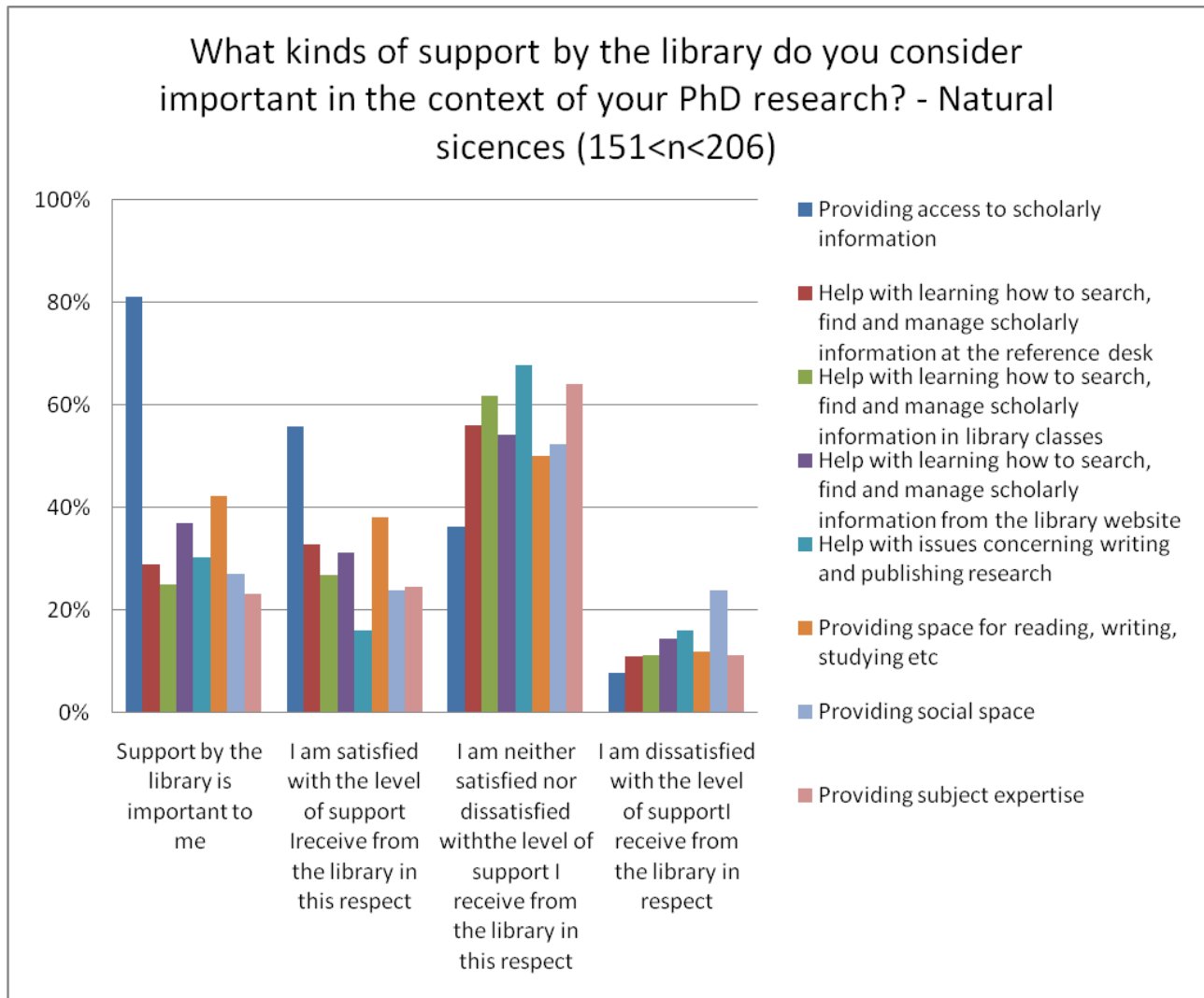
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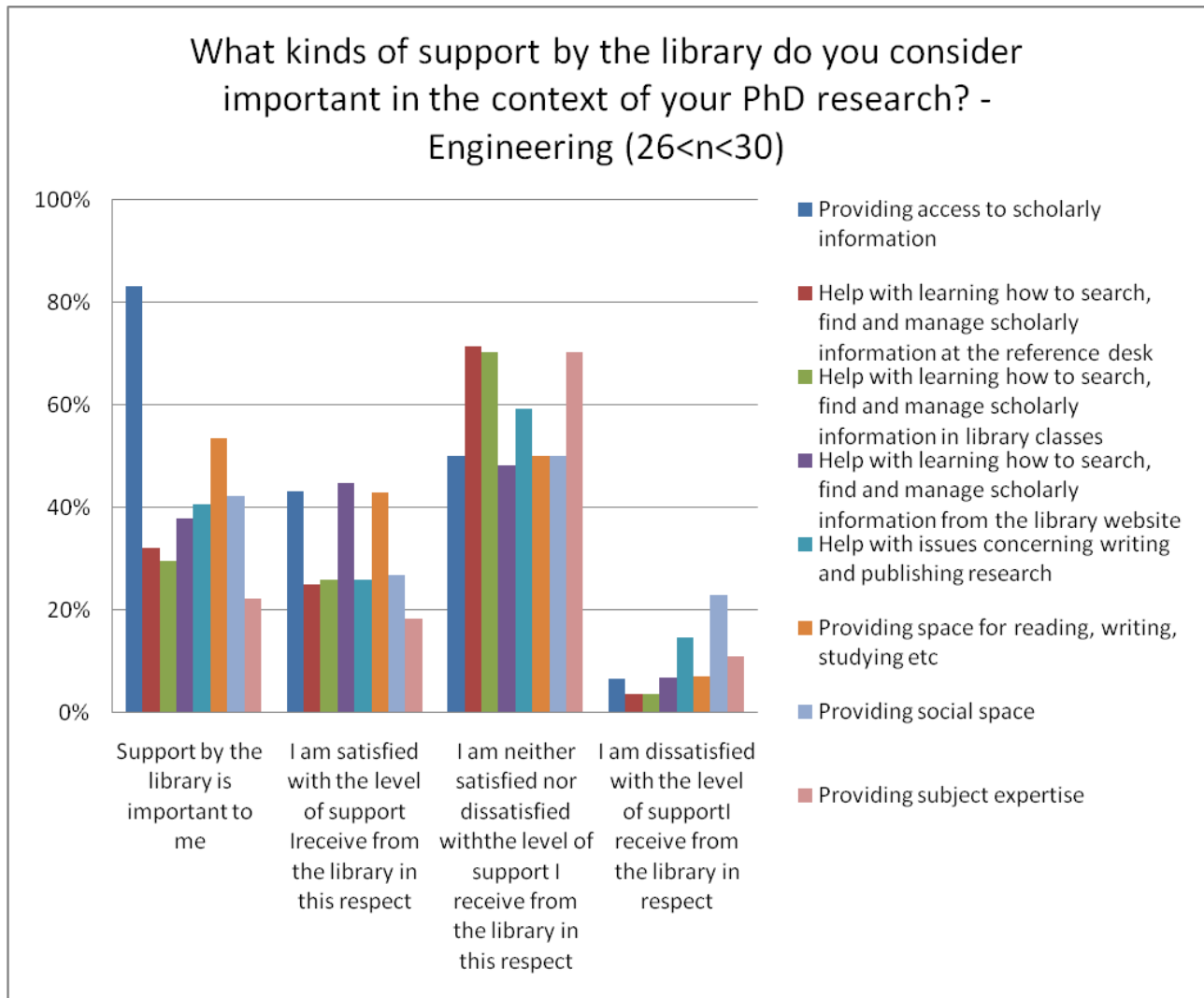


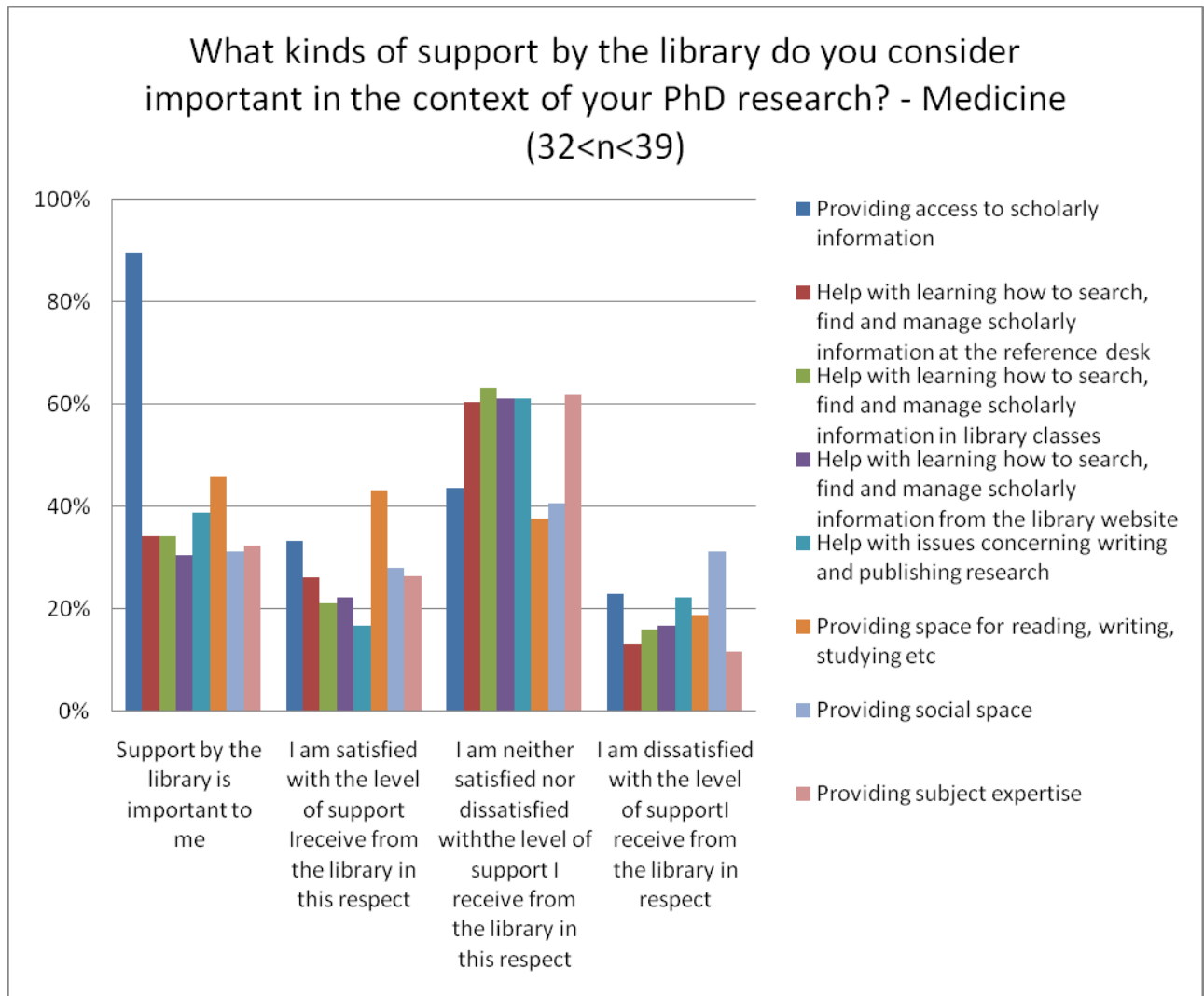
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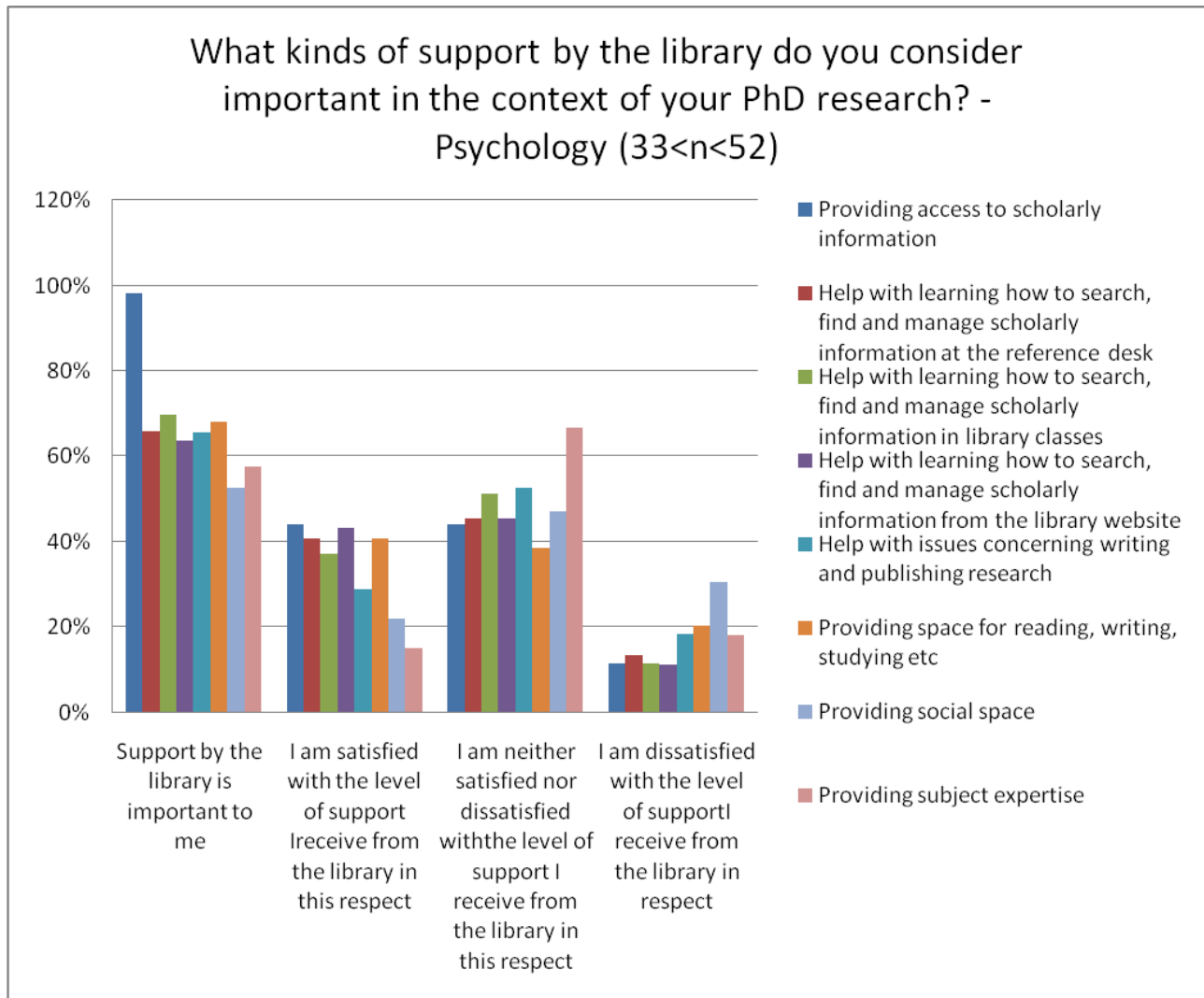


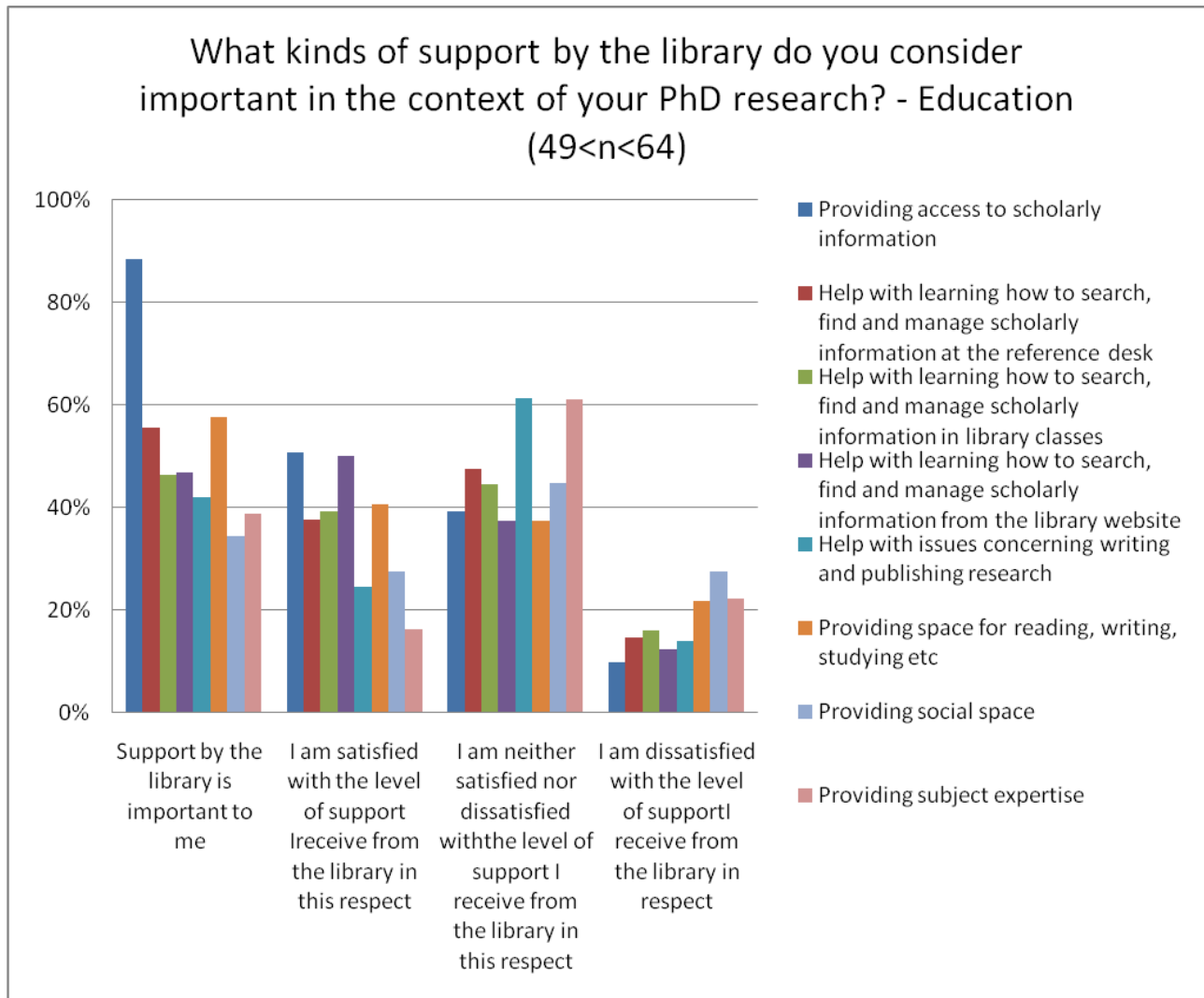


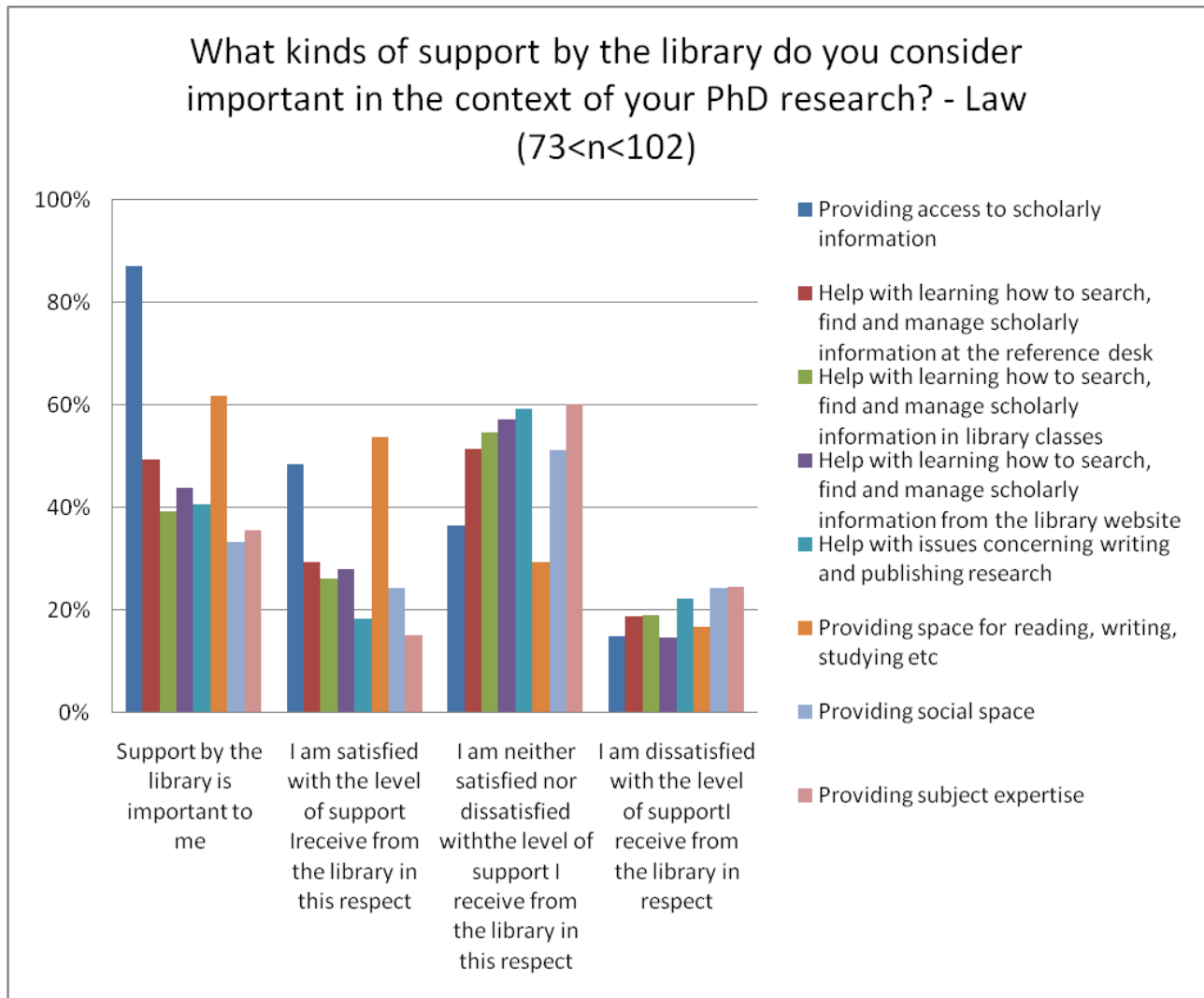


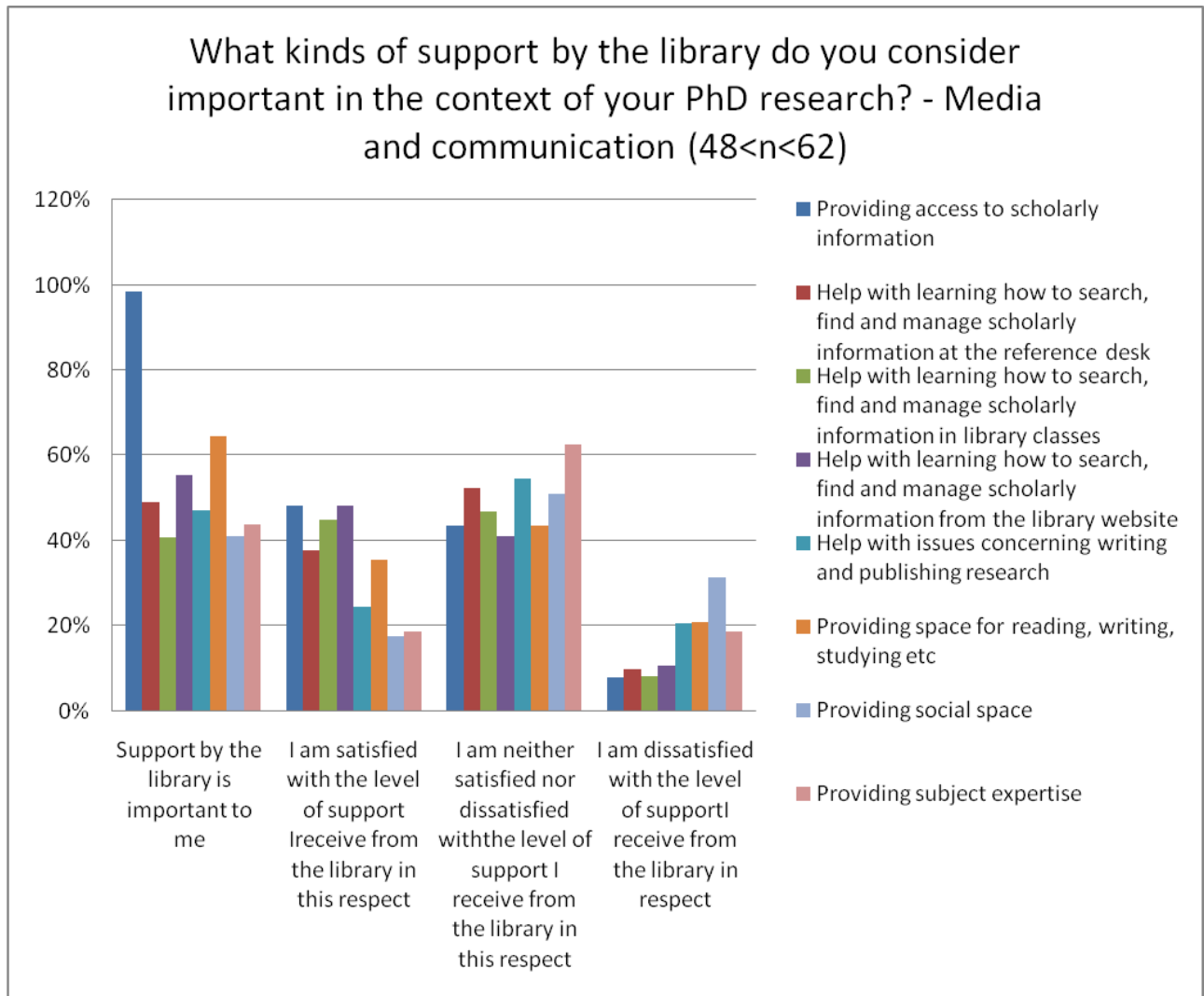




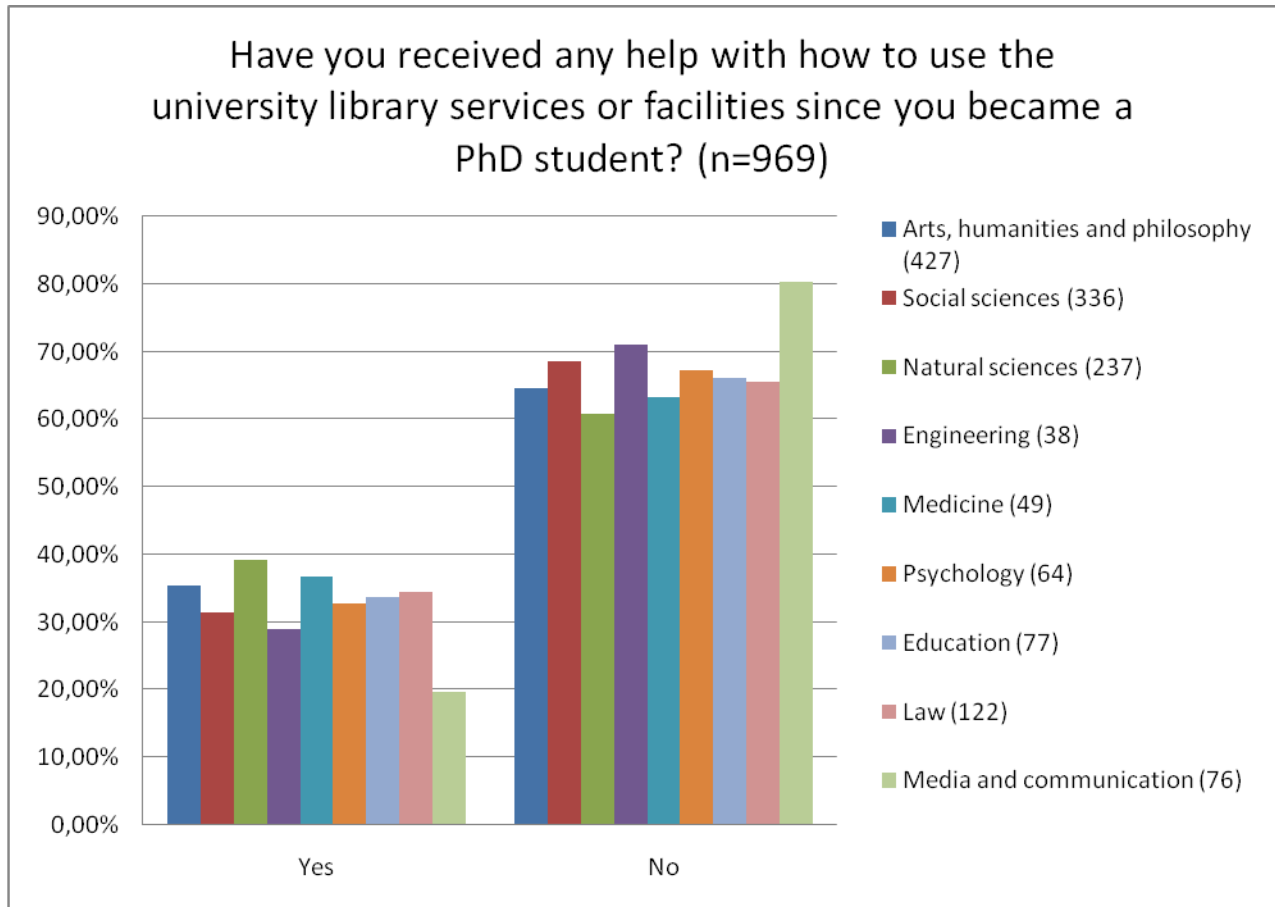




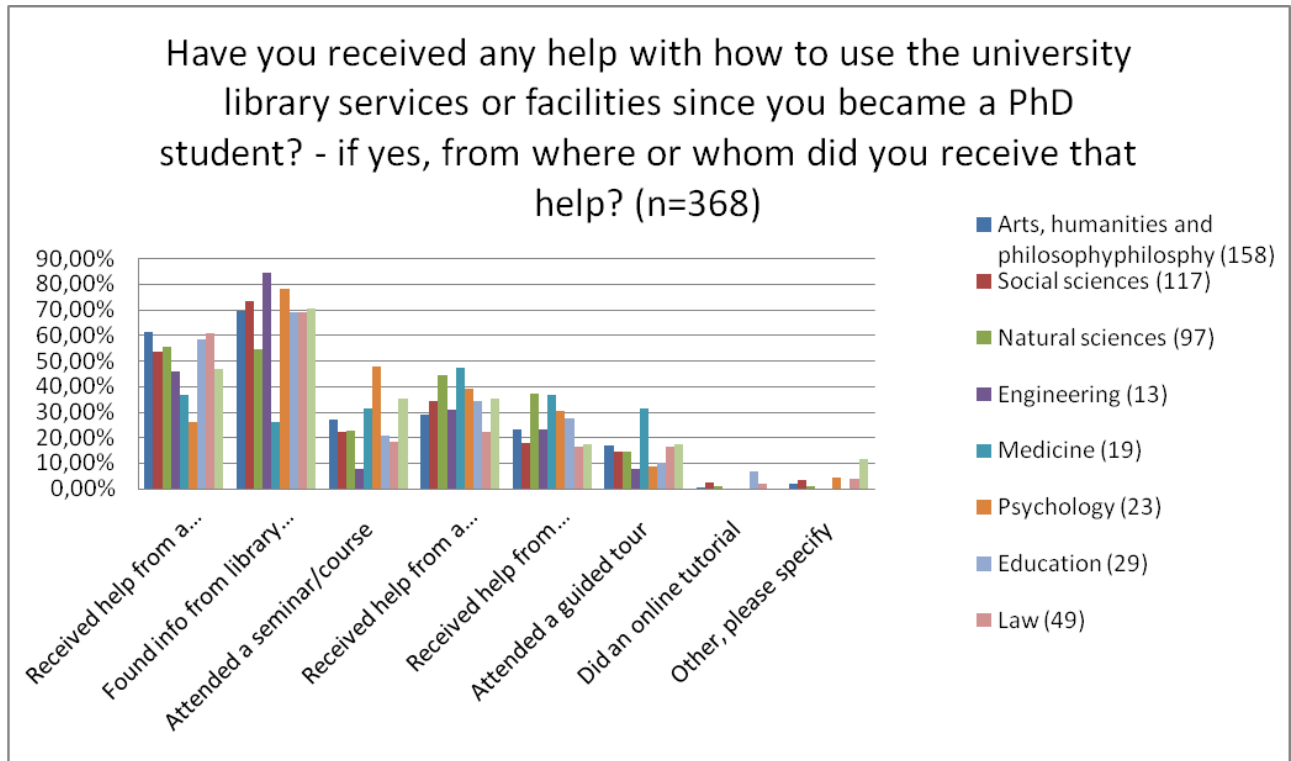




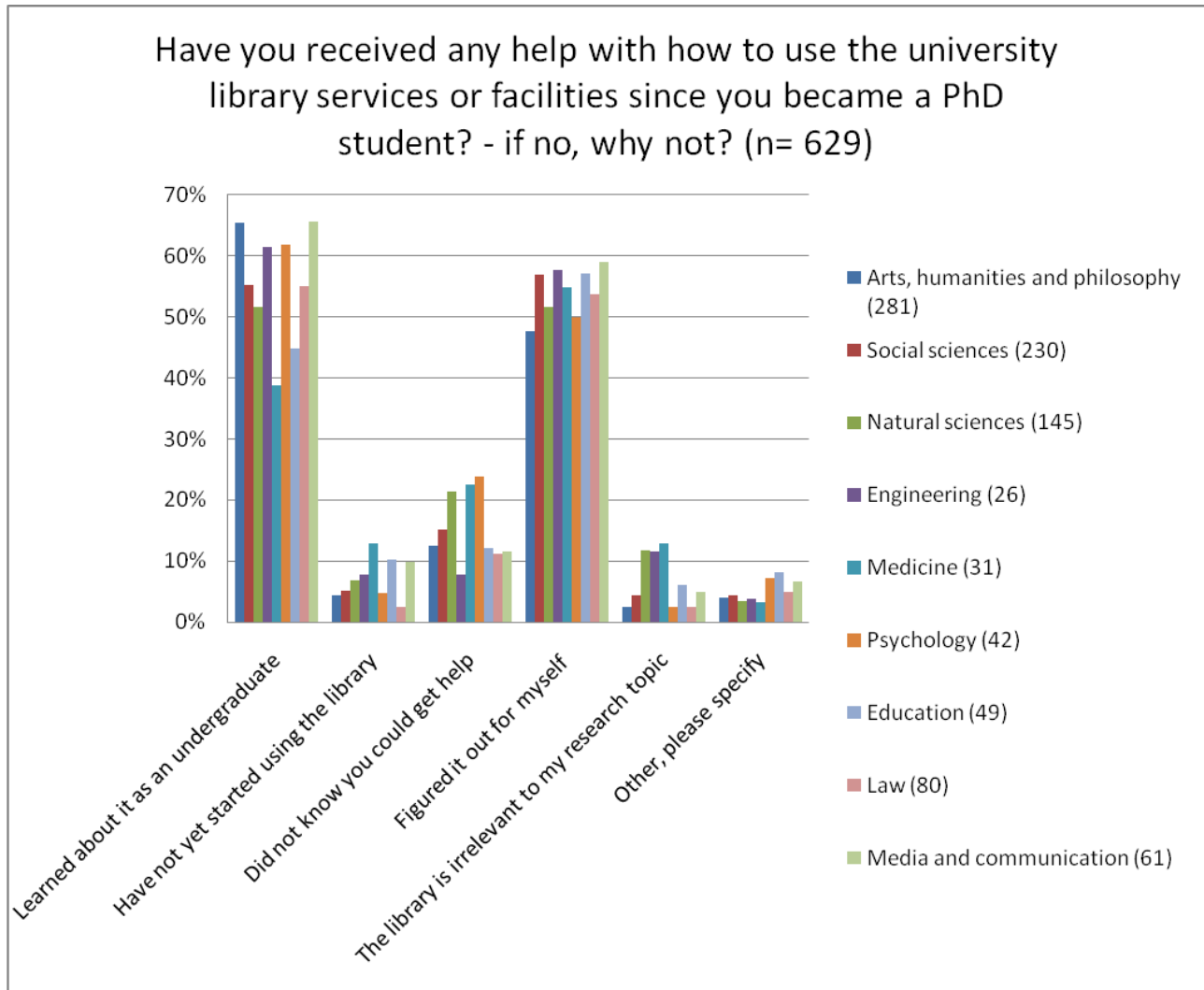
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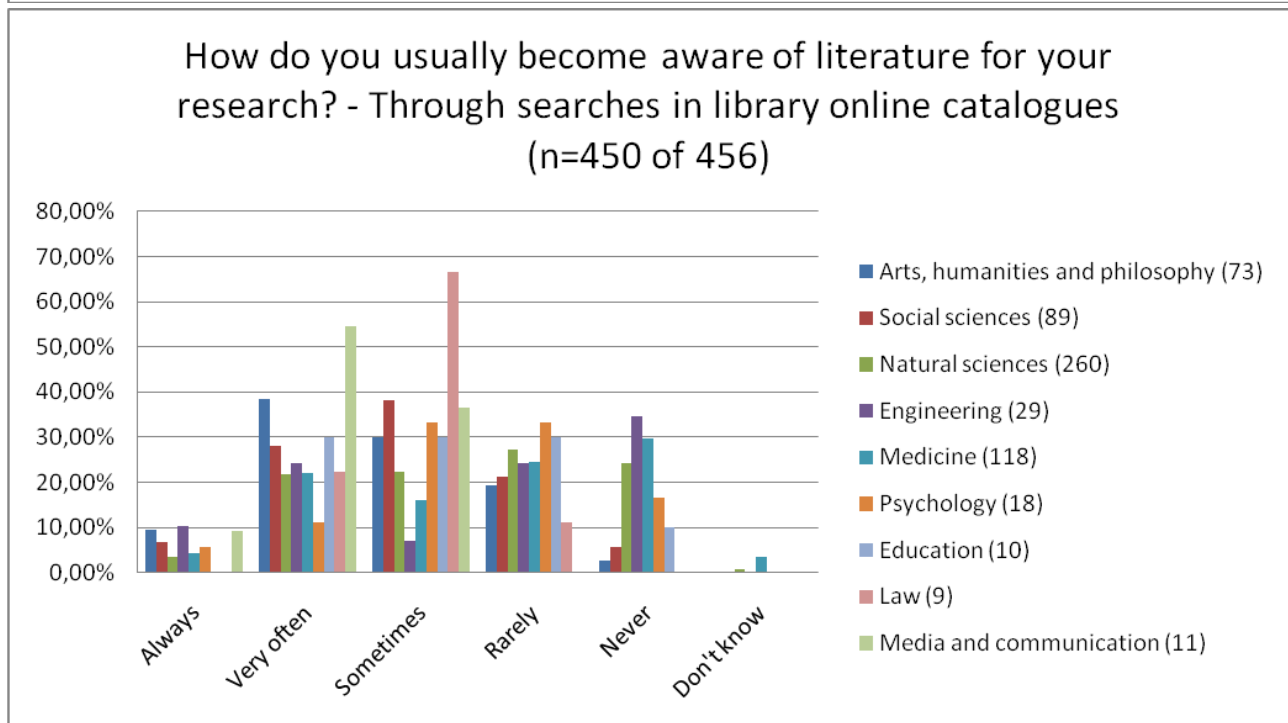
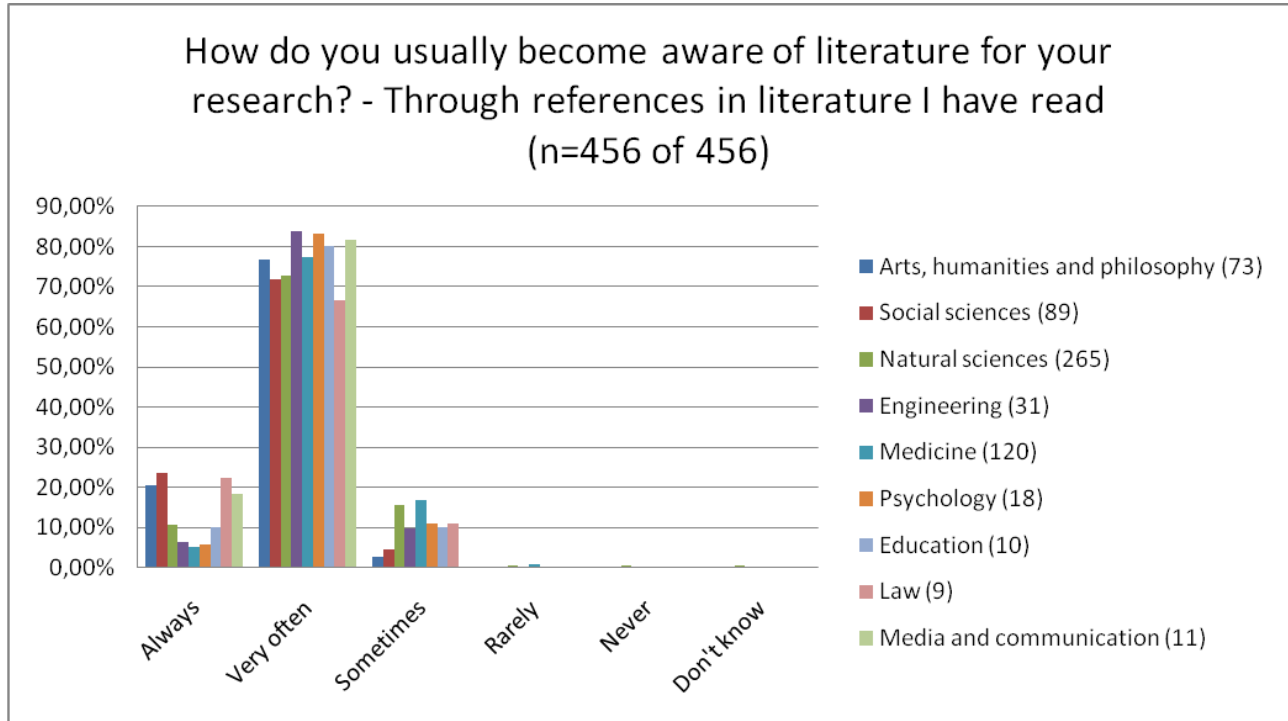


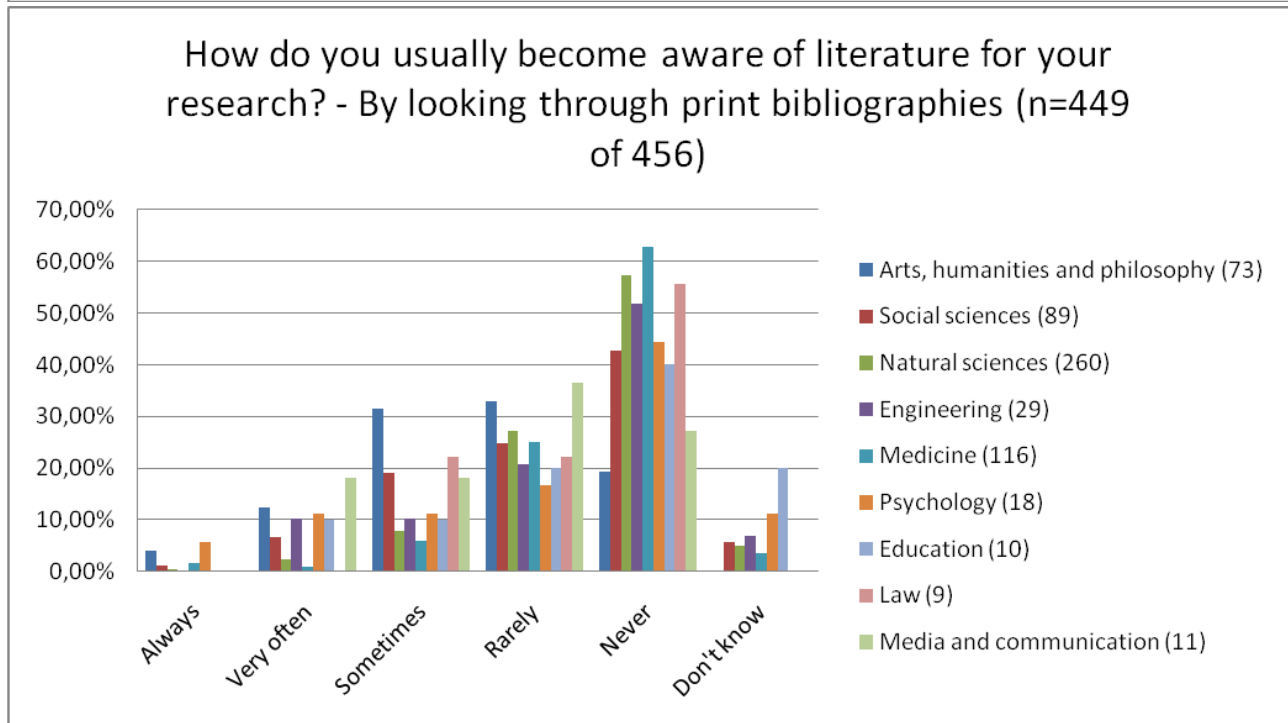
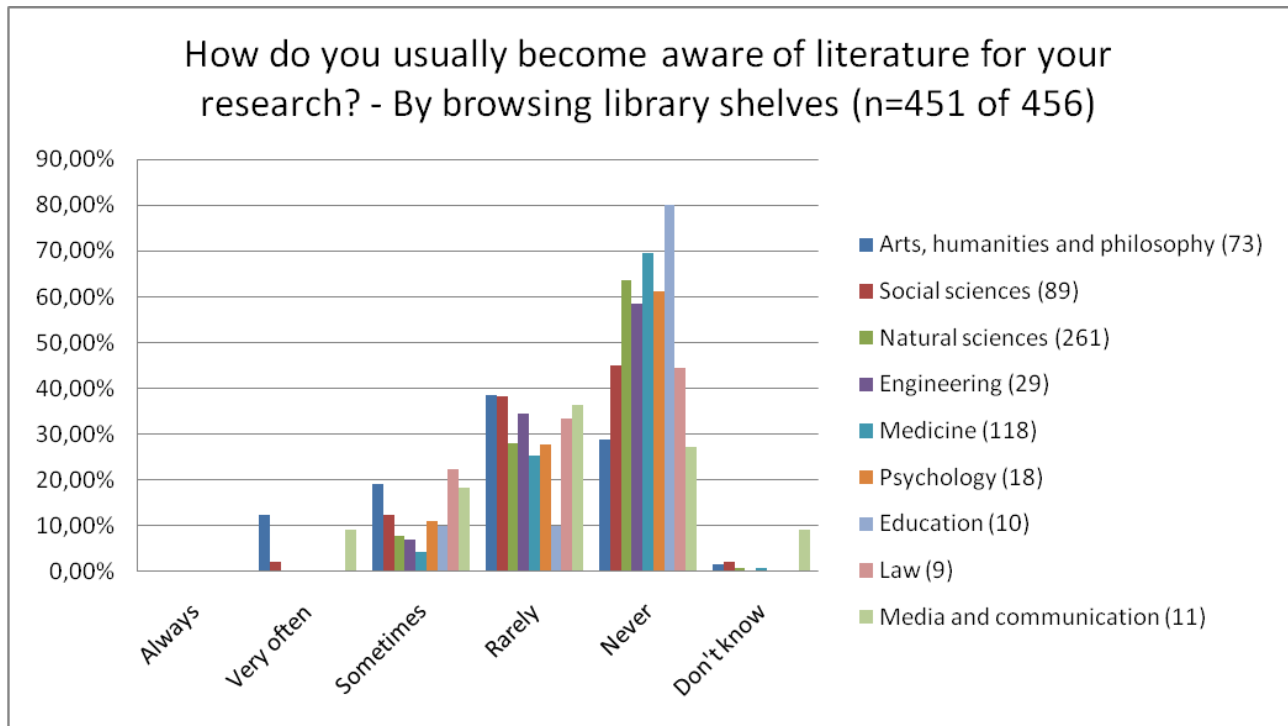
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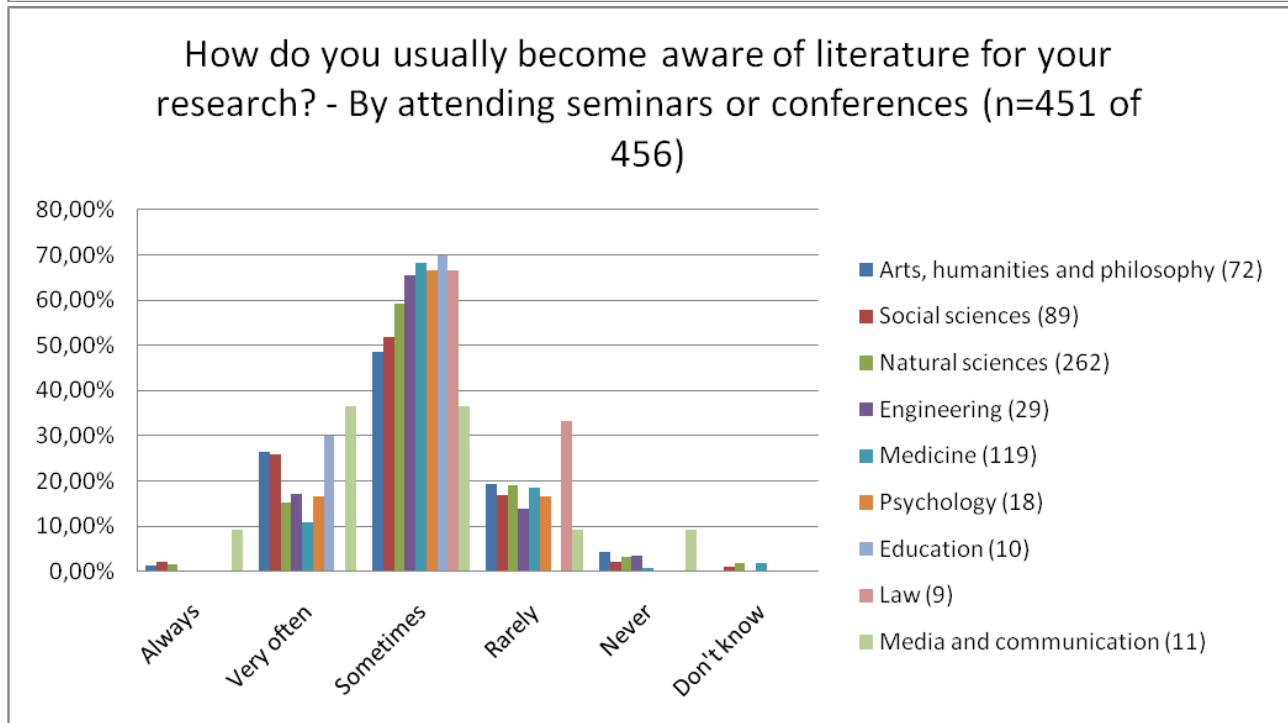
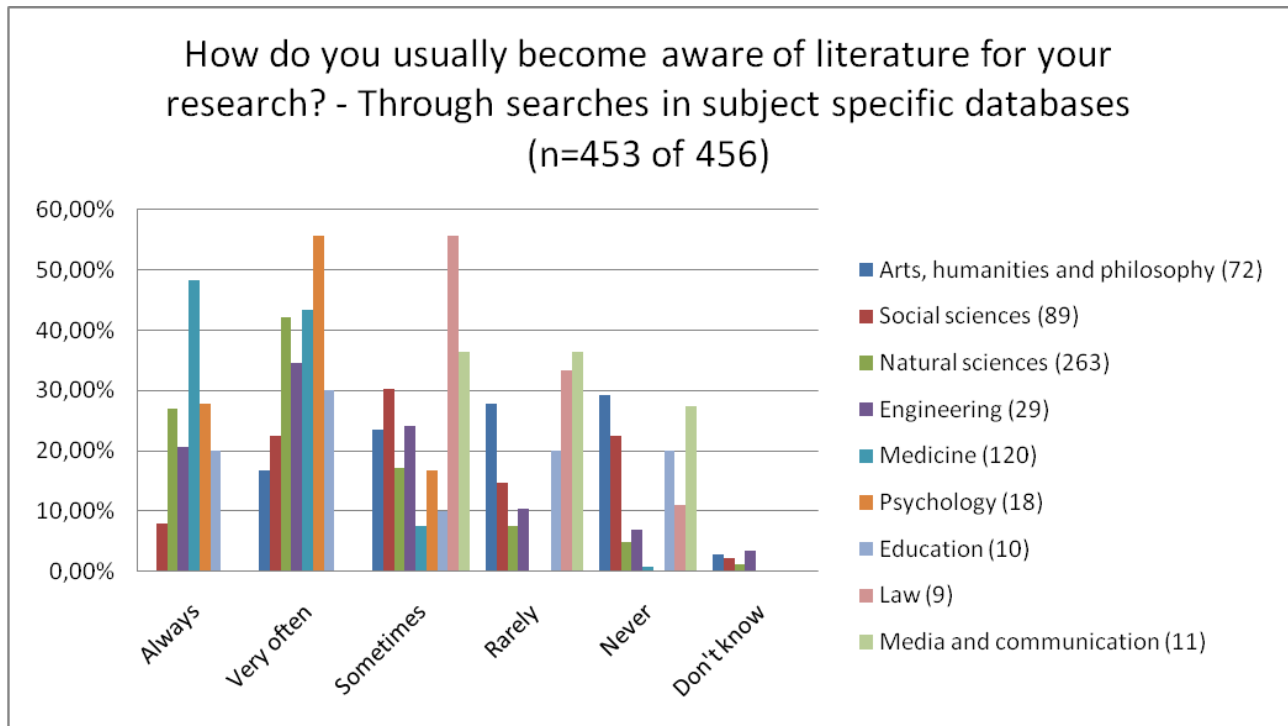


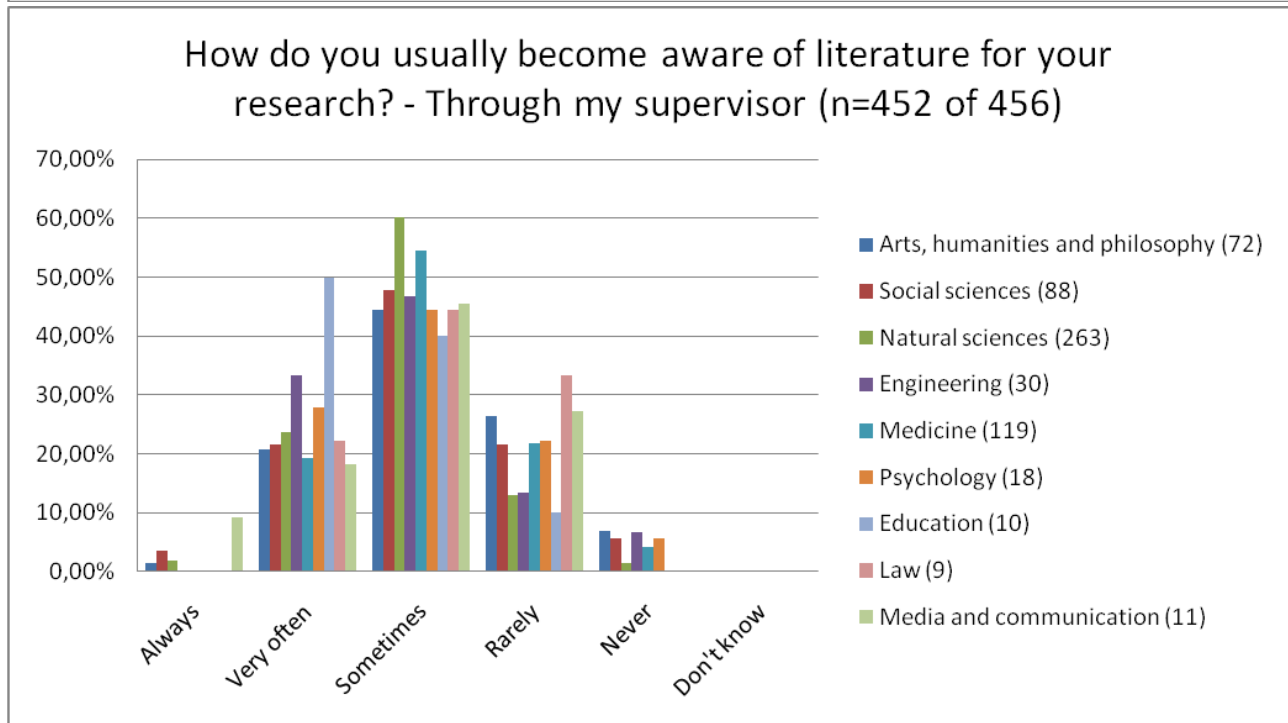
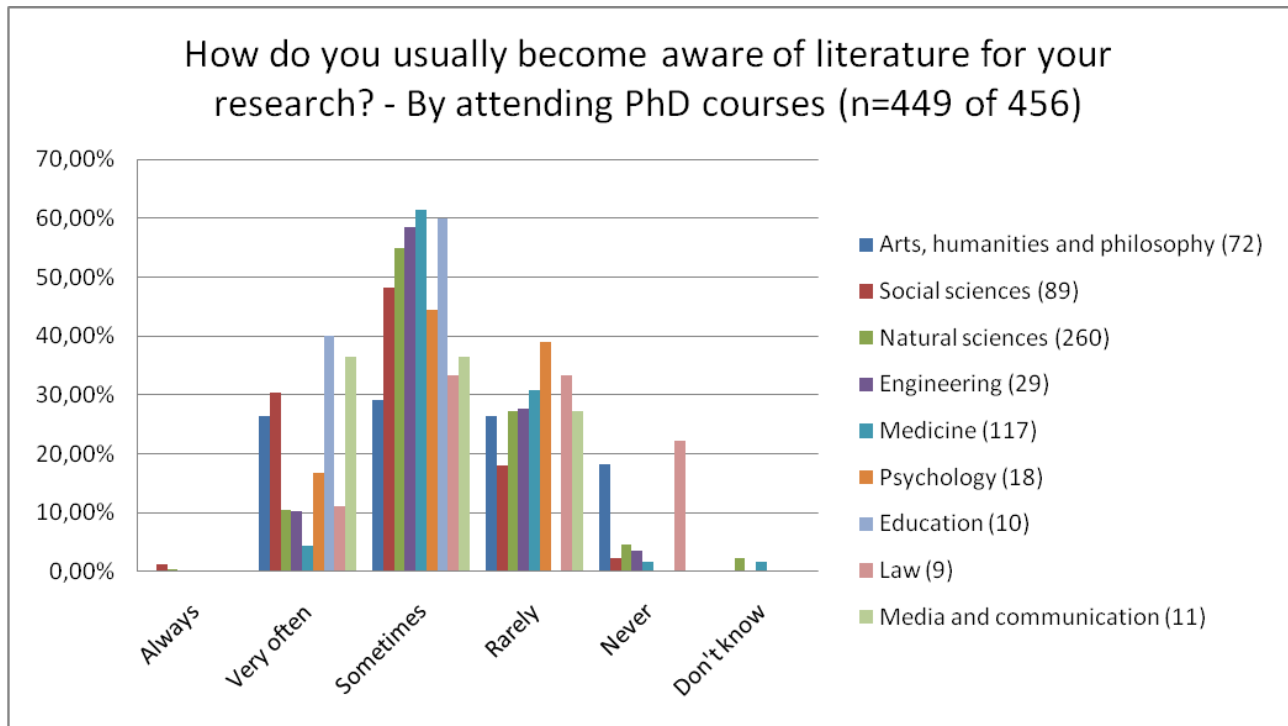
Copenhagen PhD students survey responses

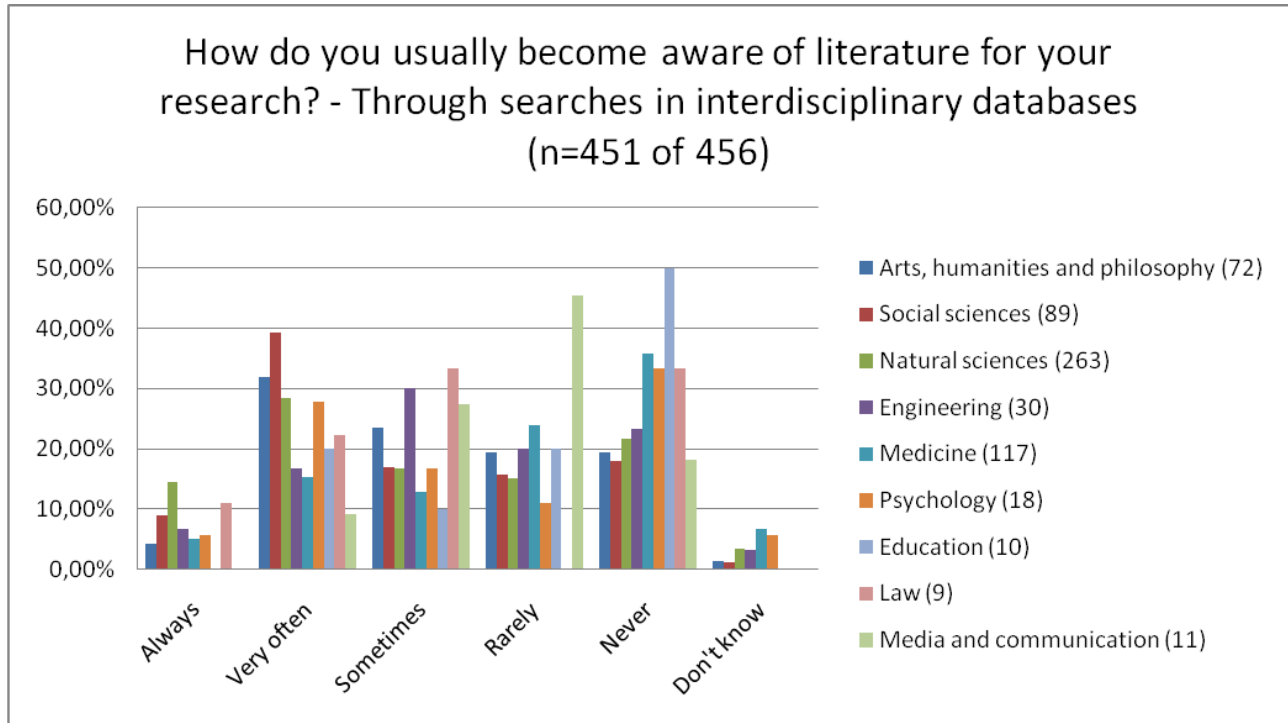
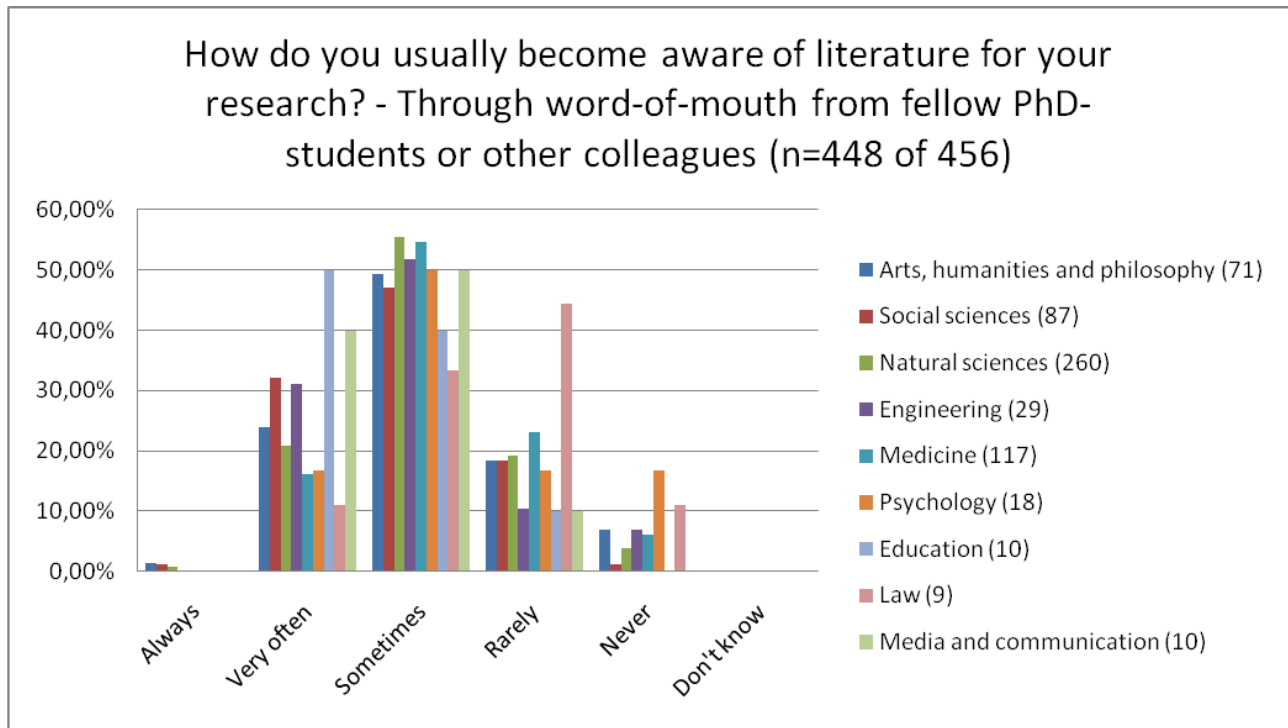
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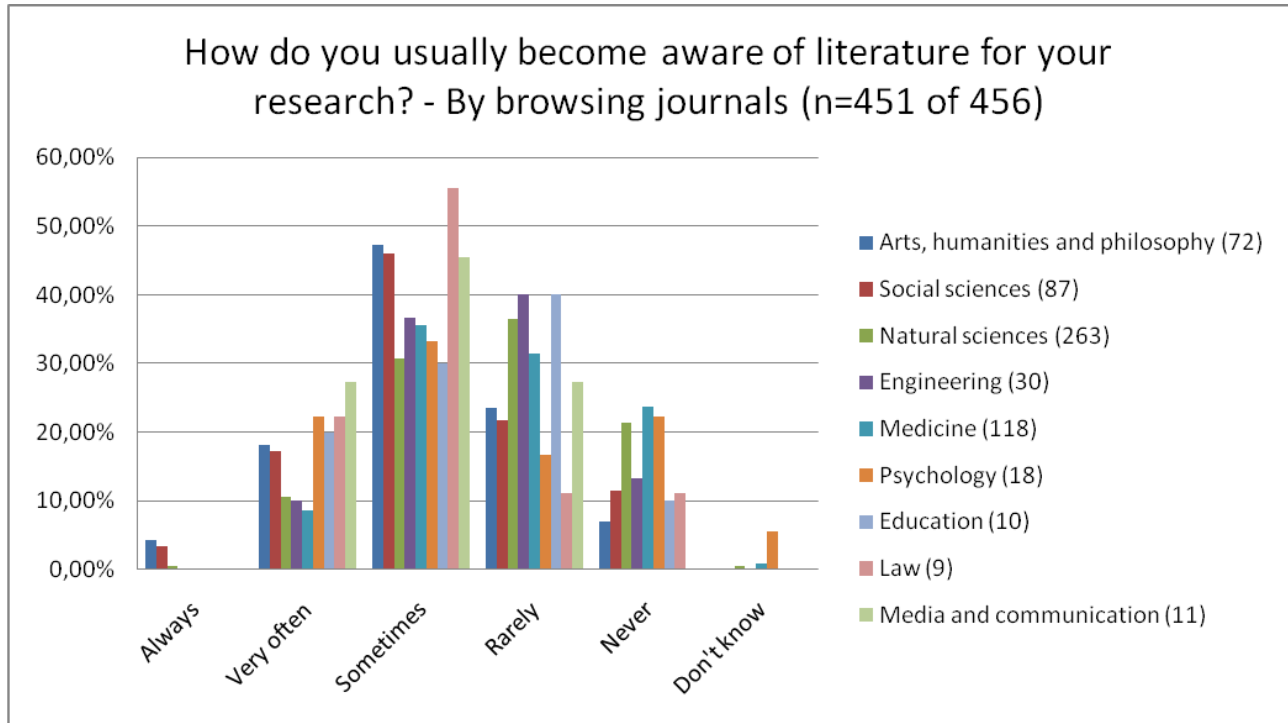
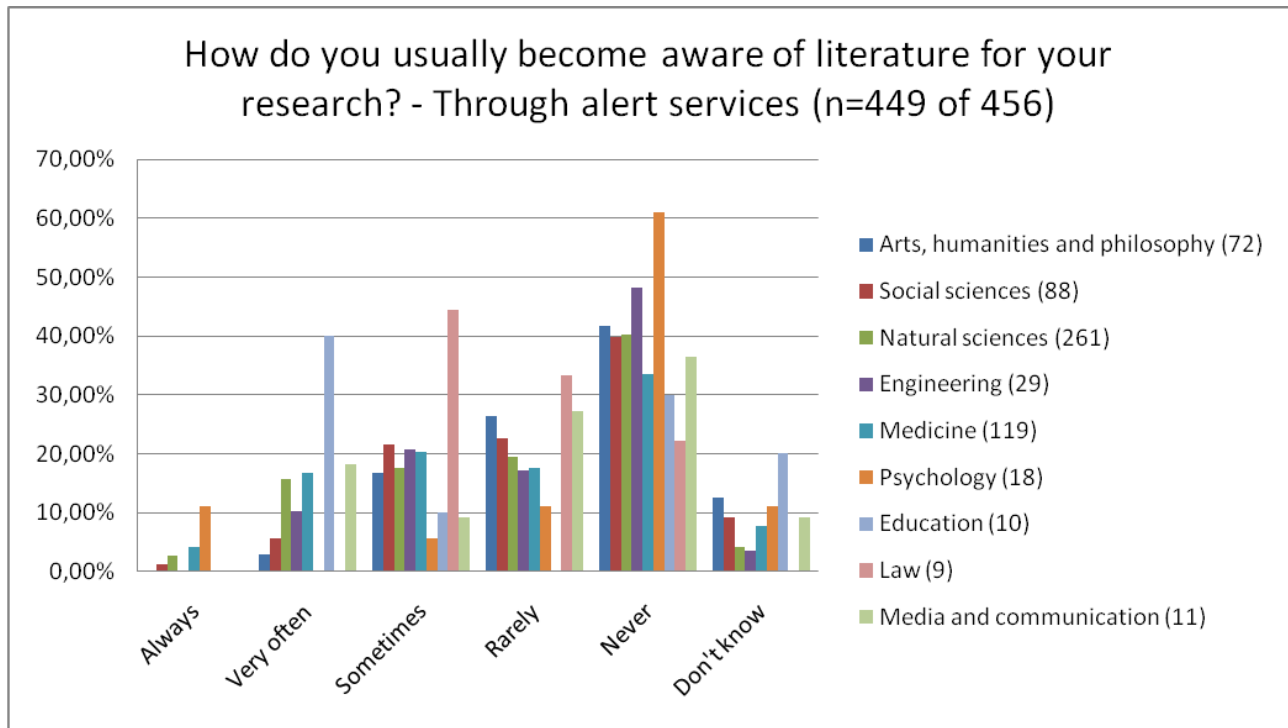


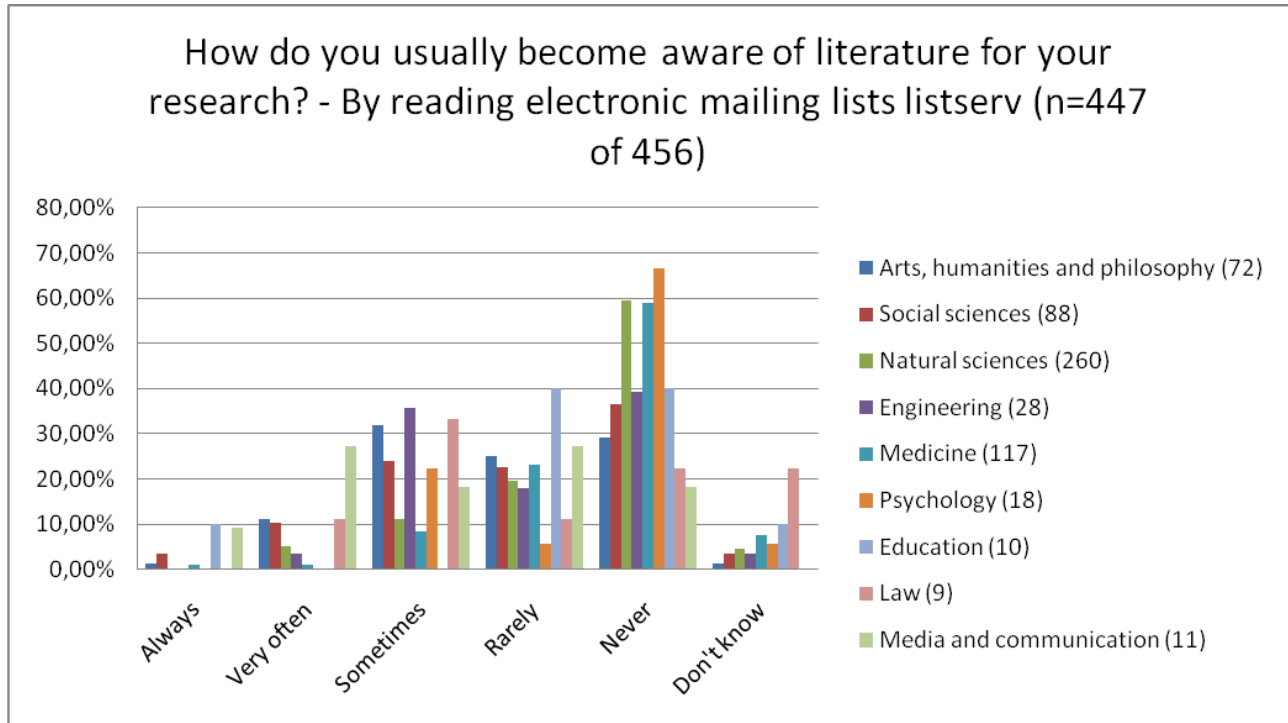
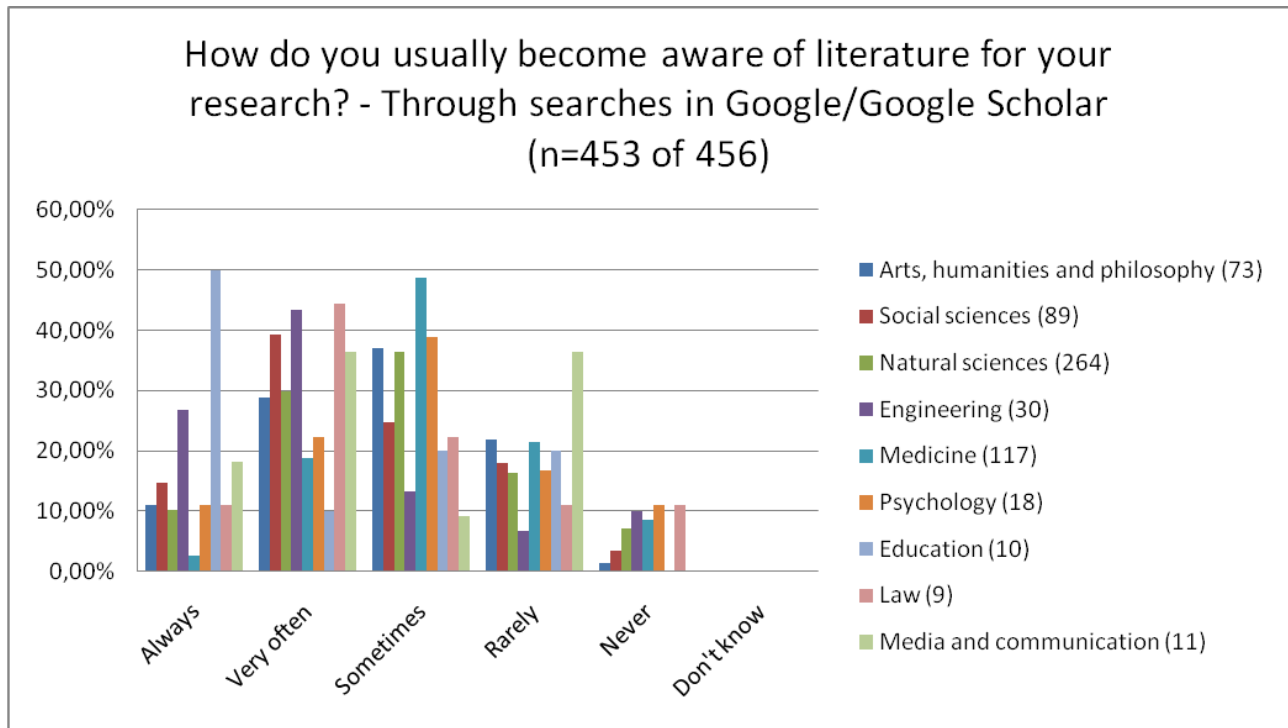


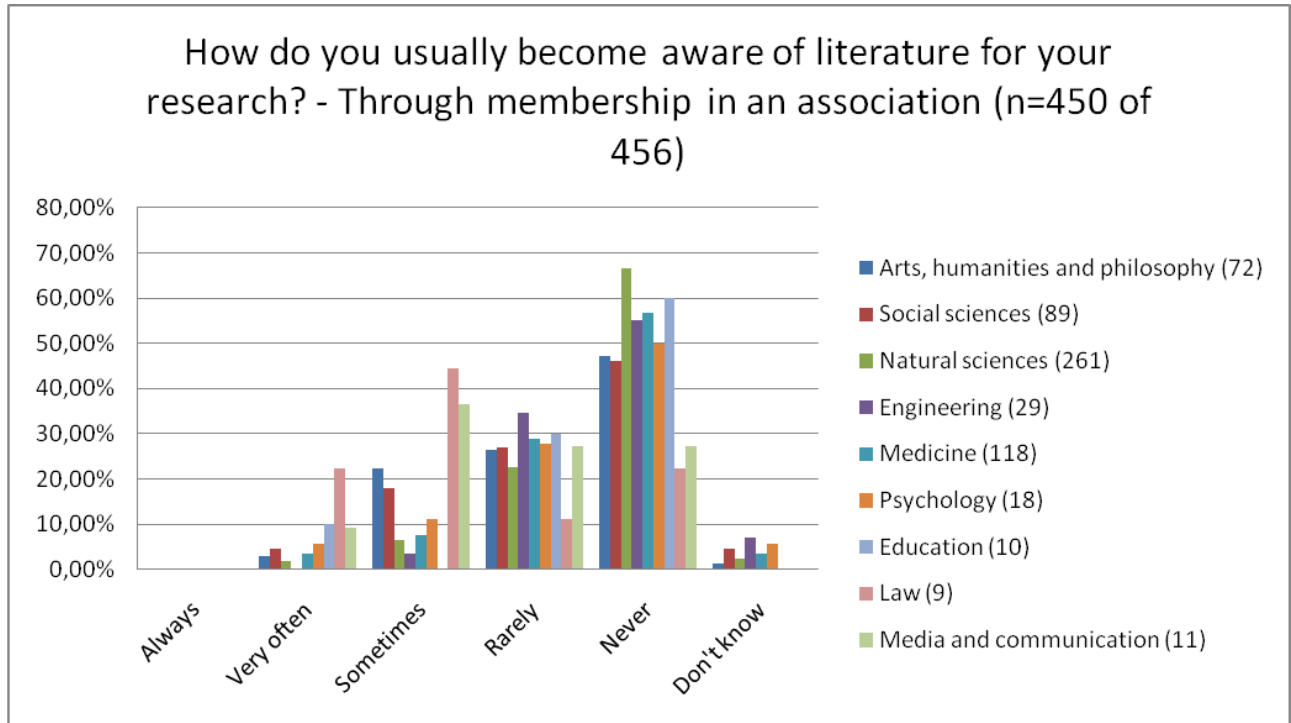
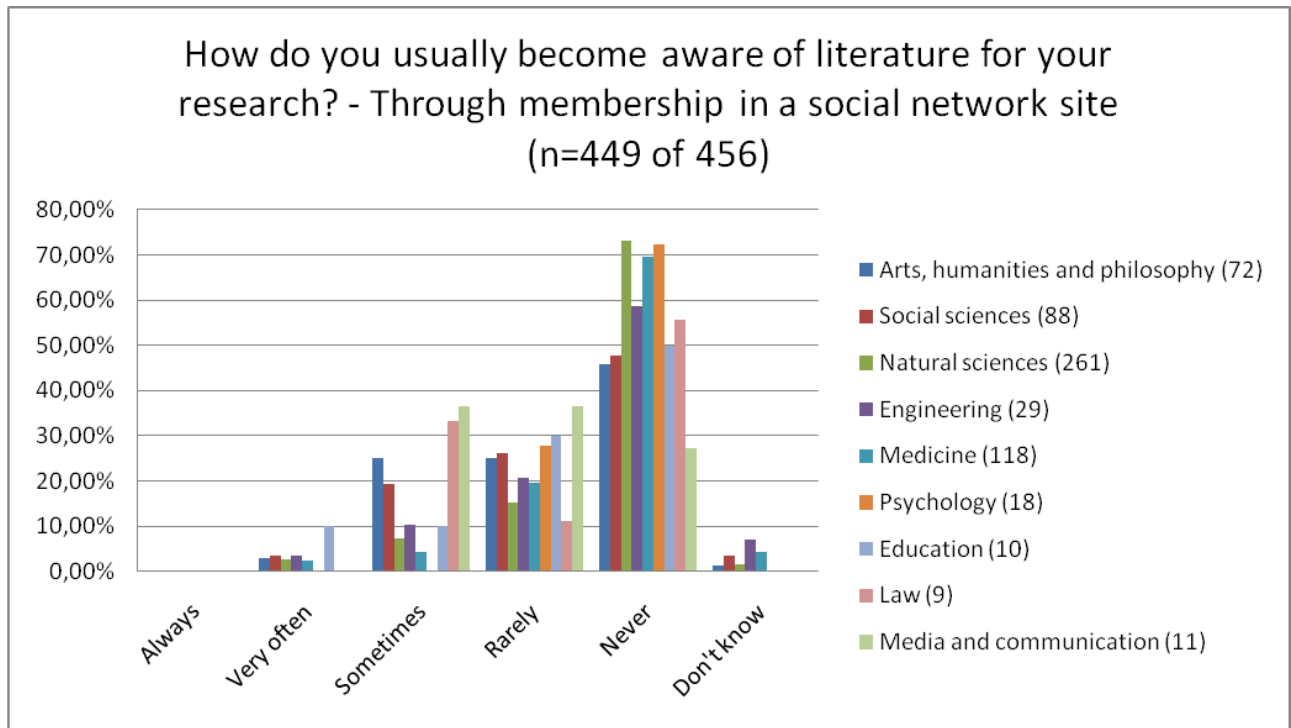


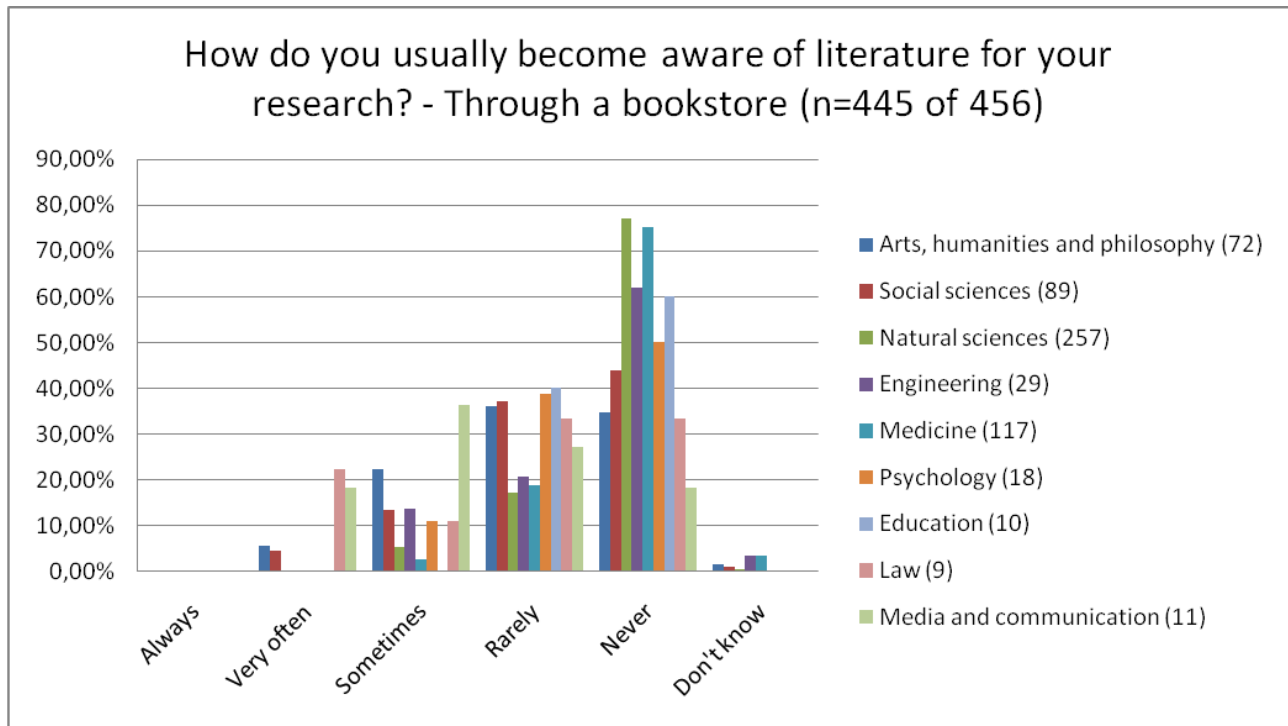




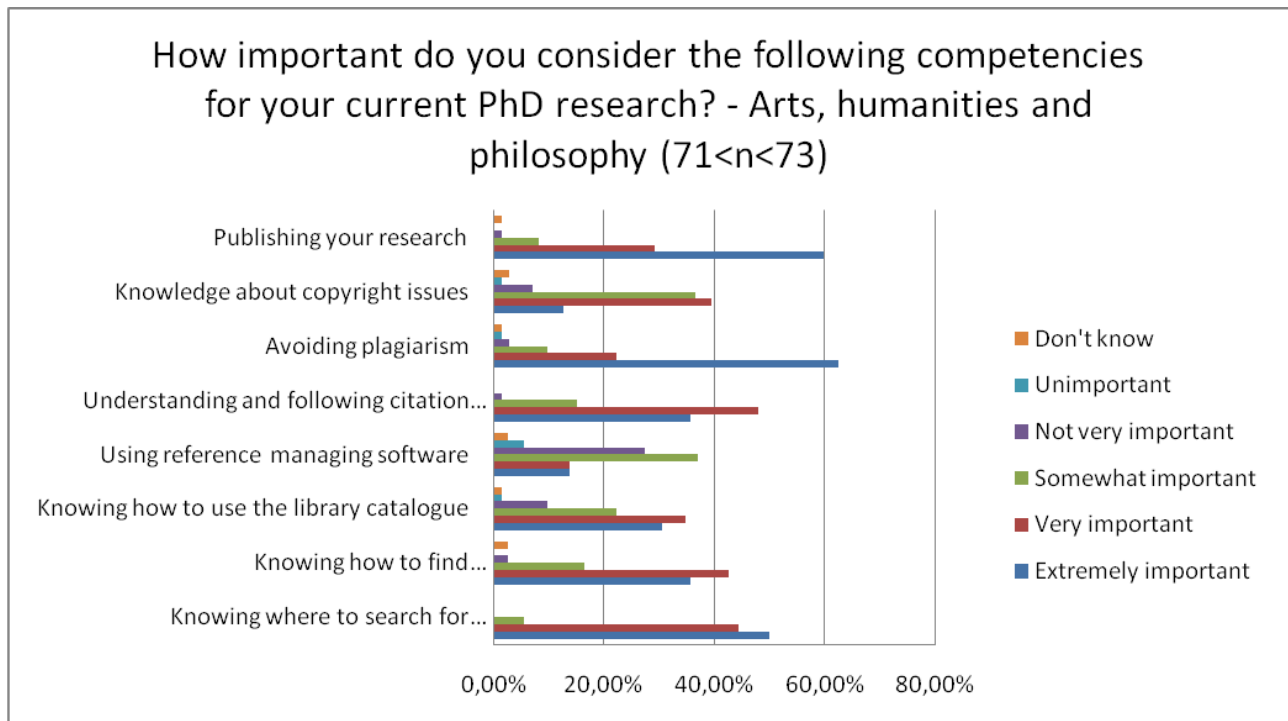


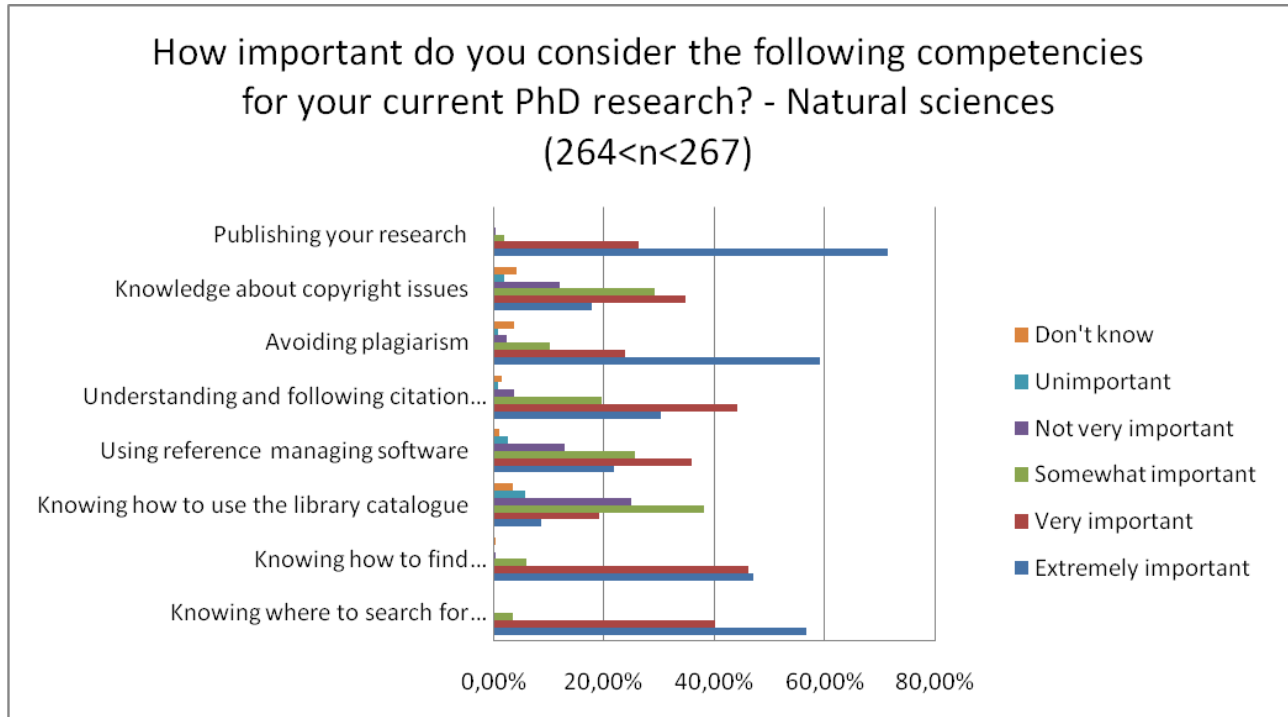
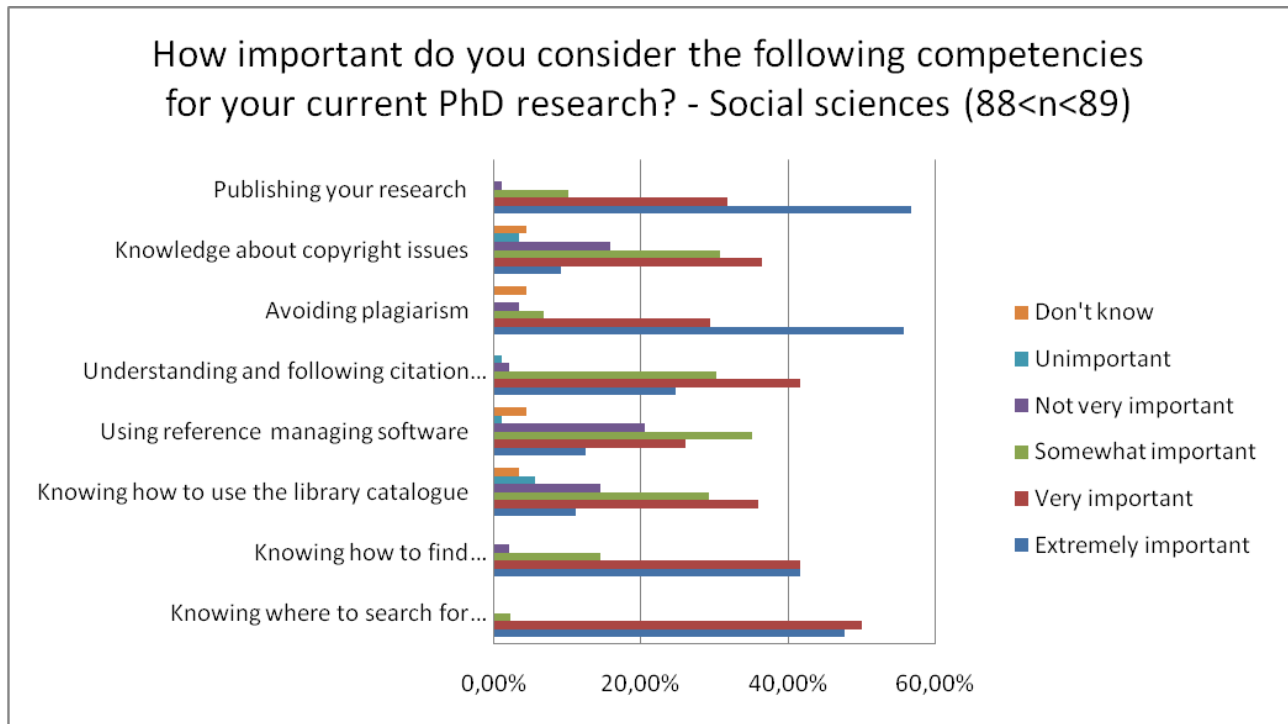


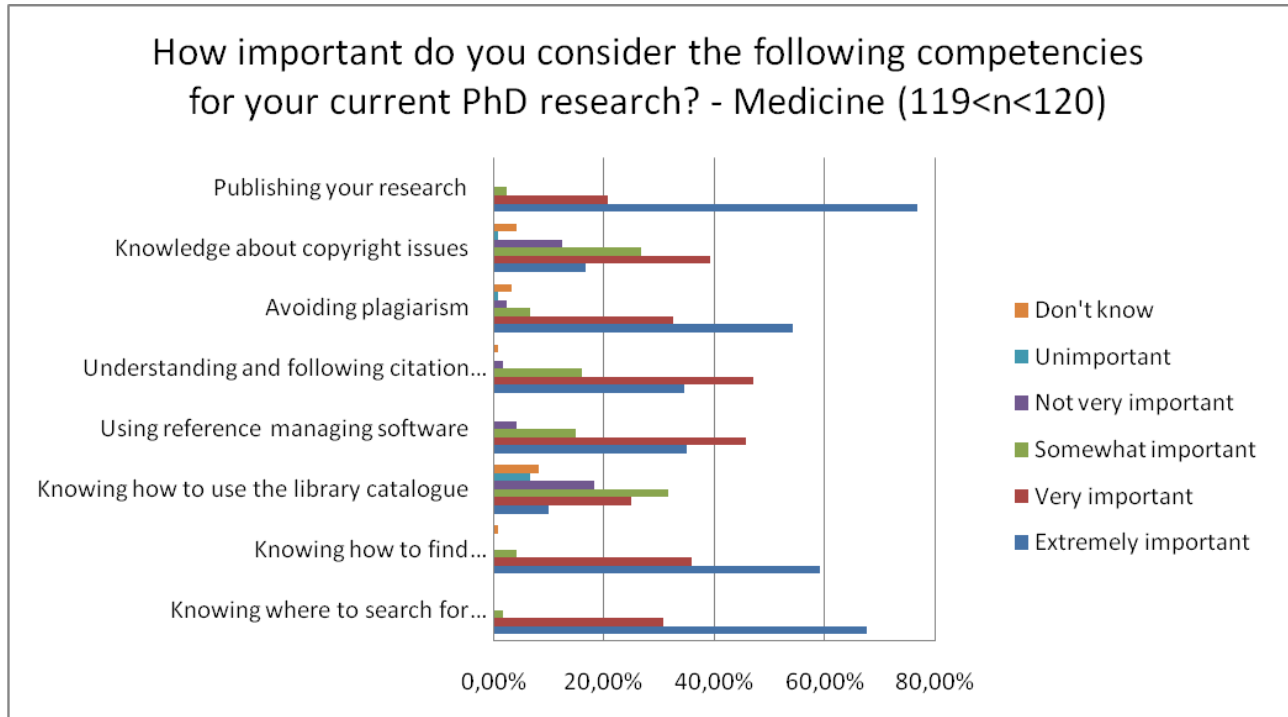
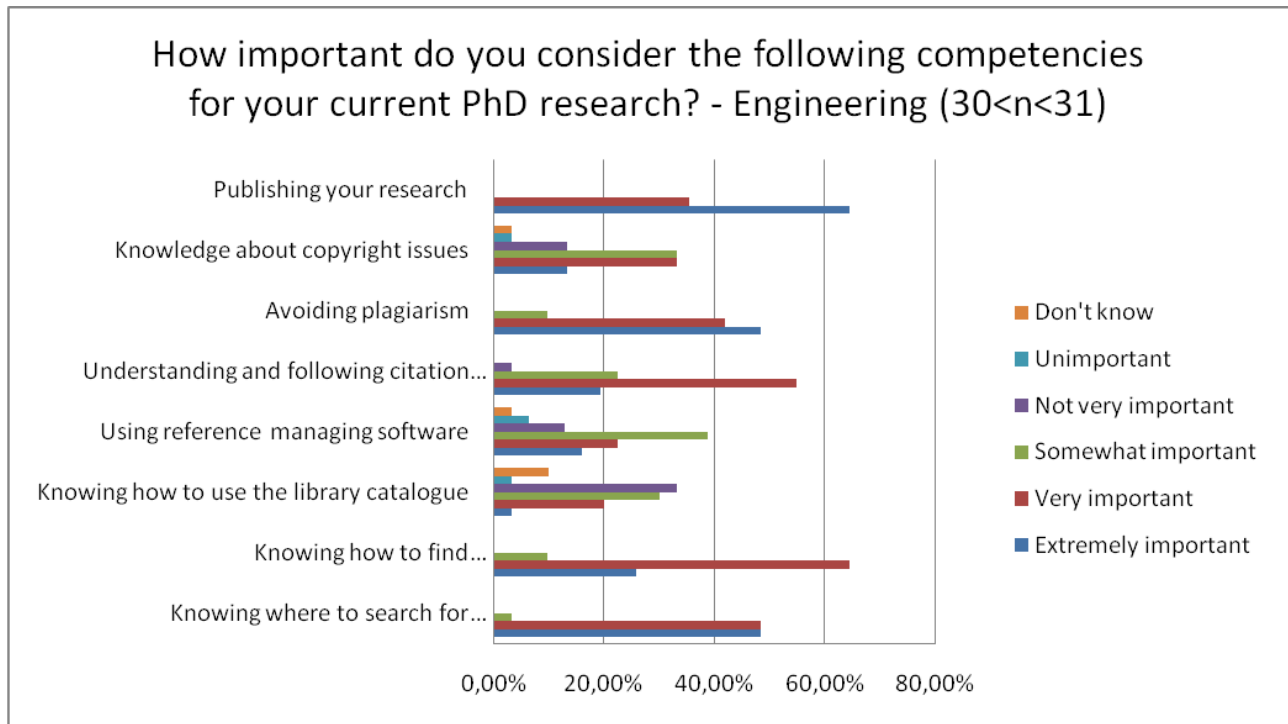


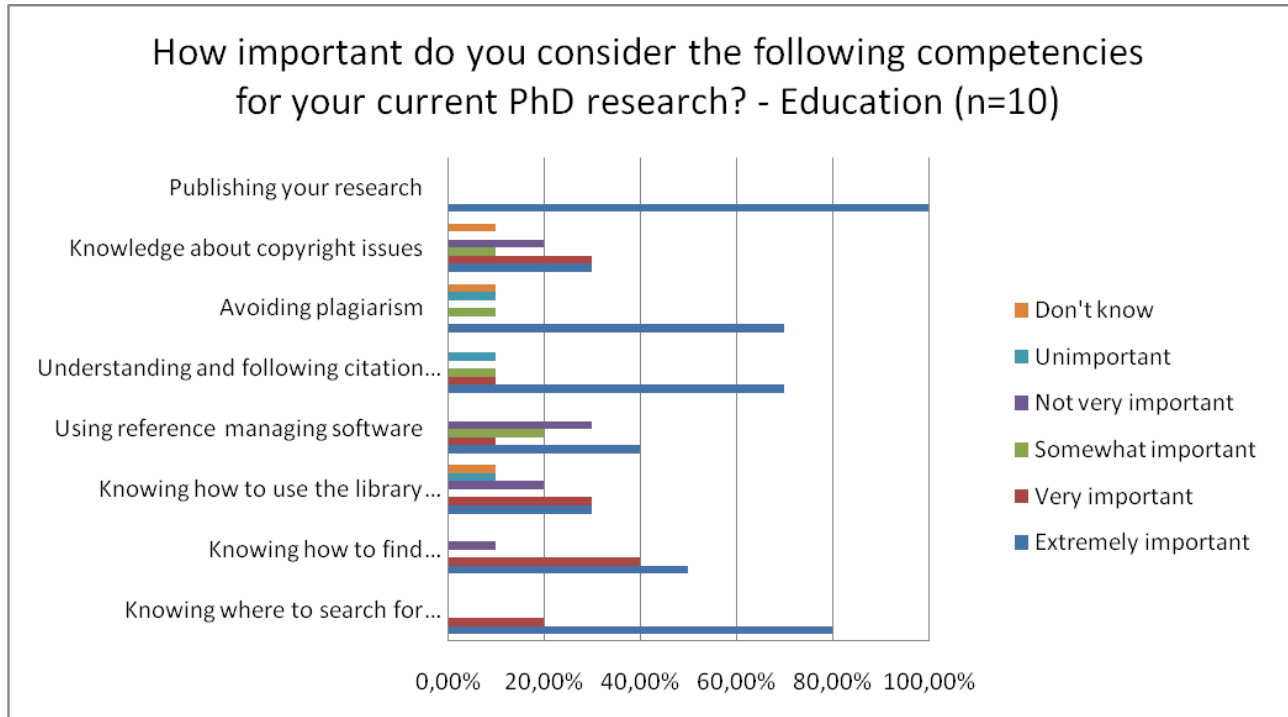
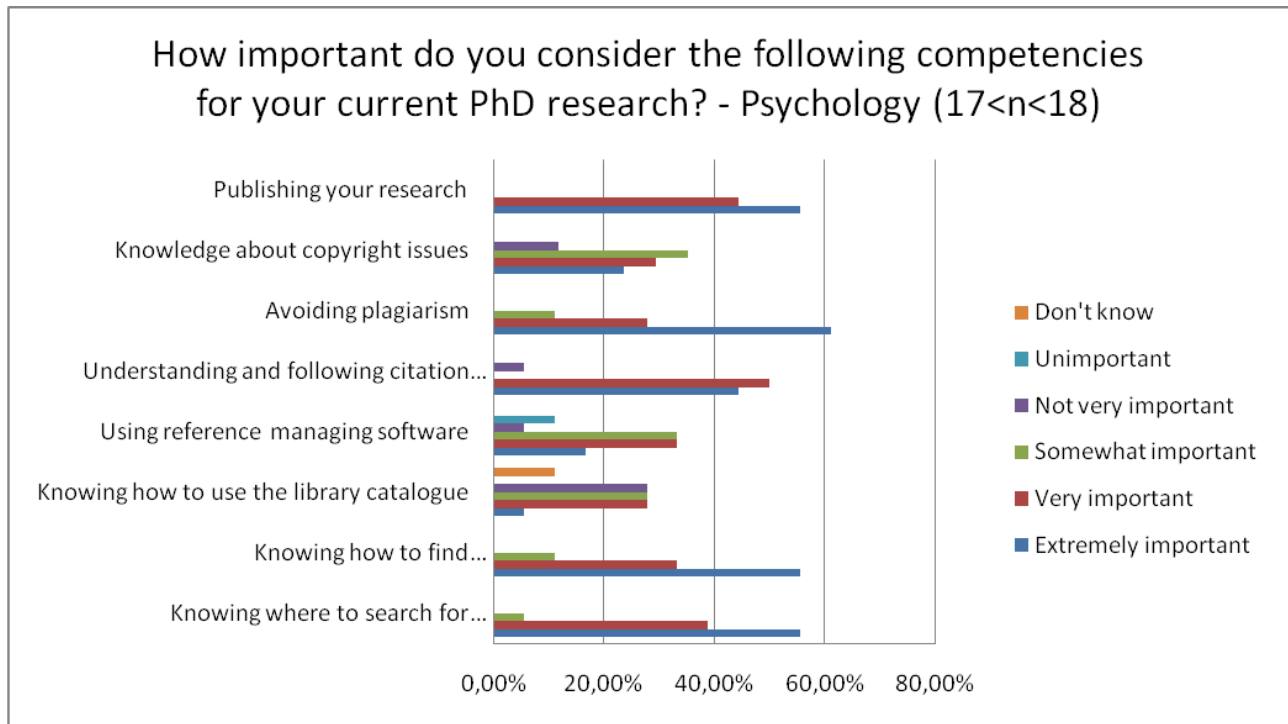


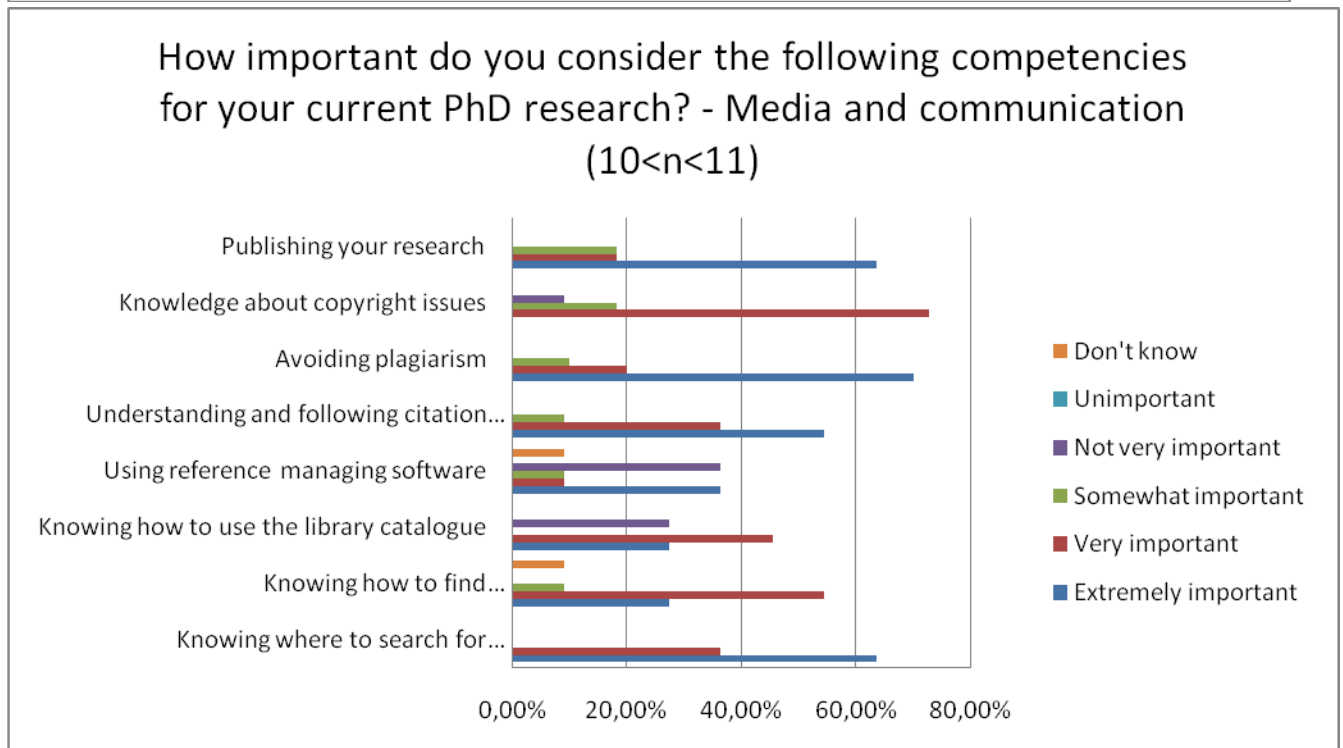
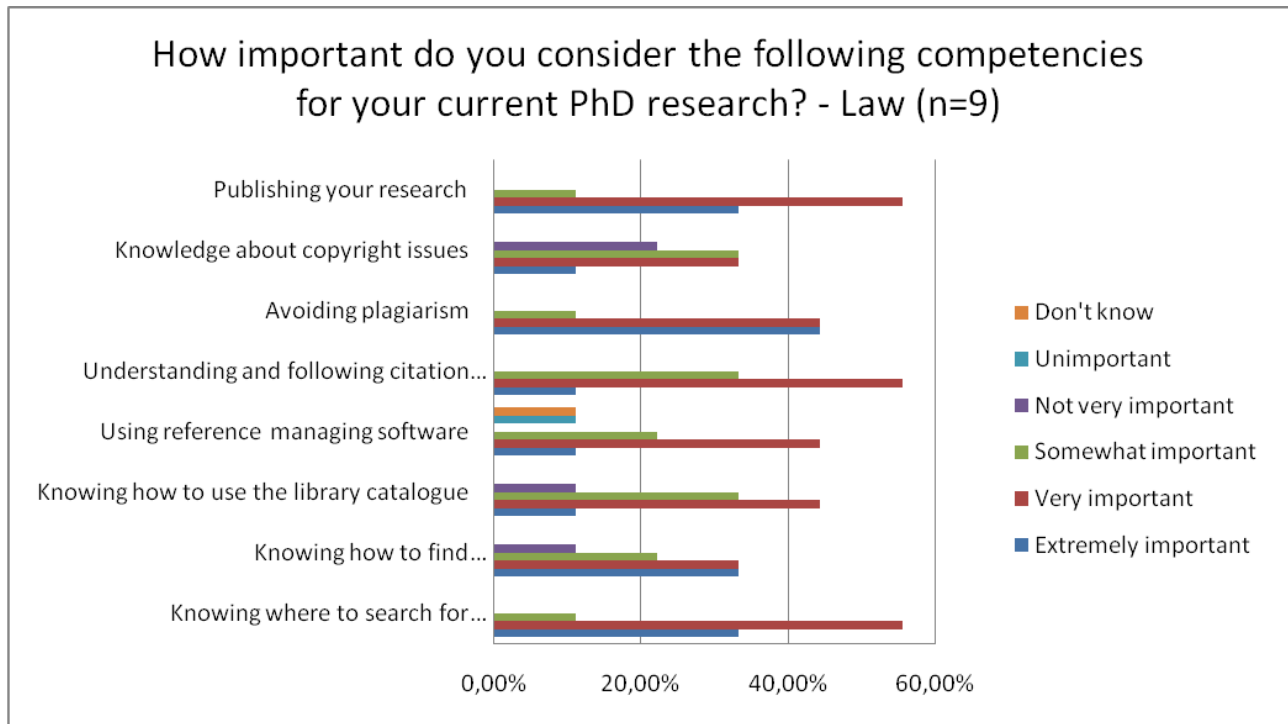
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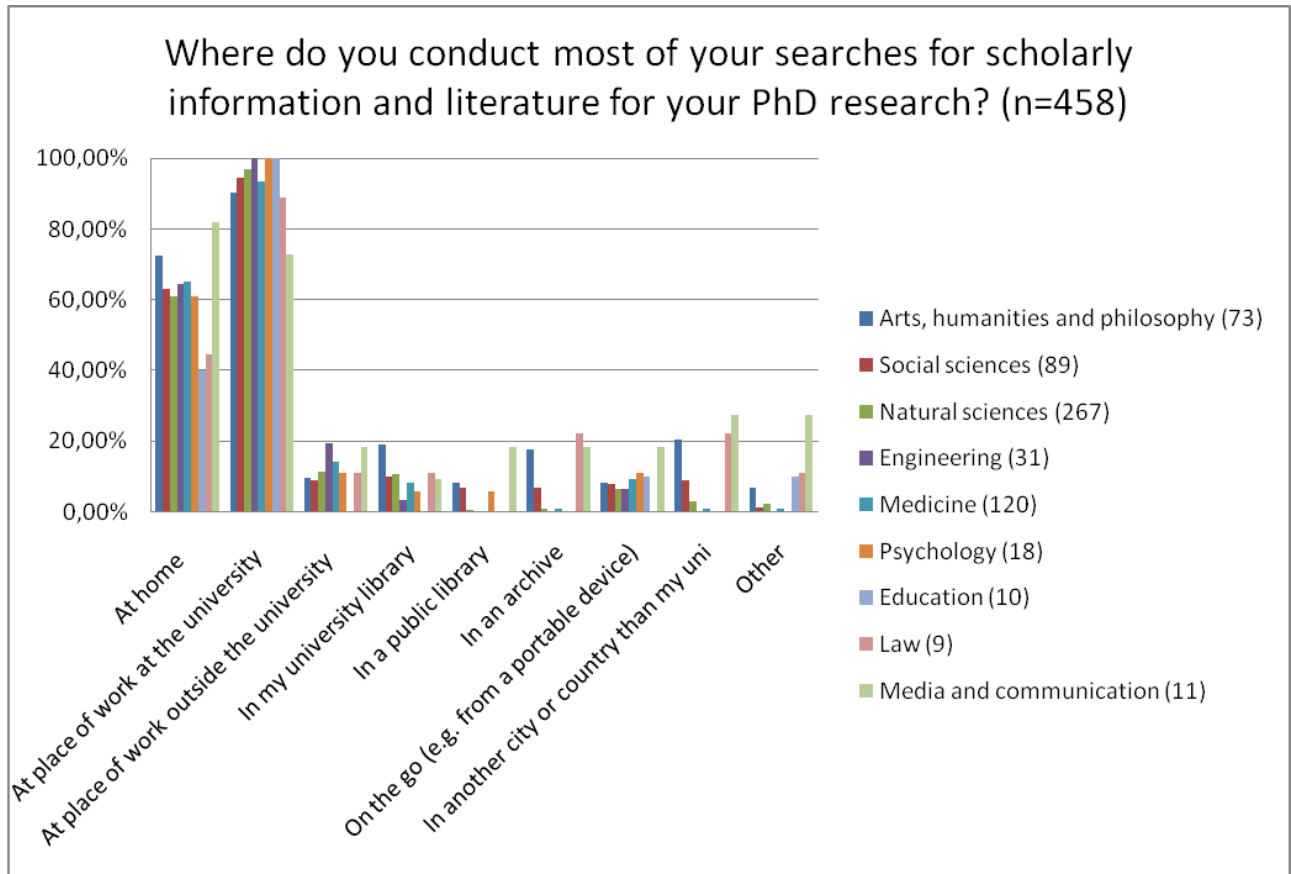




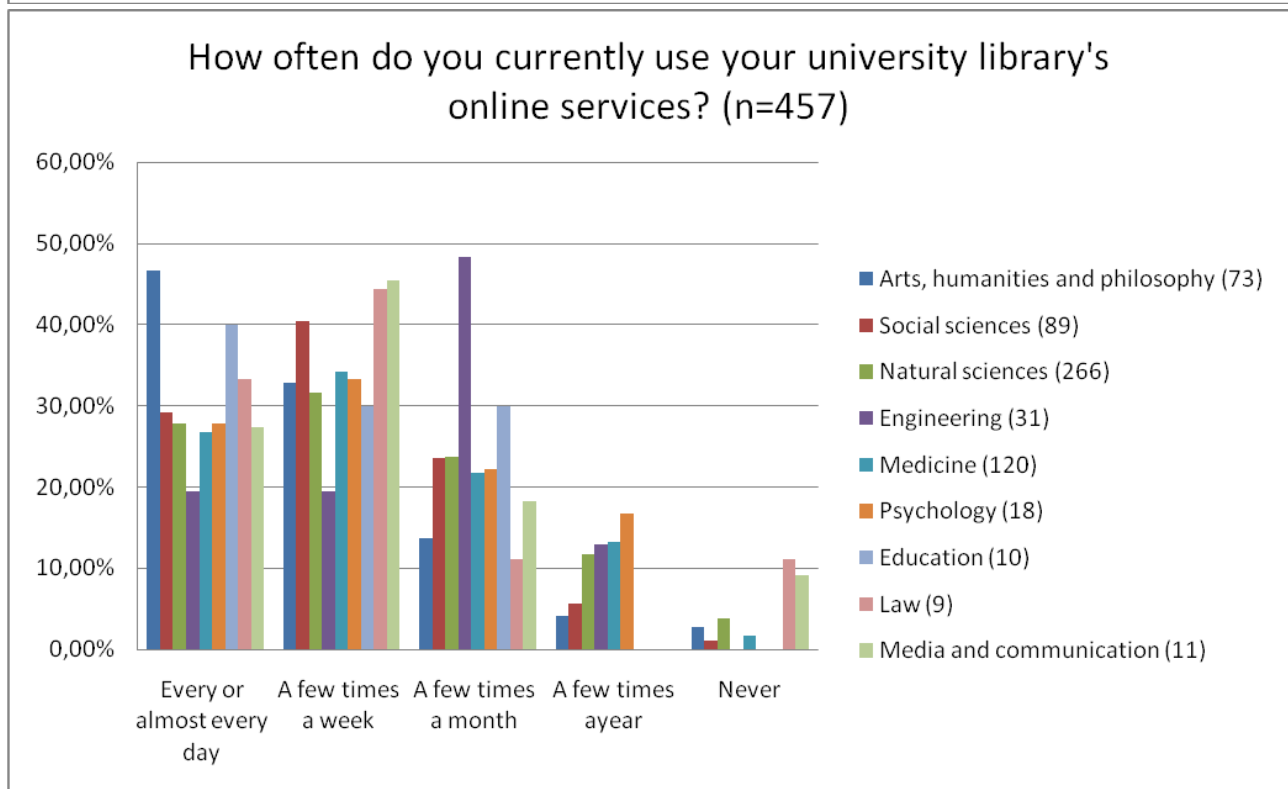
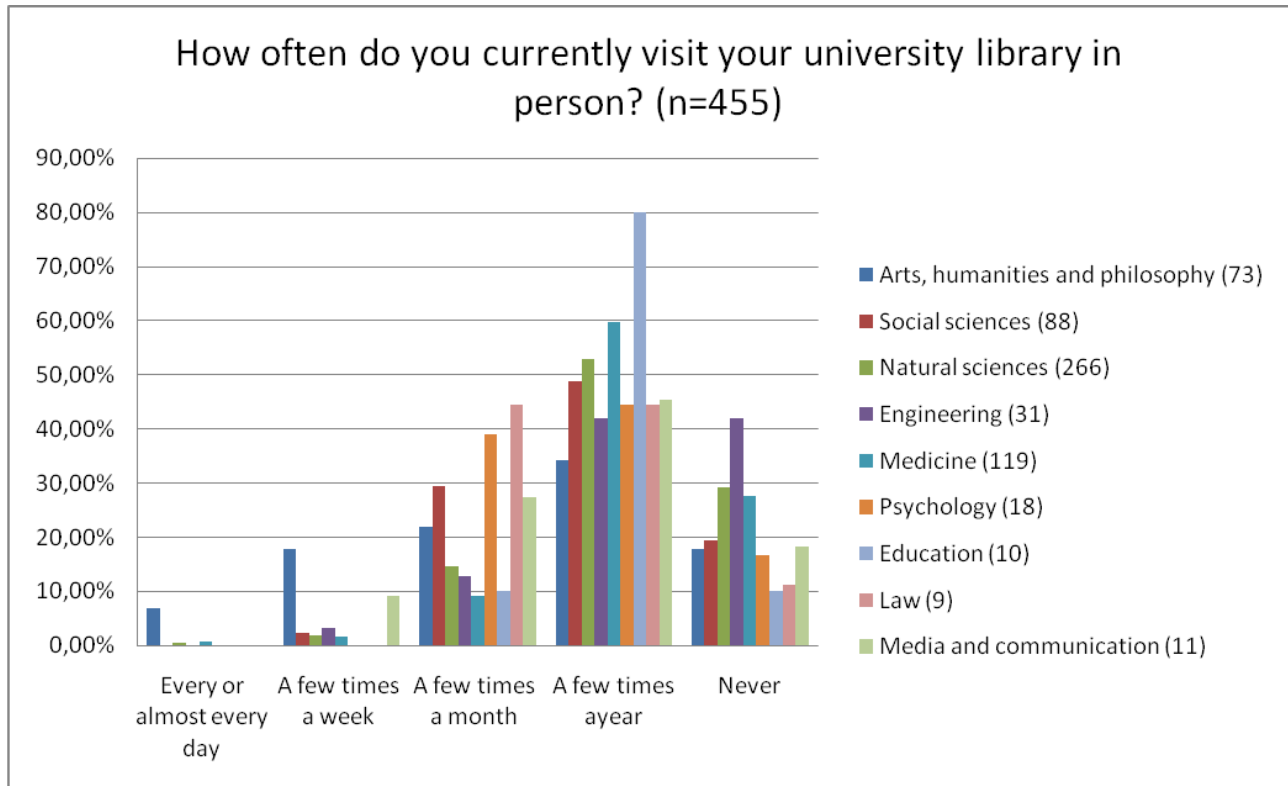




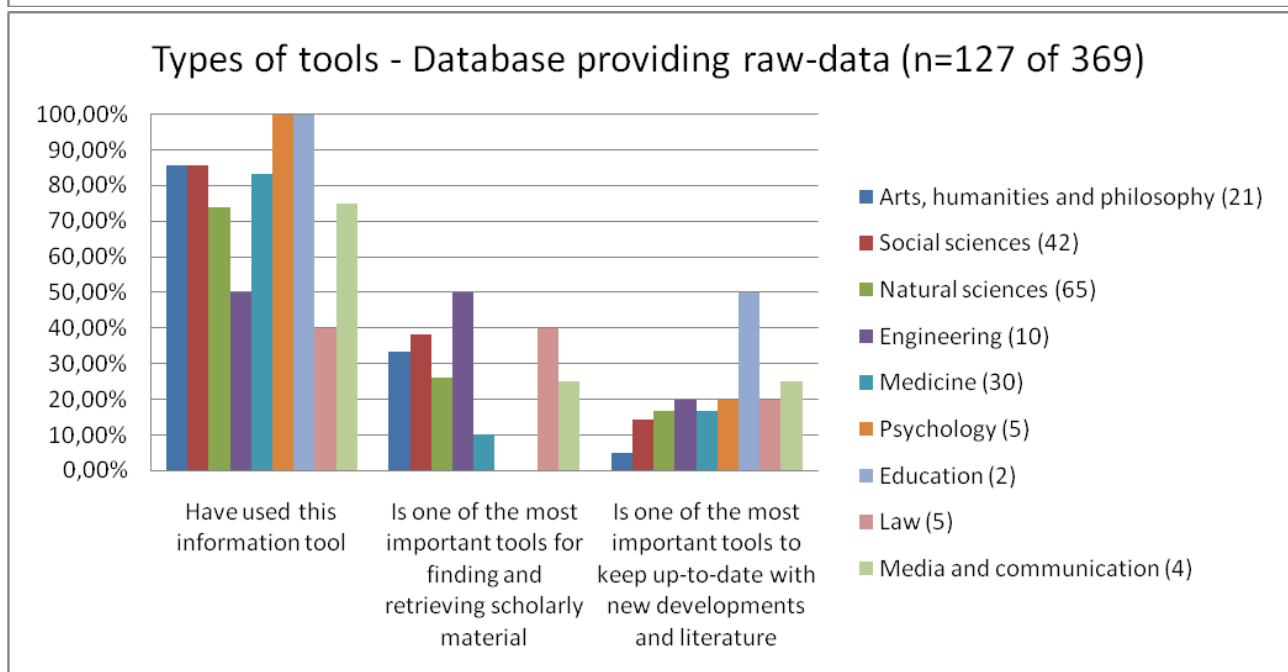
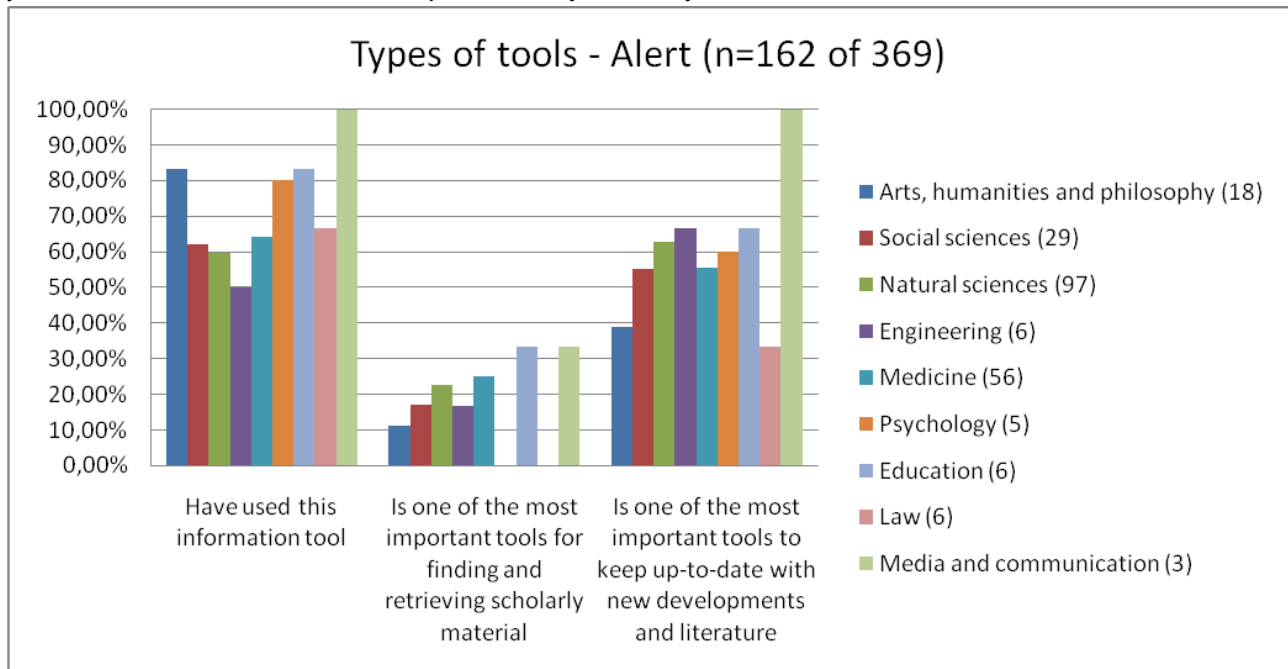
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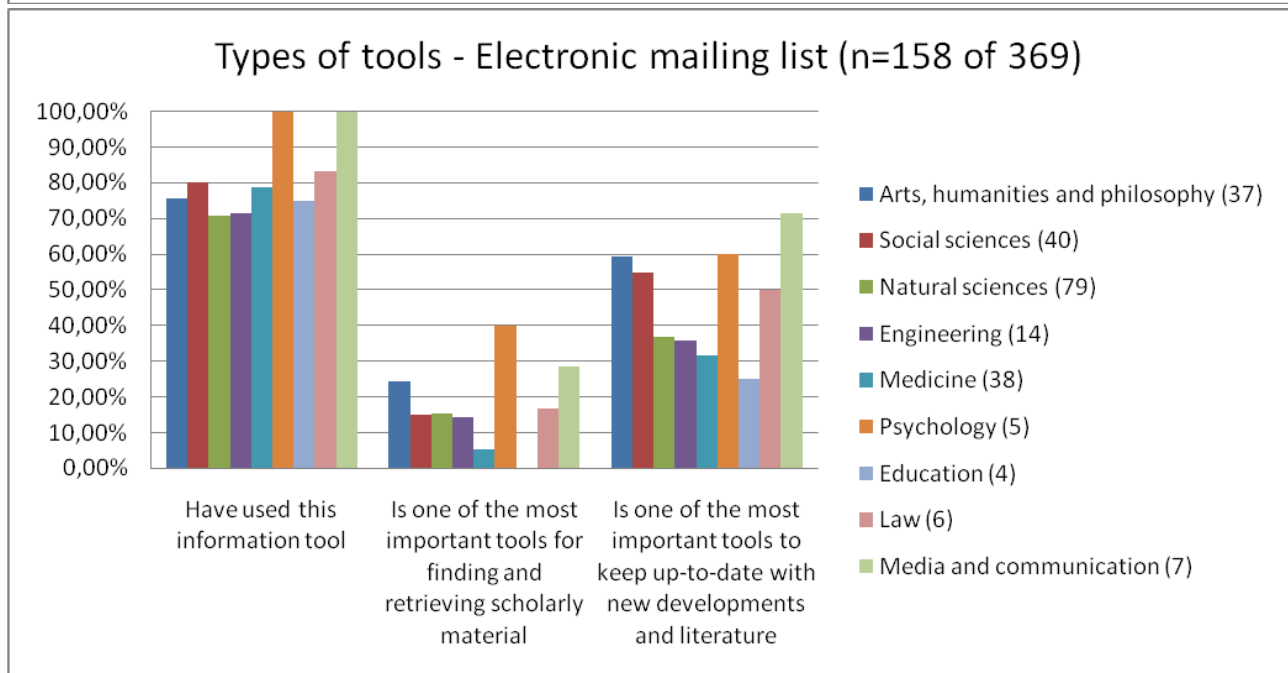
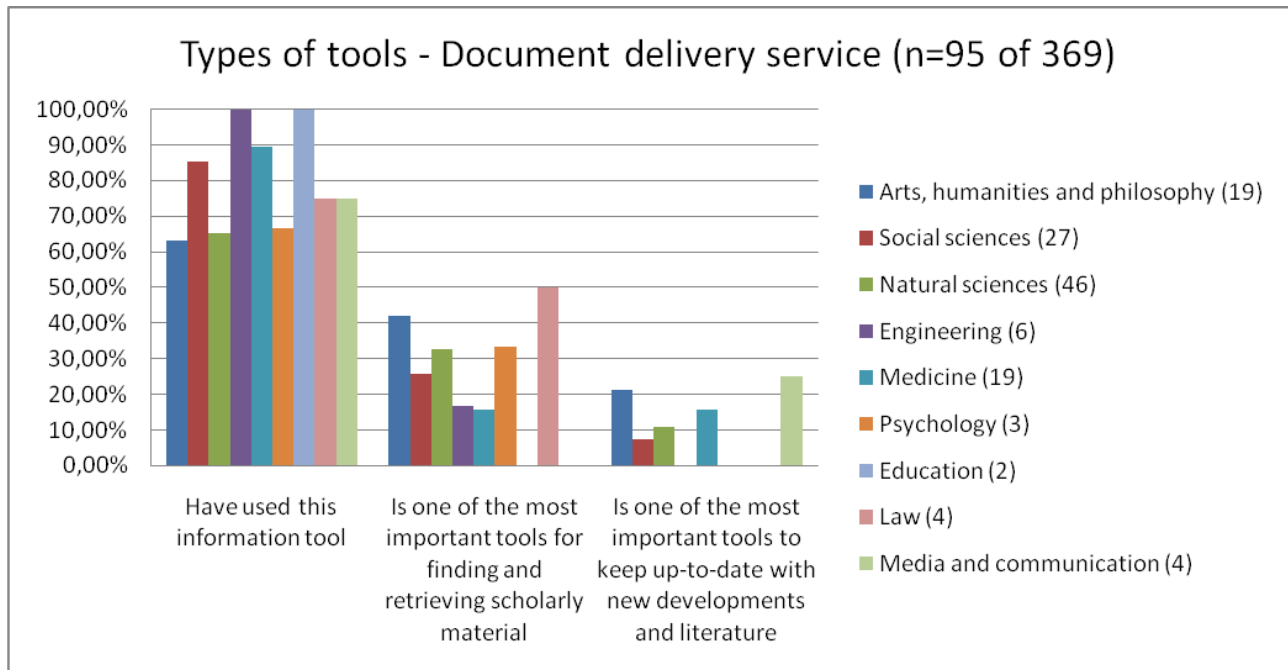


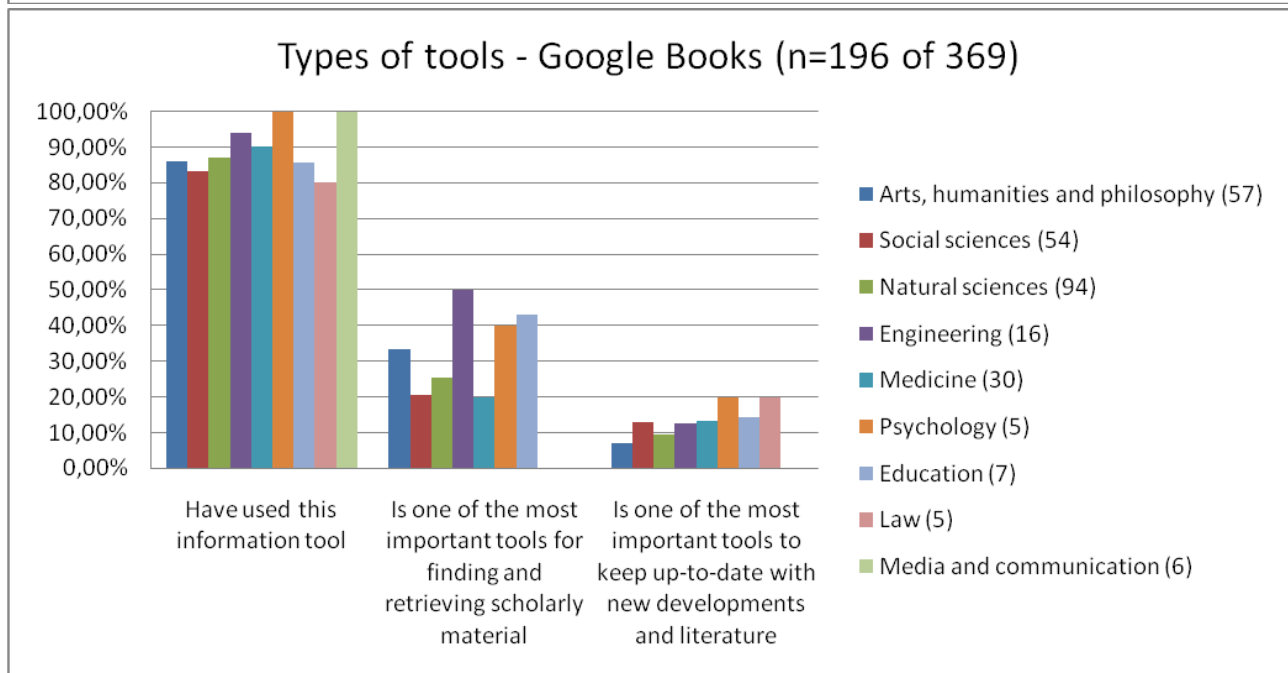
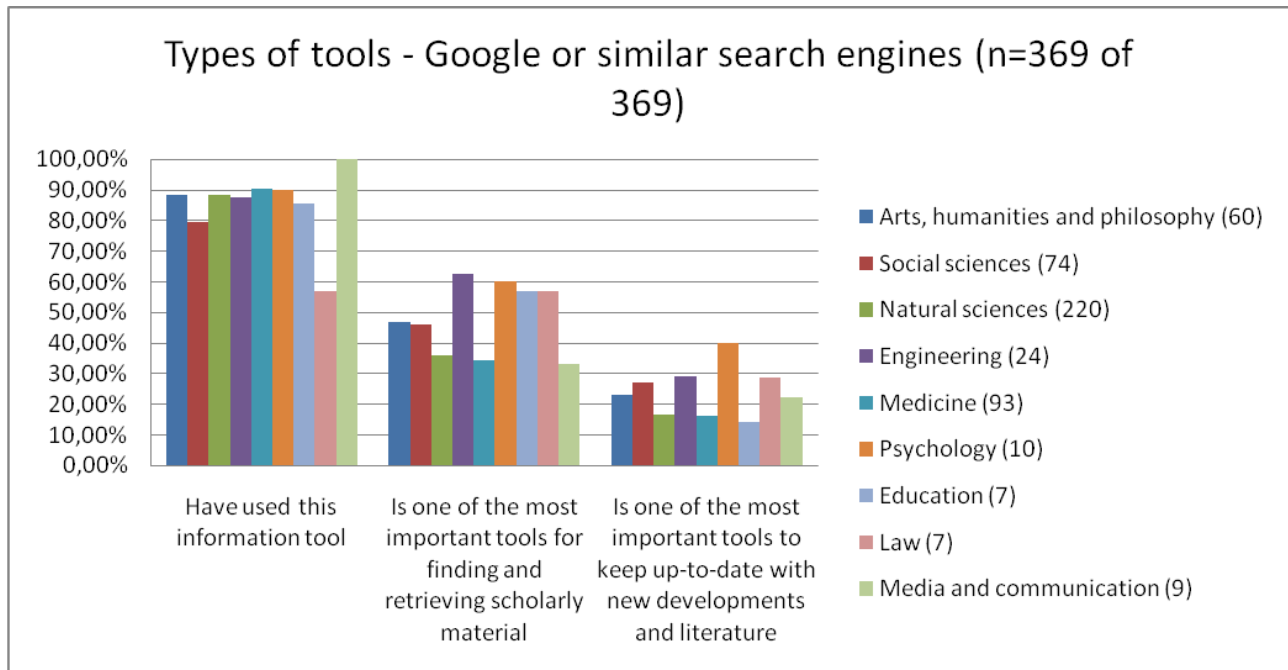
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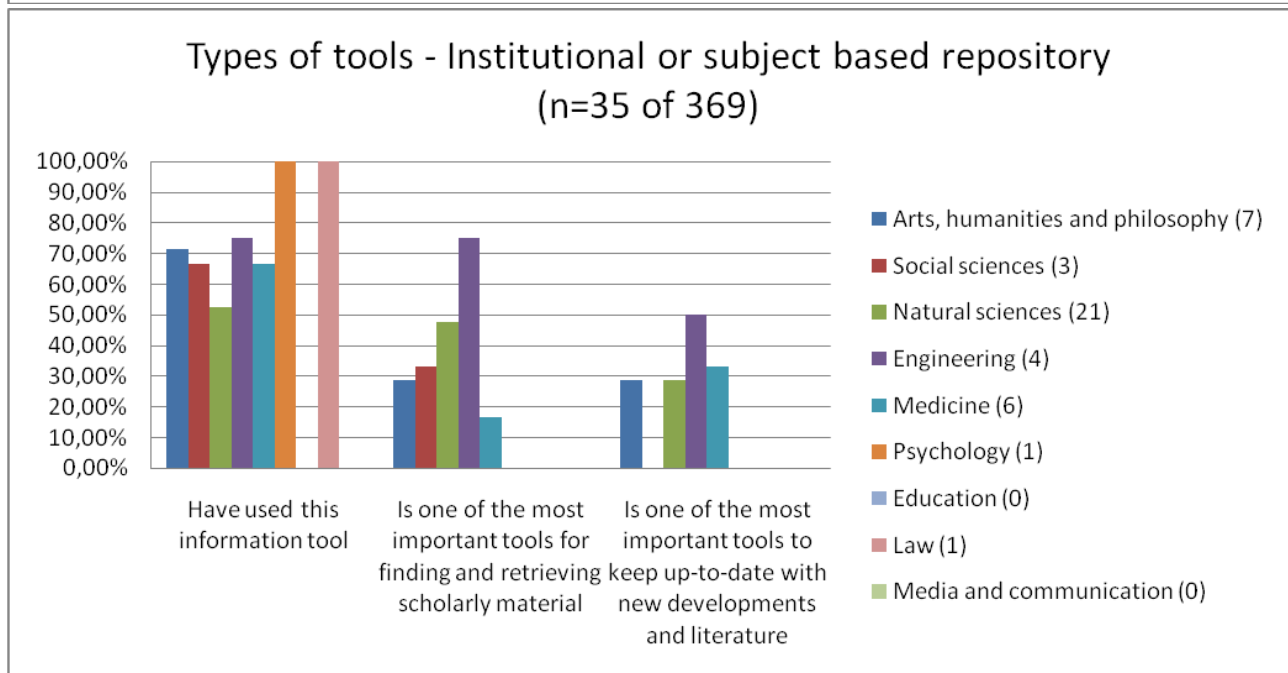
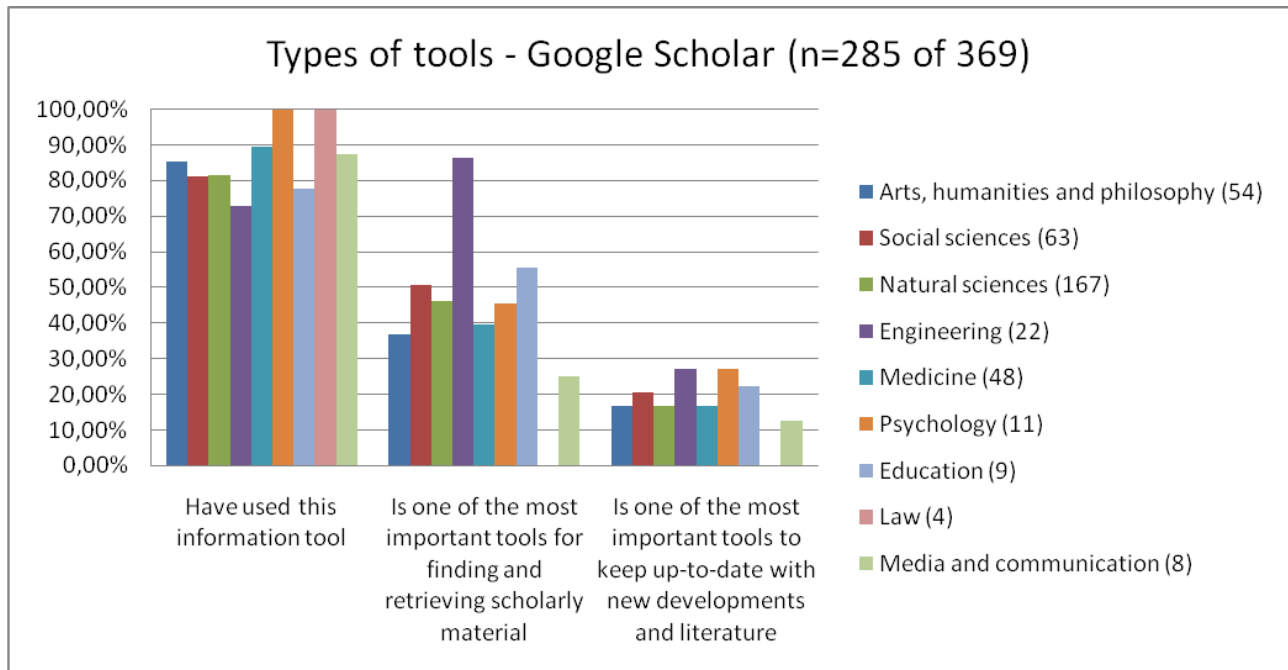


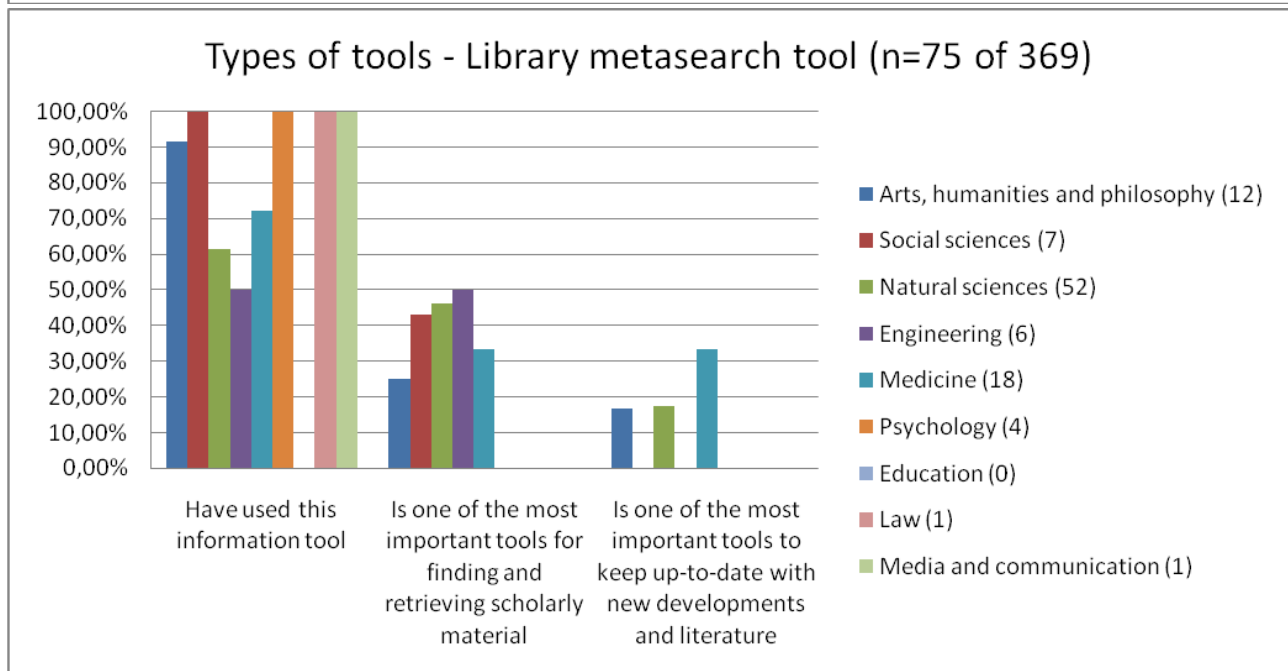
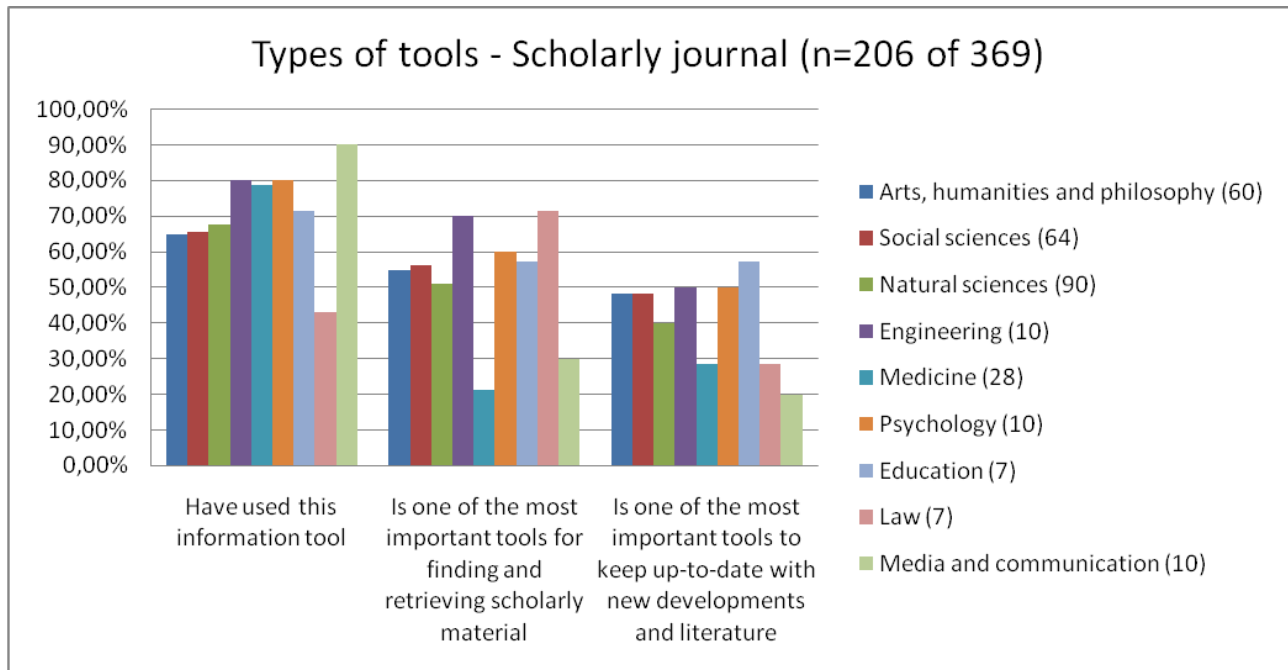
dk b1 f7 u - Look at the following alphabetical list of different types of tools and consider whether you have used them and how important they are for your research

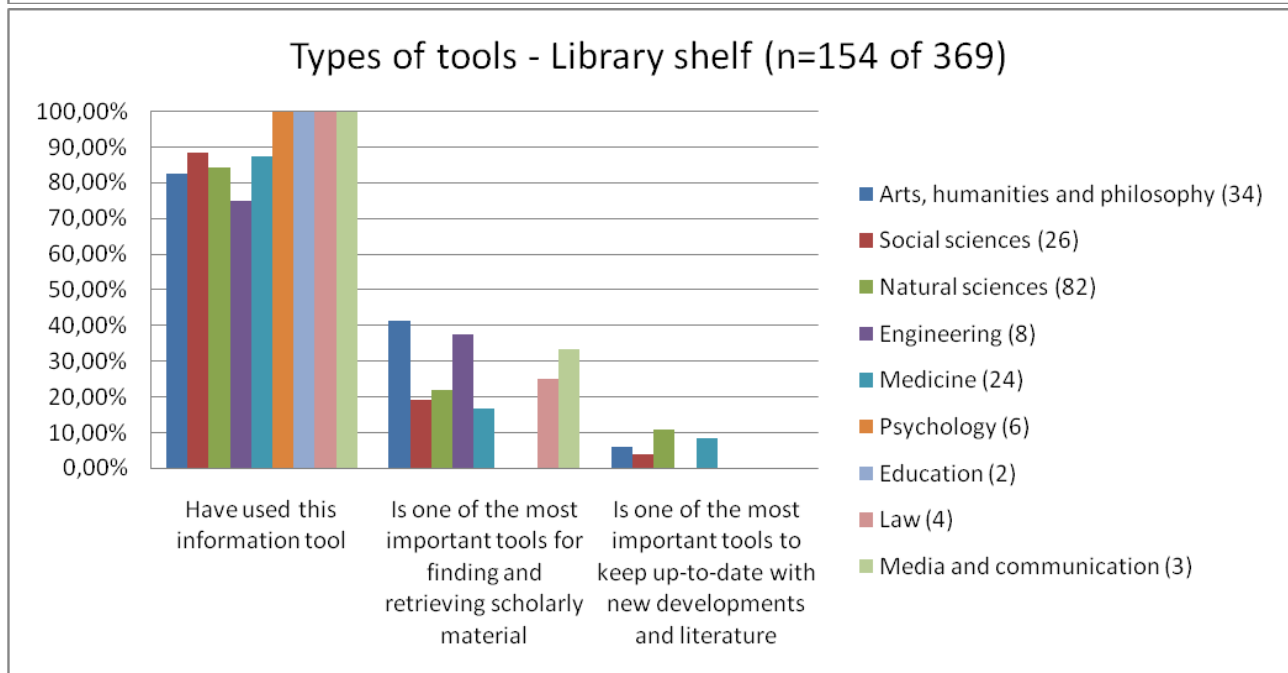
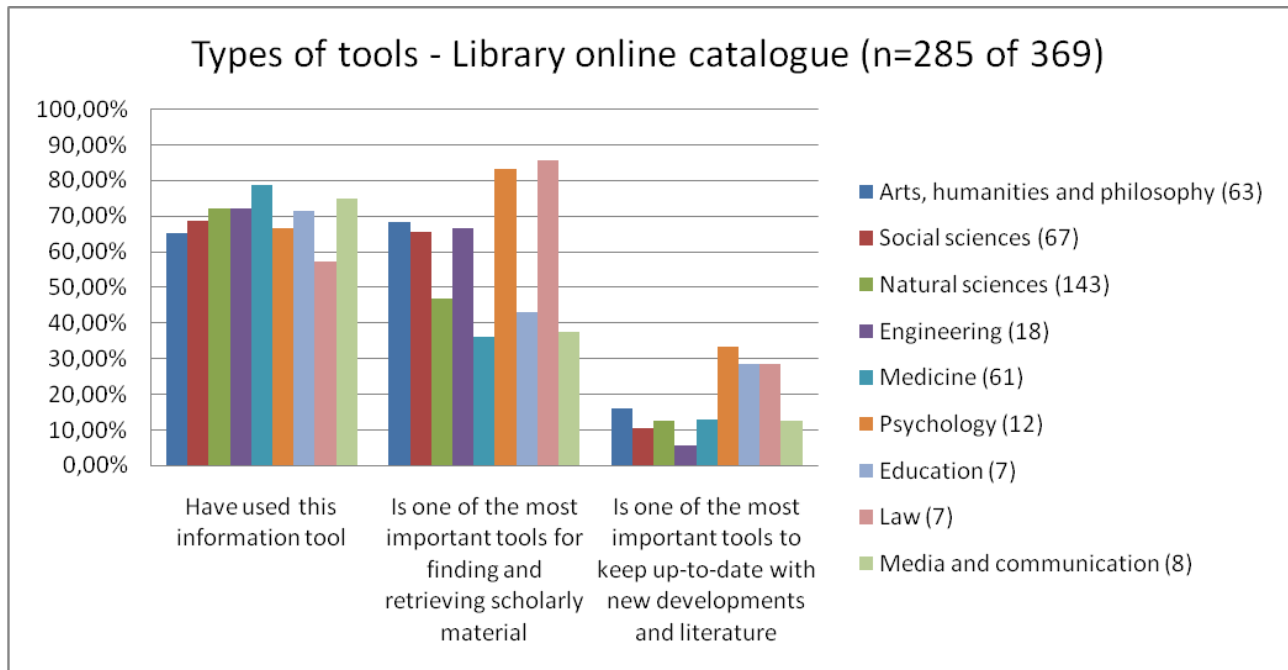


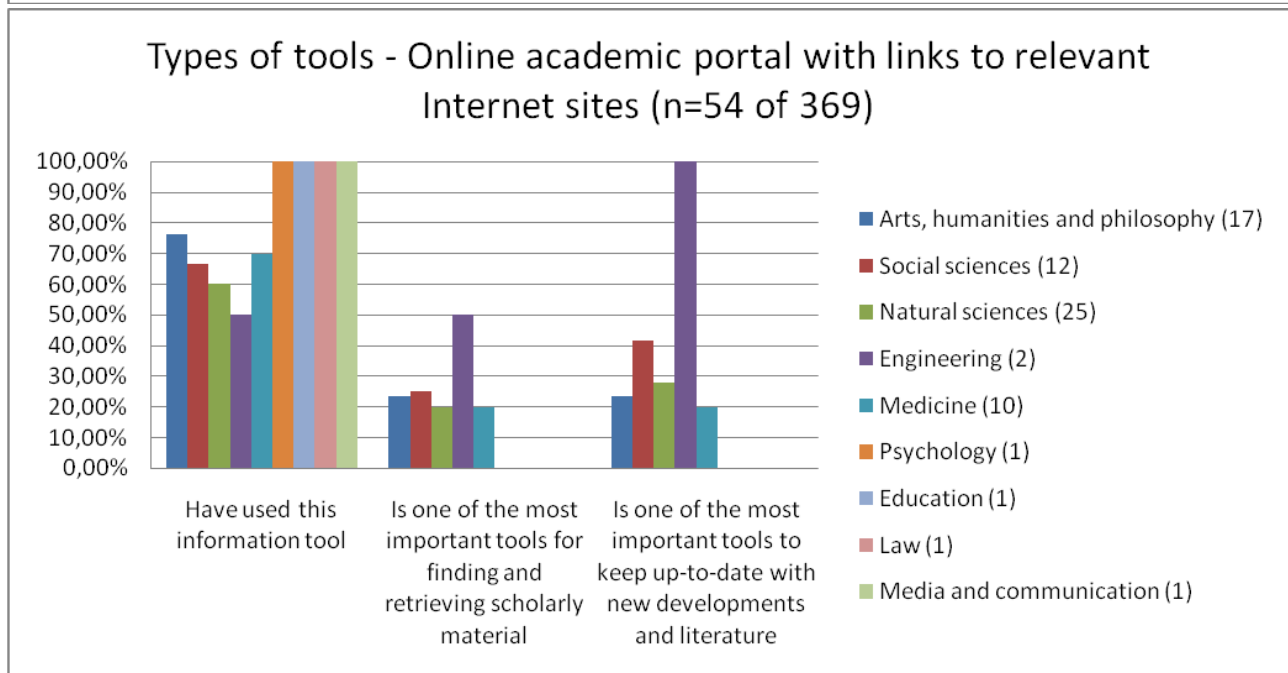
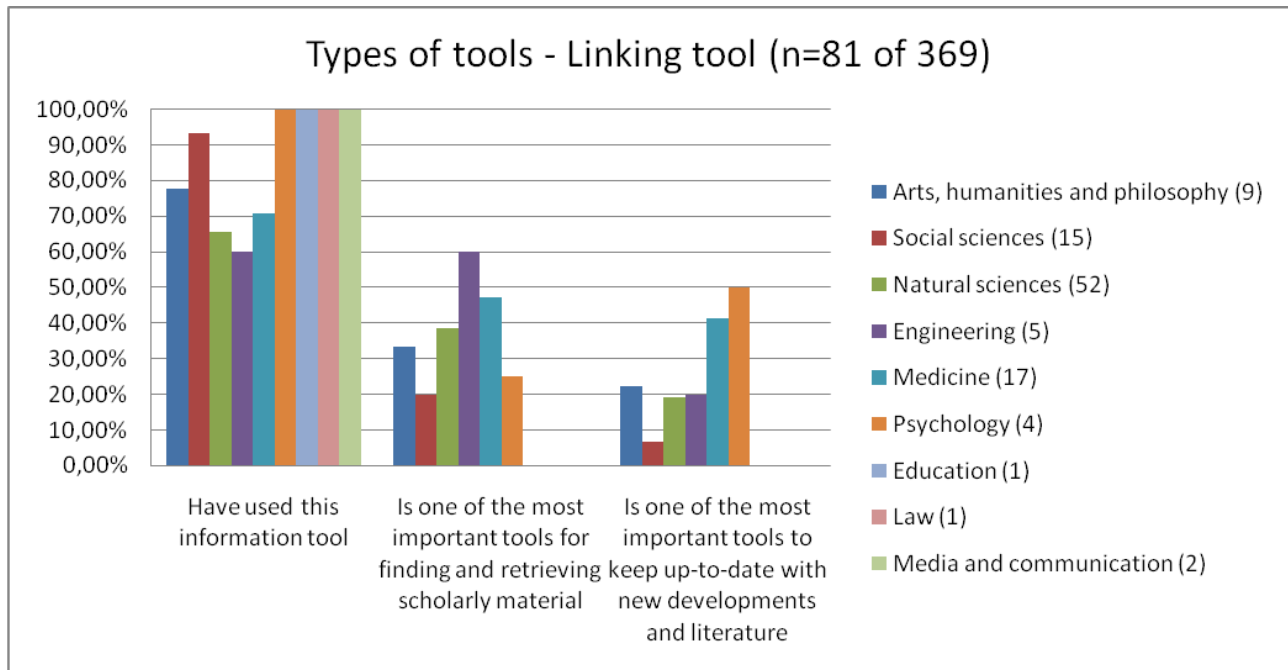


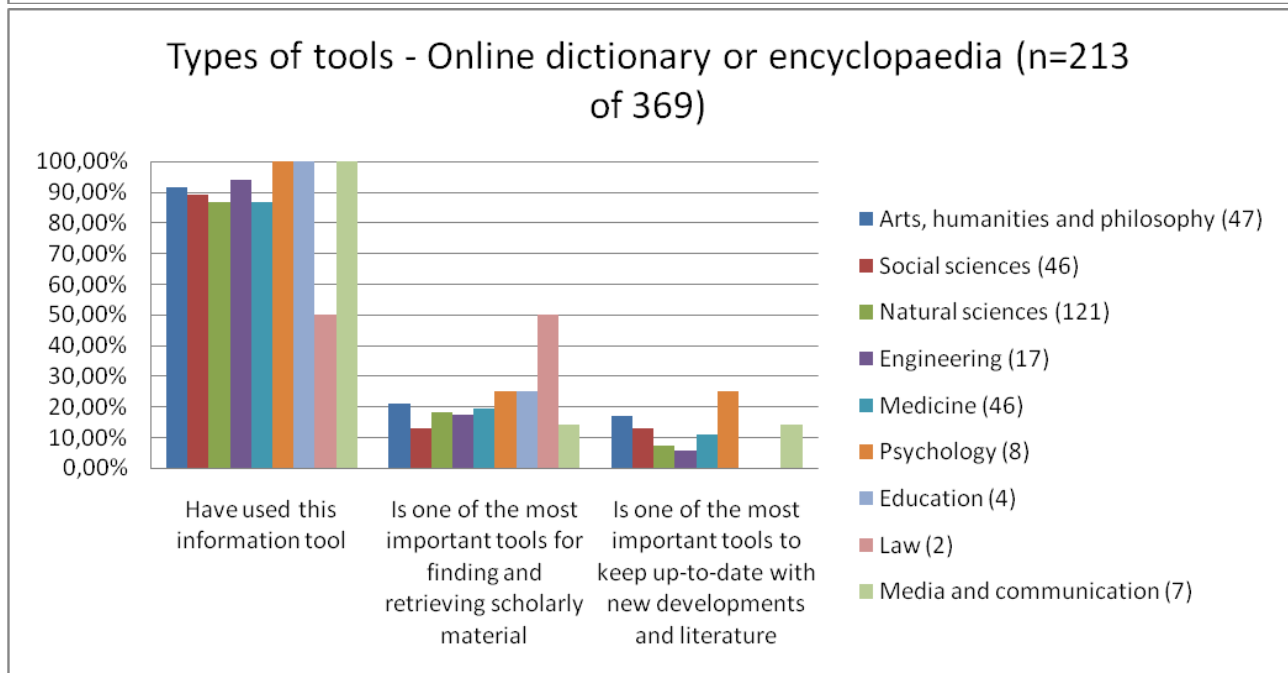
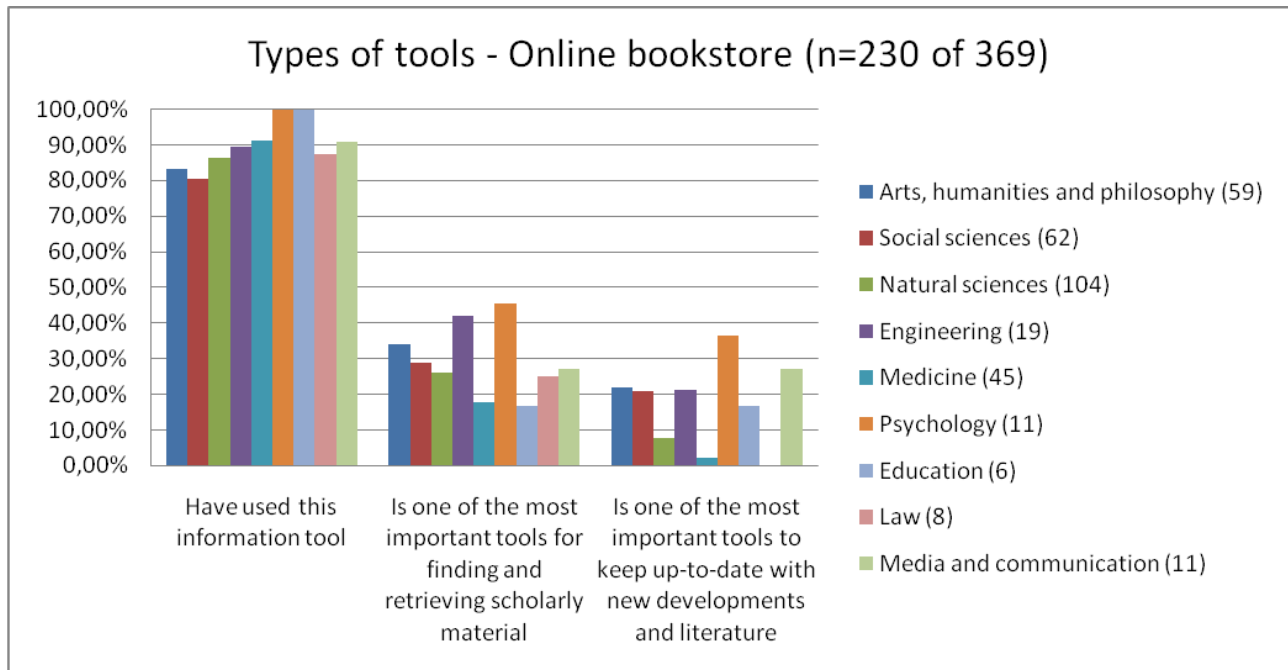


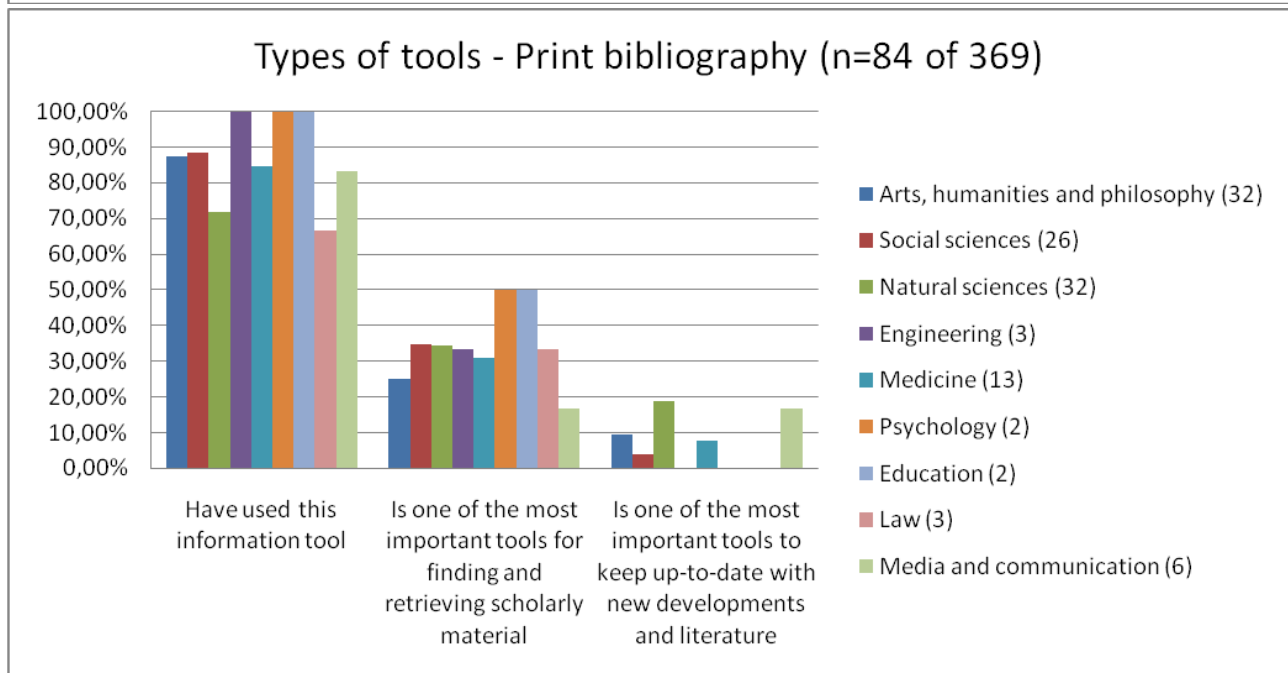
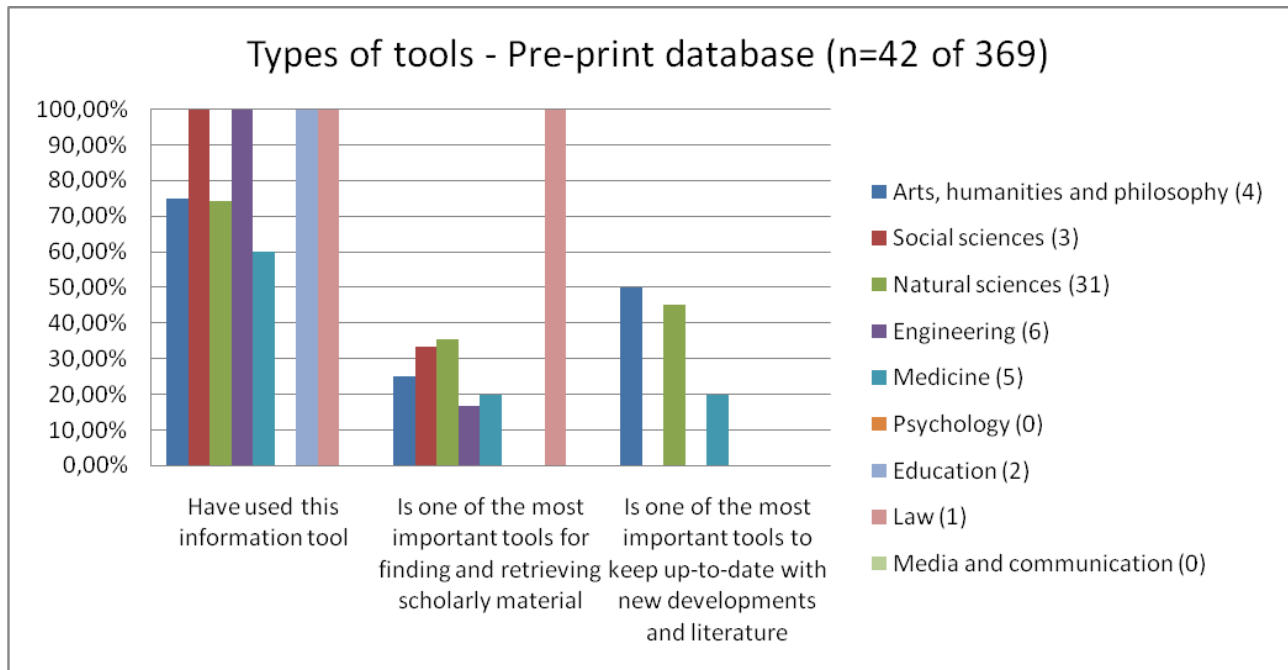


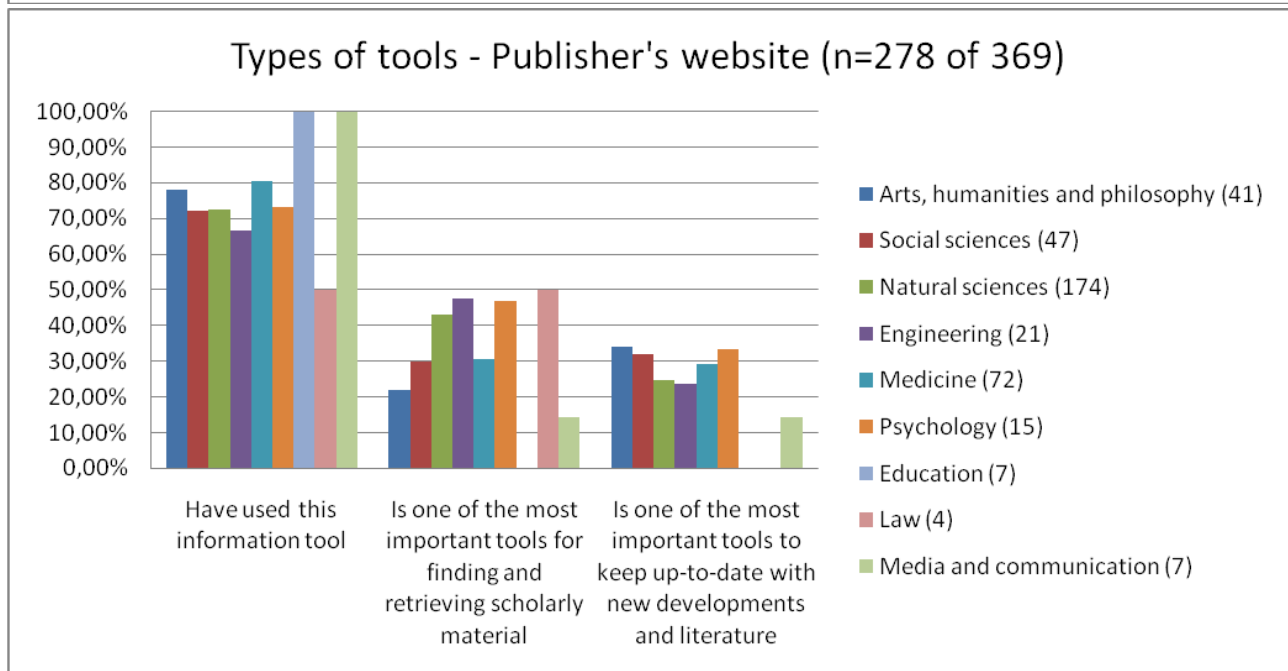
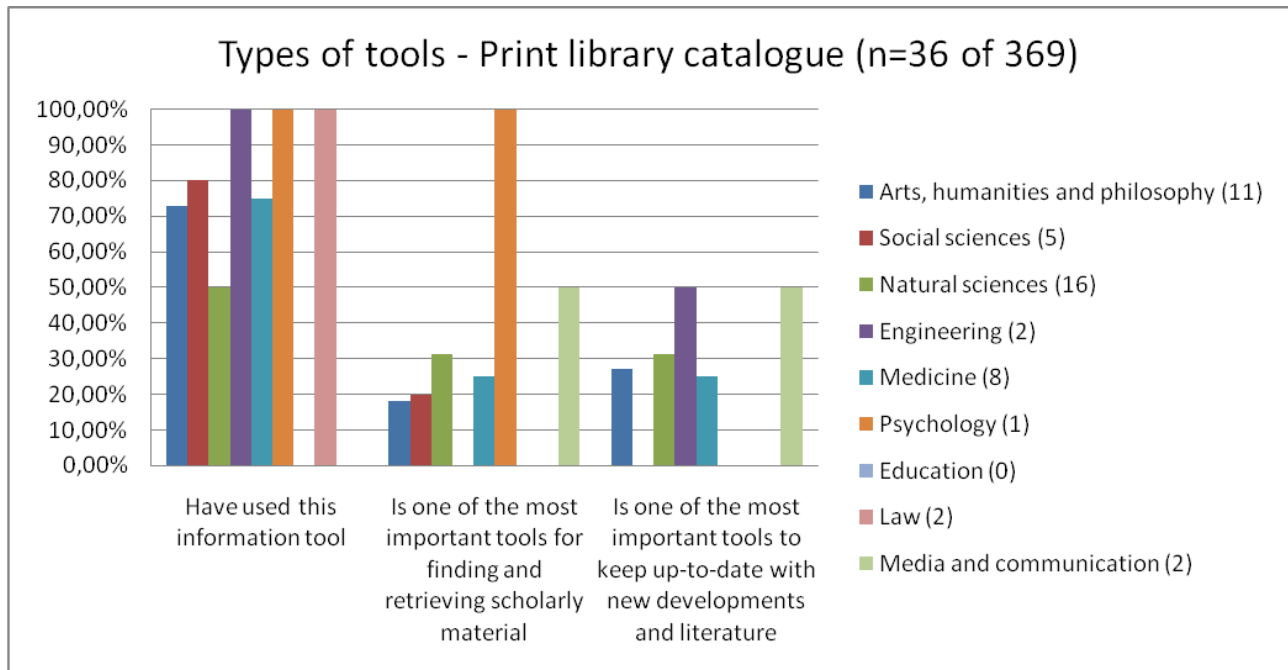


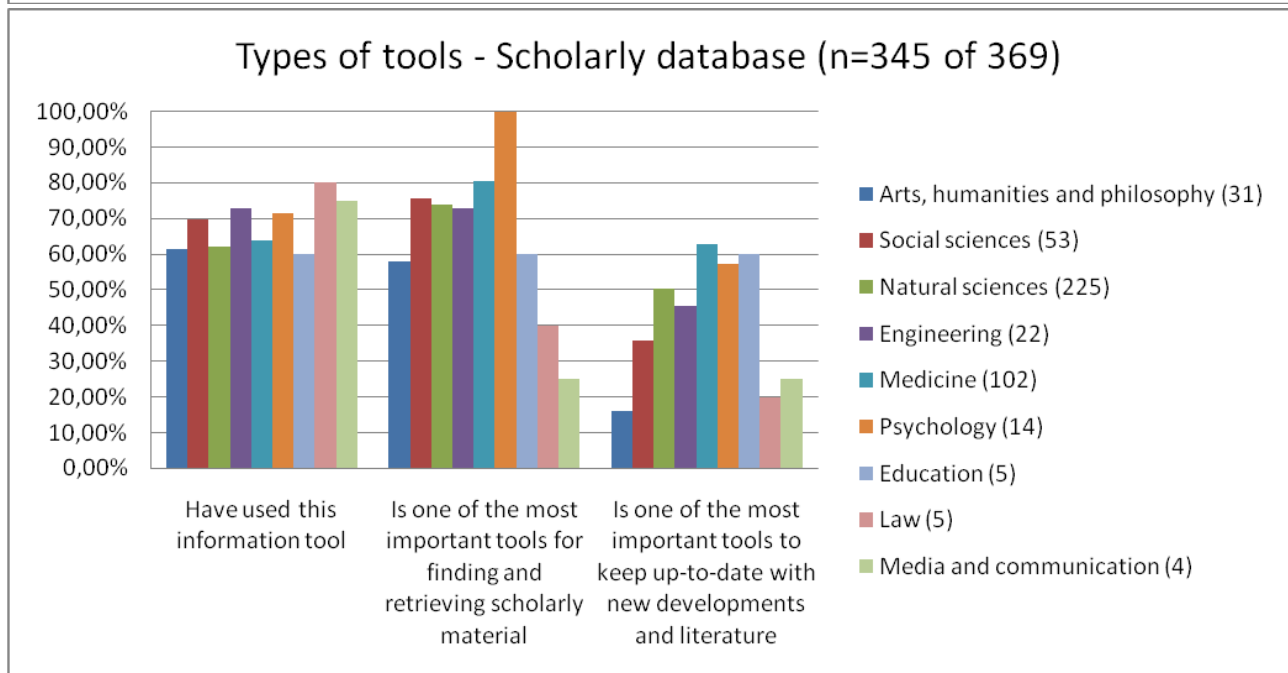
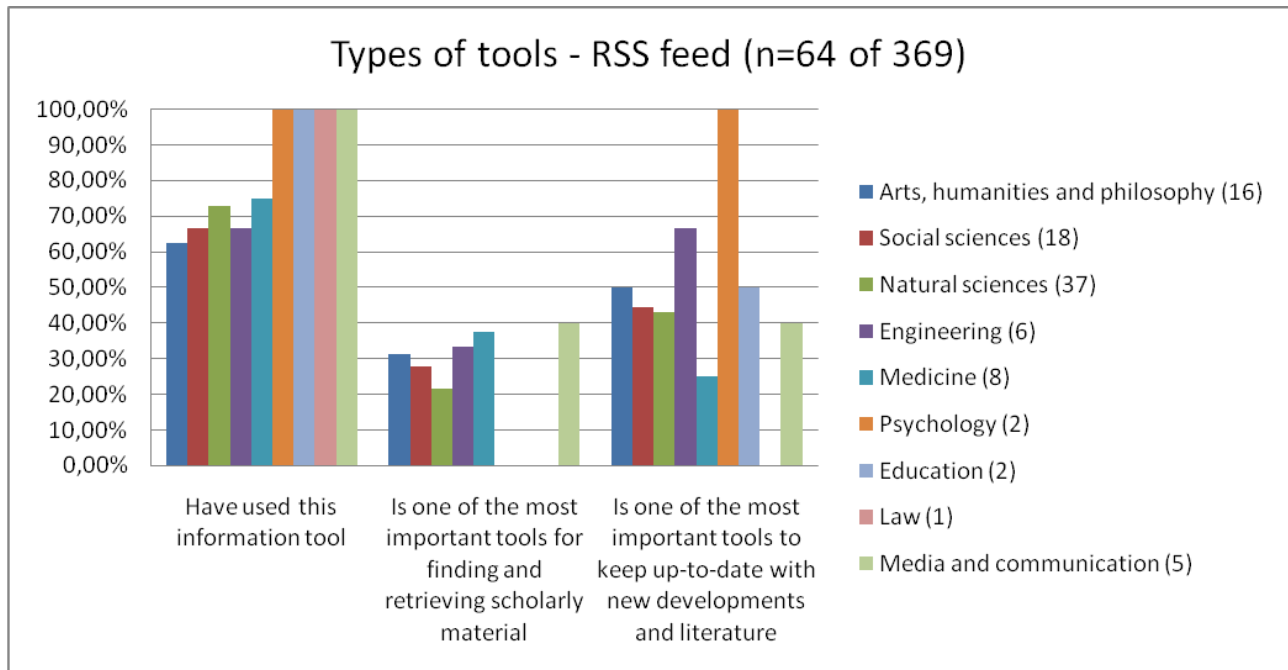


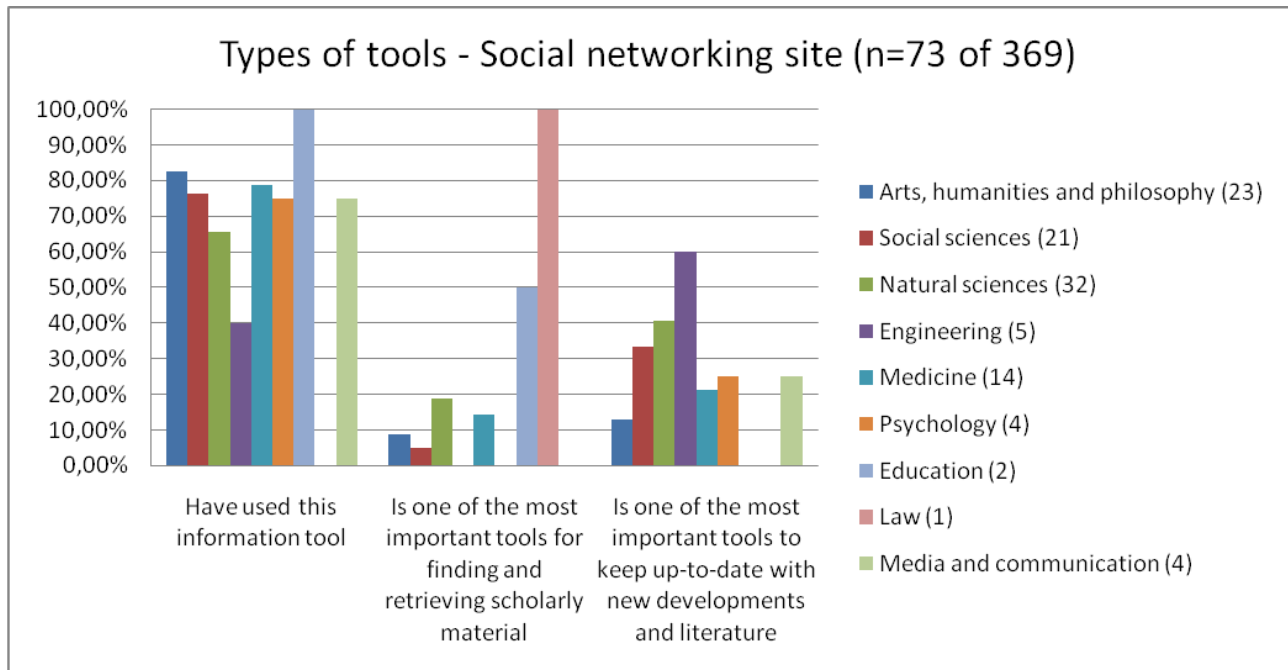




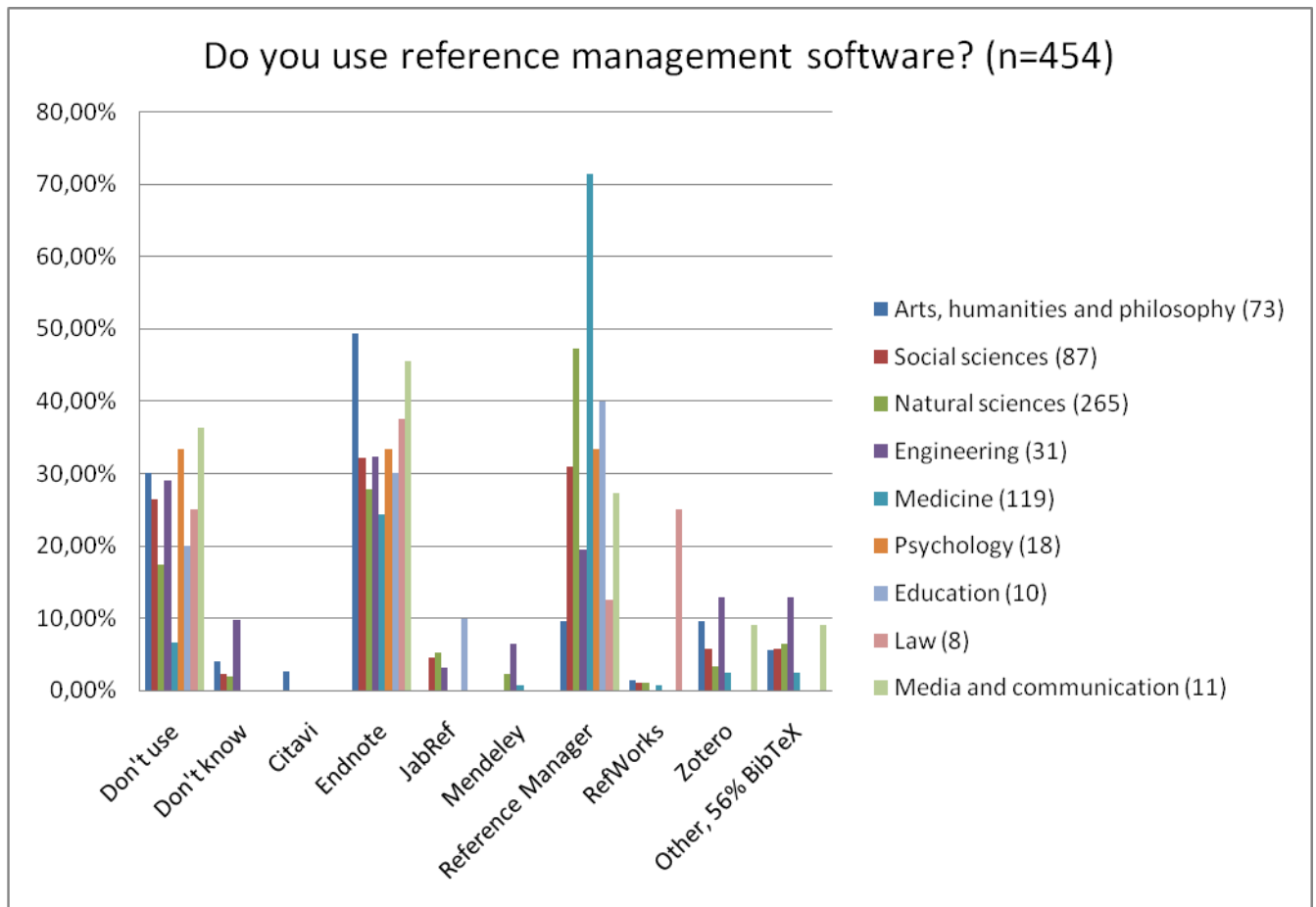




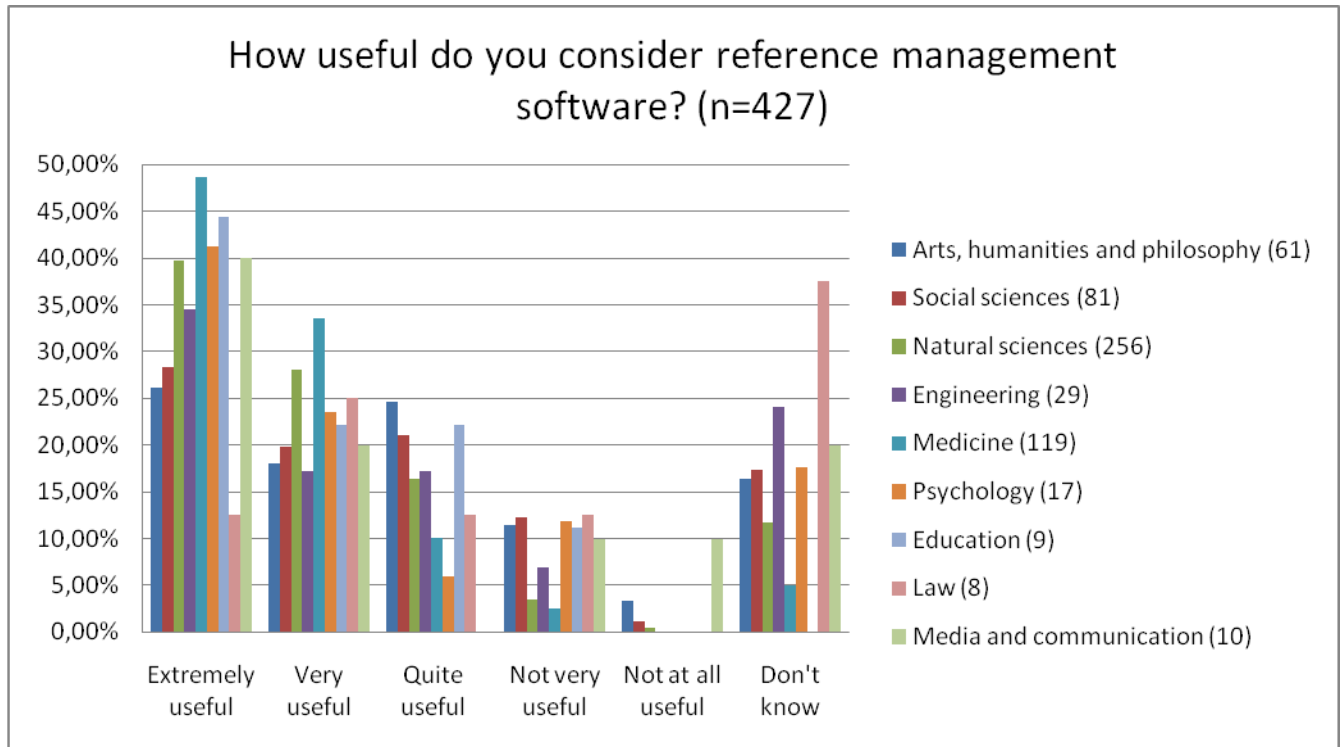




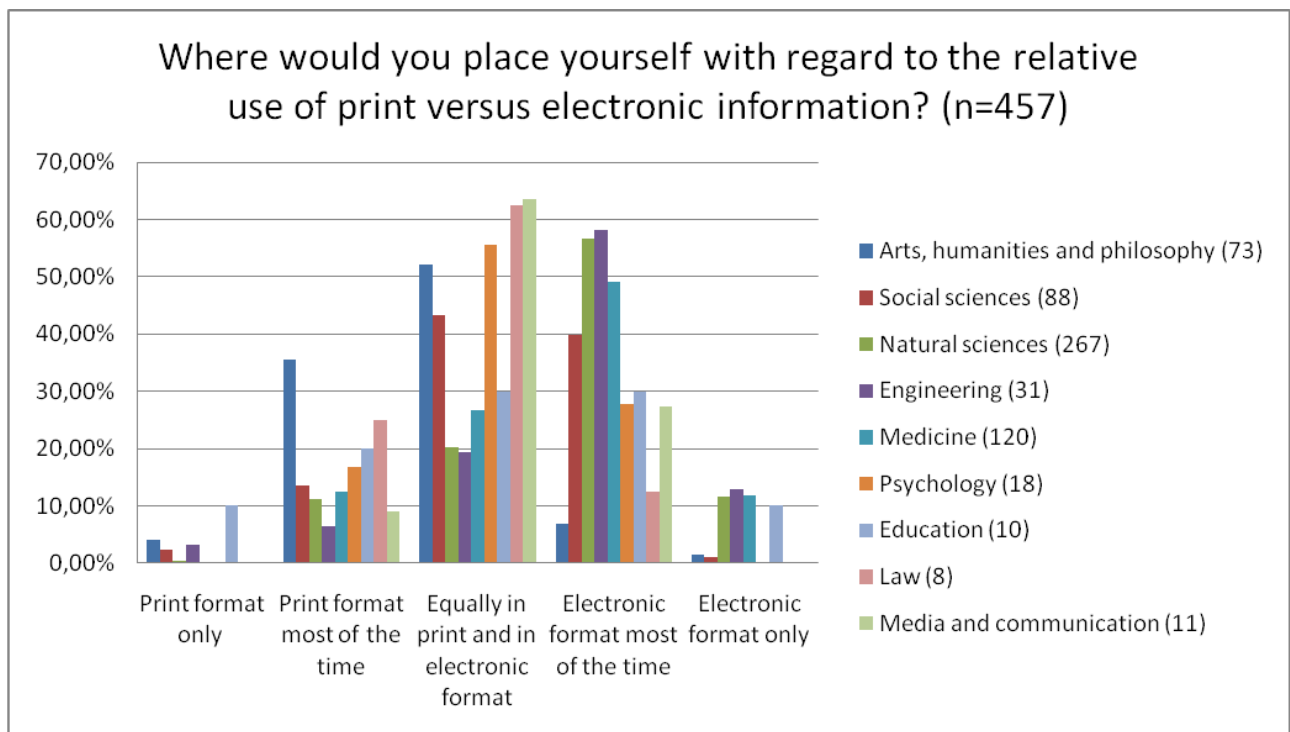
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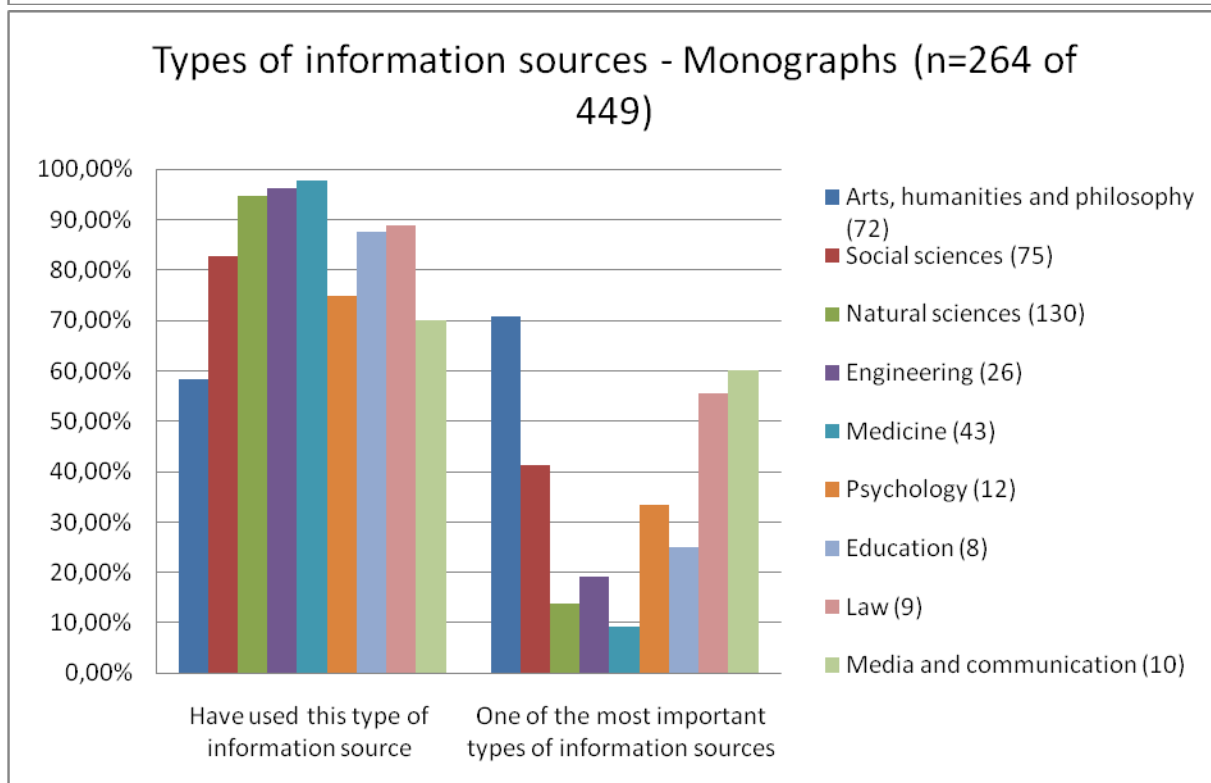
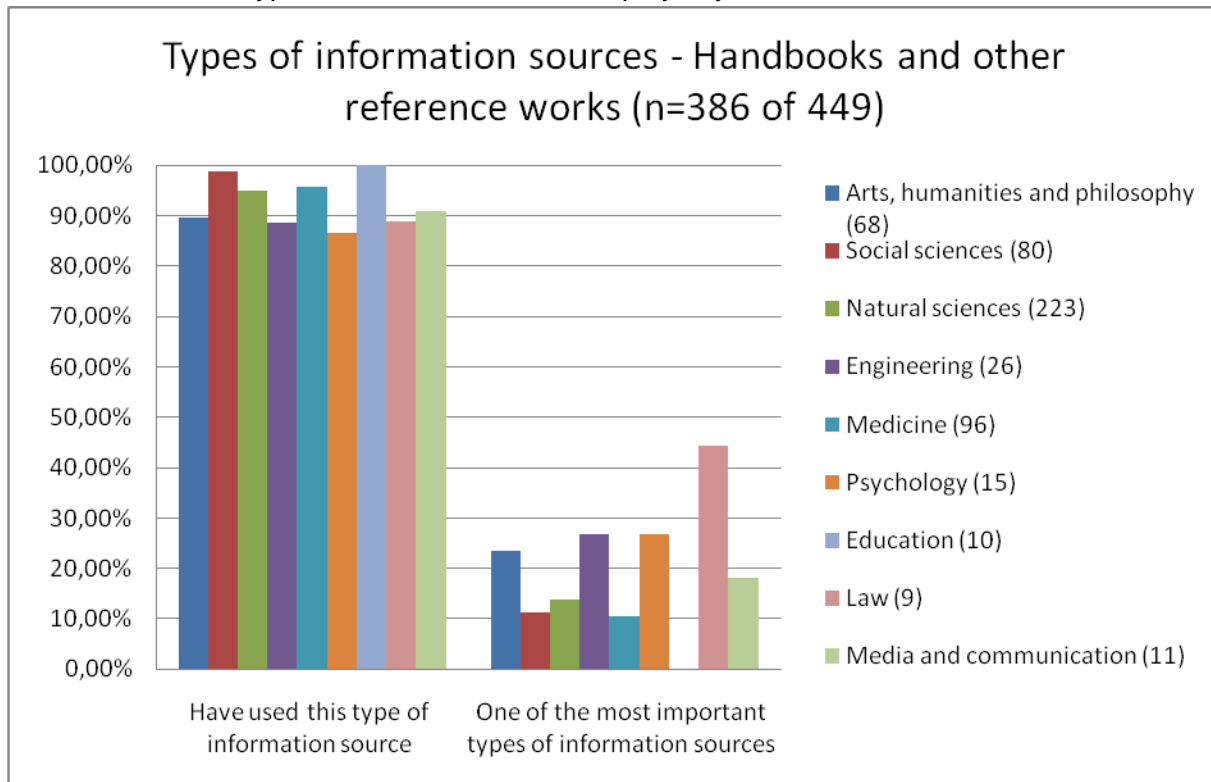
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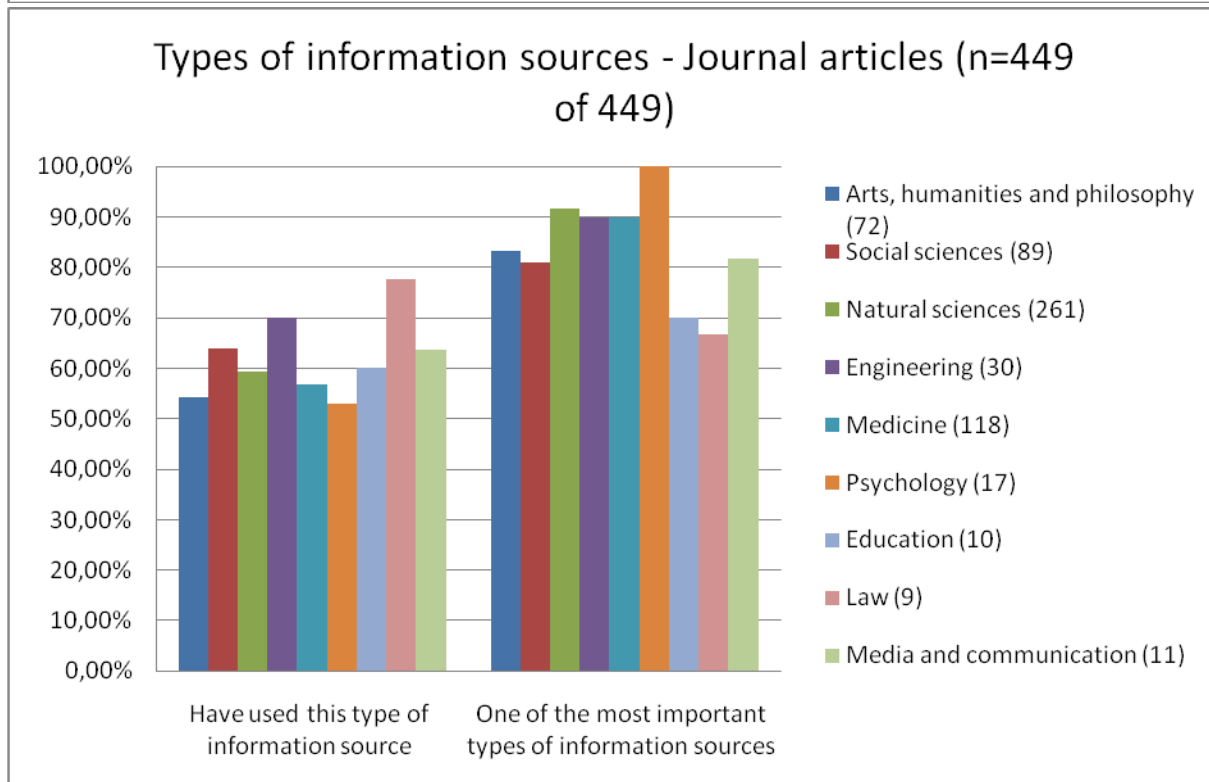
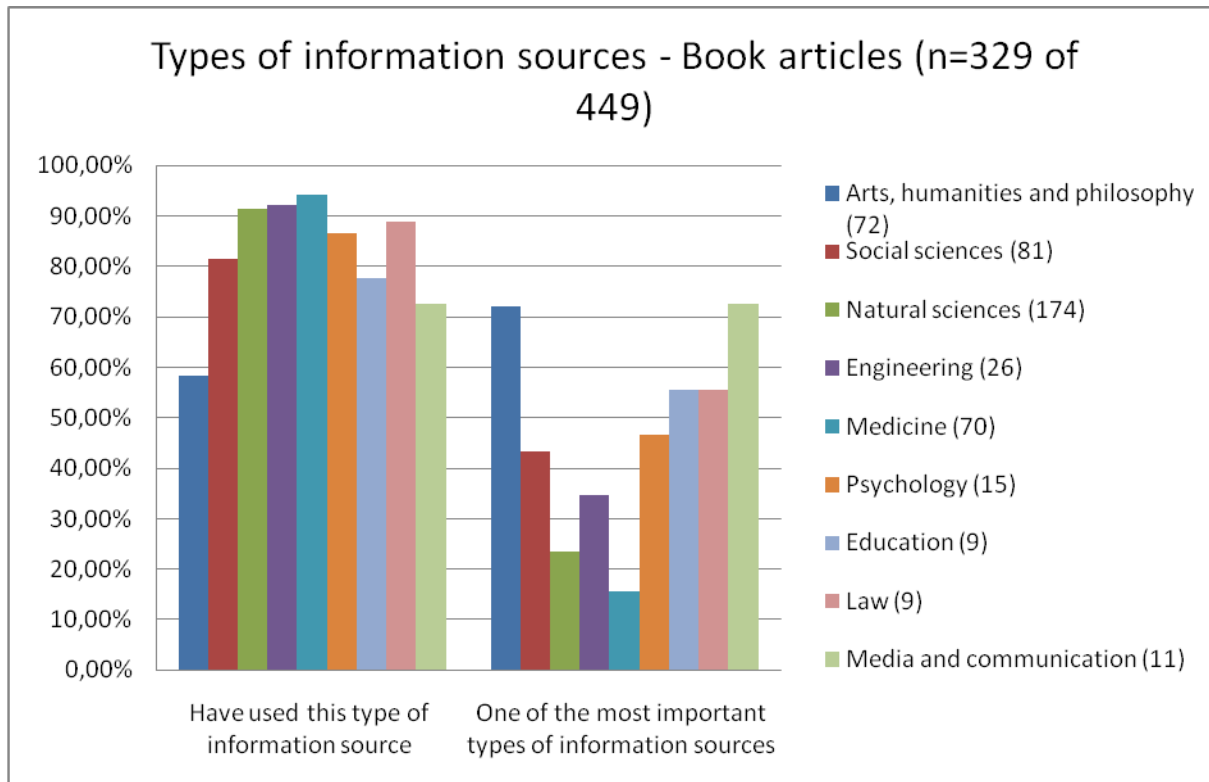


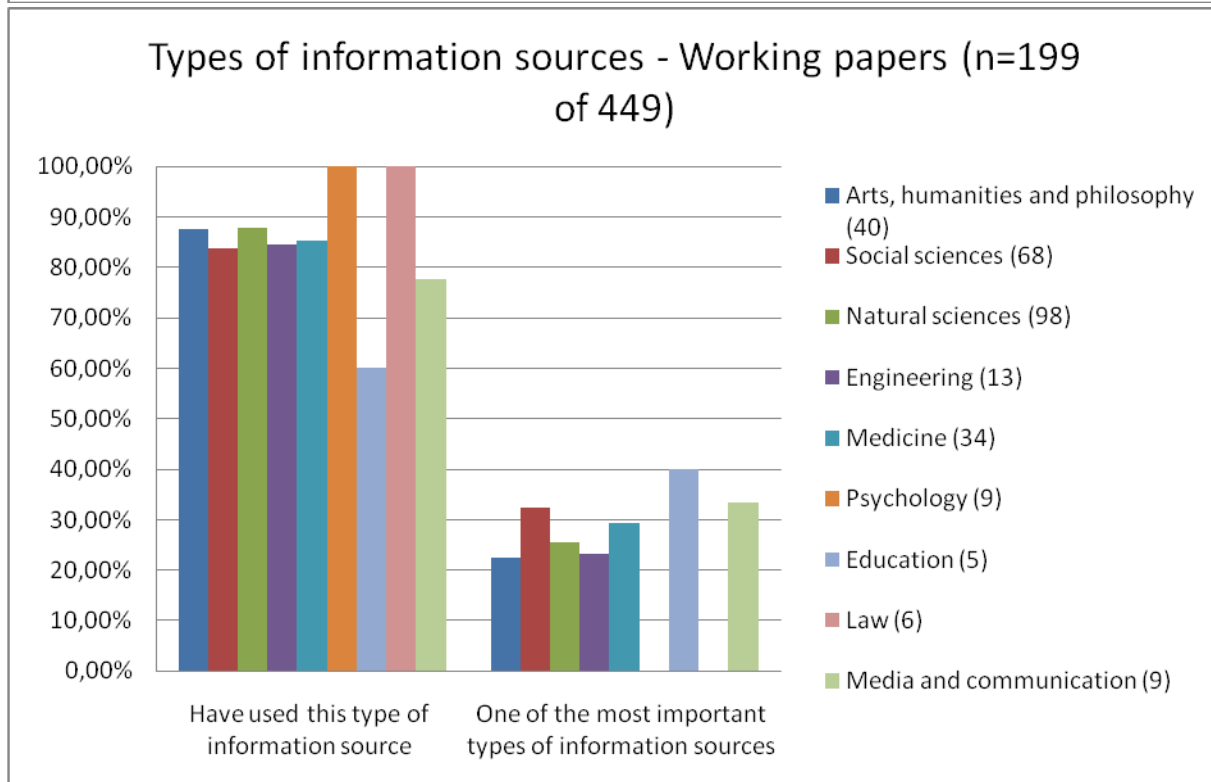
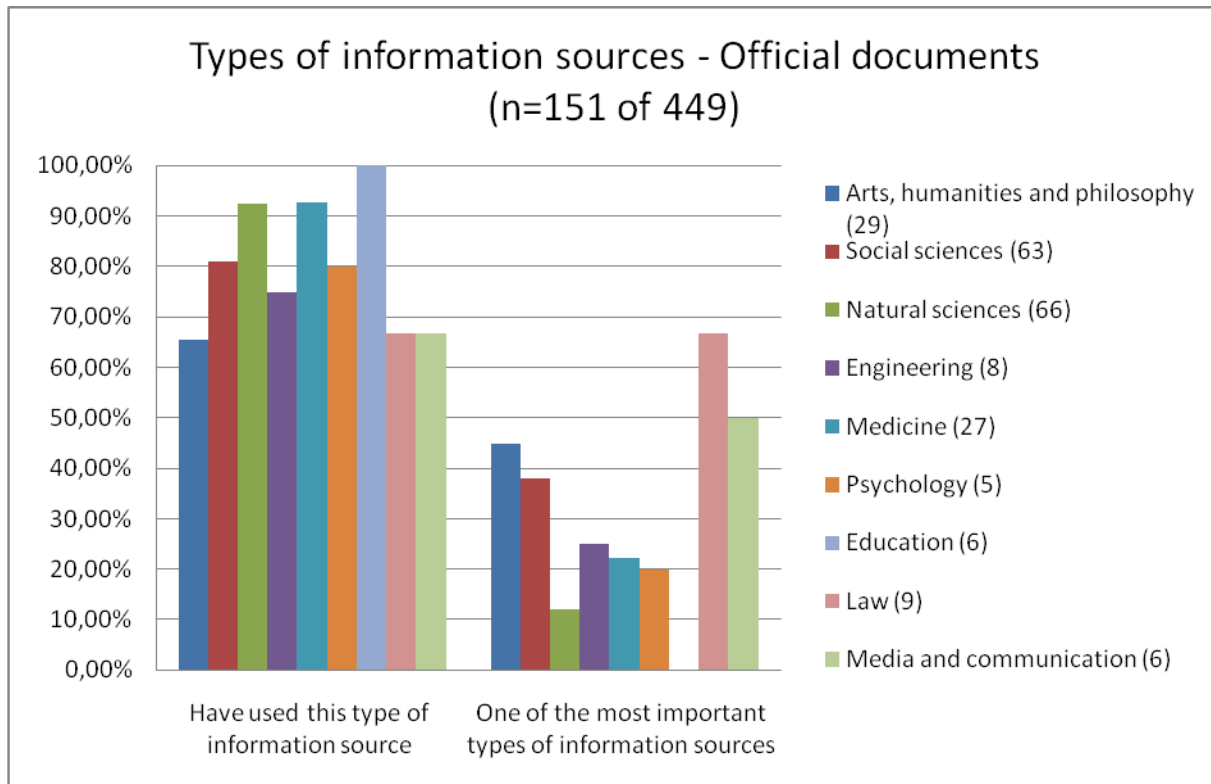
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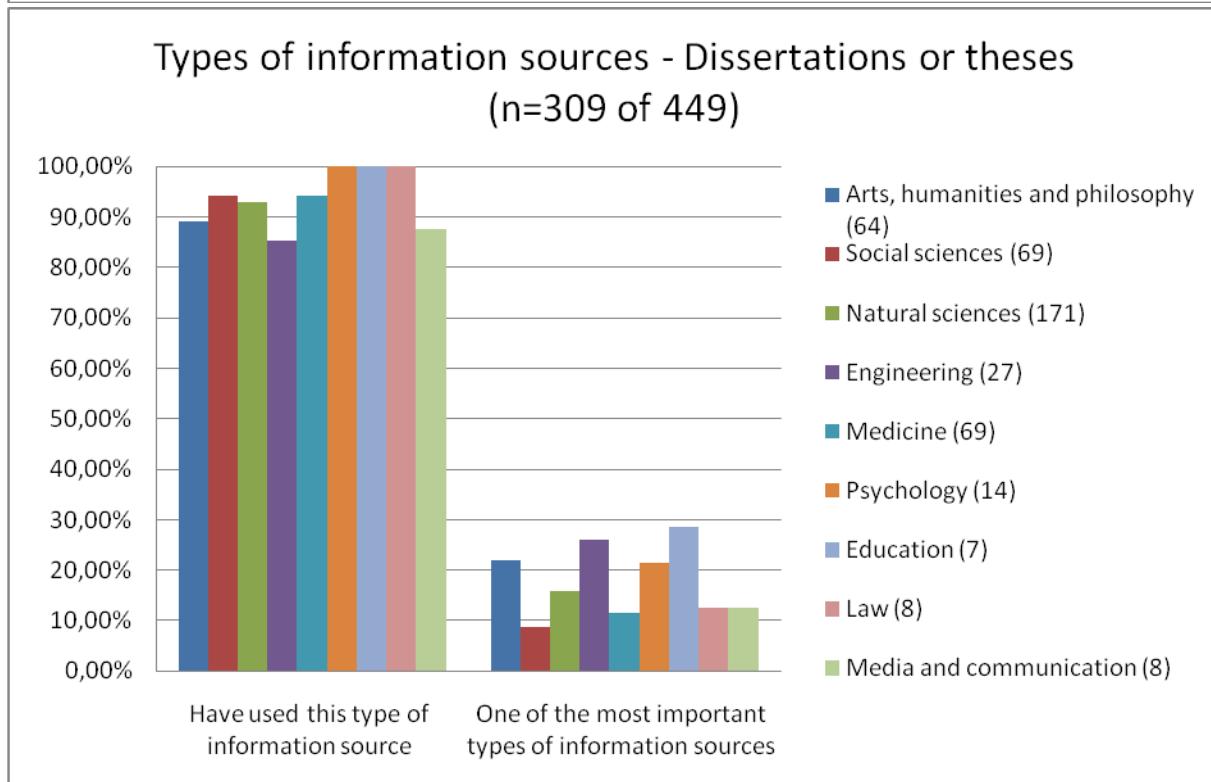
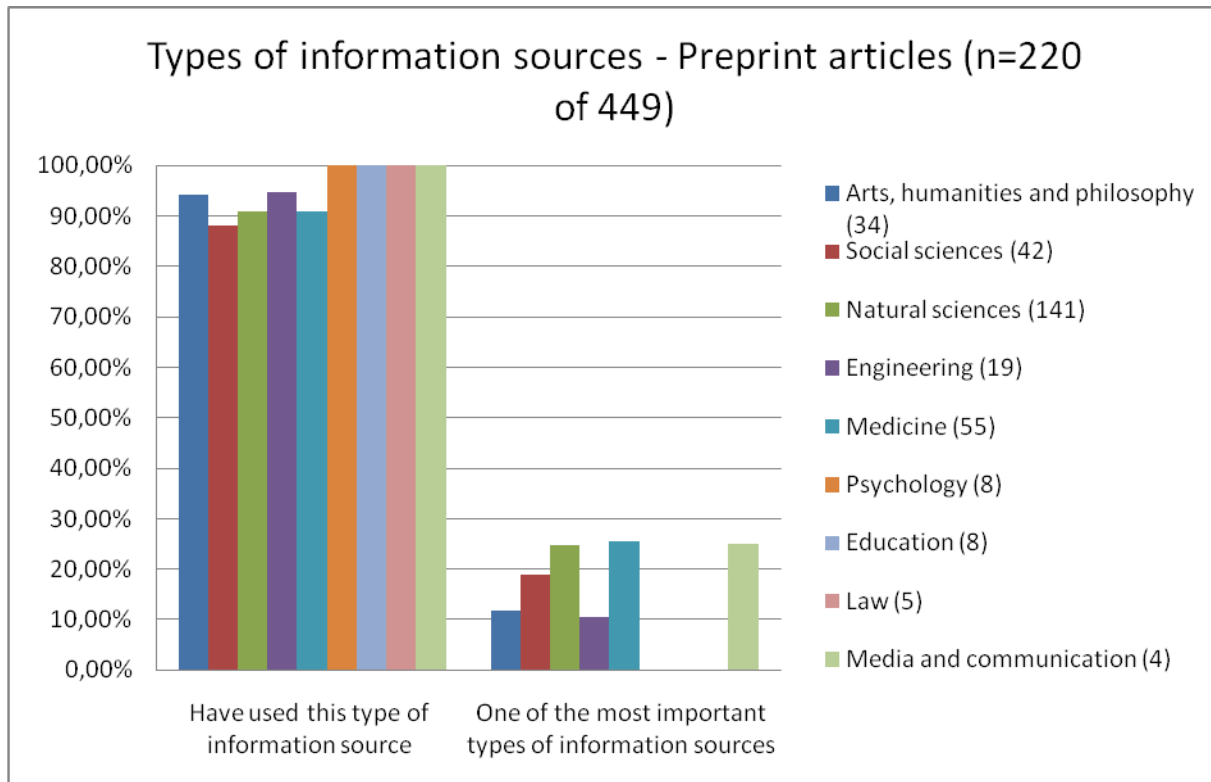


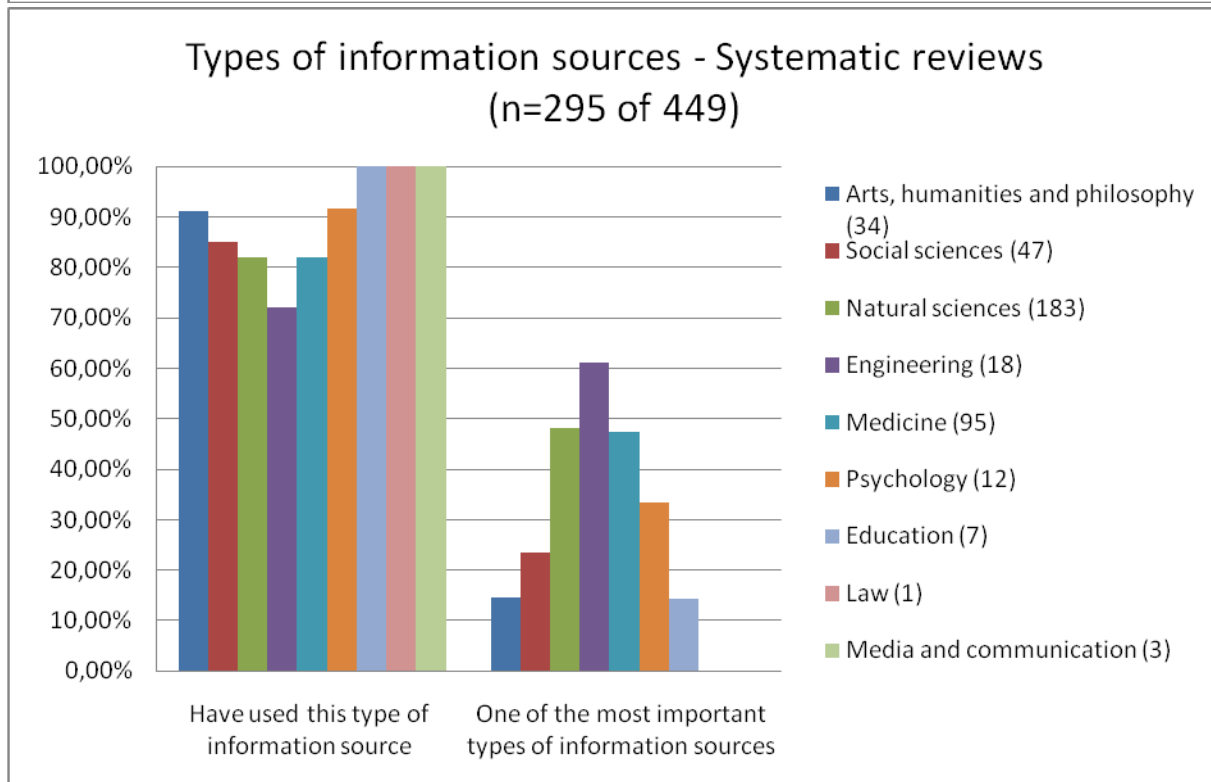
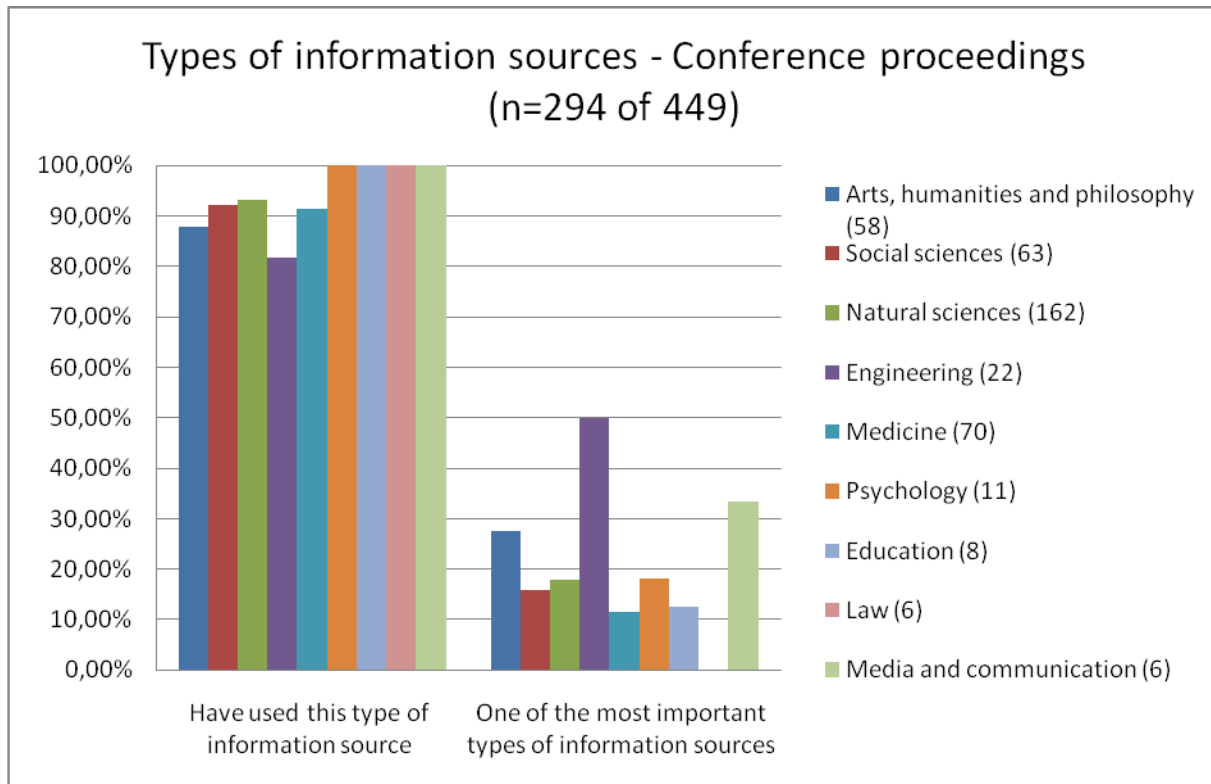
dk c2 f7 u - Different areas of research require different types of information sources. Consider what role different types of information sources play in your PhD research

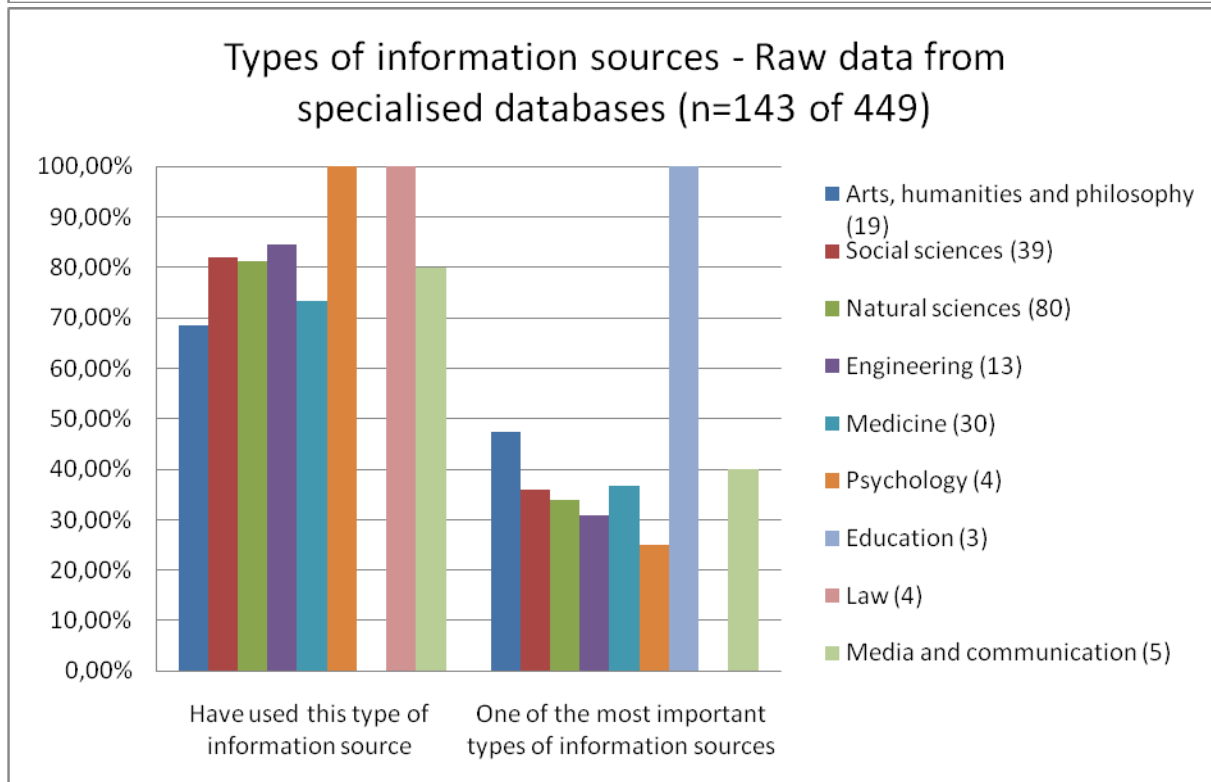
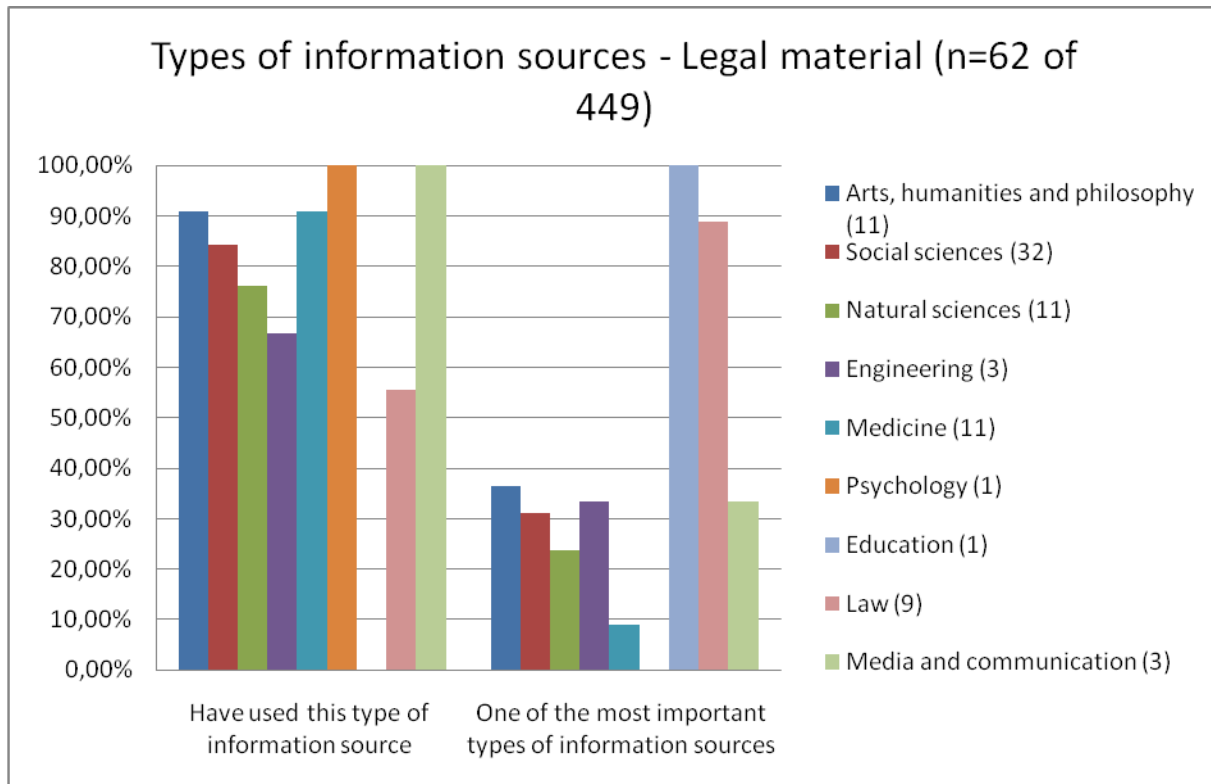


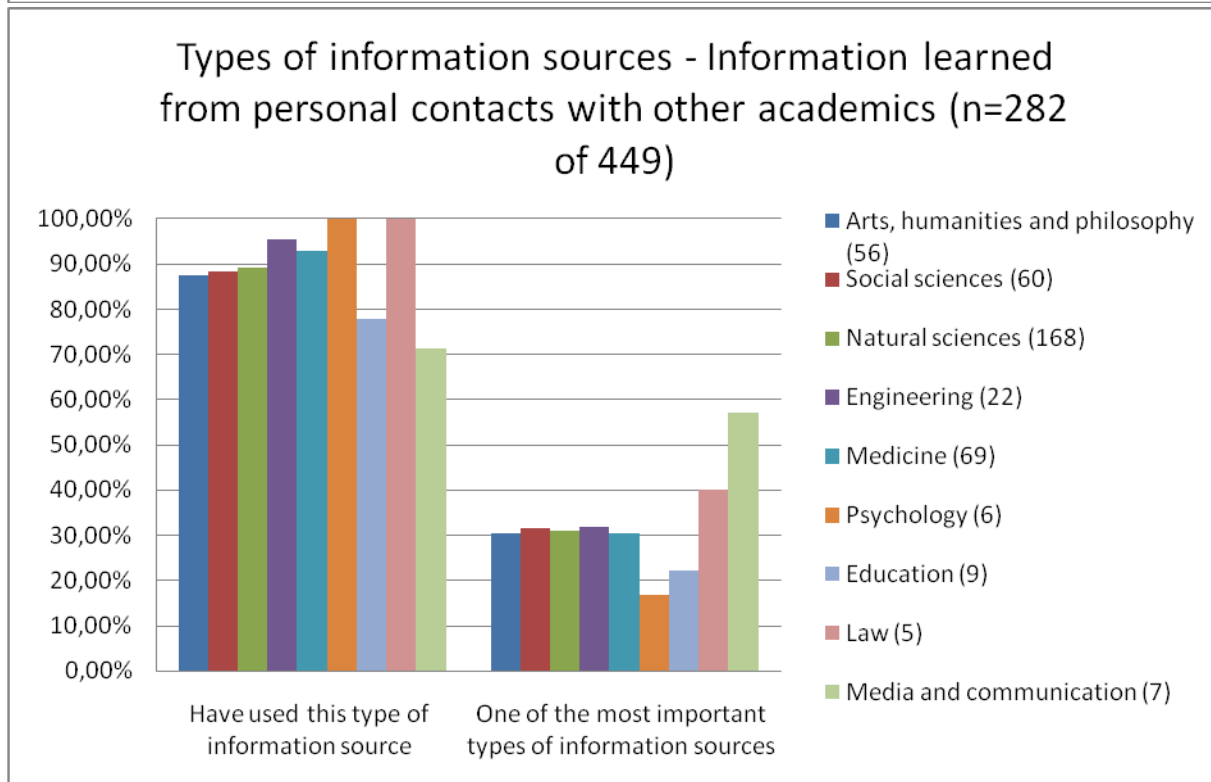
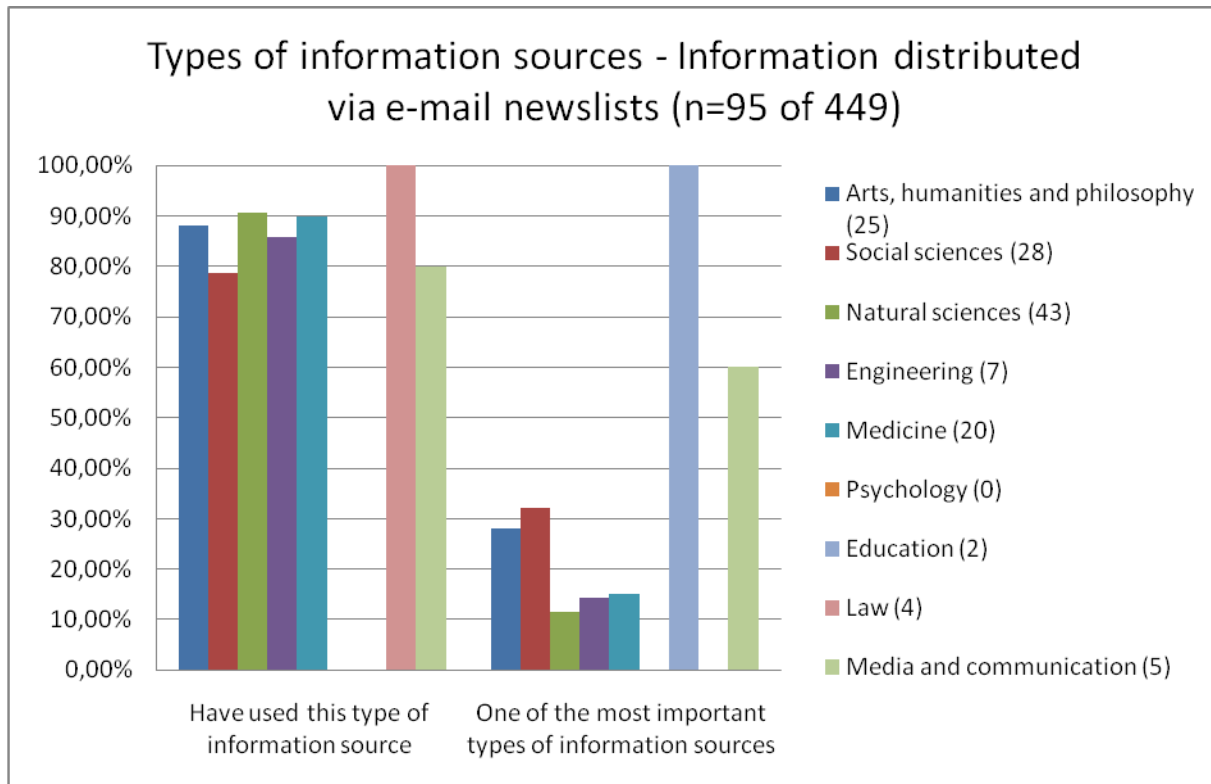


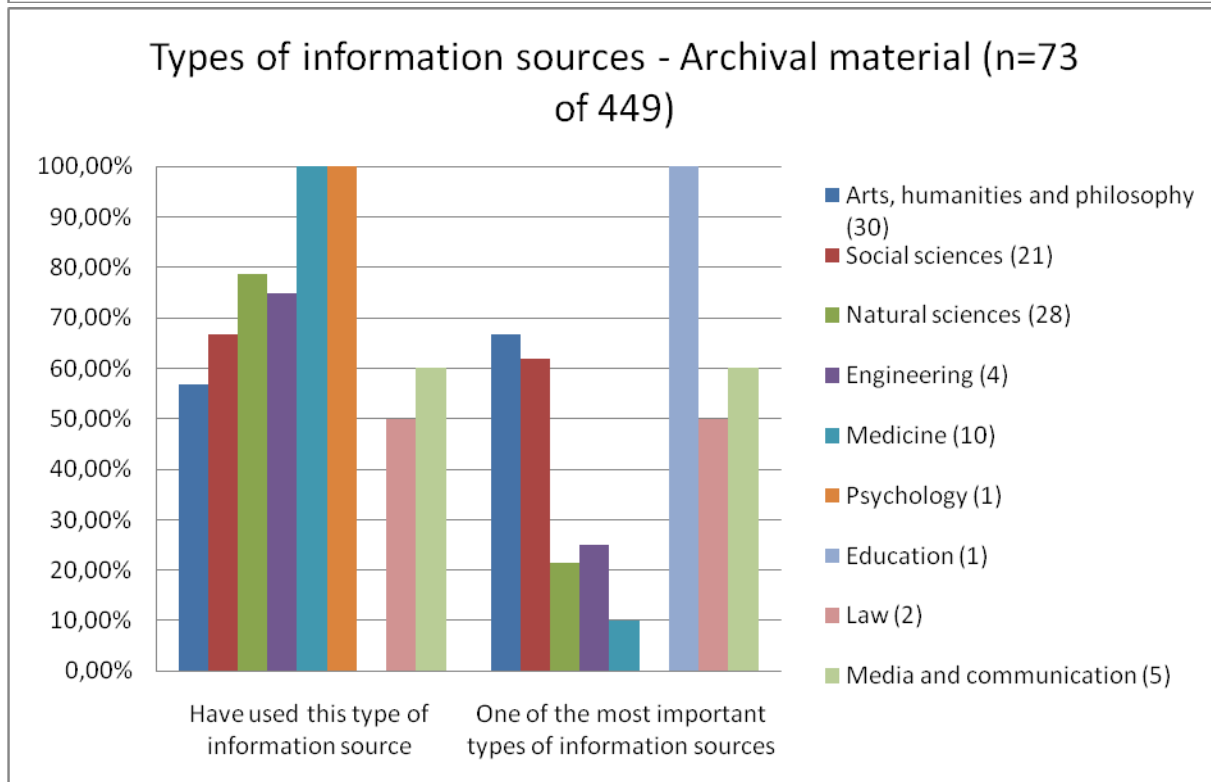
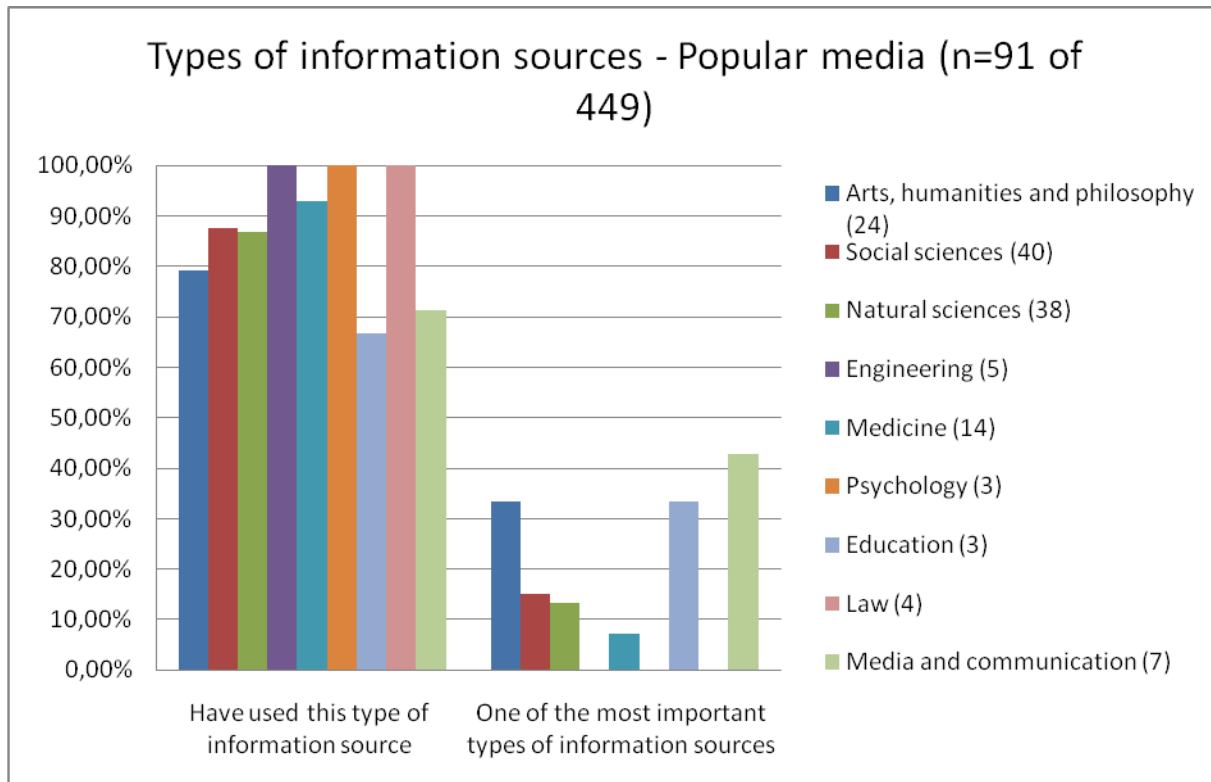


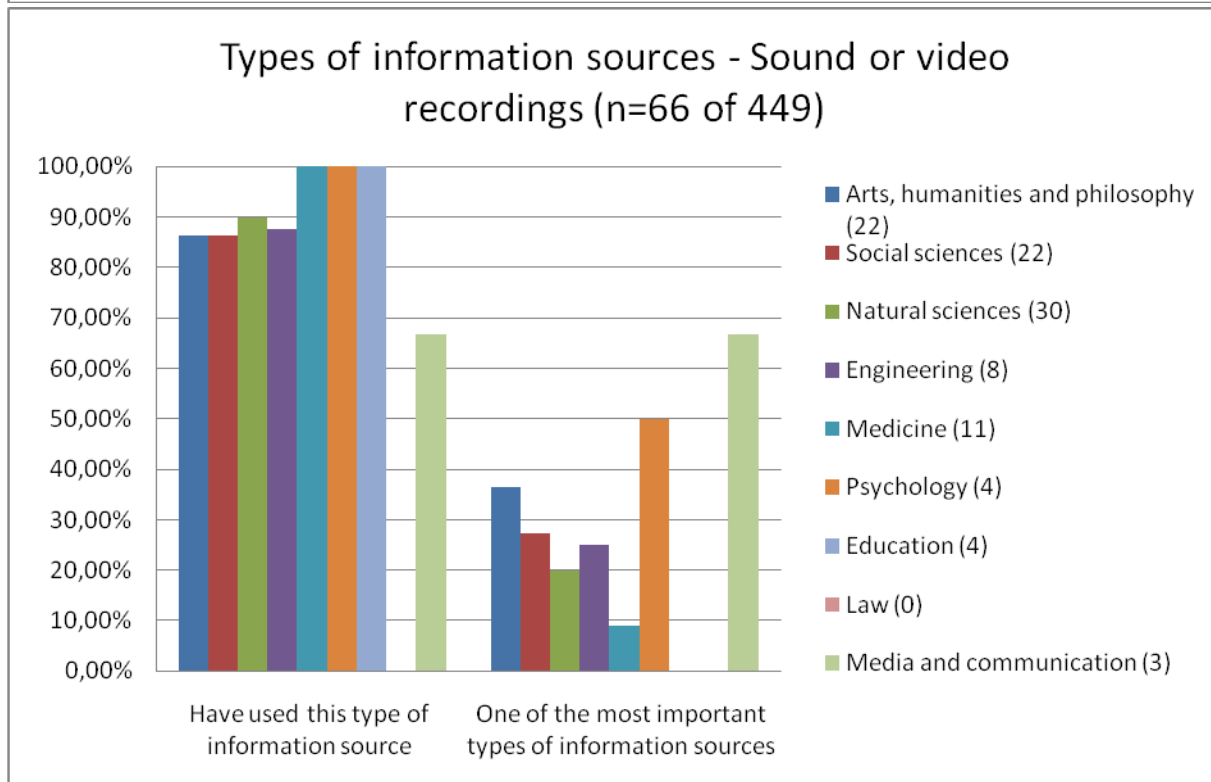
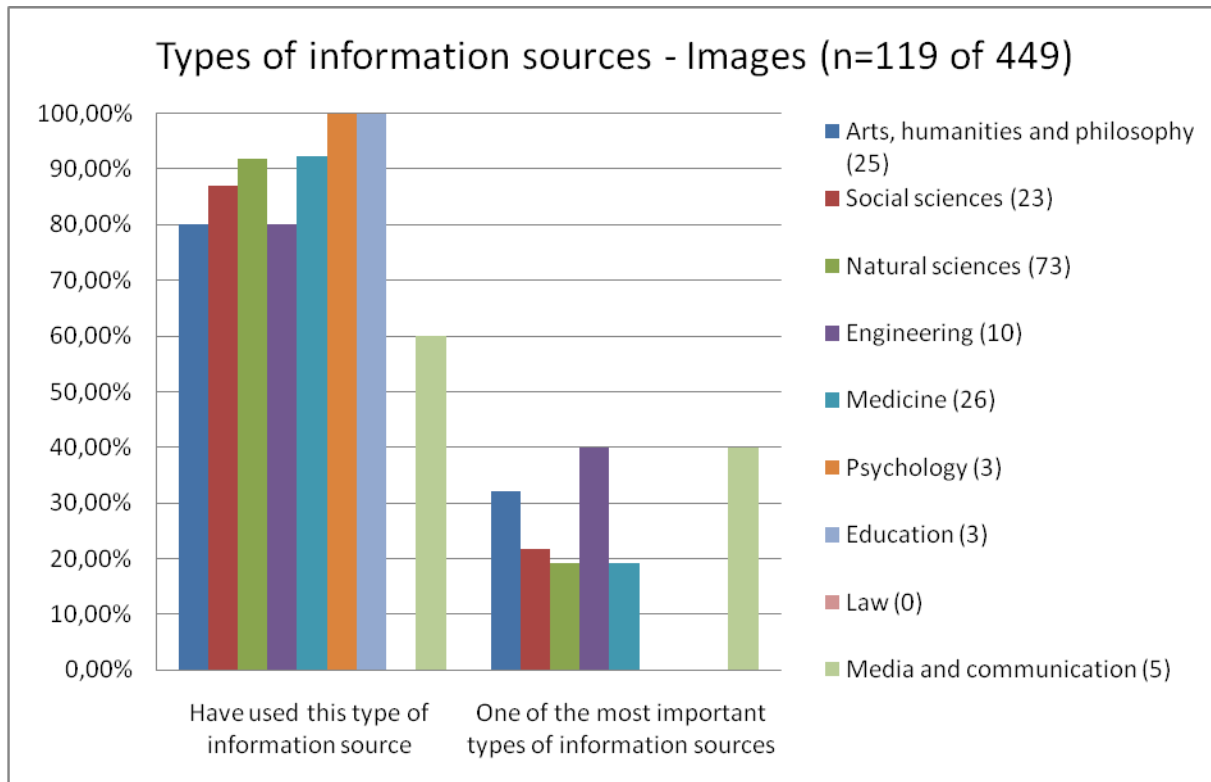




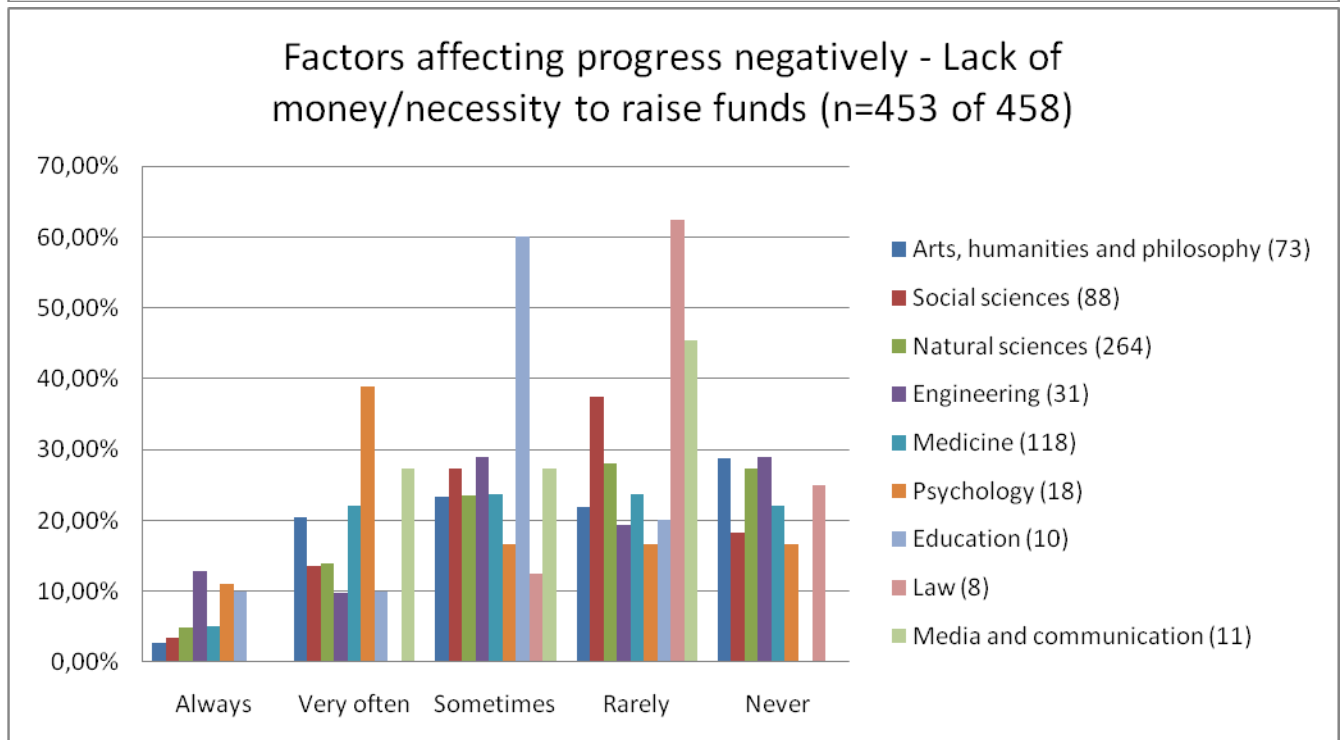
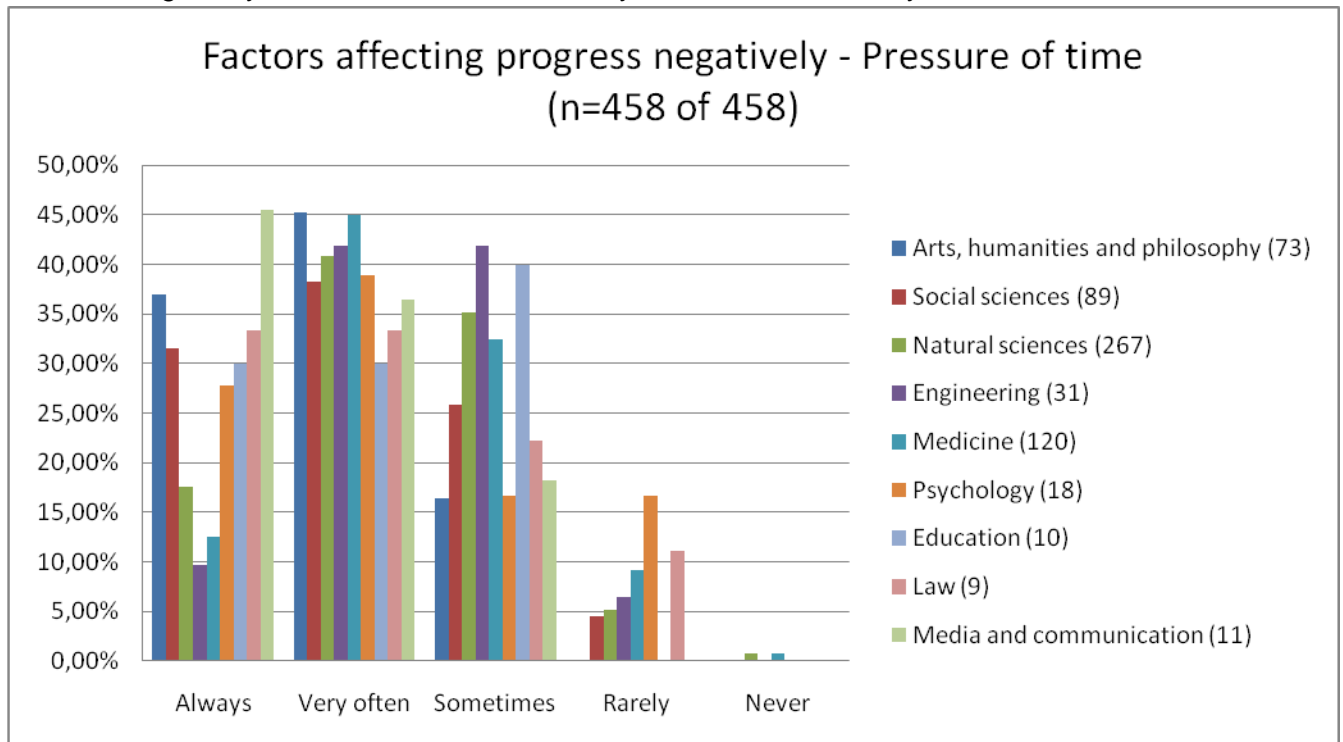


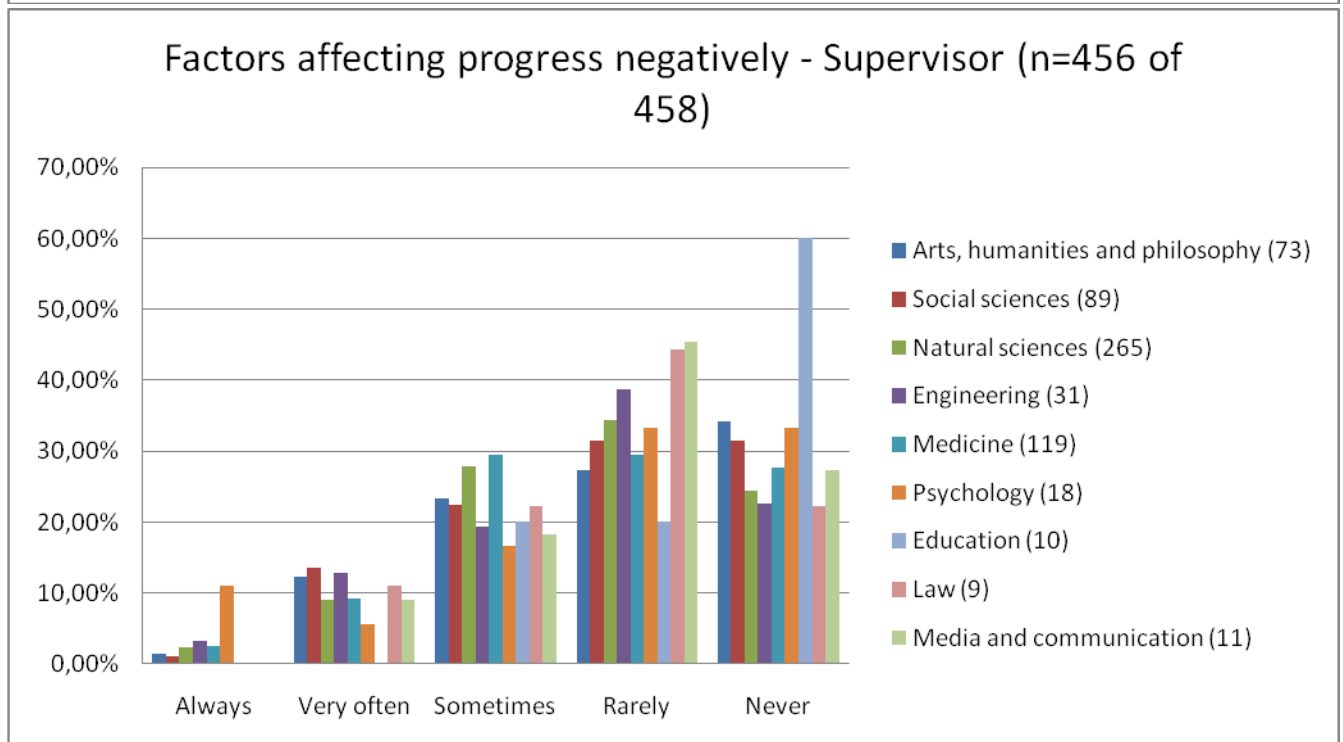
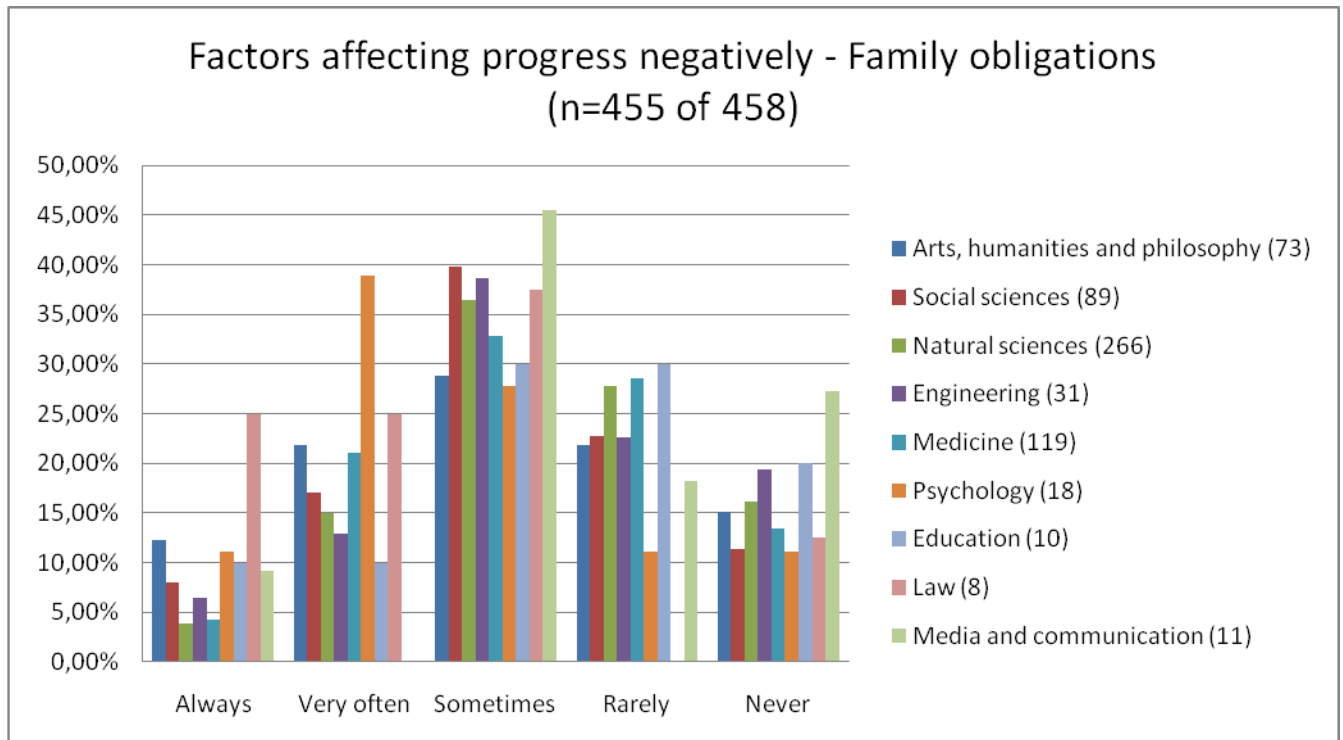


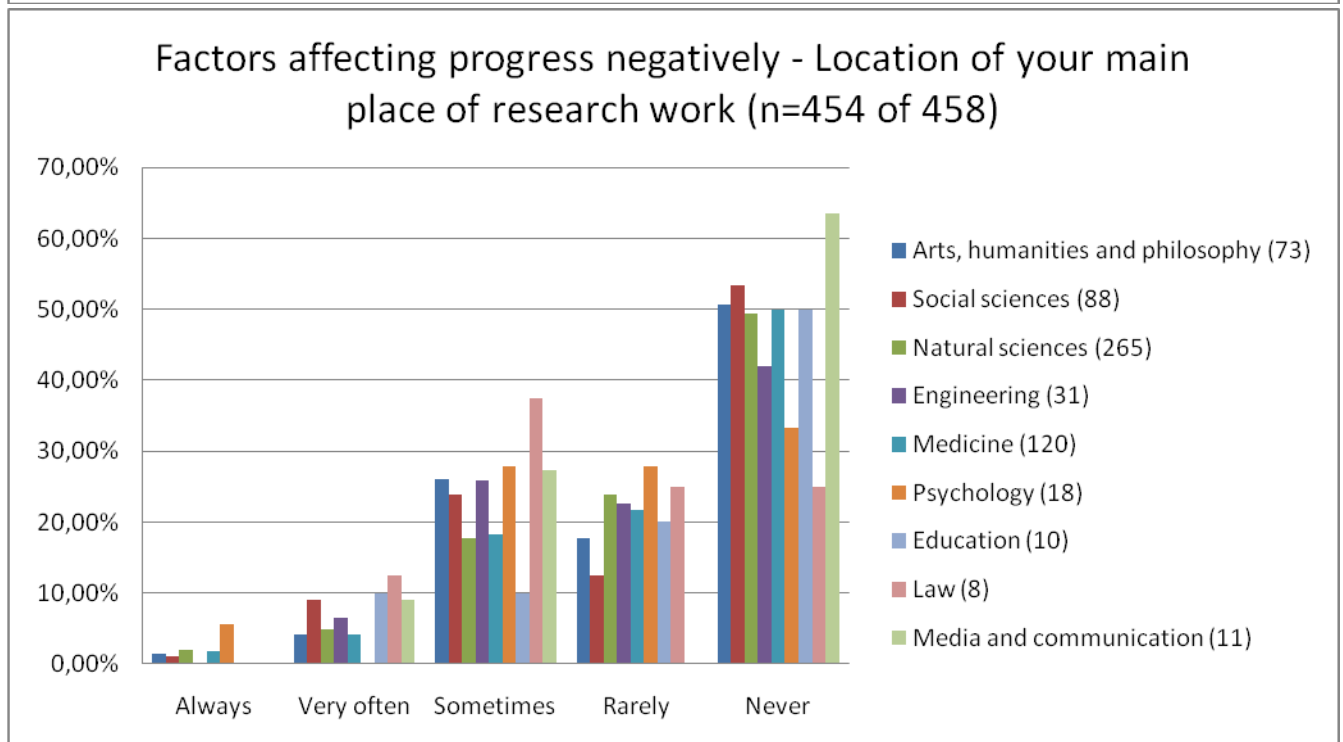
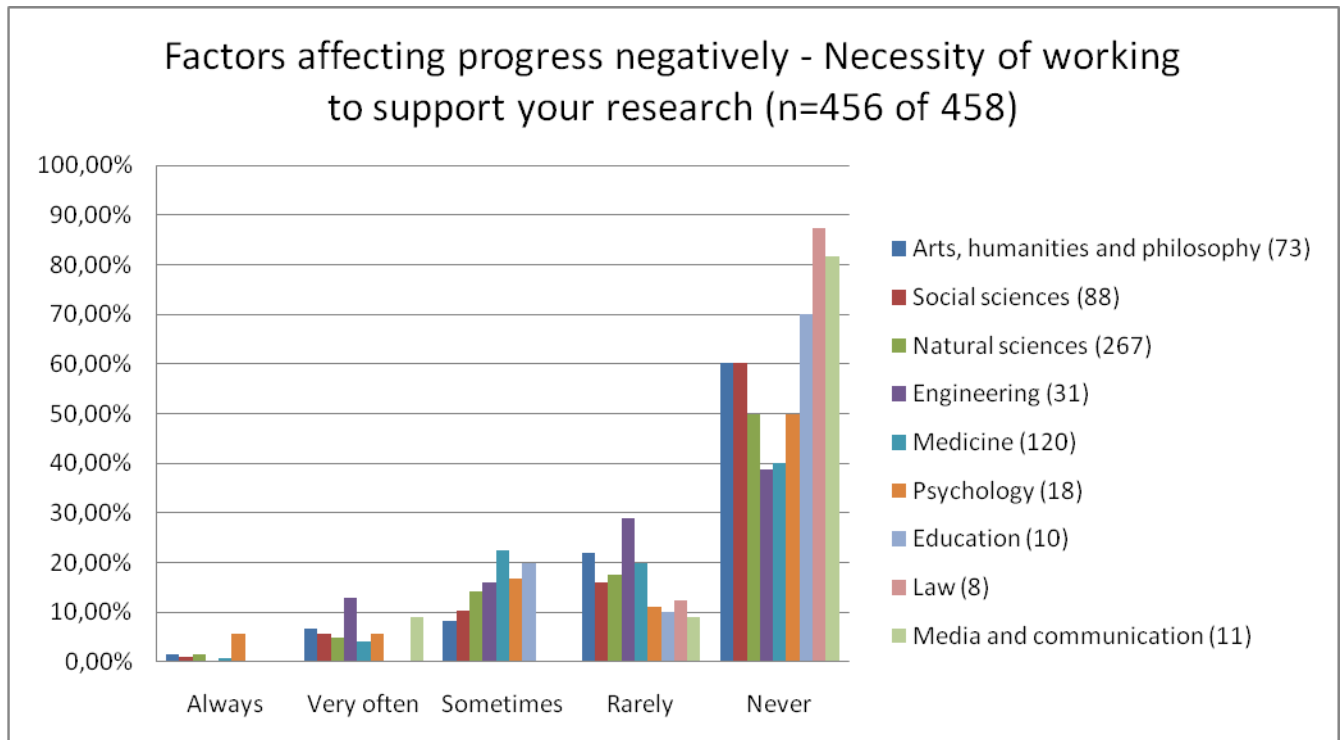


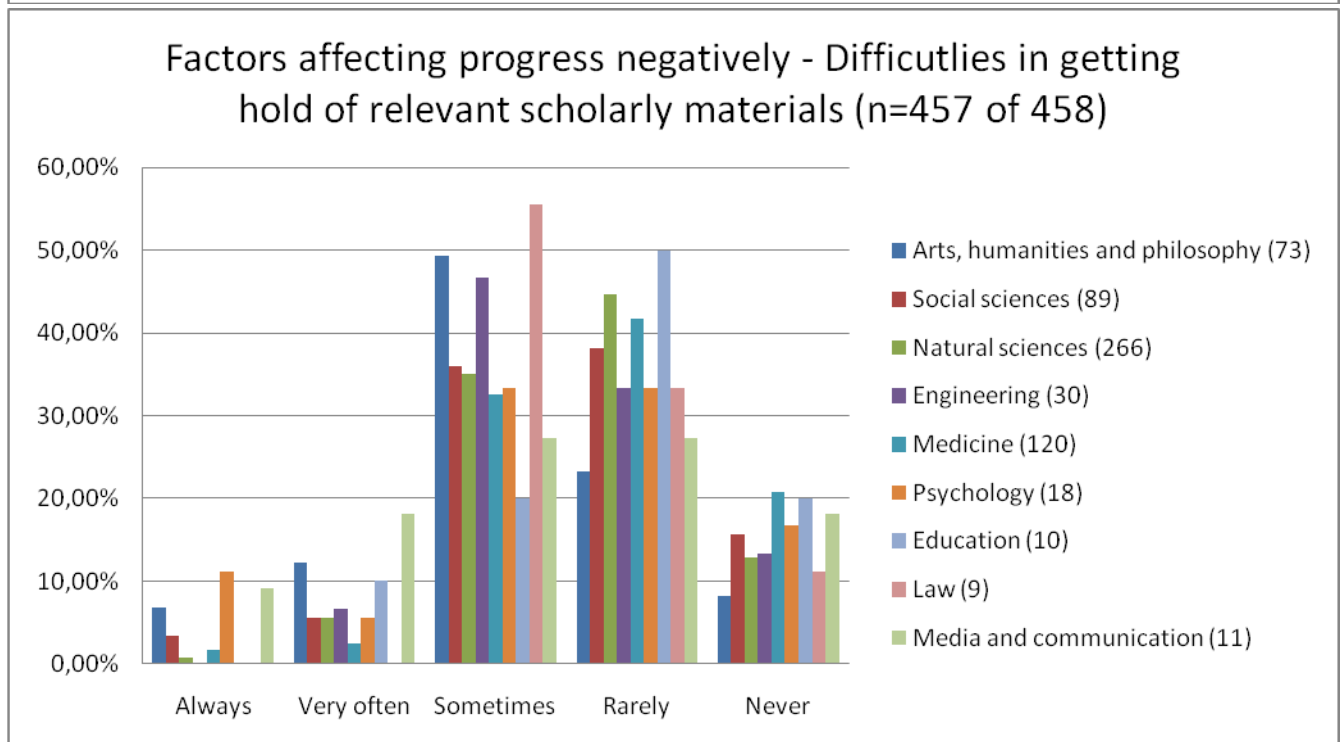
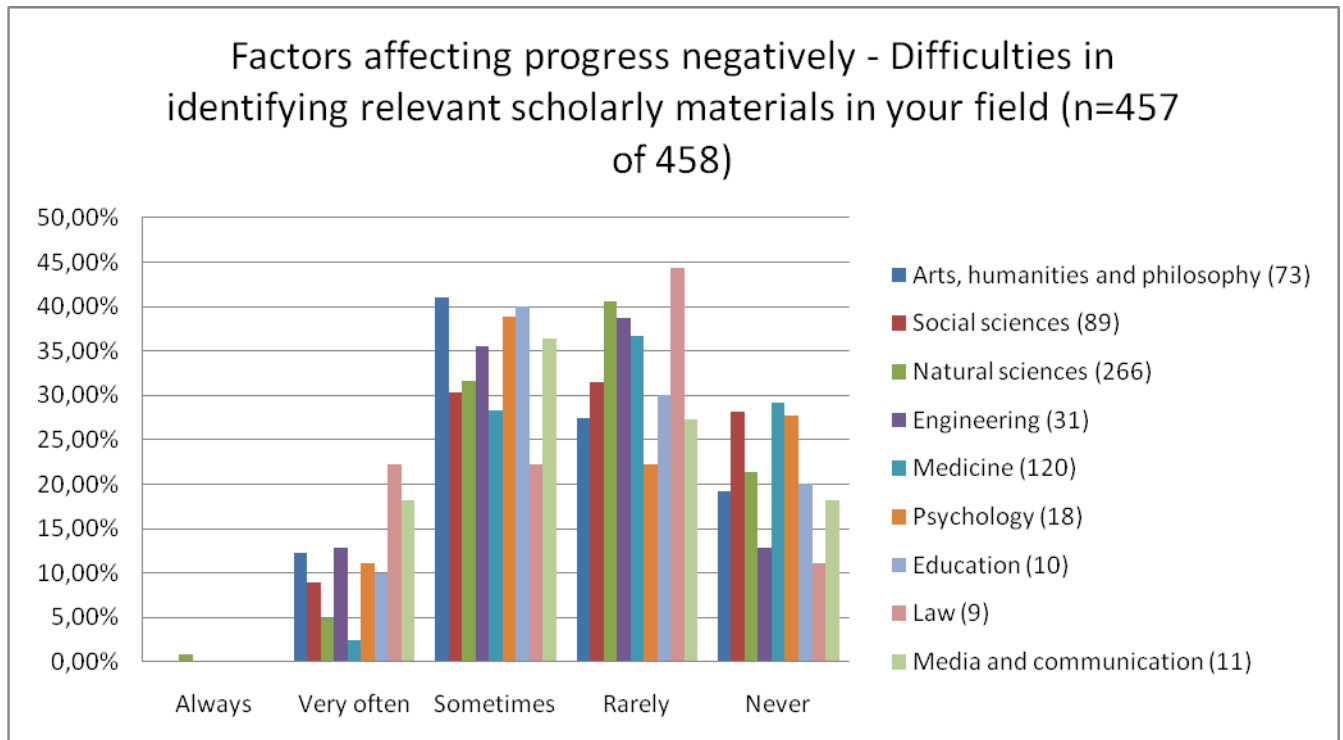


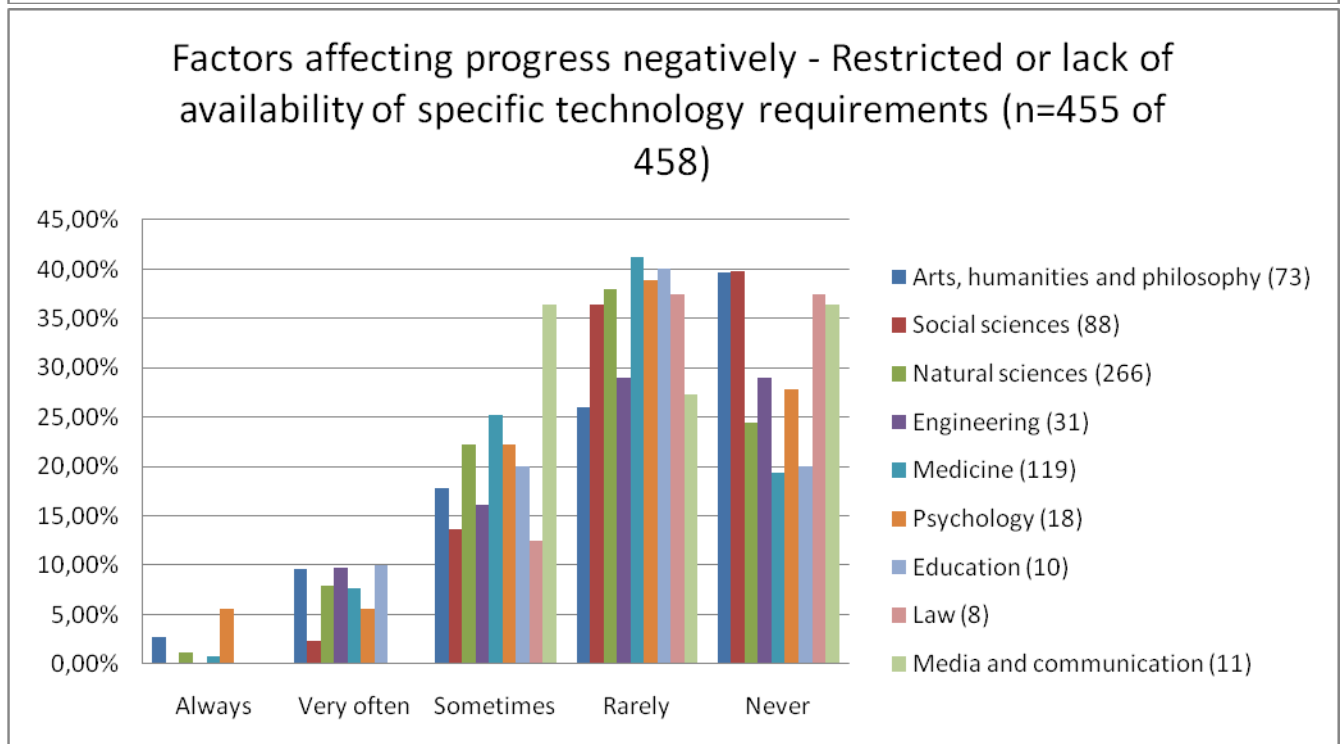
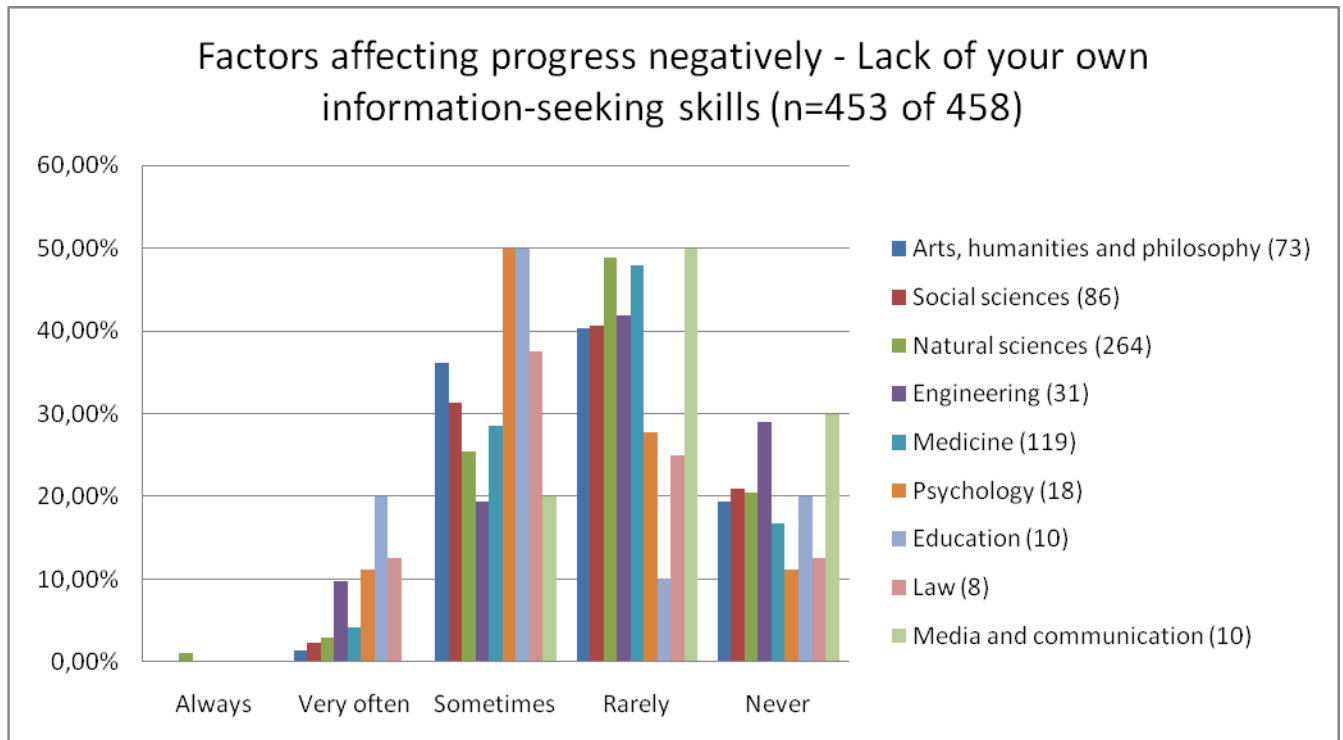
dk d4 f7 u - Listed below are various factors that you might feel affect your progress in your PhD research negatively. Please indicate how often you feel constrained by these factors

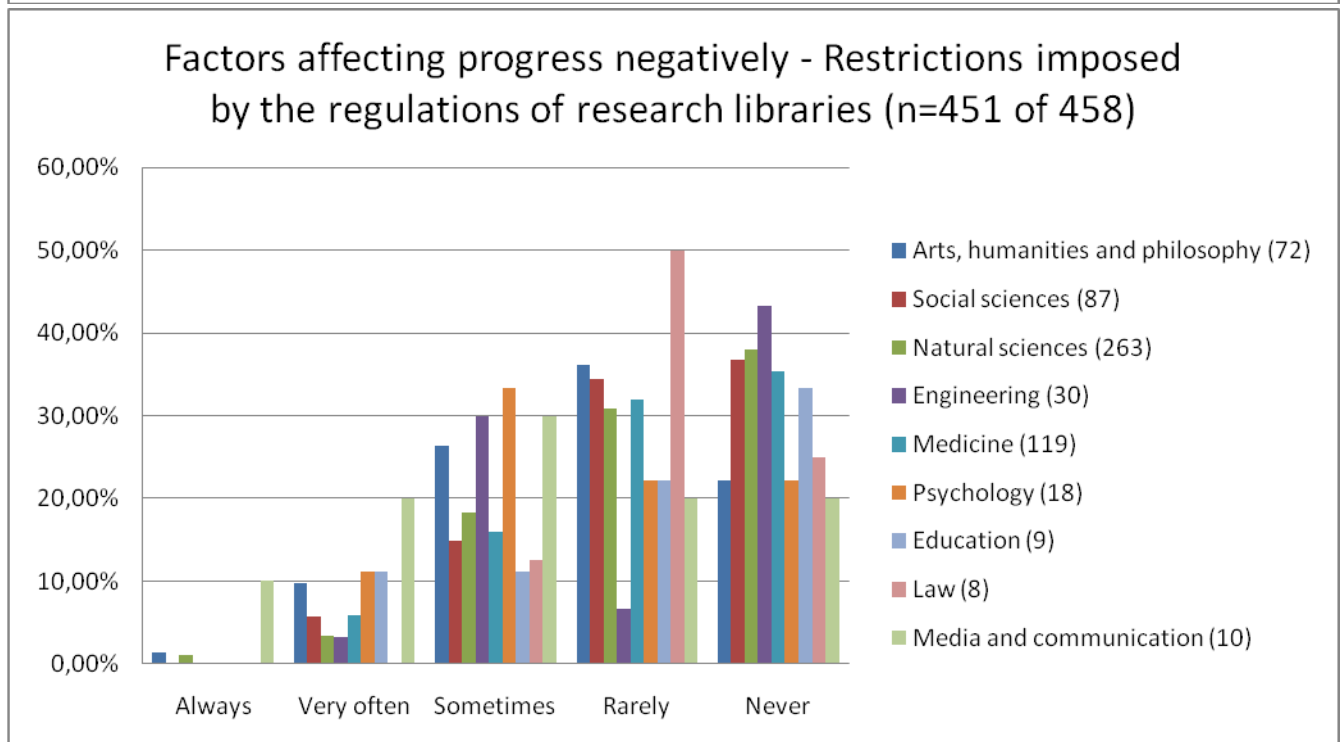
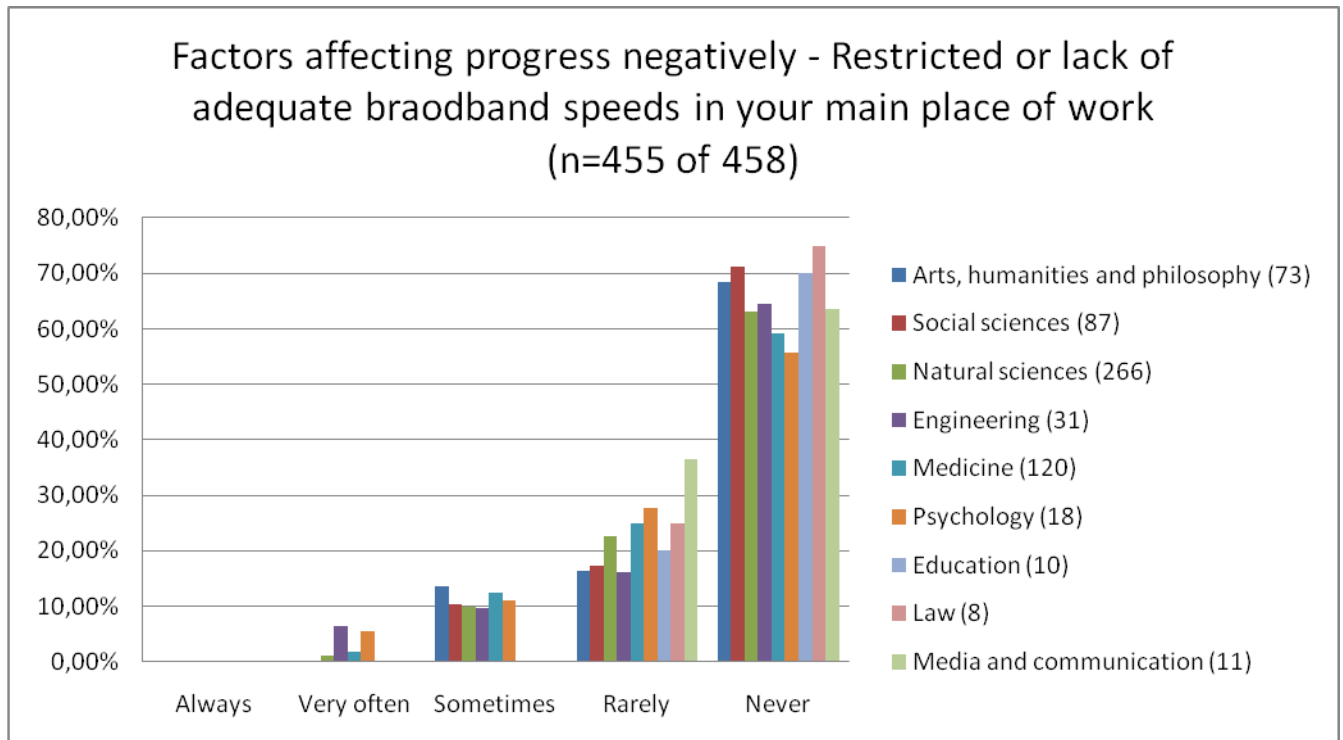


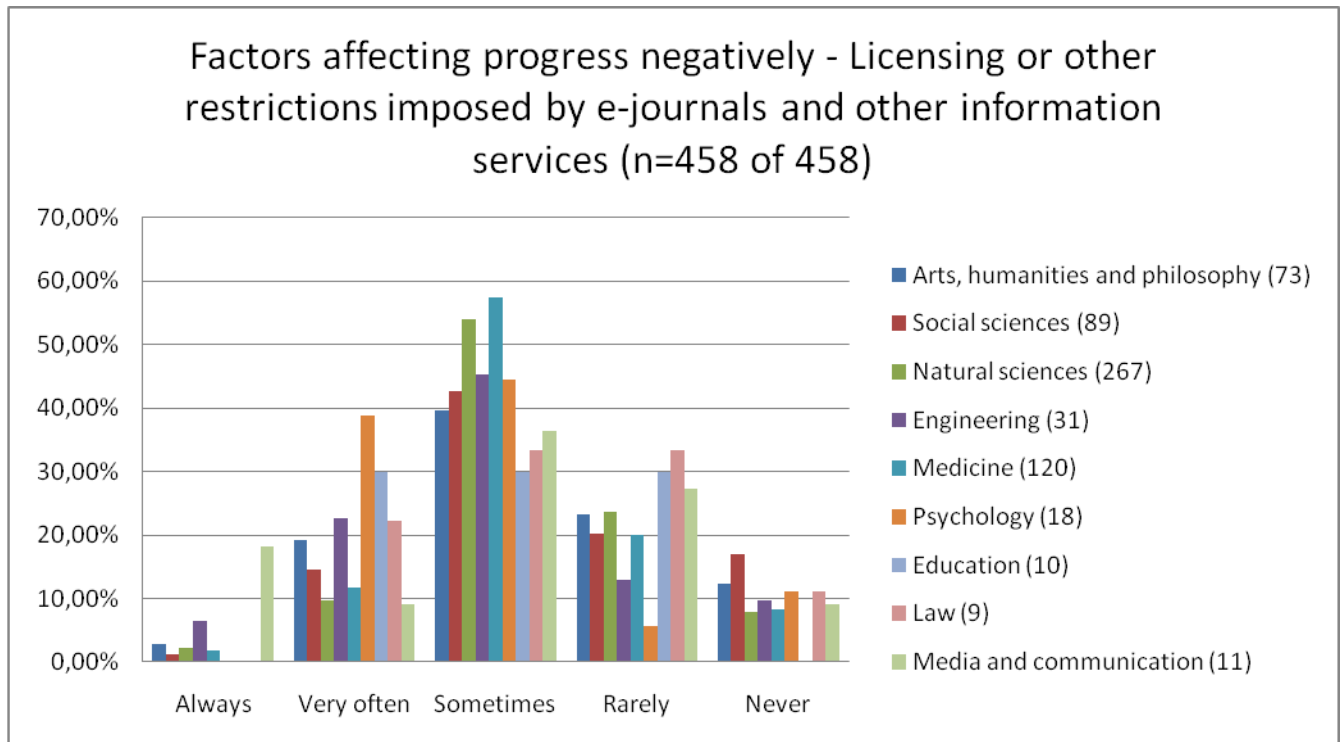




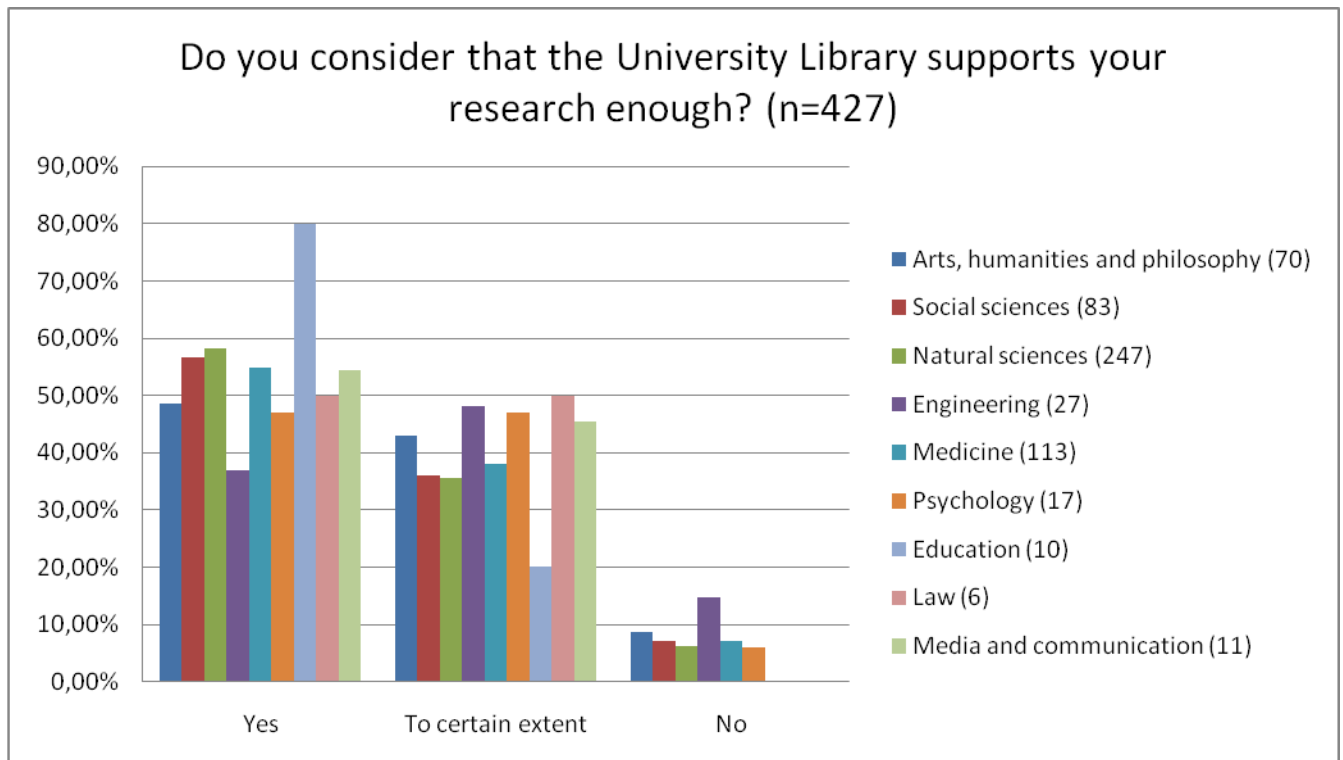




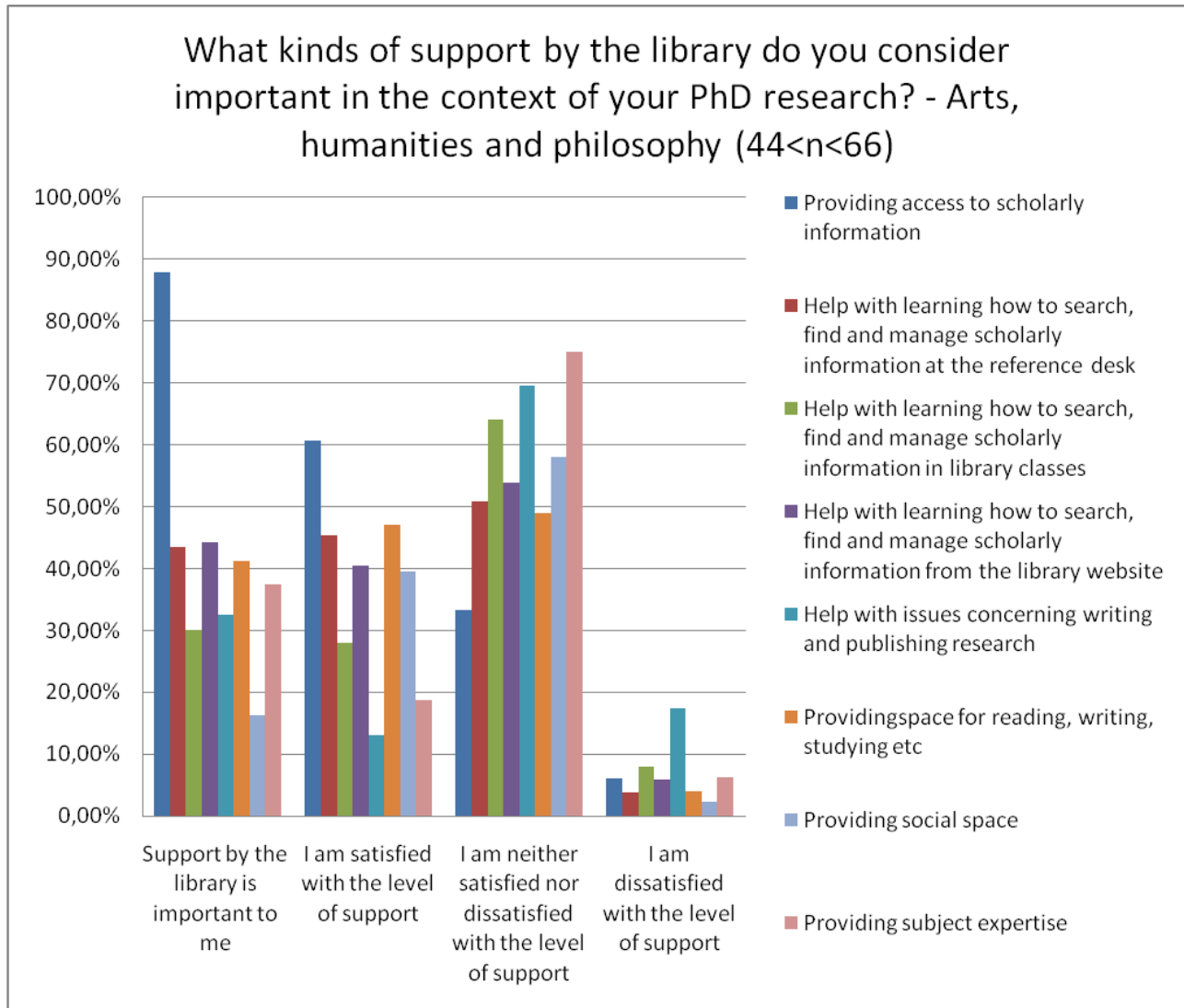


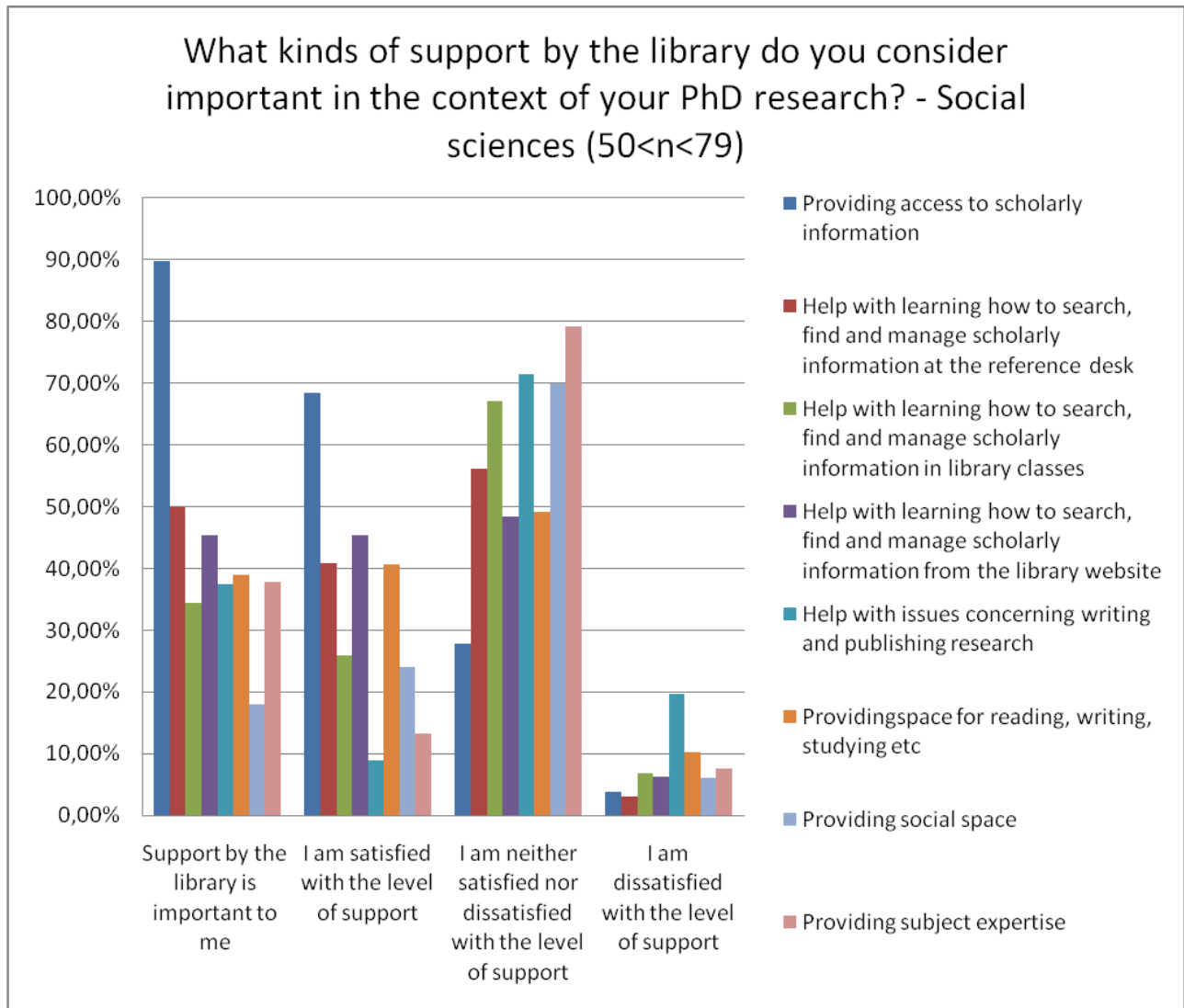


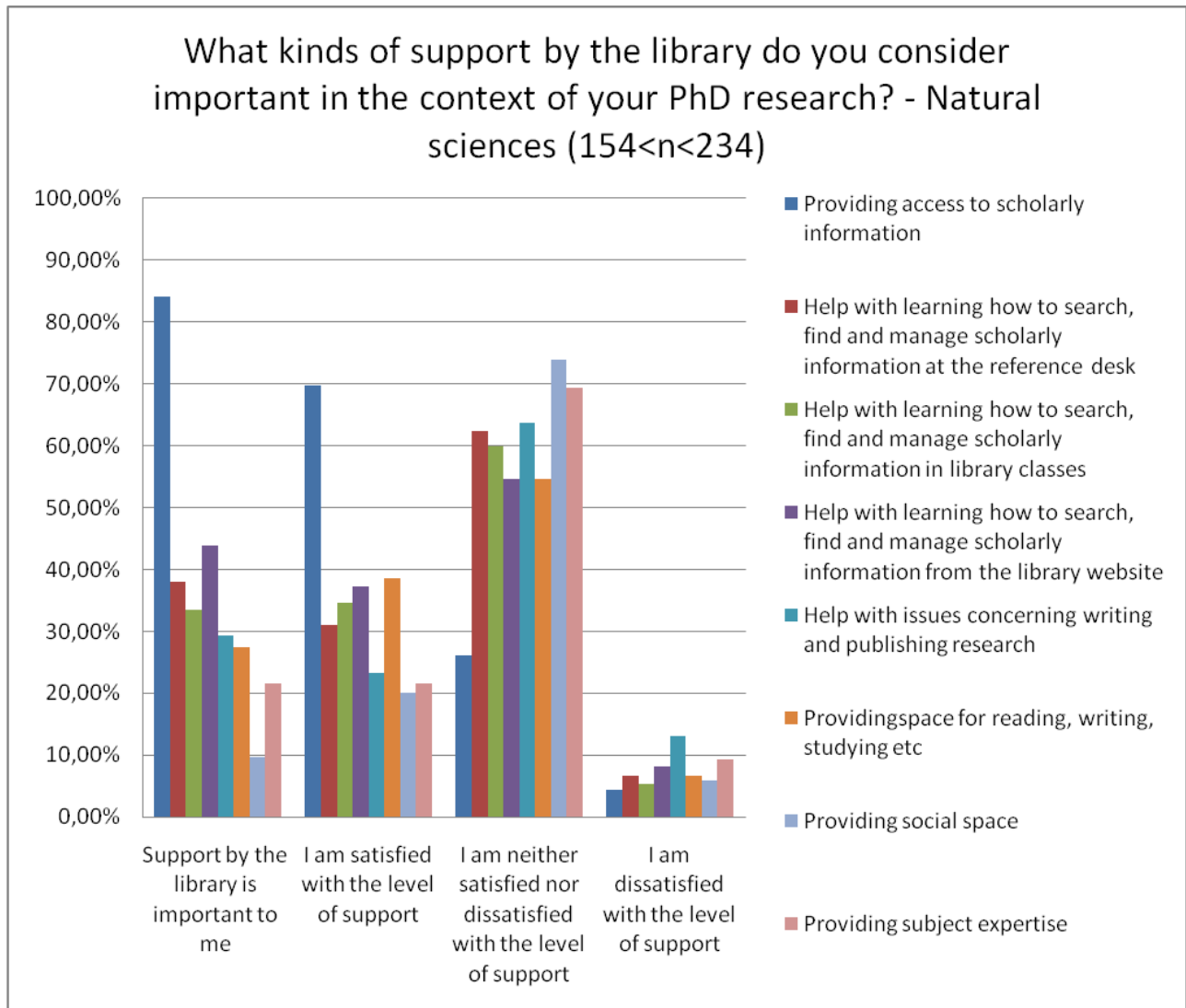
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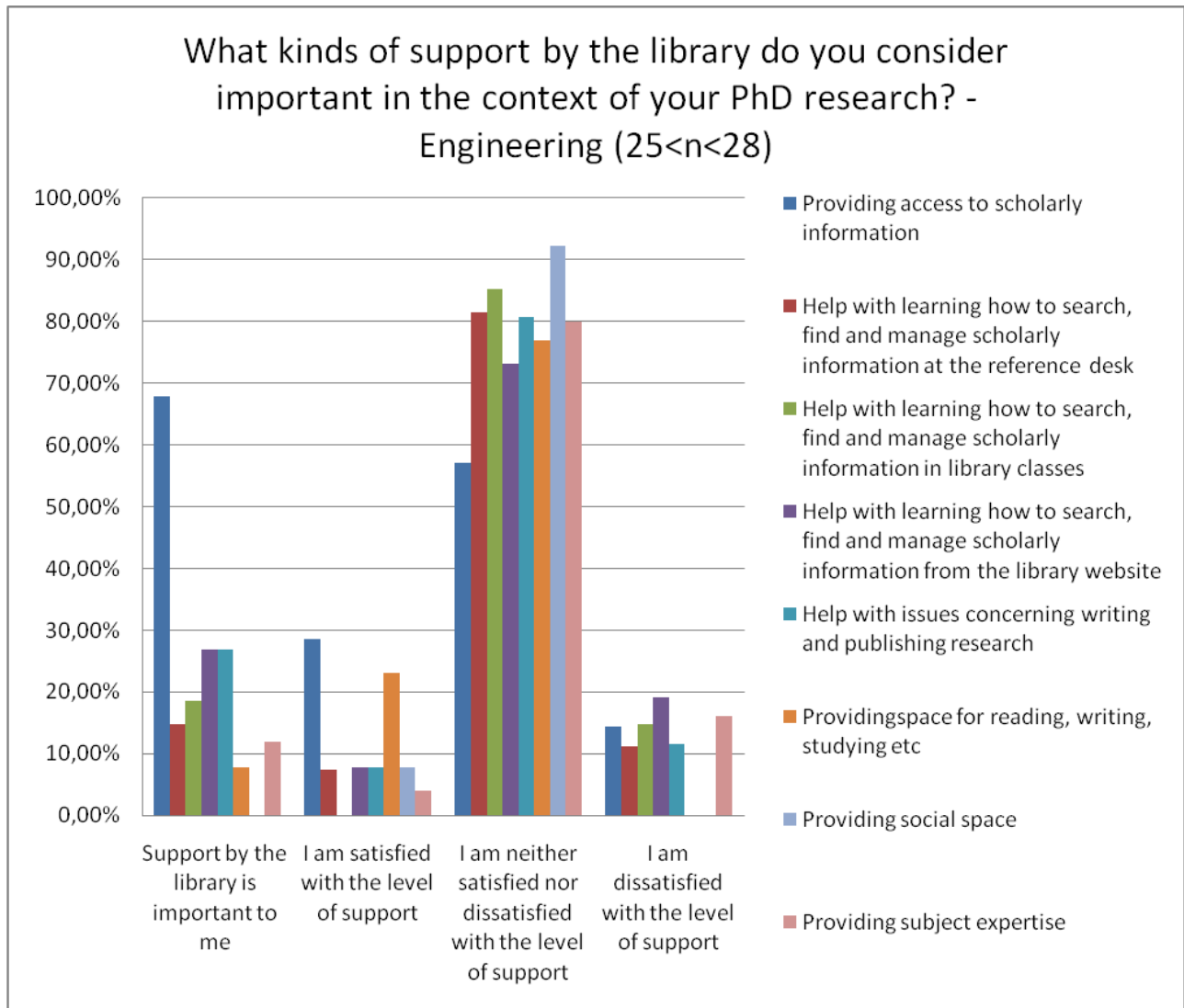


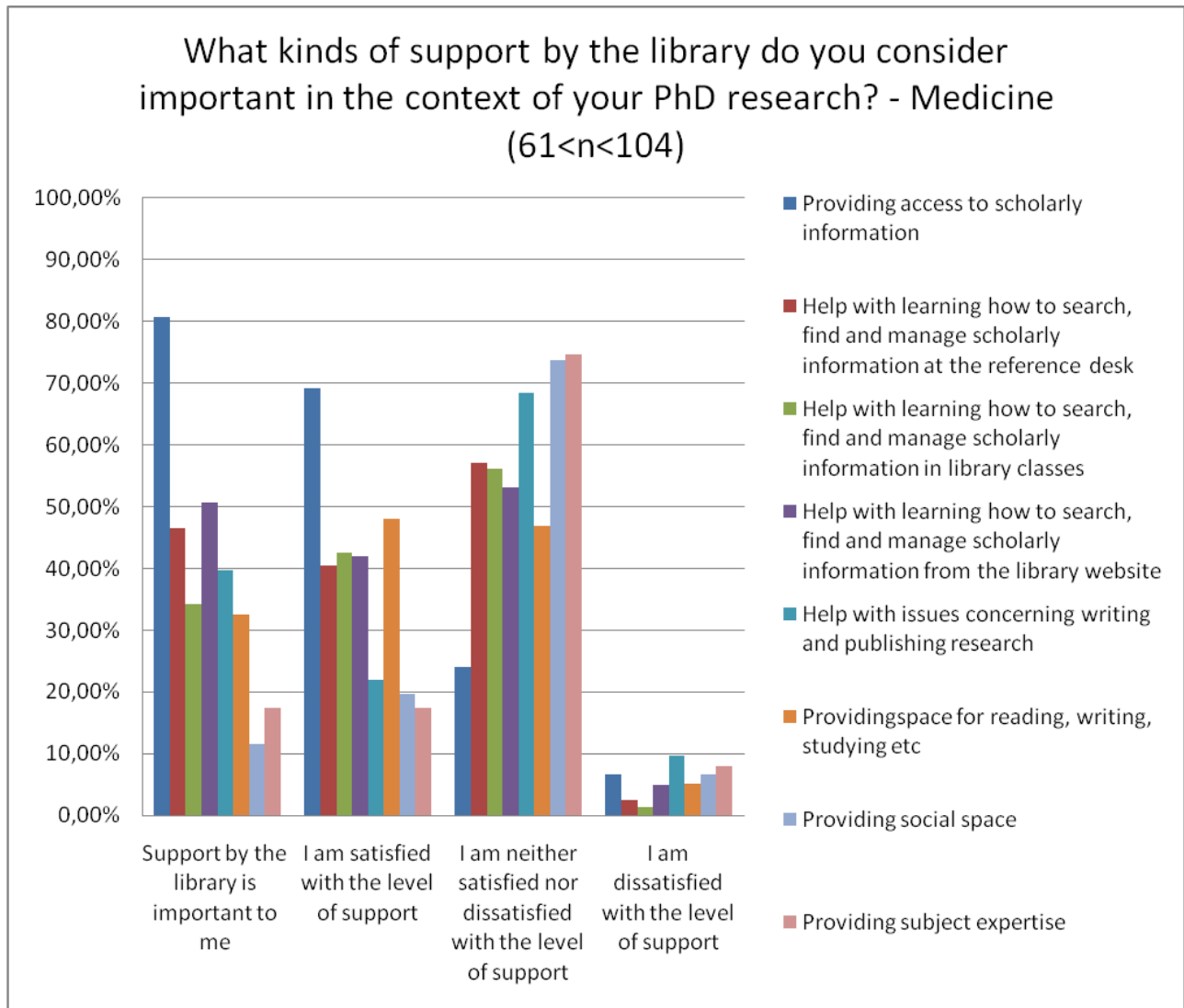
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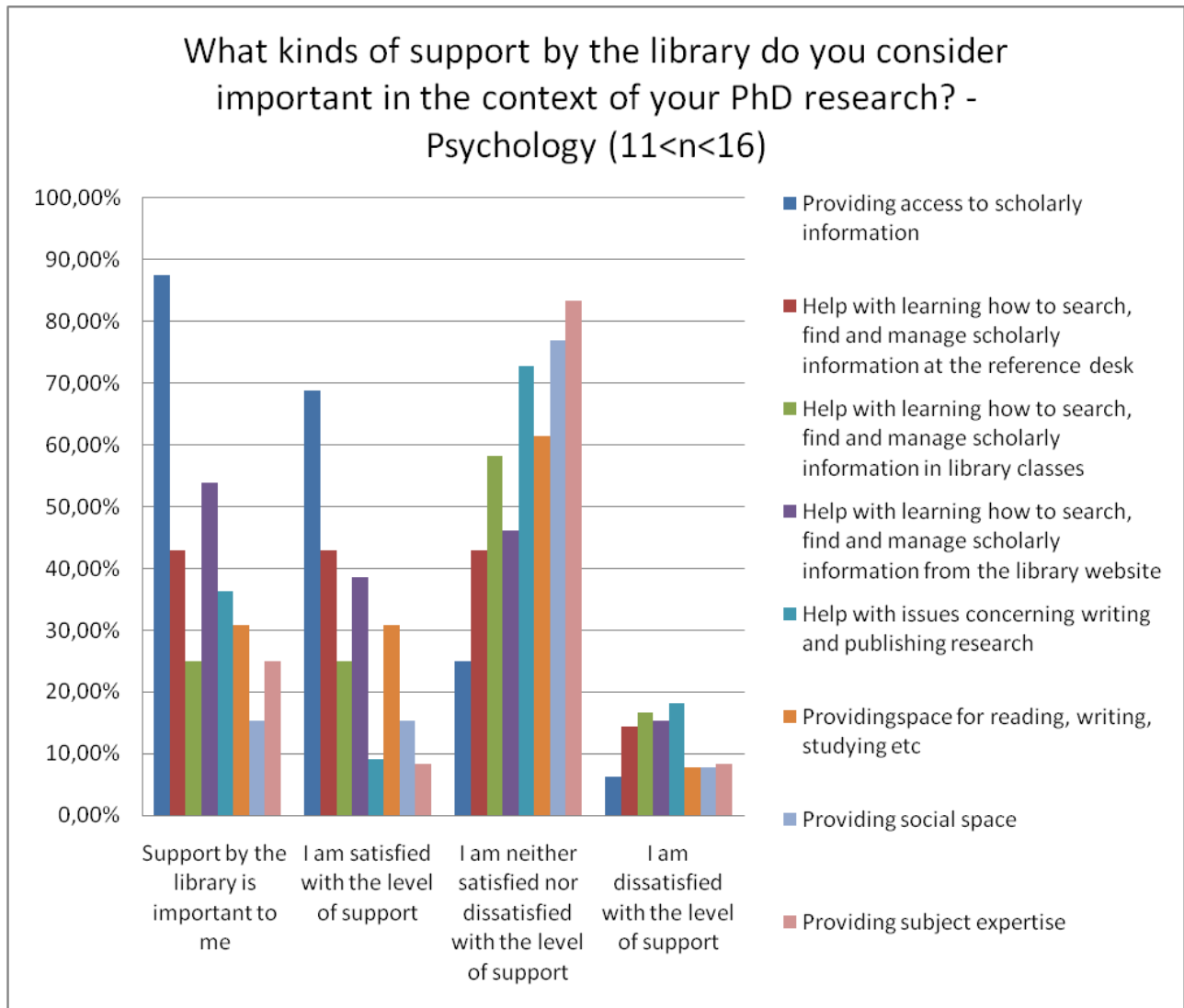


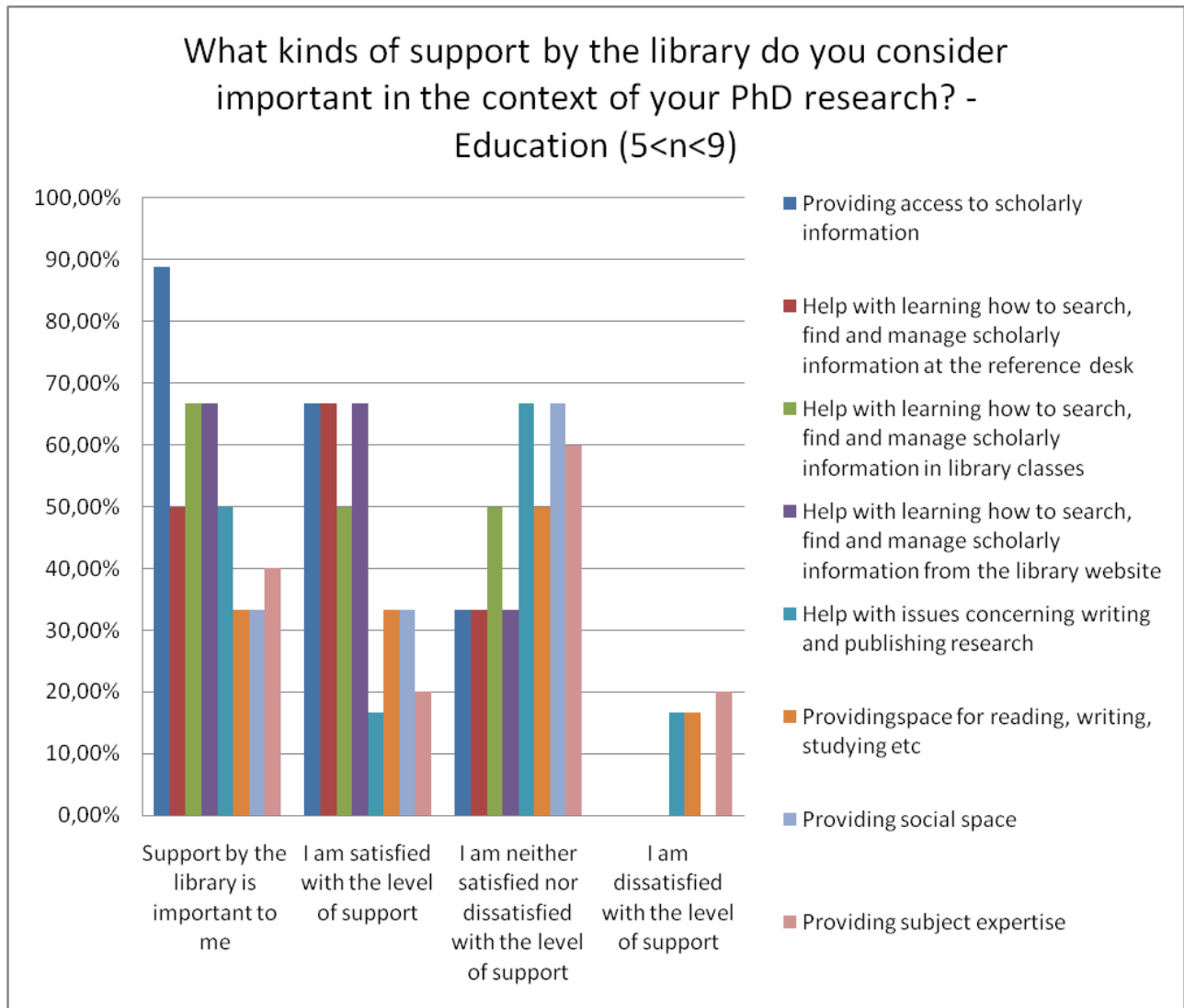


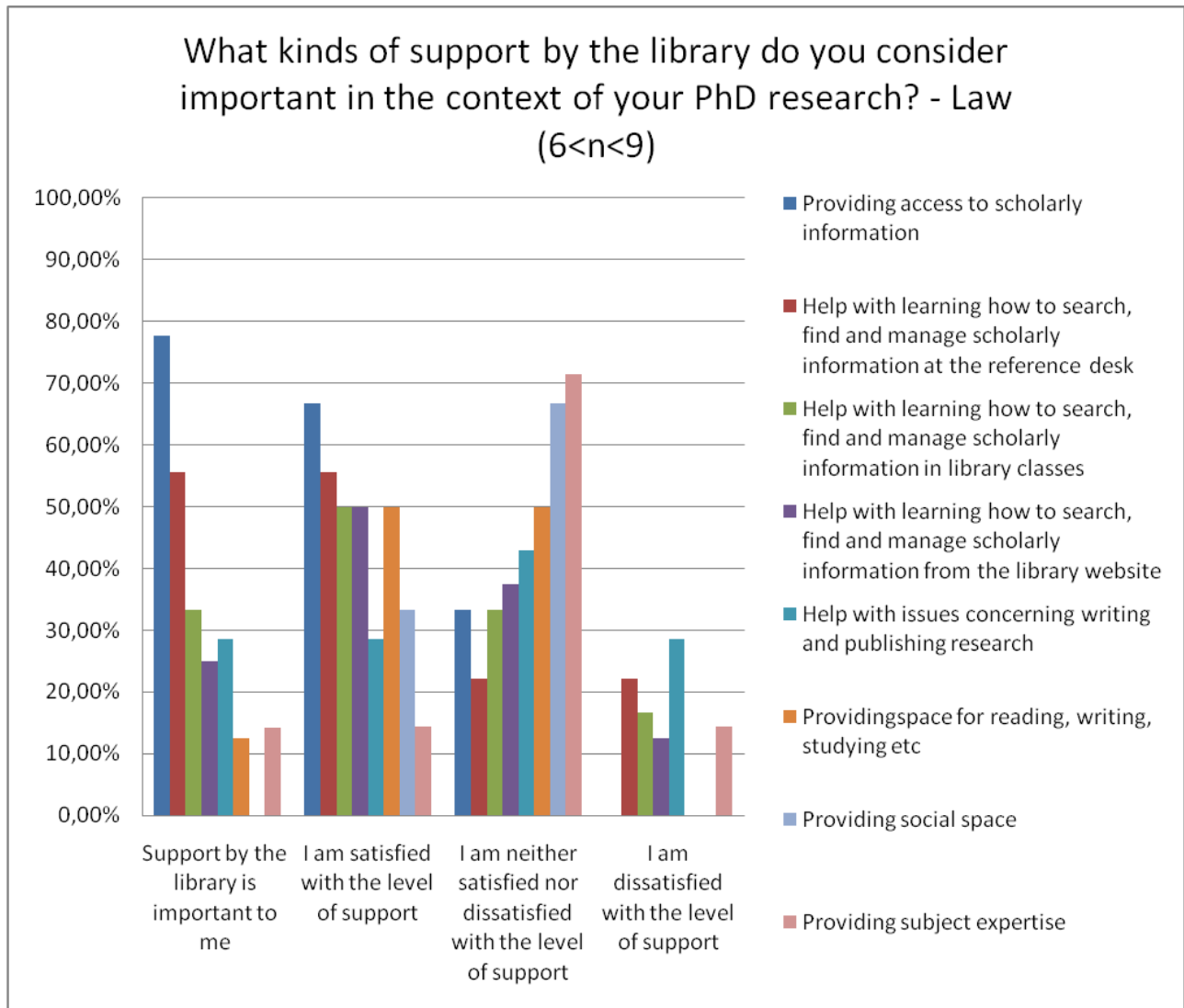


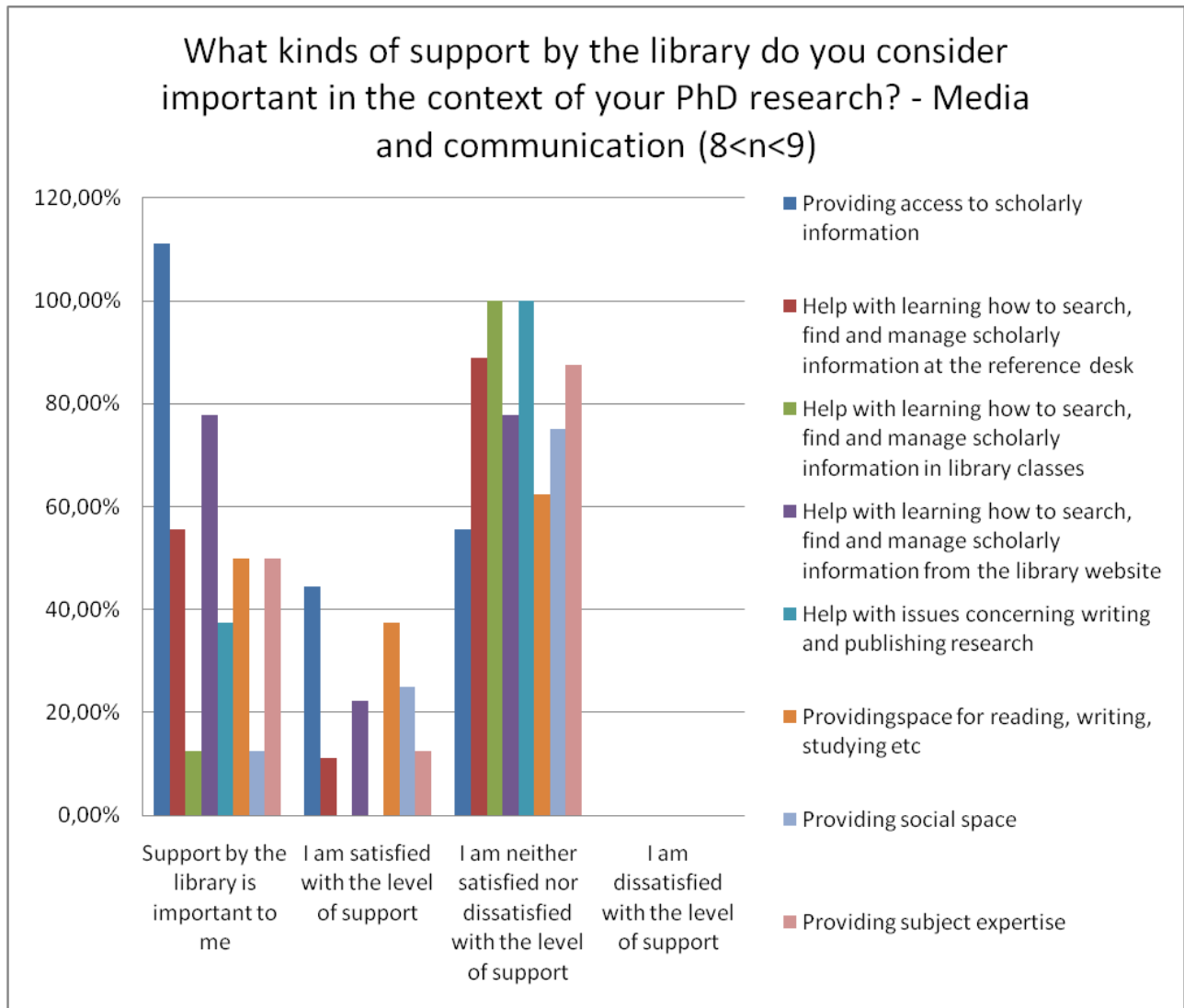




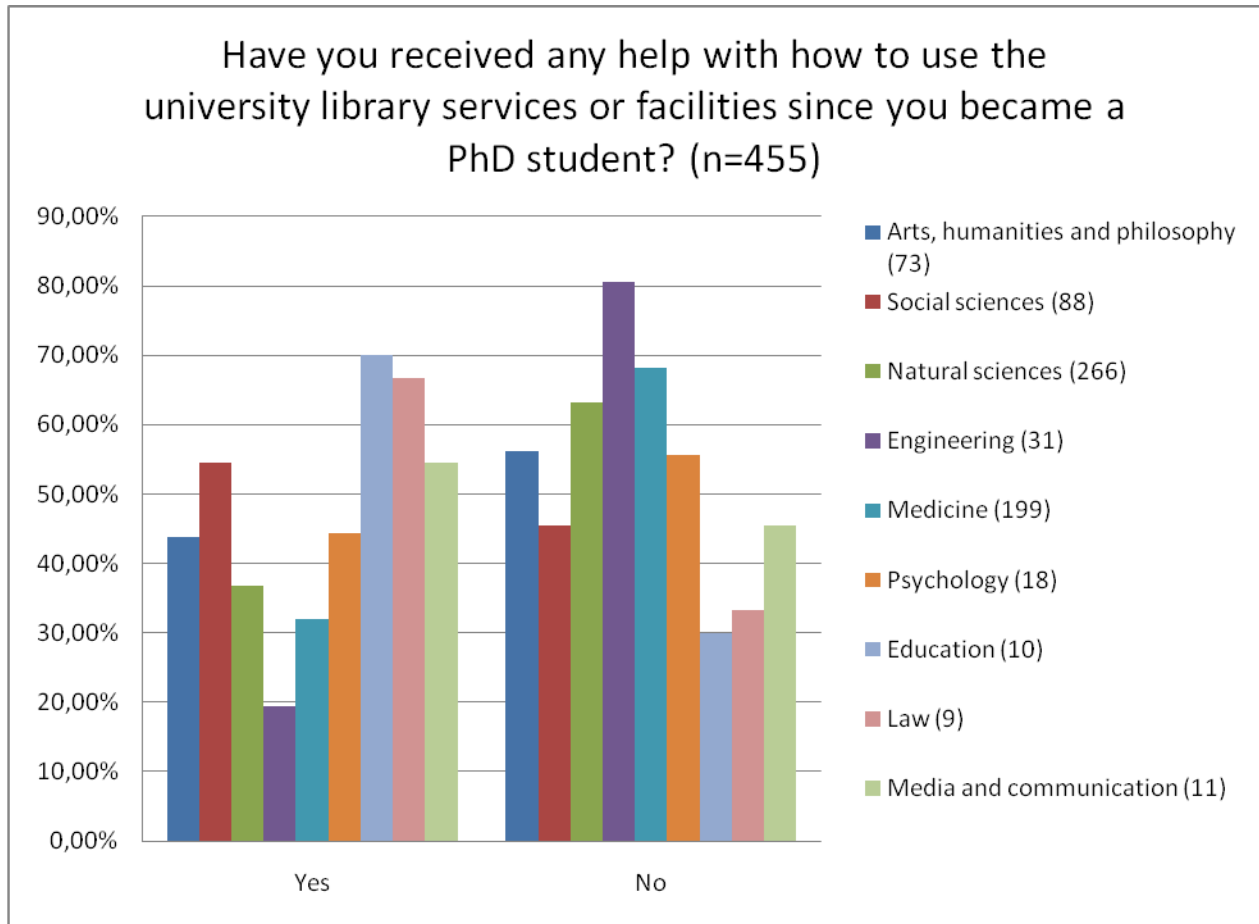




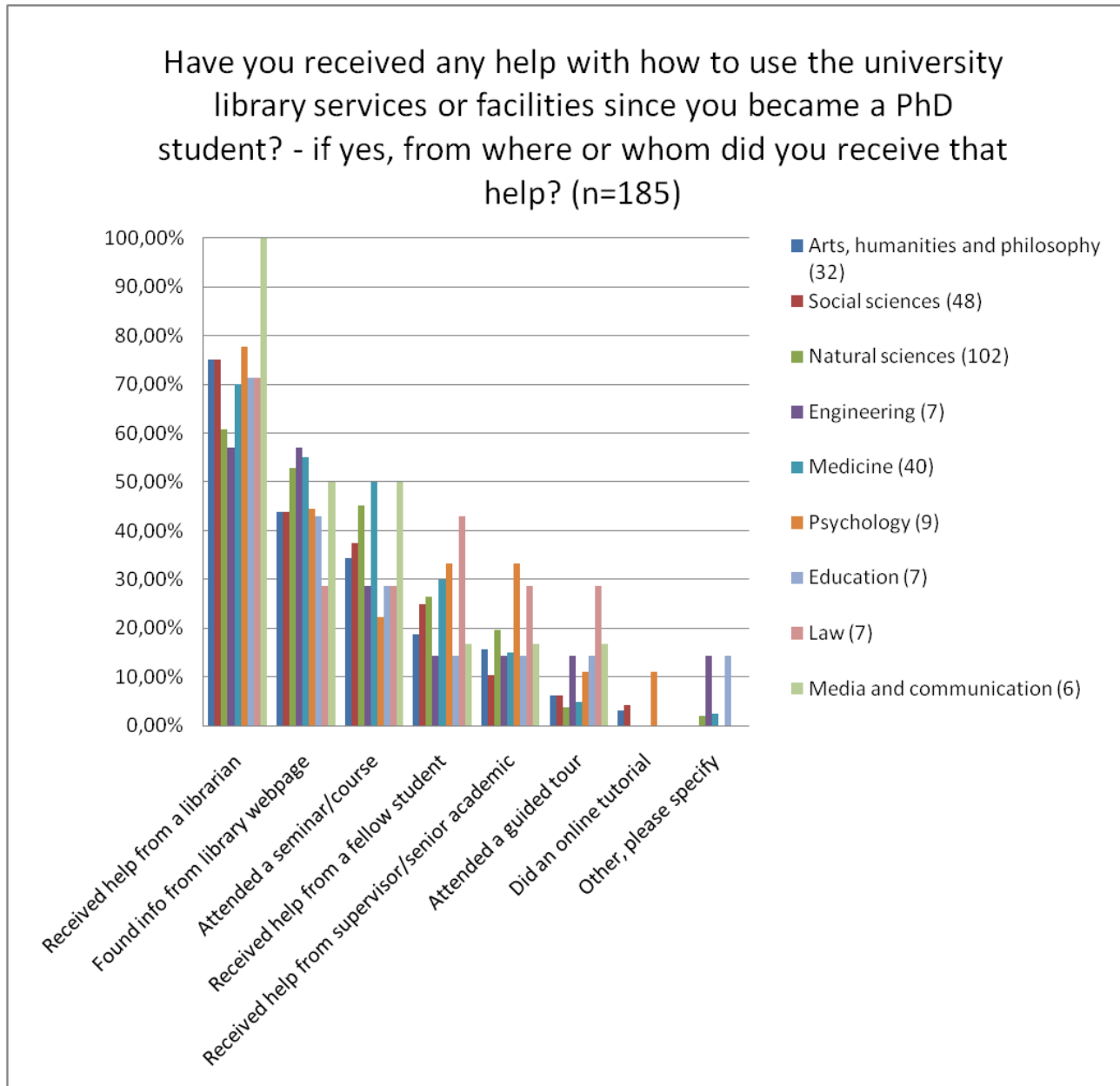




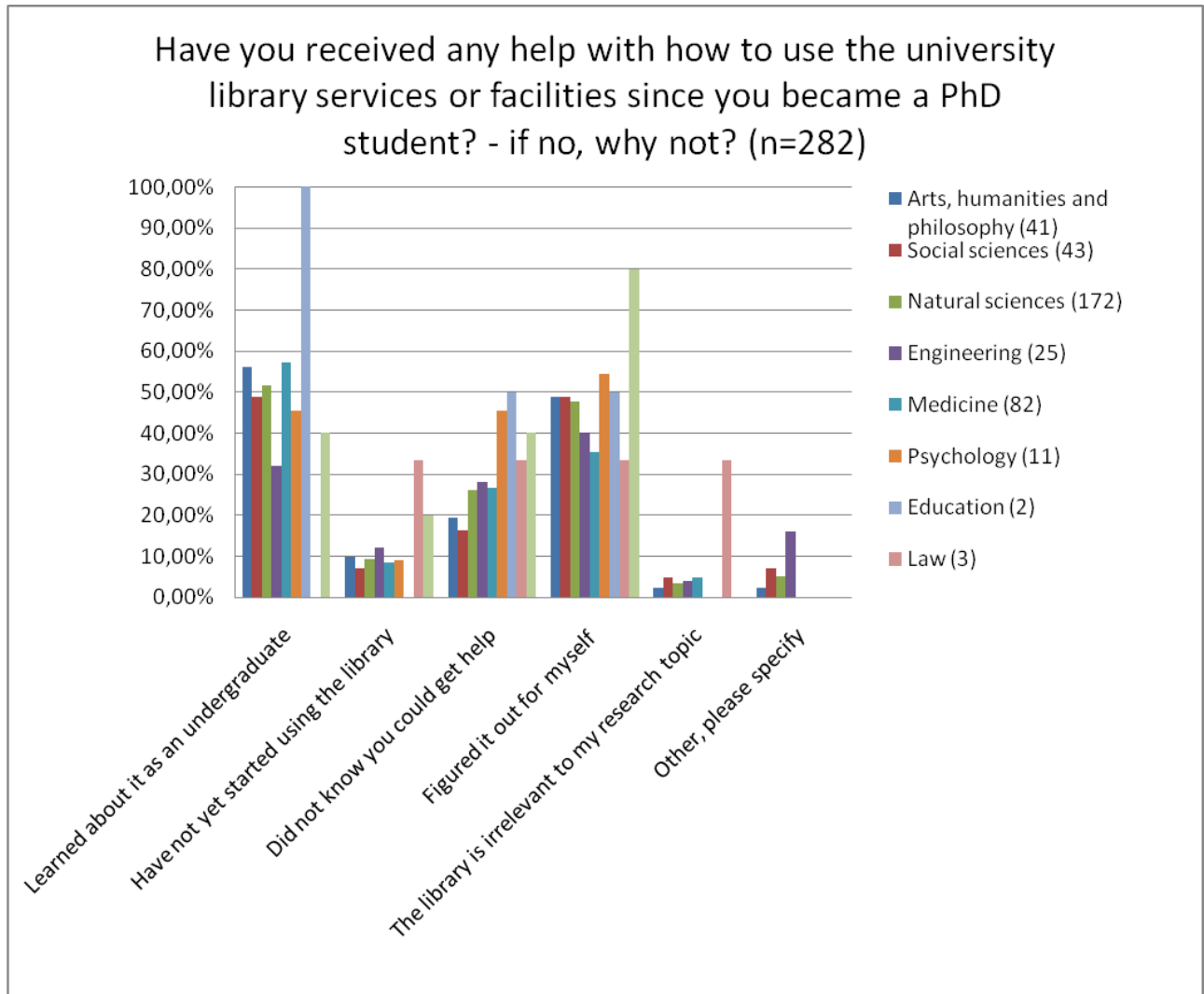
dk e3 f7 u



dk e4 f7 u



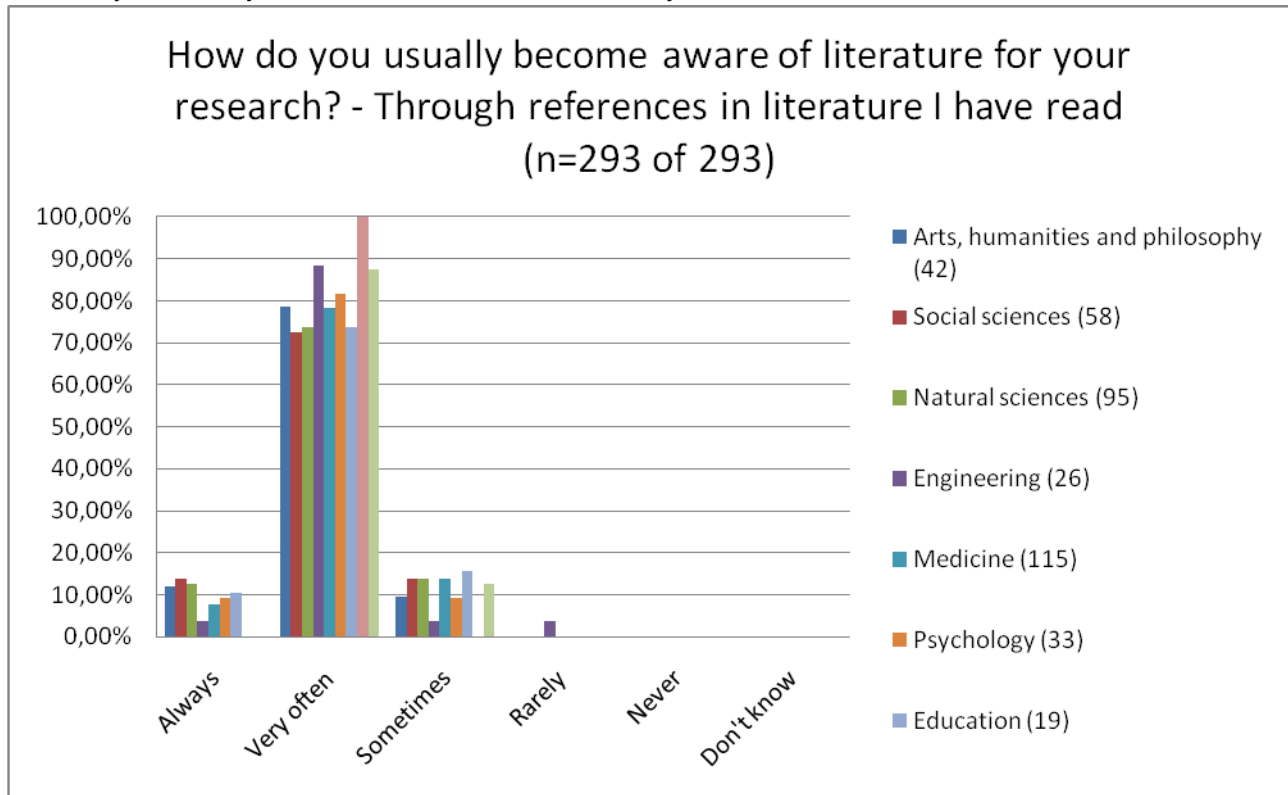
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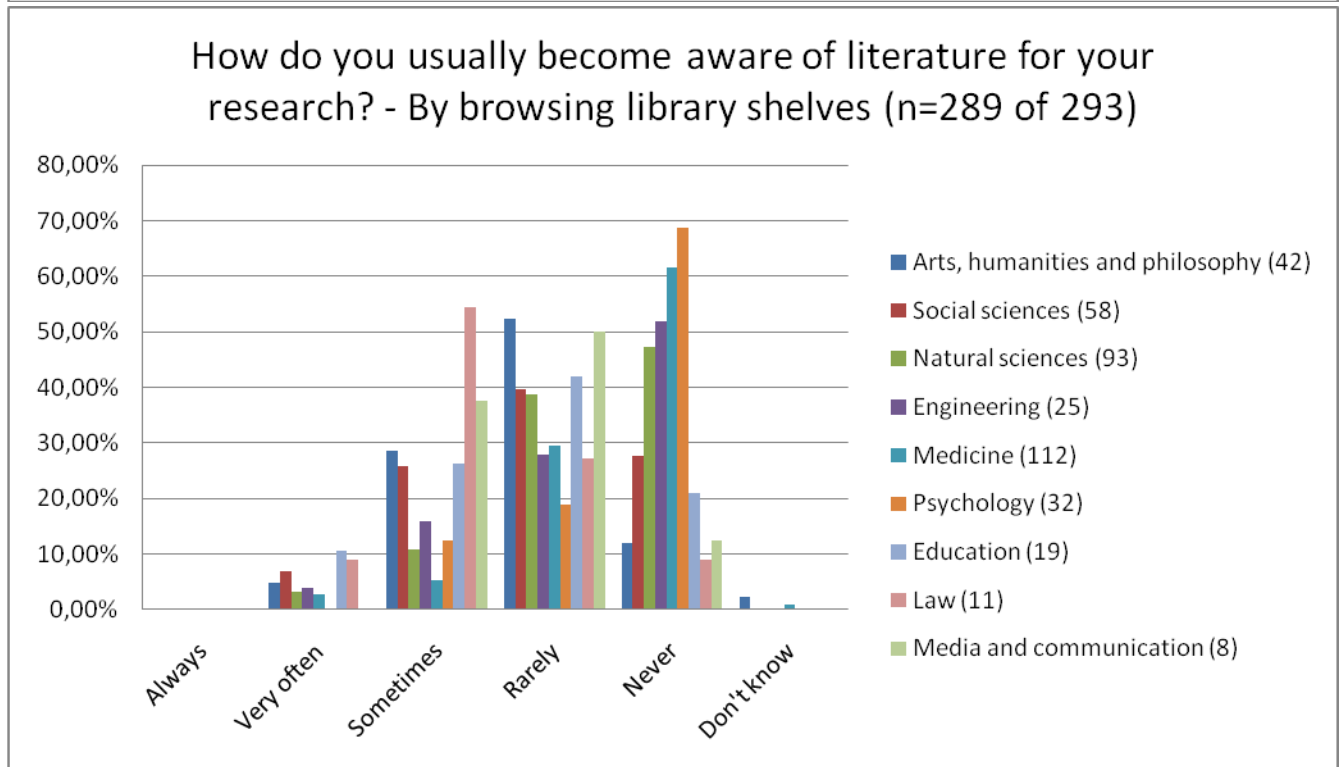
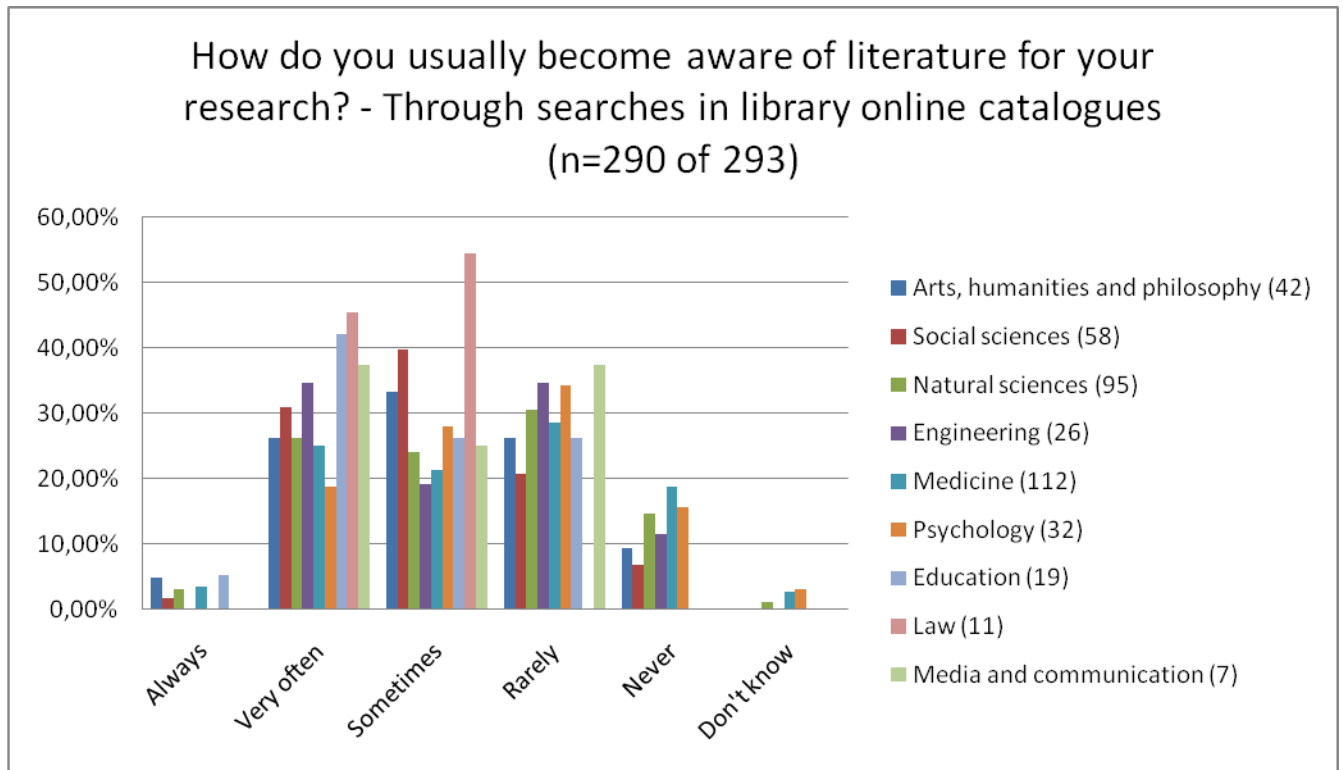


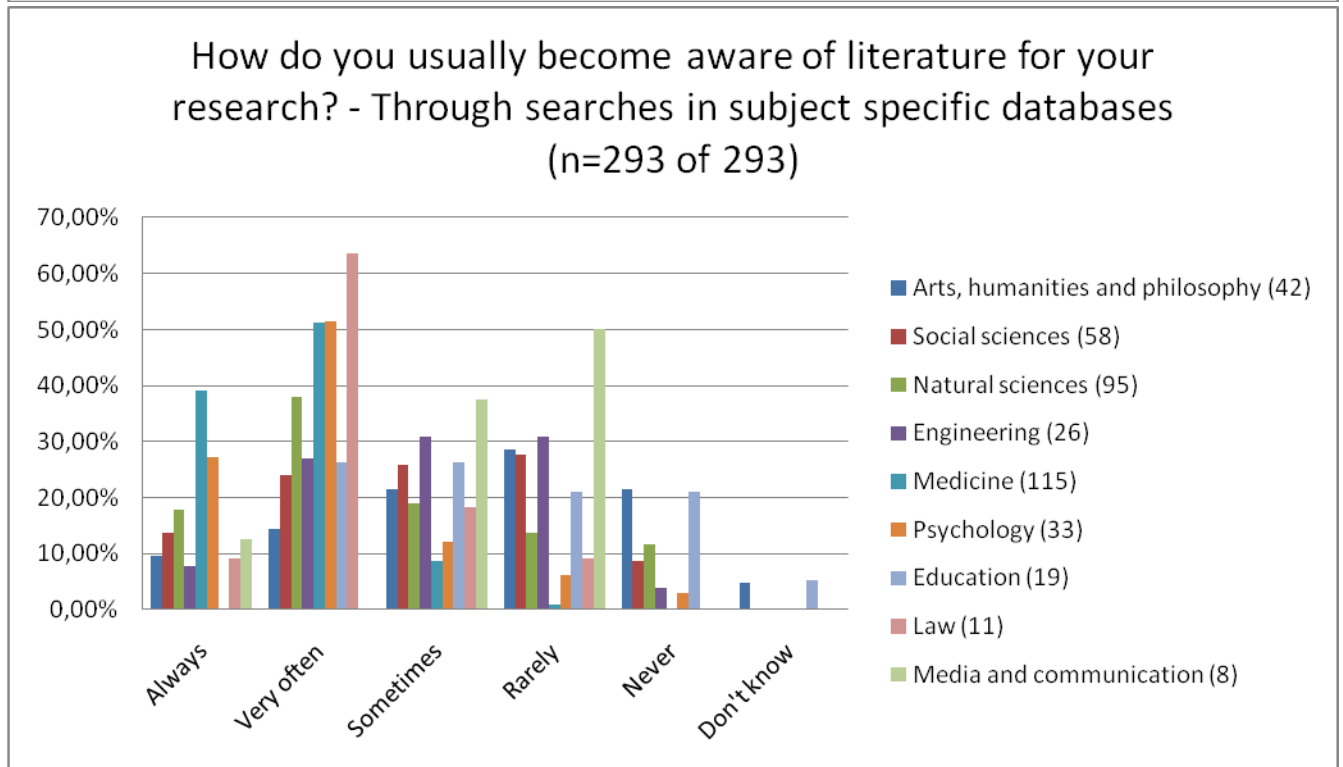
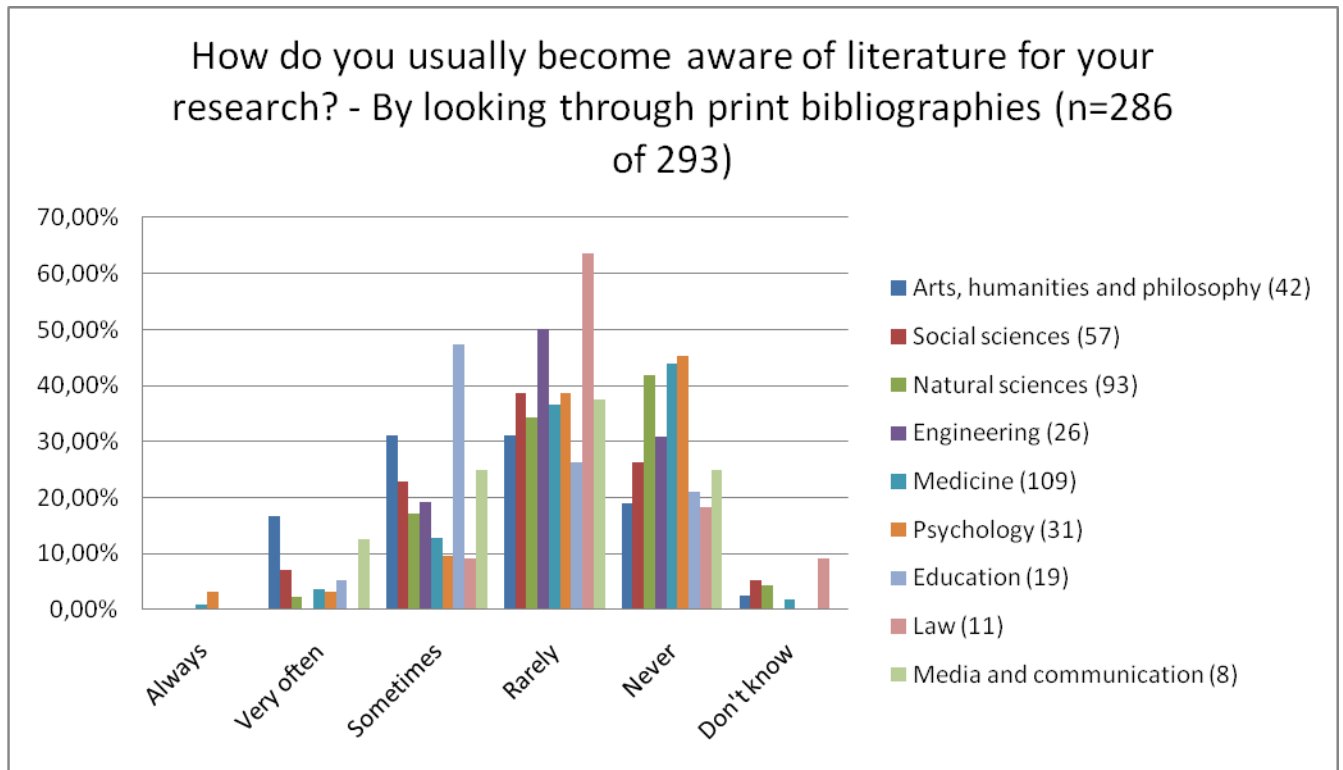
Oslo PhD students survey responses

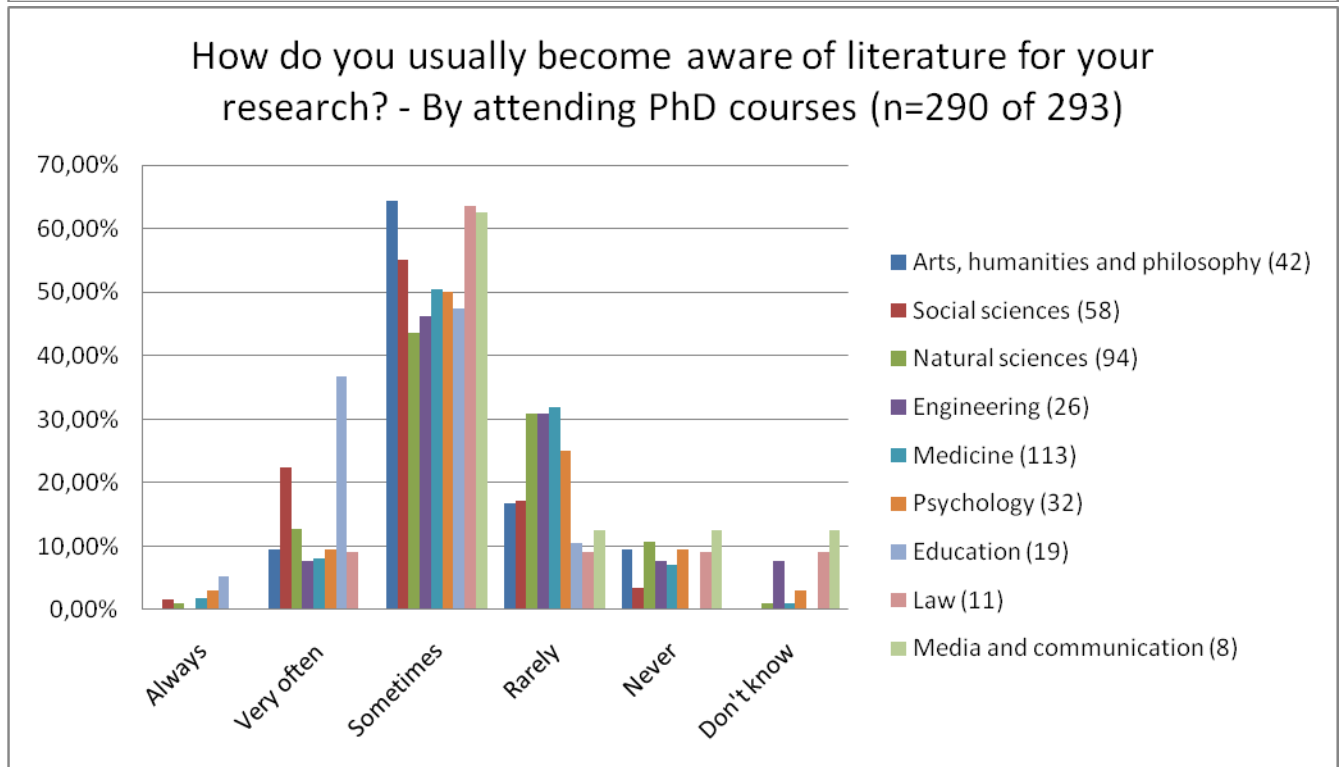
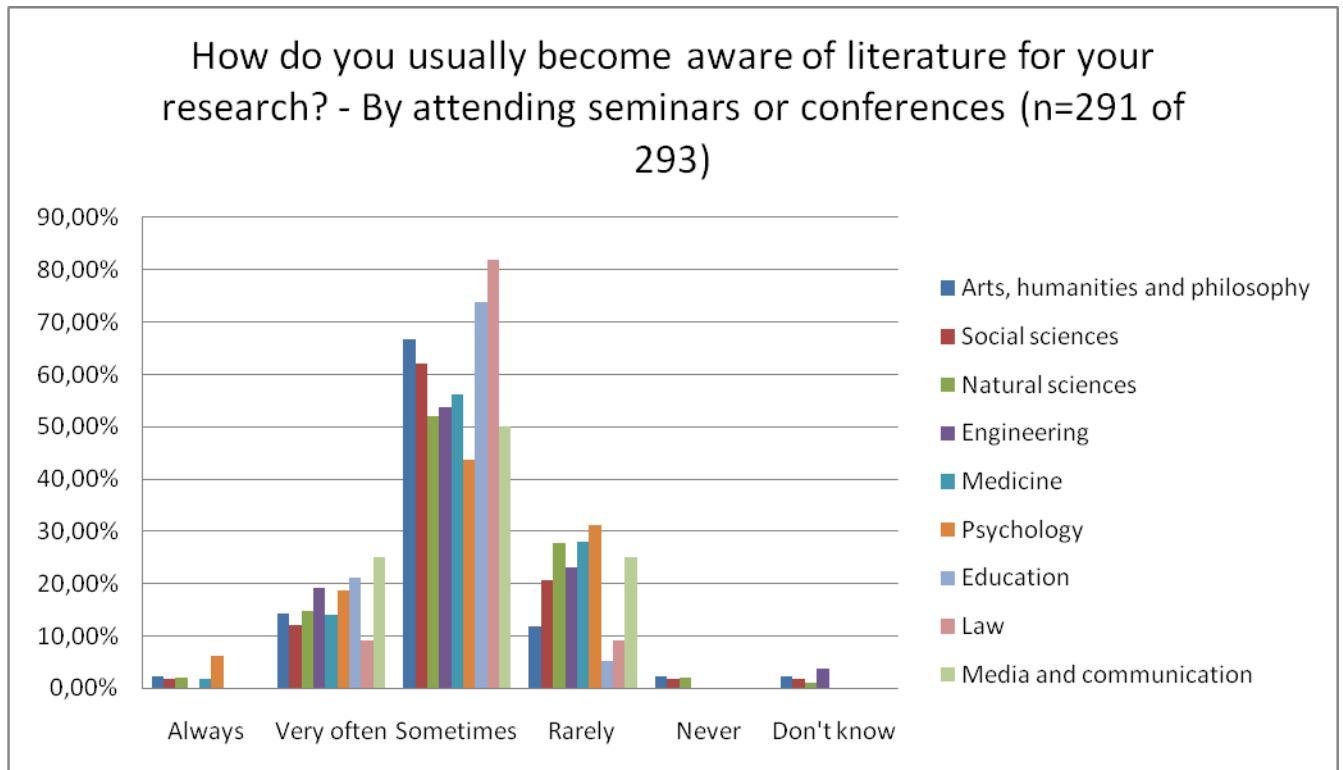
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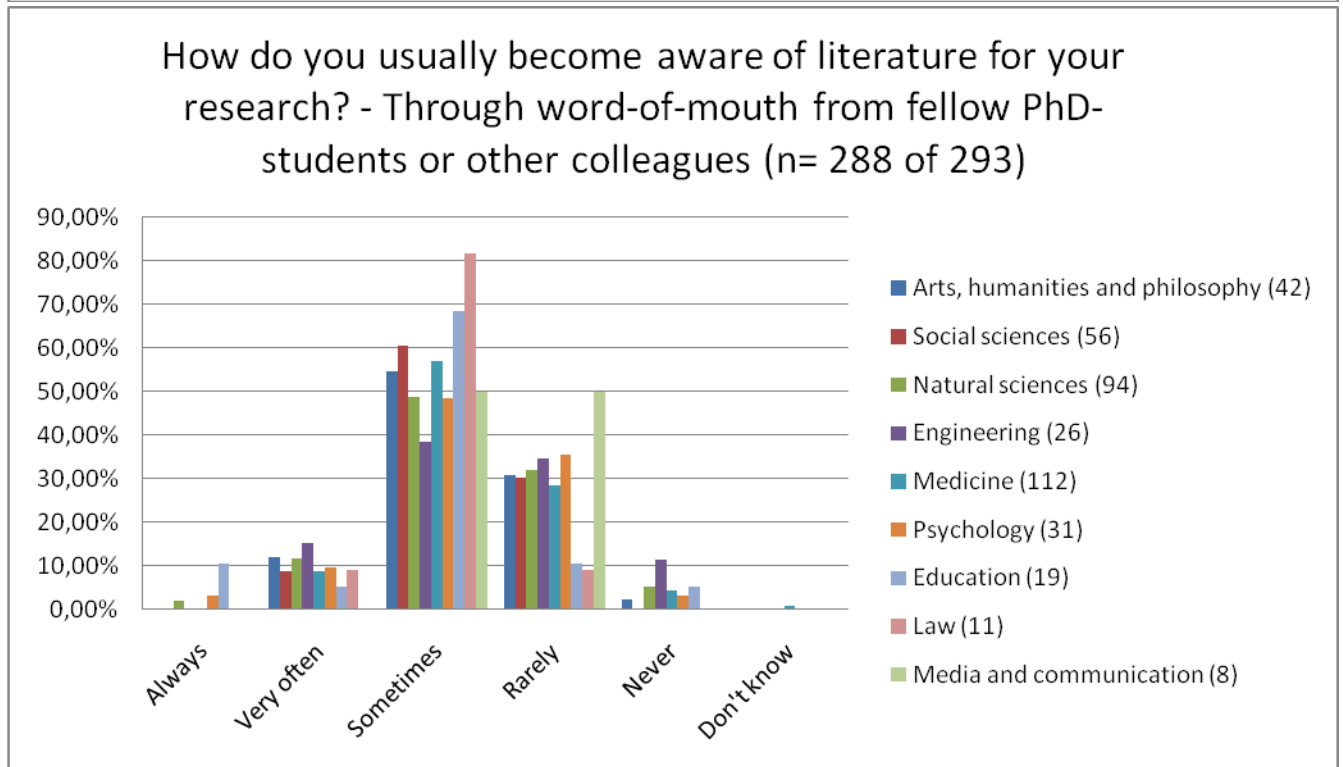
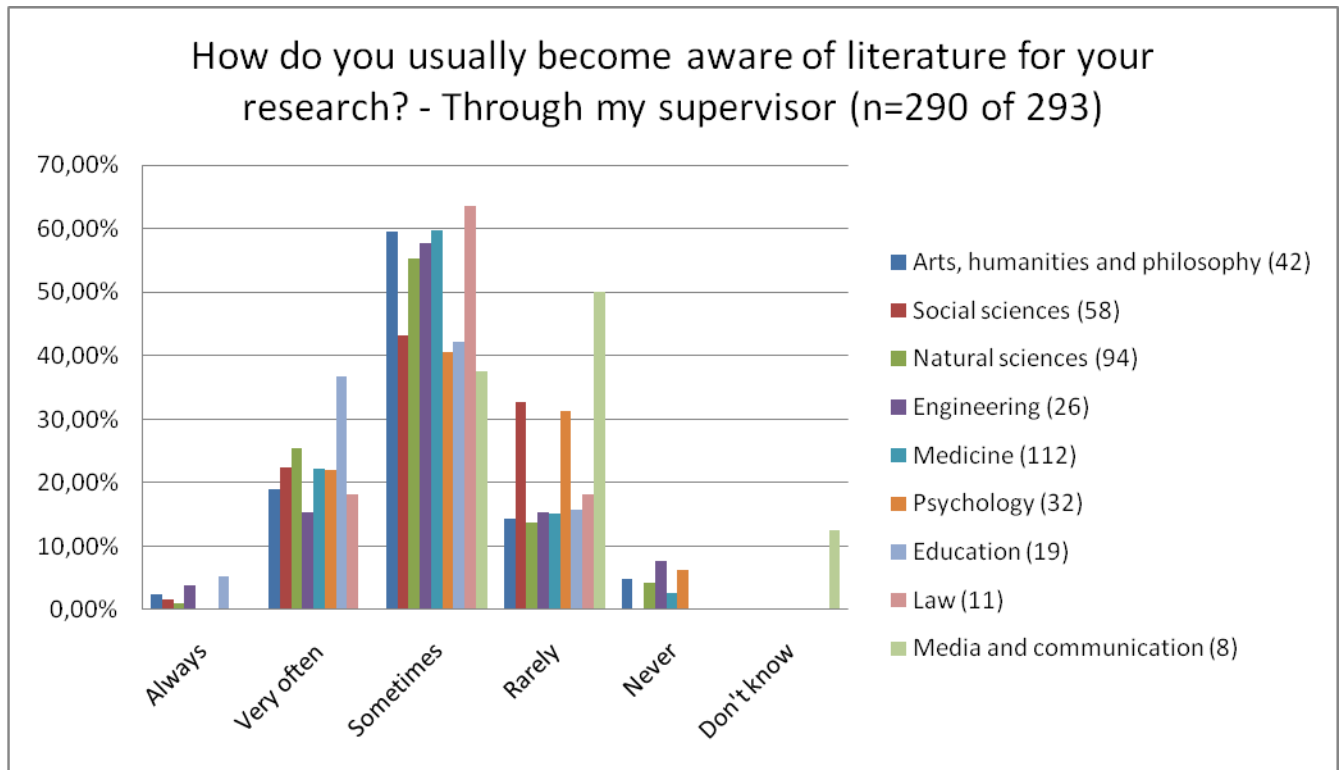
How do you usually become aware of literature for your research?

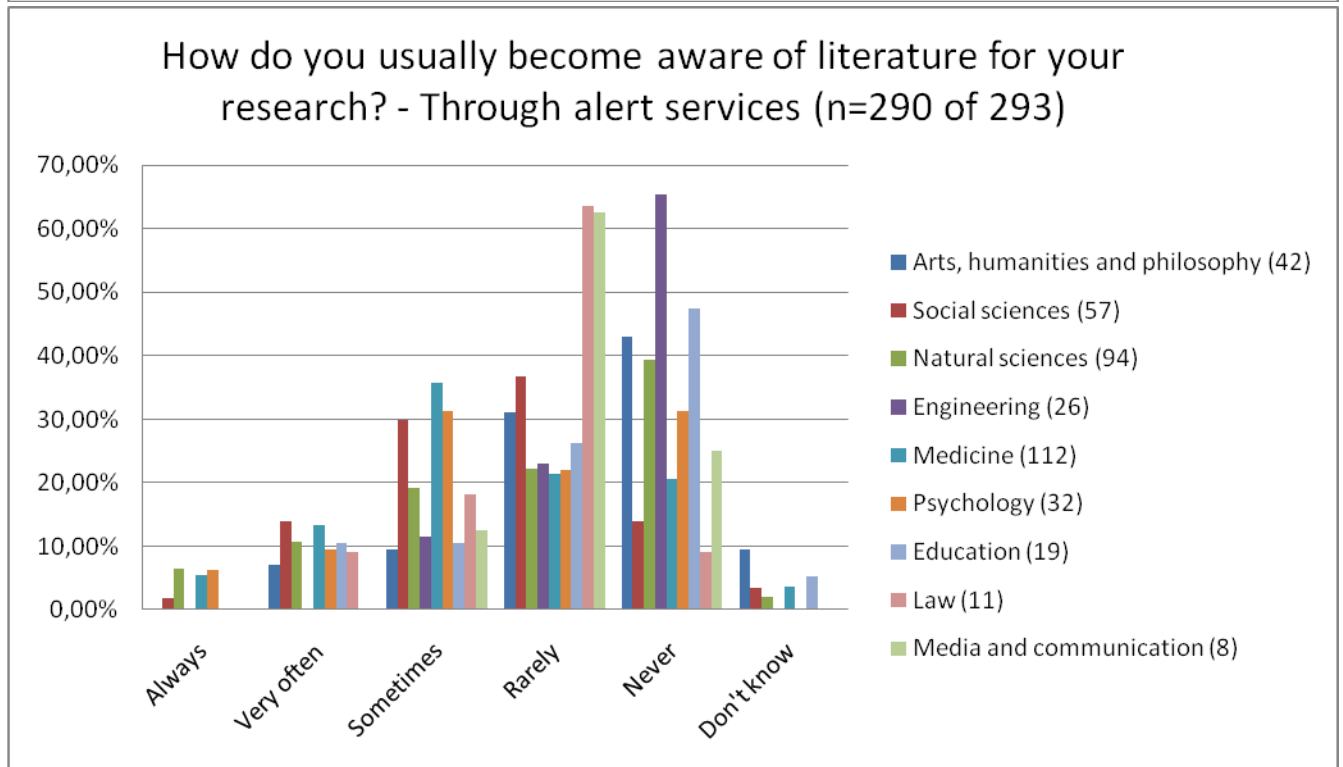
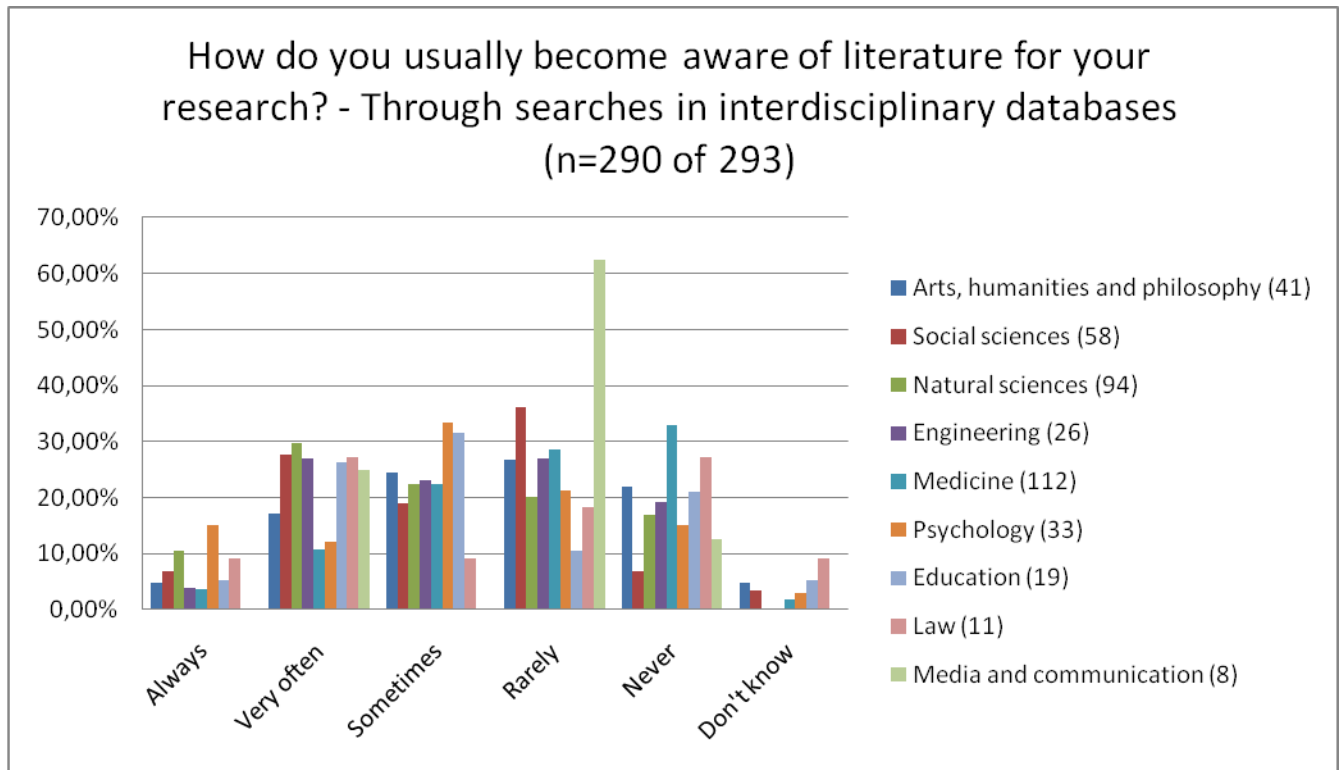


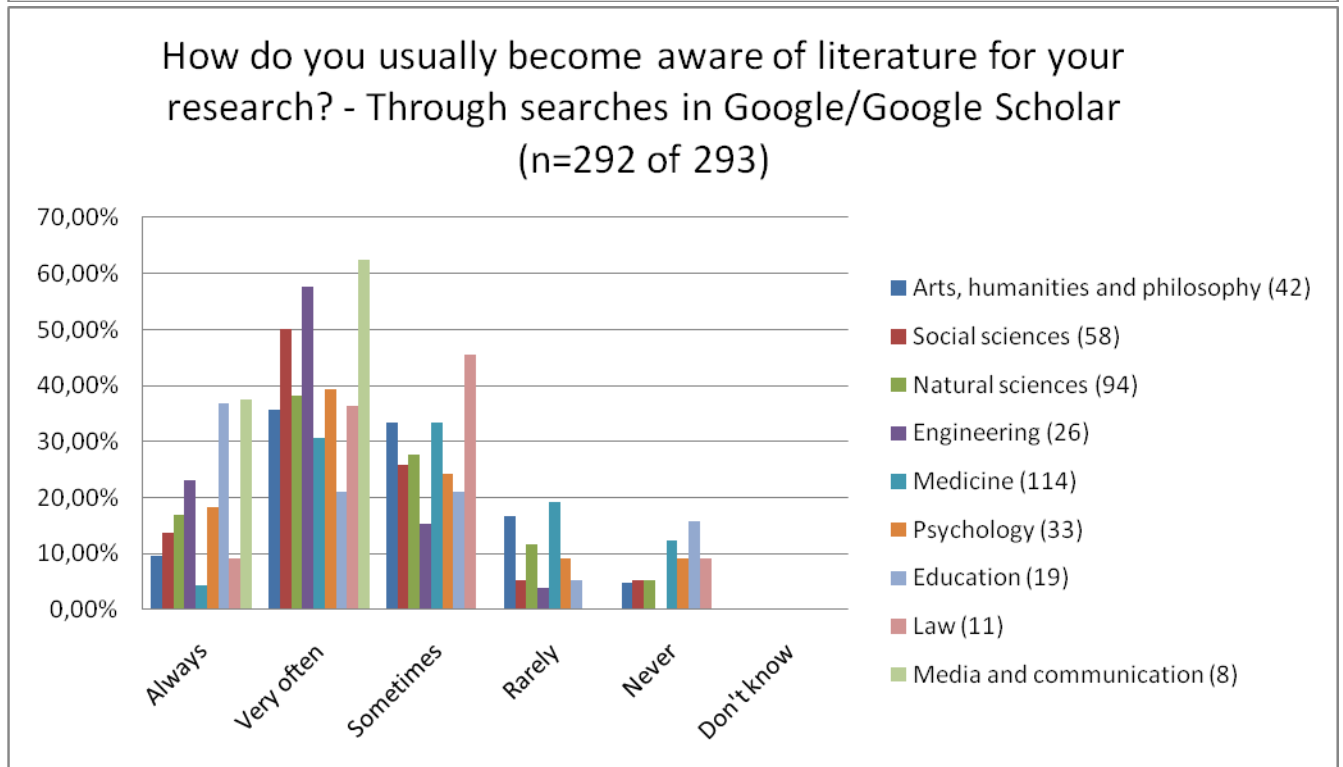
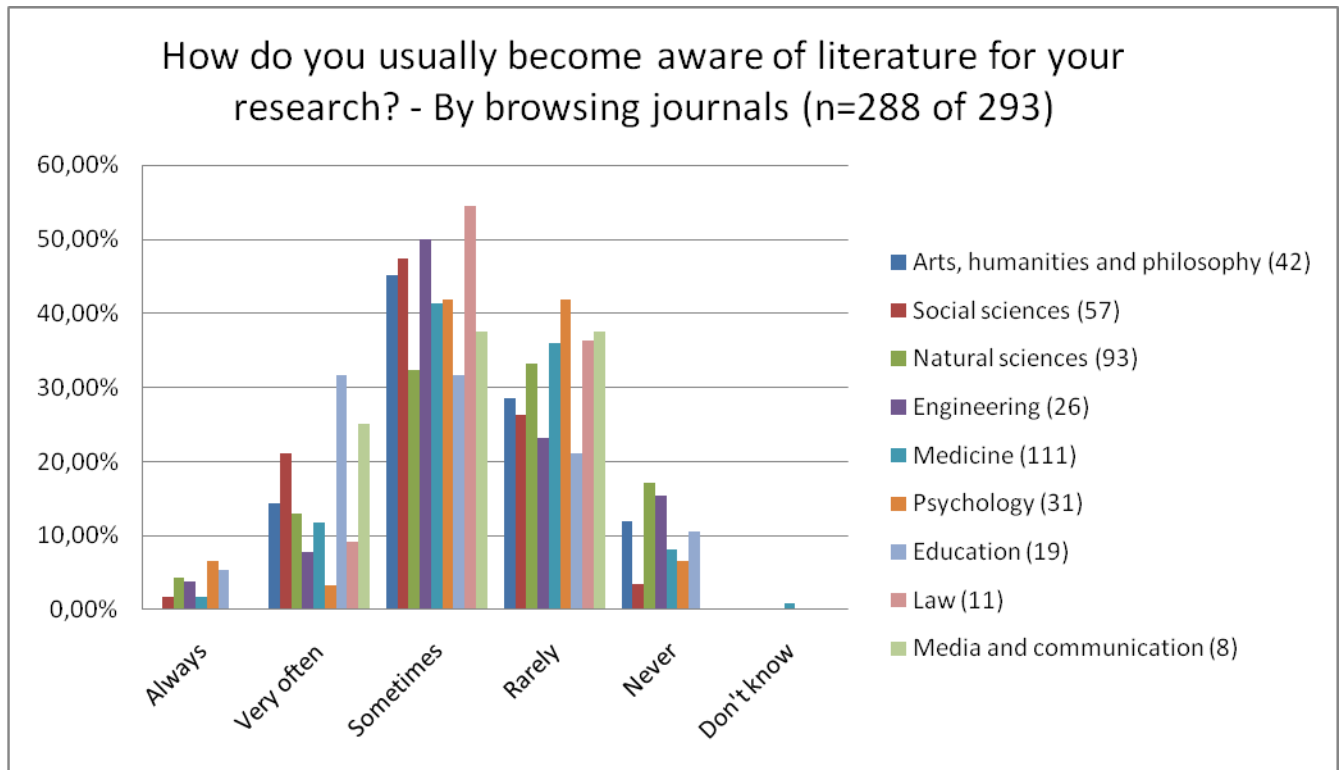


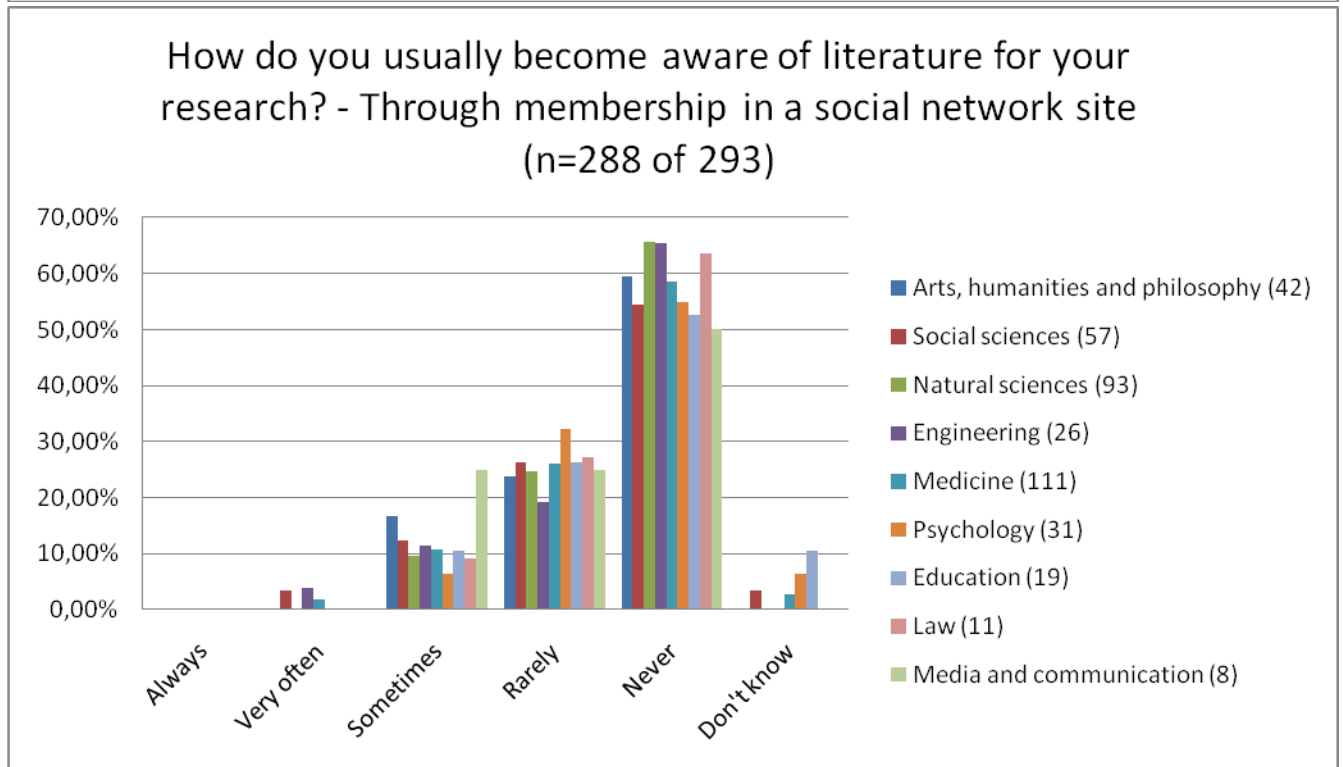
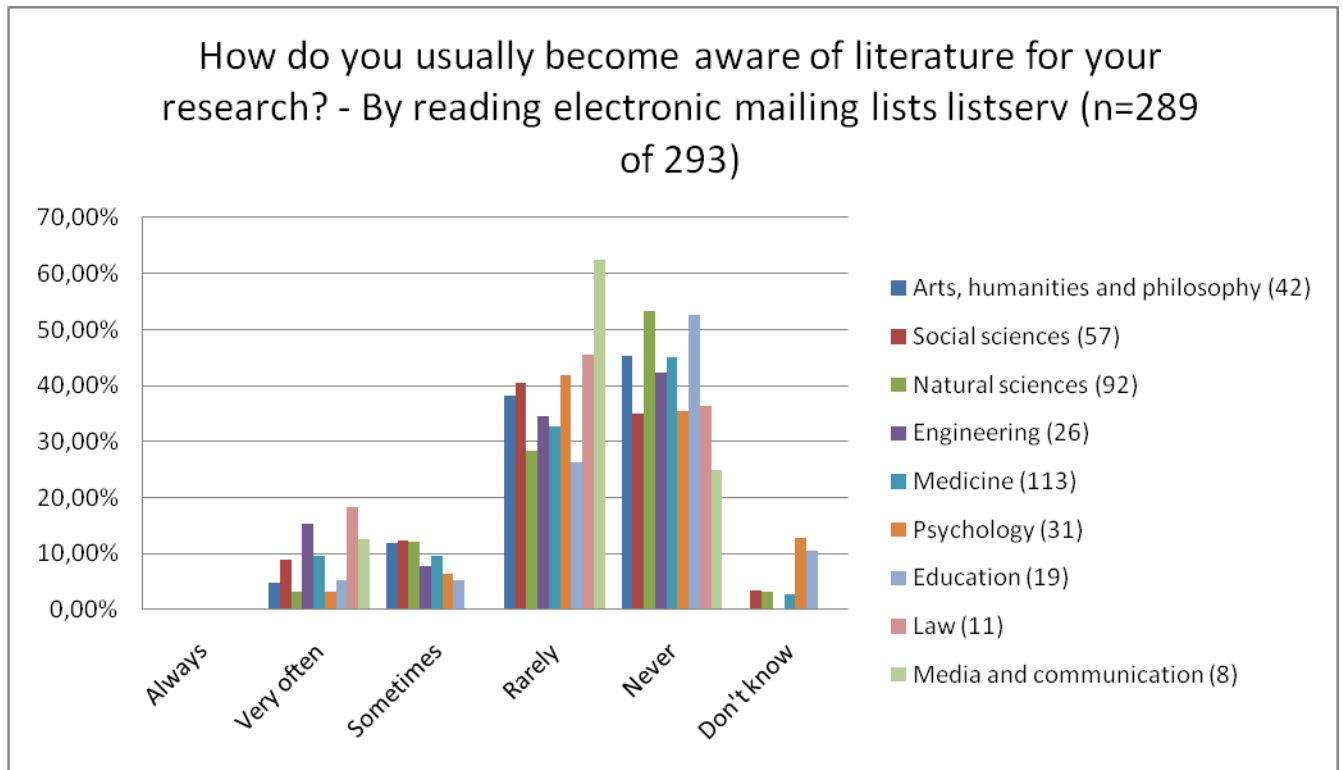


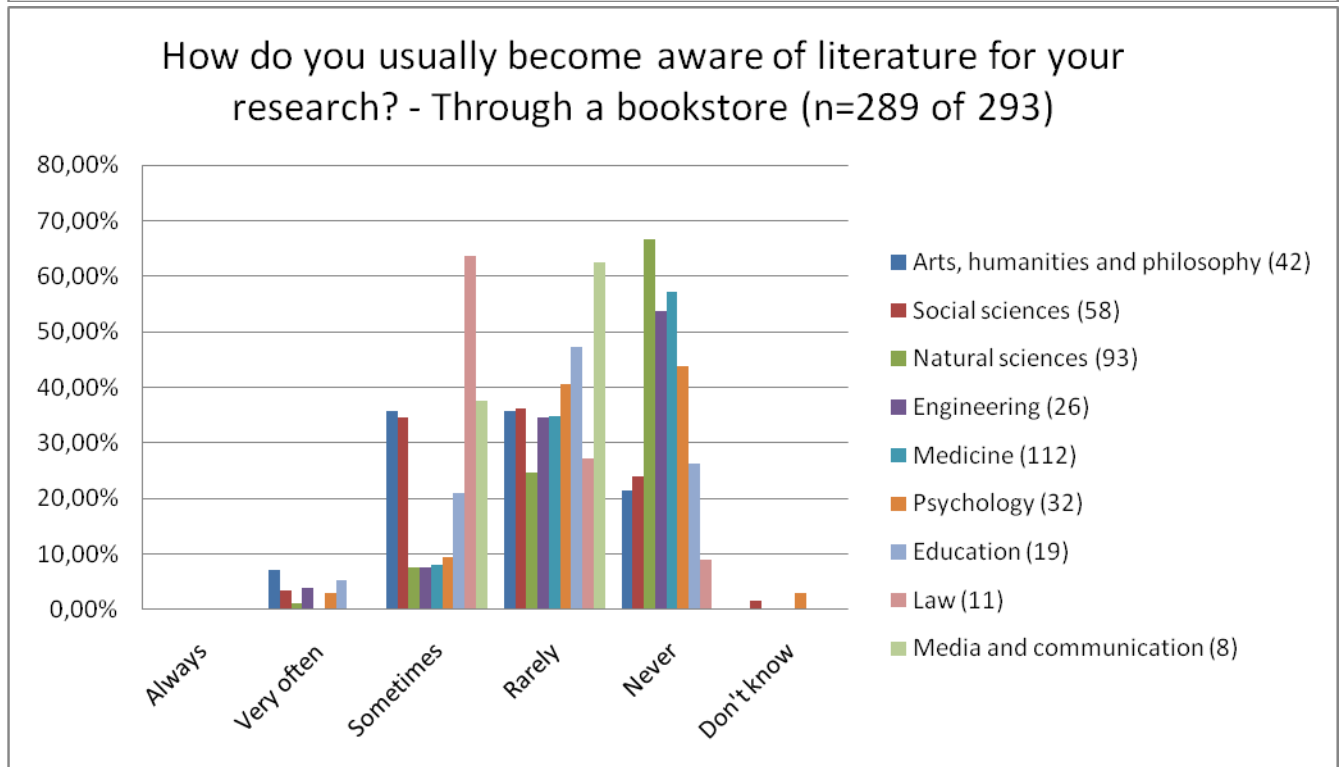
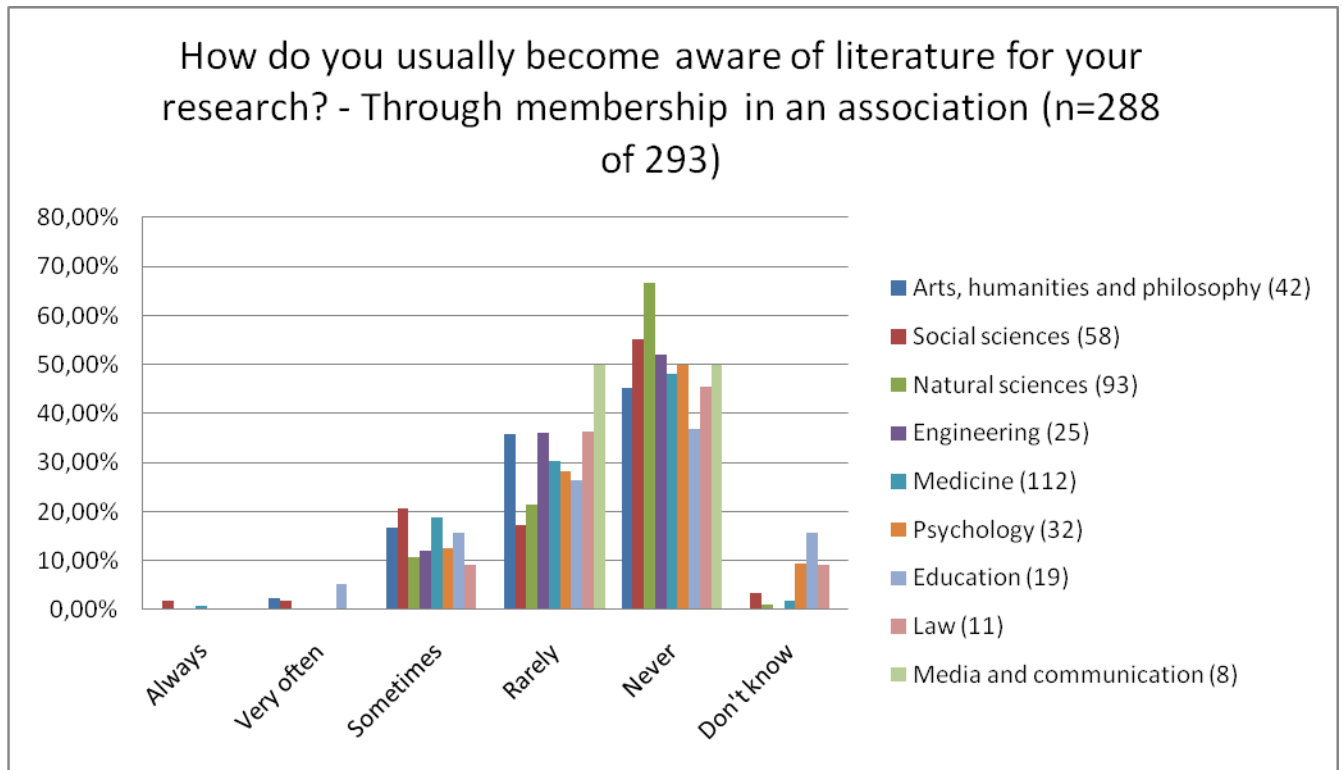






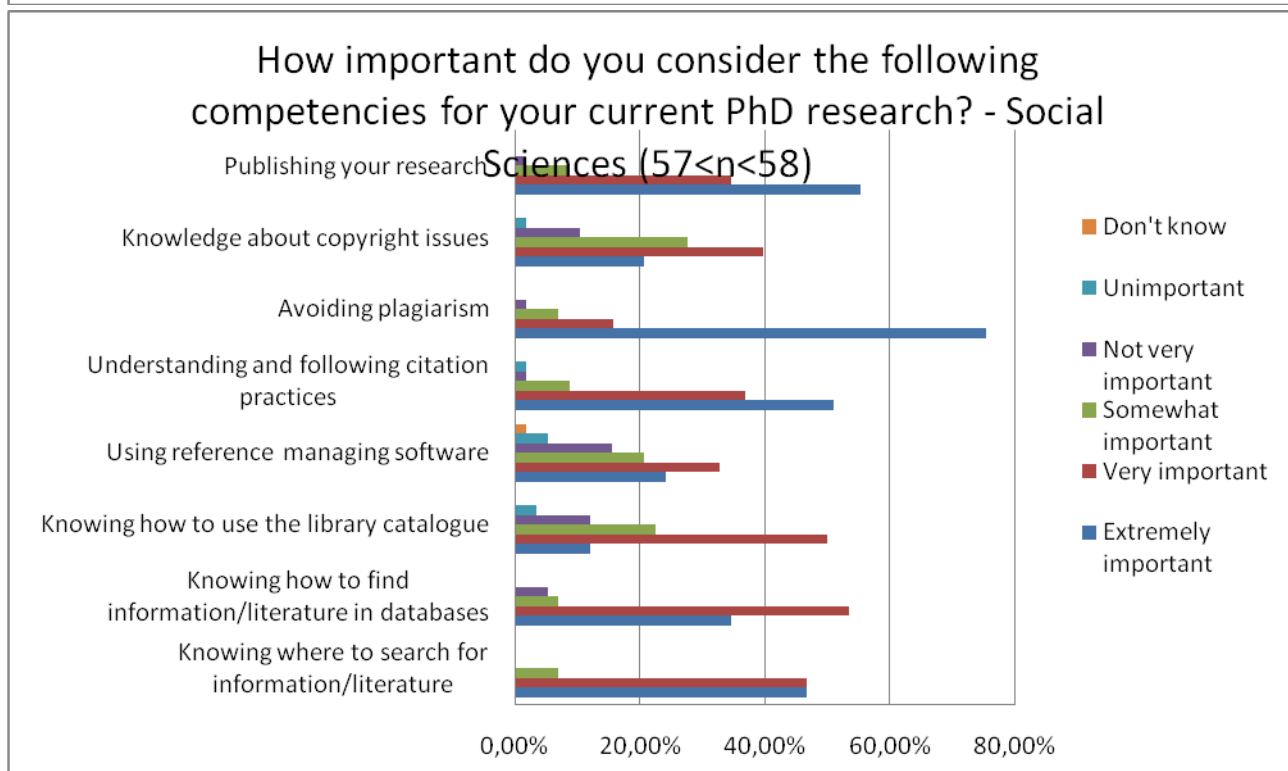
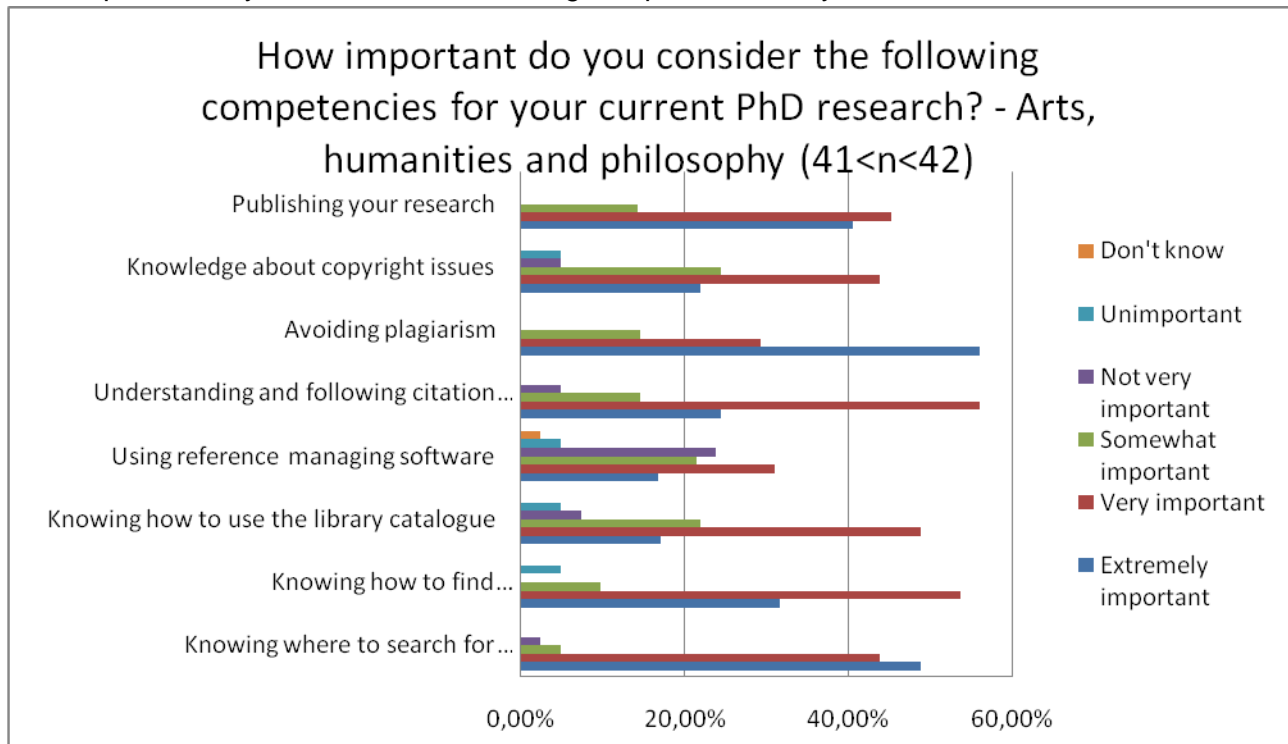


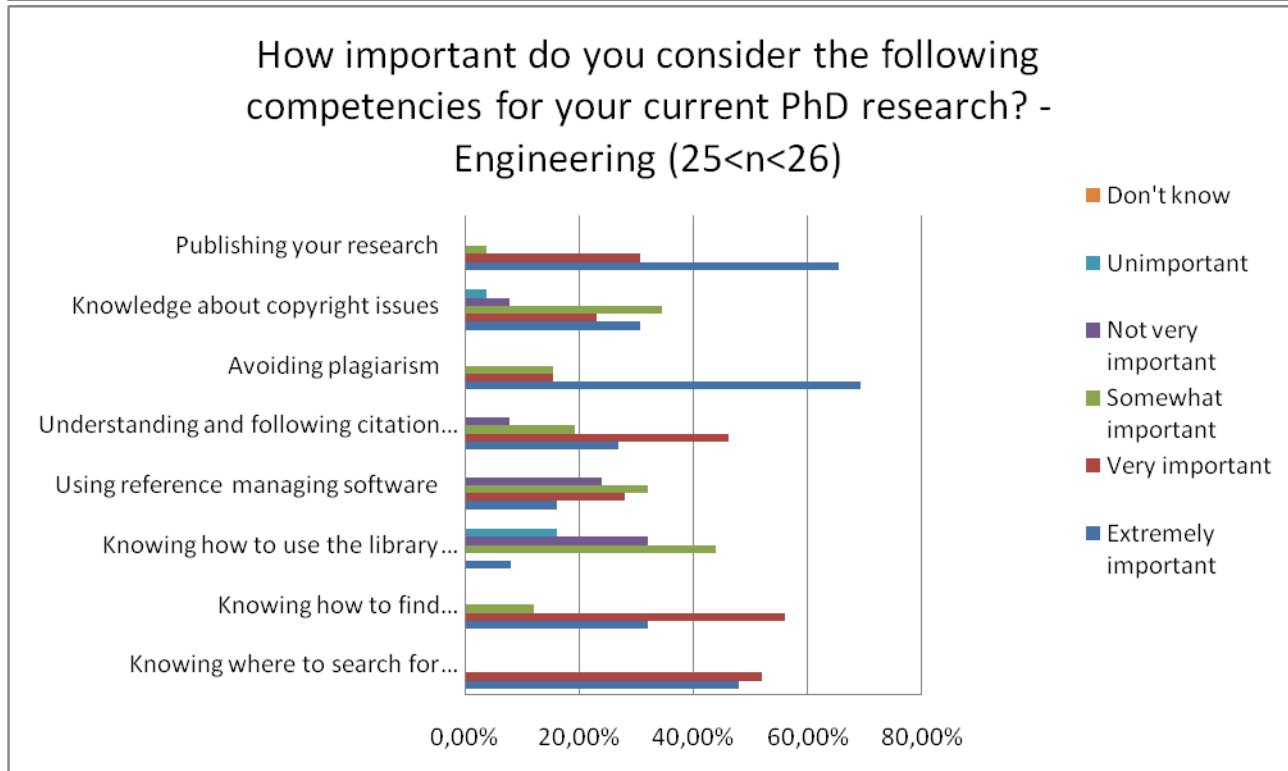
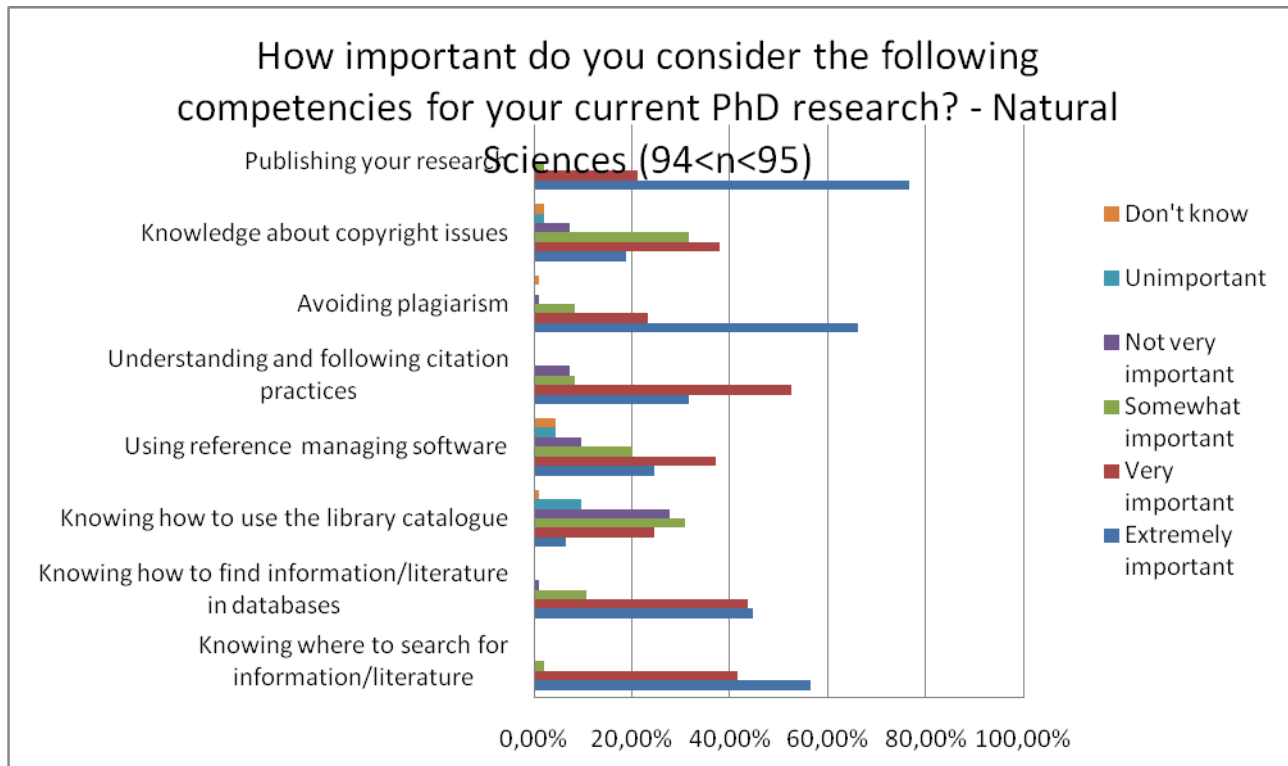


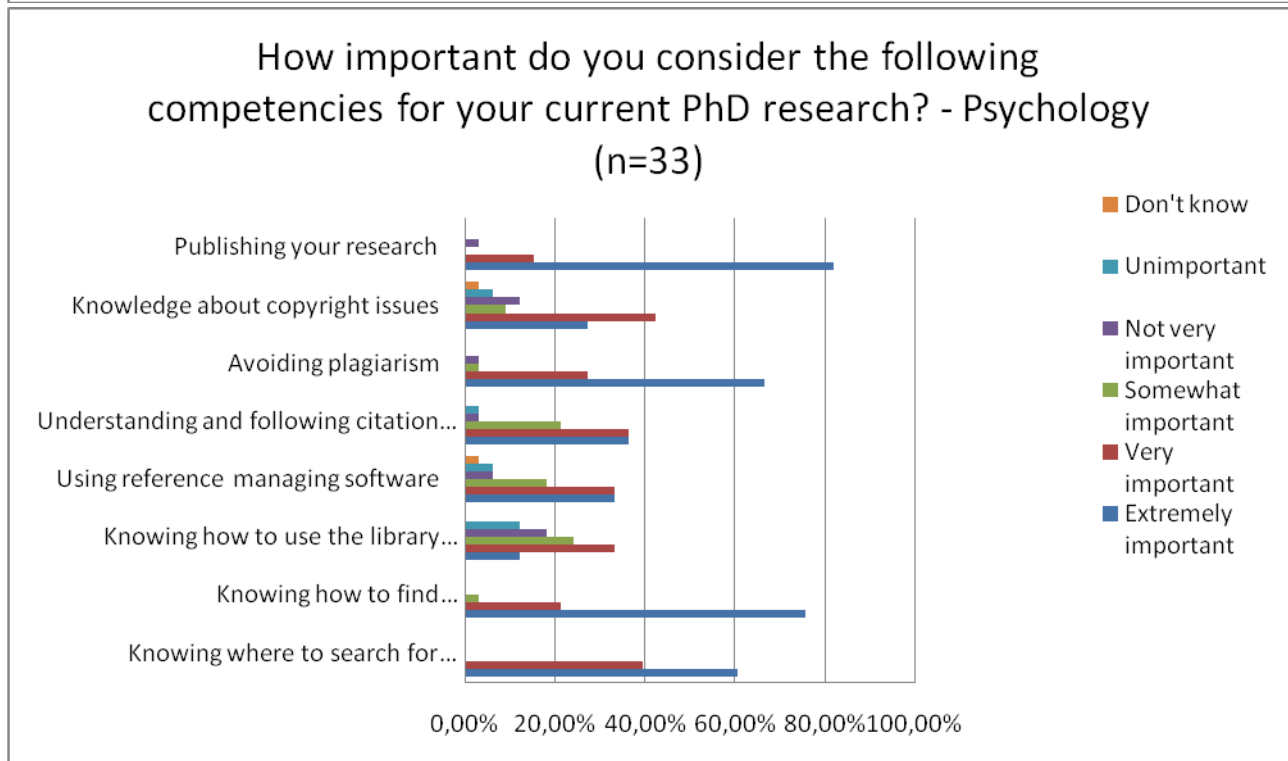
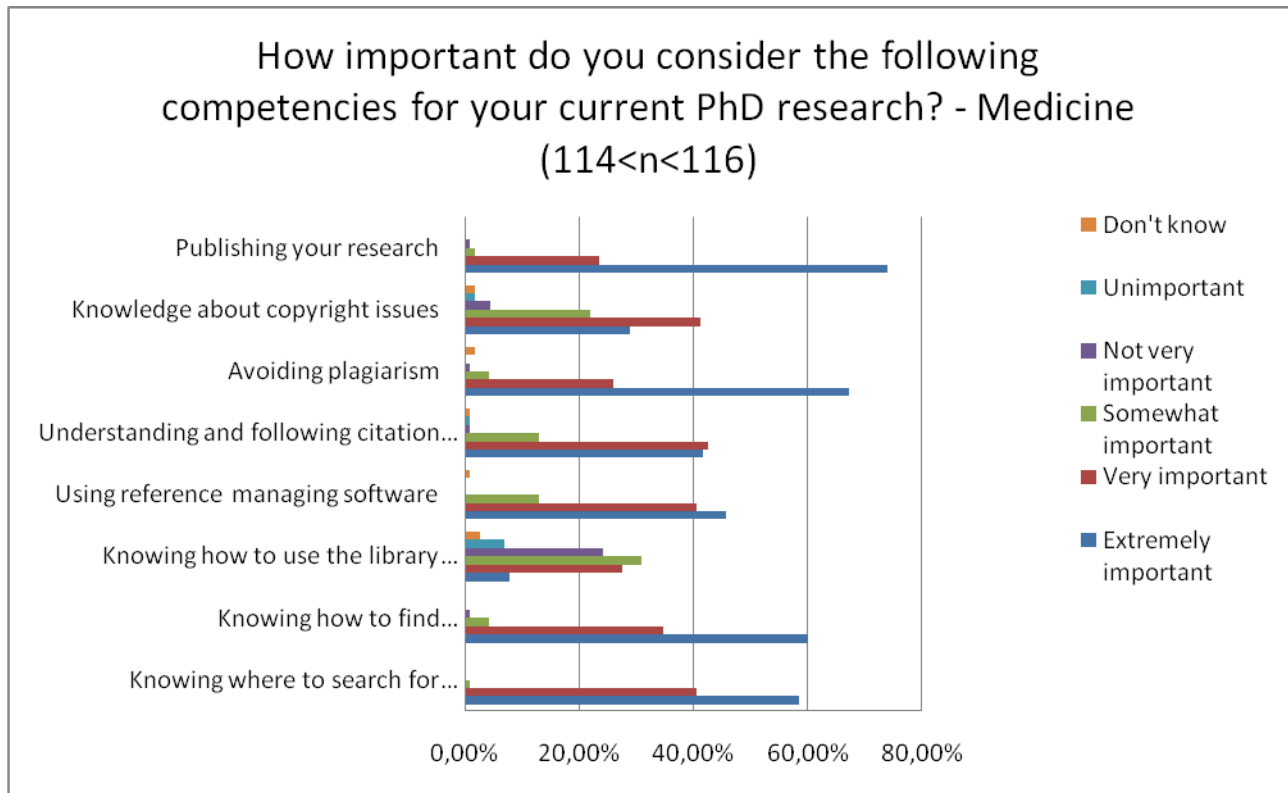


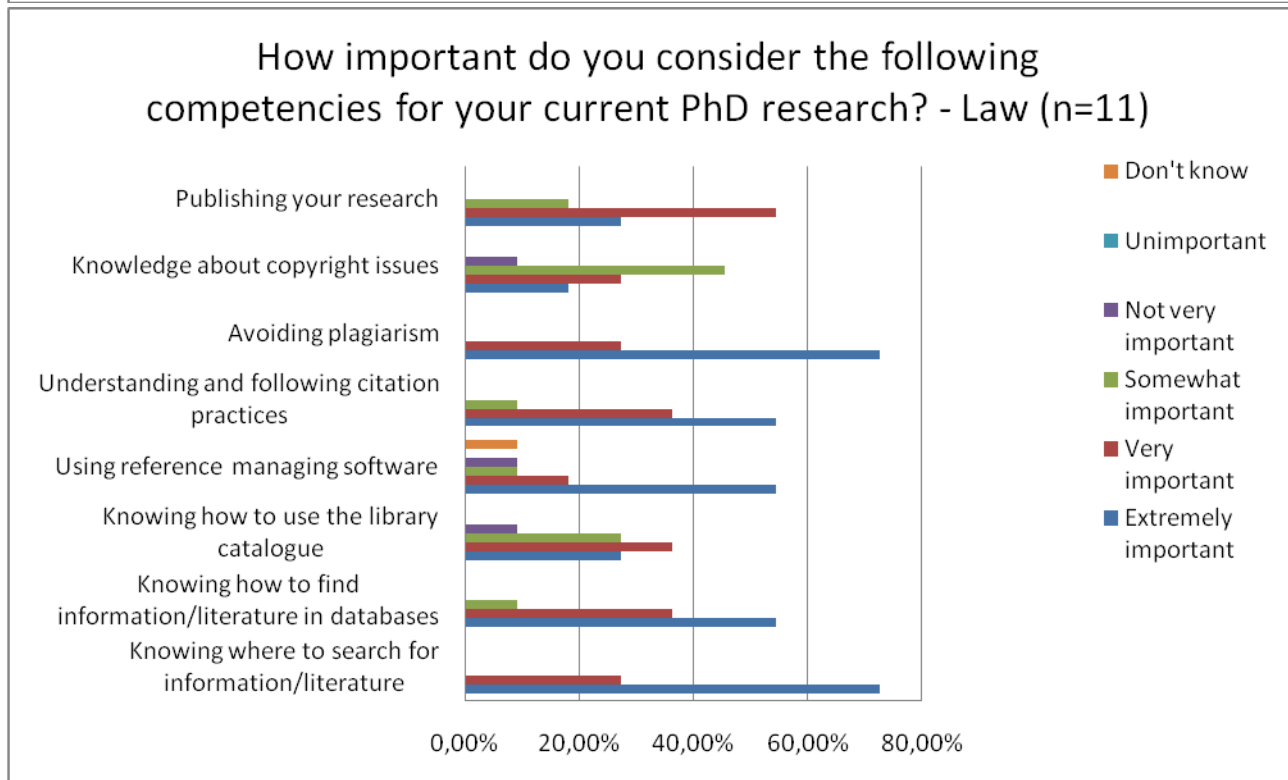
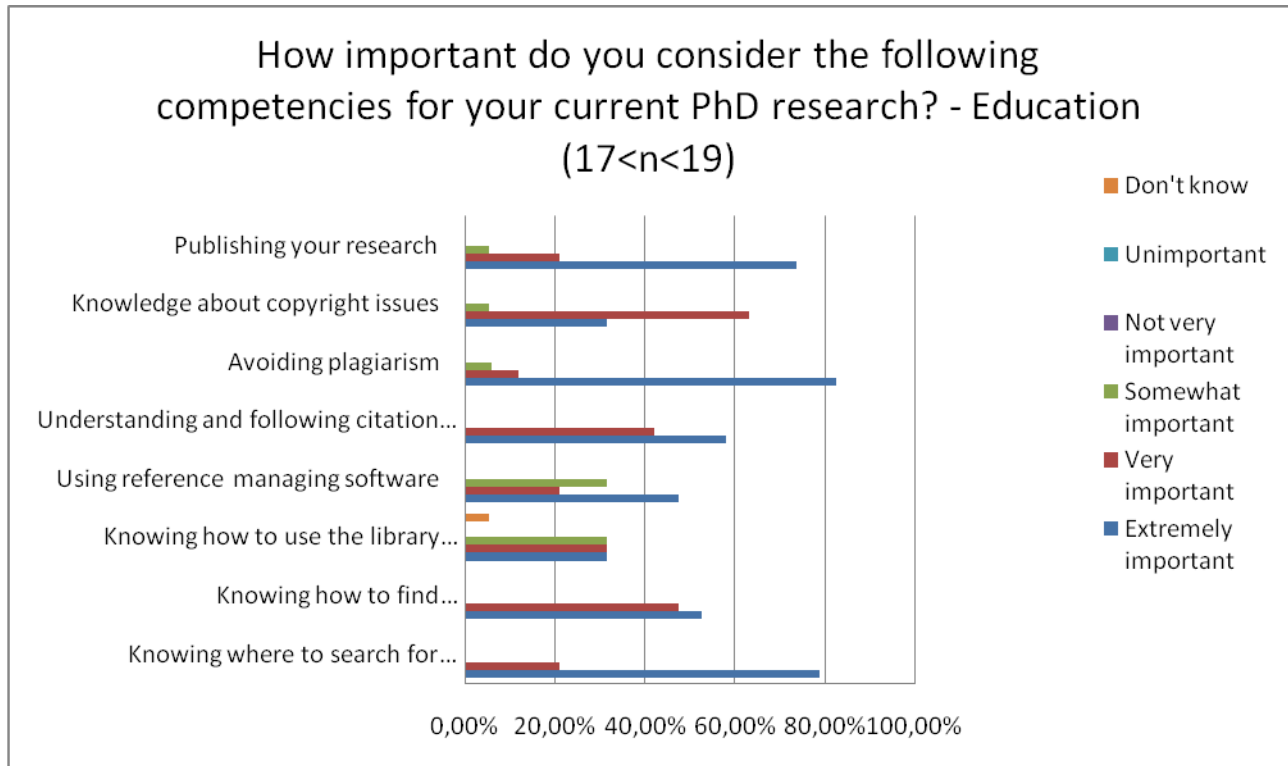
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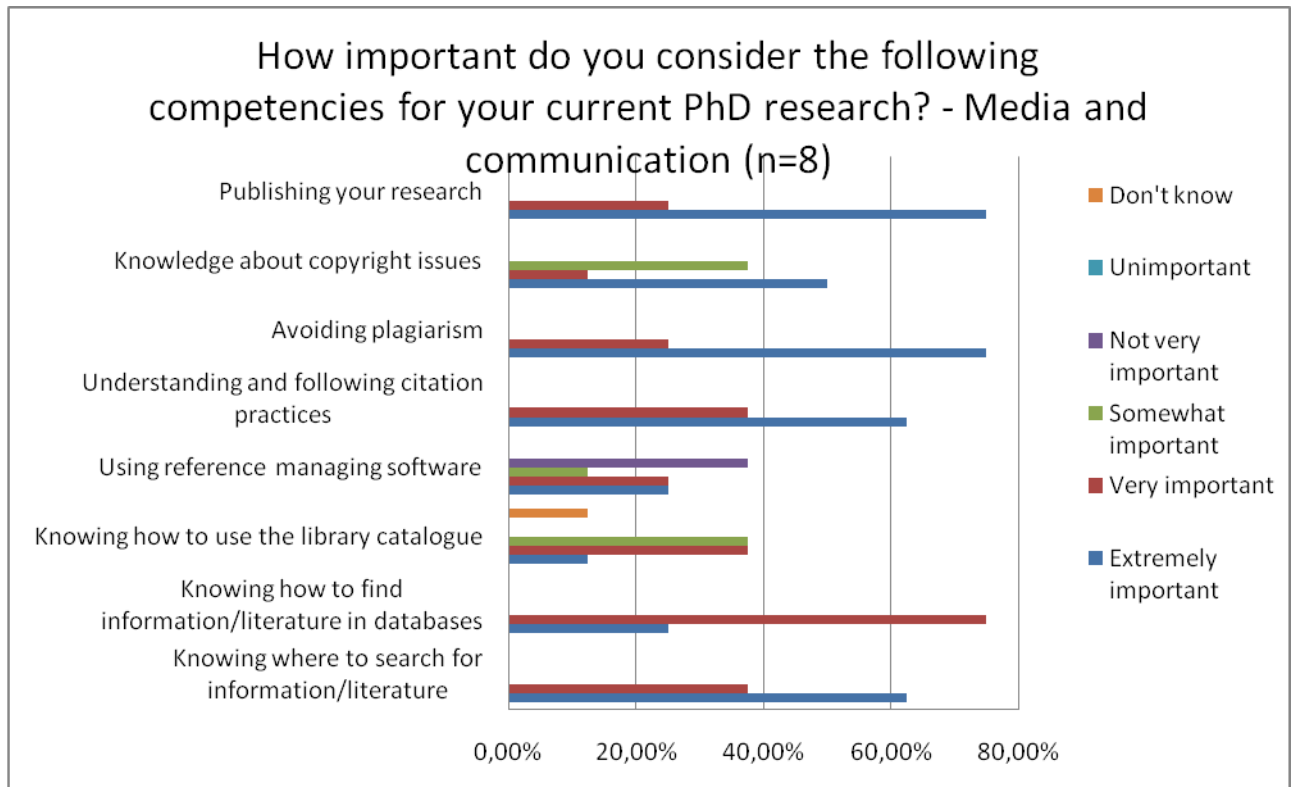
How important do you consider the following competencies for your current PhD research?



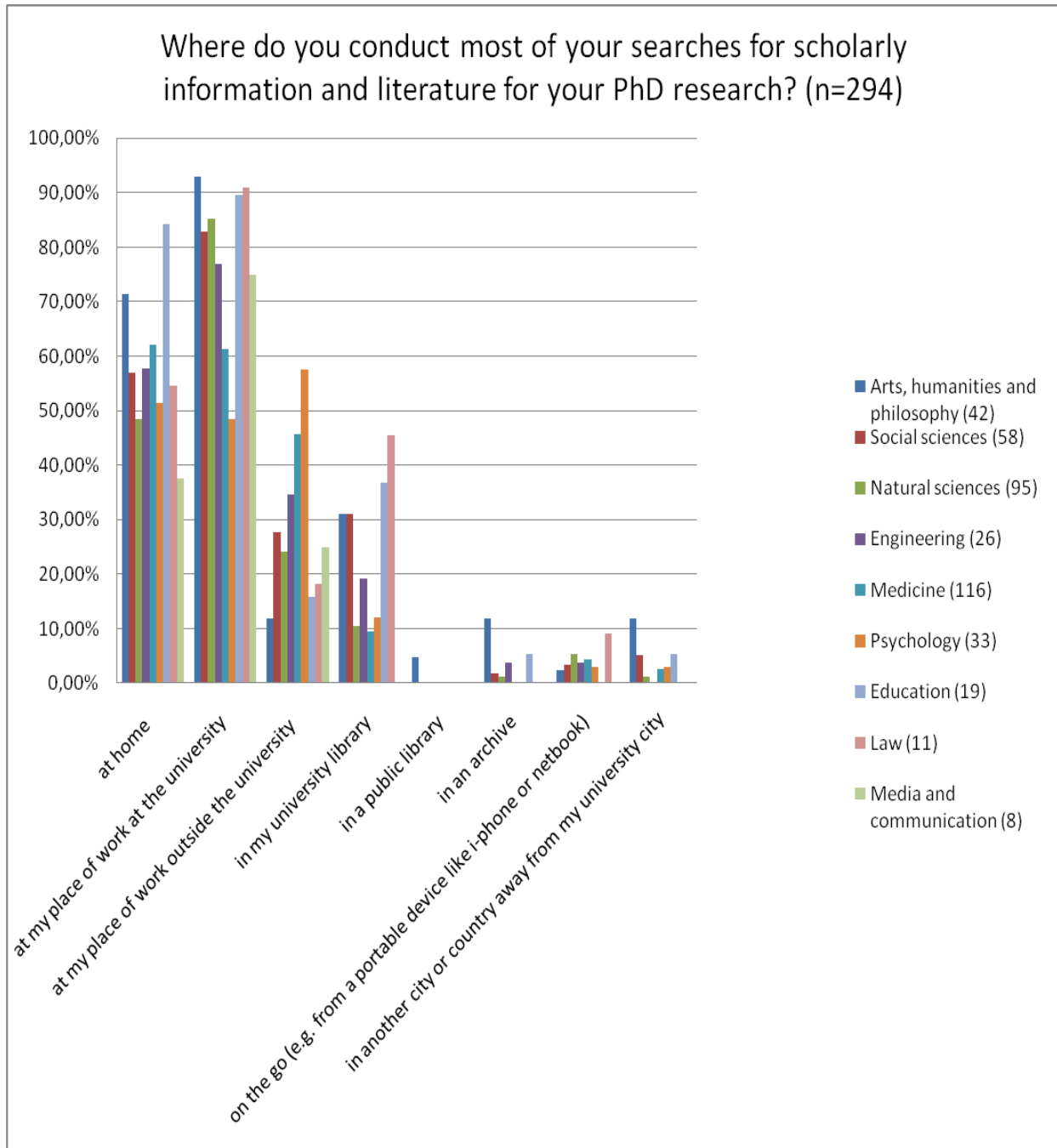




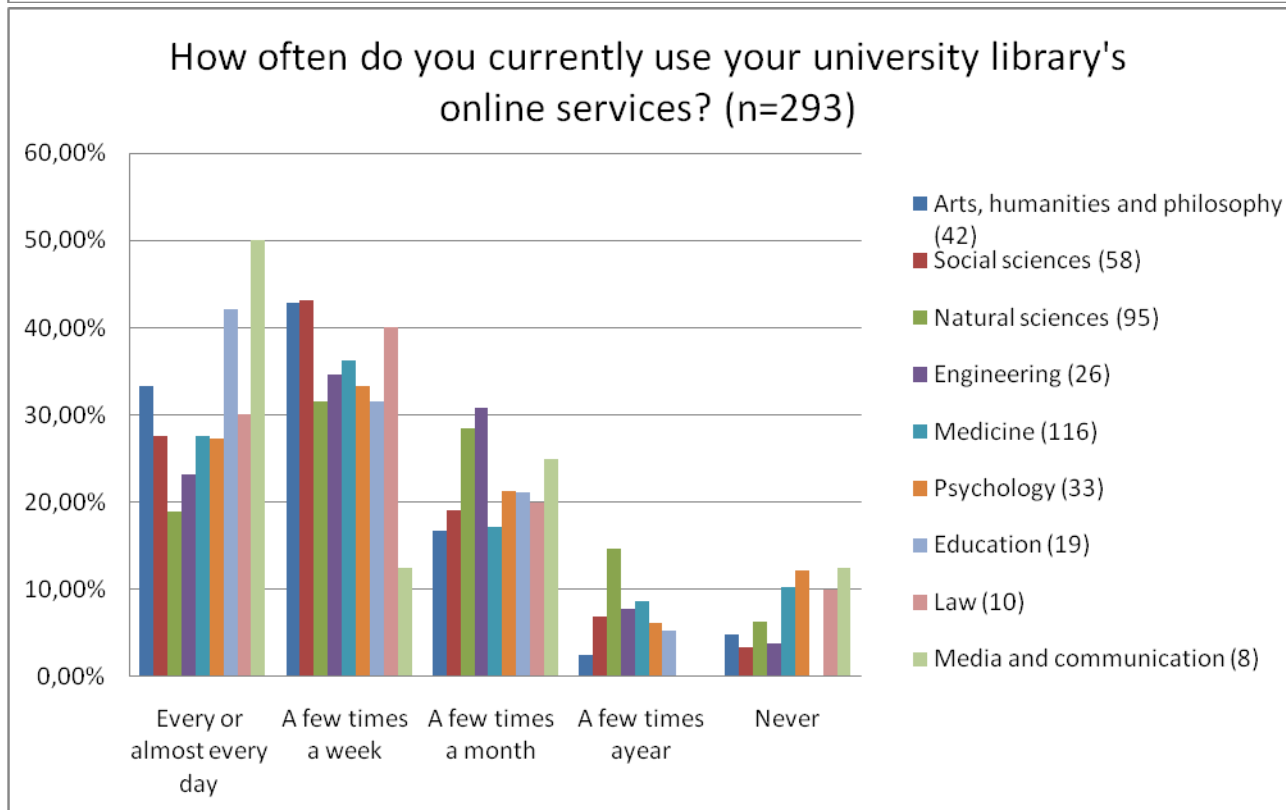
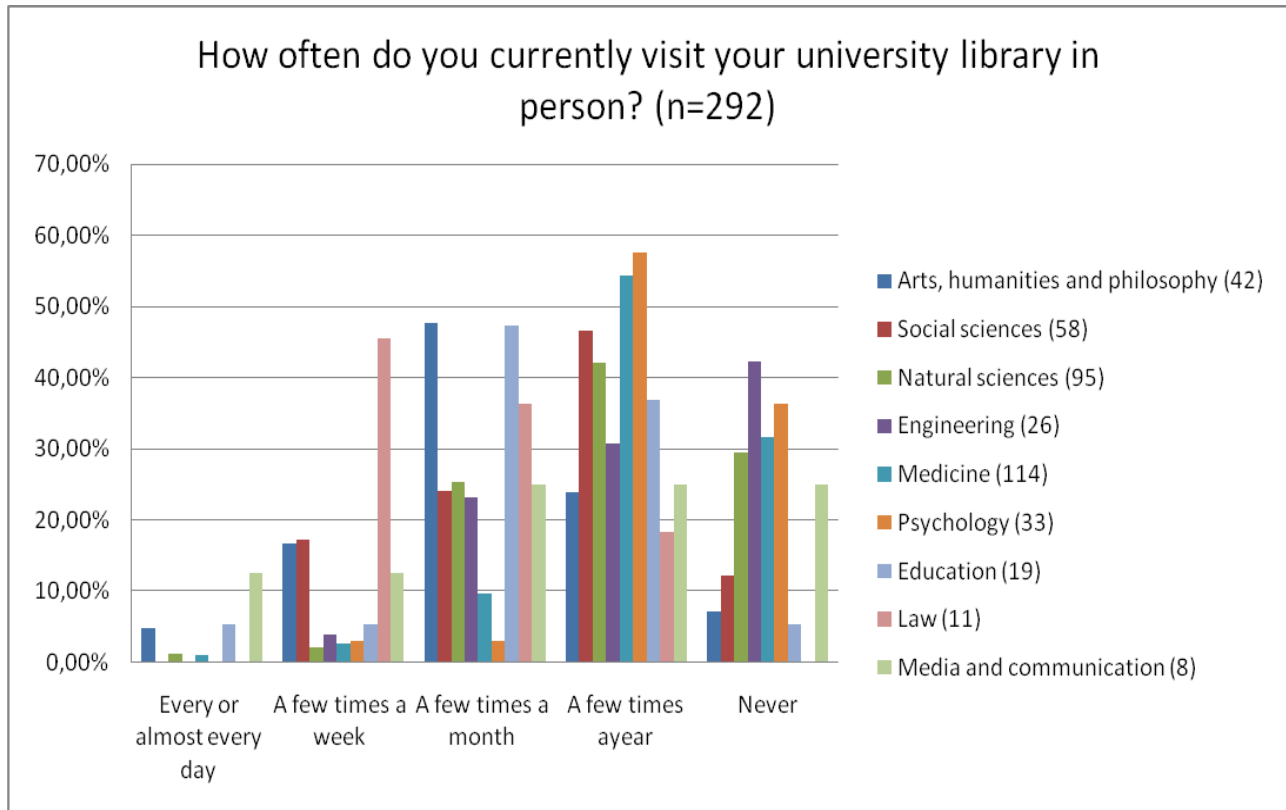




No a4 f7 u

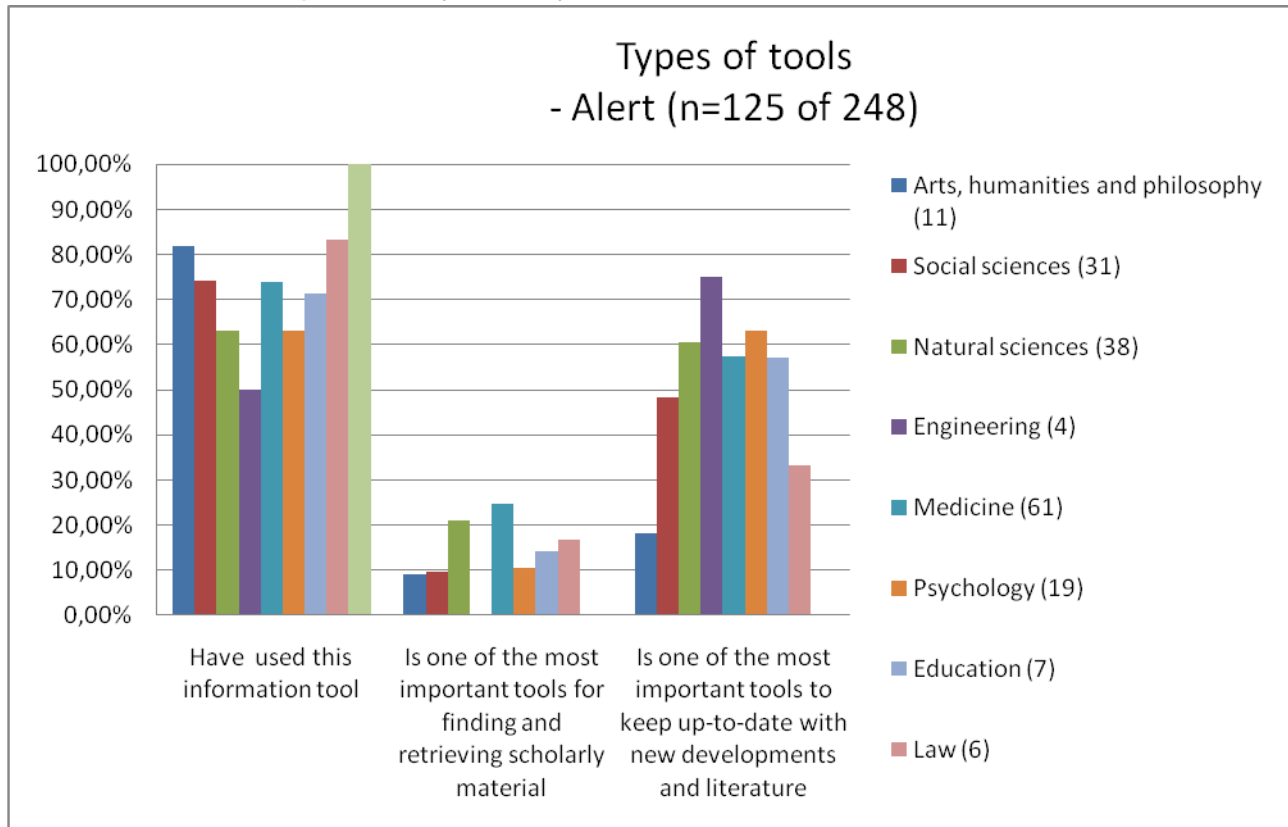


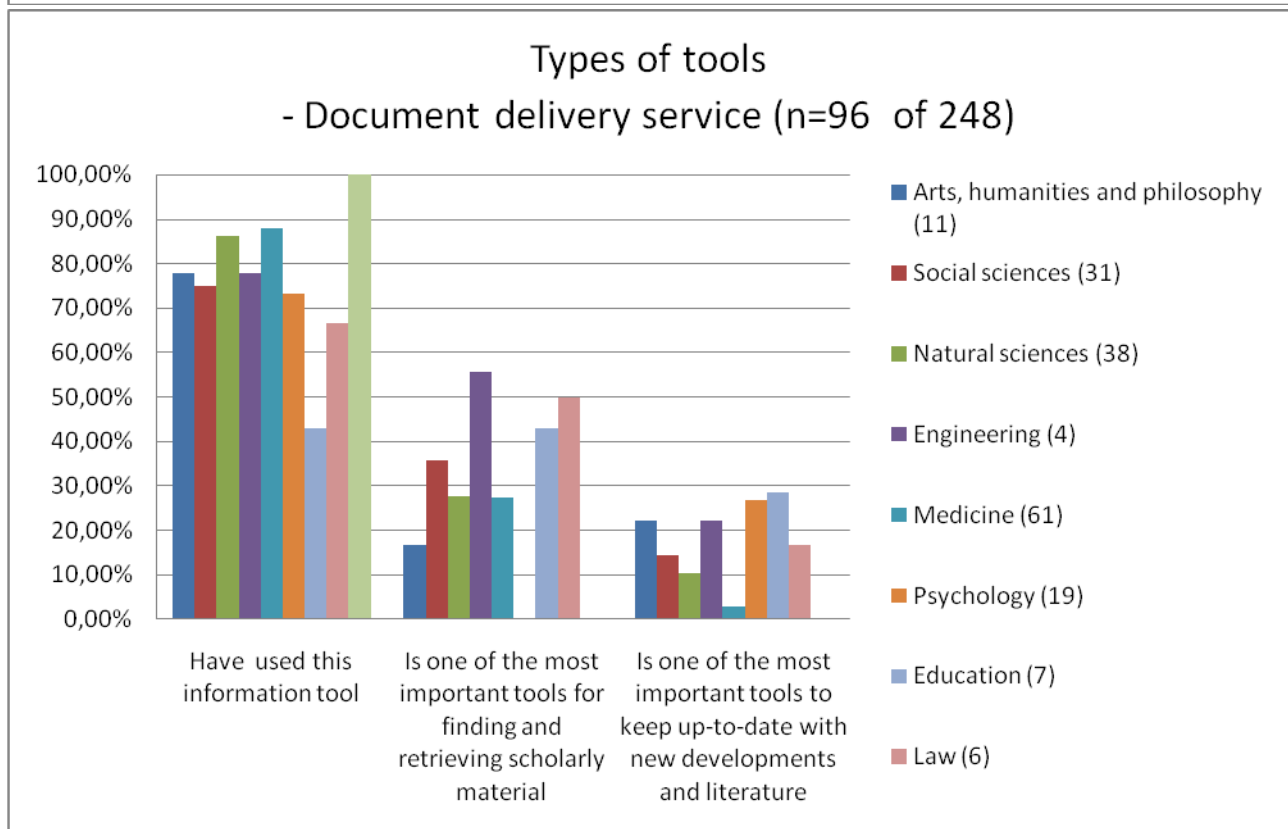
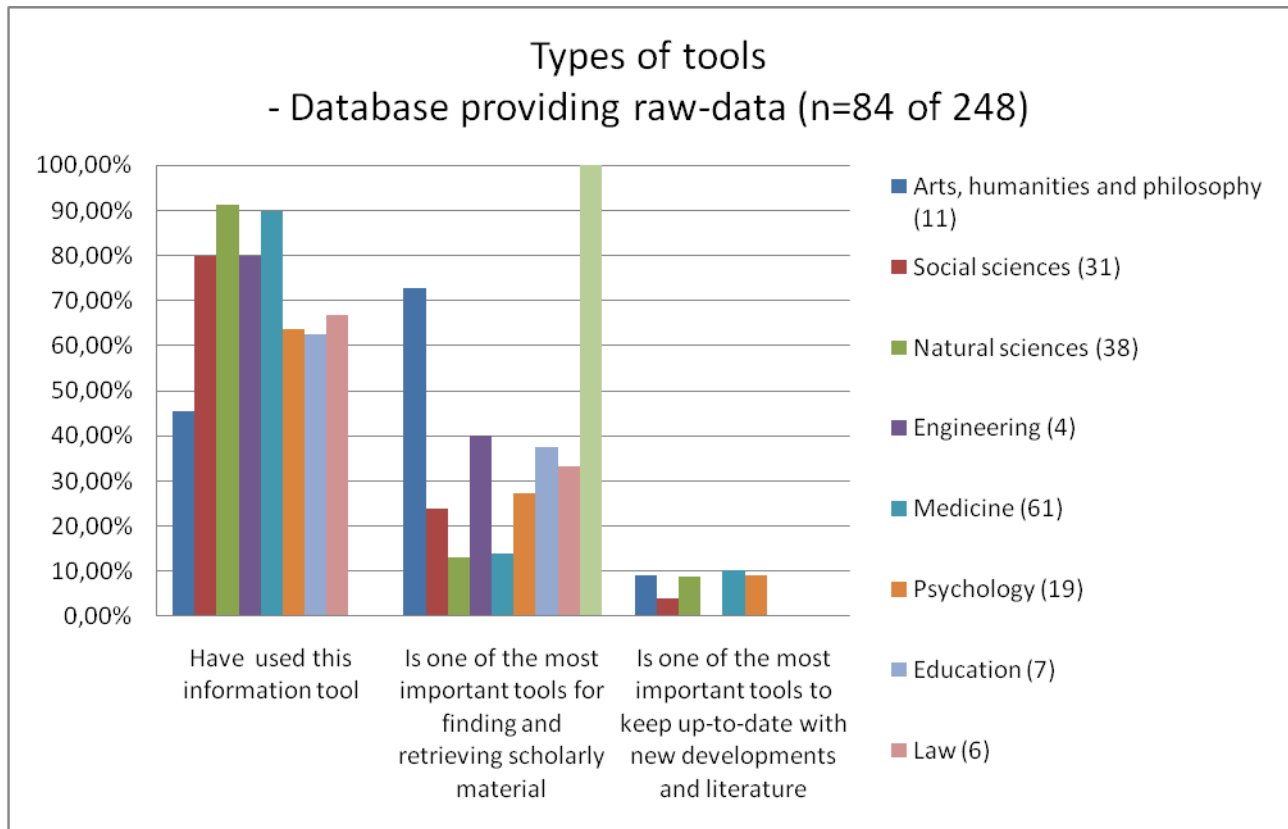
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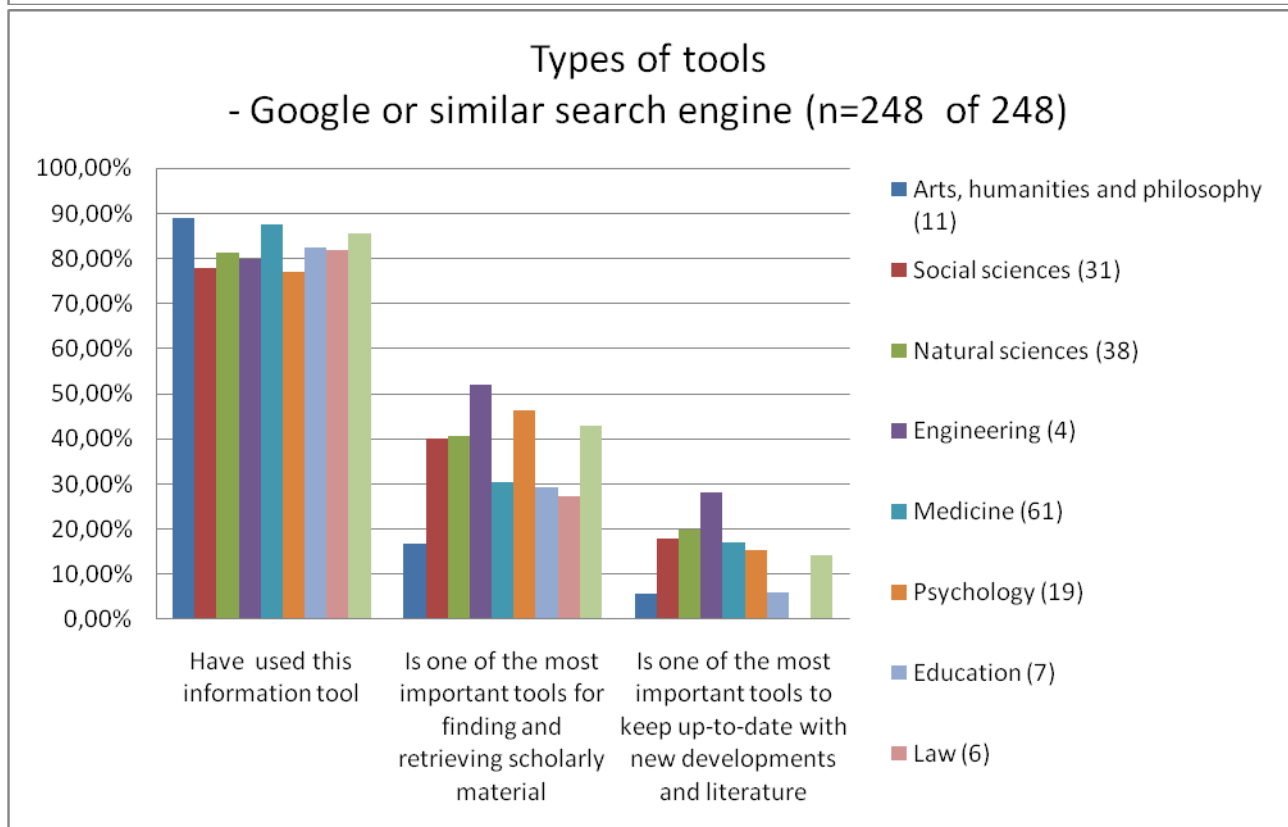
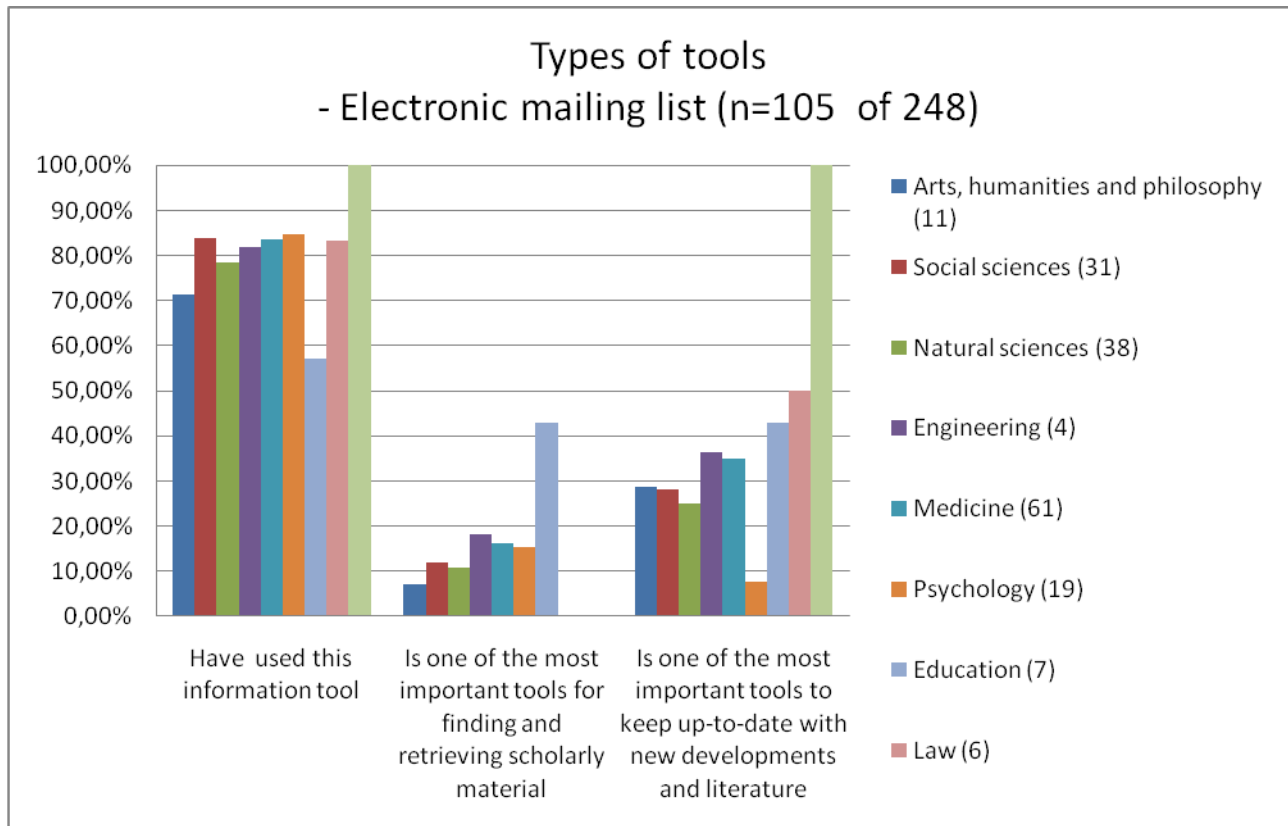


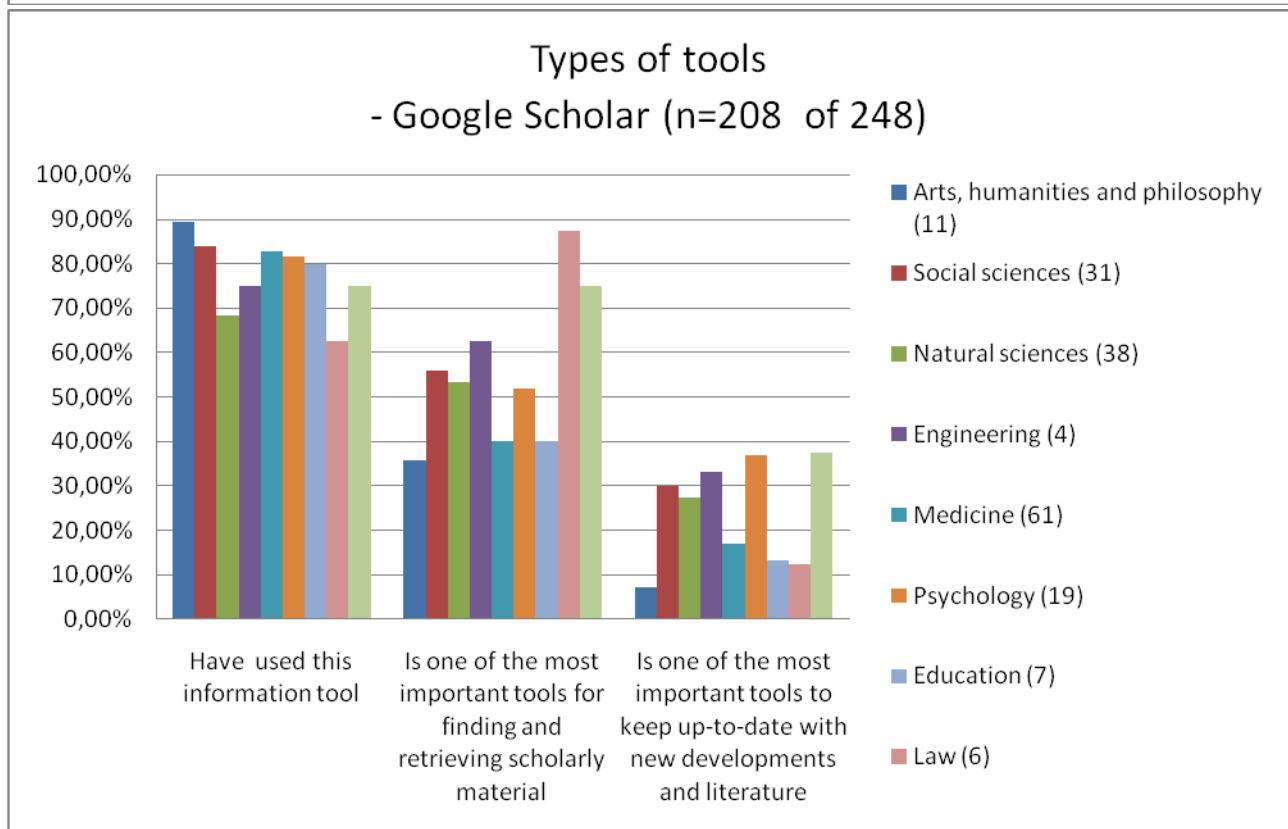
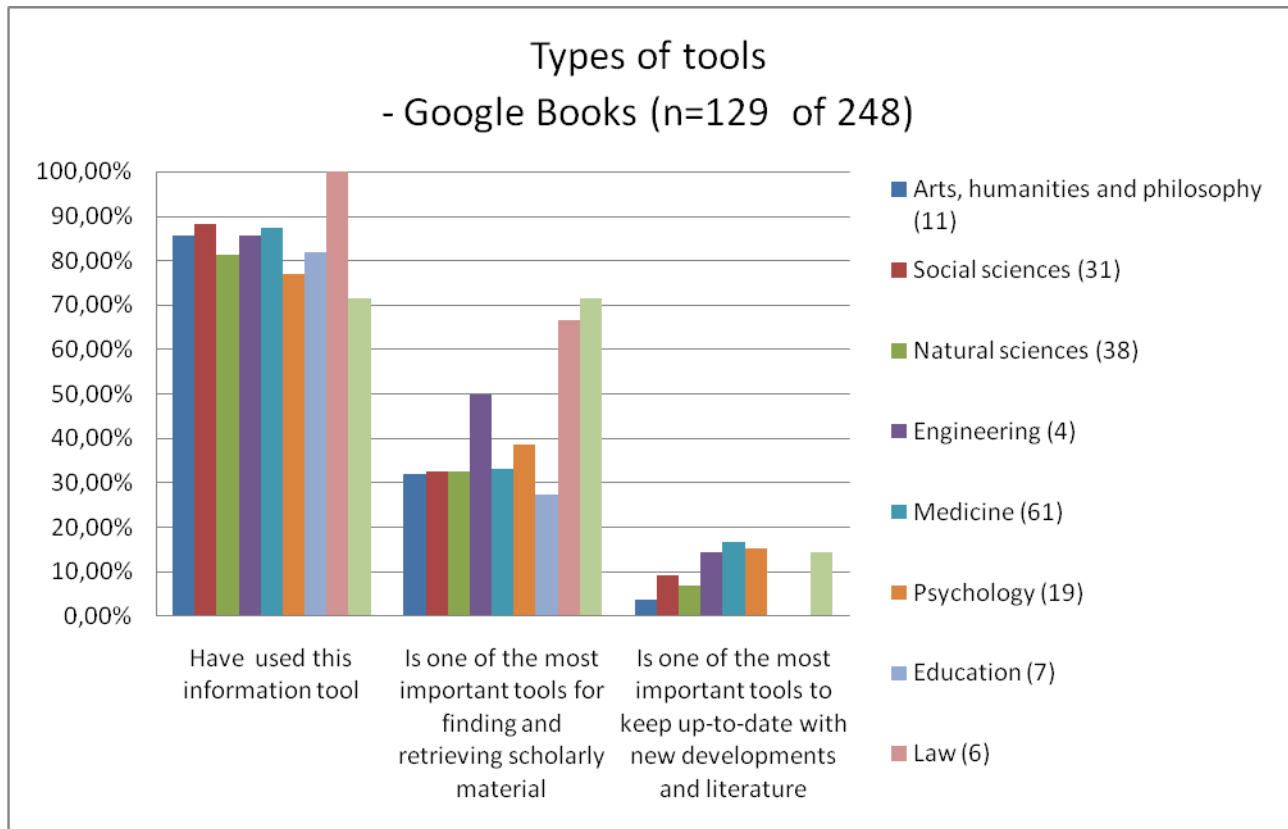
No b1 f7 u

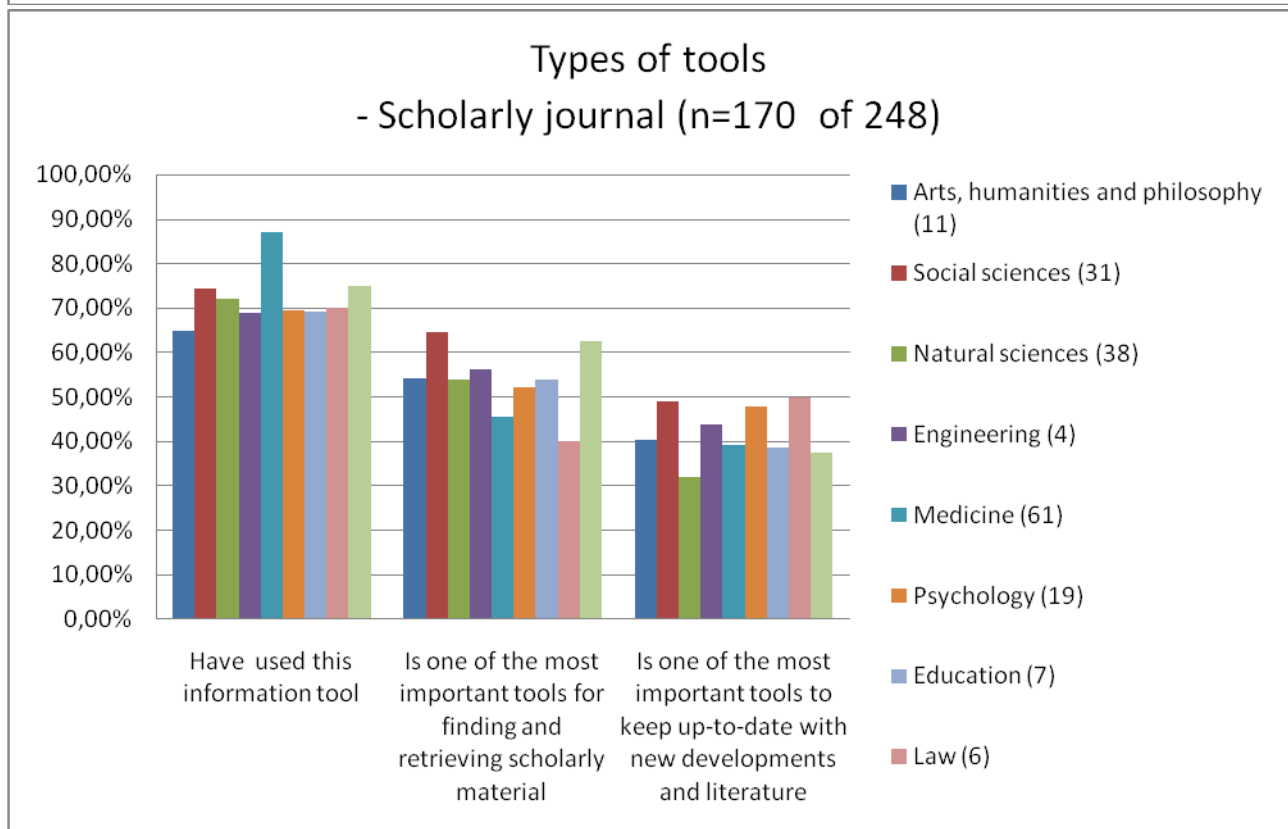
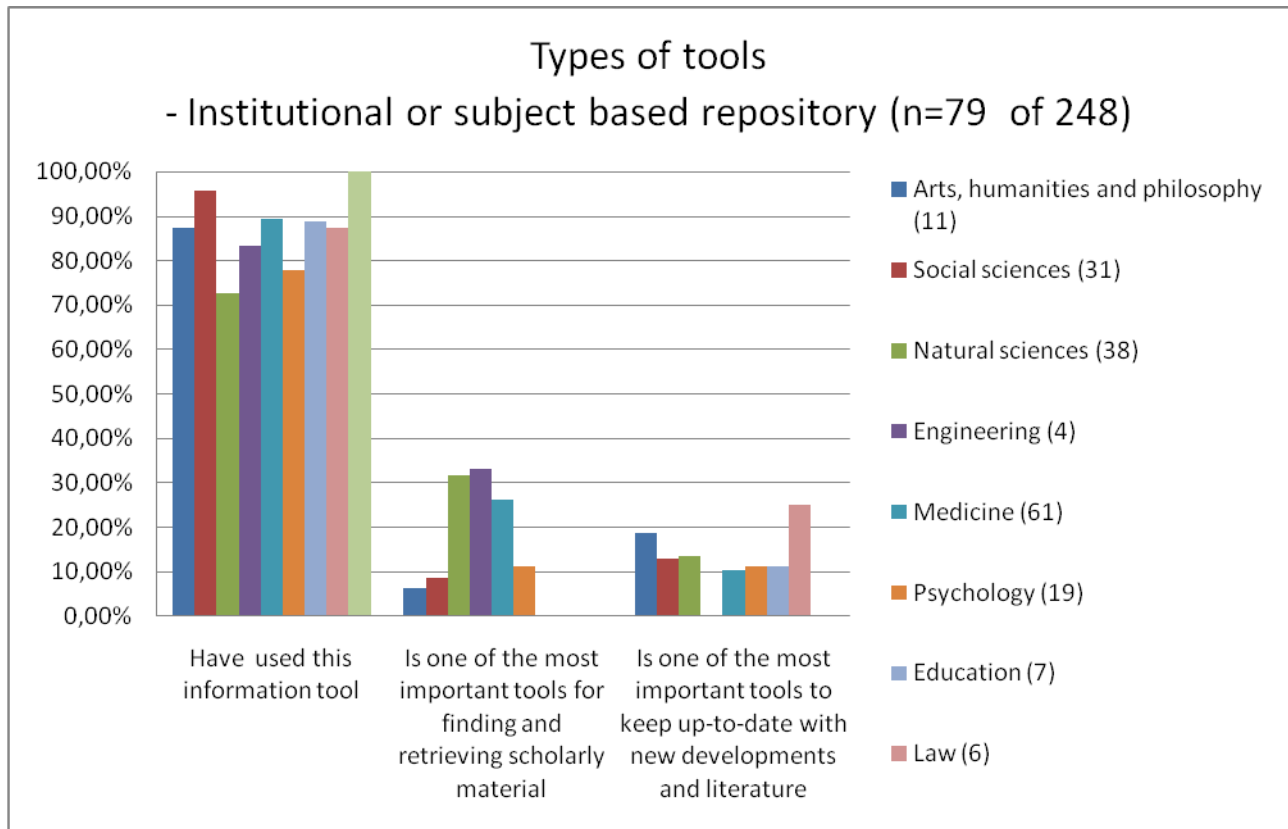
Look at the following alphabetical list of different types of tools and consider whether you have used them and how important they are for your research.

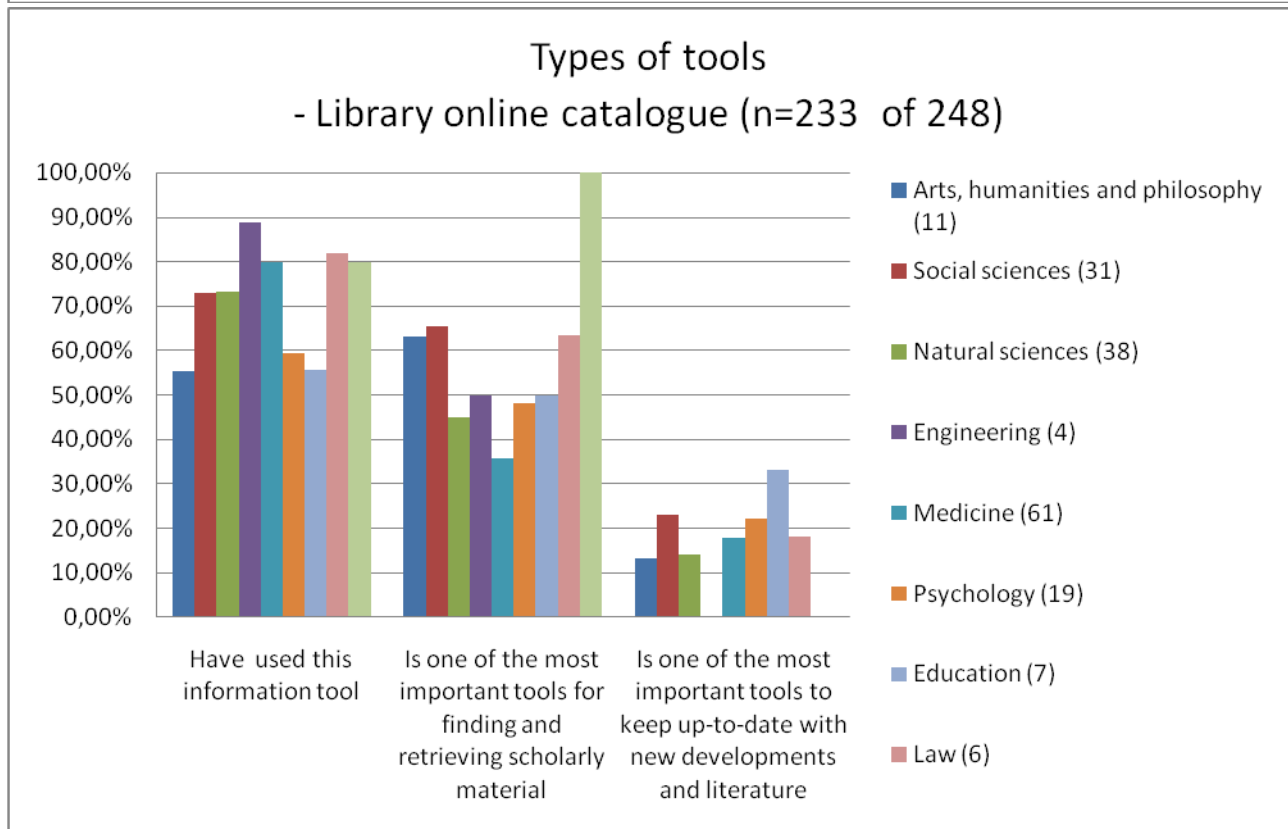
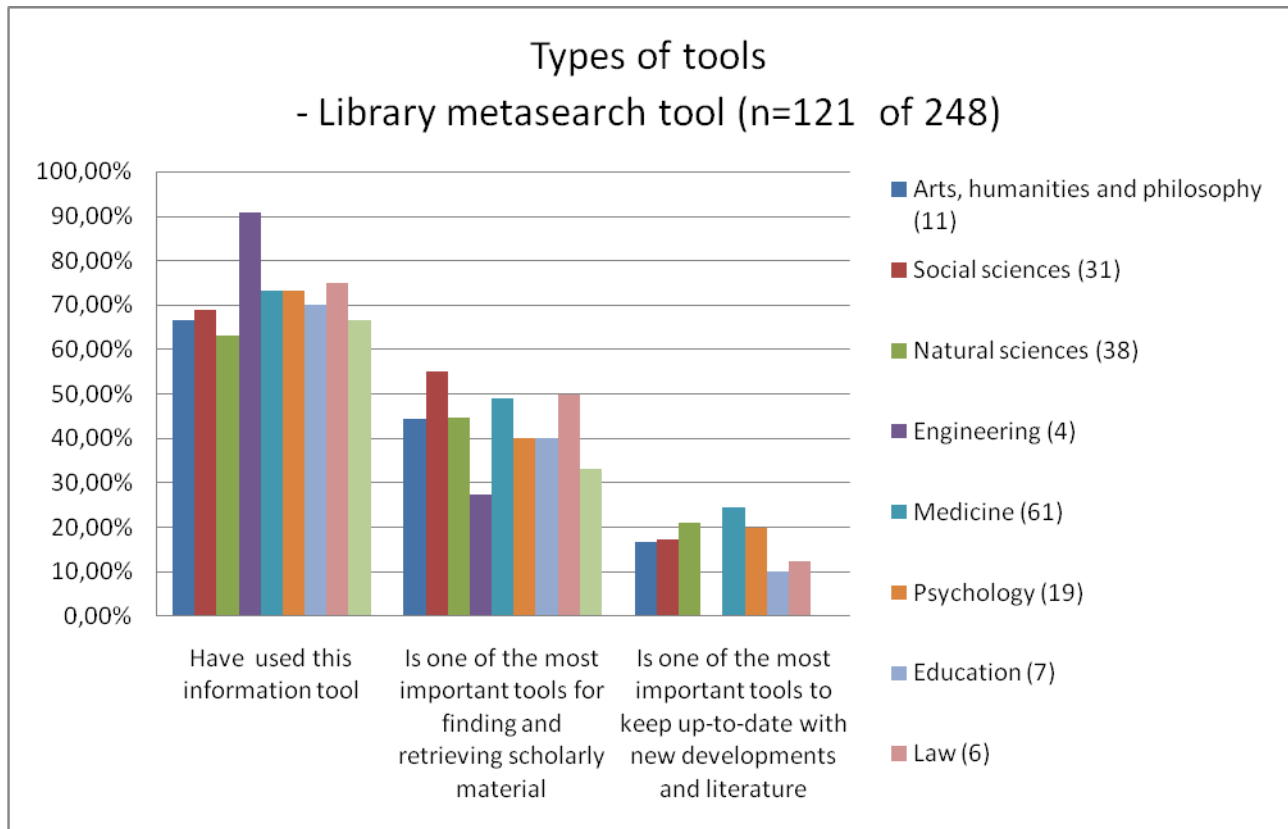


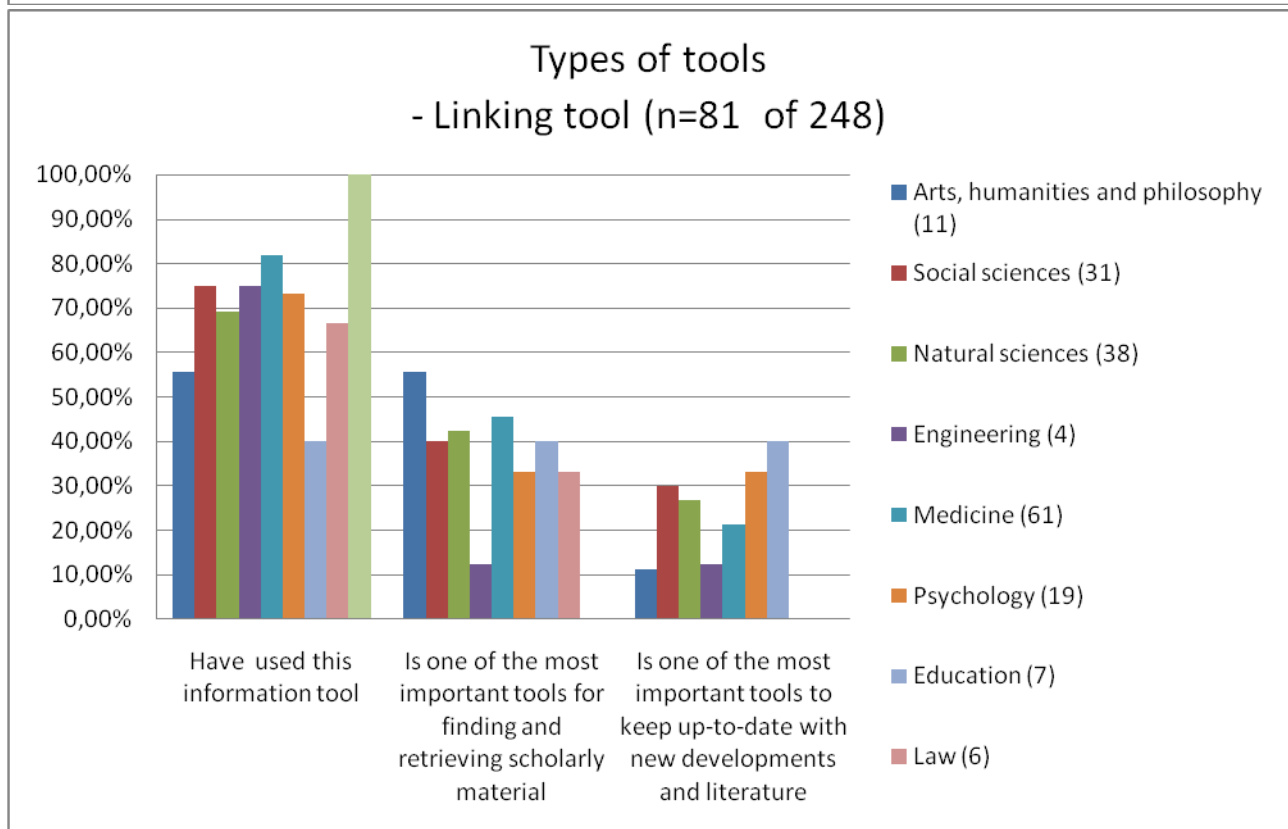
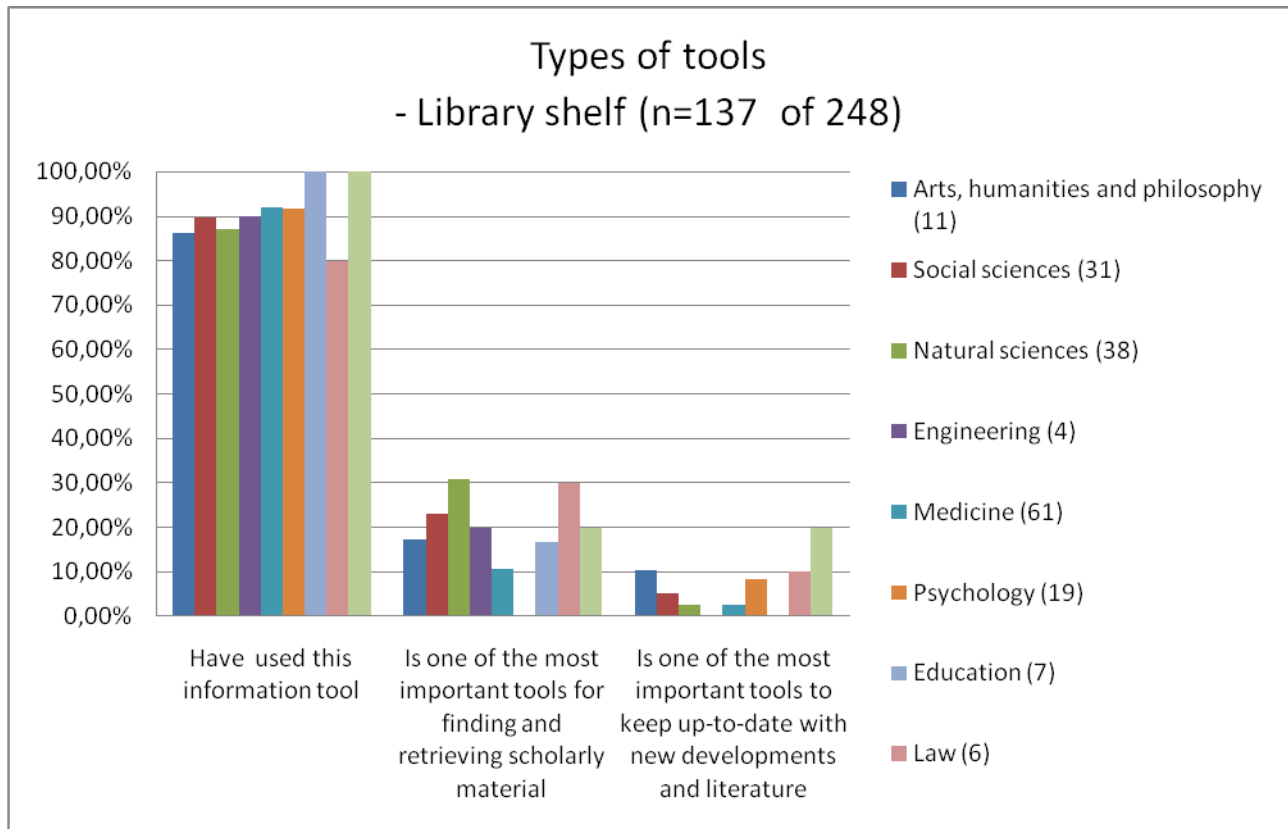


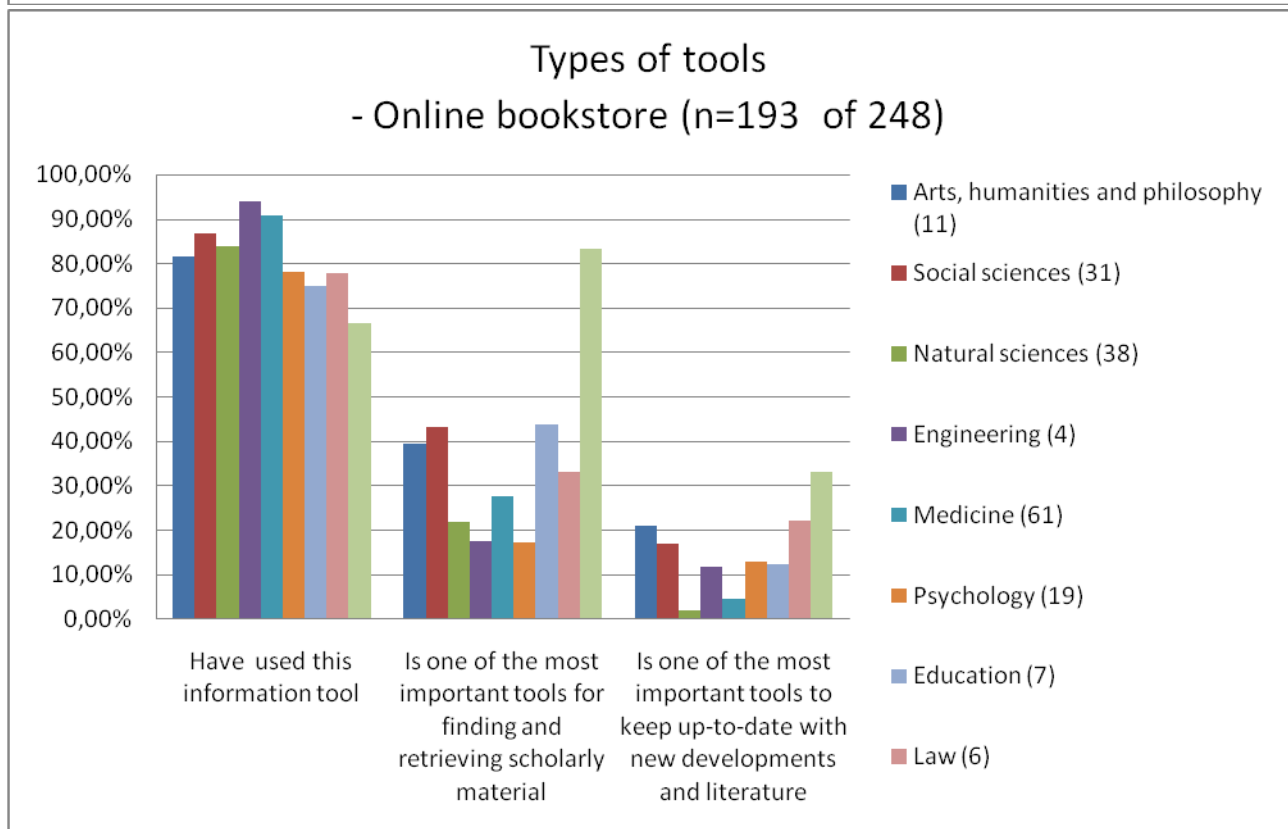
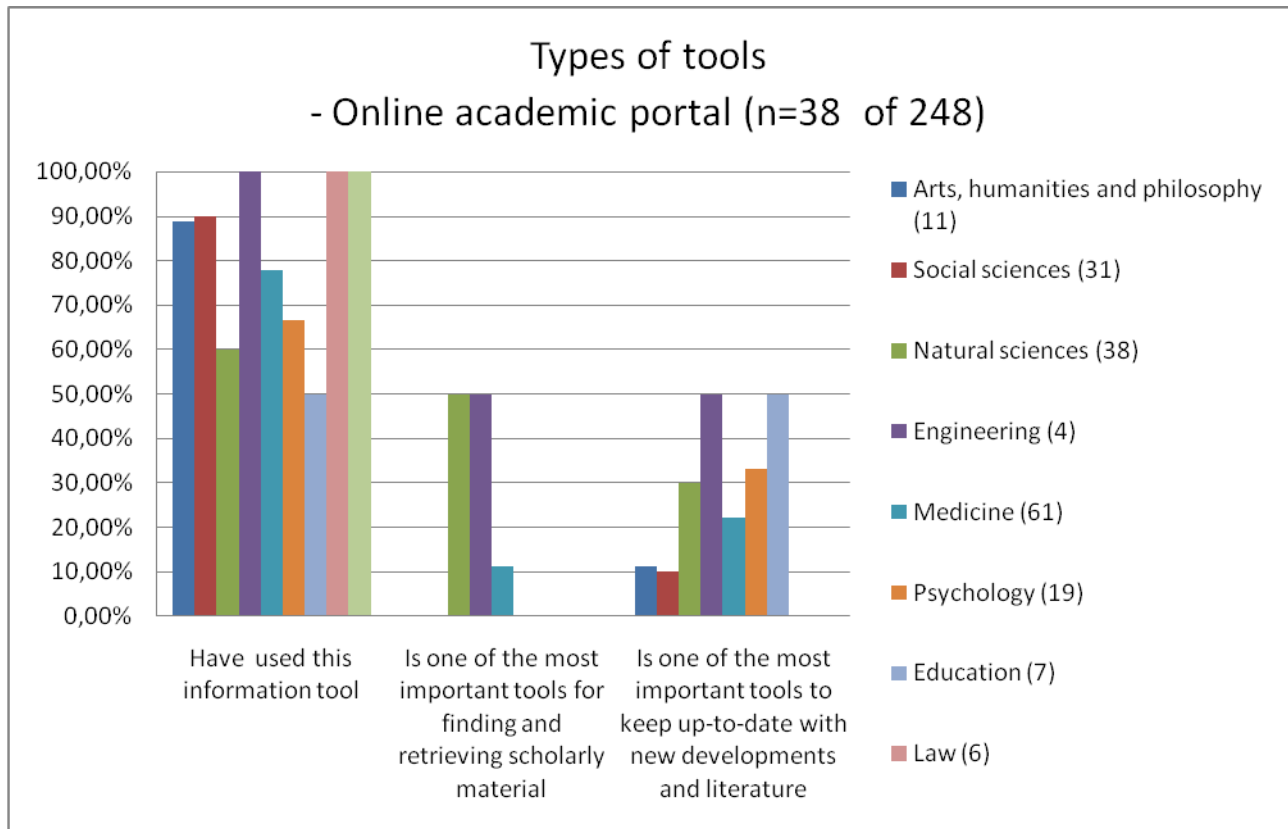


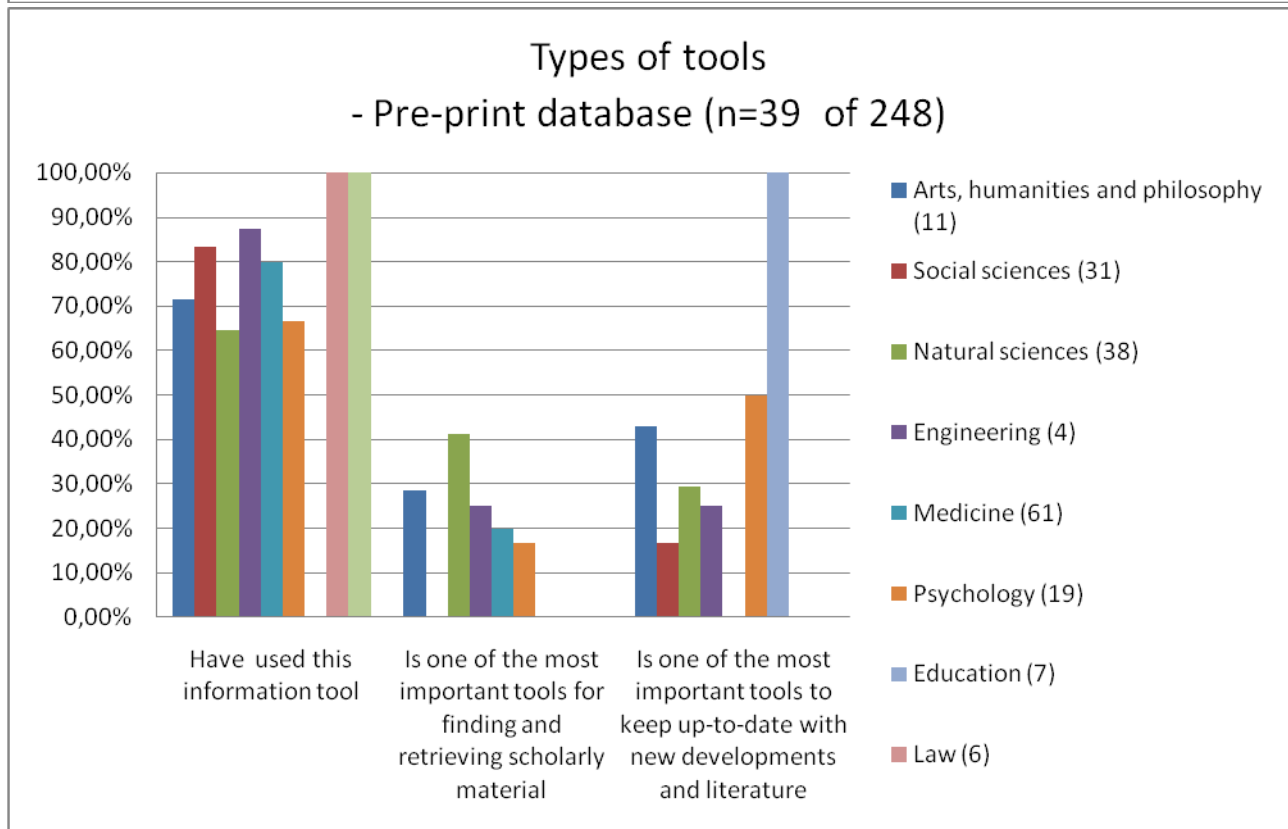
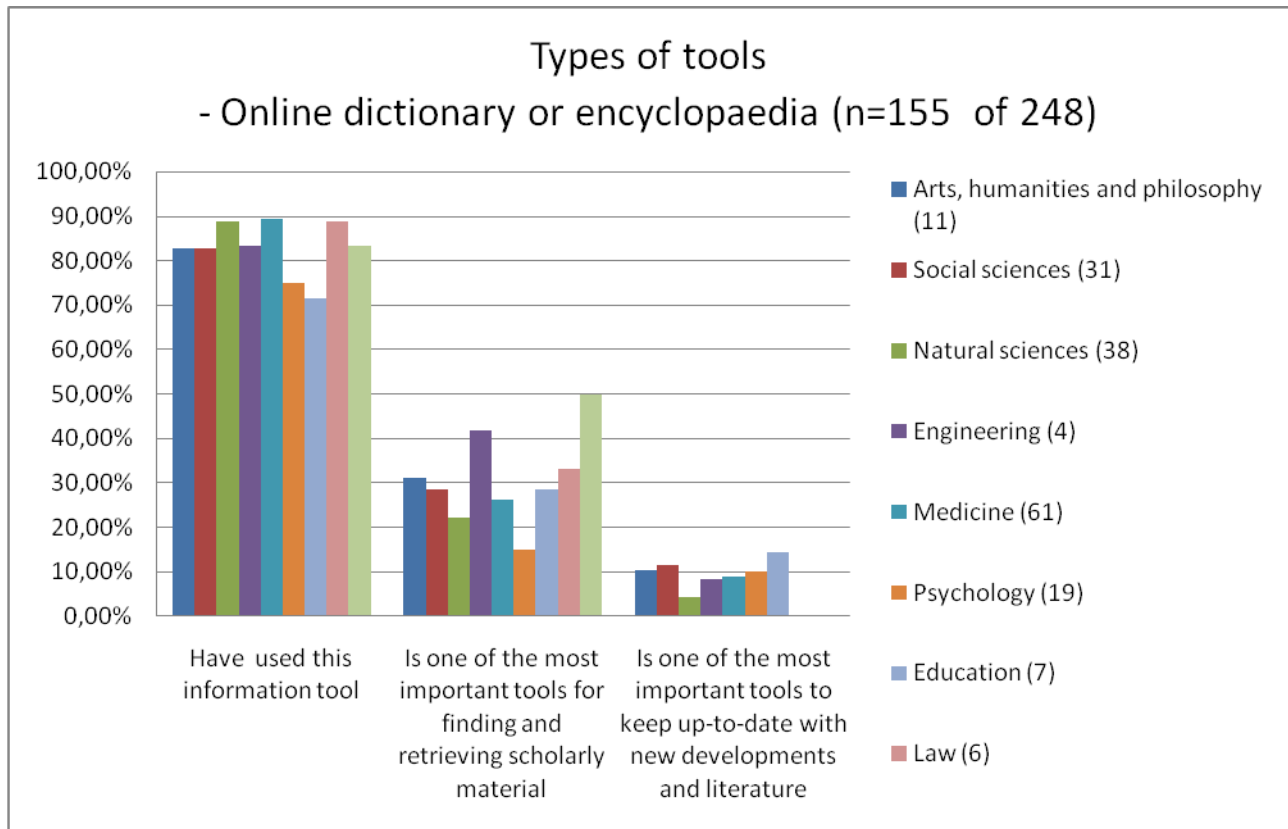


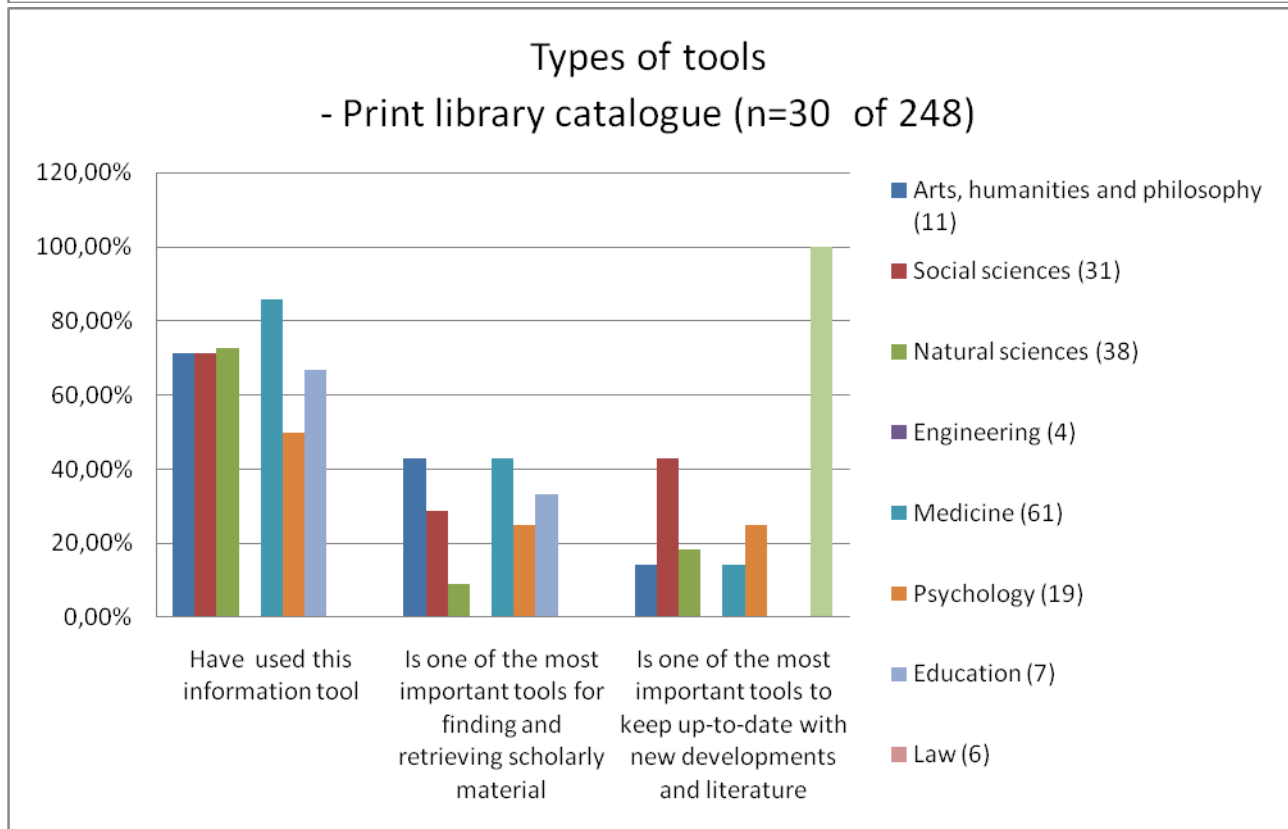
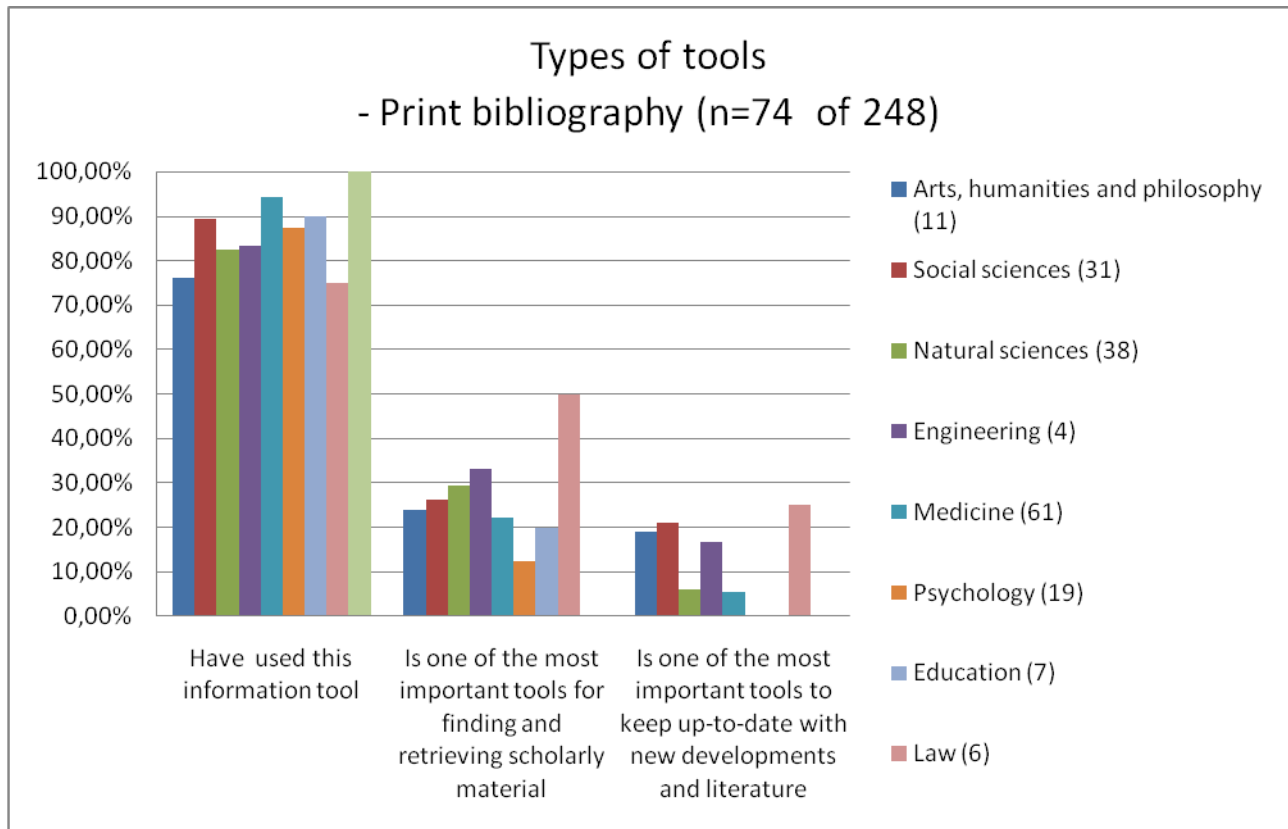


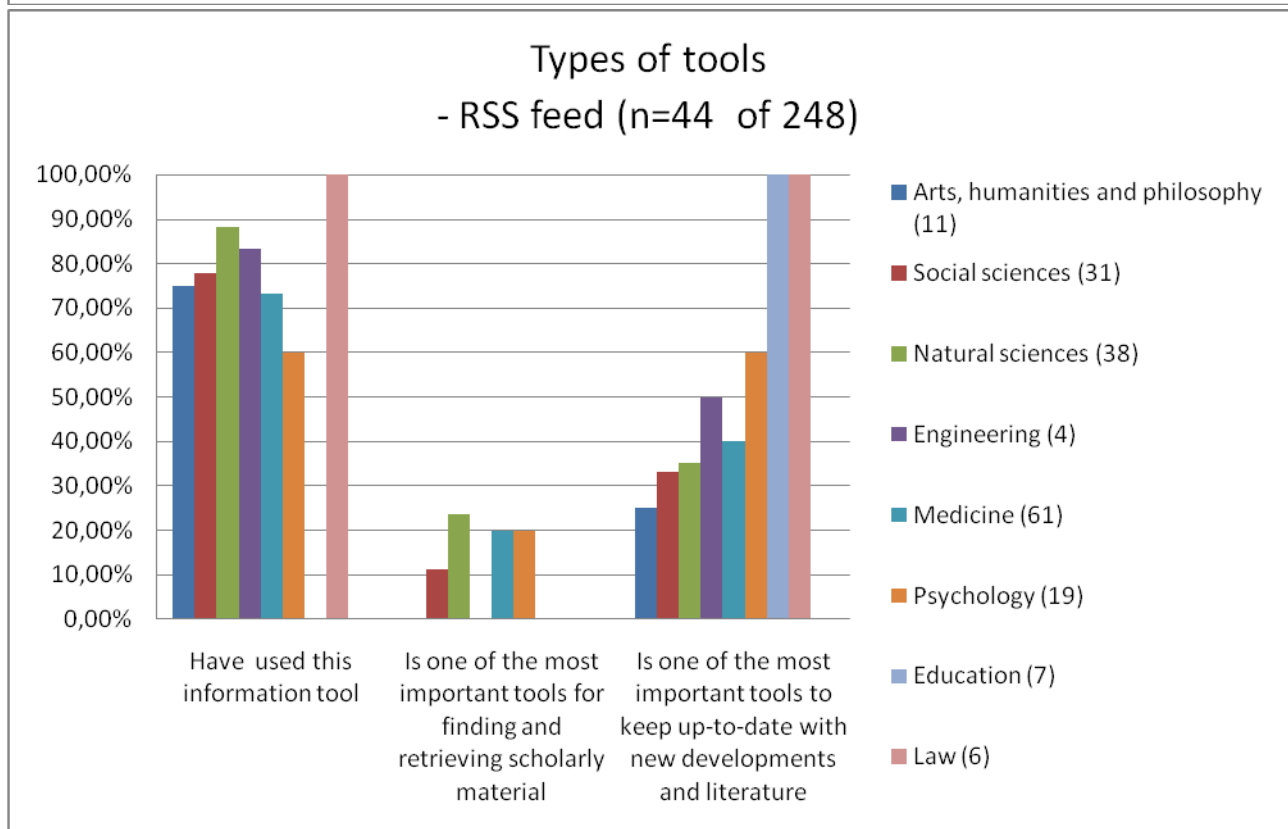
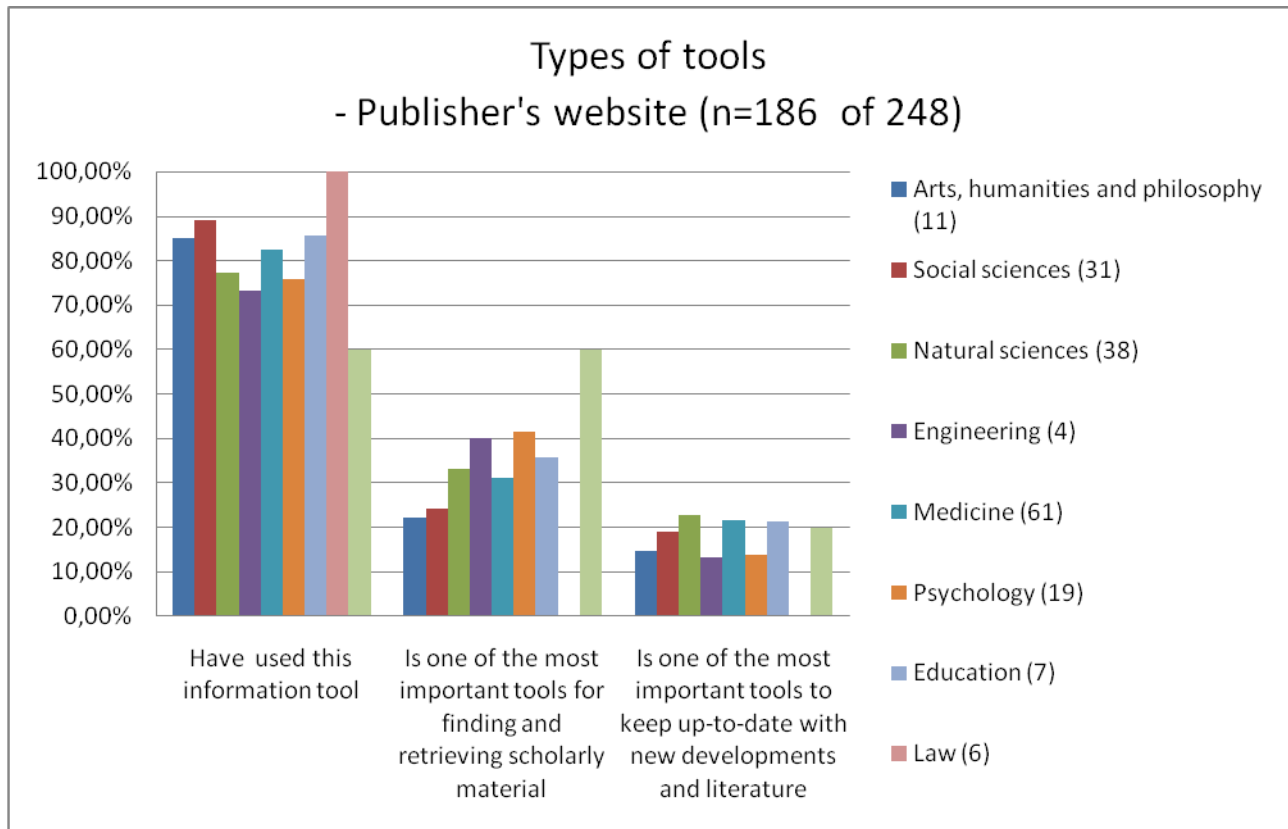


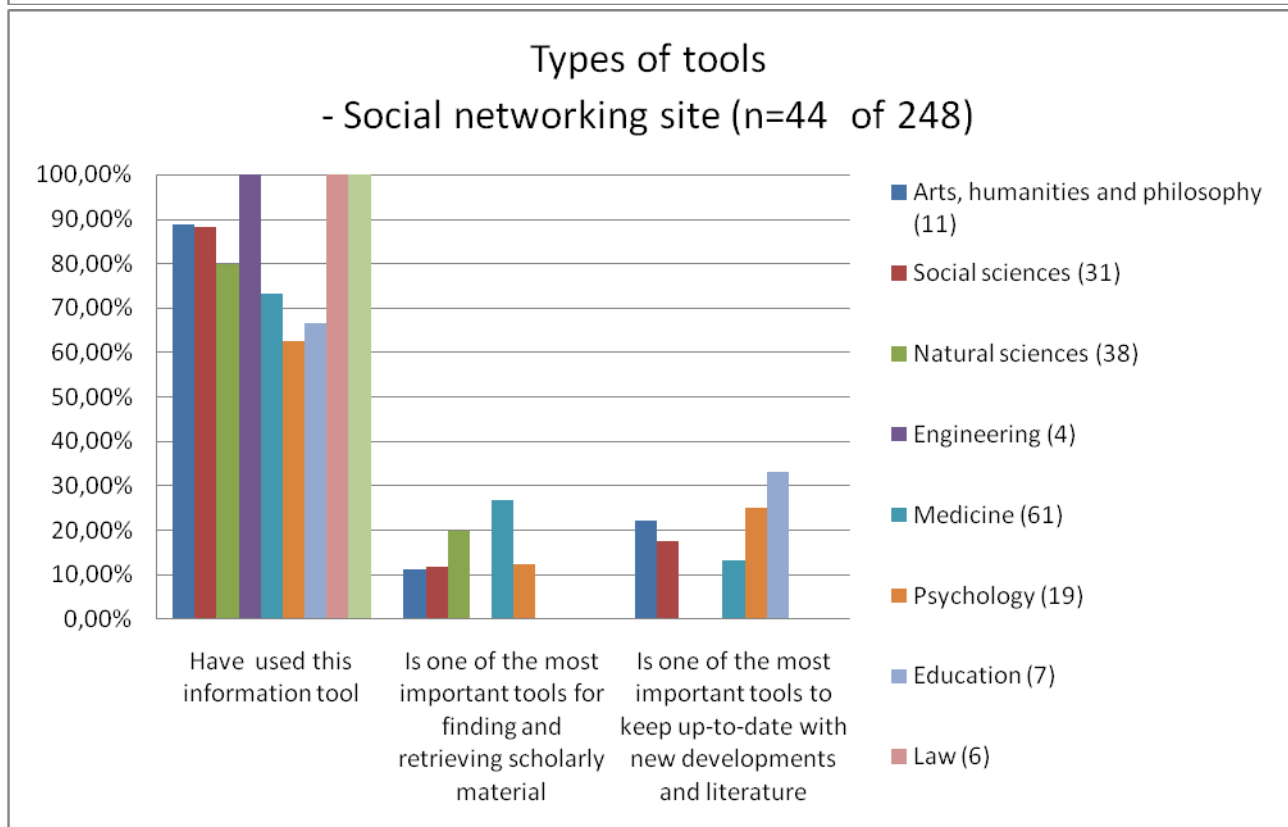
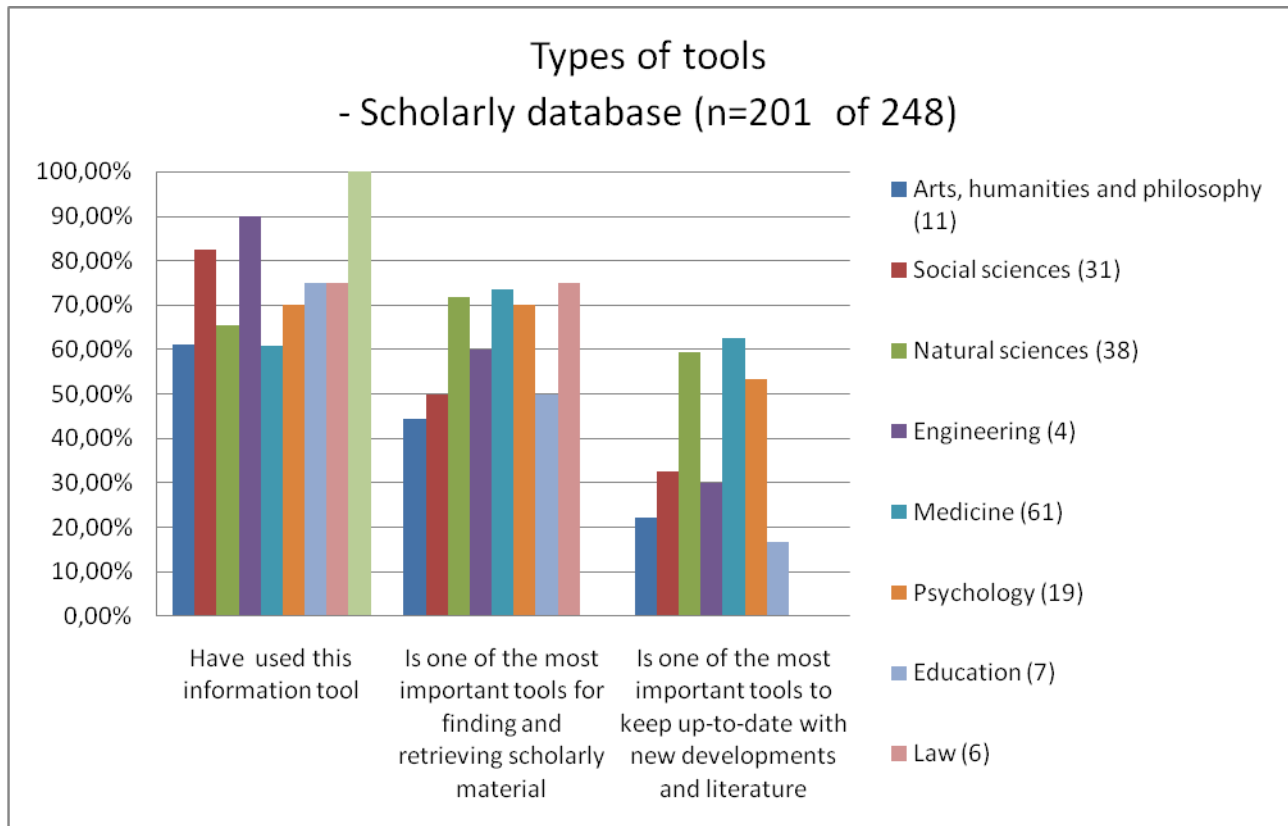




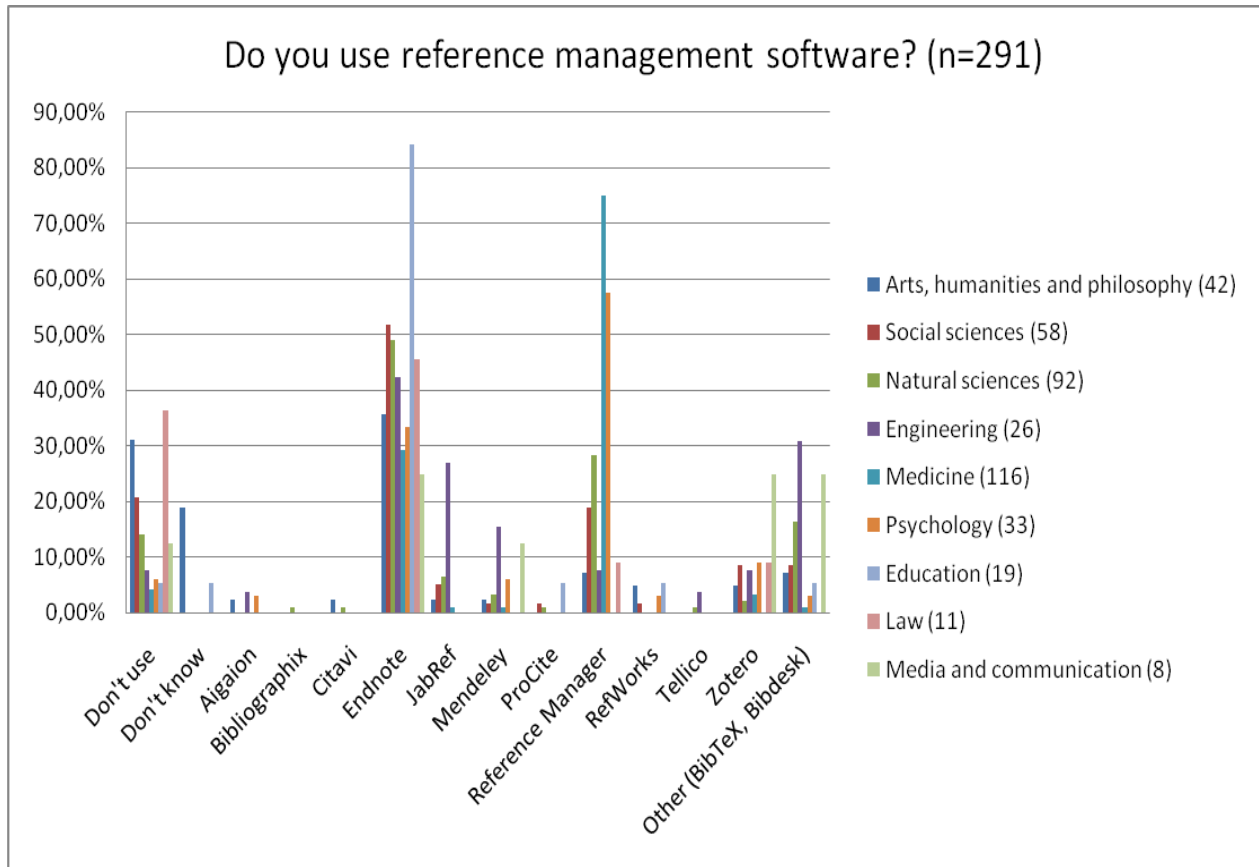




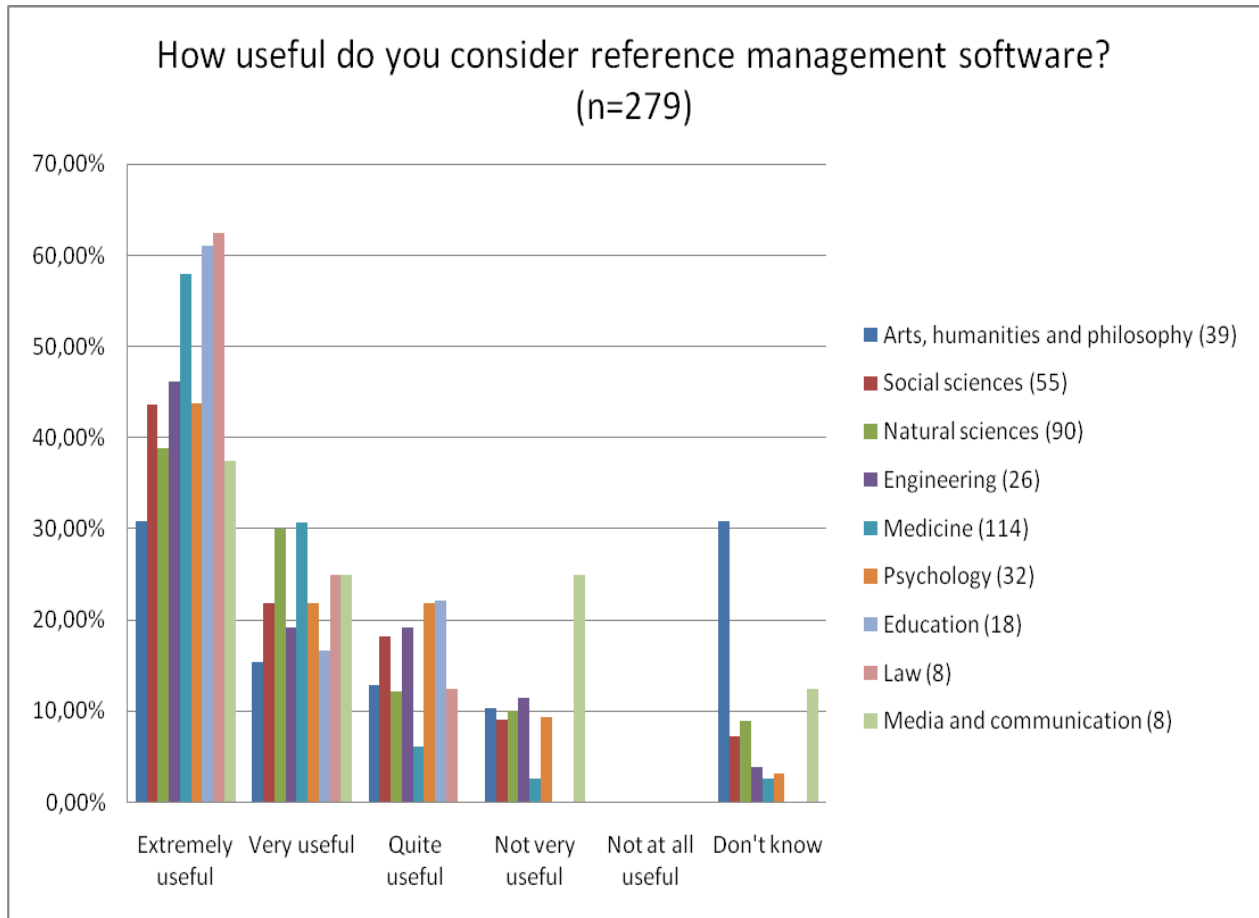




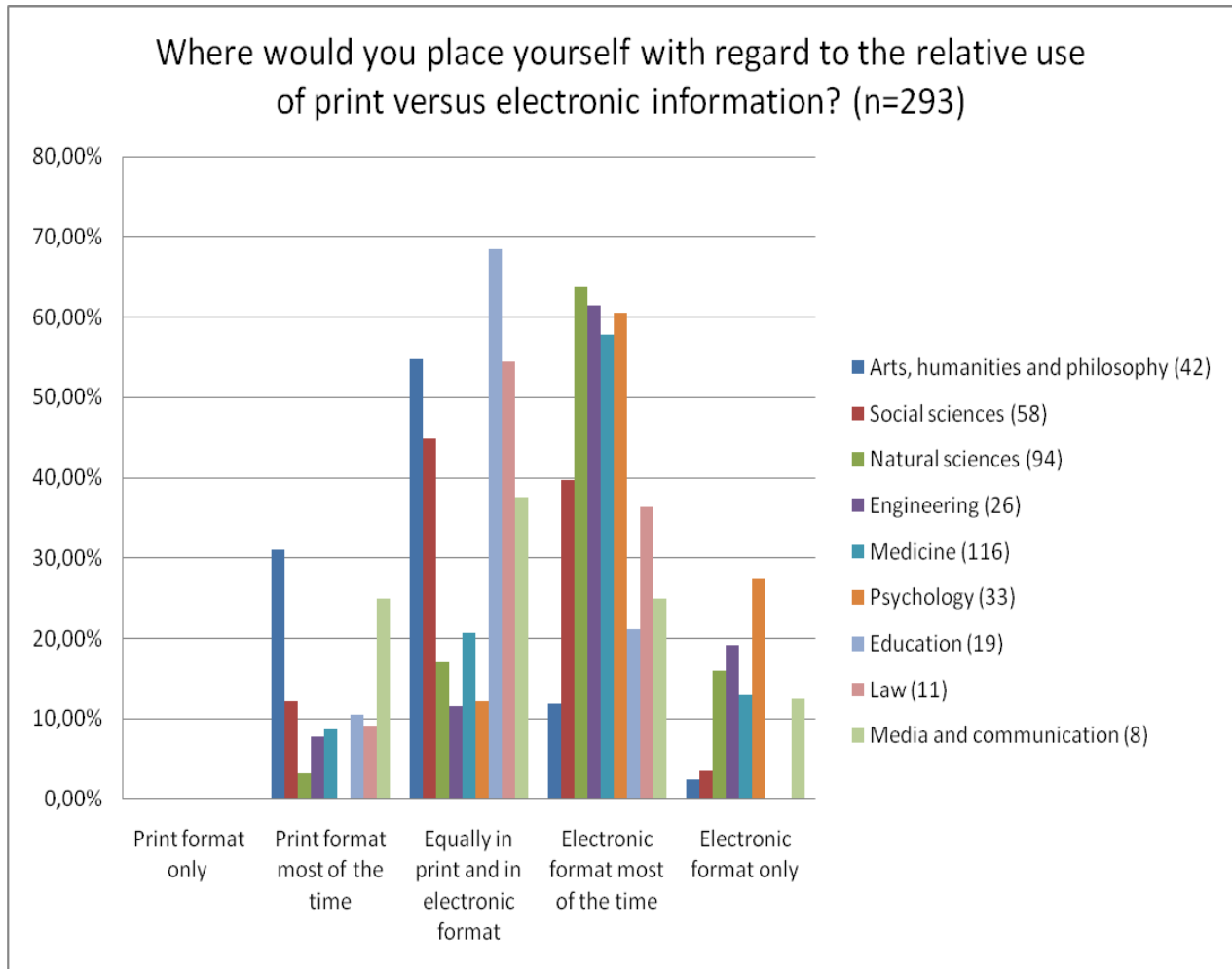
No b2 f7 u



No b3 f7 u

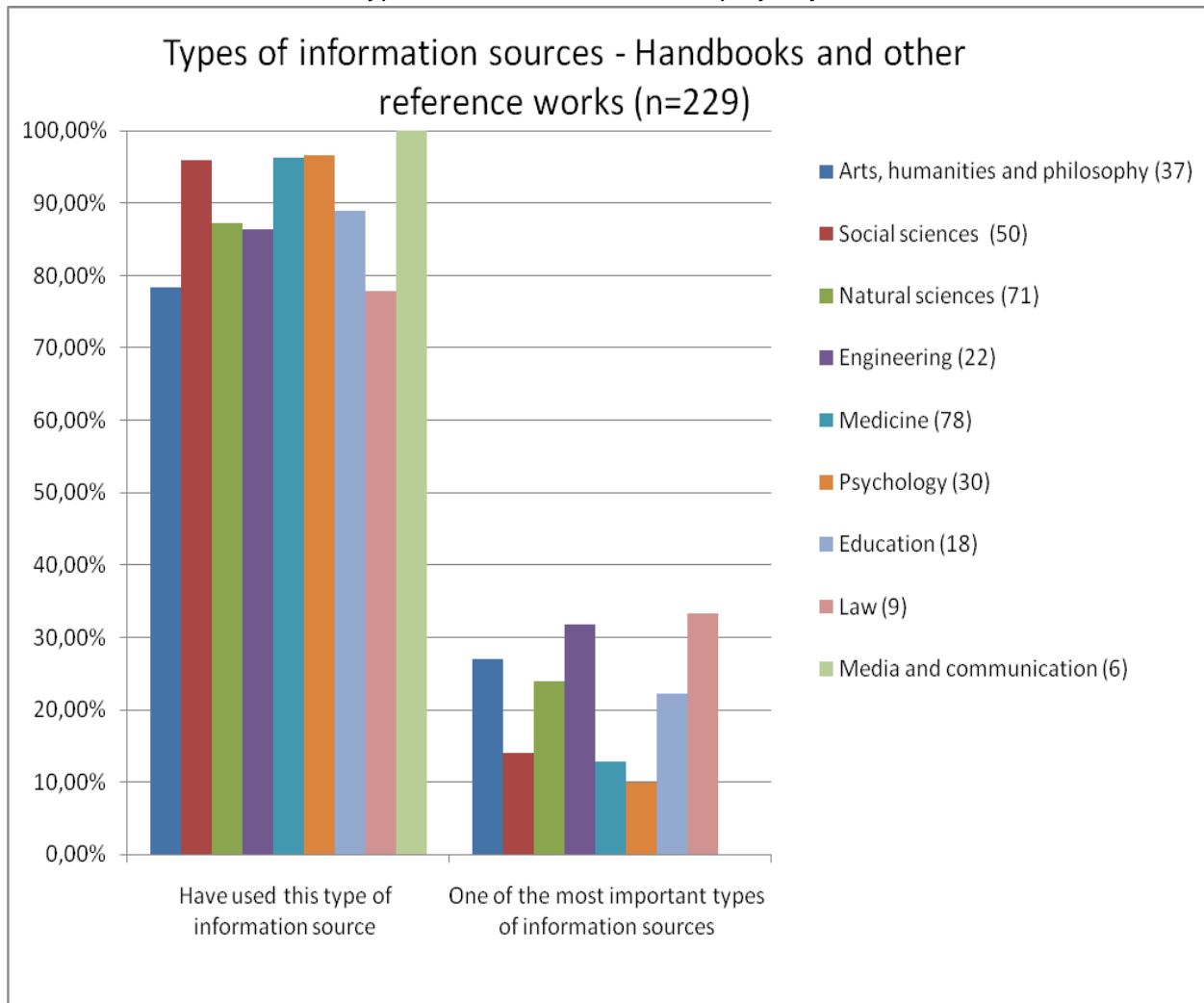


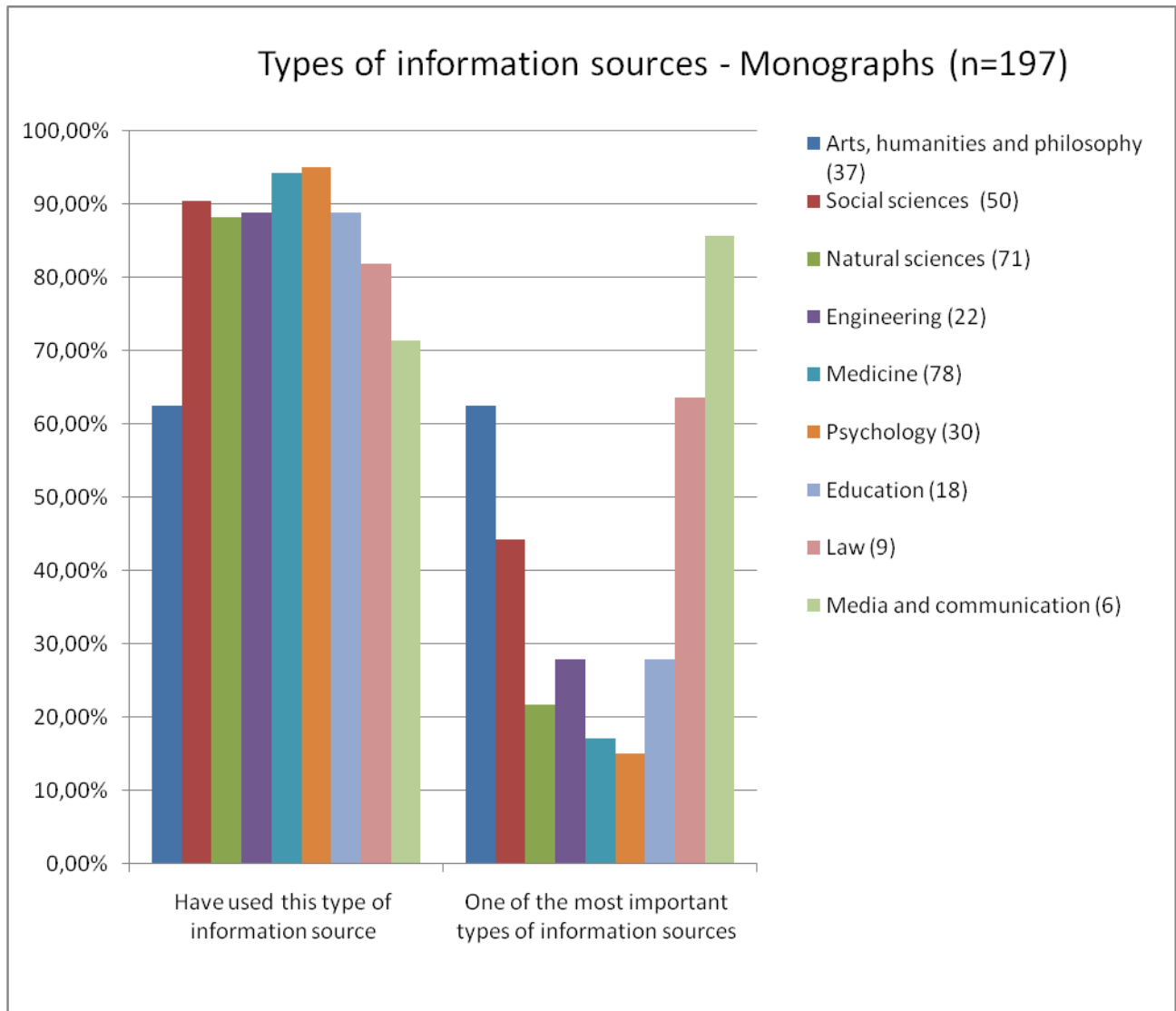
No c1 f7 u

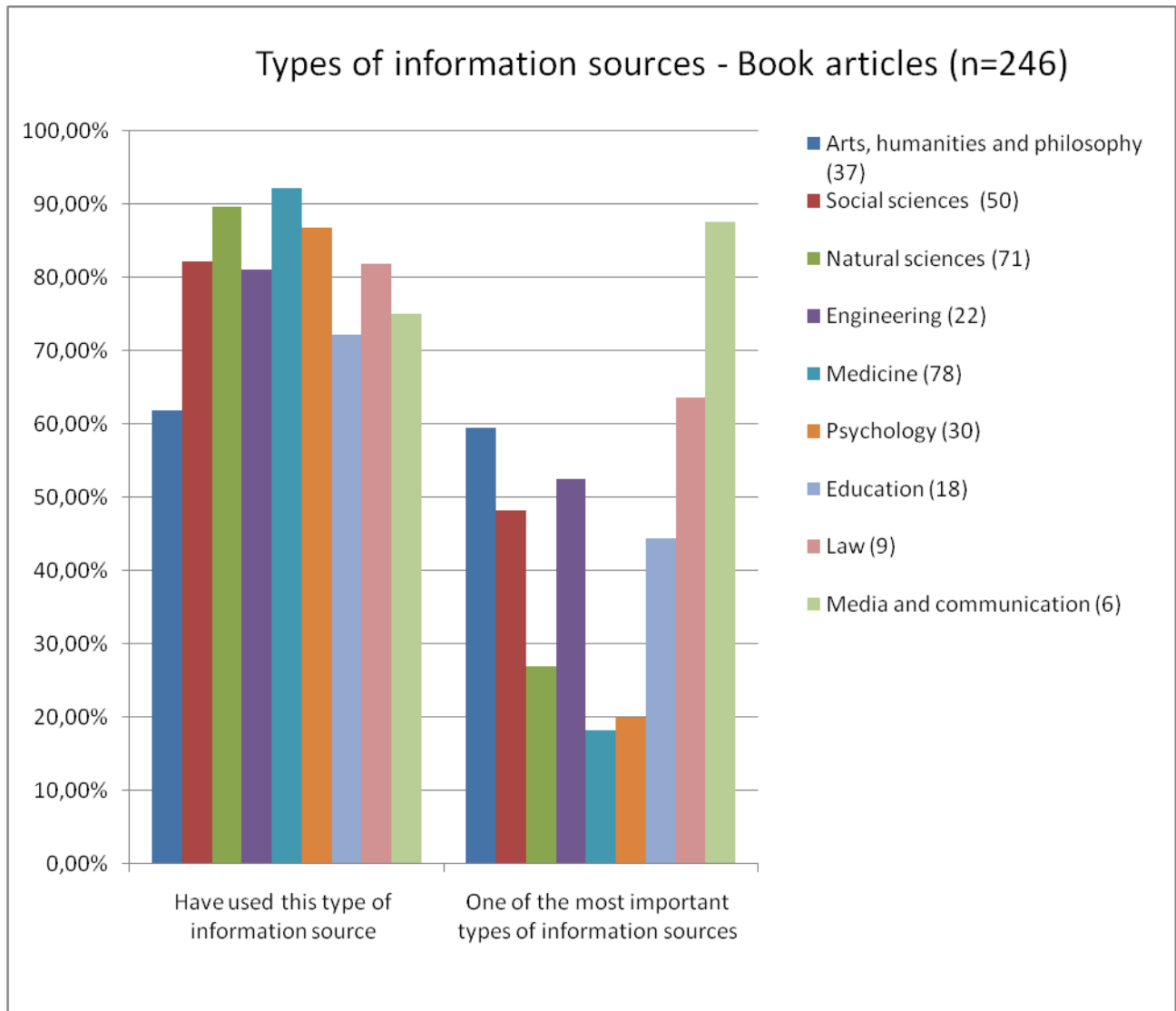


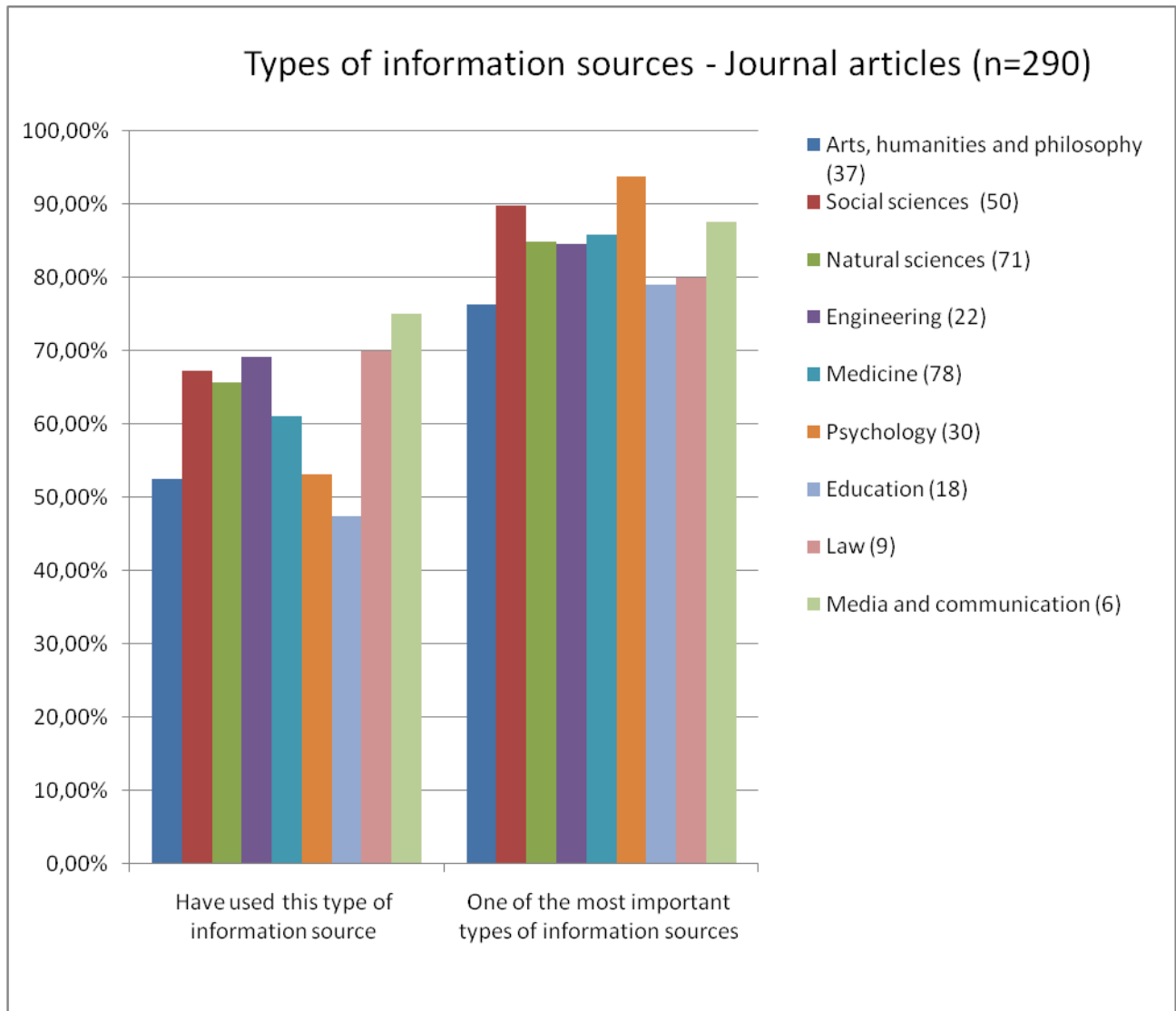
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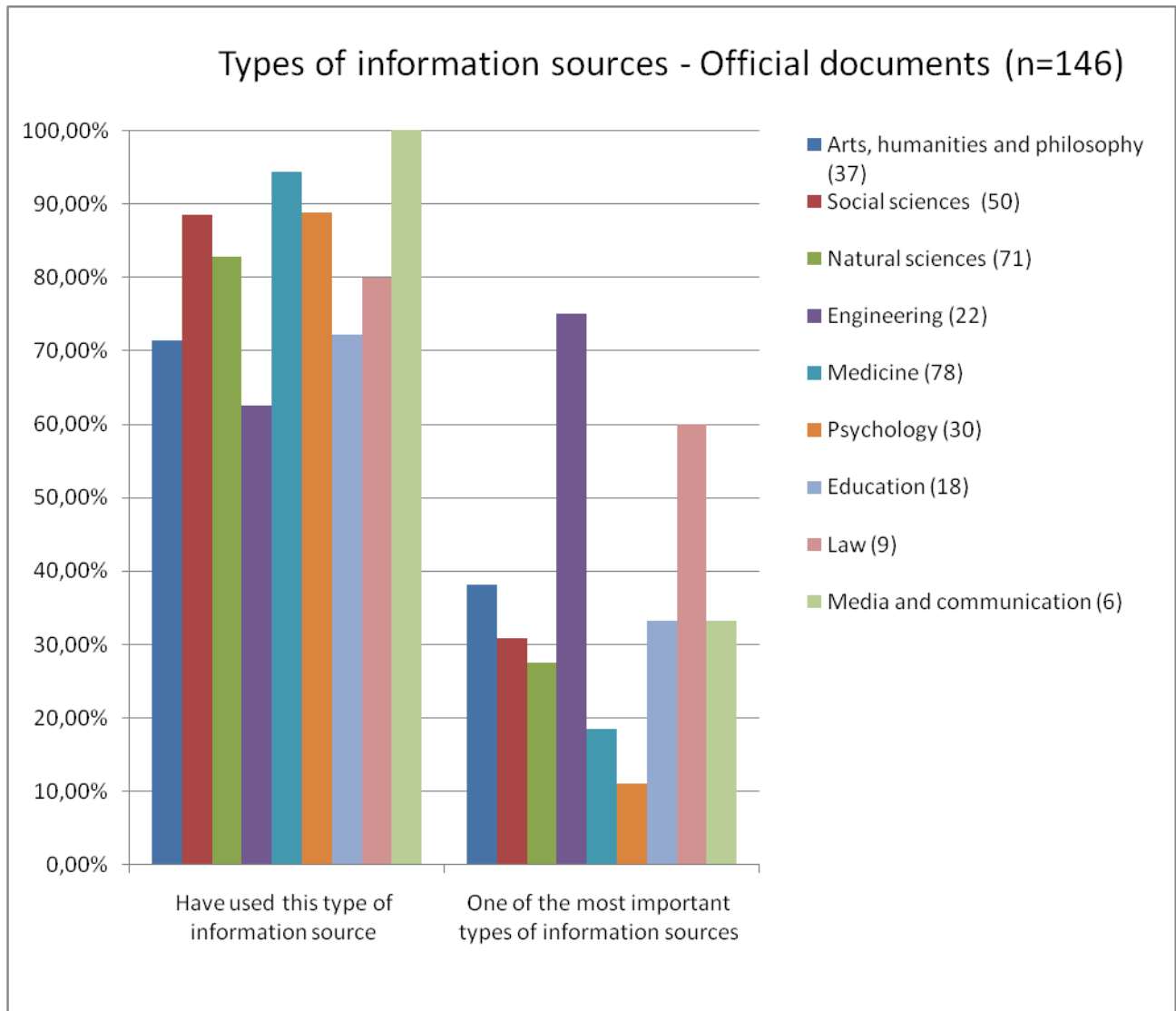
Consider what role different types of information sources play in your PhD research.

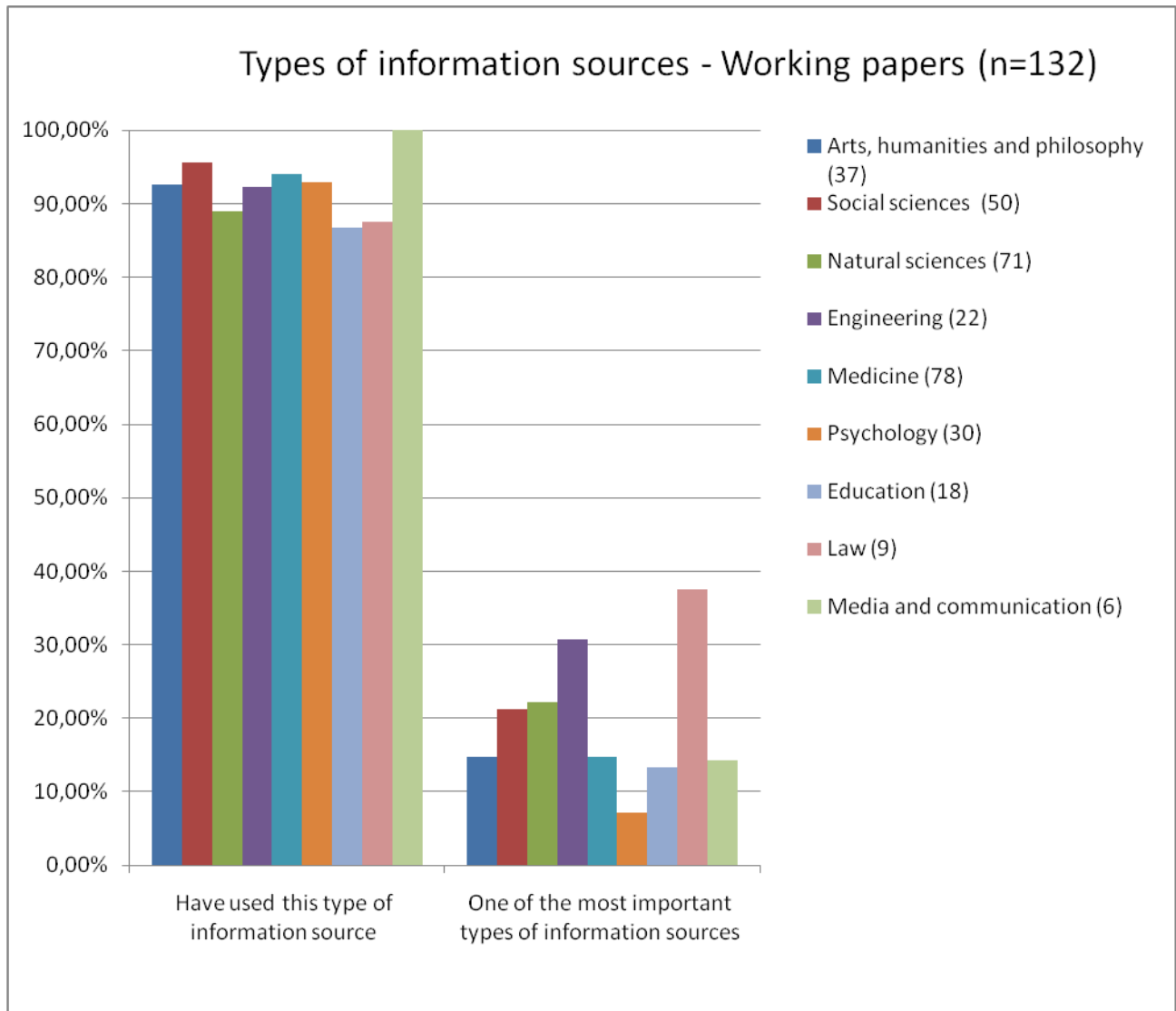


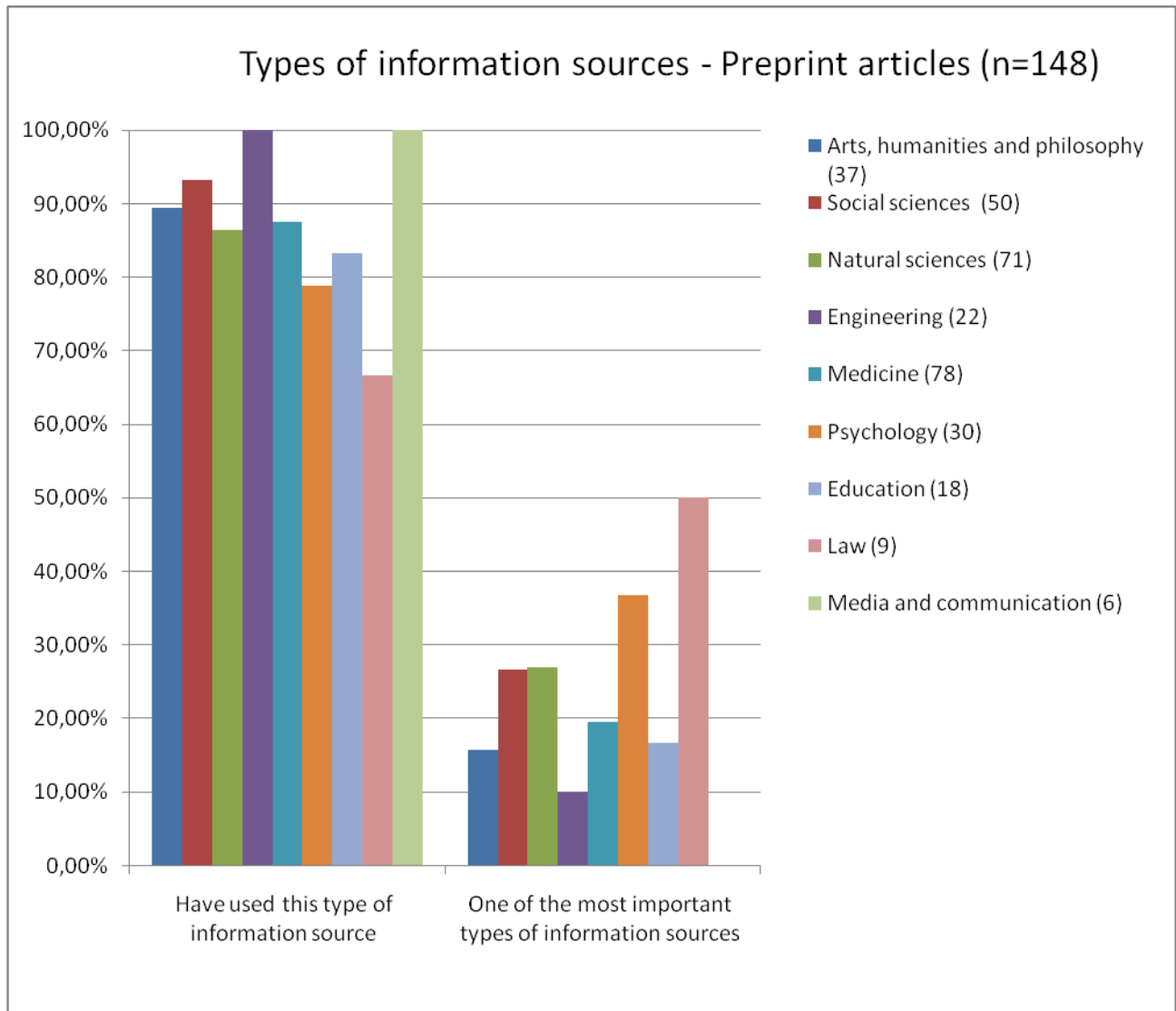


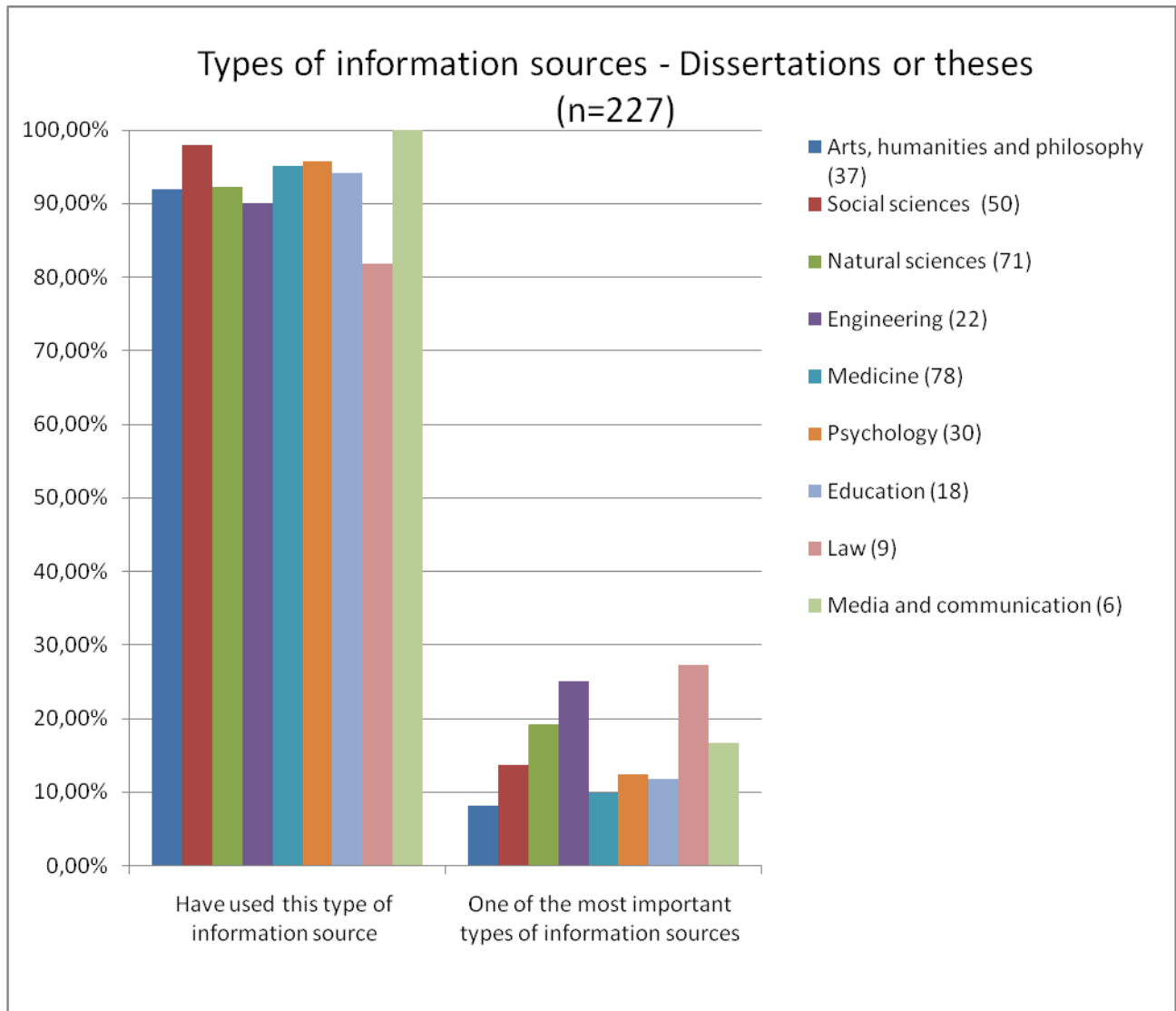


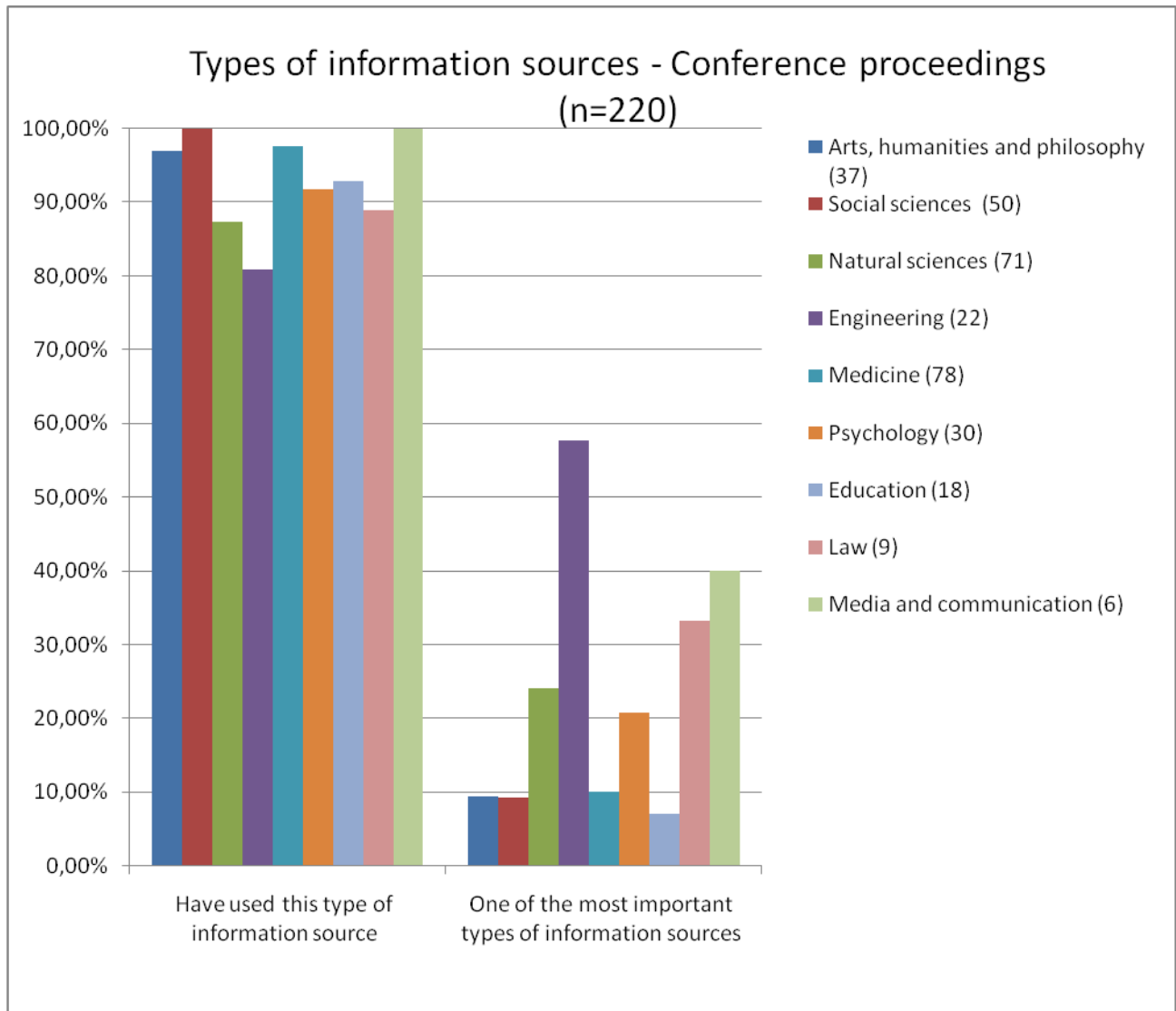


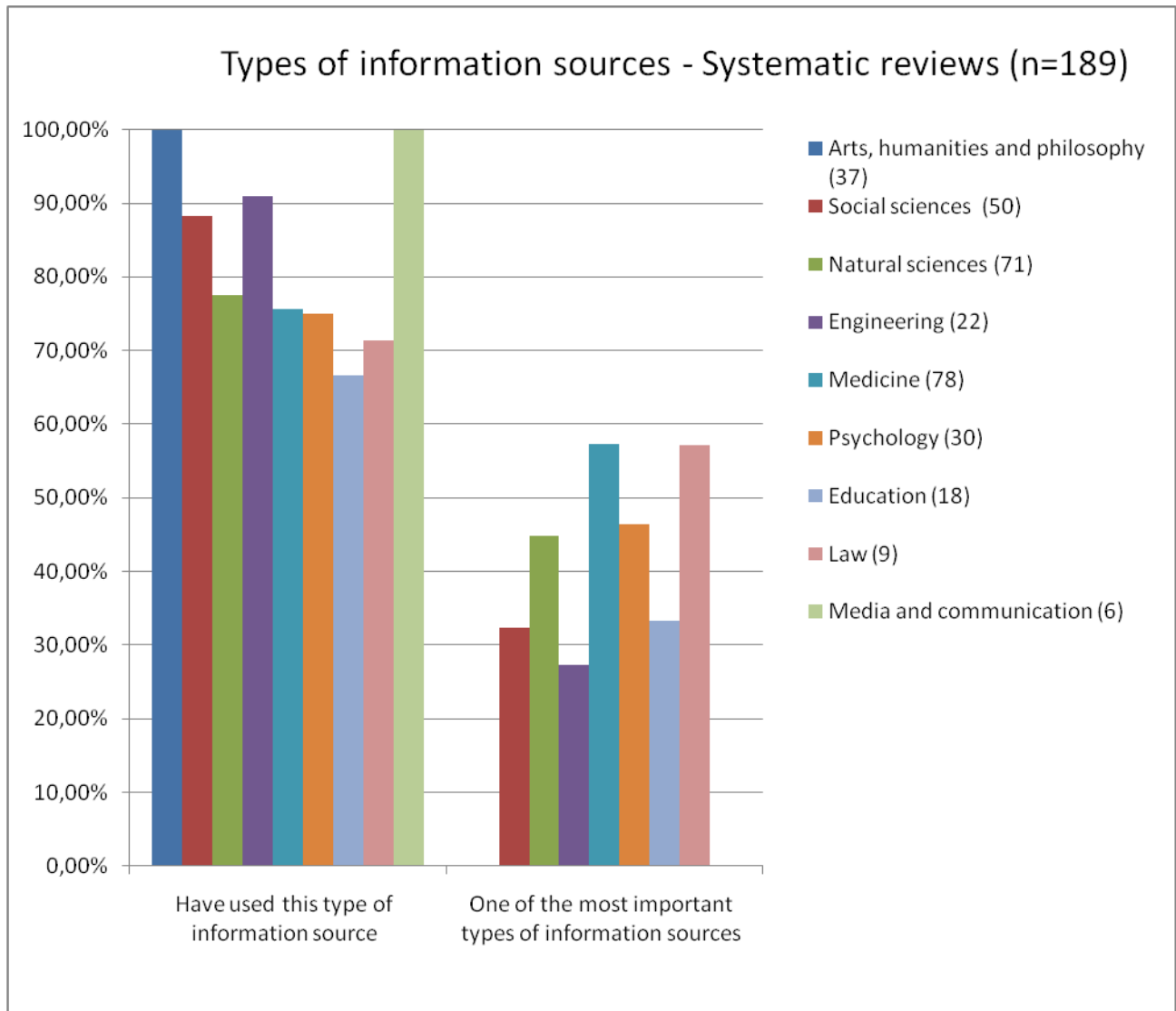


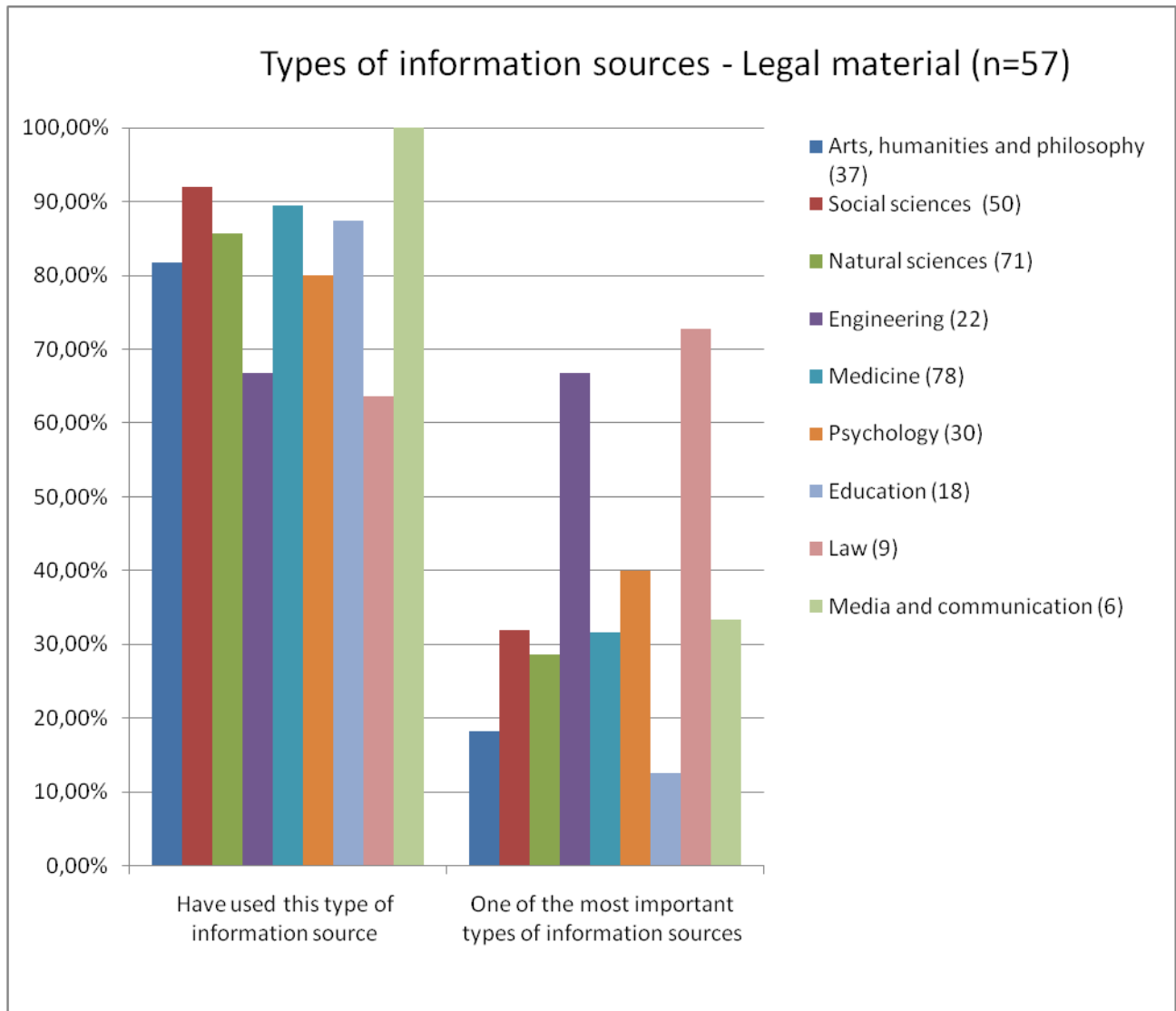


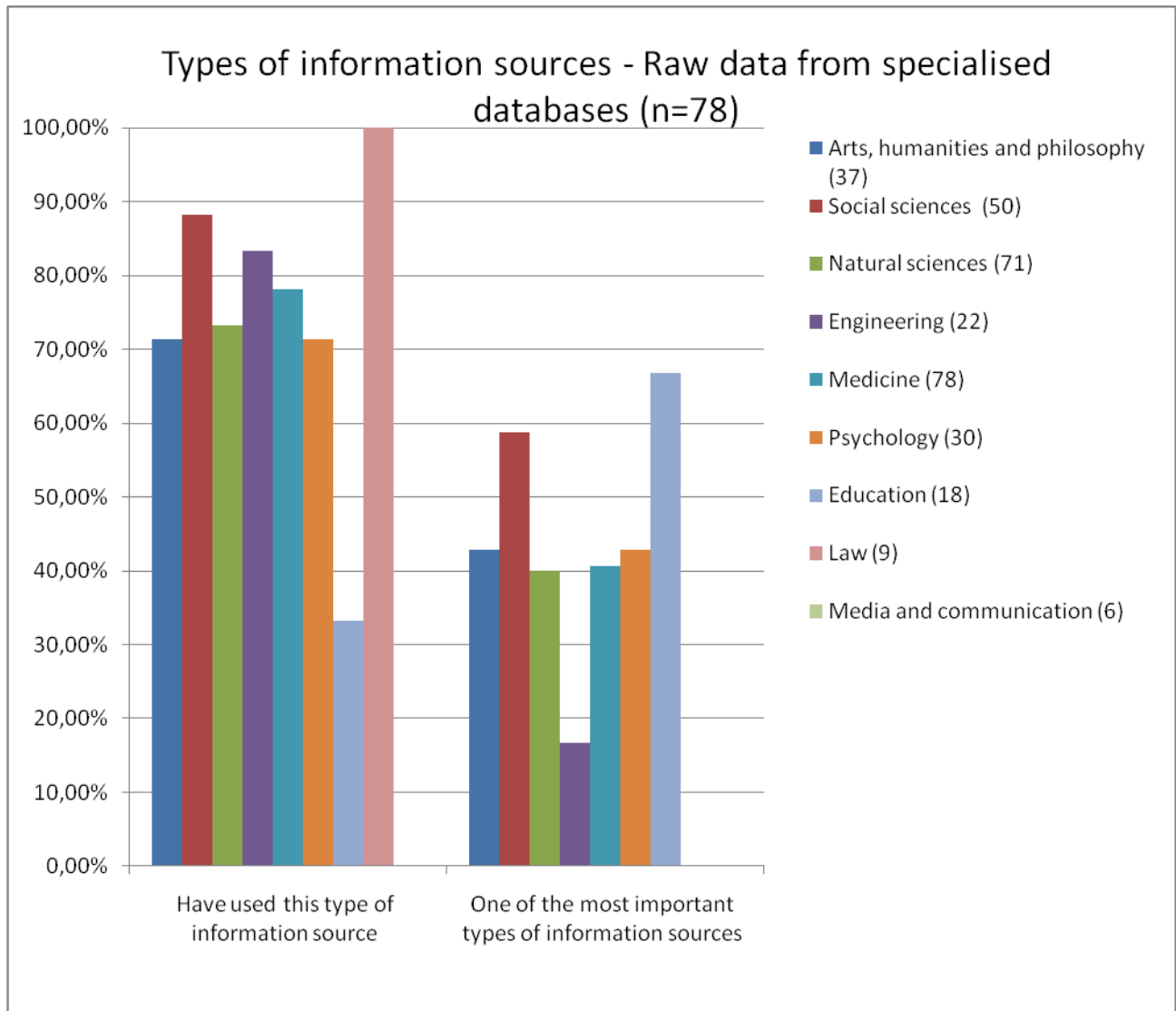


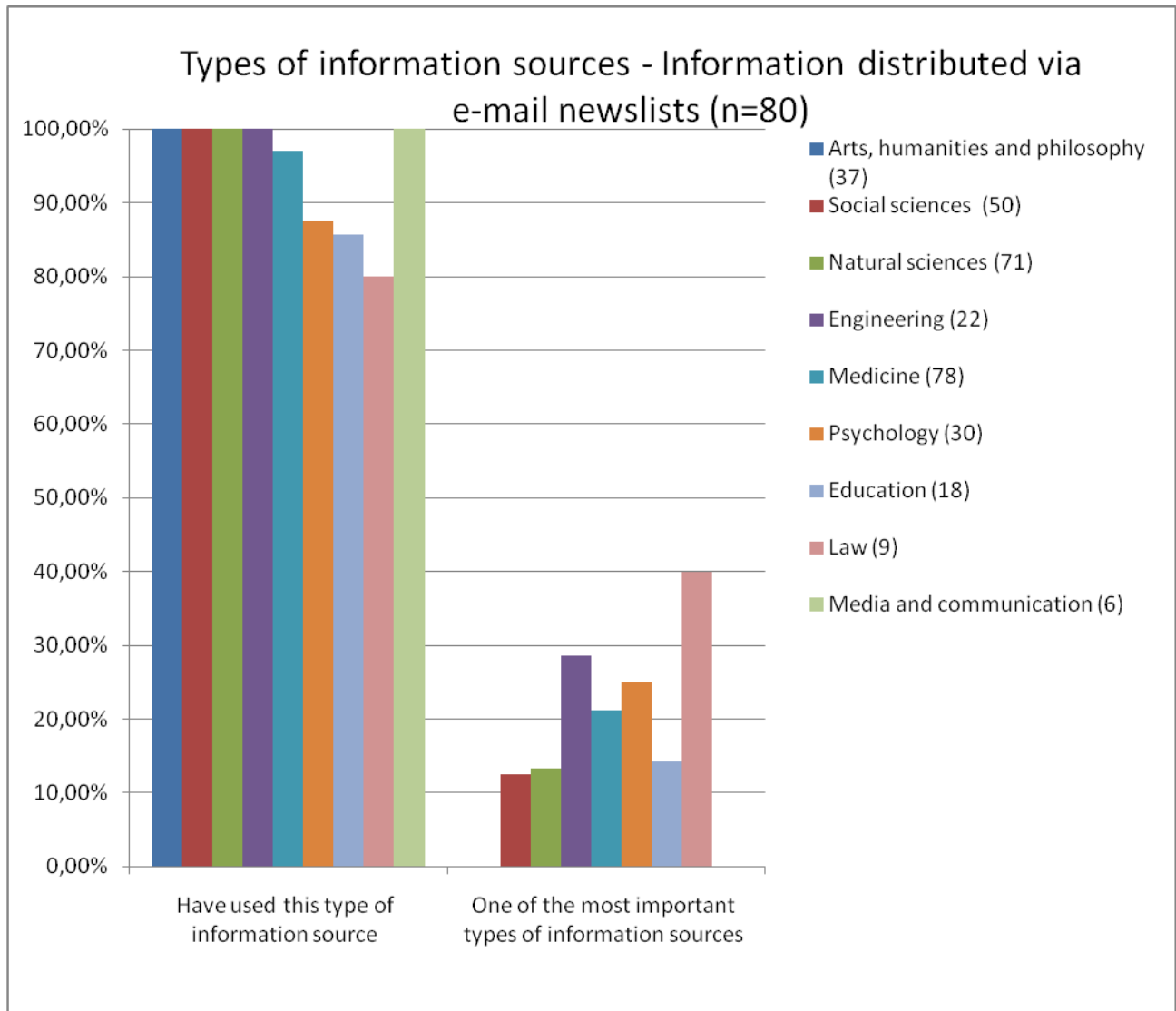


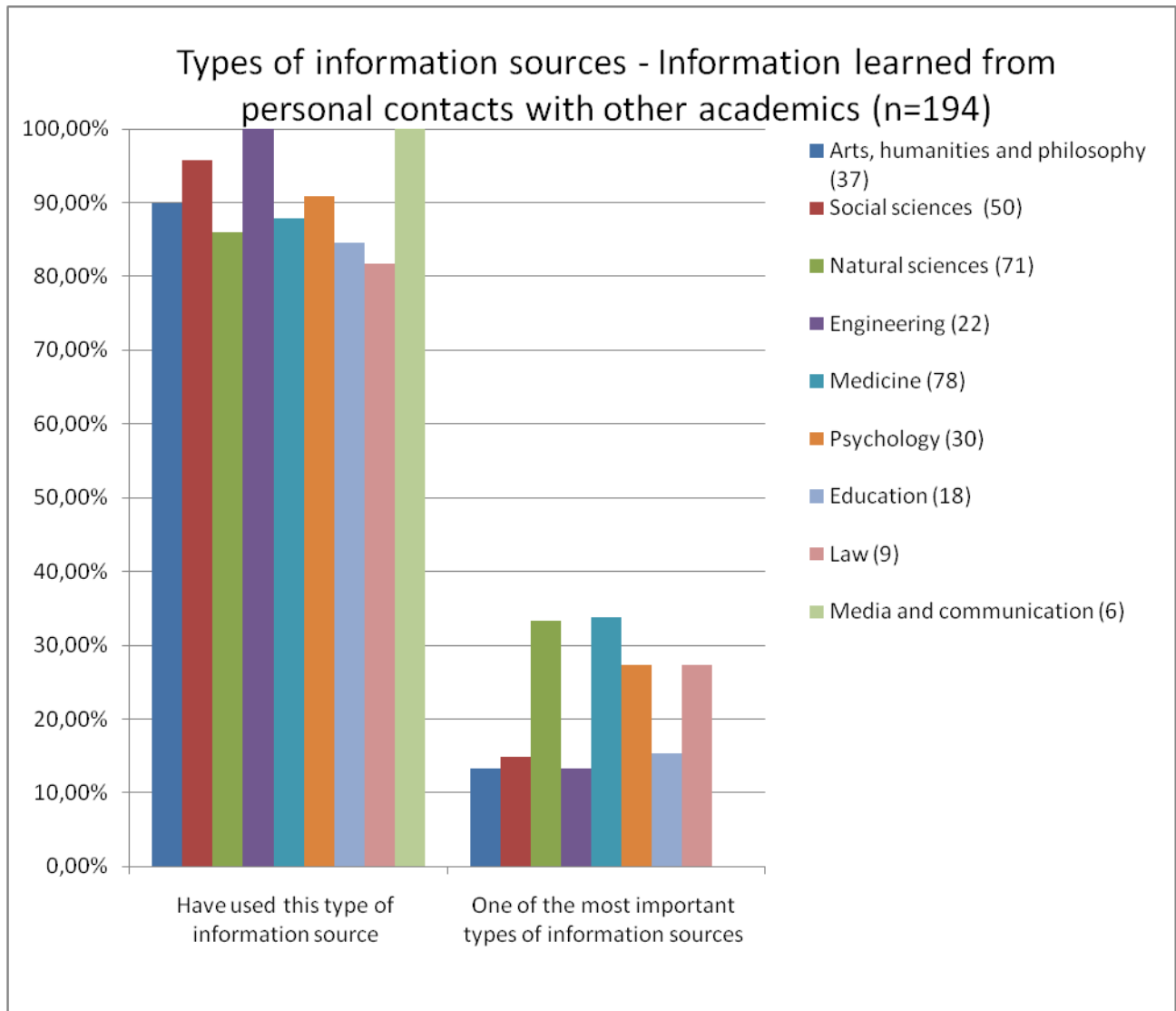


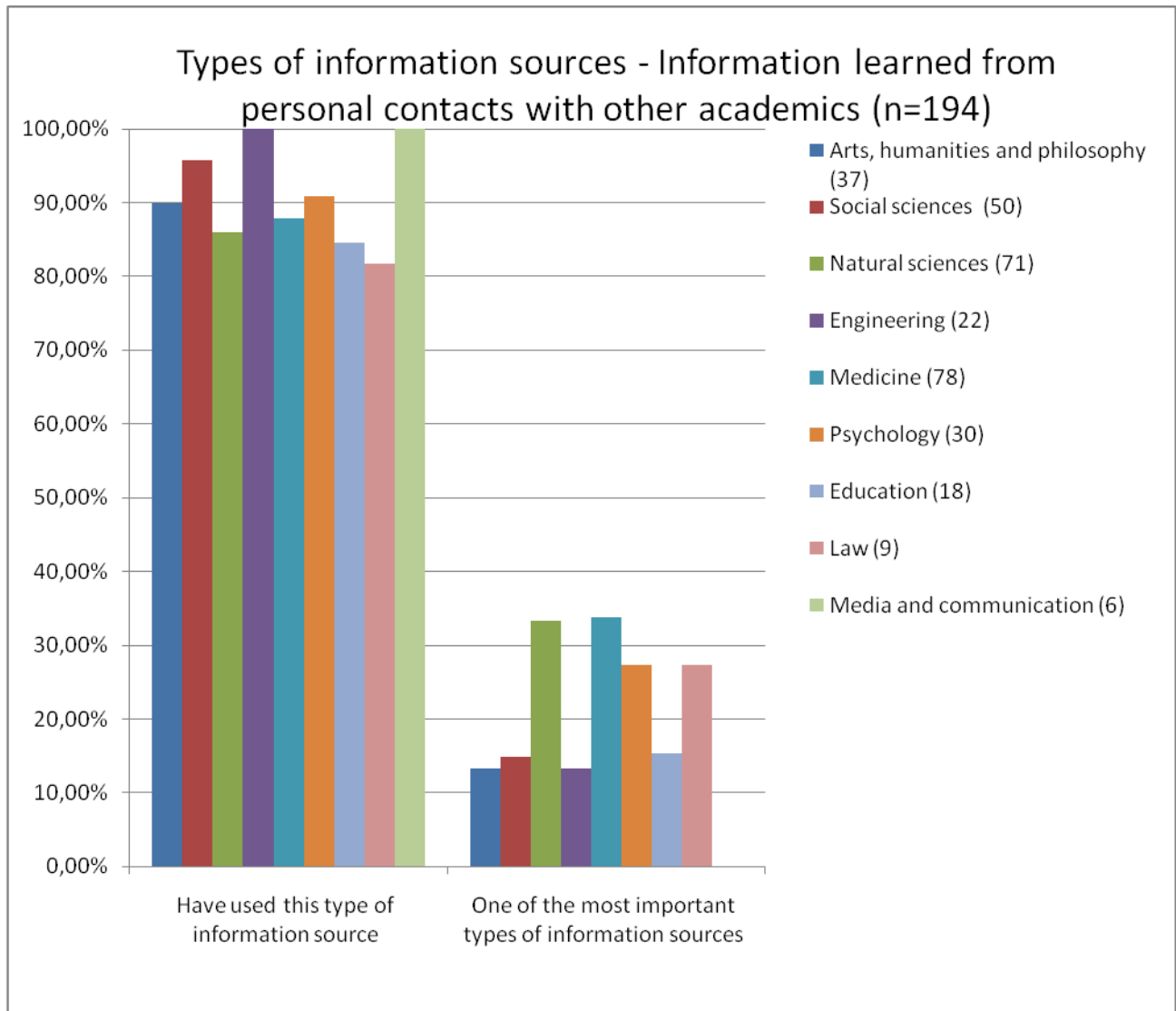


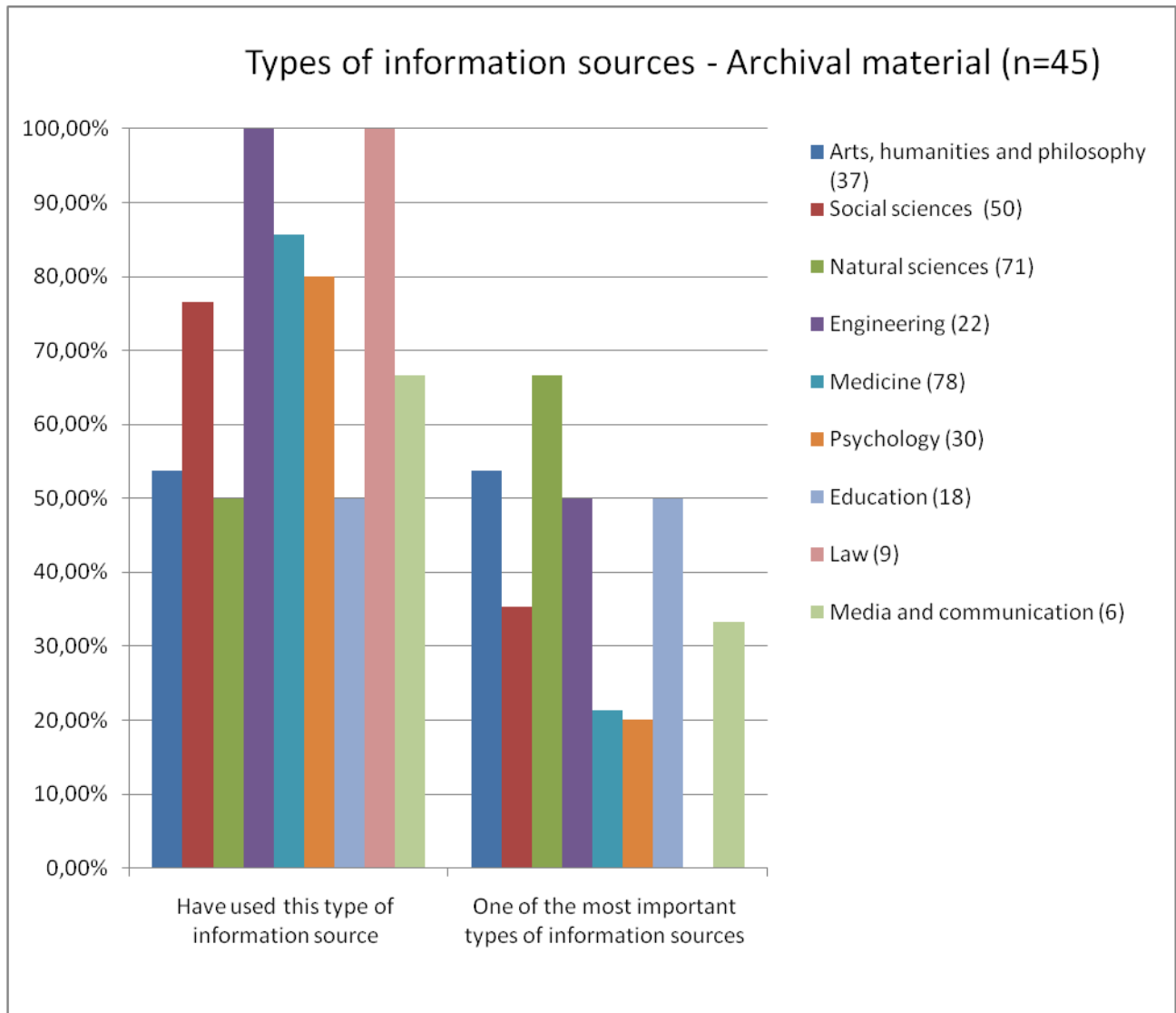


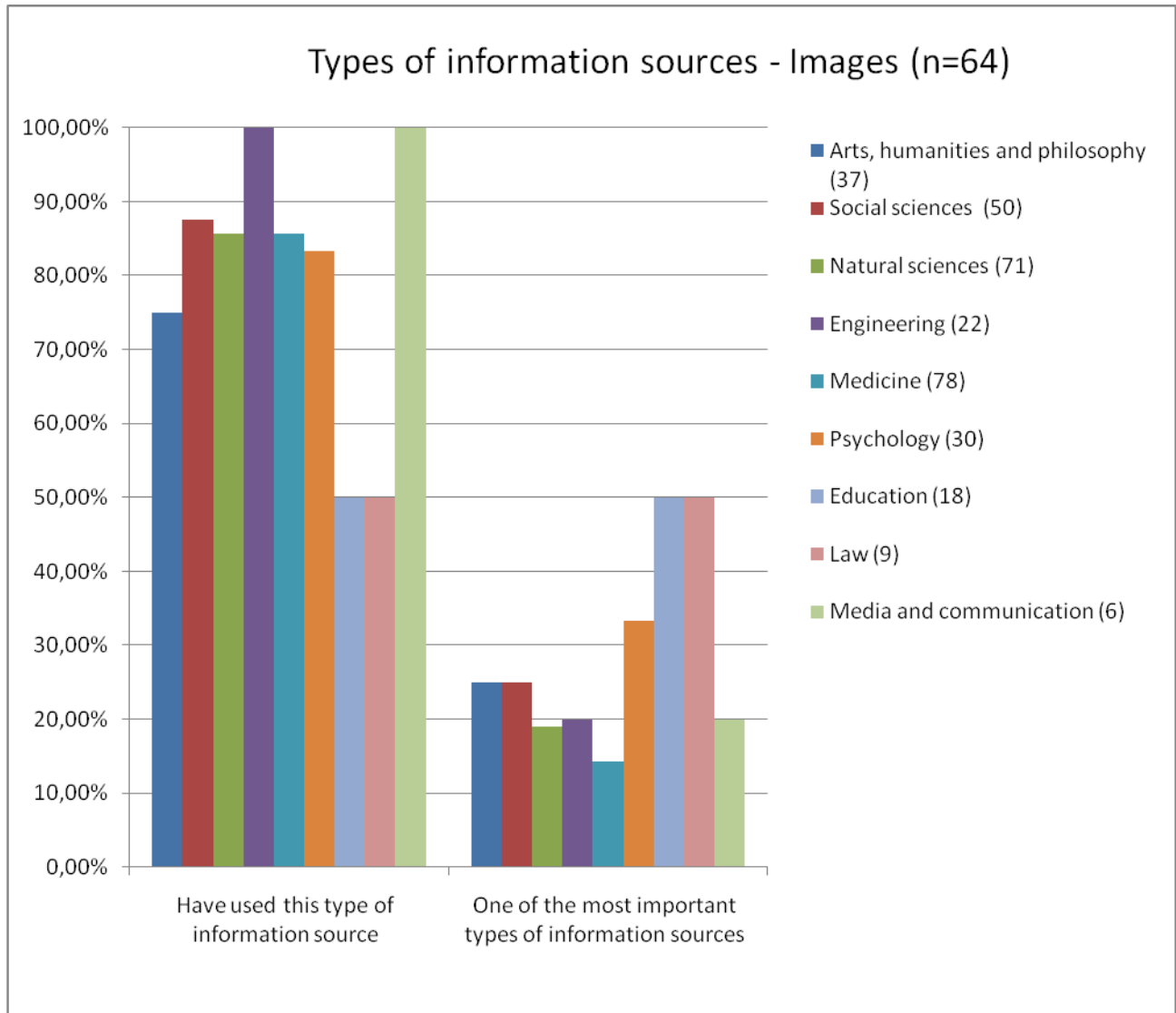


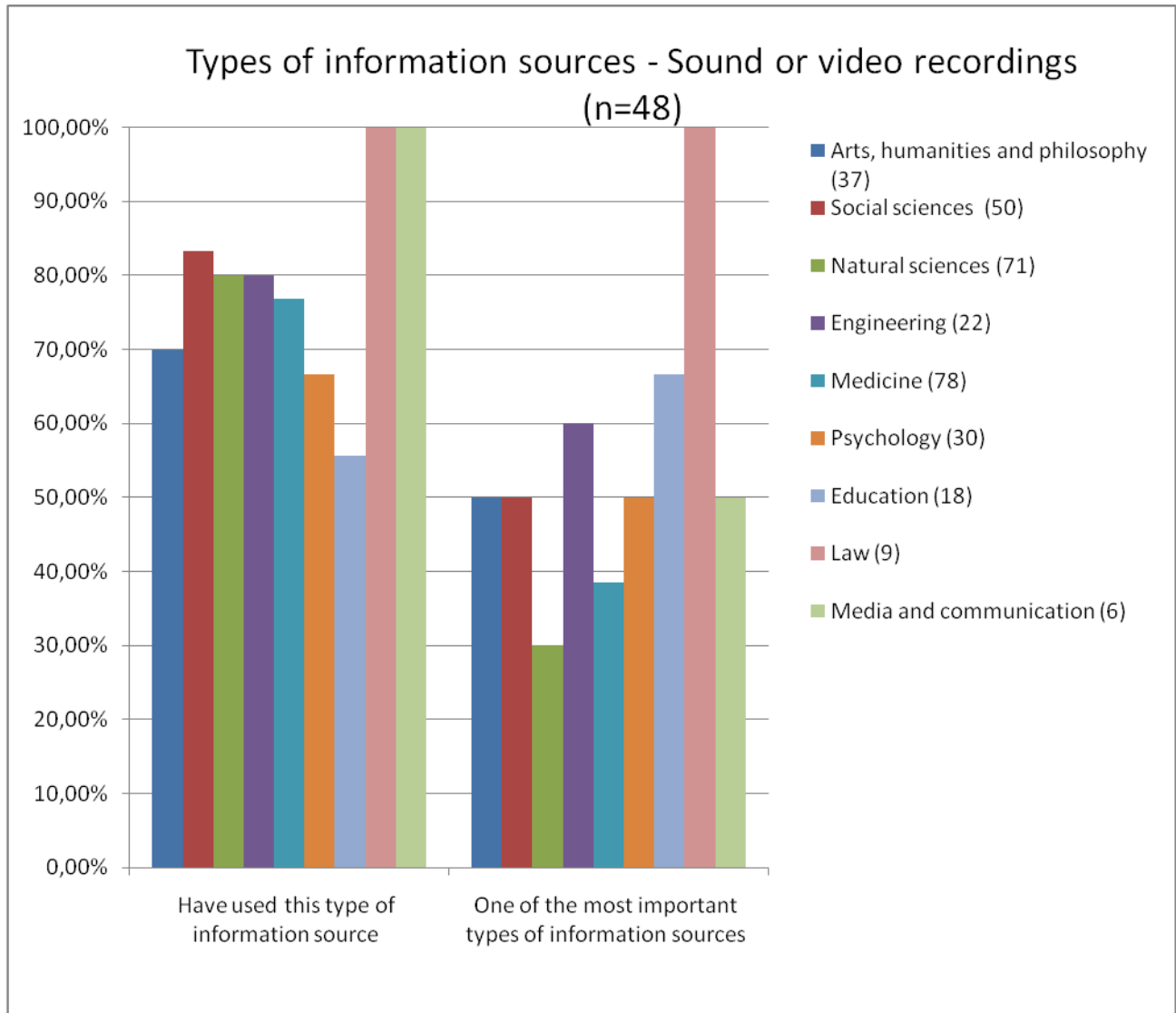






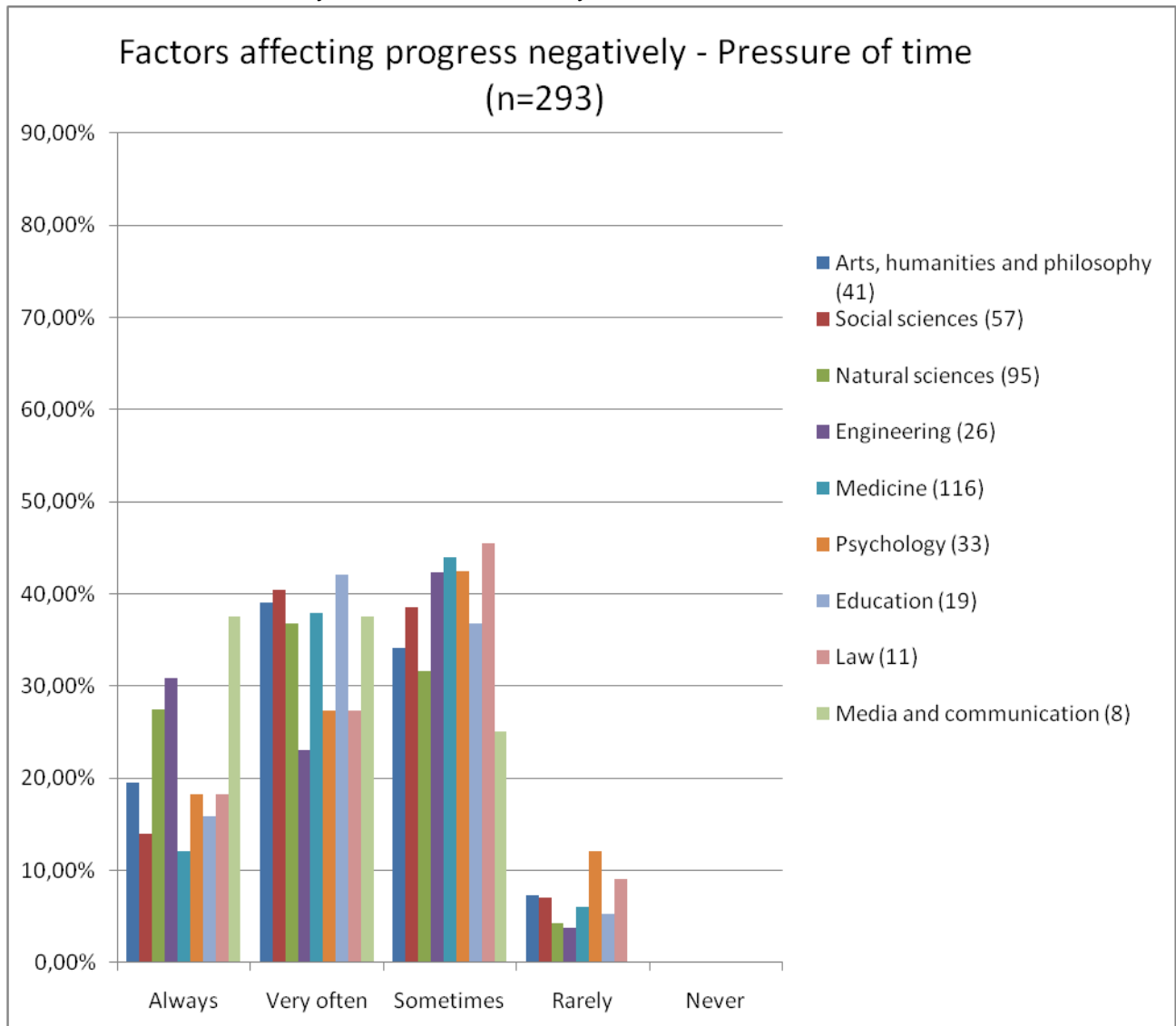


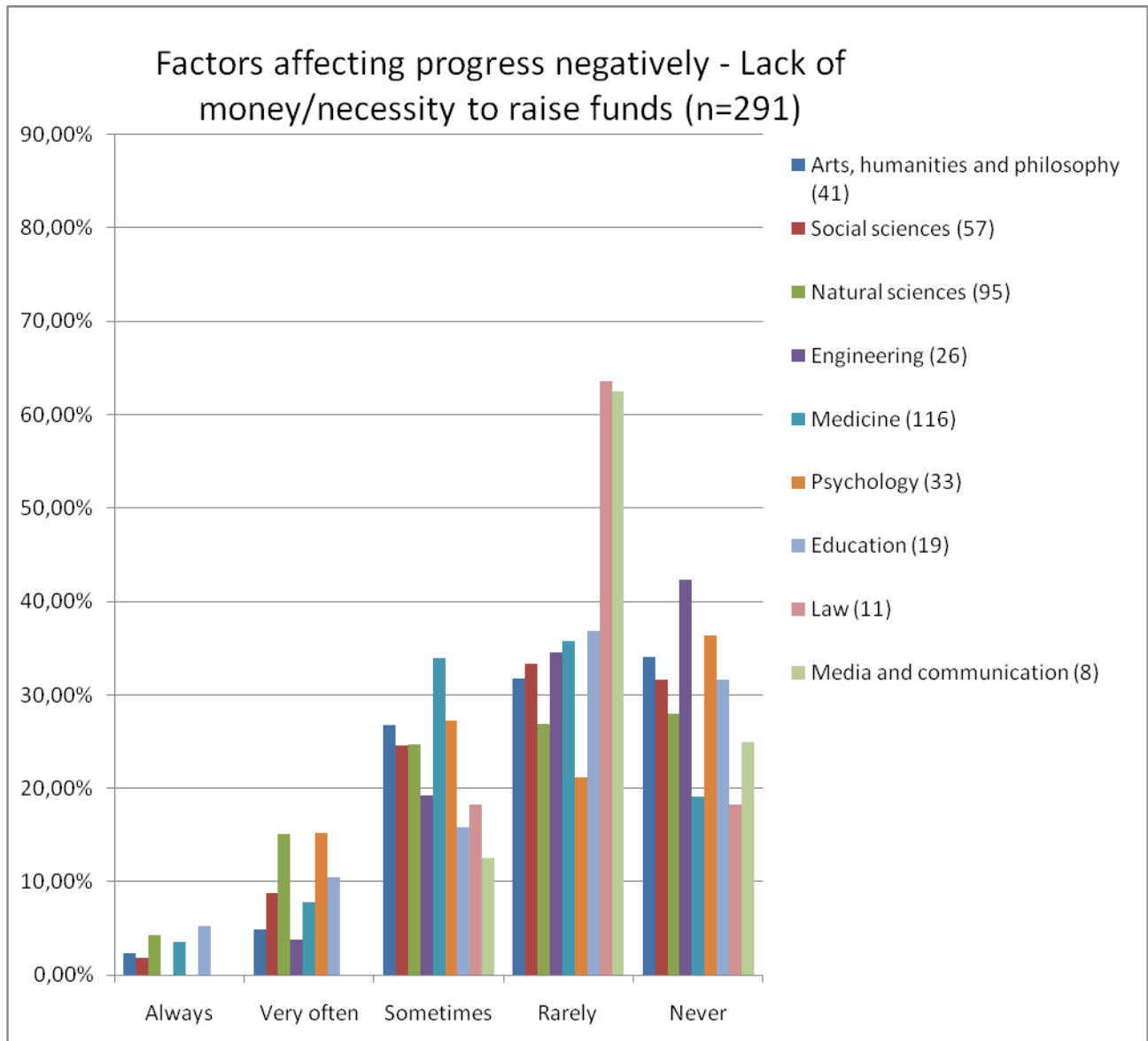


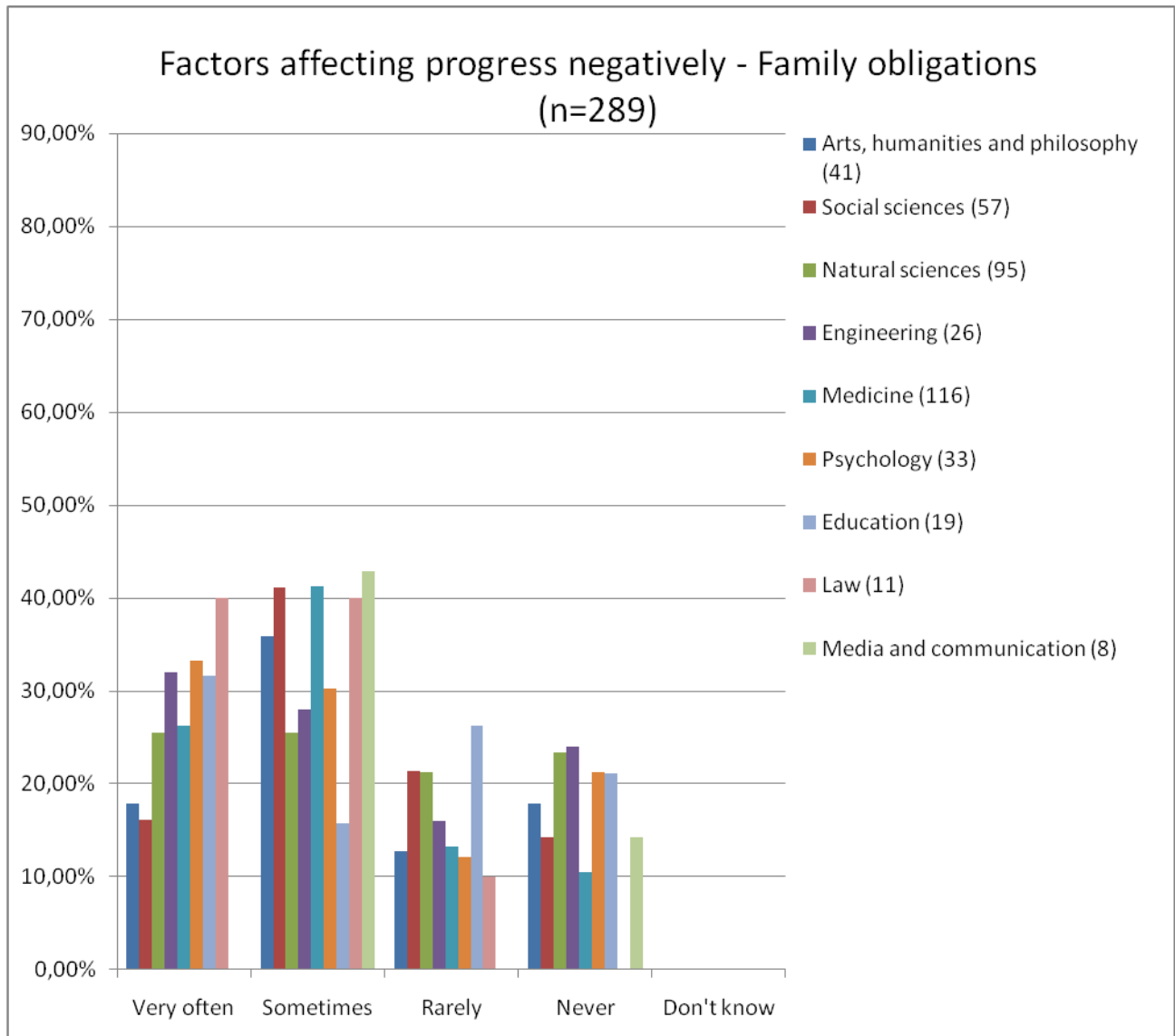


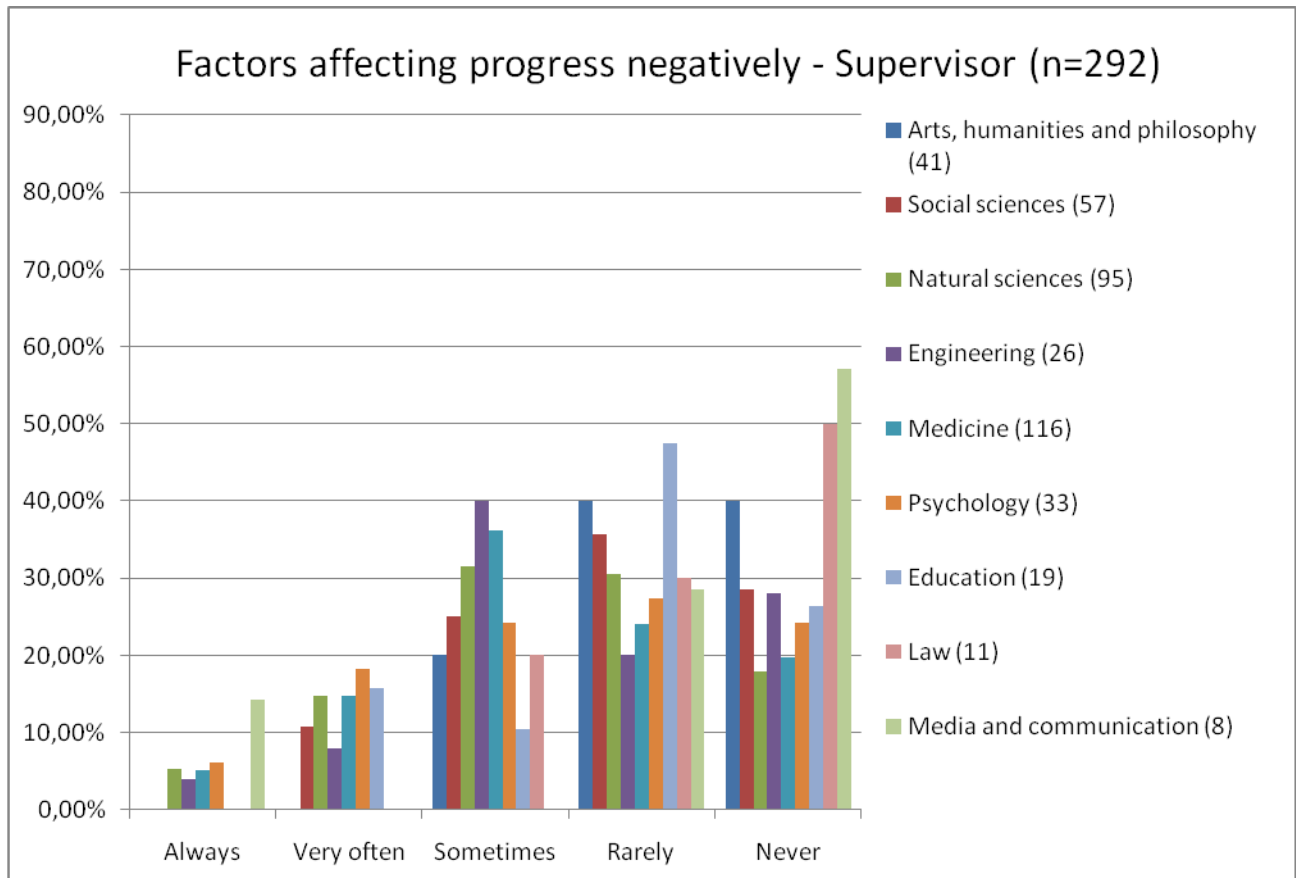
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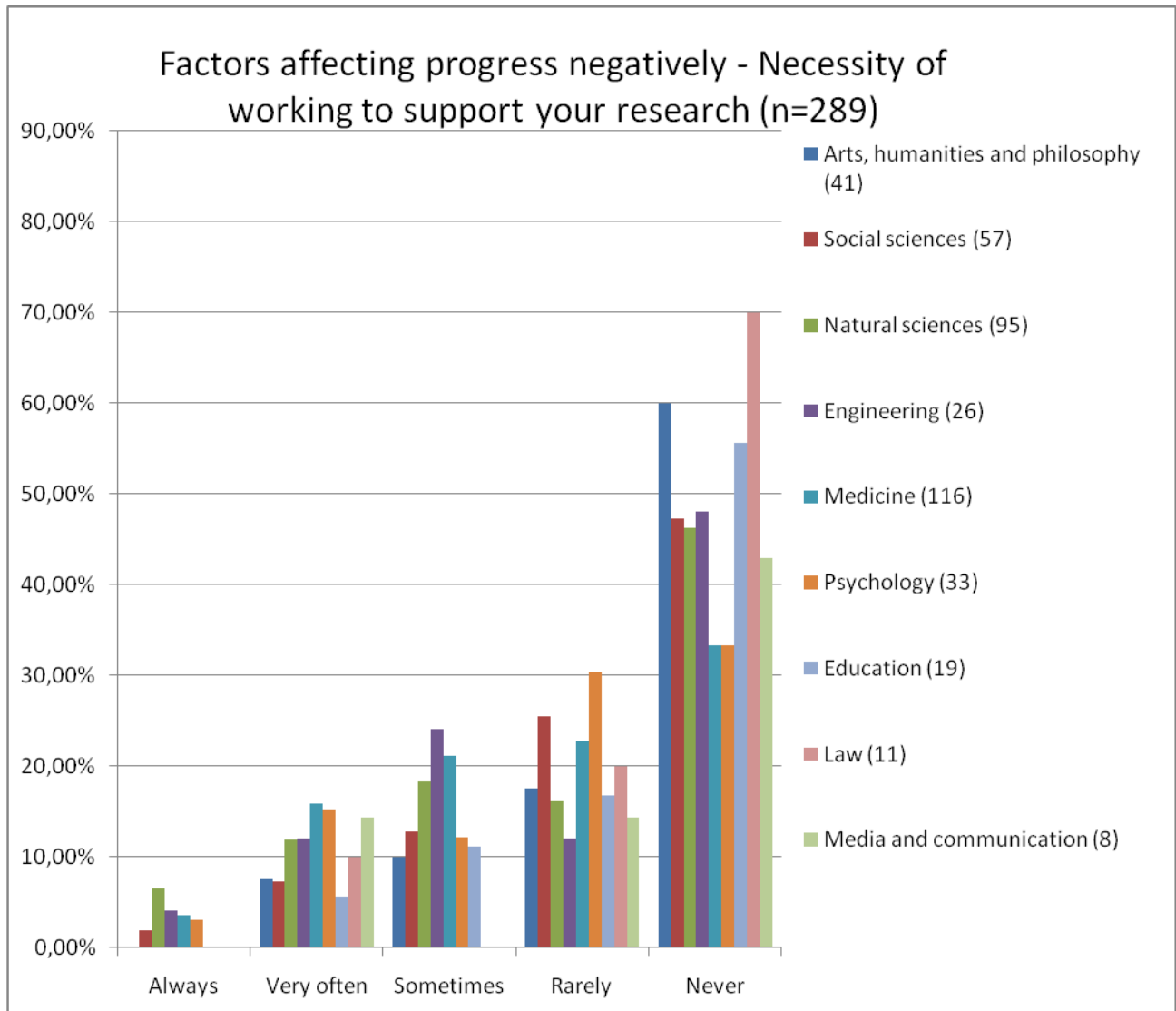
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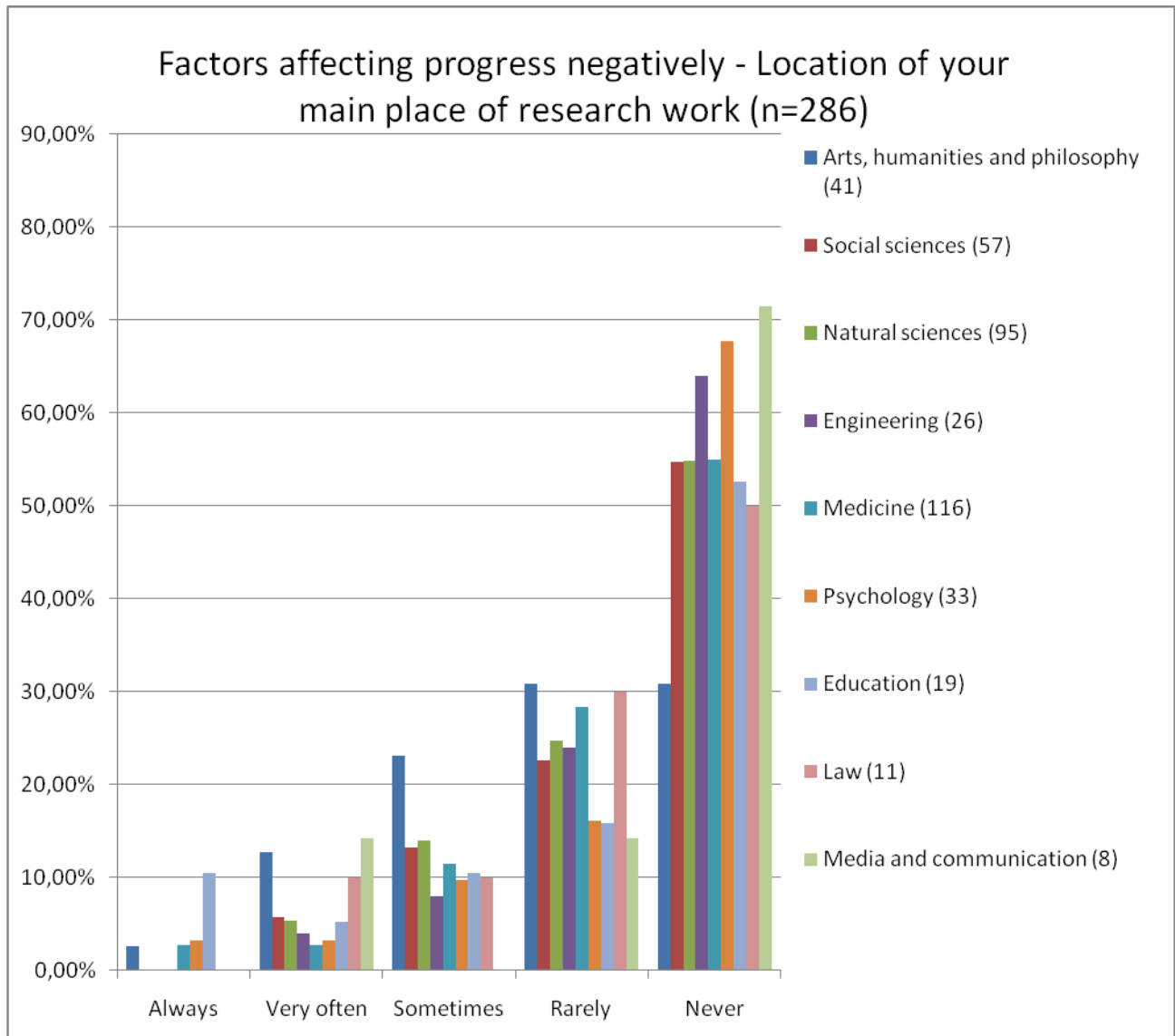


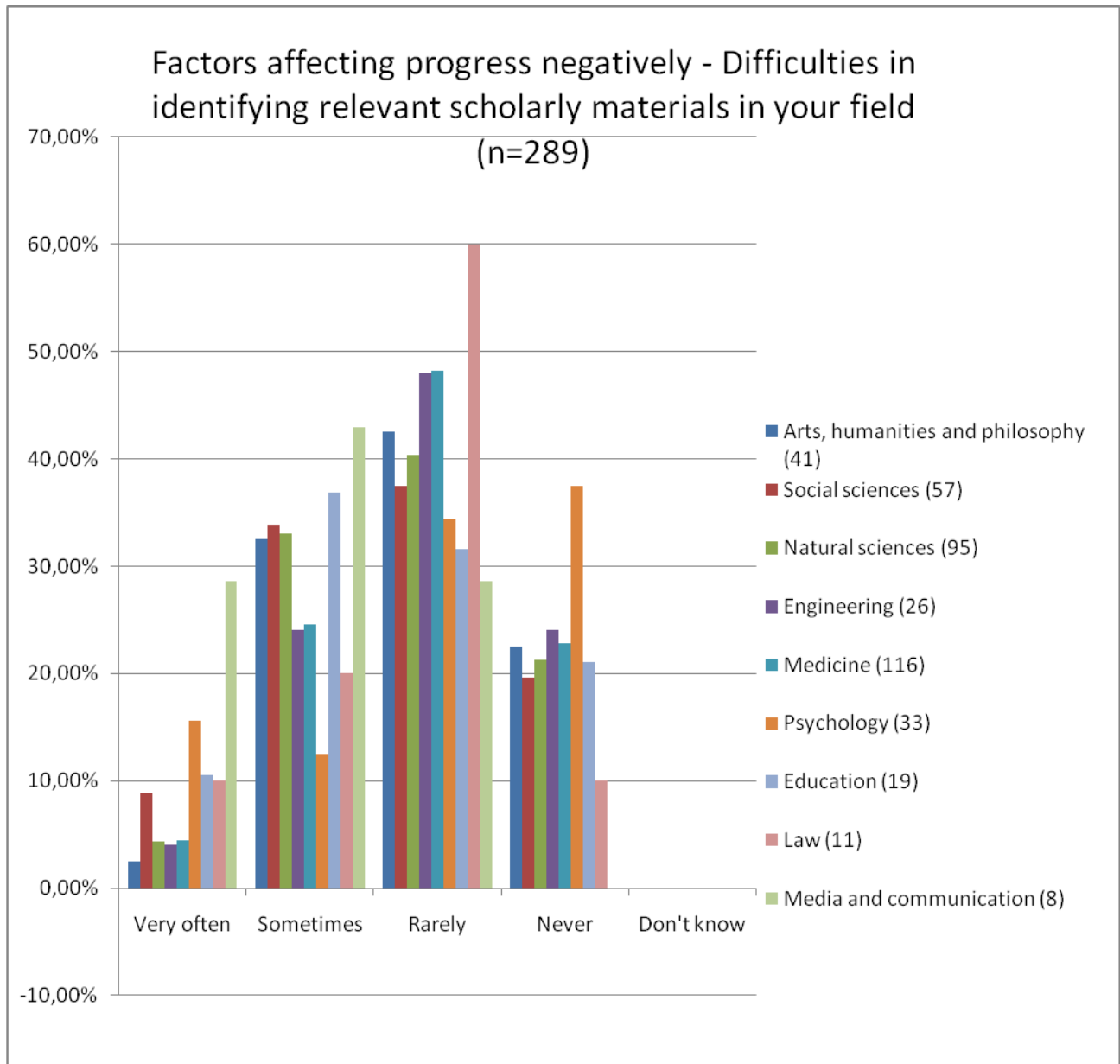


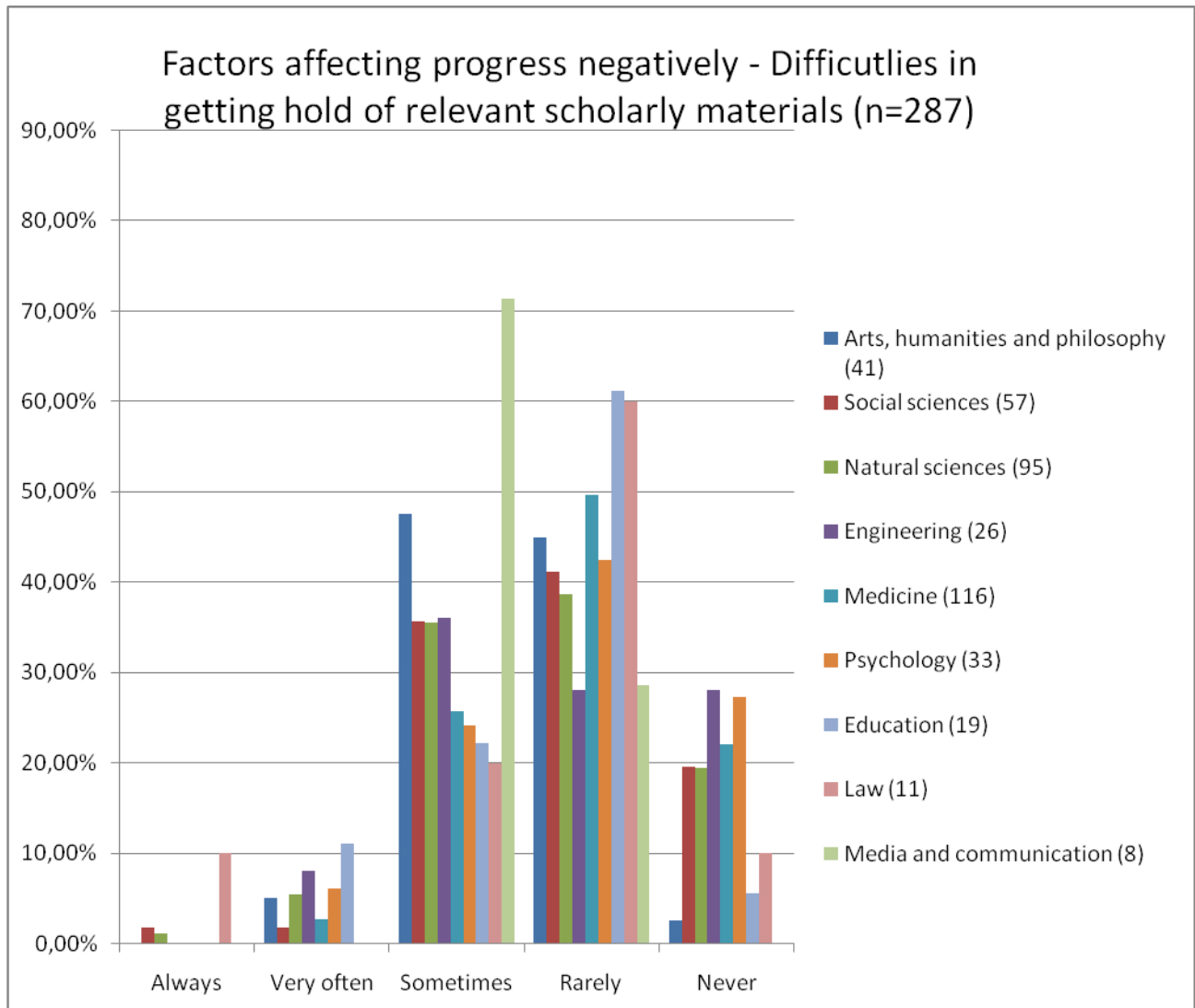


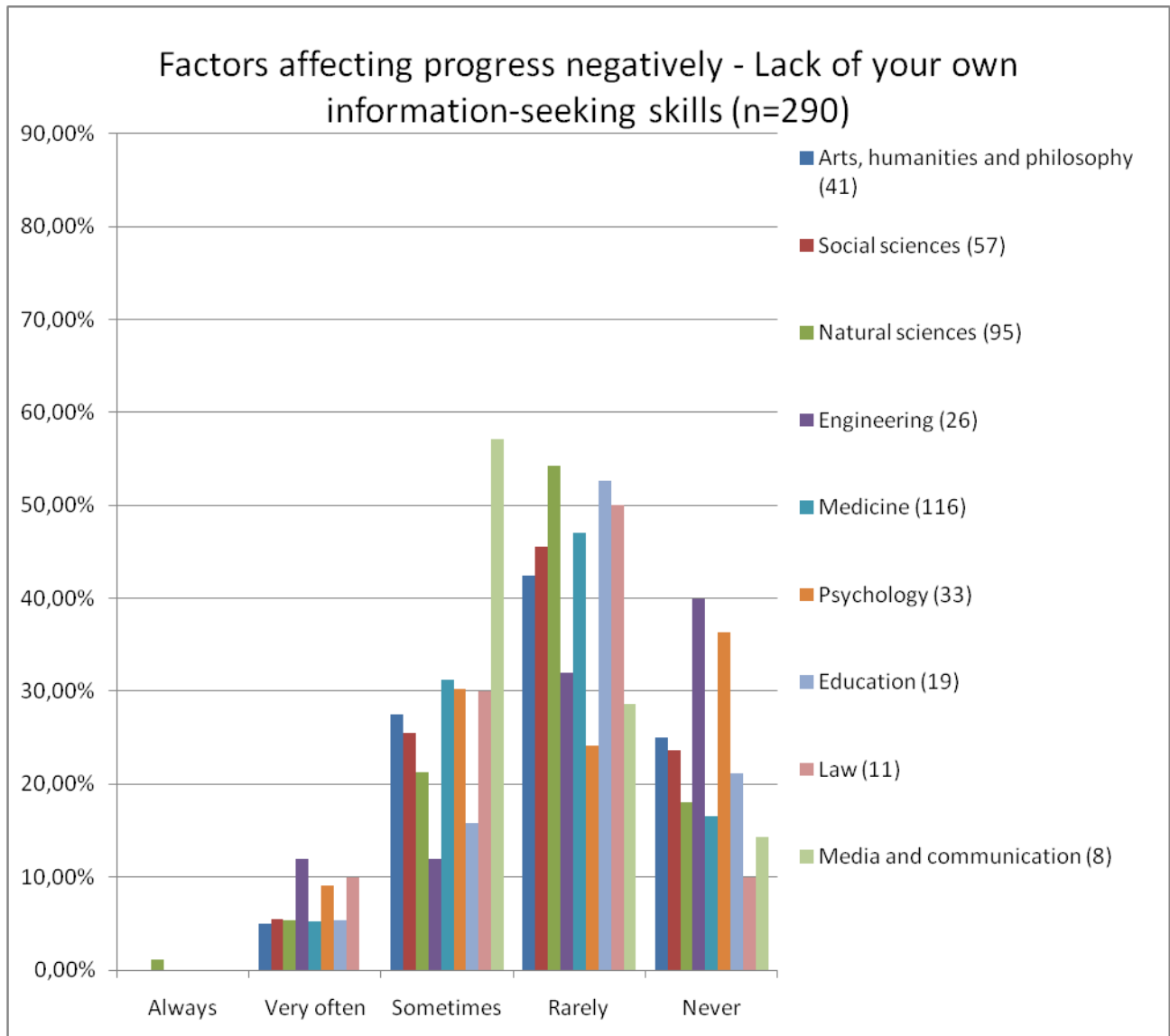


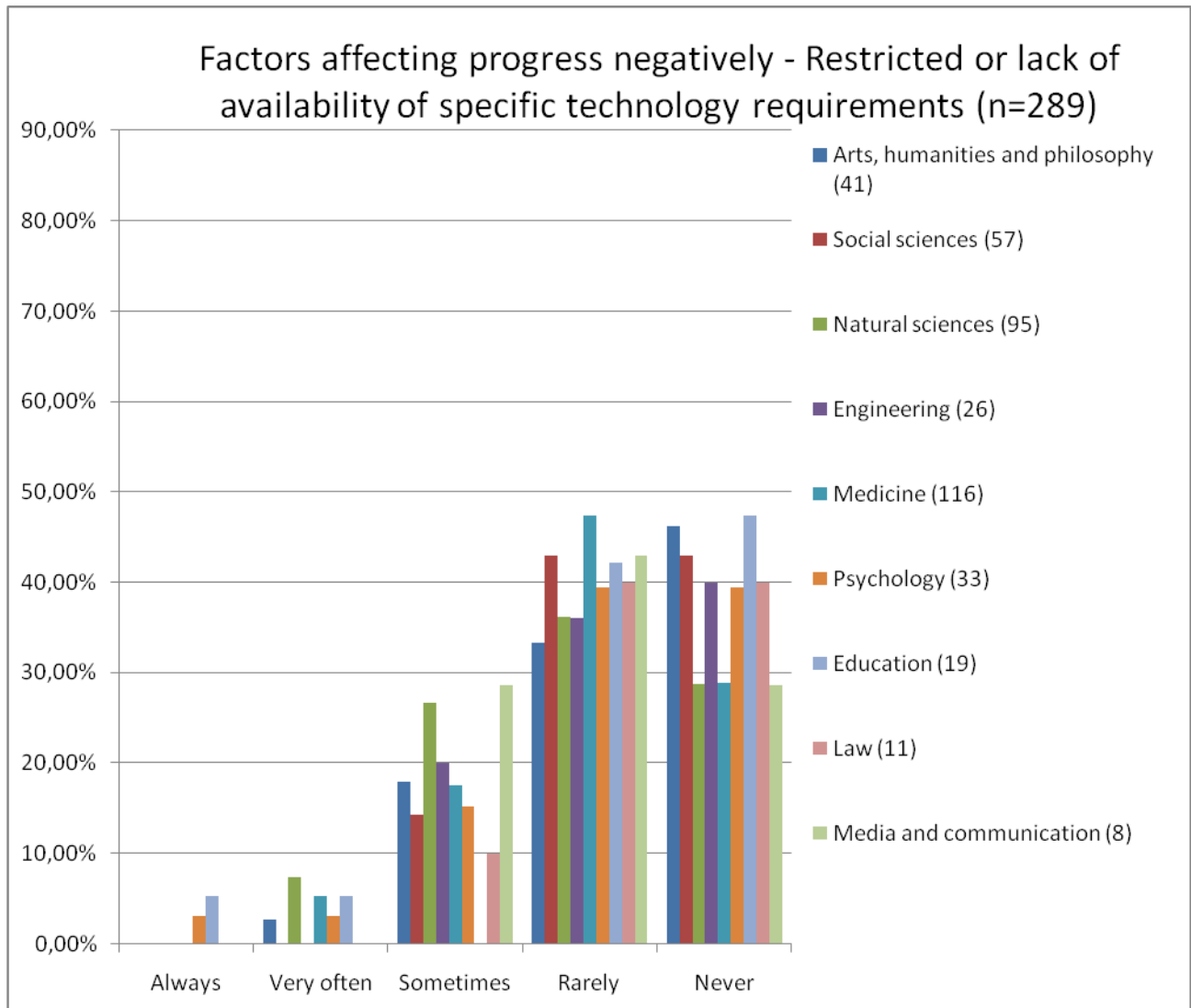


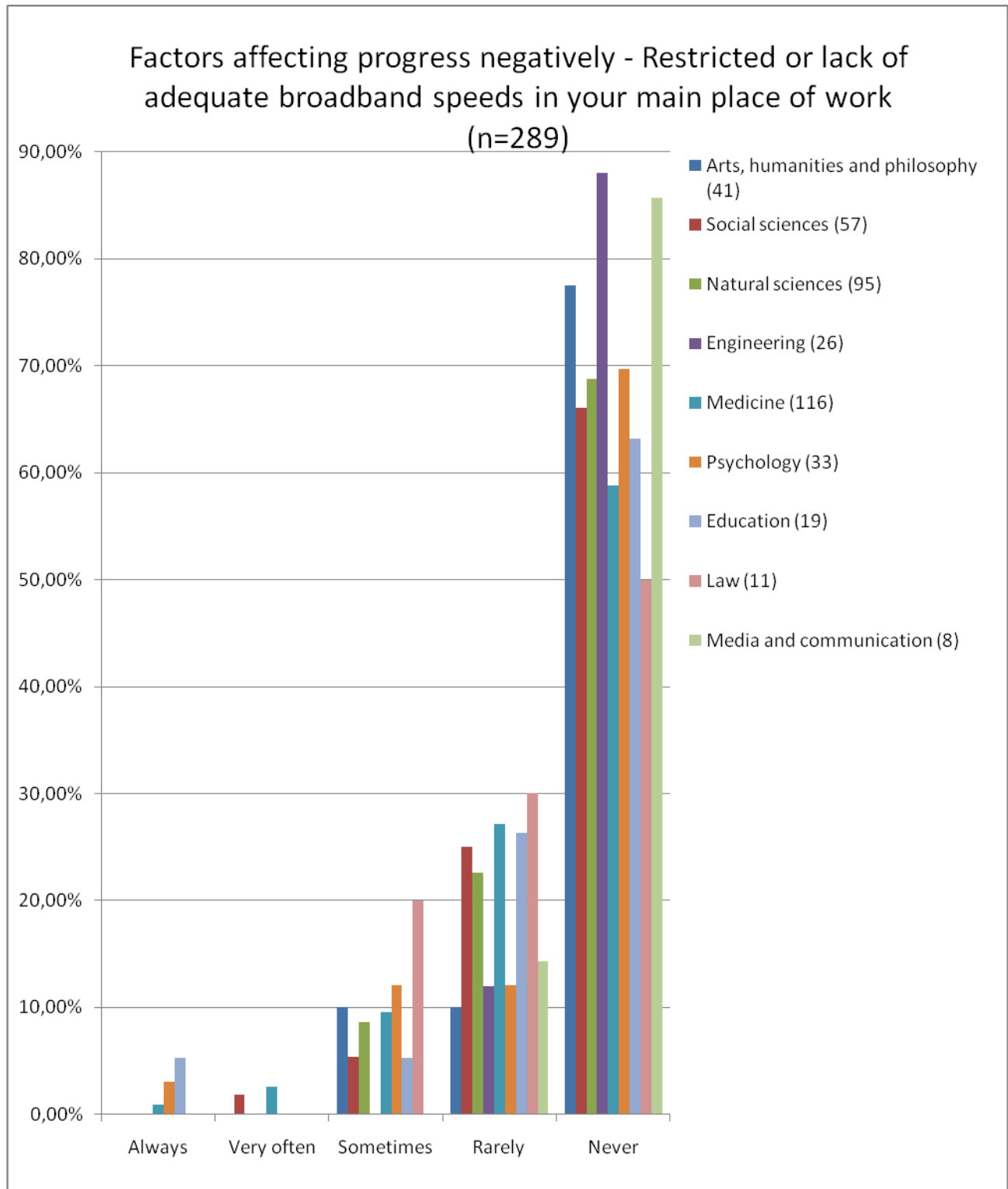


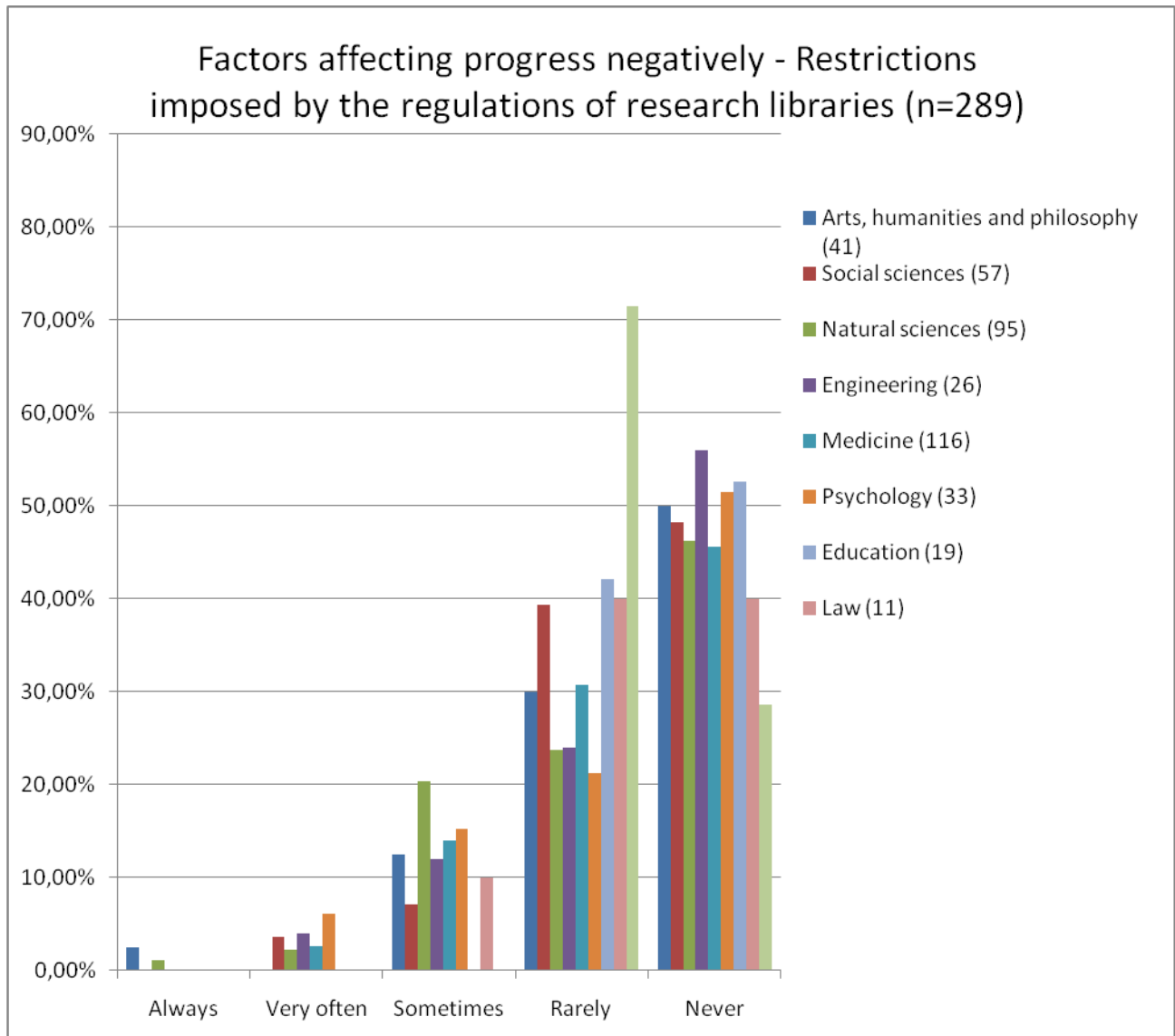


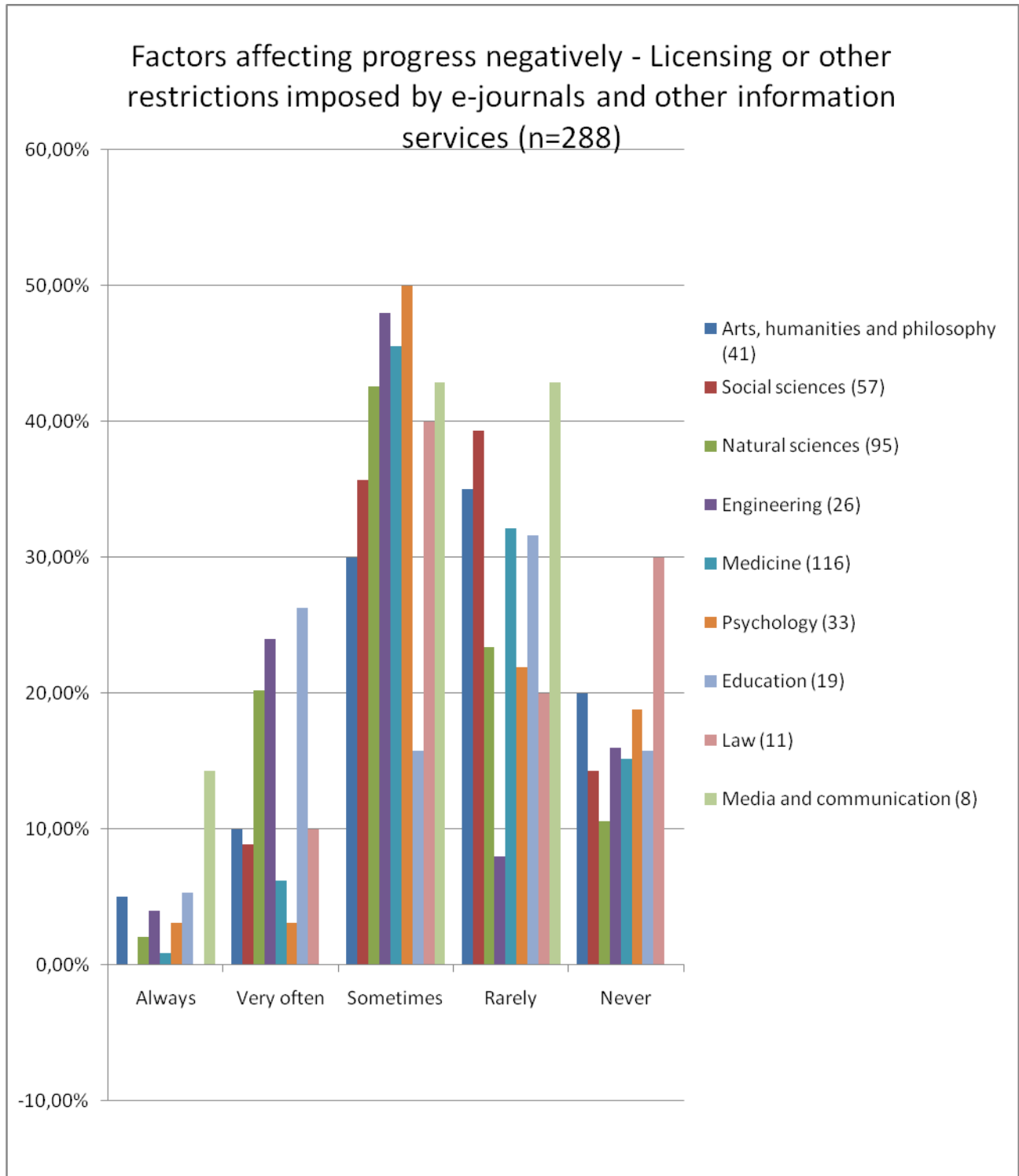




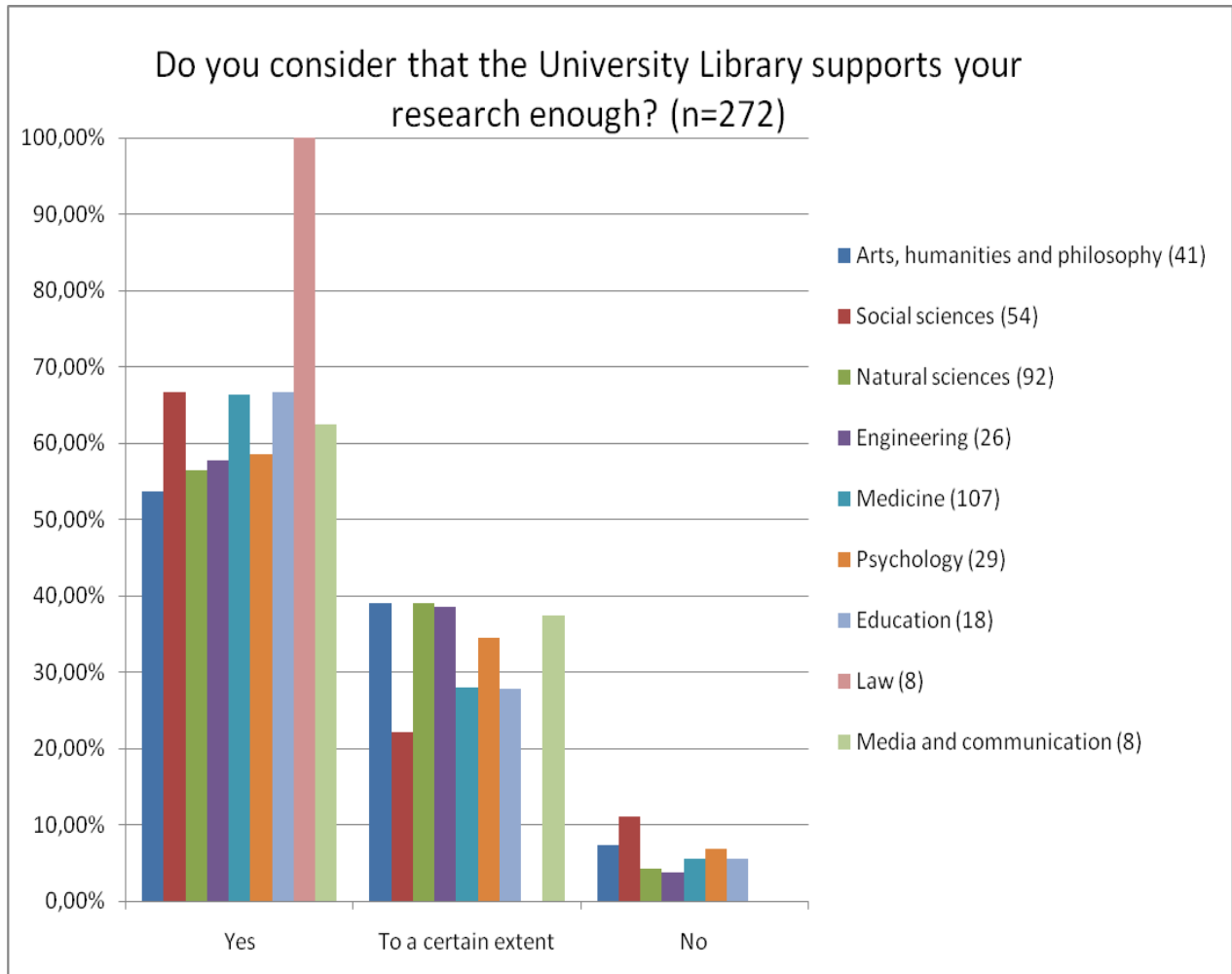




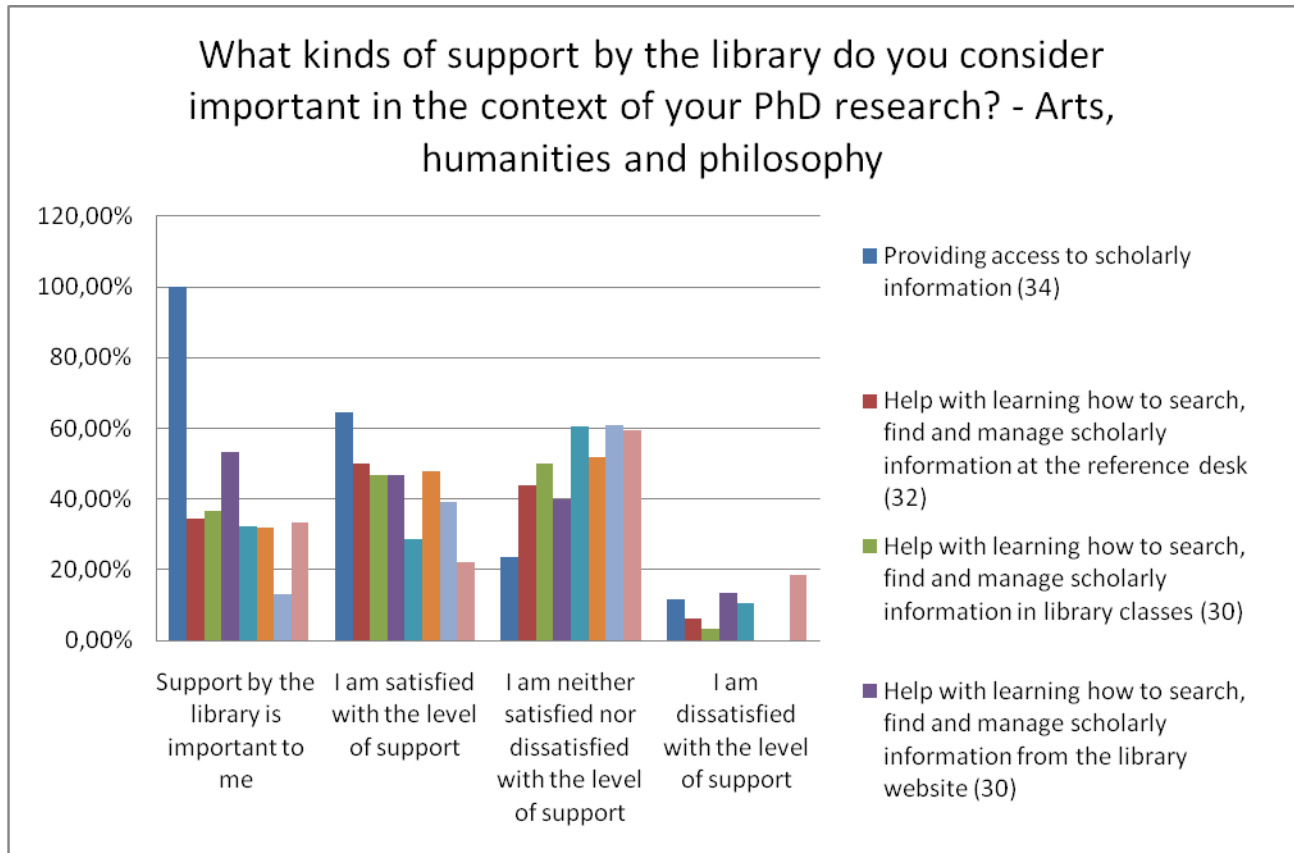


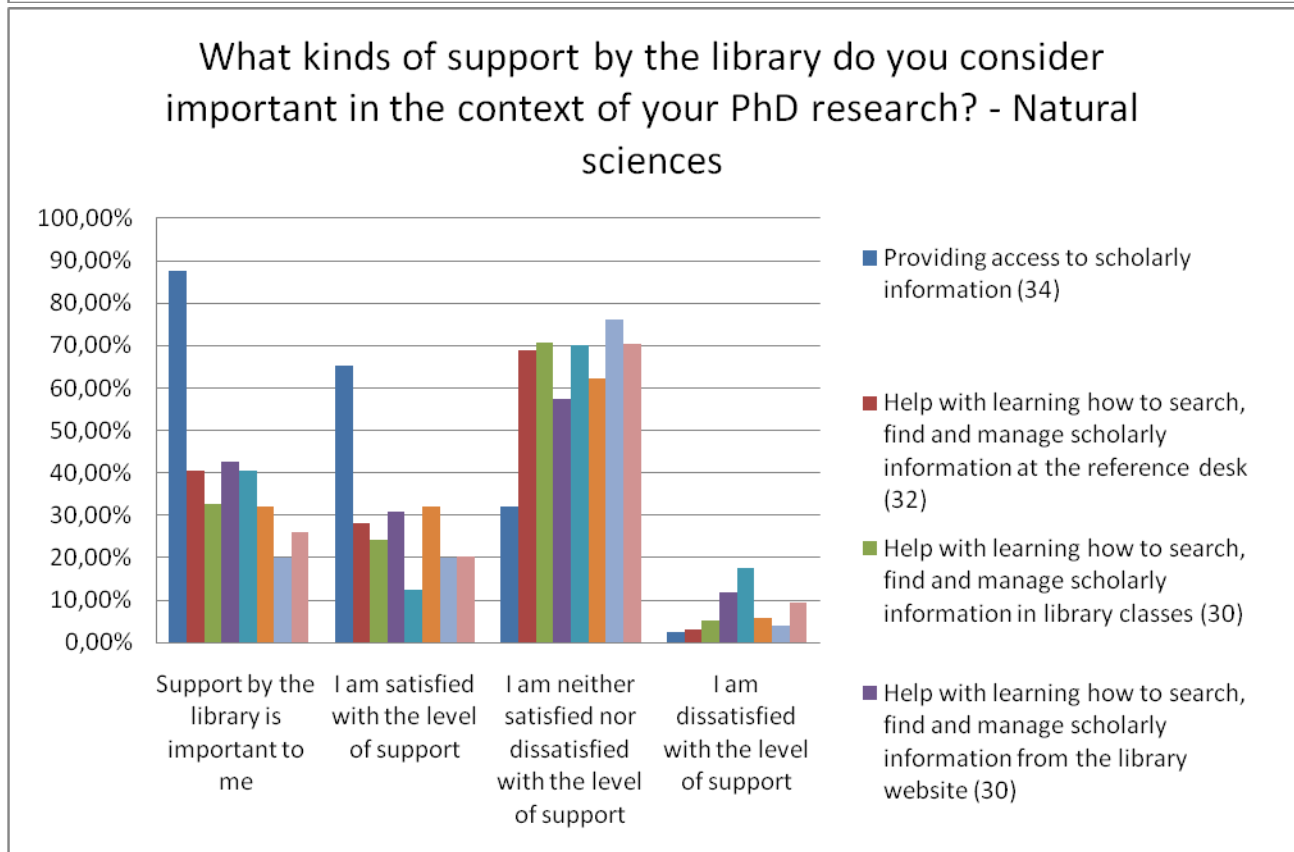
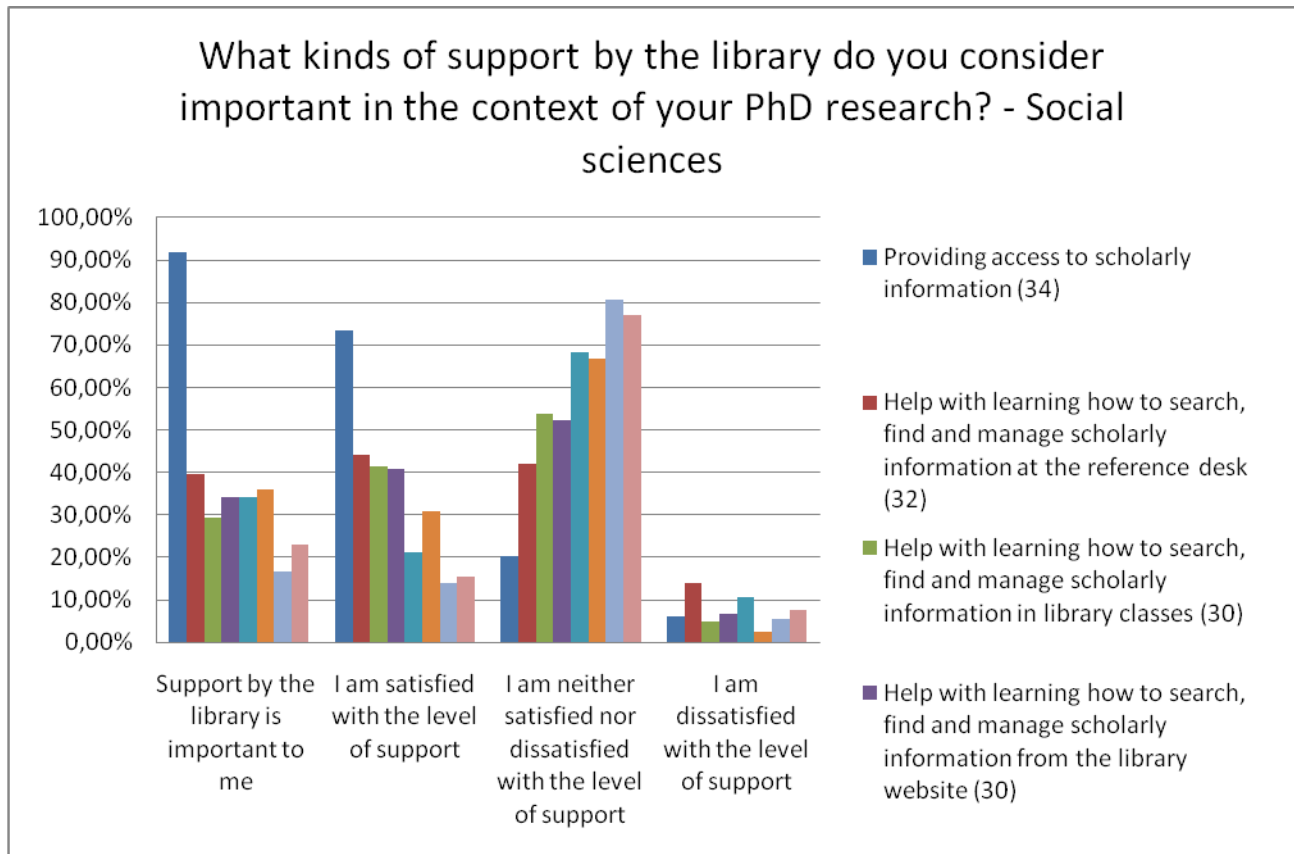


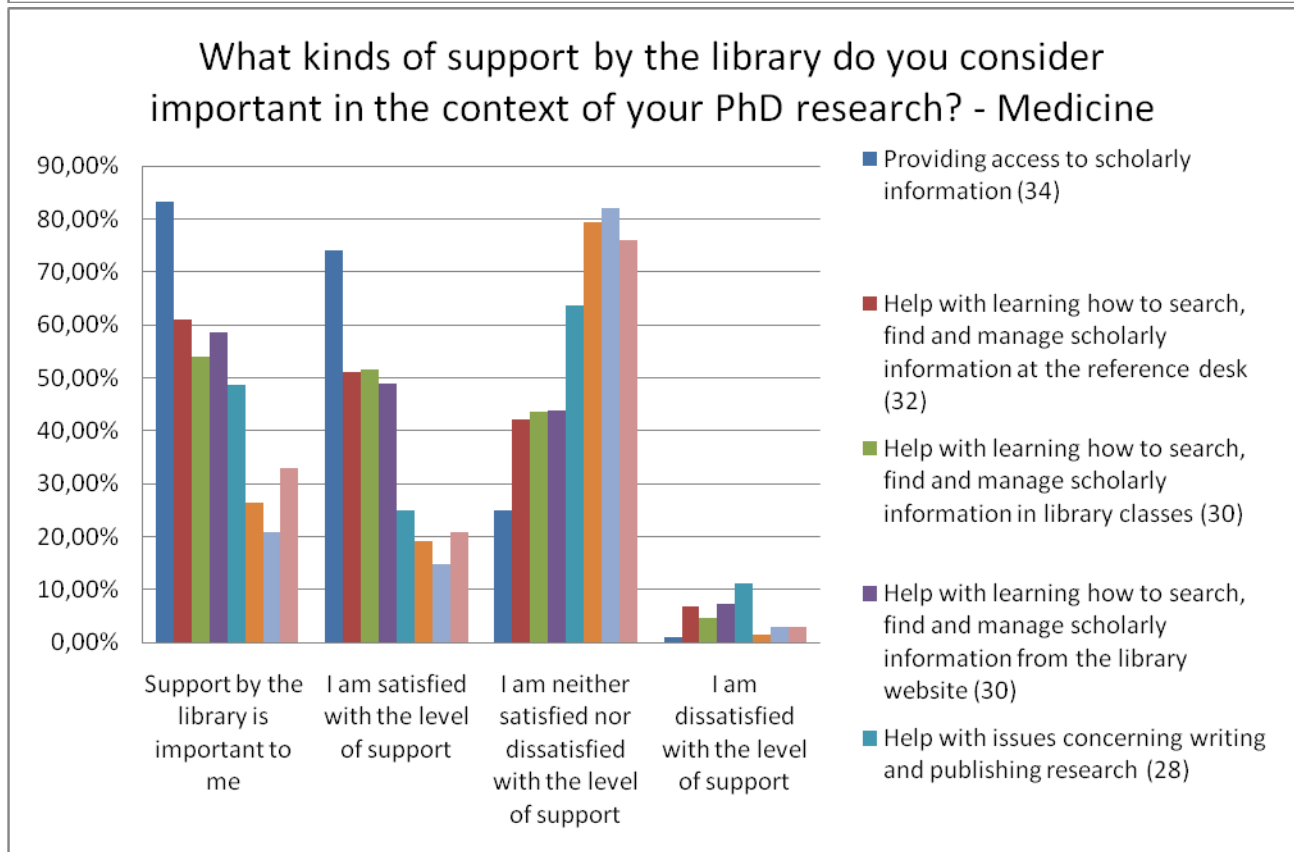
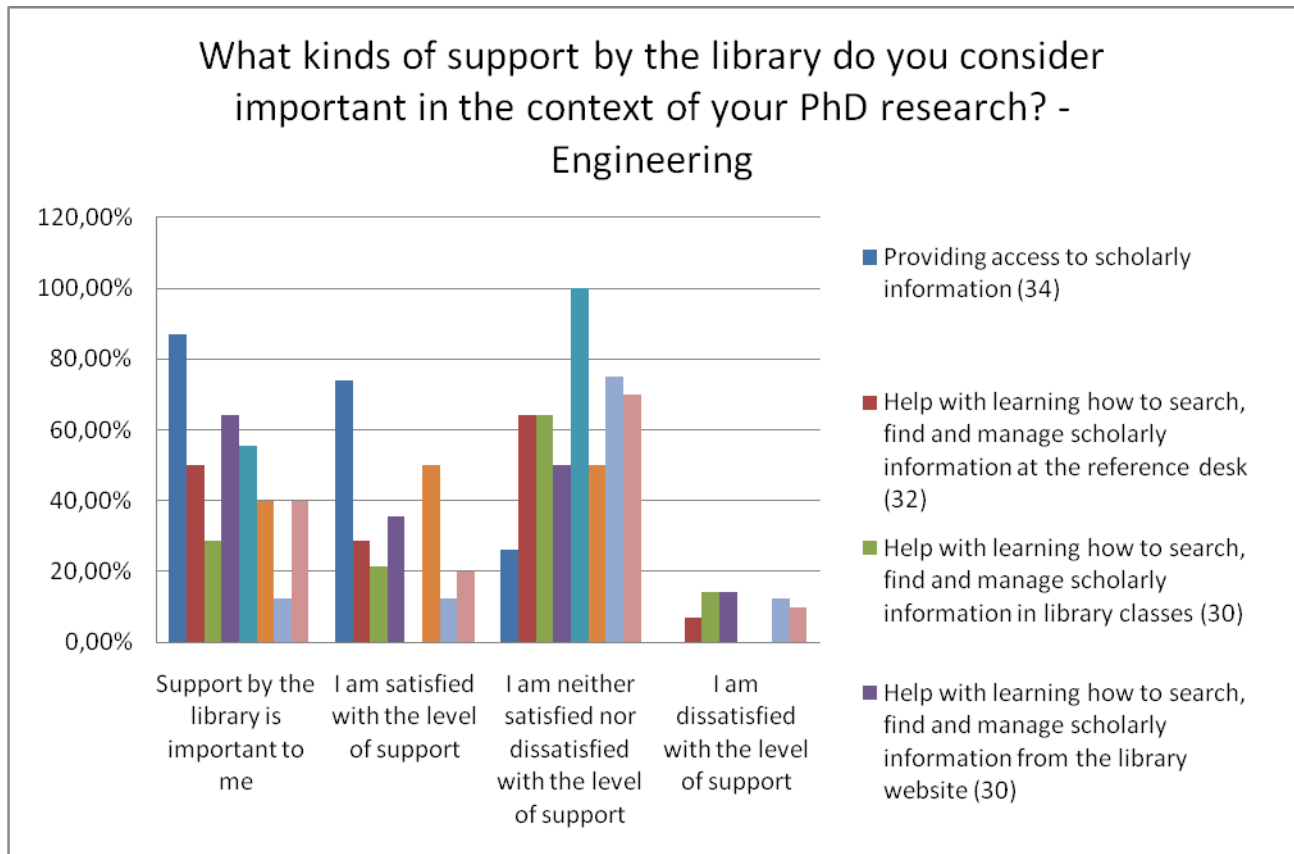
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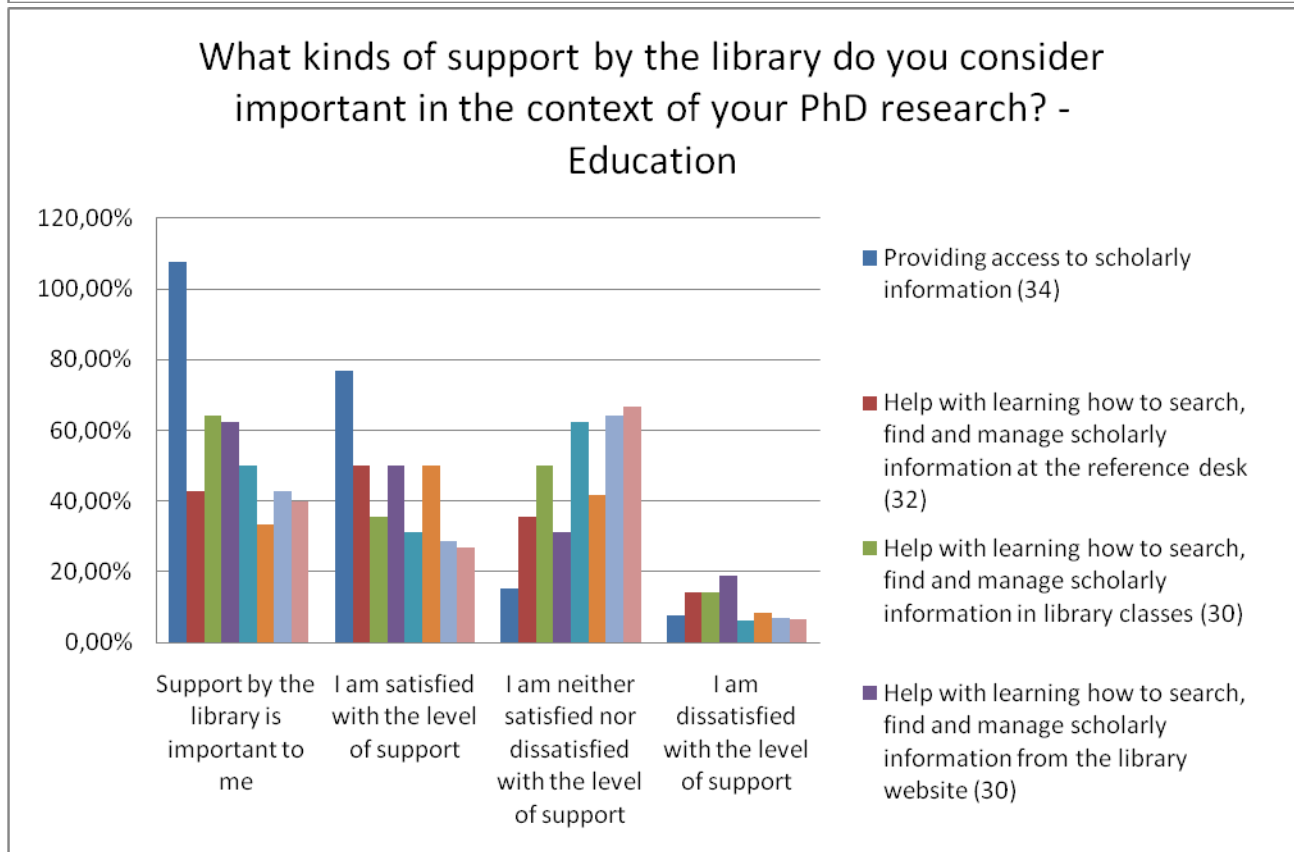
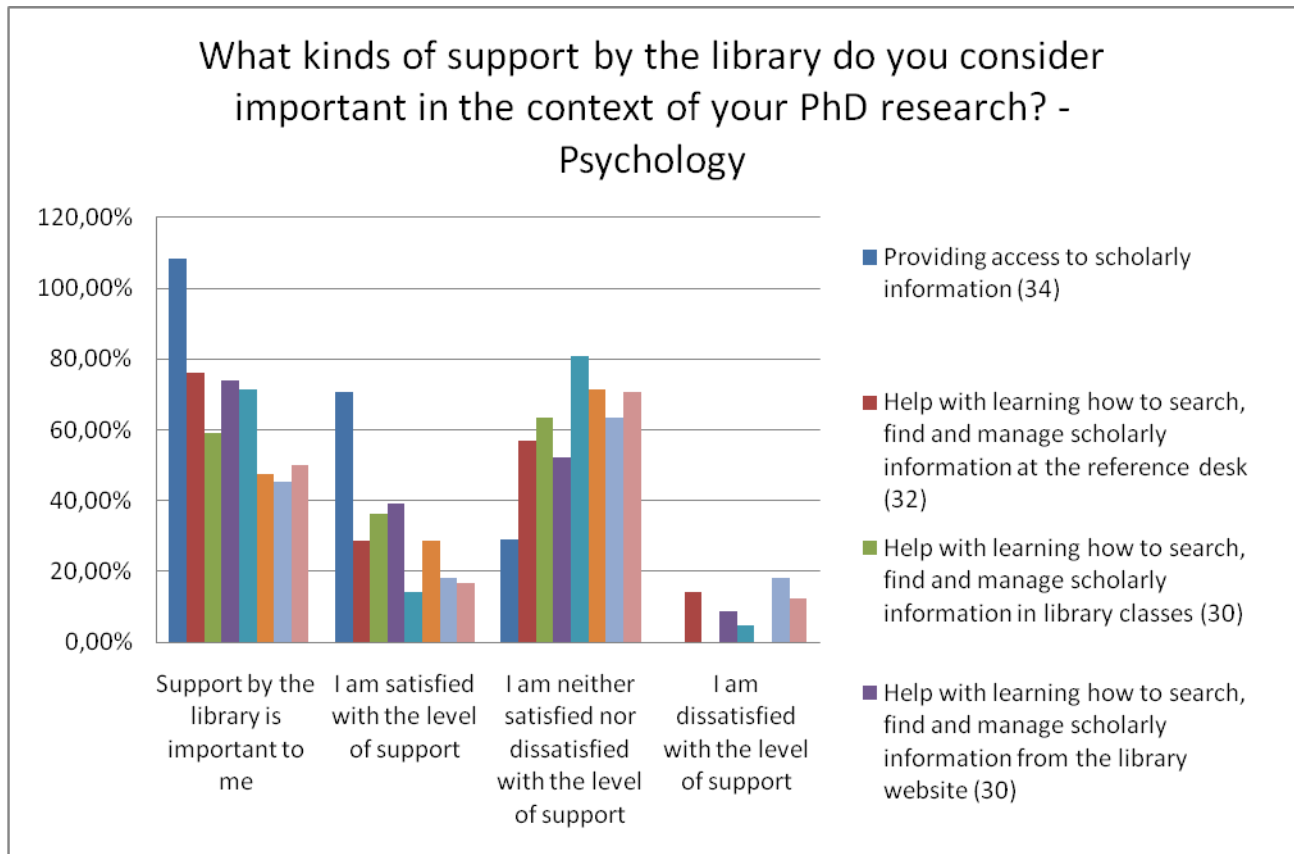


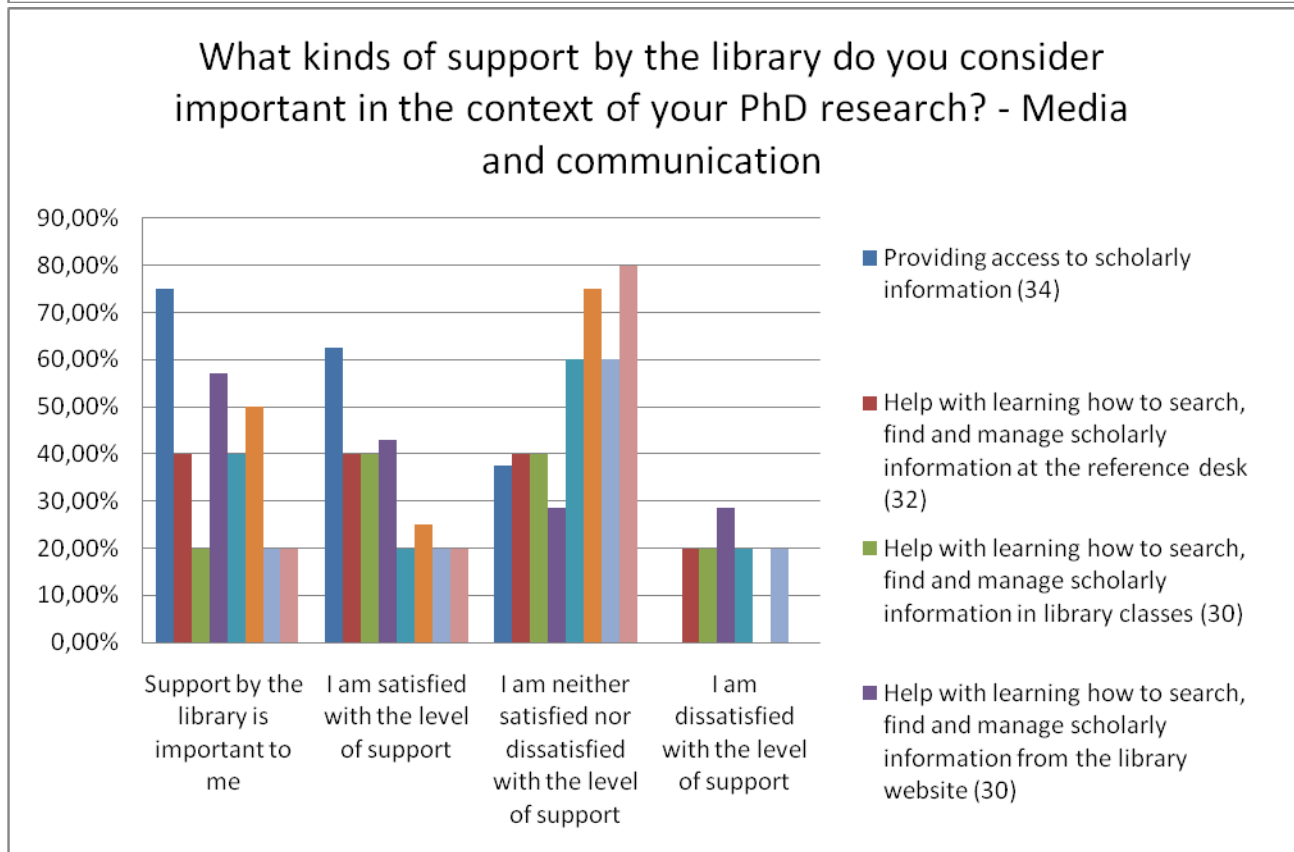
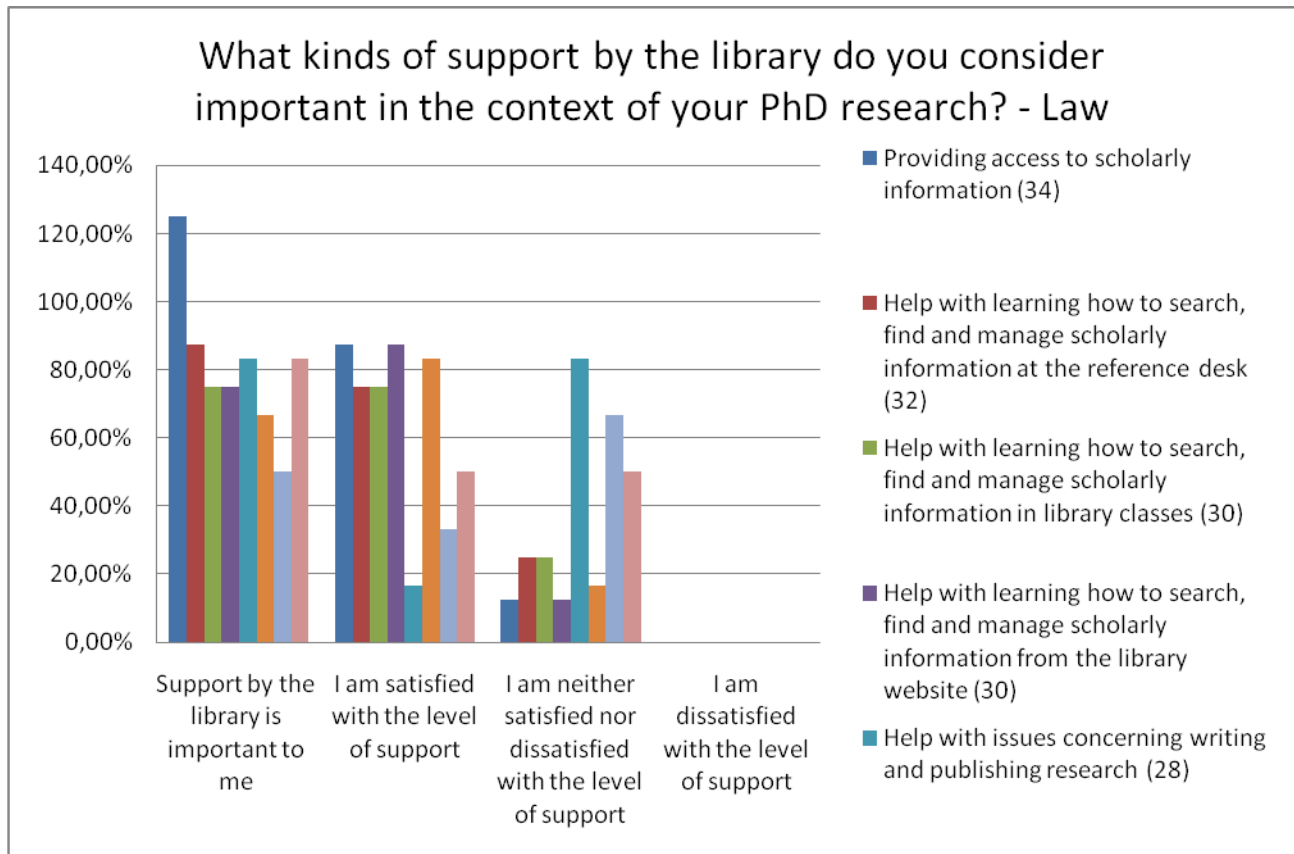
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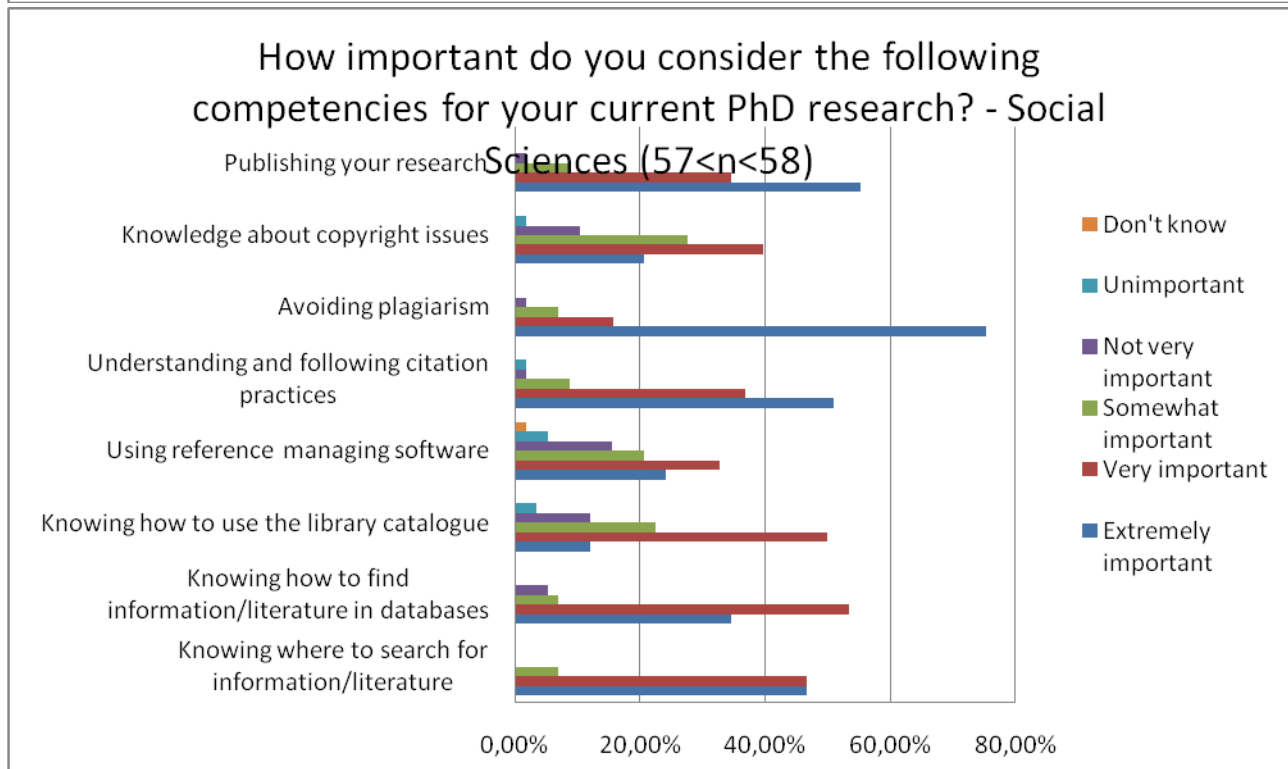
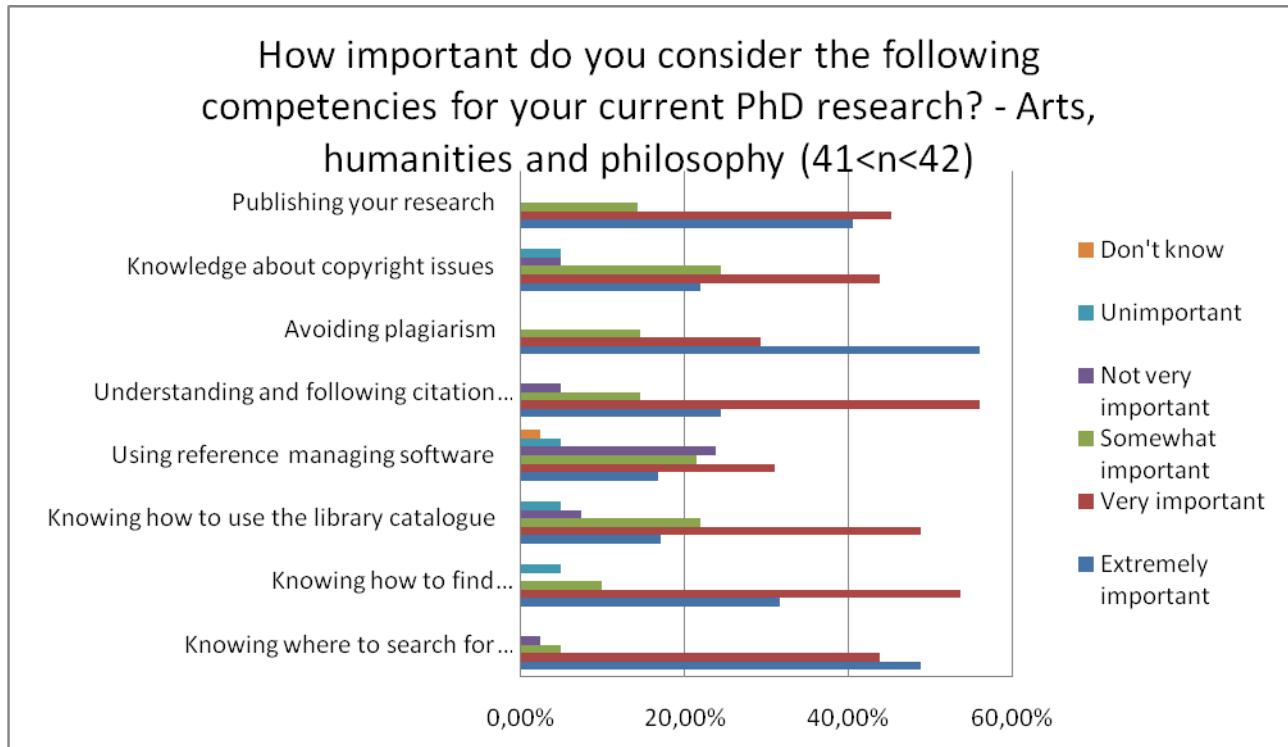


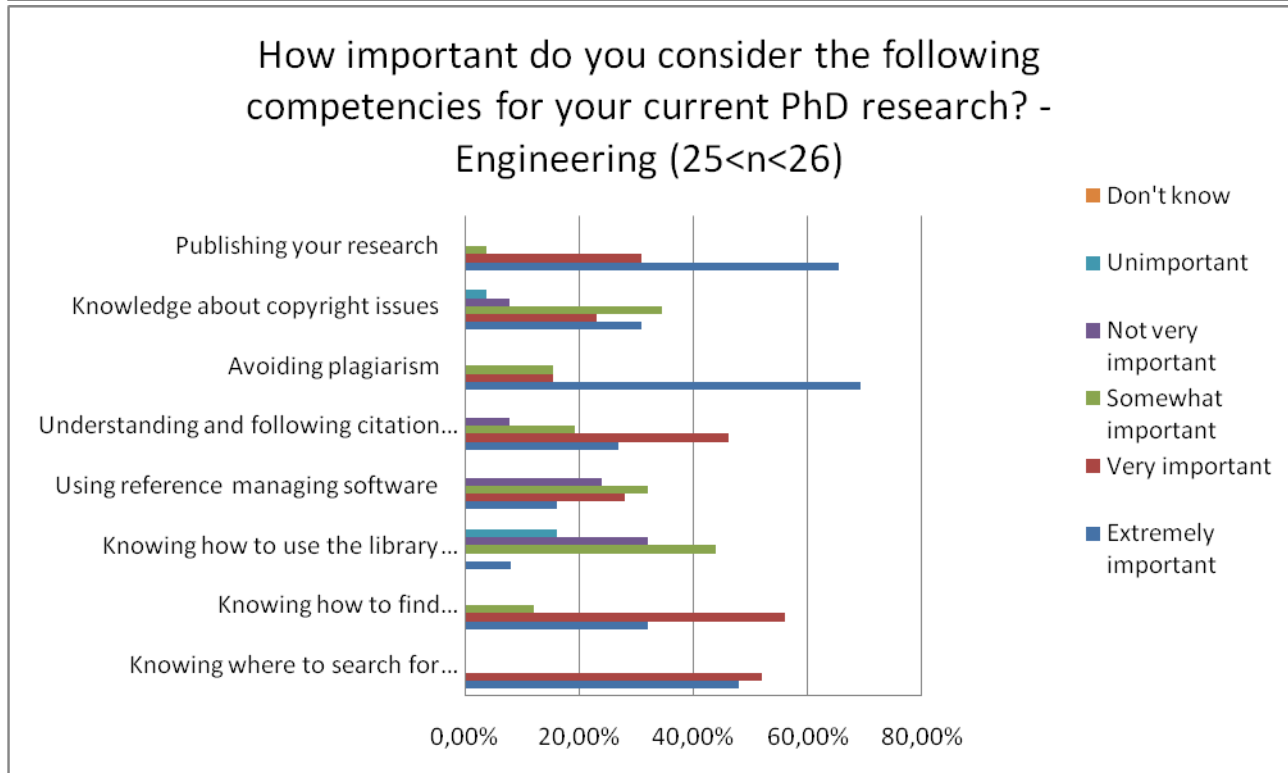
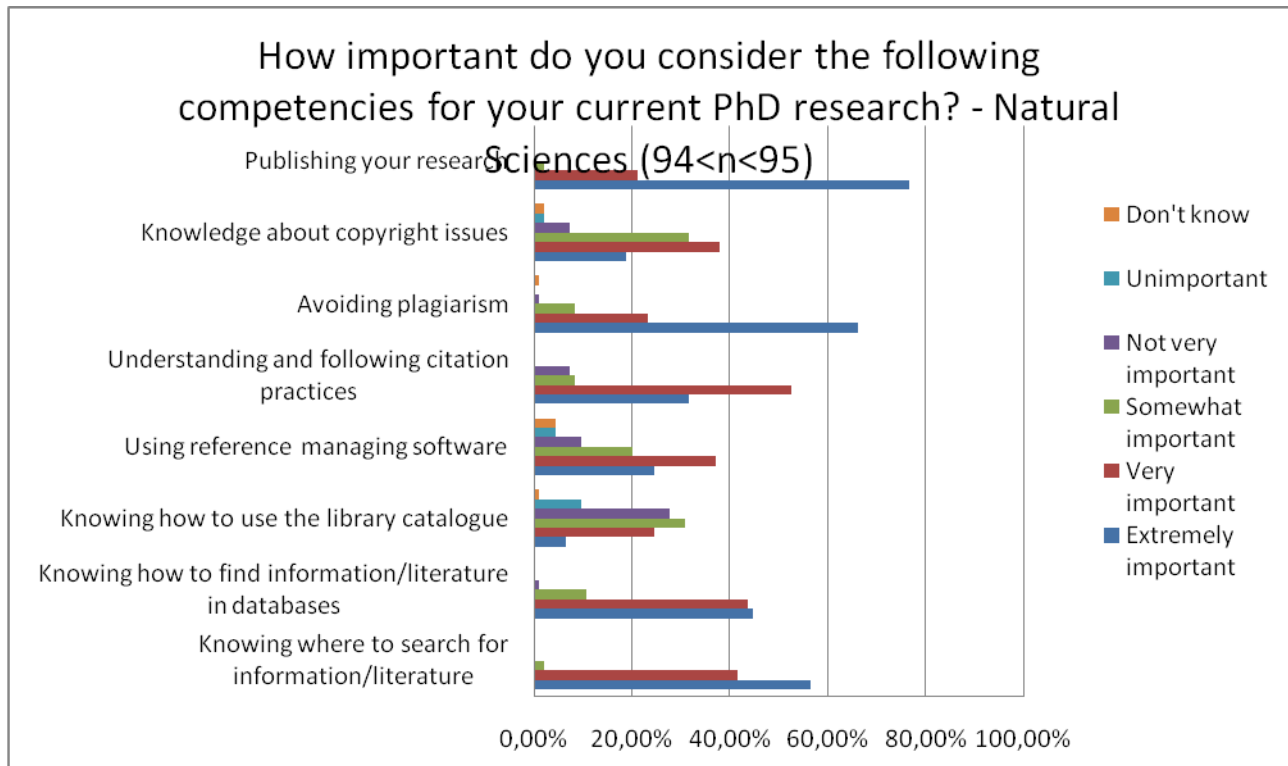


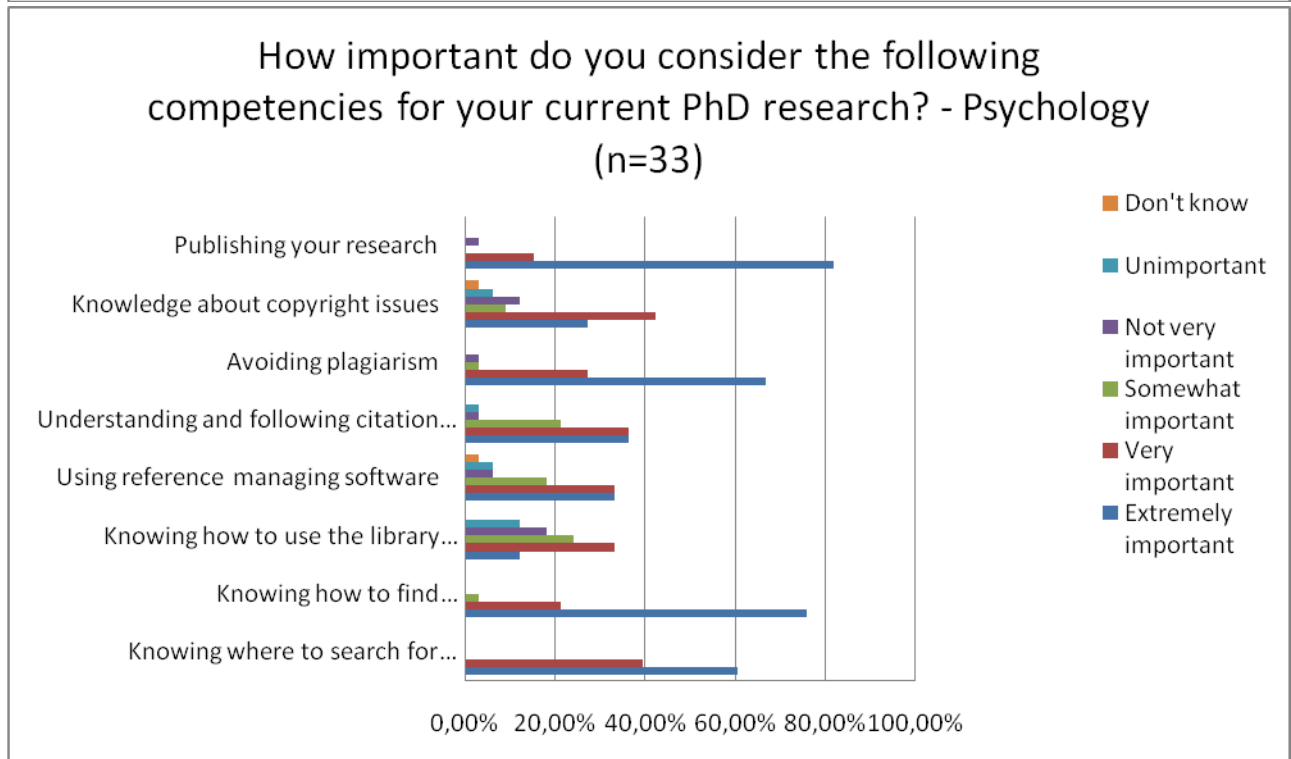
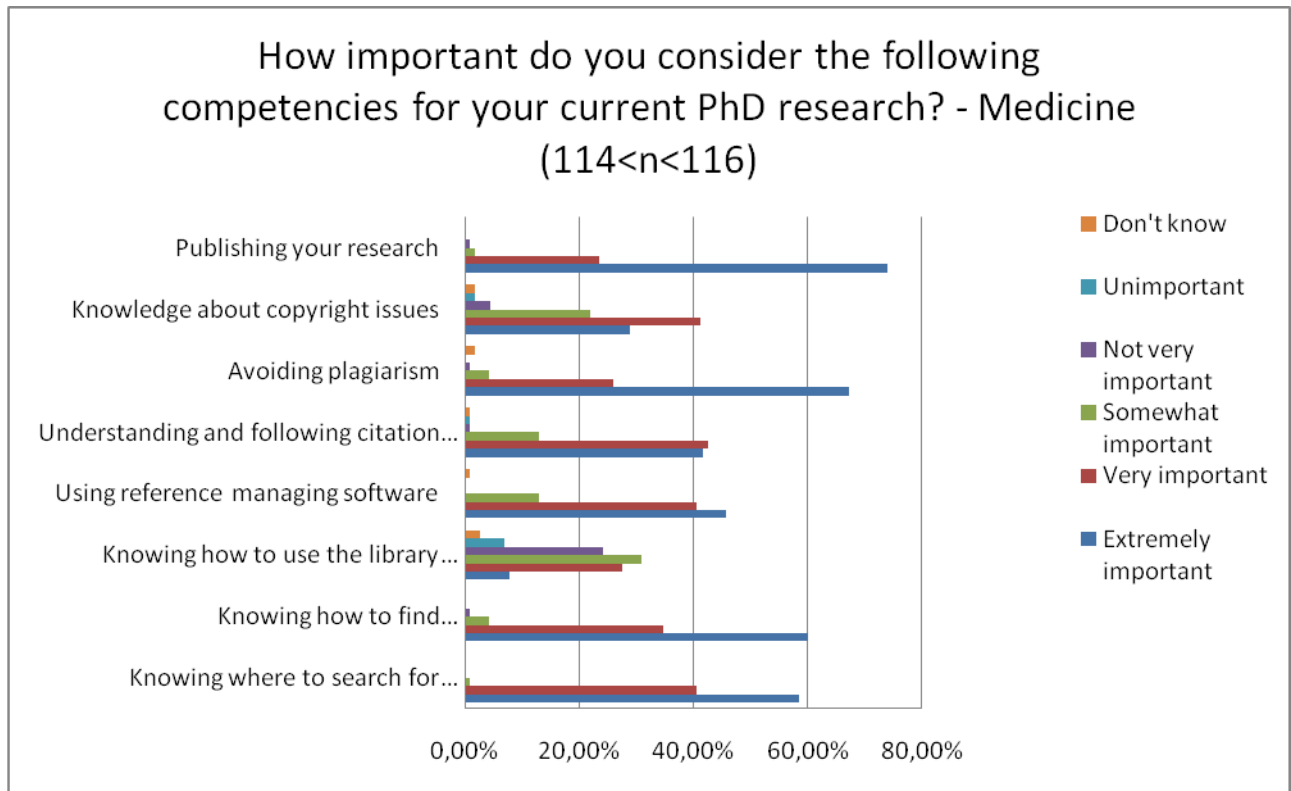


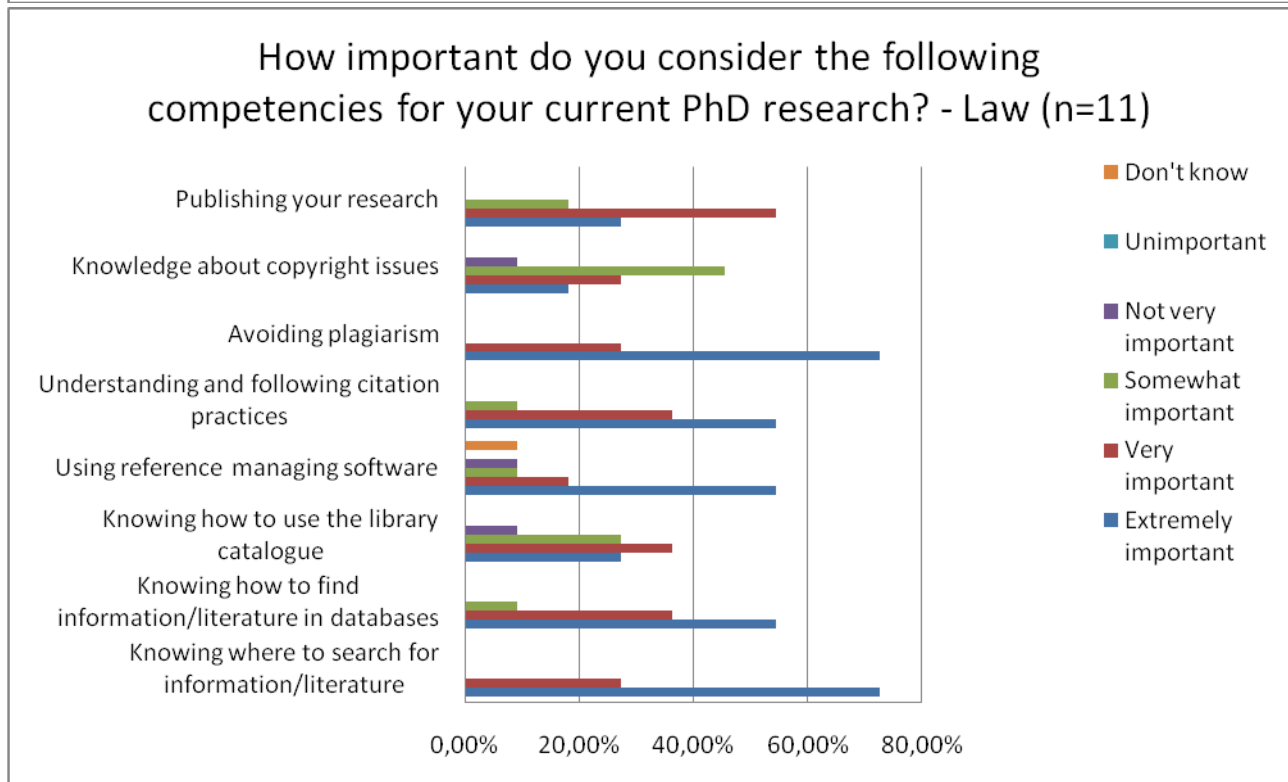
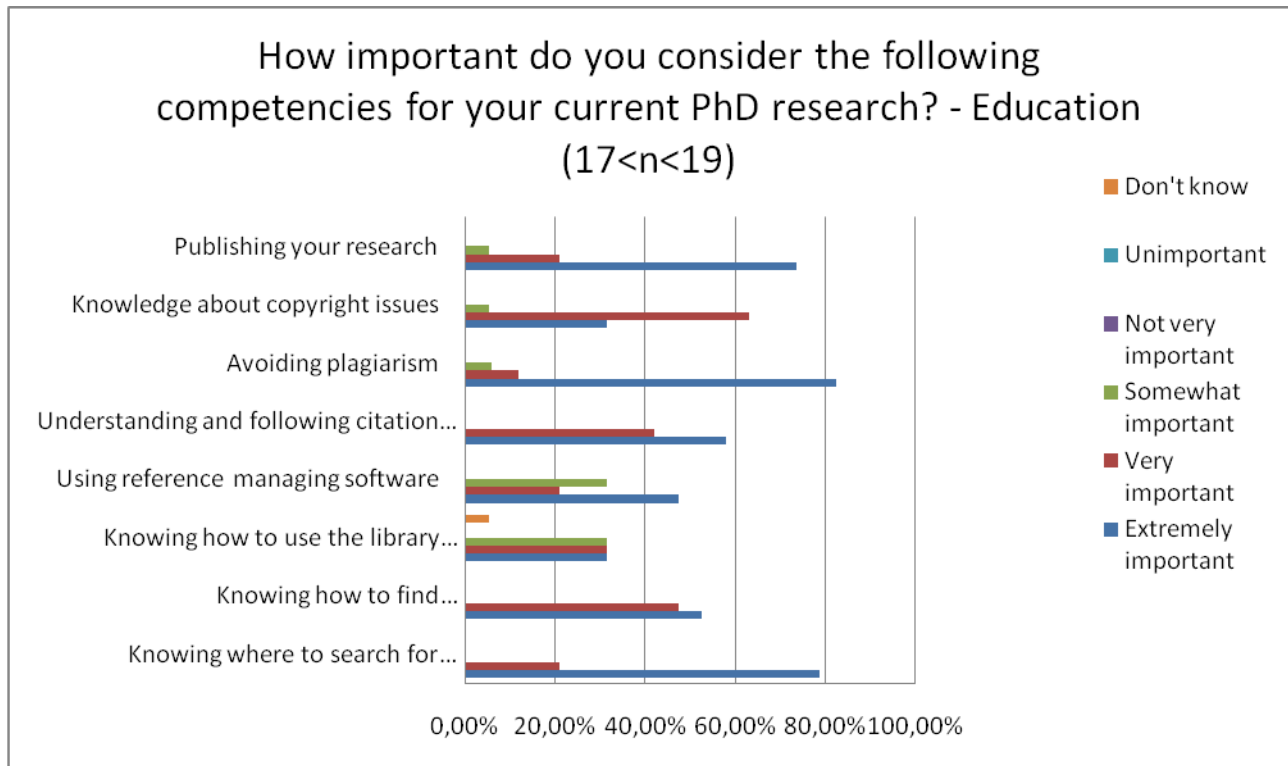


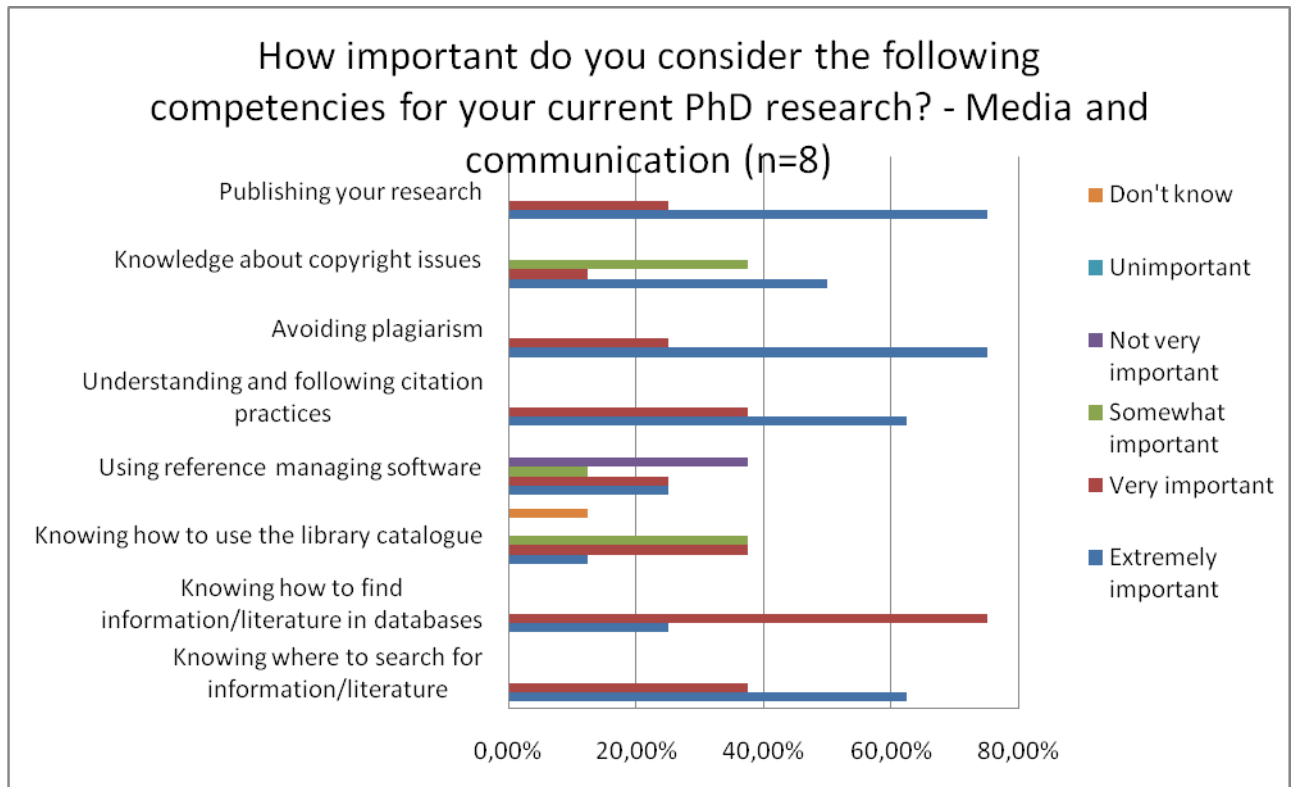
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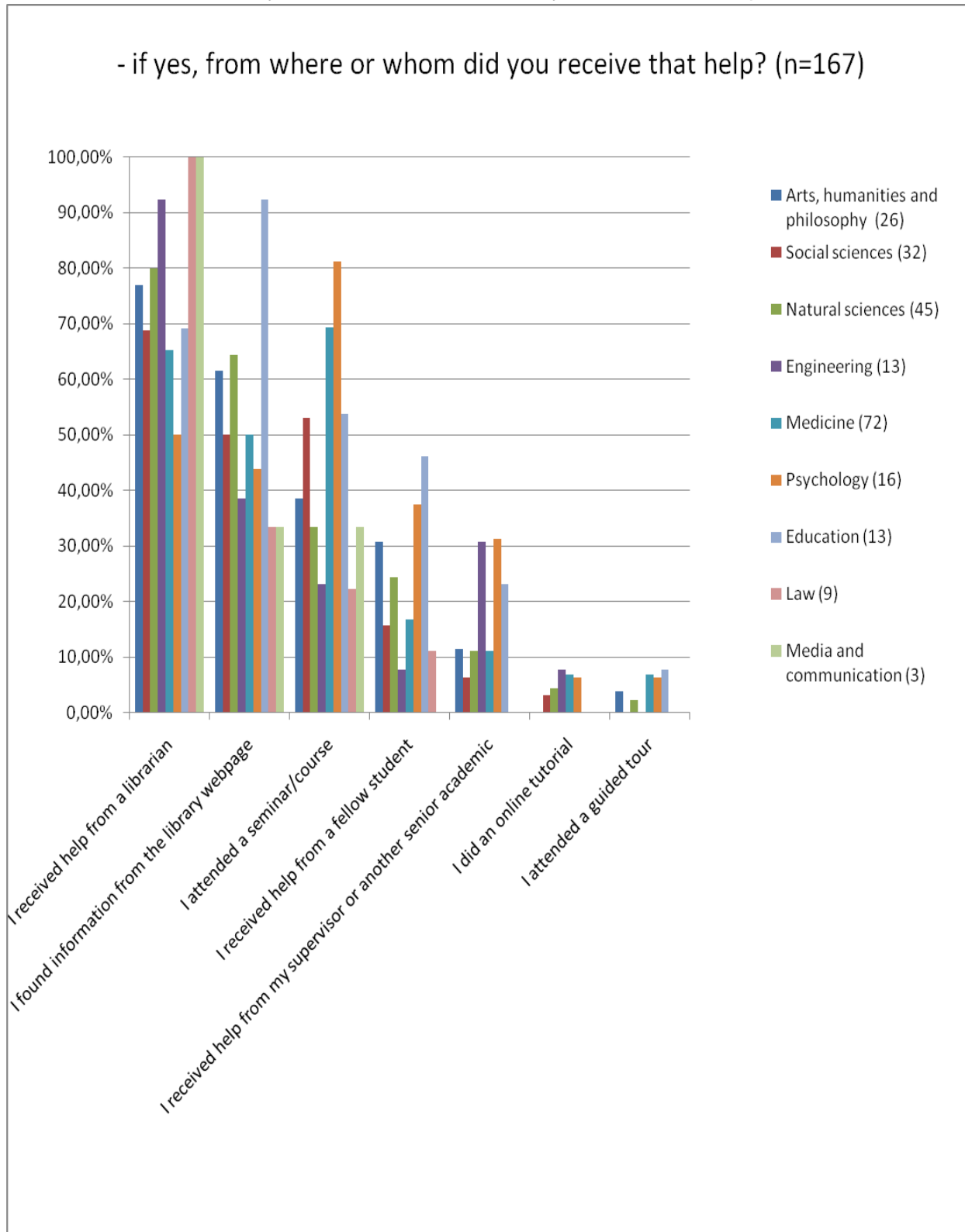




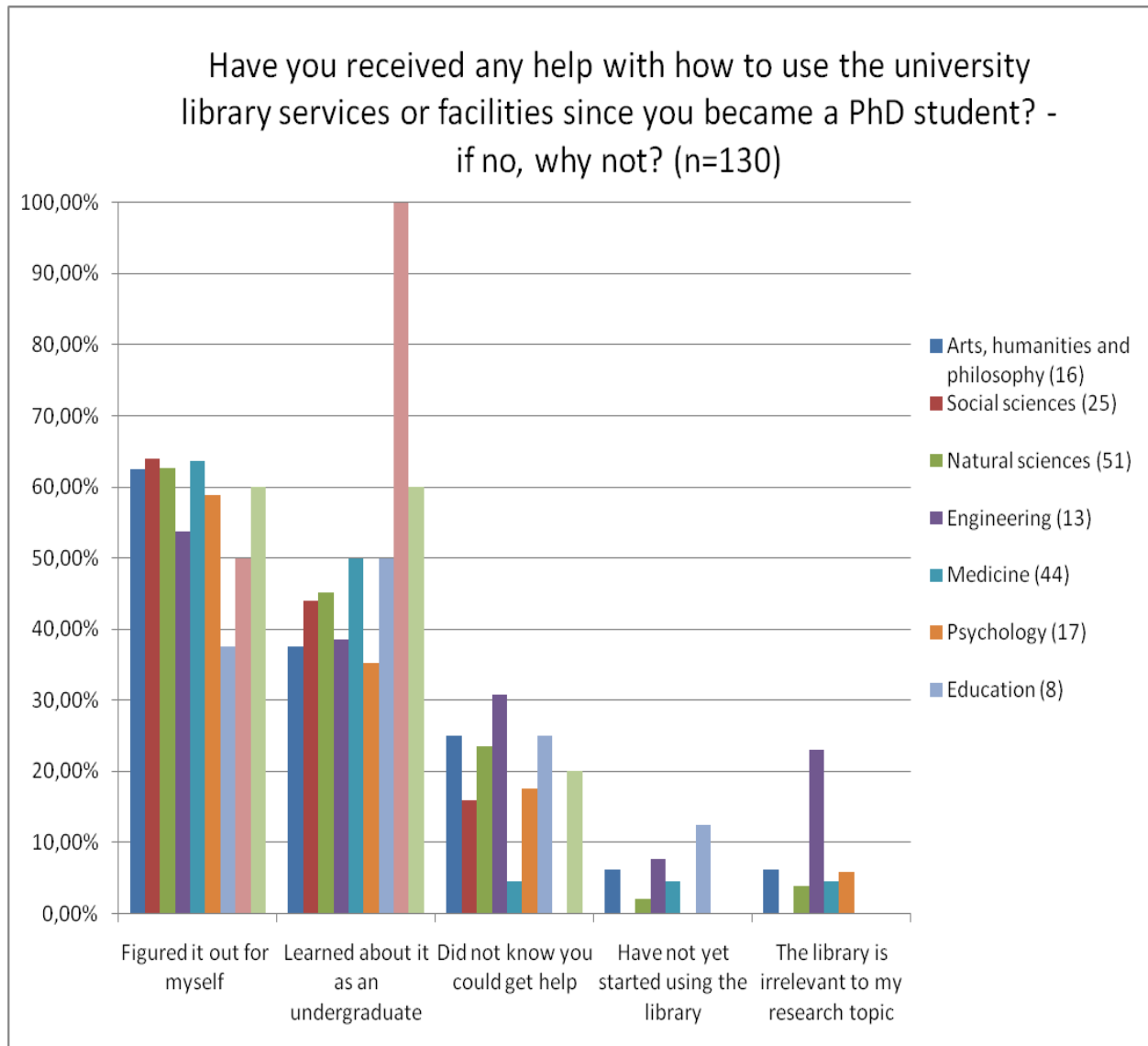


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Have you received any help with how to use the university library services or facilities since you became a PhD student?if yes: Where or from who did you receive that help?



No e5 f7 u



Appendix B. Textual analysis of the survey responses

Questions selected for analysis are listed along with the corresponding observations. Textual analysis is excluded for responses with a percentage based on fewer than 6 respondents.

Questions relating to methods

A2 How do you usually become aware of literature for your research?

Summary: The answer with the highest rank regardless of discipline and university affiliation is “Through references in literature I have read”. Various disciplines reply “Through searches in library online catalogues”, though there are no clear trends in discipline differences across universities. Most “hard” subjects and psychology reply “Through searches in subject specific databases” regardless of university affiliation, along with some disciplines like education, social sciences and law depending on university. “Through searches in Google/Google Scholar” is widely popular, with some discipline differences, but no clear trends across universities.

Vienna: 1, 2, 5 Natural sciences, Social sciences, Medicine, Psychology, 8 Education, 12 Engineering, 13 Social sciences, Natural sciences, Engineering, Medicine, Media/communication.

Copenhagen: 1, 2 Arts/hum/philosophy, Media/communication, 5 Natural sciences, Engineering, Medicine, Psychology, Education, 6 Media/communication, 7 Media/communication, 8 Education, 9 Education, 10 Arts/hum/philosophy, Social sciences, Natural sciences, 11 Education, 13 Social sciences, Engineering, Education, Law, Media/communication.

Oslo: 1, 2 Natural sciences, Engineering, Education, 5 Natural sciences, Engineering, Medicine, Psychology, Law, 10 Natural sciences, 13 all except Law and Medicine.

1. Through references in literature I have read

Universities: There are more “always” in Vienna than in Copenhagen and Oslo.

Subjects (Vienna): No differences between subjects.

Subjects (Copenhagen): No differences between subjects.

Subjects (Oslo): No differences between subjects.

2. Through searches in library online catalogues

Universities: Common in Vienna, no clear tendency in Oslo and Copenhagen. In these two universities it’s very different what they do.

Subjects (Vienna): Very common for Arts/humanities and Social Sciences than for Natural Sciences, where most reply “rarely”. The usage is also less pronounced for Engineering. But not very big differences.

Subjects (Copenhagen): Arts/humanities and Media/communication uses it the most, while Med and Engineering uses it the least. Very big differences between subjects. No subject clearly prefers/avoids it.

Subjects (Oslo): Big differences between subjects. Social Sciences is the biggest user, while Psychology doesn’t use it that much. The distribution between subjects is quite scattered. No subject clearly prefers/avoids it.

3. By browsing library shelves

Universities: Vienna has a top around “rarely”, while Copenhagen and Oslo are topping on “never”.

Subjects (Vienna): Natural Sciences and Med has a top in “never”, while the other subjects tops in “rarely”.

Subjects (Copenhagen): All subjects except Media/communication tops in “never”.

Media/communication tops in “rarely”.

Subjects (Oslo): Law tops in “sometimes” with more than 50%, but there are only 11 respondents, so it could be random. By far the most universities are on “never” or “rarely”.

4. By looking through print bibliographies

Universities: Vienna has a flat top around “rarely”, Oslo the same. Copenhagen has a tight top on “never”.

Subjects (Vienna): Psychology tops on “sometimes”, while Copenhagen and Oslo tops on “rarely” or “never”.

Subjects (Copenhagen): Arts/humanities has 60 % responding “sometimes” or “rarely”, while Copenhagen and Oslo tops on “never”.

Subjects (Oslo): All subjects tops around “rarely”. Education tops around “sometimes”, but there are only 19 respondents in that group.

5. Through searches in subject specific databases

Universities: There are bigger differences between the subjects in Copenhagen and Oslo than in Vienna.

Subjects (Vienna): Natural Sciences and Med tops in “always”, while the other subjects tops around “sometimes”.

Subjects (Copenhagen): Medicine tops in “always”, Natural Sciences tops in “very often”, and the other subjects are evenly distributed.

Subjects (Oslo): Natural Sciences, Medicine, and Psychology are the most positive, while the other subjects tops around “sometimes”.

6. By attending seminars or conferences

Universities: No differences between the universities. There is a top on “sometimes”.

Subjects (Vienna): More common for Medicine than for Law, but there is not a very big difference.

Subjects (Copenhagen): No subject differences – they are all with a top on “sometimes”.

Subjects (Oslo): No subject differences – they are all with a top on “sometimes”.

7. By attending PhD courses

Universities: Both Copenhagen and Oslo tops around “sometimes” while Vienna tops around “rarely” indicating higher usage here.

Subjects (Vienna): There is a tendency for art/hum, Social Sciences and Education to use this more than the rest, as these subjects tops around “sometimes”.

Subjects (Copenhagen): There is a tendency for a higher usage among Arts/humanities, Social Sciences. The rest responds “sometimes” most frequently.

Subjects (Oslo): Most popular in Social Sciences. Most others responds “sometimes”.

8. Through my supervisor

Universities: There are no real difference between the universities. The top is around “sometimes” for all three.

Subjects (Vienna): Usage highest among Natural Sciences, Medicine and Education. Law tops in “rarely” and has the highest score in “never” (almost 20%).

Subjects (Copenhagen): Usage seems higher among Natural Sciences, but there is a clear top around “sometimes”.

Subjects (Oslo): Most subject top around “sometimes”, but Social Sciences is highly represented in “rarely”.

9. Through word-of-mouth from fellow PhD-students or other colleagues

Universities: Vienna has a wide top around “sometimes” and “rarely”, while Copenhagen and Oslo has a more sharp top on “sometimes”. The group in “very often” is a little larger in Copenhagen than in Vienna and Oslo.

Subjects (Vienna): Law and Media/communication is shifted towards “rarely” and “never”, while the other subjects lean more towards “sometimes” and “very often” - especially Natural Sciences, Social Sciences and Arts/humanities.

Subjects (Copenhagen): No clear differences between subjects. The high curves for Law, Education and Media/communication is probably due to the low number of respondents.

Subjects (Oslo): No clear differences. Most answer “sometimes” with a lower top on “rarely”.

10. Through searches in interdisciplinary databases

Universities: No differences between universities. They all have a very wide top from “very often” to “never”.

Subjects (Vienna): No clear subject dependant differences.

Subjects (Copenhagen): Arts/humanities, Social Sciences and Natural Sciences has large groups in “very often”, while Medicine has a wide top around “never”.

Subjects (Oslo): There is a tendency for Medicine to group around “never”.

11. Through alert services

Universities: There are only slight differences. They all have a top around “never” leaning towards “rarely”.

Subjects (Vienna): There are no subject differences. They all have a top around “never” leaning towards “rarely”. That top is less clearly defined in Copenhagen than Oslo and Vienna.

Subjects (Copenhagen): There is a common top on “never” (ca. 40%), but more subjects have groups in “sometimes” (20%) : Arts/humanities, Social Sciences, Natural Sciences, Engineering and Med.

Subjects (Oslo): The top on “never” is not as clearly defined, but wider towards “rarely” and “sometimes”.

12. By browsing journals

Universities: All three universities have tops around “sometimes”.

Subjects (Vienna): Preference is clearly highest in Engineering (35% says “very often”). The rest tops in “sometimes” leaning towards “rarely”.

Subjects (Copenhagen): Natural Sciences tops in “rarely” while the rest tops in “sometimes”.

Subjects (Oslo): Medicine and Psychology has higher representation in “rarely” than the other subjects, but all top in “sometimes”.

13. Through searches in Google/Google Scholar

Universities: Vienna and Oslo have clear tops around “very often” leaning towards “sometimes”, while Copenhagen have a wider distribution around “sometimes” - maybe due to a low number of respondents in Engineering, Psychology, Education, Law and Media/communication.

Subjects (Vienna): This option is most popular among Engineering, Social Sciences and Education while Psychology and Law lean towards “sometimes”.

Subjects (Copenhagen): Popular among Social Sciences and Engineering, while the rest top around “sometimes”.

Subjects (Oslo): Most subjects top around “very often” indicating a popular choice.

14. By reading electronic mailing lists listserv

Universities: While Vienna has a top on “never” tapering off towards “always”, the tops in Copenhagen and Oslo are very different. In Copenhagen there is a top on “never”, but the groups “rarely” and “sometimes” are larger than in Vienna. In Oslo the groups “never” and “rarely” are of equal size.

Subjects (Vienna): There are no subject differences.

Subjects (Copenhagen): Art/hum and Engineering top in “sometimes”, but have second top in “never”.

Subjects (Oslo): 30-40% of all subjects choose “rarely” and “never”. Marginally higher usage in Psychology and Social Sciences.

15. Through membership in a Social Science network site

Universities: There are no real differences between the universities. They all top in “never” tapering off towards “always”.

Subjects (Vienna): There are no subject differences. 70-80% says “never”, 20-30% says “rarely” and 10-20% says “sometimes”.

Subjects (Copenhagen): There are no subject differences. 70-80% says “never”, 20-30% says “rarely” and 10-20% says “sometimes”.

Subjects (Oslo): There are no subject differences. 70-80% says “never”, 20-30% says “rarely” and 10-20% says “sometimes”.

16. Through membership in an association

Universities: There is a marginally higher usage in Copenhagen than in Oslo and Vienna, but the all have their top in “never”. 80-90% says “rarely” or “never”.

Subjects (Vienna): Med and Education are less represented in “never” than the other subjects.

Subjects (Copenhagen): No discernible differences.

Subjects (Oslo): No discernible differences.

17. Through a bookstore

Universities: A higher usage in Oslo than Copenhagen and Vienna. Oslo has a wide top around “rarely” and “never” while Copenhagen and Vienna top in “never”.

Subjects (Vienna): All subjects except for Media/Communication top in “Never”, they top in “Sometimes” indicating a higher usage.

Subjects (Copenhagen): Somewhat higher usage among Arts/humanities and Social Sciences.

Subjects (Oslo): Arts/humanities and Social Sciences lean towards “sometimes” and “rarely”, while the rest lean towards “rarely” and “never”.

A3 How important do you consider the following competencies for your current PhD research?

Summary:

Vienna: All competencies are considered important in all disciplines, except “using reference managing software”. However, medical students place great emphasis on “Knowing where to search for information/literature” and “Knowing how to find information/literature in databases”.

Copenhagen: All competencies are considered important in all disciplines, except “Using reference management software” and “Knowing how to use the library catalogue”.

Oslo: All competencies considered important in almost all disciplines, except for “Using reference management software”, “Knowing how to use the library catalogue”, and “Knowledge about copyright issues”, though the distribution of these are less clear between disciplines than in Copenhagen and Vienna.

The issues deemed the most important by most respondents are “Publishing your research”, “Knowledge about copyright issues”, “Avoiding plagiarism”, “Knowing how to find information/literature in databases”, and “Knowing where to search for information/literature”.

Vienna

Subject category	Importance
Arts/humanities	All considered important except “Using reference managing software” which is somewhat important.
Social Sciences	All considered important except “Using reference managing software” which is somewhat important.
Natural Sciences	All considered important except “Using reference managing software” and “Knowing how to use the library catalogue” which is somewhat important.
Engineering	All considered important except “Knowledge about copyright issues” and “Using reference managing software”.
Med	All considered important. Great emphasis on “Knowing where

	to search for information/literature” and “Knowing how to find information/literature in databases”.
Psychology	All considered important except “Using reference managing software” which is somewhat important.
Education	All considered important except “Using reference managing software” which is somewhat important.
Law	All considered important except “Using reference managing software” and “Publishing your research” which is somewhat important.
Media/communication	All considered important except “Using reference managing software” which is somewhat important.

Copenhagen

Subject category	Importance
Arts/humanities	All considered important except “Using reference managing software” which is somewhat important. To a lesser extent “Knowledge about copyright issues”.
Social Sciences	All considered important except “Using reference managing software” which is somewhat important.
Natural Sciences	All considered important except “Knowing how to use the library catalogue” which is somewhat important.
Engineering	All considered important, except “Using reference management software” and “Knowing how to use the library catalogue”, which are somewhat important.
Medicine	All considered important except “Knowing how to use the library catalogue” which is somewhat important.
Psychology	All considered important except “Knowing how to use the library catalogue”, “Using reference managing software” and “Knowledge about copyright issues” which is somewhat important.
Education	Too few respondents to say.

Law	Too few respondents to say.
Media/communication	Too few respondents to say.

Oslo

Subject category	Importance
Arts/humanities	All considered important. "Using reference managing software" is important but to lesser degree.
Social Sciences	All considered important. "Using reference managing software" is important but to lesser degree.
Natural Sciences	All considered important. "Knowing how to use the library catalogue" is deemed somewhat important.
Engineering	All considered important except "Knowing how to use the library catalogue", "Using reference managing software" and "Knowledge about copyright issues" which is somewhat important.
Medicine	All considered important except "Knowing how to use the library catalogue" which is somewhat important.
Psychology	All considered important. There are a tendency to deem "Knowledge about copyright issues" and "Knowing how to use the library catalogue" less important than the other issues.
Education	All considered important. There are a tendency that fewer deem "Knowing how to use the library catalogue" important.
Law	All considered important. The only issue deemed less than very important is "Knowledge about copyright issues". But there a too few respondents to say for sure.
Media/communication	Too few respondents to say.

A4 Where do you conduct most of your searches for scholarly information and literature for your PhD research?

Universities: There are huge differences between the universities: In Vienna 70-80% say "at home". The second largest group is "place of work at the university" and "at the university library" as a very large third. In Copenhagen around 90% say "place of work at the

university” and 50-60% say “at home”. The other groups are all around 10%. In Oslo most respondents fall within the following four groups: “place of work at the university”, “at home”, “place of work outside the university” and “at the university library” in a falling order. Oslo in this respect resembles Vienna more than Copenhagen.

Subjects (Vienna): All subject except Natural Sciences responds “at home” as their preferred place of search. Natural Sciences chose “place of work at the university”. These two groups are by far the largest for most subjects. For Arts humanities and philosophy the second preferred site is the university library. This pattern is the same for Social Sciences, Psychology and Law.

Subjects (Copenhagen): In Copenhagen there are no differences between the subjects. The two groups that most chose is “place of work at the university” (70-100%) and “at home” (40-80%). The other groups are around 10%.

Subjects (Oslo): Oslo is intermediate between Vienna and Copenhagen. The two most preferred groups are the same, but the number of students choosing the other groups are a little larger than Copenhagen.

A5 How often do you currently use your university library's facilities in order to search for or access scholarly information?

Vienna: Visiting the library in person a few times a month: Arts/humanities/philosophy, Social sciences, Education, Law, and Media/communication. Visiting the library in person a few times a week: Natural sciences, Engineering, Medicine, and Psychology. All students use the online services a few times a week.

Copenhagen: All students visit the library a few times a year. Online services are used a few times a week in all disciplines except Arts/humanities/philosophy (every day) and Engineering (a few times a month).

Oslo: All students visit the library a few times a year, except for students in Art/humanities/philosophy and Education, who visit a few times a month, and Law who visit a few times a week. All students use the online services a few times a week, except Media/communication and Education, who visit every day.

1. How often do you currently visit your university library in person in order to search for or access scholarly information?

Universities: Vienna resembles Oslo in this respect with most respondents choosing “a few times a month” or “a few times a year”. Copenhagen respondents top in “a few times a year”.

Subjects (Vienna): There is a clear tendency for respondents from Arts/humanities, Social Sciences, Law and Education to visit the library more often than Natural Sciences, Engineering and Med.

Subjects (Copenhagen): No subject top elsewhere than “a few times a year”, but there are differences. The most visiting subjects are Arts/humanities (almost 20% respond “a few times a week”), Social Sciences, Psychology.

Subjects (Oslo): There are very large differences in the distribution. This may be due to the low number of respondents. But there is a pattern, that resembles Copenhagen. The most visiting subjects are Arts/humanities while Medicine, Psychology and Engineering are the least visiting.

2. How often do you currently use your university library's online services (e.g. its databases, online catalogue, website) in order to search for or access scholarly information?

Universities: Vienna displays the clearest picture with a large majority responding “a few times a week”. The second largest group is “a few times a month” indicating a slightly lower usage than in Oslo and Copenhagen.

Subjects (Vienna): Engineering seems like the subject that uses this the least with a large group (30%) responding “a few times a year”. Natural Sciences, Arts/humanities and Social Sciences uses it the most with around 20% responding “every or almost every day”.

Subjects (Copenhagen): There are large differences between the subjects. Arts/humanities have their majority responding “every or almost every day”. This is true also for Education. Most other subjects top in “a few times a week”. Engineering top in “a few times a month”. Natural Sciences is more diverse as they are divided into three groups of almost equal size of 20-30% in “every or almost every day”, “a few times a week” and “a few times a month”.

Subjects (Oslo): The differences between the subjects are not very large. There is a majority responding “every or almost every day” or “a few times a week” and the rest in “a few times a month” (20%). The subject with the least usage is Medicine and Psychology both with around 10% responding “never”.

Questions relating to tools

B1 Look at the following alphabetical list of different types of tools and consider whether you have used them and how important they are for your research.

Looking at the number of respondents to this complex question we observe that for the three universities most used and important tools are as follows:

	1st place	2nd place	3rd place
Vienna	Google	Library online catalogue	Online bookstore
Copenhagen	Google	Google Scholar/Library online catalogue	Publisher's website
Oslo	Google	Google Scholar	Scholarly database

Going into more detail:

1. **Alert**

Universities: For Vienna the general usage is less than Oslo and Copenhagen. Usage is not over 60%, while in Copenhagen and Oslo usage is between 60 and 80%. The differences between subjects are larger in Oslo and Copenhagen, probably because of the lower number of respondents in certain subject groups.

Subjects (Vienna): There are not very big differences in the usage between subjects. The only one being Engineering and Media/communication where 90% and /5% respectively indicated that alerts is one of the most important tools to keep up-to-date. The other subjects are all 45-65% in this group. 10-25% of respondents indicated that alerts are one of the most important tool to find and retrieve information.

Subjects (Copenhagen): Not many respondents have answered this question indicating use. But Natural Sciences and Medicine have a high number of which around 60% have used this tool. Most respondents report using the tool mostly for keeping up-to-date.

Subjects (Oslo): Using the tool has been tried by 60-70% of Medicine, Social Sciences and Natural Sciences. These subjects report usage is for keeping up-to-date.

2. **Database providing raw-data**

Universities: Usage of this tools seems larger in Copenhagen and Oslo than in Vienna. Among the groups with a large number of respondents the usage lies between 80 and 90% in Copenhagen and Oslo, while in Vienna the usage is approx. 10% lower.

Subjects (Vienna): 20% more resp. from Natural Sciences and Medicine have used this tool compared to Arts/humanities and Education. The tool is used by most for finding rather than to keeping up-to-date. The most enthusiastic user are Engineering, Psychology, Education and Media/communication.

Subjects (Copenhagen): No group indicates a more than 50% importance - most around 20-30% without large differences between subjects.

Subjects (Oslo): Medicine, Natural Sciences and Social Sciences are the biggest users (80-90%), but it is neither the most important tool for finding and retrieving information or to keep up-to-date.

3. **Document delivery service**

Universities: Not many respondents regardless of subject have used this service. Though it seems that more resp. have used it in Copenhagen and Oslo than in Vienna.

Subjects (Vienna): Around 50% have used this tool with little variation between significant groups.

Subjects (Copenhagen): Usage is higher (more than 50%) with Social Sciences and Medicine in the top with 80-90% having used it. Used more for finding and retrieving than keeping up-to-date.

Subjects (Oslo): 75-90% of the large respondent groups have used the tool. They are Social Sciences, Natural Sciences, and Medicine. Not many denote it one of the most important tools - but more find it important for finding and retrieving than keeping up-to-date.

4. **Electronic mailing list**

Universities: 60-70% have used this tool overall, while in Oslo and Copenhagen the usage is 70-85%. Quite many have used this tool but it is not recognized as an important tool by a majority.

Subjects (Vienna): There are no differences between the subjects. It seems this tool is used more for keeping up-to-date than finding and retrieval.

Subjects (Copenhagen): There are no differences between the subjects. It seems this tool is used more for keeping up-to-date than finding and retrieval.

Subjects (Oslo): There are no differences between the subjects. It seems this tool is used more for keeping up-to-date than finding and retrieval.

5. **Google or similar search engines**

Universities: This is bar far the most used tool. between 80 and 90% have used it. But no more than 50% at the most consider it one of the most important tools for either objective.

Subjects (Vienna): Engineering and Medicine are the biggest users but not by much.

Engineering is the largest group considering it one of the most important tools.

Subjects (Copenhagen): Among all groups a large majority have used the tool, except for Law. This could be due to the low number of respondents. In Copenhagen it is also for finding and retrieving it is used most.

Subjects (Oslo): The tool is used more for finding and retrieving, but only 40-50% consider it one of the most important.

6. **Google Books**

Universities: There are no real differences between universities in the usage of this tool. They are all in the 80-90% group.

Subjects (Vienna): More Engineering than others have used the tool. In all subjects 25-40% consider it one of the most important tools for finding and retrieving, while 10-20% consider it one of the most important tools for keeping up-to-date.

Subjects (Copenhagen): A large majority have used the tool. It seems most popular for finding an retrieving among Engineering than the others.

Subjects (Oslo): A similarly large majority have used the tool, but only 30-40 % consider it one of the most important tools for finding an retrieving. Only 10-15% find it one of the most important tools for keeping up-to-date.

7. **Google Scholar**

Universities: The number of resp. having used this tool seems slightly higher in Copenhagen than in Oslo and Vienna. Engineering seems to rate it higher in all three universities.

Subjects (Vienna): Natural Sciences, Engineering and Medicine score higher than Education and Law in usage. 60% of Engineering consider it one of the most important tools for finding an retrieving and almost 50% for keeping up-to-date.

Subjects (Copenhagen): In Copenhagen Engineering scores lowest on the usage scale. Medicine and Psychology scores highest. More than 80% of Engineering consider it one of the most important tools for finding and retrieving. The other subjects lie around 40-50%.
 Subjects (Oslo): Around 70-80 % have used the tool among the significant groups and between 40-50% consider it one of the most important tools for finding and retrieving. But Medicine scores 10-15% lower than Social Sciences and Natural Sciences. The tools seems more popular among Social Sciences, Natural Sciences and Psychology.

8. **Institutional or subject based repository**

Universities: The number of respondents having used this tool is very low. The score is around 60-70% but out of a low number of respondents. More resp. from Vienna consider it one of the most important tools for finding and retrieving than from Oslo and Copenhagen. The differences between subjects seem higher in Copenhagen and Oslo than in Vienna - probably due to the lower number of respondents in these two universities.

Subjects (Vienna): Psychology seems to have a higher usage, but it may be due to a low number of respondents. More resp. in Social Sciences and Natural Sciences find it one of the most important tools for finding and retrieving than in Education and Law. More resp. in Education and Law find it one of the most important tools for keeping up-to-date than in Natural Sciences and Medicine.

Subjects (Copenhagen): Number of respondents too low to evaluate which indicates that this tool is not considered important or used.

Subjects (Oslo): Most subjects have used this tool, more so in Arts/humanities, Social Sciences and Medicine (80-90%) than in Natural Sciences and Psychology (70-80%).

9. **Scholarly journals**

Universities: Between 70-80% have used scholarly journals as a tool. The only difference is that in Oslo Medicine is close to 90% as the only university.

Subjects (Vienna): Law scores below 70%, while Psychology and Media/communication scores highest - ca. 85%. Social Sciences, Natural Sciences, Engineering seems to find it more important for finding and retrieving than Medicine, Psychology, Education and Media/communication. In Psychology they find it more important for keeping up-to-date.

Subjects (Copenhagen): There are larger differences between subjects. Between 60 and 90% have used the tool with Media/communication in the top (90%) and Law in the bottom (40%) - probably due to the low number of respondents. There doesn't seem to be a difference between usage of the tool (finding or keeping up to-date) but usage is clearly lower in Medicine for both than in the other subjects.

Subjects (Oslo): Usage higher in Medicine, than the other subjects (close to 90%).

Consideration of its importance is lower in Medicine, though, for both kinds of usage. But for most subjects it is more important for finding and retrieving, than for keeping up-to-date.

10. **Library meta search tool**

Universities: This question has a very low Copenhagen-response rate, so its usage can be considered very low. For Vienna and Oslo it is higher and 70-80% responds that they have used it.

Subjects (Vienna): Higher usage among Psychology. Not considered very important for keeping up-to-date, except among Engineering (low resp. rate). Not very big differences between subjects when it comes to importance for finding and retrieving. They are all 35-55%

Subjects (Copenhagen): More than half of Natural Sciences have used it and find it important for finding and retrieving. Low response rate makes interpretation difficult but indicates low usage and importance.

Subjects (Oslo): For all subjects 60-70% of resp. have used the tool. 40-50% consider it one of the most important tools for finding and retrieving, but only 10-20% find it important for keeping up-to-date.

11. **Library online catalogue**

Universities: A high response rate indicates a high usage in all universities - somewhat higher in Vienna than in Oslo and Copenhagen.

Subjects (Vienna): Engineering and Psychology has the highest usage percentage (80-90%) with Education and Law in the bottom (ca. 65%). Clearly all subjects finds it more important for finding and retrieving than for keeping up-to-date. But there are subject differences: Natural Sciences, Engineering and Medicine are in the bottom, while the other subjects score higher in finding/retrieving.

Subjects (Copenhagen): There are no clear subject differences in usage. All subjects consider the tool more important for finding/retrieving than for keeping up-to-date. But this importance is higher for Arts/humanities, Social Sciences and Natural Sciences, but not for Medicine. In keeping up-to-date, Psychology scores higher than the other subjects.

Subjects (Oslo): Between 50 and 90% have used this tool, indicating large subject differences -as the response rate is relatively high. Highest usage among Social Sciences, Natural Sciences and Medicine (around 70-80%). All subjects consider the tool more important for finding/retrieving than for keeping up-to-date. Medicine finds it less important than Social Sciences and Natural Sciences.

12. **Library shelf**

Universities: around 80% have used this "tool" with only little difference between universities.

Subjects (Vienna): There are no real differences between subjects - they are all around 80%. The finding/retrieving group is larger (25%) than keeping up-to-date (15%).

Subjects (Copenhagen): A general usage over 80% and for some close to 90% (Social Sciences and Medicine). For 40% of Arts/humanities it is important for finding and retrieving, but for Social Sciences, Natural Sciences and Medicine it is closer to 20%. Hardly any subject finds it useful for keeping up-to-date.

Subjects (Oslo): 80-90% have used the “tool”. 30% of Natural Sciences consider it one of the most important tools for finding and retrieving. But hardly any subject have more than 10% finding it one of the most important tools for keeping up-to-date.

13. **Linking tool**

Universities: Vienna scores higher, indicating a higher usage. Larger differences between subjects in Copenhagen and Oslo, but this is probably due to the lower number of respondents answering this question.

Subjects (Vienna): Psychology have a higher usage than the other subjects (90%). Natural Sciences and Medicine has the highest percentage of respondents who consider it one of the most important tools for finding and retrieving (40%). Education has the higher percentage of respondents who consider it one of the most important tools for keeping up-to-date.

Subjects (Copenhagen): 65% of Natural Sciences have used it, while it is higher for Arts/humanities and Social Sciences, but that might be due to the lower number of respondents. 40-50% of Nat and Medicine consider it one of the most important tools for finding and retrieving while only Medicine (40%) consider it one of the most important tools for keeping up-to-date.

Subjects (Oslo): Around 70% of the large response groups have used it and between 40-50% find it one of the most important tools for finding and retrieving. Only 20-30% of these find it one of the most important tools for keeping up-to-date.

14. **Online academic portal**

Universities: In Vienna the usage is around 60-90 % of the respondents, while in both Copenhagen and Oslo the general usage is a little lower. For Copenhagen and Oslo the number of respondents is low, but Engineering is the most positive group in all three universities for finding and retrieving. For keeping up-to-date the number of respondents in the Copenhagen and Oslo groups are too low, but for all three universities no subject group scores higher than 50% in estimating the importance of this tool for both types of usage.

Subjects (Vienna): Engineering, Psychology and Media/communication all report more than 75% usage, while the other subjects are under. Medicine reporting the lowest usage (58%).

Subjects (Copenhagen): The number of respondents to this questions is very low, indicating a low usage and importance of tool.

Subjects (Oslo): The number of respondents to this questions is very low, indicating a low usage and importance of tool.

15. **Online bookstore**

Universities: A high percentage (62-77%) of respondents have answered this question, indicating a high usage - with the highest occurrence in Copenhagen.

Subjects (Vienna): The highest usage is in Engineering and Medicine, but usage is high in all subjects. It is only one of the most important tools for about 10-35 % in both respects.

Subjects (Copenhagen): Psychology and Education is the top users of this tool but all subjects score high. Engineering and Psychology are the most positive users for finding and retrieving, while Psychology scores highest (35%) in using it for keeping up-to-date.

Subjects (Oslo): Subjects having used this tool is highest in Medicine with more than 90%. It is one of the most important tools for finding and retrieving for around 40% in Arts/humanities and philosophy and Social Sciences. Evaluation of importance of this tool for keeping up-to-date is somewhat lower generally with no groups exceeding 25%. The most positive users in this group are Arts/humanities and philosophy and Social Sciences.

16. **Online dictionary or encyclopedia**

Universities: In all three universities more than 80% in general have used this tool, but it is not an important one for any of the two types of use. Only in Oslo is the importance for finding and retrieving slightly higher with groups such as Arts/humanities and philosophy and Social Sciences scoring around 30%. The other groups are around 20%. For keeping up-to-date the importance is much lower for all universities (10-15%).

Subjects (Vienna): All subjects score high in usage (80-90%), Engineering, Medicine and Psychology being the highest. The importance is rated low in all subjects with Medicine as one exception, where 30% rates it as an important tool for finding and retrieving.

Subjects (Copenhagen): In Copenhagen usage is around 80-90%, but importance is low 10-20% for all subjects. Respondent numbers are very low for some subjects that rate high. They are disregarded.

Subjects (Oslo): Usage is 75-90% with Psychology at a low and Natural Science and Medicine at a high. Importance for finding and retrieving is lower in Psychology (15%) and higher in Arts/humanities and philosophy, Social Sciences and Medicine (around 30%).

Usage for keeping up-to-date is below 10% for all subjects.

17. **Pre-print database (e.g. arXive.org, CERN Document Server)**

Universities: Response to this question is low (10-20%) indicating a very low usage. Usage is slightly higher in Vienna than the other two universities.

Subjects (Vienna): Arts/humanities and philosophy and Education is low in usage (around 50% have used it) and Natural Science is higher (70%+). It is one of the most important tools for finding and retrieving for around 50% of Natural Sciences, Engineering and Law. For keeping up-to-date the importance is lower for all subjects, Natural Sciences being the most positive.

Subjects (Copenhagen): The number of respondents is too low for most subjects, but for Natural Science more than 70% have used the tool, more than 30% find it one of the most important tools for finding and retrieving and more than 40% find it one of the most important tools for keeping up-to-date.

Subjects (Oslo): Usage is between 65 and 85% with Medicine at the top (80%) and Natural Sciences at the bottom with (65%). For importance the picture is reversed, because more than 40% in Natural Science deems it one of the most important tools for finding and retrieving and only 20% from Medicine says the same. For keeping up-to-date 30% in Natural Sciences deems it important, while none in Medicine says the same. In Social Science it is more than 80% who have used the tool and around 15% finds it one of the most important tools for keeping up-to-date.

18. **Print bibliography**

Universities: 70-90% of respondents have used this tool for all three universities. Importance for finding and retrieving is lower in Oslo as opposed to the other two universities, where 30-40% deems it important in this respect. Importance for keeping up-to-date is low (10-20%) for all universities.

Subjects (Vienna): Usage is quite high for all subjects. There are no major differences. In importance for finding and retrieving, Engineering and Medicine is low (10-20%) while the other subjects are around 30-40%. 20% in Education finds it one of the most important tools for keeping up-to-date.

Subjects (Copenhagen): 70-90% of respondents have used this tool, but the response rate is low for many subjects. At the top we find Arts/humanities and philosophy, Social Science, Natural Science and Medicine. 20-30% of these find it important for finding and retrieving and 10-20% find it important for keeping up-to-date.

Subjects (Oslo): 70-95% have used the tool, with Medicine and Social Sciences being most positive. In Psychology it is not deemed important for finding and retrieving by more than ca. 10%, while 30% in Natural Science finds it important in this respect. Less than 10% in Natural Science finds it important for keeping up-to-date, while around 30% in Arts/humanities and philosophy and Social Science finds it important in this respect.

19. **Print library catalogue**

Universities: Between 60-80% have used this tool in Vienna. The number of respondents from Copenhagen and Oslo is very low indicating a low usage from these two universities. For finding and retrieving it is most important to Arts/humanities and philosophy, Social Science and Natural Science, but responses are low for Vienna as well.

Subjects (Vienna): Top users are Medicine, Psychology and Engineering while Natural Science and Education are low. Fewer have used this tool in Arts/humanities and philosophy, Social Science and Natural Science, but they deem it important for finding and retrieving in 30-40% of the cases, whereas Medicine and Engineering is around 10% in this category. Almost 50% of the respondents from Education finds it one of the most important tools for finding and retrieving. Importance for keeping up-to-date is low for all subjects.

Subjects (Copenhagen): Number of respondents too low to evaluate which indicates that this tool is not considered important or used.

Subjects (Oslo): Natural Science, Medicine and Social Science have a usage of between ca. 70-90% with Medicine as the top user. Medicine finds it important in ca. 40%, Social Sciences in ca. 30% and Natural Science in just under 20% for finding and retrieving. Social Science finds it important for keeping up-to-date in more than 40% of the cases, while Natural Science and Medicine both are under 20%.

20. **Publisher's website**

Universities: 70-90% of respondents have used this tool with no significant differences between the universities. The number of respondents in certain subjects in Copenhagen and Oslo indicates a lower interest in these subjects (Law, Education and Media/communication).

Subjects (Vienna): In usage most subjects are around 80%, while Engineering and Media/communication is close to 90%. Law is low with 70% usage. around 40% of respondents in Natural Science, Medicine and Engineering find it important for finding and retrieving, while only 20% in Law does the same. Importance for keeping up-to-date is steady around 20% for all subjects except for Medicine, which is around 5%. Law tops the score at around 25%.

Subjects (Copenhagen): 70-80% of respondents have used this tool, with no significant subject differences. Engineering, Psychology and Natural Science (ca. 45%) finds it more important than Arts/humanities and Medicine (ca. 20-30%) for finding and retrieving. 25-30% of respondents regardless of subject find it important for keeping up-to-date. There are subjects with low numbers of respondents (Psychology, Law, Education and Media/communication).

Subjects (Oslo):

21. **RSS feed**

Universities: The universities lie around 50-70% in usage. Oslo is a bit higher in usage than Vienna and Copenhagen. When it comes to importance this tool is clearly more important for all universities for keeping up-to-date with 30-50% of the students indicating this over finding and retrieving, which is around 10-40%.

Subjects (Vienna): Highest usage lies within Education, Law and Media/communication at around 70%. Engineering, Medicine and Education have used this tool the least with under 50%. Around 40-50% find this tool important for keeping up-to-date. Only Natural Sciences find it important for finding and retrieving (ca. 40%).

Subjects (Copenhagen): There are not very large differences between subjects in usage. Arts/humanities, social and Natural Sciences are all around 60-70%. The rest have too few respondents to say. Importance is around 20-30% for finding and retrieving for the Arts/humanities, social and Natural Sciences. 40-50% of the same subjects find it important for keeping up-to-date.

Subjects (Oslo): The subjects with enough respondents are Social Sciences, Natural Sciences, Medicine and Psychology. Psychology scores a 60% usage, while the other subjects score between 75 - 90%. 10-20% of PhD students from Social Science, Natural Science, Medicine and Psychology find it important for finding and retrieving, while 30-40% find it important for keeping up-to-date. Psychology-students find it important in this respect in 60% of the cases.

22. **Scholarly database (e.g. MLA Bibliography, Scopus, Web of Science, PubMed, Historical Abstracts)**

Universities: The usage of this tool is around 70% for all three universities with larger differences between subjects in Oslo and Copenhagen. The importance of this tool for finding and retrieving can be seen to be very important for most subjects in all three universities, a little more so in the Scandinavian universities. The picture is the same for keeping up-to-date, but at a lower level.

Subjects (Vienna): Usage lies between ca. 55% (Education) to ca. 95% (Engineering). The others lie around 70% who have tried this tool. Most subjects find the tool more important for finding and retrieving than for keeping up-to-date. Natural Science and Medicine find it the most important (60+%). These two subjects along with Psychology find it one of the most important tools for keeping up-to-date.

Subjects (Copenhagen): Between 60-70% have used this tool with no big differences. The tool is deemed more important for finding and retrieving than for keeping up-to-date. 70-80% find it important in the first respect with the most positive users in Medicine. In keeping up-to-date there are large differences between the subjects. Arts/humanities and philosophy scores the lowest while Medicine and Psychology scores higher.

Subjects (Oslo): More than 80% in Social Sciences have used the tool, while only 60% in Medicine have used it. Natural Science lies around 65%. The tool is deemed more important for finding and retrieving than for keeping up-to-date. The subjects finding it most important tool for finding and retrieving is Natural Sciences, Medicine and Psychology, while Social Sciences find it less important. Natural Sciences, Medicine and Psychology also find it important for keeping up-to-date but to a lesser degree.

23. **Social networking site**

Universities: In Vienna there are less differences between subjects, than in Oslo and Copenhagen. But the overall usage is almost the same with a slightly higher usage in Copenhagen and Oslo. The importance of the tool is higher in the Scandinavian universities but there is also a higher difference between the subjects. Perhaps this difference is accentuated by the lower number of respondents making the results more prone to chance.

Subjects (Vienna): More than 60% of all subjects but one have used this tool. Only Law scores under (ca. 45%). Most users are among Natural Science, Engineering and Psychology. More than 35% from Law find it one of the most important tools for finding and retrieving, while the other subjects score around 15%. In keeping up-to-date, the subjects score around 25-35% except for Natural Science (ca. 15%), Engineering (0%) and Medicine (ca. 15%).

Subjects (Copenhagen): Around 65-80% of the PhD students in Arts/humanities, Social Sciences, Natural Sciences and Medicine have used the tool. Most subjects score below 20% who find it important for finding and retrieving. There are subjects scoring higher, but there are too few respondents in these groups. It is deemed a bit more important for keeping up-to-date. 40% in Natural Sciences find it important along with ca. 35% of the Social Sciences students.

Subjects (Oslo): Usage is between 70-90% with Arts/humanities, social and Natural Sciences in the top. Psychology is the least positive group scoring around 60%. Importance for finding and retrieving: Medicine is the at the top with ca. 25% and Natural Science at 20%. The rest is around 10% or absent. For keeping up-to-date the Natural Science is absent, while Arts/humanities and Social Sciences score around 20%. Medicine scores ca. 15% and Psychology scores 25%.

B2 Do you use reference management software?

Universities: There are quite substantial differences between the universities in preference and usage of this particular tool. Usage is much higher in the Scandinavian universities than in Vienna for all disciplines. In Vienna EndNote is dominating the market, while users in Copenhagen/Oslo is more divided between EndNote and Reference Manager. In Oslo there is a tendency for the users to spread over a larger number of products than in Vienna and Copenhagen. Another significant difference is that in Oslo Psychology PhD students use the software in more than 90% of the cases, while in Copenhagen this group only uses it in ca. 70% and in Vienna just over 50%.

Subjects (Vienna): There are great differences between the subjects in the use of this tool. In Natural Science only about 30% don't use reference management software, while in Arts/humanities, Social Science, Education, Law and Media/communication more than 50% do not use it. Between 10-20% answer don't know. The most popular software is EndNote, Zotero, BibTex and Citavi. EndNote accounts for 40% in Natural Science and 35% in Medicine. Engineering is the second highest user group and they prefer "Other", which is 33% BibTex and other tools like BibDesk, LitLink and Papers.

Subjects (Copenhagen): There are also great subject specific differences. But all subjects are above 60% use. Subjects like Medicine (7% don't use) and Natural Science (17% don't use) are high users, while in Media/communication, Psychology and Arts/humanities usage is much lower: around 30% don't use it. The most popular tools are Reference Manager, EndNote, and Zotero. Medicine and Natural Science are fond of Reference Manager, while EndNote is popular in Arts/humanities, Media/communication and Law.

Subjects (Oslo): Usage is very high with only Arts/humanities and Law scoring more than 30% don't use. In Social Science 20% don't use the tool. The rest is around 5-15% don't use. The most popular tools are EndNote and Reference Manager. EndNote is particularly popular in Education, Social Science, Natural Science, Law and Engineering. Reference Manager is more popular in Medicine and Psychology. For the other tools Engineering are fond users of BibTex, Mendeley and JabRef. Zotero is used by ca. 5-10% of subjects. Media/communication might account for a higher usage of this particular tool.

B3 If you use, or previously have used, a reference management software (like Reference Manager or EndNote), how useful do you consider it?

Universities: The number of users finding the tool extremely useful is lower in Vienna than in Copenhagen and Oslo and the number of users answering "Don't know" is significantly higher in Vienna. In Vienna, the students in the disciplines that answer "Don't know" correspond to the groups that answered "Don't use" in question "Do you use reference management software?".

Subjects (Vienna): Largest group is "Don't know" although for Natural Science most users answer extremely useful. The subjects that answer "Don't know" corresponds to the groups that answered "Don't use" in the previous question. The most positive users are Natural Science and Medicine, while the more sceptic users are Psychology, Education and Media/communication.

Subjects (Copenhagen): Most users in general answer “Extremely useful”. In Law most users answer “Don’t know” or “Very useful”. Most positive users are from Medicine, Education, Psychology, Natural Science and Media/communication, while the sceptics are from Arts/humanities and Law.

Subjects (Oslo): The picture is very clear: Most users find the tool “Extremely useful” regardless of subject - except for Arts/humanities that are equally divided between “Extremely useful” and “Don’t know”. Most positive users are from Law, Education and Medicine. Most sceptic users are from Arts/humanities and Media/communication.

QUESTIONS RELATING TO TYPES OF INFORMATION

C1 Where would you place yourself with regard to the relative use of print versus electronic information?

Universities: The picture is quite clear: Arts/humanities, Social Sciences, Law, Media/communication and Education use print information more often than the other subjects in all three universities. Only exception is in Psychology in Copenhagen, where the majority use print material equally to electronic. In Oslo and Vienna the Psychology groups’ majority is in the “Electronic most of the time” category.

Subjects (Vienna): There are some differences between the subjects. All subjects except for Natural Sciences, Engineering and Psychology places themselves as equally in print and electronic. These three subjects are using electronic information most of the time. A large minority of Arts/humanities (40%) are primarily using print information. Arts/humanities and Social Sciences are leaning towards the print information, while the other subjects are leaning towards the electronic. Only a very small fraction of users are exclusively using either print or electronic information.

Subjects (Copenhagen): Arts/humanities, Social Sciences, Law, Media/communication and Psychology have a majority of users in the middle group using the two type of information equally. Natural Science, Engineering and Medicine have their majorities placed in “Electronic most of the time”.

Subjects (Oslo): Natural Science, Medicine and Psychology have their majority of users in “Electronic most of the time”, while all other subjects have their majorities in the equal category. No users at all have marked “Print format only”.

C2 Consider what role different types of information sources play in your PhD research.

Looking at the number of respondents to these questions we observe that for the three universities most used and important sources of information are as follows:

	1st place	2nd place	3rd place
Vienna	Journal articles	Book articles	Handbooks
Copenhagen	Journal articles	Handbooks	Book articles

Oslo	Journal articles	Book articles	Handbooks
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Going into more detail:

Place	Vienna	No. Resp.	Copenhagen	No. Resp.	Oslo	No. Resp.
1	Journal articles	938	Journal articles	449	Journal articles	290
2	Book articles	879	Handbooks	386	Book articles	246
3	Handbooks	839	Book articles	329	Handbooks	229
4	Dissertations and thesis	805	Dissertations and thesis	309	Dissertations and thesis	227
5	Monographs	796	Systematic reviews	295	Conference proceedings	220
6	Personal communication	611	Conference proceedings	294	Monographs	197
7	Conference proceedings	605	Personal communication	282	Personal communication	194
8	Working papers	513	Monographs	264	Systematic reviews	189
9	Official documents	483	Preprints	220	Preprints	148
10	Systematic reviews	427	Working papers	199	Official documents	146
11	Preprints	399	Official documents	151	Working papers	132
12	Popular media	367	Raw data	143	Popular media	87
13	Archival material	320	Images	119	Email corresp.	80
14	Images	320	Email corresp.	95	Raw data	78

15	Legal material	297	Popular media	91	Images	64
16	Raw data	278	Archival material	73	Legal material	57
17	Sound recordings	236	Sound recordings	66	Sound recordings	48
18	Email corresp.	220	Legal material	62	Archival material	45

Going into more detail:

1. **Handbooks and other reference works**

Universities: Usage is high in all three universities (80-100%), but importance is higher in Vienna, where it is around 20-40% whereas it is 10-30% in Copenhagen and Oslo in general. Subjects (Vienna): 70-90% of users have used this type of information with Engineering and Natural Science as the most enthusiastic users and Education and Law as the least.

Education and Law is deeming it important in 40% of the cases, though. Importance is generally low.

Subjects (Copenhagen): 90-100% of respondents have used this source but only Law finds it very important in ca. 45% of the cases. The other subjects deem it important in 10-25% of the cases.

Subjects (Oslo): 80-100% of respondents have used this type of source but only 10-30% of users find it one of the most important sources. Most important is it found in Engineering and Law.

2. **Monographs, i.e. scholarly books on a topic usually by one author**

Universities: The distribution of subjects is similar between the three universities. There is one unexpected pattern that is repeated in all three: Arts/humanities is the group that scores the lowest in terms of usage, which is contrary to the common notion. But monographs are deemed one of the most important type of source by Arts/humanities also in all three universities. So fewer have used monographs in their PhD project, but those who have find them very important.

Subjects (Vienna): Usage is between 70-90%, highest in Engineering, Psychology and Media/communication - lowest in Arts/humanities, Education and Law (around 70%). Importance is deemed high by most respondents in Arts/humanities, Social Science, Law and Media/communication. Lowest importance level is found in Natural Science, Engineering and Medicine.

Subjects (Copenhagen): Usage lie between ca. 60-100%. Top users are Natural Science, Medicine and Engineering. Rarer users are Arts/humanities. Importance is rated highest by Arts/humanities and lowest by Medicine.

Subjects (Oslo): Usage lies between 60-95% with Medicine and Psychology at the top and Arts/humanities at the bottom with just over 60% who have used this type of source. Importance is deemed higher by Arts/humanities, Law and Media/communication.

3. **Book articles**

Universities: The distribution of respondents resemble the one above. Higher usage in the Natural Sciences, Medicine, Psychology and lower usage in Arts/humanities. Importance is reverse. Only exception is the engineers in Oslo. They find it important more than in the other two universities (+50%).

Subjects (Vienna): Usage lies between 65-85% with Natural Science, Engineering, Medicine and Psychology as the top users. Arts/humanities and Education is the least using groups. Book articles are deemed most important by Arts/humanities, Social Science and Media/communication.

Subjects (Copenhagen): Usage is between 60-90% with Natural Science, Medicine and Engineering as the most frequent users. Arts/humanities are the least. Importance is deemed higher in Arts/humanities and Media/communication.

Subjects (Oslo): Usage is between 60-90%. Most frequent users are from Medicine, Natural Science and Psychology. Least frequent users are from Arts/humanities. Importance is higher in Arts/humanities, Law and Media/communication.

4. **Journal articles**

Universities: In Vienna the same proportion of respondents using the source also find it one of the most important source. In the Scandinavian universities there is generally a higher proportion of respondents finding it important than are actually using the source.

Subjects (Vienna): Used in 60-80% of the cases. Most used in Engineering and Medicine and least used by Education. Importance is deemed higher in 60-80% also. Most importance is deemed by Natural Science and Psychology.

Subjects (Copenhagen): Usage is only 50-80% highest among respondents from Law and Engineering. Lowest among Psychology and Arts/humanities. Importance is deemed high 80-100% by most subjects (Psychology, Natural Science, Engineering, Medicine). Least but still around 70% by Education and Law.

Subjects (Oslo): Usage is between 45-85% with Media/communication, Law, Engineering, social and Natural Sciences as top users. It is used the least by Arts/humanities and Education. Importance is deemed high in all subjects (80-95%) - more so by Social Science and Psychology.

5. **Official documents (e.g. government or state documents, parliamentary papers)**

Universities: There are no clear differences when it comes to usage or importance. Only when it comes to the engineers in Oslo. A higher proportion of them deem this source important than are actually using them.

Subjects (Vienna): Usage is between 70-90%. Mostly so by Engineering and least by Law. Importance ranges from almost 20% to almost 60% of respondents. Respondents from Law and Media/communication finds it most important, while Natural Science and Medicine does not find it most important as much.

Subjects (Copenhagen): Usage is between 65-100%. Higher usage among Natural Science, Medicine and Education. Importance is higher in Law and lower in Natural Science.

Subjects (Oslo): Usage ranges from 60-100%. Higher usage among Social Science, Medicine and Media/communication. Lower usage in Arts/humanities and Engineering. Importance is higher in Engineering though - around 75% finds it one of the most important sources. Also Law scores high, whereas Psychology and Medicine does not find it as important.

6. **Working papers**

Universities: This source is used a lot, but not very important over all. The universities have the same distribution of subjects. Only the engineers in Oslo and Vienna find this source more important than the other subjects.

Subjects (Vienna): 80-90% of respondents have used this source with very little difference between subjects. Importance is generally low (around 20% find it one of the most important sources) except for the engineers where ca. 45% find them important.

Subjects (Copenhagen): Usage is around 85%. The number of respondents in the other subjects are so low that their high or low score could be random. But Psychology and Law scores high and Education low (60%). Importance is generally low (20-30%) except for Education where 40% find it important.

Subjects (Oslo): Usage is very high (90-100%) with little difference between subjects. Importance is low in Psychology (<10%) and high in Law (close to 40%) the rest between 15-20%.

7. **Pre-print articles**

Universities: Oslo differs from the other two by having a larger difference between subjects, but the overall usage and importance is generally the same.

Subjects (Vienna): Usage is between 75-90% - highest score is in Engineering and lowest in Medicine. Importance is generally low between 20-30%. More so in Natural Sciences and Education.

Subjects (Copenhagen): Usage is very high (90-100%) in all subjects, but the importance is generally low (10-25%). It is deemed most important in Natural Science and Medicine and least in Engineering, Psychology, Education and Law.

Subjects (Oslo): Larger differences between subjects (75-100%). Highest usage in Engineering and Media/communication, lowest in Law and Psychology. Importance is lowest in Engineering (10%) and highest in Law (50%).

8. **Dissertations or theses**

Universities: The general picture is that there for all universities is a high degree of usage, but low degree of importance as a source.

Subjects (Vienna): Usage is more or less the same for all subjects (ca. 80-90%). Importance is low (around 20-30%) except for Engineering, where 45% find it important.

Subjects (Copenhagen): Usage is very high +90% for all subjects, but importance is very low except for Natural Science and Medicine, where 25% find it important.

Subjects (Oslo): Usage is between 80-100%, higher in Social Science and lower in Law. Importance is quite low (ca. 10-25%). Higher in Engineering and Law, lower in Arts/humanities.

9. **Conference proceedings**

Universities: Usage is quite high in all subjects in all universities, but only Engineering in Vienna and Oslo find this source one of the most important ones.

Subjects (Vienna): Usage is between ca. 85-95%. No great differences between subjects. Importance is around 20-30% except for among engineers. Almost 60% of them find this source important.

Subjects (Copenhagen): High usage in all subjects (ca. 90-100%). Importance is between 10-25% for most subjects. Highest is Natural Science and Medicine. No respondents in Psychology, Education and Law find it one of the most important sources.

Subjects (Oslo): Usage is around 80-100%. Highest is Social Science, lowest in Engineering. Importance quite low for most subjects, except for Engineering (ca. 55%). Arts/humanities, Social Science, Education and Medicine find it important in less than 10% of the cases.

10. **Systematic reviews**

Universities: Importance of this source is generally the same in all three universities. In Copenhagen and Oslo the importance is quite lower in Arts/humanities and Social Science than in Vienna.

Subjects (Vienna): Usage is high (70-85%). Highest usage is among engineers and lowest in Medicine. Importance is highest in Natural Science and Medicine and lower in Arts/humanities, Social Science, Education, Law and Media/communication.

Subjects (Copenhagen): Usage is between 70-90%. Single subjects are on 100% but they have very few respondents, so that is not significant. It is clear though that this source is most popular in Arts/humanities, Social Sciences and Psychology. Lowest in Engineering (ca. 70%). Importance is higher in Engineering (60%) while it is lower in Arts/humanities and Social Sciences (ca. 15-25%).

Subjects (Oslo): Usage is quite different from subject to subject. Highest usage is in Arts/humanities (100%) and lowest in Education and Law (ca. 70%). Importance is also very different between subjects. It is highest in Medicine and Law (65%) and lowest in Engineering (ca. 25%).

11. **Legal material (e.g. judgments, administrative decisions, legislation)**

Universities: Common to all three universities is that this type of source has got a low number of respondents answering, indicating low usage and importance. Of those who answered, there is a higher usage of this source in another subject than Law, but the importance is in all three universities deemed the highest in Law.

Subjects (Vienna): Usage differs quite a lot between subjects (55-100%). Highest is it in Engineering and Natural Sciences, but the number of respondents in Engineering is very low. Lowest usage is in Psychology. Importance is very low in Natural Science (15%) and not surprisingly very high in Law (ca. 65%).

Subjects (Copenhagen): There are quite large differences between subjects, but not many respondents have answered this question, so comparing is difficult. Social Science seems like the most positive subject towards this type of material. Both answer rates and responses points to a low importance.

Subjects (Oslo): Usage ranges from ca 65-100%, highest are Media/communication and Social Science and lowest is Engineering and Law. Importance ranges from ca. 15-70%. Highest importance is found in Law and Engineering, lowest in Arts/humanities and Education (under 20%).

12. **Raw data from specialised databases**

Universities: There seems to be bigger differences between subjects in the Scandinavian universities than in Vienna, but could be explained by the lower number of respondents in these two universities to this question. Especially Oslo differs in that it has a larger span in usage and importance.

Subjects (Vienna): Usage ranges from ca. 60-100%, highest in Engineering, Natural Science and Medicine, lowest in Law, Education and Media/communication. Again the ones who find it one of the most important sources of information is not the one with the highest usage. The higher importance is found in Law and Psychology (ca. 40%) and the lower is found in Engineering, Natural Science and Medicine (ca. 25%).

Subjects (Copenhagen): Usage is around 80% for the large subject groups: Social Science, Natural Science and Engineering. Importance is ca. 25-40% highest in Arts/humanities (Education scores a 100%, but only has 3 respondents).

Subjects (Oslo): Usage is very different between subjects. High usage is found in Law and Social Science (100% and 88% respectively). The lowest usage is in Education where only 30% report usage. The general picture among the other subjects is that around 70-80% have used this source. Importance is highest in Social Science and Education (ca. 60% and 65% respectively) and lowest in Engineering (ca. 15%).

13. **Information distributed via e-mail news lists**

Universities: Usage is very high in Oslo compared to the other two universities, but the importance is rather low. There are large differences between subjects in Copenhagen and Oslo, but this is probably caused by the lower number of respondents to this question.

Subjects (Vienna): 70-90% have used this source of information in their project. Most usage is found in Natural Science and Medicine, and lowest in Psychology and Law. Importance is lowest in Medicine (<10%) and highest in Engineering (ca. 40%).

Subjects (Copenhagen): Usage is around 80-90% with higher usage in Natural Science and Medicine (Law is at 100% but with only 4 respondents) and lower usage in Social Science (ca. 85%). Among the larger subject groups importance is between 10-30%. Psychology is totally missing from this question.

Subjects (Oslo): Usage is exceptionally high (80-100%) even in groups with a high number of respondents. Arts/humanities, Social Science, Natural Science and Engineering report a 100% usage. Psychology, Education and Law are all under 90% but above 80%. In importance the score is between 10% and 40% indicating that most respondents have used the source but it is not one of the most important sources for very many.

14. **Information learned from personal contacts with other academics**

Universities: There is the same distribution of respondents between the three universities: a quite high usage but a somewhat lower importance. There is a bigger difference between subjects in Oslo than in the other two universities.

Subjects (Vienna): 75-85% report having used this source. Highest in social and Natural Science, lowest in Psychology, but the difference is low. Importance ranges from 25-50% with Medicine in the top and Social Science and Education in the bottom.

Subjects (Copenhagen): Usage lies around 90% and importance around 30% for most subjects. There are no discernible differences between subjects, that cannot be due to the low number of respondents in these groups.

Subjects (Oslo): Usage is between 80% and 100%. Highest is Engineering and Media/communication (latter with a low number of respondents). Importance is higher in Natural Science and Medicine (ca. 35%) and lower in Arts/humanities, Social Science, Engineering and Education (ca. 15%).

15. **Popular media (e.g. newspapers, TV etc.)**

Universities: There is a larger difference between subjects in Oslo and Copenhagen than in Vienna. They revolve around the same approximate average, but with large differences between high and low usage and importance.

Subjects (Vienna): Usage is around 80-90% without great differences between subjects. Importance is around 15-35%. Highest importance is put on this source in Media/communication (close to 40%), and lowest in Law (15%).

Subjects (Copenhagen): Usage is around 80-90% among those who answered this question, but the response rate is low for many subjects. Social and Natural Science reports ca. 85% have tried this source. Importance larger in Arts/humanities (ca. 35%) than in social and Natural Science (ca. 15%).

Subjects (Oslo): Usage is between 70 and 100%. Highest is Engineering, Medicine and Law. Lowest is Arts/humanities and Education. Importance is lowest in Medicine (<10%) and highest in Engineering.

16. **Archival material (e.g. personal papers, letters, estate papers etc.)**

Universities: There seems to be a smaller difference between subjects in Vienna than in Copenhagen and Oslo in both usage and importance. This could be because of a smaller number of respondents in these two universities.

Subjects (Vienna): Usage is between 60-90% with Engineering as the most positive user group and Psychology as the least. Importance is between 15-55%. Engineering is deeming it least important and Arts/Humanities the most. There is quite a large difference between subjects in the importance, more so than having used the source.

Subjects (Copenhagen): Usage is 55-100% but there are too few respondents in some subjects, so analysis will in this case be on the larger subject groups. Usage is lowest in Arts/Humanities, larger in Social Science and larger still in Natural Science. Medicine scores 100% usage, but among 10 users. Importance is again inversely proportional to the usage.

Subjects (Oslo): There are huge differences between subjects in usage. Highest usage is in Engineering and Law with 100% and lowest usage is in Natural Science and Education that

scores 50%. Low usage is also present in Arts/Humanities, while Social Science is scoring rather high (ca. 75%).

17. **Images**

Universities: The same tendency as in other questions is here clear: the subjects that use a source the most also finds it important least frequently. The difference between subjects is smaller in Vienna than in Copenhagen and Oslo, possibly due to a lower number of respondents.

Subjects (Vienna): Usage is between ca. 75-90% with little difference between subjects.

Education seems to be markedly higher in usage than the other subjects, including Media/Communication. Importance is rather low - 10-30% mark this source as one of the most important ones. Lowest is Education and highest is Media/Communication.

Subjects (Copenhagen): Usage is high - 80-90%. Some subjects score 100% but they only have a few respondents (0-3). Lowest in usage is Arts/Humanities and Engineering.

Importance is for the larger subject groups around 20% with Arts/Humanities and Engineering scoring high (30% and 40% respectively).

Subjects (Oslo): Very large differences. Usage ranges from 50% to 100% with Engineering and Media/Communication scoring 100% and Education and Law scoring 50%. Importance is ranging from 15-50%. Media/Communication and Law deeming it important in most cases - 50%. Medicine finds it important least frequently.

18. **Sound or video recordings**

Universities: The difference between subjects is higher in Oslo than in Vienna and Copenhagen. The general level of usage across subjects seems higher in Copenhagen than the other two universities. Importance is very much higher in Oslo than Vienna and Copenhagen and there are larger differences between subjects in Oslo and Copenhagen than in Vienna.

Subjects (Vienna): Usage is ca. 70-90%. Least frequently used by medicine and psychology, and used the most in Social Science, Engineering and Education. Importance is least in Education (10%), Law (ca. 15%), and highest in Media/Communication (almost 60%).

Subjects (Copenhagen): Usage is around 80-90% for most subjects. Media/Communication is lower (ca. 65%) but have a low number of respondents (3). No respondents from Law indicated usage in any frequency. Importance ranges from ca. 10-60% but this large difference is possibly due to the low number of respondents in certain subject groups.

Medicine scores the lowest (ca. 0%), and Media/Communication scores the highest.

Subjects (Oslo): Usage ranges from 55-100%, but the high scoring subjects groups have a relatively low number of respondents. Lowest scores Education and highest scores Law and Media/Communication. Importance ranges from 30-100%, again the same problem with low numbers of respondents may cause very high values to appear. Lowest is Natural Science with a high number of respondents, and highest is Law with only 9 respondents.

Questions relating to feelings

D4 Listed below are various factors that you might feel affect your progress in your PhD research negatively. Please indicate how often you feel constrained by these factors.

Factors:

1. Pressure of time (Most students, except Vienna Education and Law, Copenhagen Education, and Oslo Engineering, Medicine, Psychology, and Law)
2. Lack of money/necessity to raise funds (Copenhagen Psychology, and all Vienna except Natural sciences, Education, and Law)
3. Family obligations (Copenhagen Psychology, and all Oslo)
4. Supervisor
5. Necessity of working to support you research (All Vienna, except Natural sciences)
6. Location of your main place of research work
7. Difficulties in identifying relevant scholarly materials in your field
8. Difficulties in getting hold of relevant scholarly materials
9. Lack of your own information-seeking skills
10. Restricted or lack of availability of specific technology requirements
11. Restricted or lack of adequate broadband speeds in your main place of work
12. Restrictions imposed by the regulation of research libraries (Vienna Medicine)
13. Licensing or other restrictions imposed by e-journals and other information services (Vienna Medicine and Engineering)

Vienna

Subject category	Frequency
Arts/humanities	Top of frequency "curve" at "always" or "very often": 1, 2, 5 Top of frequency "curve" at "sometimes": 3, 7, 8, 12, 13 Top of frequency "curve" at "rarely" or "never": 4, 6, 9, 10, 11
Social Sciences	Top of frequency "curve" at "always" or "very often": 1, 2, 5 Factors with highest frequency in "sometimes": 3, 7, 8, 12, 13 Top of frequency "curve" at "rarely" or "never": 4, 6, 9, 10, 11
Natural Sciences	Top of frequency "curve" at "always" or "very often": 1 Factors with highest frequency in "sometimes": 2, 8, 12, 13 Top of frequency "curve" at "rarely" or "never": 3, 4, 5, 6, 7, 9, 10, 11
Engineering	Top of frequency "curve" at "always" or "very often": 1, 2, 5, 13 Factors with highest frequency in "sometimes": 3, 4

	Top of frequency “curve” at “rarely” or “never”: 6, 7, 8, 9, 10, 11, 12
Medicine	Top of frequency “curve” at “always” or “very often”: 1, 2, 5, 12, 13 Factors with highest frequency in “sometimes”: 3, 7, 8 Top of frequency “curve” at “rarely” or “never”: 4, 6, 9, 10, 11
Psychology	Top of frequency “curve” at “always” or “very often”: 1, 2, 5 Factors with highest frequency in “sometimes”: 8, 12, 13 Top of frequency “curve” at “rarely” or “never”: 3, 4, 6, 7, 9, 10, 11
Education	Top of frequency “curve” at “always” or “very often”: 5 Factors with highest frequency in “sometimes”: 2, 3, 8, 12, 13 Top of frequency “curve” at “rarely” or “never”: 4, 6, 7, 9, 10, 11
Law	Top of frequency “curve” at “always” or “very often”: 5, 13 Factors with highest frequency in “sometimes”: 2, 3, 7, 8, 12 Top of frequency “curve” at “rarely” or “never”: 4, 6, 9, 10, 11
Media/communication	Top of frequency “curve” at “always” or “very often”: 1, 2, 5 Factors with highest frequency in “sometimes”: 3, 7, 8, 12, 13 Top of frequency “curve” at “rarely” or “never”: 4, 6, 9, 10, 11

Copenhagen

Subject category	Frequency
Arts/humanities	Top of frequency “curve” at “always” or “very often”: 1 Top of frequency “curve” at “sometimes”: 3, 7, 8, 13 Top of frequency “curve” at “rarely” or “never”: 2, 4, 5, 6, 9, 10, 11, 12
Social Sciences	Top of frequency “curve” at “always” or “very often”: 1 Top of frequency “curve” at “sometimes”: 3, 13 Top of frequency “curve” at “rarely” or “never”: 2, 4, 5, 6, 7, 8, 9, 10, 11, 12
Natural Sciences	Top of frequency “curve” at “always” or “very often”: 1 Top of frequency “curve” at “sometimes”: 3, 7, 13

	Top of frequency “curve” at “rarely” or “never”: 2, 4, 5, 6, 8, 9, 10, 11, 12
Engineering	Top of frequency “curve” at “always” or “very often”: 1 Top of frequency “curve” at “sometimes”: 3, 8, 13 Top of frequency “curve” at “rarely” or “never”: 2, 4, 5, 6, 7, 9, 10, 11, 12
Medicine	Top of frequency “curve” at “always” or “very often”: 1 Top of frequency “curve” at “sometimes”: 2, 3, 13 Top of frequency “curve” at “rarely” or “never”: 4, 5, 6, 7, 8, 9, 10, 11, 12
Psychology	Top of frequency “curve” at “always” or “very often”: 1, 2, 3 Top of frequency “curve” at “sometimes”: 7, 8, 9, 12, 13 Top of frequency “curve” at “rarely” or “never”: 4, 5, 6, 10, 11
Education	Top of frequency “curve” at “always” or “very often”: none Top of frequency “curve” at “sometimes”: 1, 2, 7, 9, 13 Top of frequency “curve” at “rarely” or “never”: 3, 4, 5, 6, 8, 10, 11, 12
Law	Top of frequency “curve” at “always” or “very often”: 1 Top of frequency “curve” at “sometimes”: 3, 6, 8, 9, 13 Top of frequency “curve” at “rarely” or “never”: 2, 4, 5, 7, 10, 11, 12
Media/communication	Top of frequency “curve” at “always” or “very often”: 1 Top of frequency “curve” at “sometimes”: 3, 7, 12, 13 Top of frequency “curve” at “rarely” or “never”: 2, 4, 5, 6, 8, 9, 10, 11

Oslo

Subject category	Frequency
Arts/humanities	Top of frequency “curve” at “always” or “very often”: 1, 3 Top of frequency “curve” at “sometimes”: 8 Top of frequency “curve” at “rarely” or “never”: 2, 4, 5, 6, 7, 9, 10, 11, 12, 13
Social Sciences	Top of frequency “curve” at “always” or “very often”: 1, 3

	<p>Top of frequency “curve” at “sometimes”: Top of frequency “curve” at “rarely” or “never”: 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13</p>
Natural Sciences	<p>Top of frequency “curve” at “always” or “very often”: 1, 3 Top of frequency “curve” at “sometimes”: 4, 13 Top of frequency “curve” at “rarely” or “never”: 2, 5, 6, 7, 8, 9, 10, 11, 12</p>
Engineering	<p>Top of frequency “curve” at “always” or “very often”: 3 Top of frequency “curve” at “sometimes”: 1, 4, 8, 13 Top of frequency “curve” at “rarely” or “never”: 2, 5, 6, 7, 9, 10, 11, 12</p>
Medicine	<p>Top of frequency “curve” at “always” or “very often”: 3 Top of frequency “curve” at “sometimes”: 1, 4, 13 Top of frequency “curve” at “rarely” or “never”: 2, 5, 6, 7, 8, 9, 10, 11, 12</p>
Psychology	<p>Top of frequency “curve” at “always” or “very often”: 3 Top of frequency “curve” at “sometimes”: 1, 13 Top of frequency “curve” at “rarely” or “never”: 2, 4, 5, 6, 7, 8, 9, 10, 11, 12</p>
Education	<p>Top of frequency “curve” at “always” or “very often”: 1, 3 Top of frequency “curve” at “sometimes”: 7 Top of frequency “curve” at “rarely” or “never”: 2, 4, 5, 6, 8, 9, 10, 11, 12, 13</p>
Law	<p>Top of frequency “curve” at “always” or “very often”: 3 Top of frequency “curve” at “sometimes”: 1, 13 Top of frequency “curve” at “rarely” or “never”: 2, 4, 5, 6, 7, 8, 9, 10, 11, 12</p>
Media/communication	<p>Top of frequency “curve” at “always” or “very often”: 1, 3 Top of frequency “curve” at “sometimes”: 7, 8, 9, 13 Top of frequency “curve” at “rarely” or “never”: 2, 4, 5, 6, 10, 11, 12</p>

Questions relating to library support

E1 Do you consider that the University Library supports your research enough?

Universities: There are few differences between disciplines but some between the universities - the Oslo PhD students generally give more positive answers, followed by Copenhagen, while the Vienna mostly reply “to a certain extent”.

Subjects (Vienna): There seems to be no subject differences. 25-35% of all reply “no”, approximately 55% “to a certain extent”, and 10-20% “no”

Subjects (Copenhagen): Some subject differences in Engineering and Education: Approximately 50% in most subjects reply “yes”, 35-50% “to a certain extent” and 5-10% “no”, apart from Engineering, where only about 35% reply “yes”, just under 50% reply “to a certain extent”, and 15% “no”; and Education, where 80% reply “yes”, and 20% “to a certain extent”.

Subjects (Oslo): Some subject differences: 55-65% in most subjects reply “yes”, 28-39% “to some extent”, and approximately 5% “no”, apart from Social Sciences where fewer have replied “to a certain extent”, and more “no”; and Law, where 100% have replied “yes” (only 8 respondents).

E2 What kinds of support by the library do you consider important in the context of your PhD research?

Summary: Regardless of subject and university affiliation, providing access to scholarly information is the most important support. Providing social space is generally not rated important by Copenhagen and Oslo PhD students, but more so for Vienna students, and overall 25% are dissatisfied with the support in this service regardless of discipline. Roughly, Copenhagen PhD students are most dissatisfied with the support on “help with issues concerning writing and publishing research”, although there are some differences between disciplines. The dissatisfaction among Oslo PhD students seem to center not on specific services, but more according to discipline, with the highest percentage among Media/communication and the lowest among Law students.

1. Providing access to scholarly information

Universities: Is the most important regardless of discipline and university affiliation. Few students are dissatisfied with the support, though of Vienna medical and Law students, Copenhagen Engineering students, and Oslo Arts/humanities students more than 10% are dissatisfied.

Subjects (Vienna): Is most important regardless of discipline (80-100%). Most students are either satisfied or neither satisfied nor dissatisfied, the disciplines in which proportion of dissatisfied students is more than 15% are: Medicine (23%) and Law (16%).

Subjects (Copenhagen): Is most important regardless of discipline (68-100%). Most students are either satisfied or neither satisfied nor dissatisfied, the amount that reply dissatisfaction with the support varies between 0-15%.

Subjects (Oslo): Is most important regardless of discipline (75-100%). Most students are either satisfied or neither satisfied nor dissatisfied, the amount that reply dissatisfaction with the support varies between 0-11%.

2. **Help with learning how to search, find and manage scholarly information at the reference desk**

Universities: Some distinction between disciplines, but no clear trend bridges across universities.

Subjects (Vienna): 50-65%, except for the disciplines Natural Sciences, Engineering and Medicine (approx. 30%). The disciplines in which proportion of dissatisfied students is more than 15% are: Education (16%), Social Sciences (16%) and Law (19%).

Subjects (Copenhagen): 38-55%, except for Engineering (15%). The disciplines in which proportion of dissatisfied students is more than 15% are: Medicine (22%).

Subjects (Oslo): 35-97%, in 2 sections: a low importance group (Arts/humanities, Social Science, Natural Science, Education, and Media/communication), and a high importance group (Engineering, Medicine, Psychology, and Law). The disciplines in which proportion of dissatisfied students is more than 15% are: Media/communication (20%).

3. **Help with learning how to search, find and manage scholarly information in library classes**

Universities: Some distinction between disciplines, but no clear trend bridges across universities.

Subjects (Vienna): 25-46%, except for Psychology (78%). The disciplines in which proportion of dissatisfied students is more than 15% are: Education (16%), Medicine (16%), and Law (19%).

Subjects (Copenhagen): 12-34%, except for Education (66%). The disciplines in which proportion of dissatisfied students is more than 15% are: Psychology (17%) and Law (17%).

Subjects (Oslo): 20-75% in 2 sections: a low importance group (Arts/humanities, Social Science, Natural Science, Engineering, and Media/communication), and a high importance group (Medicine, Psychology, Education, and Law). The disciplines in which proportion of dissatisfied students is more than 15% are: Media/communication (20%).

4. **Help with learning how to search, find and manage scholarly information from the library website**

Universities: Some distinction between disciplines, but no clear trend bridges across universities.

Subjects (Vienna): 30%<50%, except for Media/communication (55%) and Psychology (62%). The disciplines in which proportion of dissatisfied students is more than 15% are: Medicine (16%).

Subjects (Copenhagen): Three groups: 25 and 27% Law and Engineering respectively, 66 and 78% Education and Media/communication respectively, and the rest 45-55%. The disciplines in which proportion of dissatisfied students is more than 15% are: Engineering (19%).

Subjects (Oslo): 52-74% except for Social Sciences (35%) and Natural Sciences (42%). The disciplines in which proportion of dissatisfied students is more than 15% are: Education (19%) and Media/communication (28%).

5. **Help with issues concerning writing and publishing research**

Universities: Very little distinction between disciplines, and no clear trend between universities.

Subjects (Vienna): 30-46%, except for Psychology (65%). The disciplines in which proportion of dissatisfied students is less than 15% are: Engineering and Education (both 14%).

Subjects (Copenhagen): 28-37%, except for Education (50%). The disciplines in which proportion of dissatisfied students is more than 15% are: Education (16%), arts, humanities and philosophy (17%), Psychology (18%), Social Sciences (19%), and Law (28%).

Subjects (Oslo): 35-40%, except for Law (82%), Psychology (70%), Engineering (50%), Education (50%), and Medicine (49%). The disciplines in which proportion of dissatisfied students is more than 15% are: Natural Sciences (18%), and Media/communication (20%).

6. **Providing space for reading, writing, studying etc**

Universities: Some distinction between disciplines, but no clear trend bridges across universities.

Subjects (Vienna): 42-66%. The disciplines in which proportion of dissatisfied students is less than 15% are: Natural Sciences (11%), and Engineering (6%)

Subjects (Copenhagen): 27-50%, except for Engineering (7%) and Law (12%). The disciplines in which proportion of dissatisfied students is more than 15% are: Education (16%).

Subjects (Oslo): 26-40%, except for Psychology (46%), Media/communication (50%), and Law (66%). Percentage of dissatisfied students 0-6%.

7. **Providing social space**

Universities: Generally not rated important by Copenhagen and Oslo PhD students, except for a select few disciplines, but more so for Vienna students. Between $\frac{1}{4}$ - $\frac{1}{3}$ of all Vienna students are dissatisfied with the support. Of the other disciplines/university affiliations that rate the support important, only the Oslo Psychology students has a high reply-percentage of dissatisfaction.

Subjects (Vienna): 30-50%. Percentage of dissatisfied students higher than 15% in all disciplines (22-33%).

Subjects (Copenhagen): 0-18%, except for Education (37%). Percentage of dissatisfied students 0-8%.

Subjects (Oslo): 10-20%, except for Psychology (43%), Education (42%), and Law (45%). The disciplines in which proportion of dissatisfied students is more than 15% are: Psychology (19%), and Media/communication (20%).

8. **Providing subject expertise**

Universities: Some distinction between disciplines, but no clear trend bridges across universities.

Subjects (Vienna): 22-43%, except for Psychology (57%). Arts, humanities and philosophy (17%), Law (25%), Psychology (18%), Media/communication (19%), Social Sciences (23%), Education (22%). The disciplines in which proportion of dissatisfied students is less than 15% are: Medicine (11%), Engineering (10%), and Natural Sciences (10%).

Subjects (Copenhagen): 12-25%, except for arts, humanities and philosophy (37%), Social Science (38%), Education (40%), Media/communication (50%). The disciplines in which proportion of dissatisfied students is more than 15% are: Engineering (16%), Education (20%).

Subjects (Oslo): 20-40%, except for Psychology (50%), and Law (93%). The disciplines in which proportion of dissatisfied students is more than 15% are: arts, humanities and philosophy (19%).

E3 Have you received any help with how to use the university library services or facilities since you became a PhD student?

Universities: Differences between disciplines but also between universities. So no clear trend. The difference between disciplines is larger in Copenhagen and Oslo, possibly due to the lower number of respondents in the Scandinavian universities compared to Vienna.

Subjects (Vienna): no subject difference (30-40% yes, 60-70% no), though Media/communication 20% yes, and 80% no.

Subjects (Copenhagen): responses vary between subjects, with the lowest percentage of yes-replies in Engineering (20%), going via Medicine, Natural Sciences, arts humanities and philosophy, Psychology, Social Sciences, Media/communication, Law, to the highest yes-percentage in Education (70%).

Subjects (Oslo): responses vary between subjects, with the lowest percentage of yes-replies in Media/communication (38%), going via Natural Sciences, Psychology, Engineering, Social Sciences, Medicine, Education, arts humanities and philosophy, to the highest yes-percentage in Law (82%).

E4 Have you received any help with how to use the university library services or facilities since you became a PhD student? If yes: Where or from who did you receive that help?

Summary: Most students reply they received help from a librarian or found the information from the library web page. Many Oslo students equally often replied they attended a seminar/course, whereas the Copenhagen students depending on discipline either attended a seminar/course or received help from a fellow student. Many Vienna students also received help from fellow students and senior academics.

1. I received help from a librarian

Universities: Large discipline variations, varies between universities, but fewer Vienna reply as having received help from a librarian.

Subjects (Vienna): 25-60% going from Psychology (25%), via Medicine, Engineering, Media/communication, Social Sciences, Natural Sciences, Education, Law, to arts humanities and philosophy (60%).

Subjects (Copenhagen): 55-100% going from Engineering (55%), via Natural Sciences, Medicine, Law, Education, arts humanities and philosophy, Social Sciences, Psychology (77%), to Media/communication (100% - only 6 respondents).

Subjects (Oslo): 50-100% going from Psychology (50%), via Medicine, Social Sciences, Education, arts humanities and philosophy, Natural Sciences, Engineering (92%), to Law (100% - 9 respondents) and Media/communication (100% - 3 respondents).

2. I found information from the library web page

Universities: Large subject differences, but nothing consistent across universities.

Subjects (Vienna): 25-85% in three groups: 1) Medicine (25%), 2) Natural Sciences (55%), and 3) all the other disciplines (70-85%).

Subjects (Copenhagen): 30-55% roughly in three groups: 1) Law (30%), 2) arts humanities and philosophy, Social Sciences, Psychology and Education (all approx. 45%), and 3) all the other disciplines (50-55%).

Subjects (Oslo): 35-65%, except for Education (95%).

3. I attended a seminar/course

Universities: Large subject differences, but nothing consistent across universities.

Subjects (Vienna): 7-45% roughly in three groups: 1) Engineering (7%), 2) Psychology (48%), and 3) all the other disciplines (19-35%).

Subjects (Copenhagen): 22-50% with Psychology the lowest (22%), and Natural Sciences, Medicine, and Media/communication the highest (45, 50, and 50% respectively).

Subjects (Oslo): 22-82% in roughly two groups: Social Sciences, Education, Medicine, and Psychology (53-82%), and all the other disciplines (22-38%).

4. I received help from a fellow student

Universities: Large subject differences but nothing consistent across universities.

Subjects (Vienna): 20-45% lowest in Law (20%) and highest in Medicine and Natural Sciences (45%).

Subjects (Copenhagen): 15-45% lowest in Engineering, Education, Media/communication and arts humanities and philosophy (approx. 15%), and highest in Law (45%).

Subjects (Oslo): 7-45% lowest in Engineering and Law (7-11%) and highest in Psychology and Education (37-45%).

5. I received help from my supervisor or another senior academic

Universities: Response percentage generally higher in Vienna than Oslo and Copenhagen.

Psychology students have same response-rate across universities (30-35%).

Subjects (Vienna): 15-35%, Medicine and Natural Sciences the highest, while Media/communication and Law the lowest

Subjects (Copenhagen): 10-20%, except Psychology (35%) and Law (28%).

Subjects (Oslo): 5-12%, except Education (23%), and Engineering and Psychology (both approx. 30%).

6. I did an online tutorial

Universities: Generally very low response rate - is this because there is no online tutorial, it is not visible enough, it is hard to access, or because human interaction is rated higher?

Subjects (Vienna): 0-5%

Subjects (Copenhagen): 0-5%, Psychology (11%)

Subjects (Oslo): 0-7%

7. I attended a guided tour

Universities: Generally very low response rate.

Subjects (Vienna): 5-15%, except for Medicine (approx. 30%)

Subjects (Copenhagen): 5-15%, except for Law (approx. 30%)

Subjects (Oslo): 0-7%

8. Comments

Universities: Common denominator across disciplines and universities is that PhD students learnt to use the library system before becoming PhD students, either via courses during undergraduate years, by being employed by the library, using the system, and asking via phone, email, web page, reading brochure or similar.

Subjects (Vienna):

- Worked at library myself (Arts, humanities and philosophy, Social Sciences, and Media/communication)
- I attended a guided tour during my undergraduate studies (Arts, humanities and philosophy and Media/communication)
- The library bought books important for my research (Arts, humanities and philosophy)
- Printed brochure (Social Sciences, Psychology and Law)
- I attended a guided tour during my undergraduate studies (Social Sciences)
- Course on use of EndNote; information about web of science (Social Sciences)
- I paid for private instructor (Social Sciences)
- Help from family (Natural Sciences)
- Learning by doing (Law)

Subjects (Copenhagen):

- I phoned the library (and often do) (Natural Sciences and Education)
- E-mail (Natural Sciences and Engineering)
- Searching course (Medicine)

Subjects (Oslo):

- Attended seminar course during MA courses (Arts, humanities and philosophy)
- E-mail (Medicine)

E5 Have you received any help with how to use the university library services or facilities since you became a PhD student? If no: Why not?

Summary: Most students, regardless of university affiliation or discipline, reply they learnt about it as an undergraduate, or figured it out for themselves. However many Copenhagen and some Oslo students also replied they did not know they could get help.

1. I did not need any since I learned about the library services and facilities as an undergraduate

Universities: Some discipline differences, but nothing consistent across universities. Between 1/3-1/2 of the PhD students learnt to use these services during their undergraduate years.

Subjects (Vienna): 40-65%, lowest at Medicine and Education, highest at arts humanities and philosophy and Media/communication.

Subjects (Copenhagen): 30-55%, lowest at Engineering and Media/communication, and highest at Medicine and arts humanities and philosophy. Excluded: Law (0% but only three respondents), and Education (100% but only two respondents).

Subjects (Oslo): 35-60%, lowest at Psychology and arts humanities and philosophy, highest at Medicine and Education (both 50%). Excluded: Media/communication (60% from 5 respondents) and Law (100% but only two respondents).

2. I have not yet started using the library services and facilities

Universities: Generally low numbers regardless of discipline and university affiliation.

Subjects (Vienna): 3-13%

Subjects (Copenhagen): 8-12%, Excluded: Law (33% of 3 respondents) and Media/communication (20% of 5 respondents).

Subjects (Oslo): 0-12 %

3. I did not know you could get help

Universities: Some discipline differences, but nothing consistent across universities. Extra PR for services needed especially to Vienna Natural Sciences Medicine and Psychology PhD students, to all Copenhagen PhD students, and to most Oslo PhD students.

Subjects (Vienna): 7-24%, highest in Natural Sciences, Medicine and Psychology (over 20%), 15% or lower in the remaining disciplines.

Subjects (Copenhagen): 16-50%, lowest number in Social Sciences and art humanities and philosophy (<20%), Natural Sciences, Engineering and Medicine (25%), to Psychology (55%). Excluded: Media/communication (40% 2), Law (35% 3) and Education (50% 5)

Subjects (Oslo): 15-30%, except for Medicine (5%)

4. I figured it out for myself

Universities: Generally 50% of the PhD students respond to have figured it out for themselves. Very few discipline and university affiliation differences.

Subjects (Vienna): 48-59% - very little subject difference.

Subjects (Copenhagen): 35-55%. Lowest in Medicine and Engineering, highest in Psychology. Excluded: Law (33% of three respondents), Education (50% of two respondents), and Media/communication (80% of 5 respondents).

Subjects (Oslo): 53-64%, except for Education (37%). Excluded: Law (50% of two respondents), and Media/communication (60% of 5 respondents)

5. The library is irrelevant to my research topic

Universities: Very low response rates, except for Engineering, which is fairly high in Oslo and Copenhagen. General tendency to dismiss library in the "hard disciplines" Natural

Sciences, Engineering and Medicine, perhaps because a lot is open access or accessed via electronic access perhaps provided by library/uni/employer.

Subjects (Vienna): 0-5%, except for Natural Sciences, Engineering and Medicine (approx. 12%).

Subjects (Copenhagen): 0-5%. Excluded Law (33% of three respondents), Education and Media/communication (0% of two and 5 respondents).

Subjects (Oslo): 0-6%, except Engineering (23%).

6. **Comments**

Universities: Many did not need the course since having had it during undergraduate years or have picked up skills underway or during earlier employment period at the library. Little time or possibility to fit in the library courses during the PhD, some do not know the courses were there at all. Some PhD students are discouraged by previous unhelpful or unfriendly experiences at the library. Many use only the most basic services (electronic access to journals), people are glad not to have to come to the library to pick up books/use the e-resources. Many students use the local institutional or hospital (work related) library.

Subjects (Vienna):

- No time (Arts, humanities and philosophy, Psychology, Education)
- I feel very unwanted at the library - it is not a place I want to go to. The librarian is horribly unfriendly .. who would ask for help there? (Arts, humanities and philosophy, Education)
- It looks to be very complicated (Arts, humanities and philosophy, Social Sciences, Media/communication)
- Help was offered but I could not participate in the workshop (Arts, humanities and philosophy)
- Usually undergrad students get an introduction. as i only came here for my PhD i missed that (Arts, humanities and philosophy, Social Sciences, Media/communication)
- They didn't help (Arts, humanities and philosophy, Social Sciences, Law)
- I attended a course/seminar organised by the library when I was doing my masters (Arts, humanities and philosophy, Social Sciences)
- Experts elsewhere (Arts, humanities and philosophy, Social Sciences, Medicine)
- I couldn't take part in a course but I plan to do so (Arts, humanities and philosophy)
- Help wasn't satisfactory (Arts, humanities and philosophy, Social Sciences, Psychology)
- No real need, to date (Arts, humanities and philosophy, Social Sciences)
- Too complicated with dates (Social Sciences, Media/communication)
- Don't know how to get some (Social Sciences, Education)
- I asked colleagues about the issues important for me (how to use e-journals, how to get a vpn-connection etc.) (Social Sciences)

- I asked for help at the very beginning of my PhD study because I come from an other Education facility but the answer I received showed a lack of interest and people were very unfriendly. I then figured it out by myself and asking colleagues (Social Sciences)
- I have stopped using the library services (Social Sciences)
- Online access works automatically and behind the scenes (Natural Sciences)
- University-independent library at research institution (Natural Sciences)
- Lack of competence of the personal (Natural Sciences)
- No courses provided (Natural Sciences)
- Most of the time use the digital library (Engineering)
- Incompetent librarian (Law)
- Help of colleagues (Law)

Subjects (Copenhagen):

- I've done it before (Arts, humanities and philosophy, Social Sciences, Education)
- I've never gotten around to seek help and it was never offered to me (though I could probably use it (Arts, humanities and philosophy, Social Sciences)
- REX continues to be a mystery to me. I do not like searching REX. The librarians at IFS at KU are great at helping (Social Sciences)
- I did not seek help (Social Sciences, Natural Sciences, Engineering)
- Wrote for help (Social Sciences, Engineering)
- I am currently residing in Melbourne (Natural Sciences)
- Help was provided during my master's research, and was unfortunately not very good, so I felt my time would be better spent elsewhere (Natural Sciences)
- I never saw anyone working in our library (Natural Sciences)
- There has currently been no need for the use of the library. That will, however, change (Natural Sciences, Engineering)
- I use the library at my primary workplace which is placed outside the university (Natural Sciences)
- Need library only for access to journals online (Natural Sciences)
- Only three month into my program, but I plan to get help soon (Natural Sciences)
- Have not seen or heard anything about services for PhD students (Engineering, Psychology)

Subjects (Oslo):

- Expected to find out by yourself (Social Sciences, Medicine, Psychology)
- The helper did not solve the problem (Social Sciences, Law)
- Will attend a course in the fall (Social Sciences)
- Used to work at the library as an undergrad (Social Sciences, Law)

- I mostly use my work place library (Social Sciences, Psychology)
- Structured assistance will begin next semester (Natural Sciences)
- It is time-consuming to get help from the library services, compared to electronic search by myself (Natural Sciences, Engineering)
- My workplace library has given me the information (Natural Sciences, Medicine)
- I use the library at my workplace and the librarians there are brilliant :-)
(Medicine)
- Working outside of university area, have access to own library service
(Medicine, Psychology)
- External PhD project outside UiO (Psychology)
- I use another library that the university library, but they cooperate so that I have access to everything (Psychology)
- The course was taken when I was Master student but not for PhD, that's long time ago, I've forgot (reply from question E6 seems to have been misplaced).

E6 Is there anything else you would like to tell us about the support you are receiving from the library for your PhD research?

- A summary of the appreciated things and suggestions for improvement:
- In depth and discipline specific help at the beginning of the PhD, both in information searching and reference management.
- Better advertising for the services the library already has.
- Seminars/teaching outside normal working hours (Vienna).
- Wishes for free inter library loans (Vienna).
- Remote access to the electronic services, and/or better advertising/guidance in the already existing remote access.
- Help with proof reading for scientific journal papers.
- Getting a librarian to the institute or office, and/or better advertising for an already existing service.
- Communication in English for foreign PhD students (especially with regard to standard messages and texts).
- Book and journal acquisition suggestion, and/or better advertising for an already existing service.
- Personalised help.
- Friendly staff at the libraries, the feedback from the PhD students is very varied from high praise to the opposite.

Vienna - Positive remarks

- Librarian are great in helping to find especially old articles.
- Useful help was offered at the faculty of philology but not at the faculty of Law.

- I cherish the availability of the librarians and their readiness to answer questions. The goodwill is simply there!

Vienna - Constructive criticism, critique points and misunderstandings

- I think the PhD student should be taught at the beginning about the library services and facilities.
- I actually never made it to the university library, I never felt the necessity for this. Maybe I just wasn't aware that it also could be a good starting point, maybe some marketing activity would help here ;)
- At a library seminar on online research, the library's representative didn't know about Google Scholar.
- Generally the support is quite sufficient, but as soon as there are very specific questions, I don't know whom to ask for support.
- Useful help was offered at the faculty of philology but not at the faculty of Law.
- All offers to learn about research techniques are offered during daytime, no offers for students working full time. In general, I think there are not enough courses offered to learn how to work professional scientific online-databases.
- Online journals should be made accessible to all students and book loans from other libraries should be funded by the university library
- Electronic information should be available from outside the university or the library (PhD students often work and are not always present at the university).
- The librarian couldn't tell me things I didn't know and wasn't really competent.
- There is no in-depth introduction.
- If books relevant for my research topic are acquired at all, they are too old, and most of the time borrowed.
- The "fernleihe" system should be better explained and communicated.
- PhD students should already know how to use all the different library services.
- University library services strongly differ, depending on the motivation/expertise of employees.
- Although it is improving, there is still too little online access (journals, also accessing books in electronic format would be good).
- Most library staff is very unfriendly and unhelpful. I feel that they are stressed because they are understaffed.
- Managing literature incl. using programmes like EndNote should be intensively trained. A few-day course incl. practical work; more steps than shallow basic" and "advanced".
- I was (and am) in need of some help on behalf of electronical research use and there is no one who helps me. But unfortunately I am 45 years old, and no one sees an importance of helping someone who studies in his/her later years.
- The library staff at the University of Vienna is a shame: uneducated, rude and incompetent.

Copenhagen - Positive remarks

- I think my library and librarians are very effective when it comes to find and get articles and material they do not physically have at the library, and that is being very helpful for me.
- The employees are qualified and always helpful
- The delivery service is very convenient and time saving
- I rarely or never need the library. But from my previous experiences I am certain that they are more than willing to help me out if I need help.
- The LIFE library is very helpful and quick to answer mails, if you for some reason cannot get the things you need. It is a great service.
- The library is well organized and the staff are helpful, the web page is easy to navigate and has the information I need. Some of the software for reading e-books/materials is messy, but I don't think it is the library's fault but the content provider's fault.

Copenhagen - Constructive criticism, critique points and misunderstandings

- The course didn't teach me anything I didn't already now.
- The portion of the course that included use of library resources was too short, just two hours.
- I need personal, face-to face-help in a consultation-situation, where they help me almost understand how the mysteries of literature search works. And I would never "survive" without the three alerts that the librarian xx created for me.
- Am not actively seeking it, so cant really complain. Would have liked to take course in ref man but never got around to do it.
- I have never used the library or any of its resources during my PhD work, as I have never even considered to use a librarian. I have always searched on my own through the universities access to specific online journals.
- It would be nice if we get visits from librarians at our departments.
- I am stationed in another university and have not been to much in Copenhagen. Would like library to be more aggressive about what they can offer PhD students.
- Need proof readers for scientific journals.

Oslo - Positive remarks

- I do mainly use the library at the University college where I have my office (not the University library in Oslo).
- The library is always helpful when I need help, but that's not very often.
- The web site of my University library has clear instructions and is easy to use.
- I have a good impression of the UiO library and trust that they would help me if necessary.
- Access to online journals is very good.

- It is great the library supports collective collection of books for institutes outside university campus, so we can send one person a week to fetch all books for the entire institute. Great service!
- The access to full-text journal papers via the University Library website is extremely helpful as a supplement to the access I have through my employer.

Oslo - Constructive criticism, critique points and misunderstandings

- Use of a foreign language rather than English in the instructions, messages etc in and by the library [it seems the user has problems reading Oslo and would prefer the instructions, messages etc. in English].
- I wish for a much easier bibsys web system.
- The online ordering scheme for books or hard copies is not quite good. Perhaps it's good that it's awkward to fill in - otherwise we might order far too many papers!
- It could be better, the librarians working on specific academic fields could be easier accessible, and in general it seems like my home library is more directed against students than researchers.
- What I want from the library is 1) access to journals online, 2) that relevant books are available 3) that the library database gives an accurate view of the contents of the library. 1) is very good, 2) is ok, 3) is bad. It occasionally annoys me when the library focus on other issues, I don't want any other support from the library, I just want 1)2)3) working well.
- I have not received any help from the university library services but a lot of help from our local library service in the hospital i am working at who have guided me to the university sides if needed.
- The main support was to have access to the papers if I did not find them online. I managed to have a learning course after I delivered my PhD (that was a bit late, but better than nothing). No help in searching was offered, did not even know it was possible until ca. 3 months. Communication since has improved very much.
- I should and could probably get more support, but I'm not clever enough to ask for it, sometimes I use a great amount of time to find out about things through web sites when it would have been much easier to ask for help. Some of my fellow students ask more and get quick and good help from the library.
- I would say the help has been minor and somewhat coincidental this far. Not because there is no better offer, but I have not had the need for more at this point.
- I would like to be able to suggest some books and/or publications to be bought for the library.
- I wish I didn't have to book a time in advance.
- When I need a book I contact my library at the workplace, which then again orders the books from the university library or whichever library has it.
- I receive library support from my work place (outside the university).

Appendix C: Survey methods and questionnaire

Survey methods

The results are based upon a survey conducted using SurveyXact. 4.453 PhD students attending the universities of Copenhagen, Oslo and Vienna answered a questionnaire containing 35 questions covering the five themes:

- A. methods for searching for scholarly information for their project
- B. tools for searching, finding and managing scholarly information
- C. types of information they want, search for and use in their project
- D. feelings they have while searching
- E. library support

A set of questions about the respondents' background gave us information e.g. about the students' subject discipline, age group or stage in their project. The questionnaire is placed in appendix C. In the following the respondents' answers will be analyzed by university with focus on their subject discipline. A host of other crosses are possible to make, but in order to maintain clarity we have decided to look exclusively on the differences between the different subject disciplines and only look at other parameters when there are specific reasons to do so. In section 4 we shortly describe the differences between the three participating universities along with any similarities. The reason for dividing the report in this manner is to make it more accessible to the people from each university who wishes to make an evaluation of their particular university's efforts on servicing the PhD students.

Questions presented in this report (with preceding question code):

- (A2) How do you usually become aware of literature for your research?
- (A3) How important do you consider the following competencies are for your current PhD research?
- (A4) Where do you conduct most of your searches for scholarly information and literature for your PhD research?
- (A5) How often do you currently use your university library's facilities in order to search for or access scholarly information?
- (B1) Look at the following alphabetical list of different types of tools and consider whether you have used them and how important they are for your research.
- (B2) Do you use reference management software?
- (B3) If you use, or previously have used, a reference management software (like Reference Manager or EndNote), how useful do you consider it?
- (C1) Where would you place yourself with regard to the relative use of print versus electronic information?
- (C2) Consider what role these different types of information sources play in your research.
- (D4) Listed below are various factors that you might feel affect your progress in your PhD research negatively. Please indicate how often you feel constrained by these factors.
- (E1) Do you consider that the University Library supports your research enough?
- (E2) What kind of support by the library do you consider important in the context of your PhD research?

- (E3) Have you received any help with how to use the university library services or facilities since you became a PhD student?
- (E4) If yes: From where or whom did you receive that help?
- (E5) If no: Why not?
- (E6) Is there anything else you would like to tell us about the support you are receiving from the library for your PhD research?

The answers to the above questions were divided into each of the **discipline groups**:

- Arts, humanities and philosophy (including performing arts, history, languages, linguistics, literature, cultural studies, archeology, religion and theology, philosophy)
- Social Sciences (including economics, business, political science, social anthropology, sociology, human geography, gender studies)
- Natural Sciences (including mathematics, biology, chemistry, physics, astronomy and earth sciences)
- Engineering (computer sciences, informatics)
- Medicine (dentistry and other health related disciplines)
- Psychology
- Education
- Law (including criminology)
- Media and communication

Survey respondents had the option of multiple answers and of skipping questions altogether.

The choice not to make all questions mandatory were made since making them mandatory might result in losing too many respondents in the process. Most histograms present the percentage of answers out of the total number of respondents who answered that particular question. This is to enable easy comparison between the subject disciplines.

What this entails is that one needs to be very careful when reading e.g. a graph, to take into account the number of respondents to a given question before drawing meaning from that graph. For instance: if an option has been rated as very important by 80 of the respondents to that question, but only 10% of the total amount of respondents bothered to answer that particular question, it might not have been that important after all. Some of the 90% who did not answer that particular question might have dropped out of the questionnaire before finishing it, so it may not mean that 90% of the respondents found that particular question of very little importance, they may have dropped out before that particular question. Thus we should be careful when concluding on the basis of questions with a low response rate.

Survey questionnaire

Information behaviour of PhD students in Copenhagen, Oslo and Vienna - a survey

You have been invited to participate in this survey as a PhD student. We appreciate your taking the time to fill in the questionnaire.

The research team from the University Libraries of Copenhagen, Oslo and Vienna would like to find out more about the information behaviour of PhD students at the three universities since PhD students are an important researcher sub-group whose information seeking behaviour can act as an indicator for the development of scholarly communication and research practices. By conducting this study at three different European universities we are hoping to gain comparative information. Through your participation you will contribute to our better understanding of how beginning researchers in different disciplines seek scholarly information and use their library's support in doing so. University libraries are increasingly involved with different aspects of scholarly communication and the research work flow. Since the libraries involved in this study want to improve and develop their traditional services, it is very important to know about the way researchers seek, find, gain access to and make use of different kinds of information.

The questionnaire is divided into sections concerning methods of searching, tools, types of information, the experience or feelings characterizing the search process, library support and background information on the PhD project and the PhD student.

In the context of this questionnaire, we refer to all doctoral or PhD studies or programmes as "PhD" no matter whether or not this term is part of their official names.

Thank you for your help.

Methods

There are many ways you can search for information. For libraries it is important to know how researchers search, find and manage information. In answering the following questions please think of how you become aware of, search for and retrieve material for your research. In certain stages of a research project the importance of searching for literature or scholarly information can be greater than in others. How extensively are you searching for literature at the moment?

- (1) All or most of the time
 (2) Very Often
 (3) Sometimes
 (4) Hardly at all
 (5) I am currently not searching
 (6) Don't know

How do you usually become aware of literature for your research?

Always Very often Sometimes Rarely Never Don't know

Through references in literature I have read

- (1) (2) (3) (4) (5) (6)

Through searches in library online catalogues

- (1) (2) (3) (4) (5) (6)

By browsing library shelves (1) (2) (3) (4) (5) (6)

By looking through print bibliographies

- (1) (2) (3) (4) (5) (6)

Through searches in subject specific databases (e.g. PubMed, Sociological Abstracts, Lovdata, EconLit, GeoRef)

- (1) (2) (3) (4) (5) (6)

By attending seminars or conferences

- (1) (2) (3) (4) (5) (6)

By attending PhD courses (1) (2) (3) (4) (5) (6)

Through my supervisor (1) (2) (3) (4) (5) (6)

Through word-of-mouth from fellow PhD-students or other colleagues

- (1) (2) (3) (4) (5) (6)

Through searches in interdisciplinary databases (e.g. Project Muse, Infotrac, Proquest, Jstor, MLA Bibliography, Analytical Abstracts, Scopus, ISI web of science)

- (1) (2) (3) (4) (5) (6)

Always Very often Sometimes Rarely Never Don't know

Through alert services (1) (2) (3) (4) (5) (6)

By browsing journals (1) (2) (3) (4) (5) (6)

Through searches in Google/Google Scholar

- (1) (2) (3) (4) (5) (6)

By reading electronic mailing lists listserv

- (1) (2) (3) (4) (5) (6)

Through membership in a social network site

- (1) (2) (3) (4) (5) (6)

Through membership in an association

(1) (2) (3) (4) (5) (6)

Through a bookstore (1) (2) (3) (4) (5) (6)

Other, please specify (1) (2) (3) (4) (5) (6)

How important do you consider the following competencies for your current PhD research?

Extremely important Very important Somewhat important Not very important Unimportant Don't know

Knowing where to search for information/literature

(1) (2) (3) (4) (5) (6)

Knowing how to find information/literature in databases

(1) (2) (3) (4) (5) (6)

Knowing how to use the library catalogue

(1) (2) (3) (4) (5) (6)

Using reference managing software (i.e. EndNote, Reference Manager, Zotero or other)

(1) (2) (3) (4) (5) (6)

Understanding and following citation practices

(1) (2) (3) (4) (5) (6)

Avoiding plagiarism (1) (2) (3) (4) (5) (6)

Knowledge about copyright issues

(1) (2) (3) (4) (5) (6)

Publishing your research (1) (2) (3) (4) (5) (6)

Other, please specify (1) (2) (3) (4) (5) (6)

Where do you conduct most of your searches for scholarly information and literature for your PhD research? Multiple answers are possible.

(1) at home

(2) at my place of work at the university

(3) at my place of work outside the university

(4) in my university library

(5) in a public library

(6) in an archive

(7) the go (e.g. from a portable device like i-phone or netbook)

(8) in another city or university away from my university city (e.g. in an archive or depository library abroad)

(9) other, please specify _____

How often do you currently use your university library's facilities in order to search for or access scholarly information?

Every or almost every day A few times a week A few times a month A few times a year Never Don't know

How often do you currently visit your university library in person in order to search for or access scholarly information?

(1) (2) (3) (4) (5) (6)

How often do you currently use your university library's online services (e.g. its databases, online catalogue, website) in order to search for or access scholarly information?

(1) (2) (3) (4) (5) (6)

Every or almost every day A few times a week A few times a month A few times a year Never Don't know

Is there anything else you would like to tell us about how you search, find and manage scholarly information for your PhD research?

Tools

Today researchers are using a great variety of tools to find and retrieve scholarly material. It is very important for libraries to know if there are tools that are used more than others or considered more useful than others. In this section of the survey we would like to find out about your use of tools for finding and managing scholarly information.

Look at the following alphabetical list of different types of tools and consider whether you have used them and how important they are for your research.

Tick the box if you have used this information tool for your PhD research

Tick the box if this is one of the most important tools for finding and retrieving scholarly material (e.g. books, articles,...) for your PhD research

Tick the box if this is one of the most important tools to keep up-to-date with new developments and literature in your PhD research

Alert

(1) (4) (3)

Database providing raw-data (e.g. statistical databases, or observational data like Simbad, Danish State Archives, National Archives)

(1) (4) (3)

Document delivery service (e.g. Subito, Interlibrary Loan)

(1) (4) (3)

Electronic mailing list (list serves)

(1) (4) (3)

Google or similar search engines on the open web (e.g. AltaVista, Bing, Yahoo)

(1) (4) (3)

Google Books (1) (4) (3)

Google Scholar (1) (4) (3)

Institutional or subject based repository (e.g. DUO, DIVA, Phaidra)

(1) (4) (3)

Scholarly journal (1) (4) (3)

Library metasearch tool (e.g. x-port, metalib, SFX citation linker)

(1) (4) (3)

Library online catalogue (e.g. BIBSYS Ask, Rex)

(1) (4) (3)

Library shelf (full of books or journals)

(1) (4) (3)

Linking tool (e.g. SFX citation linker)

(1) (4) (3)

Online academic portal with links to relevant Internet sites (e.g. Intute, Voice of the Shuttle)

(1) (4) (3)

Online bookstore (e.g. Amazon)

(1) (4) (3)

Online dictionary or encyclopaedia (e.g. the Dictionary of National Biography or Britannica Online Encyclopedia)

(1) (4) (3)

Pre-print database (e.g. arXiv.org, CERN Document Server)

(1) (4) (3)

Print bibliography (1) (4) (3)

Print library catalogue (1) (4) (3)

Publisher's website (e.g. a website for an individual journal)

(1) (4) (3)

RSS feed (1) (4) (3)

Scholarly database (e.g. MLA Bibliography, Scopus, Web of Science, PubMed, Historical Abstracts)

(1) (4) (3)

Social networking site (e.g. Facebook, ResearchGate)

(1) (4) (3)

Other, please specify (1) (4) (3)

Do you use reference management software?

(1) Don't use

(2) Don't know

(3) Aigaion

(4) AlleMeineBuecher.Net

(5) B3

- (6) Biblioscape
- (7) Bibliographix
- (8) BiblioWeb
- (9) BibORB
- (10) Bibus
- (11) Bibwiki
- (12) Citavi
- (13) Citeit!
- (14) CiteSmart
- (15) DAFFODIL
- (16) Endnote
- (17) gBib
- (18) Ibidem
- (19) Inflight
- (20) JabRef
- (21) Kaspaliteo
- (22) Memento
- (23) Mendeley
- (24) ProCite
- (25) Pybliographer
- (26) rebase
- (27) RefDB
- (28) Reference Manager
- (29) Referencer
- (30) RefWorks
- (31) Scholars Aid
- (32) Sixpack
- (33) Synapsen
- (34) Tellico
- (35) TextCite
- (36) WIKINDX
- (37) Zotero
- (38) Other, please specify _____

If you use, or previously have used, a reference management software (like Reference Manager or Endnote), how useful do you consider it?

- (1) Extremely useful

- (2) Very useful
 (3) Quite useful
 (4) Not very useful
 (5) Not at all useful
 (6) Don't know

Is there anything else you would like to tell us about the tools you use to search, find and manage scholarly information for your PhD research?

Types of information

As part of their gathering of scholarly information, scholars from different disciplines or subjects need access to a great variety of materials for their research. It is important that libraries develop an understanding of how researchers from different disciplines or subjects use different types of scholarly material. In this section of the survey we would like to find out about your use of different kinds of scholarly information.

We know that today scholarly information can be accessed in print and electronic format. The extent to which this is done so may differ in different areas of research. When you consider your own PhD research where would you place yourself with regard to the relative use of print versus electronic information?

- (8) For my research I access scholarly information in print format only
 (7) For my research I access scholarly information in print format most of the time
 (3) For my research I access scholarly information equally in print and in electronic format
 (4) For my research I access scholarly information in electronic format most of the time
 (5) For my research I access scholarly information in electronic format only

Different areas of research require different types of information sources. Consider what role different types of information sources play in your PhD research.

Tick the box if you have used this type of information source in your PhD research

Tick the box if this is one of the most important types of information sources in your PhD research (even if you have not used it yet)

Handbooks and other reference works

- (1) (2)

Monographs, i.e. scholarly books on a topic usually by one author

- (1) (2)

Book articles (1) (2)

Journal articles (1) (2)

Official documents (e.g. government or state documents, parliamentary papers)

- (1) (2)

Working papers (1) (2)

Preprint articles (1) (2)

Dissertations or theses (1) (2)

Conference proceedings (1) (2)

Systematic reviews (1) (2)

Legal material (e.g. judgments, administrative decisions, legislation)

(1) (2)

Raw data from specialized databases

(1) (2)

Information distributed via email newlists

(1) (2)

Information learned from personal contacts with other academics

(1) (2)

Popular media (e.g. newspapers, TV etc.)

(1) (2)

Archival material (e.g. personal papers, letters, estate papers etc.)

(1) (2)

Images (1) (2)

Sound or video recordings (1) (2)

Other, please specify (1) (2)

Is there anything else you would like to tell us about the types of scholarly information you need for your PhD research?

Feelings

Literature on the topic has clearly shown that feelings are an important aspect of how researchers and students experience the research process and how they deal with its challenges. Research normally involves a broad range of feelings from insecurity and confusion to hope and clarity. Knowing about how researchers feel as they look for scholarly information gives the library important clues about how to devise its services. In this section we would like to find out about your own experiences in this respect.

How confident do you feel about searching, finding and managing scholarly information for your PhD research?

(1) Very confident

(2) Confident

(3) Neither confident nor not confident

- (4) Not confident
 (5) Not confident at all
 (6) Don't know

When it comes to searching for scholarly information how confident do you feel using the computer?

- (1) Very confident
 (2) Confident
 (3) Neither confident nor not confident
 (4) Not confident
 (5) Not confident at all
 (6) Don't know

Consider the following statement: "When it comes to searching, finding and keeping records of scholarly information for my research, I feel that I am well-organized." How true is the statement for you?

- (1) Absolutely true
 (2) Mainly true
 (3) Neither true nor untrue
 (4) Mainly untrue
 (5) Absolutely untrue
 (6) Don't know

Listed below are various factors that you might feel affect your progress in your PhD research negatively. Please indicate how often you feel constrained by these factors.

Always Very often Sometimes Rarely Never Don't know

Pressure of time (1) (2) (3) (4) (5) (6)

Lack of money/necessity to raise funds

(1) (2) (3) (4) (5) (6)

Family obligations (1) (2) (3) (4) (5) (6)

Supervisor (1) (2) (3) (4) (5) (6)

Necessity of working to support your research

(1) (2) (3) (4) (5) (6)

Location of your main place of research work

(1) (2) (3) (4) (5) (6)

Difficulties in identifying relevant scholarly materials in your field

(1) (2) (3) (4) (5) (6)

Always Very often Sometimes Rarely Never Don't know

Difficulties in getting hold of relevant scholarly materials (online or hard copy)

(1) (2) (3) (4) (5) (6)

Lack of your own informationseeking skills(1) (2) (3) (4) (5) (6) **Restricted or lack of availability of specific technology requirements**(1) (2) (3) (4) (5) (6) **Restricted or lack of adequate broadband speeds in your main place of work**(1) (2) (3) (4) (5) (6) **Restrictions imposed by the regulations of research libraries**(1) (2) (3) (4) (5) (6) **Licensing or other restrictions imposed by e-journals and other information services**(1) (2) (3) (4) (5) (6)

Is there anything else you would like to tell us about the how you feel as you search, find and manage scholarly information for your PhD research?

Library support

Libraries need to know about the role library support plays for PhD students. In this section we would like to find out how you see the role of your library for your PhD research. Do you consider that the University Library supports your research enough?

Yes To certain extent No

(1) (2) (3)

What kinds of support by the library do you consider important in the context of your PhD research?

Support by the library is important to me

Providing access to scholarly information(1) **Help with learning how to search, find and manage scholarly information at the reference desk**(1)

Support by the library is important to me

Help with learning how to search, find and manage scholarly information in library classes(1) **Help with learning how to search, find and manage scholarly information from the library website**(1)

Help with issues concerning writing and publishing research (e.g. citations practices or copyright issues)

(1) **Providing space for reading, writing, studying ...**(1) **Providing social space (e.g. for meeting other students)**

(1) Providing subject expertise (1) Other, please specify (1)

Have you received any help with how to use the university library services or facilities since you became a PhD student?

Yes No

(1) (2)

if yes: Where or from who did you receive that help? (Multiple answers are possible.)

- (1) I found information from the library webpage
- (2) I received help from a fellow student
- (3) I attended a seminar/course
- (4) I attended a guided tour
- (5) I received help from a librarian
- (7) I received help from my supervisor or another senior academic
- (8) I did an online tutorial
- (9) Other, please specify _____

if no: Why not? (Multiple answers are possible.)

- (1) I did not need any since I learned about the library services and facilities as an undergraduate
- (2) I have not yet started using the library services and facilities
- (3) I did not know you could get help
- (4) I figured it out for myself
- (5) The library is irrelevant to my research topic
- (6) Other, please specify _____

Is there anything else you would like to tell us about the support you are receiving from the library for your PhD research?

Background

In order to better understand the information you have provided on your information behaviour, we would like to find out some facts about your PhD research and your general background.

Which of these are relatively important ways of finding information in your everyday life. Multiple answers possible.

- (1) Having conversations with people
- (2) Having telephone conversations
- (3) Communicating by e-mail

- (4) Receiving RSS feeds
- (5) Visiting chatrooms
- (6) Visiting social networking sites (e.g. Facebook or Twitter)
- (7) Being somewhere where you go to do something else (e.g. to eat or get a haircut) but where you end up sharing information just because other people are there and you start talking
- (8) Using text messages (SMS)
- (9) Watching television
- (10) Reading newspapers
- (11) Reading printed newsletters
- (12) Reading e-mail newsletters
- (13) Visiting internet homepages
- (14) Reading magazines
- (15) Listening to the radio
- (16) Reading or looking something up in books
- (17) Other, please specify _____

What PhD are you pursuing?

- (1) Full-time PhD at Copenhagen University
- (2) Part-time PhD at Copenhagen University
- (3) Full-time PhD at Oslo University
- (4) Part-time PhD at Oslo University
- (5) Doctoral degree/PhD at Vienna University

Do you work for 20 hours or more besides your PhD-research?

- (1) Yes
- (2) No

Which year of your PhD are you in?

- (1) I am in year 1
- (2) I am in year 2 - 3
- (3) I am in year 4 -5
- (4) I am in year 6 or later

How soon after taking your previous degree did you start your PhD project?

- (1) Immediately
- (2) After up to a year
- (3) After how many years? _____

Have you worked within the wider subject area of your PhD degree before starting to research your PhD (e.g. because you were employed to do so or because it was the context of previous non-PhD research or practical work)?

- (1) No
 (2) Yes, for less than a year
 (3) For how many years? _____

To which group or groups of disciplines would you say does your PhD project belong? Multiple answers are possible.

- (1) Arts, humanities and philosophy (including performing arts, history, languages, linguistics, literature, cultural studies, archeology, religion and theology, philosophy)
- (2) Social sciences (including economics, business, political science, social anthropology, sociology, human geography, gender studies)
- (3) Natural sciences (including mathematics, biology, chemistry, physics, astronomy and earth sciences)
- (4) Engineering (computer sciences, informatics)
- (5) Medicine (dentistry and other health related disciplines)
- (6) Psychology
- (7) Education
- (8) Law (including criminology)
- (9) Media and communication
- (10) Other discipline, please describe _____

We know that research is a process that can be cyclical and that may go through several iterations during the doctoral research journey. Which one of the following best describes your current work situation?

- (1) Ideas generation (e.g looking at previous work, reading widely, discussions with colleagues)
- (2) Background work (e.g locating source materials, consulting other scholars)
- (3) Preparing and organising (e.g focused use of research resources such as following up leads and references, organising information and organising data collection)
- (4) Doing actual field work, data collection, experimentation etc.
- (5) Analysing (e.g data, image or textual analysis)
- (6) Writing/creation and revision (of your primary research outputs)
- (7) Dissemination of your research (e.g working on conference papers, articles etc.)

What is your gender?

- (1) Female
 (2) Male
 (3) Don't want to say

How old are you?

- (1) 20 years old or under
 (2) 21 - 27 years old

- (3) 28 - 34 years old
- (4) 35-44 years old
- (5) 45-54 years old
- (6) 55 years old or over
- (7) Prefer not to say

Is there anything else you would like to tell us about your PhD research?

If you would like to enter the prize draw please enter your e-mail address

The answers from this questionnaire will form basis for a round of interviews with ca. 10 PhD students from each university. The interviews will deepen our understanding of the patterns of informationbehaviour, so we hope that you will agree to participate. The interviews are schduled for the autumn and will have a duration of ca. 1 hour. There will be snacks and beverages included.

If you would like to participate in an interview with us to further investigate your information beviour in our qualitative study, please enter your email adress.

Thank you very much for completing the questionnaire.

If you have won a prize or agreed to do the interview, you will be contacted by one of the members of the project group.

Please click the cross at the bottom right to finish.

Appendix D: Interview guide and methods

Research question

How do PhD students from different subjects and different universities view and experience the process of finding and using scholarly information in the context of their own research and in the general context of academia? What can we learn about their needs, their information practices and the challenges they are facing?

Purpose of investigation: To arrive at a better understanding of an important user group's views and experiences of scholarly information.

Overall interview focus

We are interested in the PhD students' own views and experiences of finding and using information in a scholarly context. Since our approach is qualitative we do not test any hypotheses but allude to a number of themes in our interviewing (exemplified by possible questions) and see where the interviewees take us.

Interview setting and context

PhD students from the three universities are interviewed in German, Oslo, and Danish respectively; with an option for English for international students. Number of students and subjects in each research node is to be ca. 1 pr. subject area. The interviews last for about an hour each. A comfortable setting is to be established. Cookies and juice/water will be served.

Interview procedure

Background information (e.g. subject, year, age, etc.)

Field notes are taken by the interviewer in addition to the recording of the interview to aid in the production of the written summary

Stages of the Interview

Introduction and brief statement of interview purpose

Questions following interview guide following themes

"Debriefing" - thanking participant

Immediate adding of any informal remarks that are relevant to our research topic to notes based on short-term memory of interview

Themes overview

1): Looking for, finding and managing scholarly information in your research - the interviewees' perception of their information practice and information needs in their own research

2): The issue of validation of information and literature and the interviewees' experience of and views on looking for, finding and managing scholarly information in their own research

- 3): Looking for, finding and managing scholarly information in the interviewees' past and present research and its impact on their evolving identities as researchers
- 4): The ethical dimension of the interviewees' experience of and views on looking for, finding and managing scholarly information
- 5): Support and challenges encountered by the interviewees in the process of looking for, finding and managing scholarly information including the role of library/libraries for their projects

Introduction to Interview and Project

With the help of this study (of which this interview is a part) the libraries participating in the study would like to arrive at information that helps them to further develop our services for researchers and PhD students. The whole context of finding and using scholarly information for research is continuously undergoing a process of change. By asking the researchers who are actually actively engaged in searching for, finding and using scholarly information we hope to learn about your actual information needs and practices and about the challenges you are facing. So our purpose today is to explore your experiences and viewpoints as a researcher. We already know that there are a great many different ways to go about searching for, finding and using scholarly information, depending on a great number of factors, so I would like to stress this is not about any right or wrong way but about how you go about the whole issue, your experiences and your point of view. Before we begin, is there anything else you would like to know about the project?

Purpose

Make sure student is at ease and knows that this is not an exam of his information research competence but that the interviewer and interviewee together will explore the topic together and that the purpose of the interview is to create new knowledge.

	Questions and Checklist
	<p>Interview theme (1): Looking for, finding and managing scholarly information in your research - the interviewees' perception of their information practice and needs in their own research</p> <p>1.1. What kinds of literature, or other relevant information, do you need for doing your PhD research?</p> <p>1.2. What do you do to find scholarly literature for your PhD research</p> <p>1.3. How do you keep information you find?</p> <p>1.4 How do you organize the work of looking for literature?</p>
○	How important is looking for, finding and managing scholarly information for the interviewee's PhD?

	- currently - in general
<input type="radio"/>	What makes the interviewee decide that they have an information need in the first place? - particular memory - in general
<input type="radio"/>	Difference between looking for information as part of research and as part of daily life
<input type="radio"/>	Methods for keeping up to date with scholarly literature or new developments in interviewee's research field
<input type="radio"/>	Search tools (e.g. library catalogue, database, ...) for scholarly literature
<input type="radio"/>	Search methods when looking for scholarly literature (e.g. topic words, specific authors as topic, specific scholars or scientists who are important in the field, ...)
<input type="radio"/>	Methods of finding scholarly literature for research project: - seen as personal, different from other scholars in your field - seen as according to "rules of the field" - seen as according to "general rules"
<input type="radio"/>	Methods for managing results/literature
<input type="radio"/>	Keeping track of searches
<input type="radio"/>	Difficulties with organizing and managing searches and literature
<input type="radio"/>	Methods for "keeping" scholarly literature you want to use (e.g. download/photocopy/note taking/writing down citation and where to find it)
<input type="radio"/>	View of looking for and finding scholarly literature as a process (e.g. well-organised and "contained", something you do and then it is done or is it a more messy process?)
<input type="radio"/>	Interviewee's view of research process (e.g. distinct stages)
<input type="radio"/>	What kinds of scholarly/scientific literature has interviewee used in project so far?
<input type="radio"/>	What literature is interviewee working with at the moment?
<input type="radio"/>	Role of general, non-academic kinds of information resources (e.g. from Wikipedia or a general encyclopaedia)
<input type="radio"/>	Kinds of scholarly literature would be typically used in interviewee's subject or field of research
<input type="radio"/>	Information needs of other researchers (in your field) other than interviewee's
<input type="radio"/>	Different methods for finding different kinds of literature
	Interview theme (2): The issue of validation of information and literature and the interviewees' experience of and views on looking for, finding and managing scholarly information in their own research

	<p>2.2.1. What makes you decide that scholarly information or a source of scholarly information is valid?</p> <p>2.2. Are there other criteria that play a role in your decision for or against an item of scholarly information?</p> <p>2.3. Do you think that this is typical for your discipline?</p>
<input type="radio"/>	Interviewee's view of validation
<input type="radio"/>	Validation in interviewee's field of research
<input type="radio"/>	<p>Reasons for interviewee's decision that something is useful or not useful, for keeping literature for later use or for using it?</p> <ul style="list-style-type: none"> - particular memory - general - emotional aspect (e.g. clear-cut decision, regrets, ...]
<input type="radio"/>	What does interviewee consider as reliable sources of academic information and reasons for considering them reliable?
<input type="radio"/>	Reasons for interviewee's decision about the scholarly standard of scholarly literature
<input type="radio"/>	Validation and standards in research culture of the interviewee's subject
<input type="radio"/>	Validation and standards in research culture and the particular stage in interviewee's career as a researcher
<input type="radio"/>	Reasons for deciding for or against an item of scholarly information for the interviewee's research
<input type="radio"/>	Reasons for following up citations found in scholarly publications
<input type="radio"/>	<p>Interviewee's view of importance of a scholar or a scholarly text depending on frequency of citation by other authors</p> <ul style="list-style-type: none"> - in general - for your own work
	<p>Interview theme (3): Looking for, finding and managing scholarly information in the interviewees' past and present research and its impact on their evolving identities as researchers</p> <p>2.3.1. We have talked a little now about how you find and validate information. Would you say that the way you think and act with respect to these questions has changed since you became a research student?</p>

	2.3.2. Can you see any meaningful changes happening in the way scholars find and use of scholarly literature in your research field due to "new" technologies, or developments in the publishing or academic world?
<input type="radio"/>	Has the way of dealing with scholarly literature (finding or using) changed from when the interviewee started becoming a researcher?
<input type="radio"/>	Interviewee's view of what distinguishes experts from beginning scholars with regard to information research
<input type="radio"/>	Interviewee's view of themselves as a (professional) researcher
<input type="radio"/>	Mistakes interviewee would advise inexperienced students to avoid
<input type="radio"/>	Interviewee's view of what being information literate or academically literate means
<input type="radio"/>	Interviewee's view of what is noteworthy in the way academic research is disseminated and published
<input type="radio"/>	Interviewee's perceptions of changes in where and how scholarly information is disseminated and published
<input type="radio"/>	Interviewee's perceptions of themselves as more advanced than researchers from the earlier generations
<input type="radio"/>	Interviewee's perceptions of themselves as how advanced with regard to new developments ("Change Adoption Continuum", are you an early adopter?)
	<p>Interview theme (4): Support and challenges encountered by the interviewees in the process of looking for, finding and managing scholarly information including the role of library/libraries for their projects.</p> <p>4.1. Have you experienced any challenges that you would like to share with us relating to the topics we have discussed so far, like looking for, finding or managing scholarly information?</p> <p>4.2 Can you give any instances where you have either been given support in the process of looking for, finding and managing scholarly information or would have needed support? Can you describe what this support or lack of support meant to your project?</p> <p>4.3. What role do other people have for the "information seeking" part of your research?</p> <p>4.4. Could you say something about the role of libraries for your research project?</p> <p>4.5. Have you attended a library course in information gathering at all during your studies (either as a postgraduate or undergraduate student)</p>

	4.6. Would you like the university library to give access to the usage of e.g. some social technologies, that we are not currently using or do you have a suggestion to different tools you could use via the library?
<input type="radio"/>	Persons who have been especially supportive for interviewee's PhD research
<input type="radio"/>	Interviewee's feeling of getting support (and by who) or being "on their own" when it comes to looking for scholarly information
<input type="radio"/>	Outside influences (e.g. work to earn a living; family obligations; supervisor) with an impact (positive or negative) on how successfully interviewee's project has been going? - If negative, do you feel something could have been done about it? - If positive, do you feel this could be in any way made a part of the support you receive?
<input type="radio"/>	Any situation in which interviewee felt frustrated by searching for literature? What happened?
<input type="radio"/>	Has interviewee ever given up on finding something? - What did the interviewee try out and what made interviewee give up? - Could anything have changed the interviewee's mind about giving up?
<input type="radio"/>	Anything so far that was especially useful or helpful for finding scholarly literature? Anything difficult or discouraging?
<input type="radio"/>	Contact or even collaboration with other scholars in the "information seeking" part of interviewee's research vs. isolation - If yes, how does this contact happen (e.g. same team at same university, conferences, electronically, Skype)?
<input type="radio"/>	Role of other people and especially scholars for interviewee's research - Any people who have been important for interviewee's information behaviour (e.g. former academic teachers, current supervisors, colleagues) - Insight into the research experience of other researchers? Do you or would you find it helpful to know about how other researchers go about their projects? - People as sources of scholarly information in interviewee's research (e.g. former academic teachers, current supervisors, and colleagues)?
<input type="radio"/>	Role of libraries play for interviewee's research?
<input type="radio"/>	Function of academic libraries today?
<input type="radio"/>	Interviewee's expectations concerning support or services the university and especially its library services?
<input type="radio"/>	Interviewee's history, experience and views of library tours or academic skills workshops held by librarians?
<input type="radio"/>	Would you like the university library to provide tools or services it is not providing yet?
	Interview theme (5): The ethical dimension of the interviewees' experience of and views on looking for, finding and managing scholarly information

	5.1. Are there any ethical issues concerning the use of information and literature that have become a topic during your time as a PhD student?
<input type="radio"/>	Meaning of "using information in an ethical way" in an academic context like interviewee's?
<input type="radio"/>	Interviewee's view on copyright, plagiarism, ethical use of information <ul style="list-style-type: none">- Does the issue of plagiarism affect interviewee's research?- Have these concepts ever been discussed with interviewee and in what context?- Can interviewee imagine a situation in which it is okay not to say where parts of a text written by a researcher come from?- Why does interviewee think plagiarism occurs- What does interviewee think could be done to prevent plagiarism- Can plagiarism happen by accident or does it always involve cheating?- How is plagiarism discussed in interviewee's field?