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Unravelling Language Choice in MSc Master Theses:

Analysing the Underlying Causes and Implications

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NTNU

Norwegian University of Science and Technology
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Abstract

Why do students write their master theses in the language that they do? Language choice in academic writing is a crucial decision, especially in a time where researchers and politicians alike are afraid of the Norwegian academic language entering a stage of diglossia. This paper aims to examine the causes behind the language choice in MSc master theses and seeks to provide insights into the motivation behind these choices. To achieve this, a mixed-method approach was employed, combining a survey and a literature review.

The findings reveal a growing trend toward English as the preferred language. This paper examines several contributing factors such as language proficiency, percentage of instruction and syllabus in English, as well as career considerations and perceptions towards the languages, such as the use of English as an academic *Lingua Franca*.

By shedding light on these underlying causes for language choice in master theses, this paper aims to inform students, educators and policymakers about the dynamics surrounding language selection, and thus enable them to make educated choices when it comes to language use and policy. The findings provide a foundation for further research into language choice in academic writing and offers insights into the language policy that was recently taken into effect at NTNU.

Sammendrag

Hvorfor skriver masterstudenter masteroppgaven sin på det språket som de gjør? Valg av språk i akademisk skriving er en viktig beslutning, særlig i en tid hvor både forskere og politikere er bekymret for at det norske akademiske språket skal gå inn i en fase av diglossi. Denne artikkelen tar sikte på å undersøke de bakenforliggende årsakene bak språkvalget til studenter som studerer MSc studier, og søker å gi innsikt i motivasjonen bak disse valgene. For å oppnå dette har man benyttet seg av triangulering, en metode hvor man bruker både kvalitative og kvantitative metoder, henholdsvis litteratursøk og en spørreundersøkelse.

Resultatene viser at det er en økende trend av bruken av Engelsk som språk i masteroppgaver. Denne artikkelen undersøker flere bidragende faktorer, slik som språkferdigheter, andel undervisning og pensum på engelsk, samt karrierehensyn og oppfatninger om språkene, for eksempel bruken av Engelsk som akademisk *lingua franca*.

Ved å belyse disse underliggende årsakene til språkvalg i masteroppgaver har denne artikkelen som mål å informere studenter, pedagoger og beslutningstakere om dynamikken rundt språkvalg, og dermed muliggjøre beviste og informerte valg når det gjelder språkbruk og -politikk. Resultatene lager grunnlaget for videre forskning om språkvalg i akademisk skriving, og gir innsikt i språkpolitikken som nylig ble innført ved NTNU.

Contents

List of Figures **ii**

List of Tables **iii**

1 Introduction **1**

2 Materials and Methods **3**

3 Results **6**

4 Discussion **13**

5 Conclusion **19**

List of Figures

1 Feelings surrounding English proficiency and peer pressure. 10

2 Feelings surrounding the amount of literature and vocabulary existing in English. 10

3 Feelings surrounding potential loss of social clout and future job opportunities. 11

4 Feelings surrounding supervisors language proficiency and language choice. 12

5 Regression line showing correlation between amount of instruction, syllabus, written assignments, and exams being given in English, and students writing their theses in English. 14

6 Regression line showing connection between the amount of English in the syllabus and how much literature students feel exist in English. 15

7 Correlation between lacking Norwegian scientific vocabulary and writing ones master theses in English. 16

List of Tables

1	Overview of student approximations of amount of instruction, syllabus, written assignments and exams given in English by number of participants.	6
2	Overview of student approximations of amount of instruction, syllabus, written assignments and exams given in English by percent.	7
3	Scale of the students estimated English proficiency.	8
4	I would lose future job opportunities by writing in Norwegian.	17
5	I would lose social clout by writing in Norwegian.	18

1 Introduction

There seems to be a fear in Norwegian society as well as in academia that the Norwegian academic language is on its way to extinction. Amongst others, there have been political debates for the last 20 years about how to protect the Norwegian language from losing footing in high prestige domains, including research and higher education (Ljosand, 2007; Ljosand, 2010; Ljosand, 2011). As of 01.01.2023 NTNU has implemented new language policy guidelines, which amongst other things aims to systematise when the different academic languages are in use (NTNU, 2023). This new guideline consists of 29 points, which together make up the entirety of NTNU's official language policy. Both point 5 and 11 refers to the above mentioned debate, and states that "NTNU must follow up its statutory responsibility to maintain and develop Norwegian as an academic and specialist language in all its academic communities" and that "Norwegian is to be the main language of instruction at NTNU" (NTNU, 2023). Norwegian is a small language, only spoken by approximately 5,3 million people worldwide (World data info, n.d.). Meanwhile, around 1,5 billion people speak English either as their first or second language (Statista Research Department, 2023). How can Norwegian even begin to compete?

Goal 17 of the United Nations SDG goals talk about "...international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms..." (United Nations, Department of Economic and Social Affairs, n.d.). Meanwhile, the Bologna agreement Norway signed in 1999 establishes that countries within the European Higher Education Area have to facilitate both student and staff mobility, as well as to make higher education more inclusive and accessible, and furthermore to make higher education more attractive and competitive world wide (European Commission, European Education Area, n.d.). NTNU has the slogan "Knowledge for a better world", yet when only reading through the language policy guidelines, it is not apparent if they plan to share this knowledge with the rest of the world. It is obvious that writing in English would mean that the research performed would have more reach. Furthermore, Trondheim is known as the technological capital of Norway, with large corporations such as SINTEF, Microsoft, Oracle, Verizon, Siemens, Rolls Royce and SAP, to mention a few, being established there. In the last decade over 140 tech companies have emerged from the communities surrounding NTNU and SINTEF (Work in Trondheim, n.d.).

Point seven of the new language policy guideline states that "NTNU must practise parallel language use. In practice, this means "Norwegian when you can, English when you must"" (NTNU, 2023). Thus parallel language use does not mean equal language use, nor does it mean that the choice of language is arbitrary. Meanwhile, 62.5 % of all master theses written at NTNU were written in English in 2021. In 2015 the same percentage was 57 %. From 1986 to 2021 the percentage of people writing in English rose from 9 % in 1986 to 44 % today. Furthermore, the percentage of students reported on courses with English as the language of instruction within technological and scientific studies rose from 20 % in 2012 to 37.7 % in 2021 (Språkrådet, 2007; Direktoratet for høyere utdanning og kompetanse, 2022). When it comes to language choice for master theses at NTNU, point 14 and 19 of the language policy guidelines states that "Norwegian, English, and other foreign languages can be used in parallel at master's and PhD levels when it

is justified by academic and learning considerations”, however “Master’s theses can be written in the language that is most suitable for that scientific field. The student chooses language in consultation with the supervisor”. Meanwhile, bachelor degrees at NTNU are predominantly taught in Norwegian (NTNU, 2023).

At the same time, the amount of English Norwegian students are exposed to has exploded since the beginning of the 21th century, from the normalisation of internet, television series, magazines, and apps such as TIKTOK and Instagram. People today are experiencing English at an everyday basis. Back in 1986, English had barely been a mandatory subject for 17 years, meaning that some of the master students most likely had not even had English as a subject in primary or secondary school (Norwegian Ministry of Education and Research, n.d.). Today’s students have grown up with technology at their fingertips, and have been taught English for almost as long as they have been taught Norwegian. Why is it then that the number of master theses written in English increasing at such a high rate? Do the master students feel like they have to write their theses in English, or are there other factors that affect this? Could it be due to the language of the teaching staff at the university? Are there too few articles and other academic literature being published in English? Or is Norwegian simply not “good enough” when writing a master thesis at NTNU?

Thus, the research question that this paper examines becomes:

- Which factors influence the choice of language for Norwegian students writing their MSc thesis at NTNU in Trondheim?

The thesis is limited to only accounting for the contributing factors involved in the decision-making, and does not discuss whether master students should be writing in English or Norwegian. The paper will merely reflect upon the collected data, and analyse the factors that have come up in the results. This paper will first go through the chosen method, a literature review and a survey, and explain why this has been chosen and how it has been realised. Then, the paper will show the results that have been gathered, before the results than are discussed. Finally, the conclusion will show that the above mentioned thesis statement has been concluded.

2 Materials and Methods

The results as presented in section 3 and the following discussion in section 4 is based on a literature review and a survey conducted during the late winter and spring of 2023. Before introducing these, this paper will introduce the methods and materials that have been used in order to achieve these results. This section aims to highlight the different methods that have been used in conjunction with this thesis. In addition, this section aims to explain why the different methods have been employed, and how the different methods have been used. The chosen methods should ensure verifiability and academic integrity when answering the assignment. This should also ensure the thesis reliability and validity.

Within methodology one usually classifies methods as either qualitative or quantitative. In recent times, combinations of this, so called mixed-method research, have become more frequent in use. Qualitative methods aim to understand a phenomenon, while the quantitative methods aim to measure the phenomenon. By employing both a qualitative and a quantitative method, this paper aims to detect biases, wrong assumptions, and incompleteness in the information base (UCS Libraries, 2023).

The different methods employed by this paper is the literature review and the survey. These methods will be more closely examined below. As for the analysis, Microsoft Excel was employed to create linear regressions where this was applicable. In some places, answers had to be replaced with numerical answers for this to be possible. This was, for example, the case with “are you planning to write your master thesis in English or Norwegian”, where Norwegian was replaced by 0 and English by 1 for the purpose of the analysis. When viewing linear regressions, it is important to note that a horizontal line means that there is no statistically significant connection between the two. On the other side, a sloped line would indicate that there is such a relationship between the two factors being measured. The paper also uses mathematical values such as the mean, median and standard deviation (shortened SD). The mean is defined as the sum of all values, divided by the number of values, and indicates the average answer. The median relates to the value that lies at the midpoint of the frequency distribution (which means that there is an equal probability of falling above or below it). The median is often a more accurate value when examining data sets which have a wide frequency distribution, as the impact of very low or very high numbers are less severe. The standard deviation expresses how much a value differs from the mean value for the sample. A small standard deviation indicates that most answers lie close to the mean value.

The literature review was partly done through reading recommended academic-articles, master- and doctoral theses. The recommended literature was mainly based on the works of Ljosand (2007; 2011) and Airey (2010). The remaining parts are based on a literature search, conducted through Google Scholar. The search itself is presented below. These sources were mainly utilised, because of the fact that there is a connection between the chosen problem and the article’s abstract. In addition, time of publication has been taken into account, as English becoming a larger language in Norwegian academia is a fairly young problem. In cases where there has been too little correspondence between the abstract and the selected thesis problem, the article in question has been disregarded,

and the literature search has continued to the next relevant result. Besides searches in search engines, one has also employed the tactic called “snowballing”, where one starts by going through a relevant sources’ source list to find more relevant sources. This was especially helpful when it came to the above mentioned recommended literature.

Possible limitations with this way of doing a literature review is that possible sources are neglected, simply because one does not search for the right combination of words, to generate that source as a reply. In addition, it stands to reason that some of the Norwegian literature is written because they want to restrict how much English is used in Norwegian higher education, because they fear a world of diglossia, where Norwegian is only used in lower prestige domains. In addition, the data points collected in some of the sources are based on NORA, which only shows theses that are available on open access. Meaning that the data points are deficient, as it is the students themselves who choose whether they should be openly available. In addition, there are different levels of transparency for the institutions themselves, also over time. It is unclear whether there are systematic differences between those who write in Norwegian and those who write in English when it comes to the tendency to make their assignment openly available. By performing the literature search prior to creating the survey, one was able to use existing knowledge in the field when creating the survey questions.

The survey was online during week 12-15, and was created using the online platform "Nettskjema", which is owned by the University in Oslo. It is reproduced in appendix A. The survey was distributed through personal contacts, as well as through the internal class page for the course TTT4850 - Eksperter i team - Lyd, menneske og natur at NTNU in Trondheim. When distributed, the participants were informed about the expected duration of the survey, which was 8 minutes. All of the questions were obligatory. The survey was composed of the following parts:

- Background information, including native language and estimation of proficiency level
- Likert scales on various elements surrounding students’ feelings of talent, status, and social as well as academic norms

When creating the aforementioned Likert scales, there was great care in creating unambiguous questions. There was also taken great care in anonymising the participants, and also being able to divide the participants, and possibly removing answers from the set which would not be valid (i.e., had a different first language than Norwegian, or had a different line of study). In addition, the questions had to have a similar wording, and be neutral (i.e., not try to influence the respondents, and create acquiescence bias).

While these considerations were made, there is still a possibility that the results are faulty or biased in some way. It is possible that respondents may have a tendency to choose certain response options over others. For example, some people may have a tendency to choose the middle response option on a 5-point Likert scale (i.e., the "neutral" option), while others may be more likely to choose the extremes (i.e., the "strongly agree" or "strongly disagree" options). This is a concept known as response bias. A further problem

could be that some of the respondents were in their fourth year, and not their final year. Depending on how things are organised in their faculty, this could mean that they have yet to receive much information about their thesis. In addition, bachelor subjects at NTNU are usually taught in Norwegian (NTNU, 2023). When answering questions about their last two years of study, this could for some mean their third and fourth year of study, and not fourth and fifth as intended. This could create skewed results towards the amount of Norwegian being used as the language of instruction, as well as in written assignments, exams, and the syllabus itself. Lastly, the use of personal contacts to achieve replies to a survey could skew the survey in that the respondents may hold the same worldview and opinions as oneself. At the same time, the survey has been distributed to a number of unfamiliar recipients as well, in order to minimise this risk. A last weakness is that the number of students who replied that they were planning on, or writing, their theses in Norwegian is significantly smaller than for those who are planning on, or are writing, their theses in English. This could skew the results in that the sample does not accurately represent the population as a whole.

3 Results

33 students responded to the survey. All respondents had Norwegian as their first language, and were currently or had been studying for their MSc degree at NTNU in Trondheim. Thus all 33 participants part of the sample presented in this section. The Norwegian Directorate for Higher Education and Skills (2022) argue that there are numerous reasons why students studying for their master degree choose English as the language to write their thesis in. One of these, they claim, is the students' own language background, stating that it is probable that international students would want to write their theses in English. This could not be part of the influencing factor when it comes to the aforementioned study, as all students had Norwegian as their first language.

Of the 33 respondents 72.7% are or are planning to write their MSc degrees in English. The other 27.3% are or are going to be writing their thesis in Norwegian. This is higher than the national average, as seen in The Norwegian Directorate for Higher Education and Skills (2022). All respondents who replied that they were going to be writing in Norwegian choose to write in Norwegian. Of the respondents writing in English, 9 claimed to have no choice in the matter. This contradicts NTNU's own language policy of parallel language use (NTNU, 2023). Furthermore, 66.7% are not planning on going into further studies following their master degree. 30.3% were undecided (2 writing Norwegian, 8 writing English), while 3% (one respondent) were planning on continuing their studies (was writing English).

The participants were then asked to give an approximate as to how many percent of the instruction, syllabus, written assignments and exams that had been in English in their final two years of studying. The results are presented in Table 1 and 2.

Table 1: Overview of student approximations of amount of instruction, syllabus, written assignments and exams given in English by number of participants.

%	Instruction	Syllabus	Assignments	Exams
0-10	1	0	1	2
11-20	0	0	1	4
21-30	0	0	2	2
31-40	1	2	1	1
41-50	7	6	7	3
51-60	1	1	1	2
61-70	1	0	1	3
71-80	9	5	6	3
81-90	7	6	5	4
91-100	6	13	8	9
Total	33	33	33	33

As seen in Table 1, students report English as being the language of instruction on average

74 % of the time in their final two years. Likewise they report that 81 % of their syllabus is in English. There seems to be less English when it comes to written assignments and exams, as only 69 % of written assignments and 65 % of exams are given in English.

Table 2: Overview of student approximations of amount of instruction, syllabus, written assignments and exams given in English by percent.

%	Instruction	Syllabus	Assignments	Exams
0-10	3.03%	0%	3.03%	6.06%
11-20	0%	0%	3.03%	12.12%
21-30	0%	0%	6.06%	6.06%
31-40	3.03%	6.06%	3.03%	3.03%
41-50	21.21%	18.18%	21.21%	9.09%
51-60	3.03%	3.03%	3.03%	6.06%
61-70	3.03%	0%	3.03%	9.09%
71-80	27.27%	15.15%	18.18%	9.09%
81-90	21.21%	18.18%	15.15%	12.12%
91-100	18.18%	39.39%	24.24%	27.27%
Total	100%	100%	100%	100%

Borgehaven (2022) found in her master thesis that most students think it is unproblematic to study in English. Although, she also found that 34 % of her respondents had problems understanding the content when the *instruction* was in English. Meanwhile, 42 % found that they had a hard time understanding all the *syllabus* when it was written in English. At the same time, Kingsley and Kuteeva (2012) found that in Sweden at the University of Stockholm the amount of English used in instruction and syllabus correlates to the specific discipline being studied, as well as the level of instruction (bachelors/masters) and the receptive versus productive use of English. Generally, they found that English is more used in the sciences. At the Master's level, 92 % of students from the Science faculty reported that the language of their syllabus frequently was English. Furthermore 85 of the total 200 undergraduate and Master's programmes run by the university are run in English. The authors speculate that this is due to the high number of foreign students attending the University. As for the survey conducted as a part of this thesis, all the participants were studying scientific master degrees. Ljosand (2011) found that there had been an increasing tendency toward English as the language of instruction, especially at the post-graduate level of instruction. The causes of this increase is, according to Ljosand, many and complex. They involve, but are not limited to a practical need for international communication, aspiration, competition and politics.

The participants were also asked, on a scale from 1-10, how they would rate their own English proficiency, where 1 signalled very poor and 10 signalled very good. The results are shown in Table 3.

Table 3: Scale of the students estimated English proficiency.

Scale	Number of participants	Percent of participants
1	0	0%
2	0	0%
3	0	0%
4	0	0%
5	1	3%
6	2	6.1%
7	10	30.3%
8	4	12.1%
9	12	36.4%
10	4	12.1%

Meanwhile, Buntinx and Meunier (2019) asked the students participating in their study about the legitimacy and the impact of English on their academic life. The interviewees seem to support English-taught classes when there is a reason to hold them in English. This is especially true when the students expect that they will have to communicate in English in their future jobs, because in that sense, the lectures are a practise in vocabulary and language proficiency. At the same time, the interviewees respond that they seldom participate actively in class. The students further described their difficulty in using the correct academic vocabulary in English.

Airey (2010) analysed the ability of 21 physics undergraduates at Swedish universities to orally describe and explain the science concepts met in their lectures in both Swedish and English. Some of these students had a very hard time with disciplinary English. Above an initial lower threshold of competence when it comes to disciplinary English, the students give descriptions with similar levels of disciplinary in Swedish and English. This happens regardless of the language of instruction. Later, he notes that this does not mean that students learn just as well in English as in Swedish - the only claim he makes is that the students can describe what they have learnt just as well in both languages. Furthermore, he found that the majority of students have adapted to being taught in English.

The participants were finally asked to, with their own words, describe why they choose to write in the language they were/had been writing in. Some of the excerpts are presented below. Entries marked with an asterisk is translated directly from Norwegian to English.

The following statements accounts the reason why some of the respondents choose to write in English:

- All lectures are in English. My field of study does not have well-defined Norwegian vocabulary, which makes English more suitable*
- It is easier to write in the same language as the syllabus and other available literature and research*

- Because it's the standard in my field of study. When I read other papers I will be able to use the terms immediately without translating them.
- Felt English was more international and professional.
- My professor was not proficient and comfortable with Norwegian
- I prefer English as an academic language. It has greater reach and there is more literature available in English than in Norwegian, so I'm simply more used to writing and reading English
- Mostly because my supervisor is English, and said that they preferred if the master thesis was written in English. In addition, it is a more international language, which could make the thesis more relevant, and be used as an asset by more people*

Thus the participants that choose to write in English claim they did so either because of their supervisors language skills, the instruction language in their courses, availability of academic vocabulary in Norwegian, and the language of available literature in their field of study.

The following statements accounts the reason why some of the respondents choose to write in Norwegian:

- It simply feels the most natural to me. Additionally, I'm more confident in the subject terminology (fagterminologi) being precise when writing in Norwegian
- I feel that the Norwegian language is more exciting to read and write.
- I prefer to write in Norwegian, at this point at least, because I am more comfortable with how to express myself.
- My Norwegian is better

The respondents that are writing their theses in Norwegian claim to mainly do this because of their own comfort with their first language, and not because of other points such as terminology and/or syllabus.

The respondents were then asked to state their personal opinion on a number of statements, on a scale from strongly disagree (1) to strongly agree (5). The results are shown in Figures 1, 2, 3 and 4.

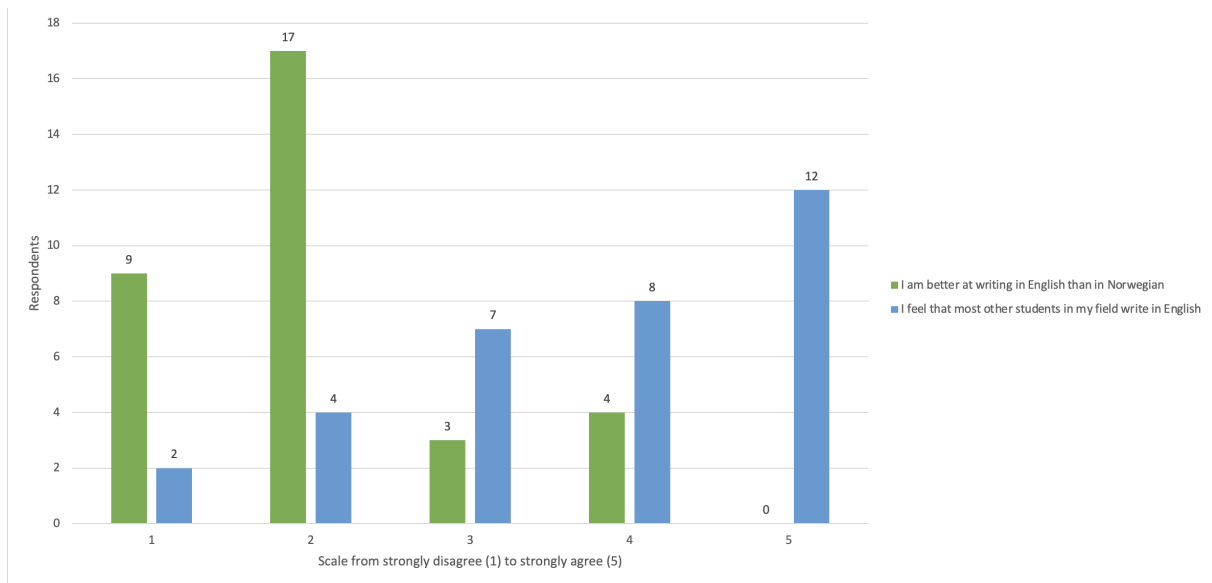


Figure 1: Feelings surrounding English proficiency and peer pressure.

Figure 1 shows that the respondents generally do not feel like they are better at writing English than Norwegian, with a mean of 2.06 and median of 2 (disagree). 0 students report to strongly agree to the statement “I am better at writing in English than in Norwegian”, in fact 79 % report disagreeing or strongly disagreeing to the statement. Figure 1 also shows that the respondents generally feel like most other students in their field write their theses in English, with a mean of 3.73 and a median of 4 (agree). Around 60 % report agreeing or strongly agreeing to the statement “I feel that most other students in my field write in English”.

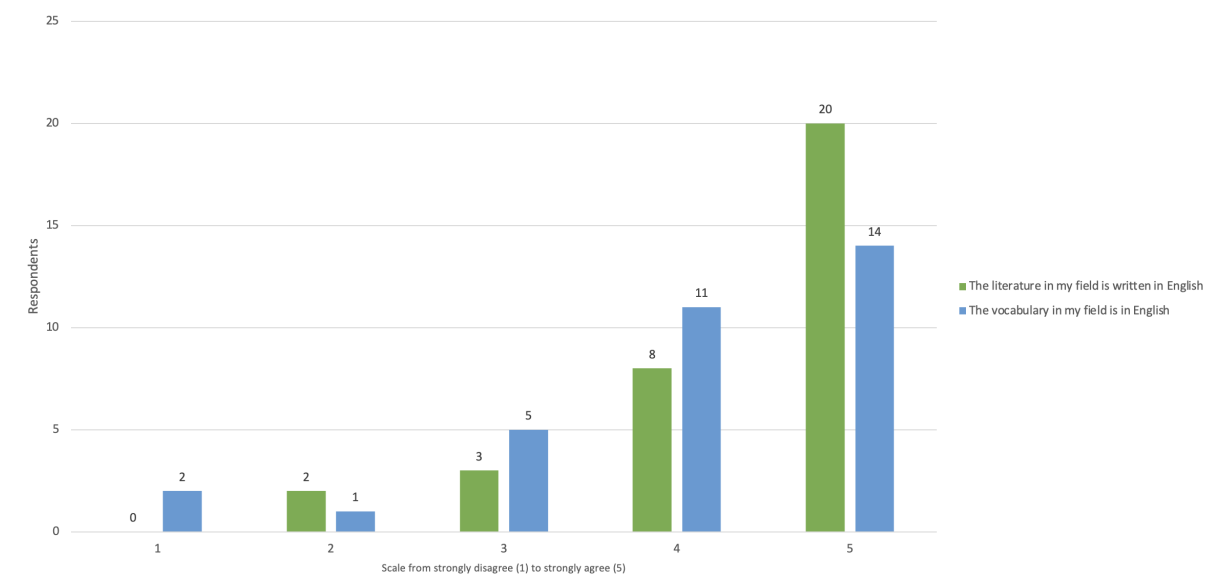


Figure 2: Feelings surrounding the amount of literature and vocabulary existing in English.

Meanwhile, Figure 2 shows that most of the respondents experience that most of the literature in their field is written in English, with a mean of 4.39 and a median of 5 (strongly agree). The figure also shows that 85 % respond that they agree or strongly agree with the statement “I feel that most of the literature in my field is written in English”. Only 2 respondents disagree with the statement. Figure 2 furthermore shows that the respondents generally feel like the academic vocabulary in their field is in English, with a mean of 4,03 and a median of 4 (agree). 76 % respond that they agree or strongly agree with the statement “The academic vocabulary in my field is primarily in English”. 3 respondents either disagree or strongly disagree with the statement.

Ljosand (2007) looked into the role of English in relation to Norwegian in higher education, focusing on PhD candidates, and which language they choose to write their theses in. The survey itself focuses on 14 PhD candidates, where 12 of them were writing in English and 2 in Norwegian. The lack of more Norwegian candidates were based on the fact that they were extremely hard to find, according to Ljosand. In her study, she found that the sub-domain of PhD thesis writing has features that resemble diglossic situations. Choosing Norwegian as their PhD language seemed unthinkable to many of the candidates writing their theses in English, they had not even considered it before being asked. At the same time, Ljosand states that there are subject fields in Norwegian academia in which writing your PhD theses in Norwegian would be socially acceptable.

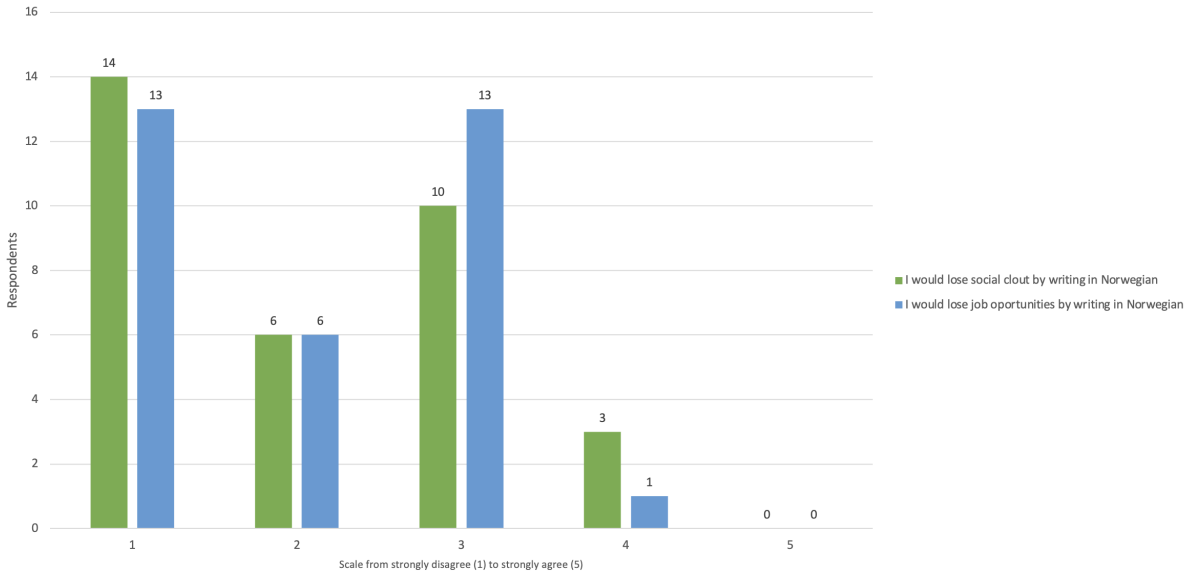


Figure 3: Feelings surrounding potential loss of social clout and future job opportunities.

Figure 3 illustrates that the respondents do not think that the language they write in will lower their social clout, nor do they generally think their choice of language will affect future job opportunities, both with a mean of 2.06 and a median of 2 (disagree). Only 3 respondents feel like they would lose social clout by writing in Norwegian. Furthermore, only 1 respondent respond that they agree to the statement “I would lose future job opportunities by writing in Norwegian”. 20 out of 33 either disagree or strongly disagree with the statement.

Borgehaven (2022) asked the respondents in her survey which language they were planning on writing their theses in, and why. 45 % (116 respondents) answered that they were going to write their master theses in English. Between these, reasons such as “the instruction and syllabus is in English” (81 respondents), “I want people who do not speak Norwegian to be able to read it” (69 respondents) and “I want to go into research, and everything is in English there anyway” (43 respondents) were highlighted as important by the respondents. Furthermore, she found that 31 respondents thought they were better at English than at Norwegian. At the same time, she found that 51 (out of 116) feel like it is expected of them to write in English, yet most disagree with the statement “I feel pressure to write in English”. The Norwegian Directorate for Higher Education and Skills (2022) also believe that factors such as expectations in the professional environment, based upon which language a majority of the research within that field of study is published in and the language of the supervisor can explain the students choice of master language.

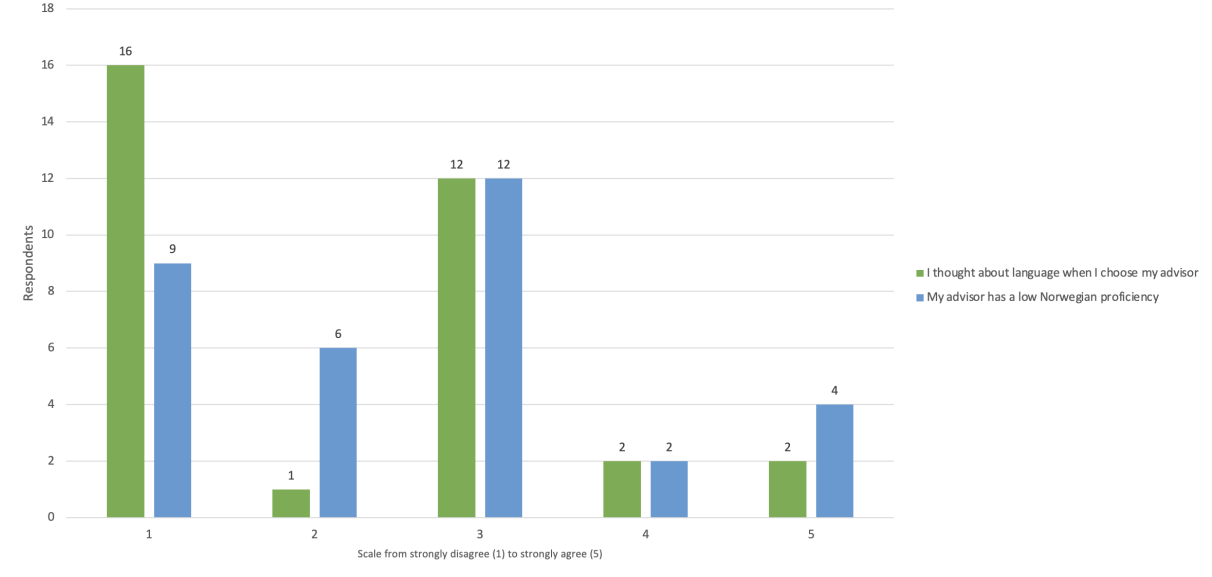


Figure 4: Feelings surrounding supervisors language proficiency and language choice.

Figure 4 demonstrates that the respondents generally have not been thinking about the language of their theses when selecting a supervisor for their theses, with a mean of 2.18 and a median of 2 (disagree). Only 4 respondents agree or strongly agree to the statement. 12/33 do not agree or disagree. Generally, the supervisors also seem to be somewhat proficient in Norwegian, with a mean of 2.58 and a median of 3 (neither agree nor disagree). Only 6 respondent agree or strongly agree to the statement that “My advisor has a low Norwegian proficiency”.

4 Discussion

This section will address the results presented in section 3. The discussion will first deal with the results collected in the literature review, and then discuss the results from the survey performed as a part of this paper.

It seems like the language of instruction and syllabus are the main reasons as to why Norwegian MSc students at NTNU choose to write their syllabus in the language they do. In the results of the survey, there is quite a large gap between the percentage of which instruction, syllabus, written assignments and exams is in English between the students who are writing their theses in Norwegian and English. The average student planning on, or writing, their theses in English can expect 78.96 % (with an SD of 18.08) of their instruction to be in English. However, students planning on writing their theses in Norwegian only have English as their language of instruction 61.11 % (with a SD of 25.10) of the time. Similarly, for students writing their theses in English, 86.88 % (with an SD of 18.52) of the syllabus is in English. For students writing in Norwegian, the same figures are 63.89 % (with an SD of 19.00). According to Borgehaven (2022) 70 % of the students writing their theses in English report the language of instruction and/or syllabus as a reason as to why they choose English rather than Norwegian, or Norwegian rather than English. Kingsley and Kuteeva (2012) argue that the amount of English being used in instruction and syllabus correlates to the specific field of study. Reporting that 92 % of students in the Science faculty frequently have their syllabus in English. As the data from the survey conducted as a part of this thesis only takes input from Science students, this could not be corroborated, however The Norwegian Directorate for Higher Education and Skill (2022) also found that the language of instruction and syllabus was more likely to be English in the sciences than in humanitarian fields. Ljosand (2011) points out that there have been an increasing amount of instruction in English, The Norwegian Directorate for Higher Education and Skill (2022) also find this in their data.

At the same time, Ljosand(2007) thinks that there are subjects fields where writing in Norwegian would be acceptable, also for a PhD thesis. Airey (2010) discusses how undergraduate students in physics still struggle with the English academic vocabulary and terminology, but that this seems to even out as students get older and have more experience in their field of study. This correlates with Borgehavens (2022) findings that between 34 and 42 % found that instruction and/or syllabus was problematic to understand when written in English. To sum this up, it seems as if this increasing amount of instruction and syllabus in English could be part of the reason as to why more and more master theses degrees are being written in English as opposed to Norwegian. At the same time, students seem to be having a harder time writing, reading and understanding in English than they do in Norwegian.

As the data from the survey conducted as part of this paper shows, students generally have more of their instruction and syllabus in English than they do their written assignments and exams. Students writing in English approximate that 77.58 % (with an SD of 25.14) of written assignments, and 71.71 % (with an SD of 33.72) of exams are in English. The students writing in Norwegian, approximate that they will have English as the language of written assignments and exams 48.33 % (with an SD of 20.77) and 45.56 % (with an

SD of 22.56) respectively. This correlation can be seen in Figure 5, where the regression line as expected rises from Norwegian (0) to English (1). The thicker points mark answers in which there are several respondents that have selected the same value.

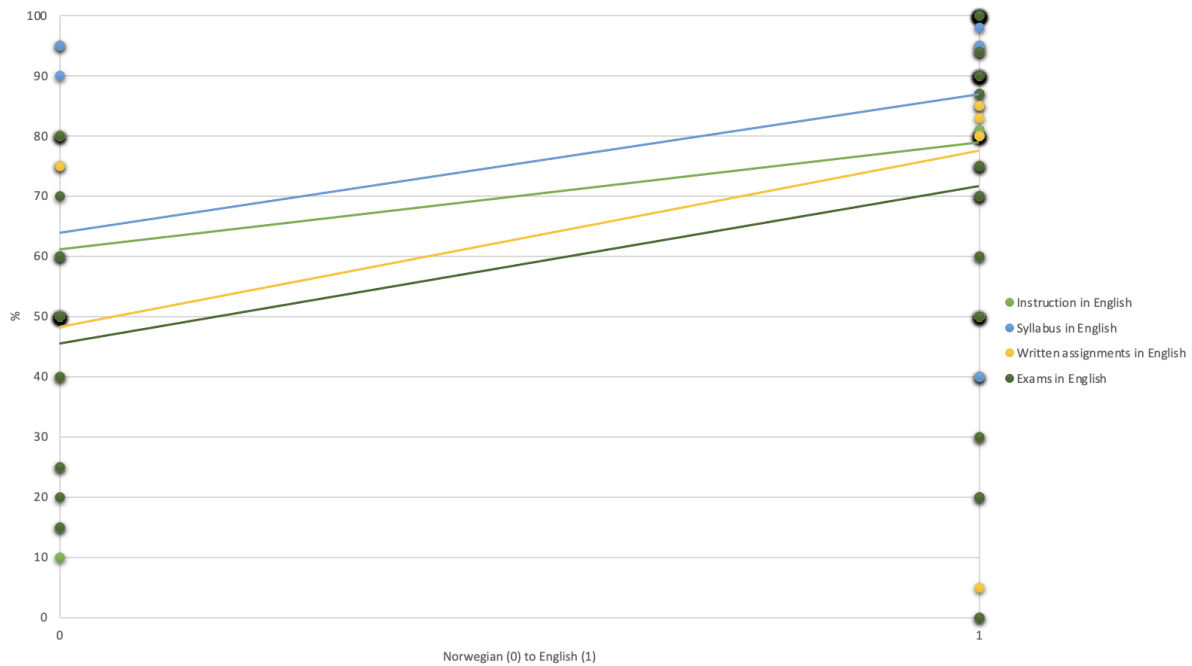


Figure 5: Regression line showing correlation between amount of instruction, syllabus, written assignments, and exams being given in English, and students writing their theses in English.

As the above data shows, students writing their theses in English generally have more instruction, syllabus, written assignments and exams in English than their fellow students who are writing their theses in Norwegian. According to Borgehaven (2022) students generally base their choice of theses language on the language of introduction and/or syllabus. According to the students who participated in the survey in correlation with this paper, this seems to be correct, as also they indicated that this was their main reason for choosing to write their master thesis in English. Those who chose to write Norwegian, also generally had less introduction and syllabus in English than those who chose to write in English. The median percentage value for these students being 60 % of their instruction and 50 % of their syllabus being in English. Meanwhile, the same numbers for students writing in English is 80,5 % of their instruction and 90 % of their syllabus in English. At the same time students perception of their own English proficiency seems to have no effect on the number of students choosing to write in English. As a matter of fact, students writing in Norwegian think they are better at writing English than students who are actually writing English!

Interestingly, students writing in Norwegian rate their own English proficiency on average to be 8.44 (out of 10), with an SD of 1.13. Meanwhile, students writing in English only rate their proficiency as 7.96 (with a SD of 1.37). At the same time, students writing

in English are closer to neutral when asked if they feel like they are better at writing in English than Norwegian, with a mean of 2.21 (and a SD of 1.02), while the Norwegian writing students have a mean of 1.67 (and a SD of 0.50). Thus students writing their theses in Norwegian think that they over all have a better proficiency in English than the students writing their theses in English, yet they still lie between *disagree* and *strongly disagree* when asked if they think they are better at writing in English than they are in Norwegian.

Another, perhaps not surprising, discovery is that there seems to be a strong link between the language of the supplied syllabus, and whether or not students feel like the majority of literature in their field is in English or not. This correlation can be seen in Figure 6 below. As seen in the figure, the regression line is rising from left to right, indicating that the more (in percentage) the syllabus is in English, the more likely it is that students will will that most of the literature in their field is in English. This does not, however, mean that this is necessarily true, but it indicates that students that are exposed primarily to English literature through their syllabus assume that the rest of the syllabus in their field also is in English.

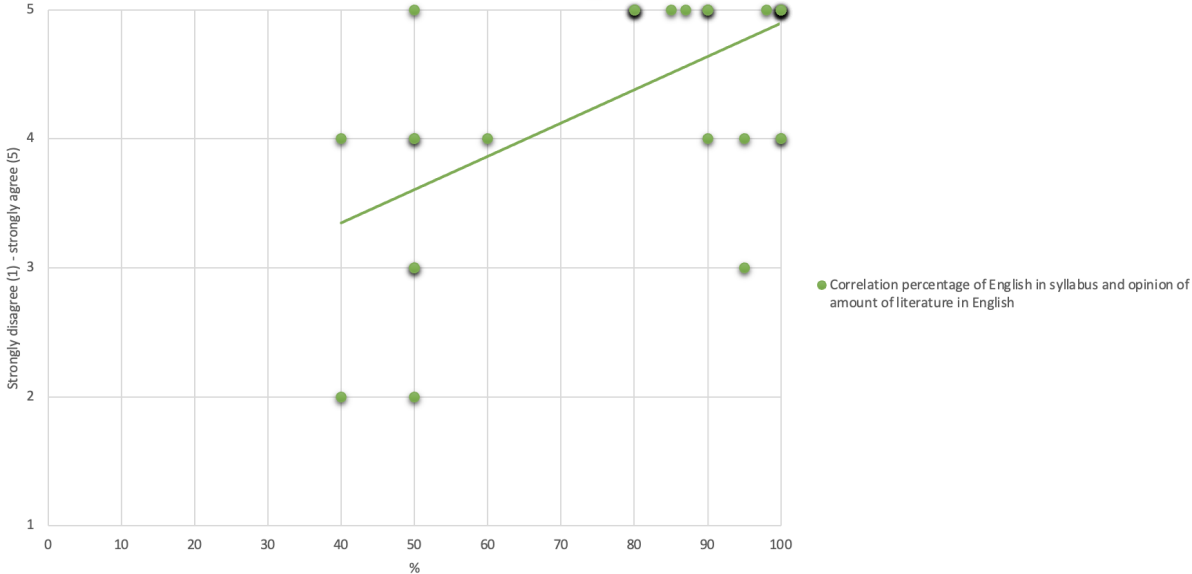


Figure 6: Regression line showing connection between the amount of English in the syllabus and how much literature students feel exist in English.

Another interesting fact is that the students writing in Norwegian generally feel like other students in their field also write Norwegian, with a mean of 2.33 (disagree) and a SD of 1.00. Meanwhile students writing in English generally feel like the other students in their field also write in English, with a mean of 4.25 (agree) and a SD of 0.90. The results does not show, however, whether this is actually true, or if it is just the students who believe this to be true. A greater sample in which the students answered more specific questions about their field of study would be needed if one wanted to show whether this is the case or not.

When it comes to the students feelings about how much of the academic vocabulary/terminology in their field that is (solely) in English, the students who reported that they were writing in English were more likely to agree to the statement, with a mean of 4.42 and a SD of 0.83. Meanwhile, the students who had elected to write their theses in Norwegian were more neutral, with a mean of 3.00 and a SD of 1.12. This can also be seen in Figure 7 below. Airey (2010) points to the fact that undergraduate students experience hardship with the English academic vocabulary and terminology. This is also supported by Borgehaven (2022). 23 out of the 24 respondents who are writing in English answer that they agree or strongly agree to the statement “*I feel that most of the literature in my field is written in English*”. Only 1 of 24, or 4 % of the respondents writing in English disagree with the statement. Meanwhile, 5 out of 9 students writing in Norwegian agree or strongly agree with the statement. 3 remain neutral, and 1 disagrees with the statement. As for terminology, 4 of the students writing Norwegian agree with the statement “*The academic vocabulary in my field is primarily in English*”. 3 are neutral to the statement, and 2 strongly disagree. For the students writing in English, however, 1 claim to disagree, 2 are neutral, and 21 agree or strongly agree to the statement.

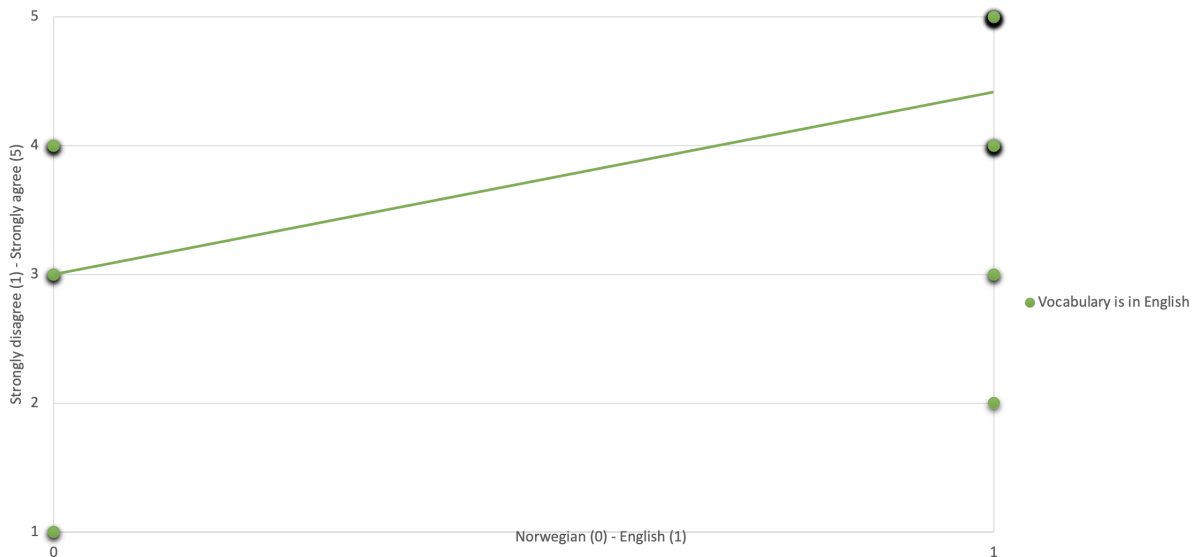


Figure 7: Correlation between lacking Norwegian scientific vocabulary and writing ones master theses in English.

When asked about whether or not they thought about language when they chose an advisor, people generally disagreed. However, when looking into the different sub-groups (namely those who are writing in English, and those who are not), this changes. Students writing their theses in English respond that they disagree with this statement (with a mean of 1.88 and a SD of 1.15. Meanwhile, the students writing their theses in Norwegian are neutral to this statement, with a mean of 3.00 and a SD of 1.32. This discrepancy between the two groups does not exist when faced with the statement “*My advisor has a low Norwegian proficiency*”, here both groups have a mean between 2.56-2.58, however, the SD is higher for students writing in English, with an SD of 1.47 rather than 0.73

which is the SD for the Norwegian writing students.

The Norwegian Directorate for Higher Education and Skill (2022) seems to think that the language and language capabilities of the supervisor is one of the main reasons why students choose to write in English or Norwegian. At the same time, the language proficiency of the supervisor is not even mentioned by Borgehaven (2022). In NTNUs' language policy, point 9 demands that Permanent employees who do not master a Scandinavian language when appointed are responsible for learning Norwegian at B2 level within three years, and thereafter continuously developing their language skills in Norwegian. Point 10 specify that NTNU has to offer employees good opportunities to learn Norwegian in particular but also to improve their proficiency in English. This could explain why the MSc students at NTNU generally disagree to the statement *“My advisor has a low Norwegian proficiency”*, and also why they generally disagree or are neutral to the statement *“When I choose an advisor, I thought about what language I wanted to write in”*.

The Norwegian Directorate for Higher Education and Skill (2022) are under the impression that one of the most weighty reason for students choosing to write their master theses in English could be pressure from their future profession. This does not correlate to the data collected by Borgehaven (2022). While approximately 44 % of the English writing students in her survey reported that they felt like it was expected of them, most disagreed when asked if they felt like there was pressure to do this. At the same time, Buntinx and Meunier (2019) found that students appreciate being taught in English if they think this will be their language of communication in their future jobs. While this does not necessarily mean that such pressure is non-existent, it seems to signalise that if there is such pressure, this pressure is not clear to the subjects potentially experiencing it. The data collected as a part of this thesis found that students generally feel as if the language of their theses has little to no effect on their future job opportunities. Generally, the students writing in Norwegian disagree more strongly to this agreement than those who are writing their theses in English. The means and standard variations can be seen in Table 4 below.

Table 4: I would lose future job opportunities by writing in Norwegian.

	Writing in English	Writing in Norwegian
Mean	2.29	1.44
SD	0.95	0.73

While the Norwegian Directorate for Higher Education and Skill (2022) point to pressure as a weighty reason for choosing to write in English, both Borgehaven (2022) and most of the respondents in the survey conducted in connection with this paper believe this to not be a factor in their decision. While 1 respondent mentioned this when asked, generally it seems as if this is not a matter the students consider.

The same can be said for the students answers to the questions about loosing social clout. While both sub-groups disagree about this being the case also in this instance, the Norwegian writing students generally disagree more than the English writing students. The means and standard variations can be seen in Table 5.

Table 5: I would lose social clout by writing in Norwegian.

	Writing in English	Writing in Norwegian
Mean	2.38	1.22
SD	1.06	0.44

When looking into the students own feelings on why they choose to write either in Norwegian or English, it became a clear divide between those who were planning on, or are writing, their theses in Norwegian, and those who have opted for English. The students who had opted for writing their theses in Norwegian generally valued the simplicity of writing in their first language, and felt like this choice was more natural to them, just because it is the language they are used to express themselves in. It almost seems to be a touch of nationalism in the way some of them are describing the use of Norwegian, as something “more exciting” than English would be.

Meanwhile, the students who have elected to write their theses in English seem to be more practical oriented about their choice of language. Many selected to write in English because of the lack of Norwegian terminology, as also seen in Figure 7. Some pointed to the fact that most of the literature was in English, and thus they would need to translate existing papers and terminology in order to employ these as sources or vocabulary in their own theses. Others again pointed to English being a much more international language, and that the research they were doing thus would have greater reach, and be of more help to a greater number of people. Some pointed to English being seen as more professional, although this does not show significantly when looking at other replies such as to losing social clout or future job opportunities, as shown in Tables 5 and 4. Finally, some claim to have chosen English because of the proficiency and preference of their supervisor. This again does not correlate to the answers given when they were asked to rate their supervisors proficiency later in the survey.

NTNUs own language policy openly states that “Norwegian is to be the main language of instruction at NTNU” (point 11) and that “NTNU must practise parallel language use. In practice, this means «Norwegian when you can, English when you must»” (point 7) (NTNU, 2023). It is thus a strange coincidence that several students feel that they have no choice when it comes to the language that they write their master theses in. Especially as point 19 states that “master’s theses can be written in the language that is most suitable for that scientific field”. Moreover, “the student chooses language in consultation with the supervisor” (NTNU, 2023). One could also argue that this heavy use of English within master theses directly contradict the language guidelines, point 14, which states that “Norwegian, English, and other foreign languages can be used in parallel at master’s and PhD levels when it is justified by academic and learning considerations” (NTNU, 2023). Airey 2011 argues that undergraduate students experience hardship with the English academic vocabulary and terminology. There is no reason to believe that the same cannot be said for master students. Furthermore, this extensive use of English does not align with NTNUs goal of parallel language, unless NTNU is under the belief that writing in English is a must for all these master theses students.

5 Conclusion

There seems to be a fear in Norwegian society as well as in academia that the Norwegian academic language is on its way to extinction. With this fear in mind, and the fact that NTNU promises to “follow up its statutory responsibility to maintain and develop Norwegian as an academic and specialist language in all its academic communities”, and that “Norwegian is to be the main language of instruction at NTNU”, one could say that it is quite contradictory that students at MSc programs report that approximately 75 % of the instruction language, and 81 % of the syllabus is given in English at MSc master level courses. As the discussion in section 4 shows, instruction and syllabus language is one of the weightiest reason as to why MSc students choose to write their theses in English rather than in Norwegian. It is furthermore actively shown that students are less likely to choose to write in English if given instruction and syllabus in English to a smaller extent. Thus, it seems as if NTNU’s own practise, and guidelines do not overlap, which is quite contradictory. Meanwhile, this does mean that research done by many MSc master theses are available to a wider audience of potential readers. This also supports the United Nations goal of international cooperation and shared access to science.

Moreover, most Norwegian tech businesses need international cooperation in order to survive. While the master students do not feel like they lose future job opportunities by writing in Norwegian, it is possible that they by writing in English get future job opportunities more easily.

NTNU’s personal goal of parallel language use also seems lacking in MSc Master level courses. It is highly unlikely that English is a must in 3/4 courses, as subjects such as project management in the building sector for instance is very much aimed at the Norwegian market. At the same time, the high degree of courses taught in English does mean that exchange students get the opportunity to freely choose more and more different classes than they perhaps otherwise would. Moreover, quite a few, almost 28 % reported that they had to write their theses in English. Yet, NTNU’s language policy is said to be “Norwegian when we can, English when we must”.

It is clear that it has become more popular to write ones thesis in English in recent years, although this is a phenomenon that has grown for over 30 years, and is likely to continue to grow, unless some outside force puts restrictions or firmer guidelines into order. The master students themselves claim that language of instruction and syllabus is the main reason they write in English rather than Norwegian. At the same time, they also mention causes such as professionalism, internationalism, and advisor language proficiency and preference.

In the future, there should be a considerable and significant focus on these underlying factors. As more and more theses are written in English at NTNU, the university should both be aware of the trend, and make a clear choice as to which way they want this to go in the future. If the administration and board see no problem in this ongoing shift, they should perhaps introduce more English instruction and syllabus to their master courses. At the same time, if this is not the development they wish to see within their organisation, they have to take firm steps to stop this, and highlight the importance of being able to

communicate terminology in the language most of these students will find themselves using the most in their working lives. Furthermore, if NTNU wishes to keep to their own guidelines for language use, they simply have to step in, and do something about the amount of English used in instruction, syllabus, written assignments and exams at their own university. By keeping up this active use of English within the scientific and technological sectors of the University, they are also choosing English over Norwegian. Rather than “Norwegian when we can, English when we must” it seems to have become “English, unless we have to do Norwegian”.

As for future research, it would be interesting to see a similar project, but with more profiles of study and more participants. This way, one could examine if the same phenomena is happening in other sectors than the scientific and technological sector. For instance, would students studying history also lean toward writing in English if their instruction primarily is in English? It would also be interesting to see a more detailed study into the choice of language on the master theses level, which also took into account the opinions of supervisors and other teaching staff. This could also have a larger subject pool of students, and thus be able to identify differences between different profiles of study, from architecture, to electrical engineering and project management, and thus be able to more precisely state why different groups of students choose different languages when writing their theses.

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