Factors that Predict Vocabulary and Self-assessment in English as a Foreign Language

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Abstract

The current study (N=196) researches how students learn English as a foreign language (EFL). It aims to find out which factors influence English learning, and which are more influential than others. The factors included in this study are age, amount of time spent on English-speaking media, number of years spent actively learning English, number of months spent abroad in general, and in English speaking countries in particular, how much the participants enjoy speaking English, and perceived usefulness of learning English. The study makes use of a questionnaire, which was distributed on various social media. On the questionnaire, the participants were asked to assess their EFL proficiency, and complete an online vocabulary test. Four separate multiple regression analyses were then used to analyze the results. The research questions addressed in the study are:

1. Which factors affect EFL vocabulary size?
2. Which factors affect self-assessed proficiency in EFL?
3. Which factors affect EFL skills in general?

According to this study, the factors researched have a stronger effect on self-assessed proficiency than vocabulary size. Enjoyment of English and time spent on English-speaking media heavily influenced both self-assessment and vocabulary size, which led to the conclusion that they most likely affect EFL proficiency in general as well. Additionally, perceived usefulness of English and time spent studying English both proved to be significant predictors of self-assessed proficiency. Finally, the study found a high correlation between vocabulary size and self-assessed proficiency. The cause and effect relationship between these variables is quite ambiguous, but it does signify that these variables influence each other, and that the results of the self-assessment analyses are also applicable to EFL proficiency in general.

Acknowledgements

A Poem – By Me

I wrote this poem as a thank you

To the people who carried me through

First of all, to my supervisor

For being such a scrutinizing analyzer[1]

Second of all, to my family

For cheering me on, somewhat anxiously

I'd obviously like to thank myself

One couldn't have done this without oneself

Most of all, I want to thank my friends

Ross and Rachel, Phoebe and Chands

The girl who believed, the one with the land,

The guy who knows the Kardashians first hand,

The girl with the boyfriend, the singer who's dead

Thanks to you all for keeping me fed

The hag who melts, the guy who can't sell

We might move away, but it's never farewell

[1] In a good way

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List of Abbreviations

EFL – English as a foreign language

ELF – English as a *lingua franca*

IDs – Individual differences

L1 – First language

L2 – Second language

SLA – Second language acquisition

SPSS – Statistical package for social sciences

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1 Introduction

The current study researches how students learn English as a foreign language (EFL). It aims to uncover which factors influence English learning, and which are more influential than others. The study makes use of a questionnaire, which was distributed on various social media. On the questionnaire, the participants were asked to assess their EFL proficiency, and complete an online vocabulary test. The research questions addressed in the study are:

1. Which factors affect EFL vocabulary size?
2. Which factors affect self-assessed proficiency in EFL?
3. Which factors affect EFL skills in general?

Most people who have learned English as a second or foreign language have an opinion about what helped them learn the language. Some might believe TV was the essential factor, some may credit traveling, some might believe everything can be explained by the generation to which one belongs, and some have a completely different explanation for why their English proficiency is as it is. Teachers often give advice to their students about the methods they can use to help them learn English, based on these opinions. However, this advice is rarely based on anything more than subjective experiences. In this thesis there is therefore an objective, quantitative study which addresses the question of which factors affect English skills. The study only analyzes the effect on vocabulary and self-assessment; however, this can give an indication of whether the factors affect English proficiency as a whole as well (see p. 58).

The factors included in this study are age, amount of time spent on English-speaking media, number of years spent actively learning English, number of months spent abroad in general, and in English speaking countries in particular, how much the participants enjoy speaking English, and perceived usefulness of learning English. A questionnaire (Appendix I) was issued online, asking about the previously mentioned factors. In addition to this questionnaire, the participants were to assess their English proficiency and complete an online vocabulary test. The primary interest here is to assess the effect of the different factors on English vocabulary size, as the participants received an objective assessment of their vocabulary size after completing the vocabulary test. It was therefore deemed appropriate to conduct an objective analysis of the effect on vocabulary size. Moreover, a separate analysis was conducted on the effect of the factors on self-assessment, as this could strengthen or challenge the results of the vocabulary analysis.

In order to obtain a large sample, the questionnaire was posted and shared on Facebook. In addition, it was shared with acquaintances, some of whom subsequently shared the link with their acquaintances. Because the questionnaire was mainly posted on the personal Facebook pages of Norwegians, most participants were from Norway. However, a link was also shared with several people from other countries, who re-distributed it with their friends. Anyone who did not have English as a first language was encouraged to participate. Since this study only researches the effect of the factors on EFL acquisition, people who did have English as their first language were not asked to complete the questionnaire.

Four multiple regression analyses were conducted in this study, two with vocabulary size as the dependent variable, and two with self-assessed proficiency as the dependent variable. The factors mentioned above are used as independent variables in all the regression analyses; however, self-assessment is added as a factor in one of the vocabulary analyses, while vocabulary size is added in one of the self-assessment analyses. These regression models show which variables most strongly predict English vocabulary size and self-assessment of English proficiency.

In chapter two (p. 3), relevant theories and previous studies about the factors in this thesis are reviewed, to form a theoretical basis for the present thesis. Chapter three (p. 16) presents the theory concerning research methods and analysis methods. It also explains the research and analysis methods used in this thesis. In chapter four (p. 30), the results of the current study are presented. The answers to each of the questions on the questionnaire are shown, and the likelihood that the regression analyses will be able to estimate the effect of the factors is assessed. In addition, the participants are divided into three age groups to display the general tendencies and differences between generations. Moreover, the multiple regression analysis results are displayed and considered. The results are discussed in chapter five (p. 53), where each of the research questions is addressed. Finally, a summary of the findings in this thesis is presented in chapter six (p. 61), which also includes limitations and implications of this study.

2 Theoretical Background

English is considered a *lingua franca* and is consequently taught in most of the world. Several theories about language acquisition have been developed, which can influence the way English is taught. Some of these theories, like behaviorism, are borrowed from other areas, while some have been developed specifically for language learning and acquisition. Along with other theories, individual differences are often taken into account (Dörnyei 2009). Although individual differences do exist, a problem arises when only a few, certain factors are considered, such as motivation, language aptitude and learning styles. Both the limited number of factors, and the factors themselves have been criticized by Dörnyei (2009, see section 2.3). Additionally, motivation is frequently discussed in connection with learning theories, and several theories have been developed concerning only the motivation aspect as well. There have been conducted studies about many of these theories, and a considerable number of researchers (e.g. Gardner 1985, Paradis 2004, VanPatten & Williams 2015) have attempted to explain the process of language learning and acquisition, although the number of different theories suggests that this is a quite complex process to understand.

2.1 English as a *Lingua Franca*

English is the predominant first language in several countries, and these countries all have different varieties of the language. Although English is considered the most common first language (L1) in the USA, England, Scotland, Australia and Ireland, they all have different English standards and rules (Bailey, Gorlach & Arbor 1986). Additionally, there are even more speakers in the world who use English as a *lingua franca* (ELF) (Seidlhofer 2005). Firth (1996: 240 as cited in Seidlhofer 2005: 339) has defined ELF, most commonly, as "a 'contact language' between persons who share neither a common native tongue nor a common (national) culture, and for whom English is the chosen foreign language of communication". English does function as a global *lingua franca*, which makes it almost essential to learn, if one wants to communicate with people with different language backgrounds.

Kachru (2006[1985]: 242) has described the spread of English as "[…] three concentric circles representing the types of spread, the patterns of acquisition and the functional domains in which English is used across cultures and languages". The inner circle contains the countries where English is the primary language used, for example the USA, the UK and Australia. Past this is the outer circle, which contains the countries that have previously been colonized by England,

and now have English as a second language (L2) used in some institutions. Examples of countries in this circle are India and Nigeria. Finally, there is the expanding circle, which contains the countries where English is taught as a foreign language and does not have a status as one of the official languages. This circle includes countries in for example continental Europe and South America (Cenoz & Jessner 2000).

As previously mentioned, many participants in this study are from Norway (see also section 3.1). Norway has never been colonized by England, and English is not considered a second language. However, most TV is not dubbed, because this is uncommon in small language communities (d'Ydewalle & Van de Poel 1999). In addition, English is taught from the first grade, and English is frequently used in University classes and textbooks. It can therefore be argued that Norway is between the outer and expanding circle. Still, it does not meet the qualifications of being a second language, and the term English as a foreign language (EFL) will therefore be used in this thesis.

2.2 Theories on Second Language Acquisition

Many researchers have developed theories to explain second language acquisition (SLA). One of the most influential theories is behaviorism, borrowed from psychology. Behaviorism "[…] attempts to explain behavior without reference to mental or internal processes. Rather, all behavior is explained solely with reference to external factors in the environment" (VanPatten & Williams 2015: 18). Many believe that behaviorism stems from research conducted by Pavlov, in which a sound was played every time his dogs were fed. Eventually, the dogs would salivate when the sound was played, even when they were not fed. In this instance, the sound is called the stimulus and the salivation is called the response. It is important to continuously repeat the stimulus to provoke the response, as the response behavior will likely diminish over time if the association is not maintained. Additionally, behaviorists believe that the responses themselves could be associated with each other. For example, people would associate letters with each other based on the likelihood of those letters being paired together. After writing English for a while, it would be natural that an "e" is more likely to follow a "th" than an "l". Therefore, one might write "the" out of habit (VanPatten & Williams 2015).

Behaviorists further believe that reinforcement and punishment can cause an organism to behave differently. This is called behavioral conditioning. An important part of this belief is that the organism can be made to engage in the behavior even when the stimulus is taken away,

if it has learned the relevant association. For example, if a chicken has been taught to dance by receiving food while lights are flashing, it will still dance to flashing lights, even when the food is taken away. According to behaviorists, this process is only a result of the association, and not of mental processes. They believe human behavior can be seen as responses to stimuli, rather than brought on by thoughts, feelings and intentions. Behaviorists therefore believe that the acquisition of language is just the acquisition of new behavior, and the only important factor is the environment. The learners replicate sounds they hear, and the likelihood that they will repeat them is dependent on whether the response is positive or negative. Much of this theory is no longer used, but conditioning, reinforcement and punishment remain as important terms today (VanPatten & Williams 2015).

Another very influential theory, developed by Stephen Krashen in the 1970s, is called monitor theory. It was developed specifically for SLA and has become well known to language teachers. This theory attempts to explain a range of phenomena in language learning and presents a model for language specifically. However, the processes involved in this learning are not thoroughly explained. As stated by VanPatten and Williams (2015: 25), monitor theory claims that "[m]uch of what we consider linguistic knowledge is, in fact, part of our biological endowment". This means that when learning a language, much of the knowledge is already existent in the learner, it just needs to be triggered by the input. Language acquisition happens through comprehensible, meaningful messages, and the interaction between these and the innate linguistic knowledge (VanPatten & Williams 2015).

Monitor theory consists of five hypotheses. Arguably the most important hypothesis within this theory is the acquisition-learning hypothesis. Krashen believes that acquisition and learning are separate; acquisition happens naturally, when the learner is not aware, while learning refers to consciously and explicitly being taught a language, as one would in a grammar lesson. An important part of this hypothesis is that the acquired and learned knowledge cannot interact. This is the reason why a learner might know a grammar rule, and still be unable to use it in spontaneous speech. Similarly, they might be able to speak correctly, without knowing the grammar rules they are using.

According to this hypothesis, the explicit teaching that is used in L2 classes should be abandoned and replaced with meaningful input methods where acquisition can take place. According to the monitor hypothesis, learners can use their learned knowledge to edit their acquired knowledge if they have enough time, and accuracy is an important aspect of the task.

For example, if the learner were to do a fill-in-the-blank exercise, they would be able to use their learned knowledge to supplement their acquired knowledge. However, these exercises are rare, and this hypothesis therefore supports the focus on acquiring rather than learning knowledge (VanPatten & Williams 2015).

The third hypothesis is called the natural order hypothesis. This states that the process of learning a language happens in a certain order. For example, there appears to be a predictability in the order that learners acquire grammatical structures such as questions, negotiation, and relative clauses. According to this hypothesis, the order of instruction and complexity of the structures do not influence the natural order of learning.

The idea that language is only acquired by hearing comprehensible input is called the input hypothesis. According to VanPatten and Williams, "[c]omprehensible input contains language slightly beyond the current level of the learner's internalized language" (2015: 27). Of course, most input will be a mix of levels, including slightly below the learner's level and slightly above the comprehensible input. However, as long as the level is roughly adjusted to fit that of the learner, it should result in at least some comprehensible input. According to this hypothesis, neither instruction of grammatical rules nor language output activities are very useful. Krashen believes that output is only a result of acquisition, not a cause for it, and that it actually might be disadvantageous.

The final hypothesis is called the affective filter hypothesis. The affective filter refers to how open the learners are to receive and process new input. Learners who are comfortable in their environment and have a positive attitude, have a lower filter than learners who are not. Therefore, a good learning environment will be beneficial to language acquisition (VanPatten & Williams 2015).

Many of the ideas and terms in this theory are still used today, though some aspects have been criticized. Ellis's (2005) non-interface position supports Krashen's acquisition-learning distinction and claims that the knowledge attained from explicit learning and implicit acquisition are stored in different parts of the brain – a view which has later been confirmed by neuropsychological research (Dörnyei 2009). This implies that implicit knowledge cannot be transformed into explicit knowledge, and vice versa. However, not everyone agrees with Krashen that this suggests that language should not be taught explicitly whatsoever. As Hulstijn stated, "[…] I consider explicit knowledge to be a worthwhile, sometimes indeed indispensable, form of knowledge to be used as a resource where and when implicit knowledge

is not (yet) available" (2002: 209 as cited in Dörnyei 2009: 160). Therefore, many teachers choose to spend their time on both explicit and implicit teaching (Dörnyei 2009).

Dörnyei (2009) writes that even though implicit and explicit knowledge cannot be converted into the other, they seem to co-operate in a way that enhances L2 proficiency. As Dörnyei (2009: 171) states: "[t]he evidence we have today points to the general conclusion that we cannot develop sufficient implicit knowledge in an L2 without the effective functioning of our explicit learning mechanisms". Therefore, explicit knowledge can supplement and enhance implicit knowledge, and Dörnyei lists six ways in which this can be done.

Firstly, in order to process a language implicitly, one needs to become explicitly aware that one should pay attention and notice the stimulus. Secondly, explicit tasks will trigger implicit learning as well. Thirdly, the explicit knowledge will have an effect on the implicit knowledge processed. Paradis (2004: 52-3 as cited in Dörnyei 2009: 172) explains it in the following way:

> rule presentation and negative feedback contribute to the development of metalinguistic knowledge, which may in turn monitor the output of linguistic competence, thus allowing conscious self-correction, which results in further practice of the desired form. The repeated practicing of the target form may eventually lead to the internalization of the implicit computational procedures that result in the automatic comprehension and production of that form. It is not the instruction and resulting knowledge that affect competence, but the extra practice provided by the use of the corrected form.

The fourth way is through memorization. Grammar learning experiments conducted by Reber (1967) have shown that memorization tasks can lead to implicit knowledge. Dörnyei's fifth way suggests that explicit knowledge can fill the gaps in implicit knowledge, even in spontaneous interaction. Paradis (2004) explained this based on neuroimaging. He stated that when learners have both implicit and explicit knowledge, they tend to use their implicit knowledge. However, when they lack the implicit knowledge, they can use their explicit knowledge to compensate. Finally, explicit learning can increase the accuracy of acquired L2 knowledge. According to Dörnyei (2009), learners who have acquired an L2 without explicit instruction have difficulty with basic grammatical structures, and form-focused instruction can help supplement their knowledge and increase their accuracy.

2.3 Individual Differences

Although researchers have developed several theories to explain language acquisition and learning, it is also essential to account for the effect of individual differences (IDs). Dörnyei defines IDs as "[…] characteristics or traits in respect of which individuals may be shown to differ from each other" (2009: 181). For the scientific definition of IDs, it is important that only characteristics that are continuous over time are included, as the definition would otherwise be too wide. Still, it is difficult to account for all these differences, and the term IDs therefore refers to characteristics that apply to everyone, but to different degrees (Dörnyei 2009).

Dörnyei (2009) lists the following factors as IDs: motivation, language aptitude, learning styles, and learning strategies. Motivation, which will be presented in section 2.4, is defined by Dönyei (2009: 182) as "[…] referring to the direction and magnitude of learning behavior in terms of the learner's choice, intensity, and duration of learning". Language aptitude refers to the learner's capacity to learn. A factor frequently mentioned is learning styles, which refers to the manner in which one prefers to learn. Somewhere between motivation and learning styles lies learning strategies, a term for the proactiveness the student shows for choosing learning routes. Although these may seem very logical, Dörnyei (2009: 182) points out that these ideas imply four assumptions:

> […] (1) IDs exist in the sense that we can identify, define, and operationalize them in a rigorous scientific manner; (2) IDs are relatively stable attributes; (3) different IDs form relatively monolithic components that concern different aspects of human functioning and that are therefore only moderately related to each other; and (4) IDs are learner-internal, and thus relatively independent from the external factors of the environment.

These assumptions are questioned by Dörnyei (2009), who initially criticizes the factors themselves. Firstly, language aptitude is a very broad term, which includes an unspecified amount of more specific factors, such as working memory. Recent researchers have therefore chosen to avoid it and use more specific terms instead. Secondly, 'motivation' is mostly used as a cognitive term and should therefore perhaps be a part of language aptitude, as this refers to cognitive factors. In addition, recent studies have viewed motivation as a fluctuating construct, rather than a static characteristic. The main problem with learning styles is that it is a very broad term with a soft definition. Therefore, it is so unspecific that most researchers have avoided using it. Dörnyei questions the categorization of learning strategies as an ID term.

Since behavior can be used strategically by one person, but not necessarily by another, Dörnyei prefers the term self-regulating capacity, meaning how proactive the learner is. Another frequently used term is anxiety, but this is also very broadly defined. It has been used as part of self-confidence, a personality trait, and as a basic emotion (Dörnyei 2009: 183). As previously mentioned, IDs is a broad term which can include many factors. Therefore, there are more factors that could be mentioned, but the aforementioned ones have been the most important in SLA. Dörnyei also states that the limited number of factors is a problem in itself, because this selection is missing several key concepts, including emotions, interests and general knowledge (Dörnyei 2009: 184).

Dörnyei has also criticized the theory because many of the IDs are not stable characteristics, but depend on the context. For example, a learner cannot be motivated as a stable characteristic, as this would fluctuate depending on the situation. Evidence for this can be found in twin studies, that are used to research whether a person is most heavily affected by environment or DNA. A general summary of most findings is that the differences between identical twins' brains are smaller than average, but there are still significant differences (Dörnyei 2009: 189). This shows that environment has a large effect, and that the brain changes over time. Logically, one would expect this to also be true for IDs such as motivation.

2.4 Motivation Theory

As mentioned in the previous section, one of the factors that is often mentioned as important for learning is motivation. A socioeducational theory developed by Gardner (1985) focused on the individual differences in attitudes and motivation for learning a second language. Dörnyei (2003: 5) defines integrative motivation theory as "[…] a positive interpersonal/affective disposition toward the L2 group and the desire to interact with and even become similar to valued members of that community". In other words, it involves the learner identifying with the L2 community. Of course, not every learner has direct access to L2 community members; however, most will still have indirect access through the media. Therefore, they can generalize to values associated with the community or the language itself.

Dörnyei and Csizér (2002) argued that the integrative motivation concept should be wider, as it appears in many settings where the learners are not part of an integration with the L2 community. Therefore, they suggested that the term is more related to the learner's self-concept, which can be compared to possible and ideal selves. Markus and Nurius (1986: 954

as cited in Dörnyei 2003: 6) define these as "[…] individuals' ideas of what they might become, what they would like to become, and what they are afraid of becoming, and thus provide a conceptual link between cognition and motivation". As mentioned above, one of these possible selves is the ideal self, in which one has all the characteristics one wants to possess. Dörney and Csizér believe that integrativeness can be understood as the characteristics in the ideal self that are seen as L2-related.

Another influential theory is Deci and Ryan's (1985) self-determination theory. Self-determination is measured by three orientations, namely autonomy, control and impersonal. The autonomy orientation refers to "[…] a high degree of experienced choice with respect to the initiation and regulation of one's own behavior" (Deci & Ryan 1985: 111). Although one might assume that the control orientation refers to control over one's actions, it actually refers to people being controlled by events. These events can either be in the environment or within oneself. With the impersonal orientation, people feel unable to control their actions in a way that will lead to desirable outcomes (Deci & Ryan 1985). According to Deci and Ryan (1985: 115), "[…] if one had a measure of self-determination, it would be positively correlated with the autonomy orientation, slightly negatively correlated with the control orientation, and highly negatively correlated with the impersonal orientation".

Self-determination theory is highly associated with the terms intrinsic and extrinsic motivation, which are frequently used in motivation research (Dörnyei 2003). Intrinsic motivation refers to doing something because the action itself is satisfactory, while extrinsic motivation refers to doing something because of a desirable outcome (Zhang *et al.* 2017: 59). Many teachers believe that intrinsic motivation is the key to learning, and therefore attempt to adjust their teaching in a way that will make the students genuinely interested in the subject. Several studies have researched the actual effect of intrinsic and extrinsic motivation, and some of these are reviewed in section 2.5.

2.5 Previous Studies of Individual Factors

Zhang *et al.* (2017: 57) conducted a study that "[…] examined L2 vocabulary learning, focusing on the joint influence of different motivational factors and learning strategies on the vocabulary breadth of adolescent learners of English as a foreign language […]". The participants were 10th grade students in an urban high school in eastern China. None had studied abroad, and the average duration of their English education was 8.70 years. Two questionnaires

were used, to survey the participants' motivation and their strategies for learning English vocabulary. In addition, a test was used to measure their vocabulary breadth. Vocabulary breadth was used as the measurement for their English proficiency because of the importance of vocabulary for learning an L2 (Zhang *et al.* 2017: 57).

The study researched the effect of both intrinsic and extrinsic motivation. Intrinsic motivation was shown to positively predict vocabulary breadth both directly and indirectly. This can be expected, because intrinsic motivation is widely believed to be essential for language learning (e.g. Noels *et al.* 1999; Pae 2008; Wang 2008 as cited in Zhang *et al.* 2017: 69). Extrinsic motivation was found to have an indirect effect on vocabulary knowledge through learning strategies. However, the direct effect from extrinsic motivation was not significant.

Pae (2008) conducted a similar study, researching the influence of motivation and self-confidence on L2 achievement. Self-confidence is defined as "[…] low anxiety and high self-evaluation of L2 competence" (Clément *et al.* 1994 as cited in Pae 2008: 11). The participants consisted of 315 Korean university students who were learning English as a foreign language. A questionnaire was used to collect the data, and was distributed in a class session. One week later, the students took a test of English for international communication. The data were analyzed by using a chi-square invariance test and a SEM analysis. The chi-square invariance test was used to examine "[…] the relationships between the instrumental and integrative orientation and the extrinsic and intrinsic motivation […]" (Pae 2008: 16). Two sets of models were created, where each model had a different explanation for which factors were significant for explaining this relationship. The chi-square analysis test analyzed the difference between two models, and the results showed which model was superior. The SEM analysis examined the relationships between the factors influencing L2 proficiency. This also gives information about how well a model fits the data.

The results showed that L2 proficiency was directly influenced by motivation. In addition, self-confidence was positively connected and English use anxiety was negatively connected to L2 proficiency. Of the factors researched in this study, the results suggested that intrinsic motivation was most highly related to L2 achievement. Since both Pae and Zhang *et al.* found that intrinsic motivation was closely related to L2 achievement, this is certainly a significant factor for predicting L2 proficiency. As shown in section 2.3, Dörnyei has criticized the use of motivation as an ID. However, this was criticism of the use of this as a stable characteristic. Therefore, it seems that motivation is an important, though fluctuating factor.

Huensch and Tracy-Ventura (2017) have studied the effect on L2 fluency from residence abroad. Fluency is defined as "[…] the smoothness and fluidity of speech […]" (Lennon 1990 as cited in Huensch & Tracy-Ventura 2017: 276). Since exposure to English is thought to trigger implicit acquisition, it could be argued that L2 fluency would improve due to residence abroad. Additionally, Clément and Kruidenier (1985) argue that contact with speakers of the L2 will increase self-confidence. Since Pae's study showed that self-confidence has a positive effect on L2 proficiency, it follows that contact with L2 speakers has a positive effect on L2 proficiency.

24 British learners of Spanish participated in Huensch and Tracy-Ventura's study (2017). They had Spanish as their major in a four-year course at the university, and were required to spend their third year abroad. Consequently, there were no students at the home university to compare them to. The amount of time they had spent learning Spanish and their proficiency test scores were collected, and quite varied. Data was collected before, during, and after their stay abroad, at a total of six times.

The results showed that fluency improved after time abroad, although there were signs of slight attrition after returning to the home country. However, the different aspects of fluency did not develop nor attrite simultaneously. The aspects that developed quickly were also the ones that were retained after returning home. Those that took longer to develop showed signs of attrition sooner. This shows that residence abroad aids L2 learning, which supports previous studies that also found improvement in fluency after time abroad (e.g. Du 2013, Freed 1995, Kim *et al.* 2015, Mora & Valls-Ferrer 2012). However, it also seems that longer time abroad may be needed for a more permanent result.

Other types of exposure have also been shown to have a positive effect on foreign language proficiency. D'Ydewalle and Van de Poel (1999) conducted a study on whether watching TV had an effect on a foreign language vocabulary. 327 students from an elementary school in a Dutch-speaking part of Belgium participated in the study. D'Ydewalle and Van de Poel aimed to determine whether the likeness of the L1 and L2 influences the effect of the TV exposure. Therefore, both French and Danish were used as a foreign language, as Danish is more similar to Dutch than French. Five versions of a 10-minute long still-motion movie were created for the project. Two versions had the foreign language in the audio, which would be the more likely situation in a real-life scenario. The two other test videos had the foreign language as subtitles. The remaining version was a control video with Dutch subtitles and audio. Four

grades were used, and each was divided into five groups, one for each video. Each group was first shown the video, and then asked to answer three tests directly afterwards. The tests were created to assess vocabulary, syntax and morphology. The tests also had visual and auditory subtests, and the visual tests were presented on paper, while the auditory tests were played as a recording.

Performance on the Danish vocabulary visual tests improved significantly, compared to the control group, when the foreign language was in either the subtitles or audio track. However, the improvements on the auditory tests, compared to the control group, were only significant when the foreign language was used in the audio track. This implies that the most common situation, with the foreign language in the audio track, is most beneficial for language learning. In contrast, there were no vocabulary acquisition improvements due to the movie in French.

The syntax test also showed no significant improvements for neither the auditory nor visual tests. In addition, the morphology test only had one significant improvement compared to the control group: the auditory test performance improved when the foreign language was used in the audio track. The results of this study imply that only vocabulary improves when watching TV that includes the target language. However, since the participants watched one movie that lasted only 10 minutes, it is possible that a more significant effect would appear after more exposure.

As this study researched different target languages than English, it can be questioned whether the results are applicable to the one conducted in this thesis. The results do suggest that the effect increases when the target language is more similar to the first language. This could also mean that the effect of watching TV in English depends on the first language of the viewer. Considering that the study did research the effect of watching a clip with the intention of learning a language, the results can be used to discuss the results in the current study. However, the following study has a closer connection to this thesis.

A similar study was conducted by Wang (2012), in which the effect American TV drama had on English vocabulary was researched. 28 students registered in an English class in a large university in Northern Taiwan participated. Their ages ranged from 20 to 45 years old, and they were all low-intermediate to intermediate level learners. The study consisted of three ninety-minute study sessions. In each session, the class was shown a clip from a TV situation comedy three times. Between the viewings the researcher made sure the students understood the clip and provided them with a list of vocabulary. The students discussed the words both among

themselves and with the researcher. Each student was interviewed about their preferences and perceived learning outcomes from the research sessions.

A vast majority, 93% in fact, agreed that they found watching TV clips pleasant. 93% also slightly or fully agreed that watching TV helped them learn vocabulary. However, only 71% slightly or fully agreed that the vocabulary level was appropriate for them. Considering that American TV is made for L1 speakers of English, it is not surprising that some students find this level difficult. The same amount slightly or fully agreed that they preferred watching TV, compared to reading a text, to learn vocabulary. Finally, 96% of the participants slightly or fully agreed that they would recommend their teacher to use TV to help students learn vocabulary. The students found that when the words were contextualized, they were easier to learn.

Sundqvist (2009) also conducted a study concerning the effect of extramural English on oral proficiency and vocabulary. She defines extramural English as "[...] linguistic activities that learners engage in outside the classroom in their spare time". 80 Swedish EFL[2] learners in grade 9 participated in the study, in which data was collected over a period of one year. Extramural activity was measured with a questionnaire and language diaries, in which the participants recorded the time spent on activities, in addition to the type of activity. To analyze the results, several statistical tests were conducted, the type of which was decided by the number and type of groups that were compared. For each hypothesis, the statistical significance (explained in section 3.4) was found, and this was used to determine whether the results could be generalized to a larger population.

Sundqvist found that both oral proficiency and vocabulary were positively and significantly affected by extramural activities. However, there was a stronger and clearer effect on vocabulary than oral proficiency. Additionally, the type of activity was significant, as there was a stronger effect from active activities (e.g. video games) than passive activities (e.g. watching TV). Finally, a gender difference was found, namely that boys spend more time on extramural activities than girls, which meant that these activities had a greater influence on boys.

[2] The case in Sweden is quite similar to that in Norway, which is elaborated on in section 2.1 (see p. 4). In these countries, English is not clearly within neither the EFL nor ESL category. Sundqvist refers to these participants as ESL learners; however, since the term EFL is used for Norwegian participants in this thesis, the same term will be used for the Swedish participants in Sundqvist's study.

The foregoing chapter creates the backdrop against which the thesis's materials and methodology are selected. In addition, these theories and studies are used in combination with the results of the current study in order to add to the field of SLA research.

3 Materials and Methodology

There are numerous decisions that researchers need to make when a study is created. The primary decision that needs to be made is the population of the study, or the group of people to which one wants to generalize the results. For example, the current study aims to generalize the results to EFL speakers, and the sample (the participants in the study) is chosen from this population. Subsequently, one needs to decide between a quantitative and qualitative research method, and later a data collection method within one of these categories. Finally, an analysis method needs to be chosen, which has to be suitable for the data collection method and generalization one wishes to make.

3.1 Participants

The population for this study, i.e. the group to which the results will be generalized, is EFL speakers, and the sample is a group of 196 non-native speakers of English. A questionnaire (Appendix I) was posted on my personal Facebook page, as well as the Facebook page for University of Stavanger students, two international Facebook groups for English teachers, and acquaintances' Facebook pages. Participants were asked to complete an online vocabulary test, to receive an estimate of the number of word families they knew, which could range between 0 and 20 000. As explained by Bauer and Nation (1993: 253):

> [...] a word family consists of a base word and all its derived and inflected forms that can be understood by a learner without having to learn each form separately. So, watch, watches, watched, and watching may all be members of the same word family [...]

Anyone who did not have English as an L1 were encouraged to participate, considering that the sample can only consist of people from the study population. In addition, two adult English classes mostly made up of immigrants with a range of ages and proficiencies were asked to participate. Finally, the questionnaire was sent in personal messages to acquaintances that are not from Norway. This was done in an attempt to get more variation within variables such as "number of years spent learning English", as other countries start teaching English at a different age than Norway. Additionally, it is likely that the amount of time spent on English-speaking media differs significantly, as it is not as accessible in every country as it is in Norway.

However, it is likely that a majority of the participants are Norwegian, as the questionnaire was mostly shared by Norwegians to their friends.

As the questionnaire was anonymous, there is not much background information about the participants in this study. The ages of the participants ranged from 18 to 80, with an average age of 28.6. Most participants had studied English for 12 years, which could suggest that they are Norwegian, as current Norwegian students are supposed to learn English for at least 12 years. However, the smallest value for this factor was 3 years, while the highest was 35 years. The majority of participants had spent time abroad and in English-speaking countries, although the amount of time varied greatly. More information about the participants' responses to the questionnaire can be found in section 4.1.

201 people completed the questionnaire; however, five responses were discarded, as these five participants appeared to have misunderstood some questions. Two respondents had answered that they received a score between 0 and 2000 on the vocabulary test, which was the lowest score possible. However, this seemed unlikely considering the responses to the other questions. Therefore, it was more likely that they had misunderstood the question, and their responses were therefore deleted before the analysis. Two other participants were discarded, because they answered that they spent an impossible number of hours on English-speaking media each week. One responded that they spent 150 hours weekly on media, which would entail approximately 2.5 hours of sleep each night, which would be impossible to do on a weekly basis. The other responded that they spent 168 hours on media each week, which is 24 hours all seven days of the week. It goes without saying that this is impossible to maintain. These participants must have misunderstood the question as well, and considering that there is no way to contact them because of the anonymous nature of the questionnaire, they had to be discarded. Finally, the fifth discarded participant responded that they had spent 1200 months abroad, which converts to 100 years. As this participant was younger than 100 years old, there appears to have been a misunderstanding or typographical error.

One can probably not argue that the sample in this case is representative of the population to which the results will be generalized, in this case EFL speakers. However, one may argue that the importance of representativeness depends on the type of study and analysis. In this study, the purpose is not to determine the common values for any of the factors. Instead, the study aims to describe the relationship between the factors and the vocabulary and self-assessment. If all participants had approximately identical values for one factor, it would be very difficult

to see if this had any effect on vocabulary or self-assessment. It may therefore be more important to have variation within the variables than to have a representative sample. Still, the results of the current study will not be generalized for all EFL speakers. Instead, they can give an indication about the effect of the various factors, and whether the same effects would be found in a larger population.

3.2 Data Collection Methods

Data collection methods are divided into two main categories, namely qualitative and quantitative methods. The main difference between these research methods is the size of the population to which one wishes to apply the results.

Qualitative research is used to investigate a small population in depth. The most common qualitative research methods are participant observation, in-depth interviews and focus groups. It often shows contradictory opinions and behaviors, and is often more nuanced than quantitative research. This can be very helpful if one is attempting to explain the complexity of an issue. The results of a qualitative study can be extended to people or groups similar to the research population; however, they cannot be generalized to a large population or area (Mack, Woodsong, MacQueen, Guest & Namey 2005).

Quantitative research can be defined as "[e]xplaining phenomena by collecting numerical data that are analyzed using mathematically based methods (in particular statistics)" (Aliaga & Gunderson 2002, as cited in Muijs 2004: 1). Part of this definition is that numerical data are collected. Qualitative data are usually not numerical, which means that they cannot be analyzed using statistics. This is a significant difference between qualitative and quantitative methods. Therefore, quantitative research is most helpful when one wants to collect numerical data about a specific phenomenon and generalize the results to a large population. Often, the data that is collected occurs naturally in numerical form, but it does not have to occur in numerical form in order to be collected as quantitative data. One can also design research instruments that convert these phenomena into quantitative data that can be analyzed statistically. For example, if one wants to research students' attitudes, these do not originally occur as numerical data. However, if one asks students to rate how much they agree with a statement about attitudes, the results will be numerical and can be analyzed quantitatively (Muijs 2004).

There are several quantitative research methods that can be used, mainly divided into experimental and non-experimental studies. Experimental studies are based on experiments,

defined by Muijs (2004: 13) as "[…] a test under controlled conditions that is made to demonstrate a known truth, or examine the validity of a hypothesis". The main difference between experimental and non-experimental studies is the control aspect. In experimental studies, one wants to control the conditions so only the variables of interest are focused on. Non-experimental studies are more varied and include for example survey research and observational research.

Survey research is commonly used and characterized by "[…] the collection of data using standard questionnaire forms administered […] increasingly by using web-based and e-mail forms" (Muijs 2004: 34). Creating a survey is a process which consists of several steps. Firstly, one must define a research question. According to Muijs (2004: 36), "[s]urvey research is well suited to descriptive studies, or where researchers want to look at relationships between variables occurring in particular real-life contexts". Because of limitations that exist when one conducts a study, one often has to settle for fewer variables than what is needed to explain the full complexity of the phenomenon in focus. The following design will be dependent on the research questions decided upon. For example, if one wants to research the effect English TV has on vocabulary, one could use pre- and post-surveys. In this case, a pre-survey would be used before watching a TV episode, and a post-survey after. The surveys could then be compared. If one wants to find participants' self-assessed vocabulary level, a cross-sectional study, in which the participants are surveyed once, would be appropriate. Unfortunately, time and budget constraints often lead to cross-sectional studies conducted once, even when this is not the ideal research method in the relevant study. For example, if one wishes to research participants' development, one would ideally conduct a study several times, over a long time period.

It is also important to decide what the population of the study is going to be. If the population is all senior citizens in Norway, one needs to take a sample from this group. One can only generalize one's findings to populations one has sampled from. Additionally, the sample needs to be representative of the population. For example, one cannot sample senior citizens from only one city, and generalize for the whole country. Once the method and sample are chosen, one needs to decide how to collect the data. A method that has become very common is online and e-mail questionnaires. This is very popular because participants are most likely familiar with the format, they can do it at their convenience, and the answers can be stored in a database and analyzed directly. However, the main problem is that only a small percentage of those contacted take the time to complete it, so it is difficult to reach the desired population. In

addition, the sample may not be representative, as one might argue that the need for a computer suggests that many respondents will be young and wealthy. However, computers are relatively cheap presently, and considering that smartphones are very common, the need for wealth is less important now. In addition, it is becoming increasingly more common for older generations to spend time on technology, which means that this issue with representativeness has also become less problematic in recent years.

3.3 Data Collection in this Thesis

A quantitative survey research is used in the current study, as the goal is to generalize the results. An online questionnaire was created (Appendix I), with the goal of assessing the participants' English vocabulary size and self-assessed proficiency. In addition, the participants were to answer questions about the factors researched in this study, namely age, amount of time spent on English-speaking media, number of years spent actively learning English, number of months spent abroad in general, and in English-speaking countries in particular, how much they enjoy speaking English, and perceived usefulness of learning English. Henceforth, the abbreviations in Figure 1 will be used.

Factor	**Abbreviation**
Participant's age	*Age*
Number of weekly hours spent on English-speaking media	*Media*
Number of years spent actively learning English	*School*
Number of months spent abroad in general	*Abroad*
Number of months spent in English-speaking countries	*EngCountries*
Participant's enjoyment of speaking English	*Enjoyment*
Perceived usefulness of English	*Usefulness*
Vocabulary score	*Vocabulary*
Self-assessed proficiency	*Self-assessment*

Figure 1 - Factors studied and corresponding abbreviations

The effect the factors have on English vocabulary and self-assessed proficiency is the main focus of this study. Two separate measures are used because one can be more certain of the

validity of the results if they are similar in two different tests. This use of two tests can be considered a form of triangulation, defined by Cohen *et al.* (2005: 112) as: "[...] the use of two or more methods of data collection in the study of some aspect of human behavior". Cohen *et al.* encourage the use of triangulation, as it can increase the validity of results. In addition to the improved validity, the use of two proficiency measures leads to the possibility of an examination of any potential differences between the effect of the factors on the separate measures.

The first measure is the vocabulary score. This is used because vocabulary is an essential part of learning a language, and there is a strong correlation between vocabulary size and reading comprehension (Farvardin & Koosha 2011). In addition, it is simple to measure this objectively online, which is helpful in a quantitative analysis. It also naturally occurs in numerical form, which is beneficial for the analysis method in this study. Therefore, this is a natural main measure for this thesis. The second measure was the participants' self-assessed proficiency. This is used because it is more extensive than vocabulary size, as the participants were to assess their proficiency as a whole, including vocabulary, accuracy, fluency, etc. Therefore, this can suggest which factors have an effect on EFL proficiency in general. In addition, it can be easily expressed in numerical form, which is helpful in the analysis. However, self-assessment is undeniably a very subjective measurement, which is the reason it is not treated as the primary measure in this thesis.

After the first two questions that determined the vocabulary and self-assessment scores, there were seven questions about the factors researched in this study. The first question asked about the participants' age, which was to be entered as a numeral in a box. A multiple-choice format with age ranges was not used, because the analysis requires responses in a single figure format. This factor will henceforth be referred to as the *Age* factor.

Next, the participants were asked how long they had studied English, including primary and secondary school. This clarification was needed because people might assume that the question only refers to studying at the university level. If the sample of the study only consisted of Norwegian participants, the primary school years could have been excluded, but considering that some participants were from other countries, it is likely that they began learning English at different ages. This factor will henceforth be referred to as the *School* factor.

The third question asked how many months the participants had spent in a country where they had to communicate in English. They were asked to include all short vacations, as these might

add up to a significant amount of time. This question was asked because even if they did not spend time in an English-speaking country, the time spent practicing speaking English might prove to be important. This factor will henceforth be referred to as the *Abroad* factor.

The following question asked how many months they had spent in a country where English is the first language. It is presumed that there will be a different effect from spending time with people who speak English fluently compared to people who also have English as a second or foreign language. Additionally, as previously mentioned, studies have shown that there is a positive effect from living in a country where they speak the target language (see section 2.5). This factor will henceforth be referred to as the *EngCountries* factor.

After this, the participants were asked how many hours they spend on English-speaking media in an average week. This only included media with audio, for two reasons. Firstly, media without audio, such as Facebook and Twitter, are probably mixed with both English and the participants' L1. Secondly, as it is common to spend much time on these platforms, in unconnected short periods of time, it would likely be extremely difficult for participants to estimate the amount of time they spend on this each week. This factor will simply be referred to as the *Media* factor.

The sixth question asked how useful the participants thought it was to know English. They were to rate their own assessment of the usefulness of English on a scale from one to ten. This would certainly have an effect on their motivation. It is likely that the responses would differ depending on how often the participants interacted with people who did not speak their L1, and how much they were planning to interact with these people. This factor is used as an extrinsic motivation factor, as this is an external factor for learning a foreign language (see p. 10). This will be referred to as the *Usefulness* factor.

Finally, the participants were asked how much they enjoy speaking English. Like the previous question, the participants were asked to rate their level of enjoyment on a scale from one to ten. This is used as an intrinsic motivation factor, as it concerns the internal interest and joy of learning the language (see p. 10). It will be referred to as the *Enjoyment* factor.

The questionnaire took about 15-20 minutes to complete, and most of this time was spent on completing a vocabulary test, at http://my.vocabularysize.com/. The questionnaire introduction included the link, and the result was to be entered as the answer to the first question. This test was one of several vocabulary tests found online, and was chosen because of the creators' goal to make an improved and reliable vocabulary test, in addition to the extensiveness of the test.

It was created as a group project at Victoria University of Wellington in New Zealand[3]. It was made as a tool for assessing one's own and students' vocabulary size. In addition, it is mentioned on the site that it can also be used by researchers to measure their participants' vocabulary size. According to the creators, they wanted to make an improved test that addressed some issues with previous vocabulary tests (VocabularySize.com 2018). The length of the test, which is either 100 or 140 questions, is randomly selected. Ideally, there would be one set number of questions for every test, but unfortunately this is not the case. Each question has a word presented in a sentence, and one is to select the correct meaning from four possibilities. There is also an "I don't know" option, which one is encouraged to use instead of guessing. The sentence the word is presented in is designed not to give clues about the meaning of the word. When the test is completed the participant is given the approximate amount of word families they know, between 0 and 20 000.

3.4 Regression Analysis

In a quantitative study, once the data is collected, the results are usually analyzed using statistical tools. When the goal of the study is to research the effect of several factors on one variable, a common analysis method is multiple linear regression. This analysis tool looks at the relationship between the dependent variable and the independent variables. If one is researching the effect of several variables on fuel usage, for instance, the fuel usage would be the dependent variable, and the independent variables would be the factors of which one is researching the effect. After a well-executed multiple regression analysis, one will have an equation that predicts the result, meaning the dependent variable, by using all the independent variables. The equation would have the following format:

$$Y = a + b_1X_1 + b_2X_2 + \ldots + b_nX_n$$

where b_1 is the coefficient for X_1, b_2 the coefficient for X_2, etc. In addition, the analysis provides a p-value (or statistical significance), which shows whether the relationship between an independent variable and the dependent variable is statistically significant. This shows how likely it is there is an effect in the sample, but not in the population. Hence, an effect found in

[3] The site is affiliated with both the School of Linguistics and Applied Language Studies and the School of Engineering and Computer Science at Victoria University of Wellington, New Zealand. Initially, the site started as a hobby with which the creators aspired to build an accessible and reliable vocabulary test. A group of students from a third-year course at this University designed and programmed the site in 2010. More information can be found at http://my.vocabularysize.com/FAQ and http://my.vocabularysize.com/about-us.

the sample can only be generalized to a wider population if the p-value is low. There is no set requirement for what the p-value must be in order to have a statistically significant effect. However, it is common to either have 0.05 or 0.01 as an upper limit for statistical significance. In this thesis, a significance level of 0.01 will be used as a standard. Finally, one can also calculate the R square measure, which is the measure of how well the equation predicts the results (Muijs 2004).

In order to analyze results with multiple regression, one would usually use a software package. Excel is a tool that most people have, but it is more limited than many other packages. The most commonly used program for statistical analysis is called Statistical Package for Social Sciences (SPSS), which is available at most institutions. It is not necessarily the best software, but it is frequently used and has all the required features (Muijs 2004). Minitab is another frequently used software, although this is often not available in public institutions. Regression analysis is possible with this software as well, and will produce the same coefficients and values as the report in SPSS. However, multiple regression analysis in Minitab is only possible with a maximum of five independent factors. Therefore, if one is interested in conducting an analysis with more than five independent factors, SPSS is the superior software. Still, Minitab can be a useful software for basic statistical analysis and illustration of results.

Results from a questionnaire can be transferred to SPSS, after which the data are displayed in a spreadsheet. The horizontal rows represent each participant, and the vertical columns represent the answers to each question. There is a function in this software one can use to conduct a regression analysis, where a small menu will appear, which is used to specify the variables in the analysis. In this menu, one can select one variable as the dependent variable, and several variables as the independent variable. The possible number of independent variables is flexible, and all variables in the data do not need to be included in the analysis. After selecting the variables, the software conducts the analysis, and another document appears with the results. All of the raw regression analyses conducted for the purpose of this thesis are provided in full in Appendices II-VIII.

The document with the results provides the user with the coefficients, which explain the relationship between the dependent and independent variables. Additionally, it lists the beta value for each variable, which shows how strong the effect of the independent variable is on the dependent variable. This statistic lies between zero and one, and can be either negative or positive. A positive beta value conveys a positive effect from the independent variable, which

means that when the factor increases, the dependent variable increases as well. In contrast, a negative beta value signifies that when the factor decreases, the dependent variable increases. If the beta is zero, this indicates that the dependent variable is not explained by the independent variable. In other words, there is no relationship between these two variables. If the beta is one, this means that the dependent variable is perfectly explained by the independent variable.

Additionally, the p-value, the R square and adjusted R square are provided in the document. R square says how well the model fits the sample, while adjusted R square says how well it fits with a larger population. Adjusted R square is the most interesting value of these two, as it is the goal of this study to generalize the results. Both measures lie between 0 and 1, and the higher the value, the better the model fits. According to Muijs (2004: 166), the following rule is used to assess the fit of the model:

<0.1: poor fit

0.11-0.3: modest fit

0.31-0.5: moderate fit

>0.5: strong fit.

The strength of the adjusted R square indicates how well the independent variables explain the variation within the dependent variable. Hence, a model with a high adjusted R square value contains many of the important factors that influence the dependent variable. If the model has a low adjusted R square value, there are several important factors that are not included in the study.

A final tool that is useful for determining the validity of a multiple regression analysis is collinearity diagnostics. This is an additional statistical analysis that can be done with SPSS. It is used in order to detect an issue called multicollinearity, which means that the independent factors are too closely related to each other. This should be avoided, as it can severely inhibit the ability to estimate the relationship between each independent variable and the dependent variable. Therefore, one can include a diagnostic of this in an SPSS multiple regression analysis, which will then provide figures that show whether the independent variables are closely correlated.

When this diagnostic is conducted, two additional statistics are added to the previously mentioned document with the results from the SPSS analysis. These statistics explain roughly the same thing, so it will usually suffice to use the tolerance statistic to examine if there is multicollinearity. As defined by Muijs (2004: 181), "[t]olerance is the amount of variance in the individual variable *not* explained by the other predictor variables". As most statistics in this analysis method, this lies between zero and one. A high value is preferred, as this signifies that the effect of each independent variable is unique. In other words, there is not much correlation between the variables. A low value is worrying, as this means that one effect is explained by several factors. Independent variables that explain one another will often also have low tolerance levels (Muijs 2004).

3.5 Analysis in this Thesis

The previous subsection creates a backdrop against which the analysis in the current thesis is based. Firstly, the general tendency in the data was found, which was portrayed by figures that showed the average and median values to each question. These values were calculated for all participants, after which they were divided into three age groups, and the aforementioned values were calculated for these as well. Although the average value is very often used to represent a group, this is not always appropriate. In scenarios where the range of the numbers is quite narrow, the average is the most representative statistic to use, as every number is used in the calculation. However, if there is a skewed distribution, the median would be a more appropriate statistic to represent the data. To illustrate this, the average and median values will be calculated for the following example data:

1 2 3 4 5 6 7 8 9 10 1200

The average value is calculated by adding all values together and dividing that sum by the number of values. In this scenario, the calculation would be (1+2+3+4+5+6+7+8+9+10+1200)/11, for which the result is 114. In order to find the median value, the numbers are listed in ascending order, and the number in the center is found. In this example, the median is therefore 6. As 6 is more representative of the data than 114, the median would be used in this scenario.

After the average and median values were calculated, figures were created to represent the answers to each of the questions. The statistical software Minitab was used to create these figures. For the questions where the values varied greatly, the median value was the main

interest, because, as previously mentioned, this is a more representative value in these scenarios. For the questions where the responses are less varied, the average values are used. Secondly, the participants were divided into three age groups, namely 20-29, 30-39 and 40-60-year-olds. The average and median values of these groups were compared in order to find general tendencies within these age groups.

Subsequently, multiple regression analysis is used, as the goal is to determine which independent variables are predictors of the dependent variables self-assessed proficiency and vocabulary size. Regression analysis is possible in both the Minitab and SPSS software, but in Minitab it is only possible to have five independent variables, which is less than are analyzed in the current study (see p. 20). Therefore, SPSS was used to conduct the regression analyses in this thesis.

Several separate multiple regression analyses were conducted in this study. This was done in order to assess the influence of the independent factors on both vocabulary size and self-assessed proficiency, as any concurrence would strengthen a conclusion about the effect of a factor on EFL skills in general. Additionally, any differences would shed light on how the various aspects of EFL proficiency were affected by different factors. Furthermore, it was interesting to see how the two dependent factors influence each other.

All responses from the questionnaire were displayed in an SPSS spreadsheet. These were used to run the analyses, as explained in section 3.4. Firstly, *Vocabulary* was set as the dependent variable, and all factors except *Self-assessment* were set as independent variables. This analysis is presented in section 4.3. It shows how well the researched factors predict the variation within vocabulary size, and which factors affect this variable, and how strongly. Since vocabulary is an objective score, this analysis is quite important. Of course, the results are only directly related to vocabulary size, but one can argue that if a factor affects vocabulary size, it may also affect EFL skills in general.

As will be explained further in section 4.3, the tolerance levels for the *EngCountries* and *Abroad* factors indicated a very strong correlation. Since multicollinearity decreases the validity of the analysis, one factor needed to be removed in order to improve the model. Therefore, two analyses were conducted with *Vocabulary* as the dependent variable, in which one excluded *EngCountries*, and one excluded *Abroad* as an independent variable. Subsequently, the adjusted R square values and the beta values for the relevant factors were compared. The factor that proved to have the strongest effect was used in the consecutive

Vocabulary analysis, while the other factor was removed. Hence, the *Abroad* factor was removed from the second *Vocabulary* analysis.

The second analysis used self-assessed proficiency as the dependent variable, and retained the same independent variables. If the same factors prove to be important in this analysis, this would suggest that these factors affect EFL proficiency in general, as they affect two different aspects of EFL. Since this model had the same problem with multicollinearity, two analyses were conducted here as well, in order to establish whether *Abroad* or *EngCountries* had the strongest effect on *Self-assessment*. *EngCountries* proved to be most influential here as well, and *Abroad* was consequently removed from the second *Self-assessment* analysis.

Thirdly, a second *Vocabulary* analysis was conducted, in which the *Abroad* factor was excluded, and self-assessed proficiency was included as an independent factor. This was done to research the effect *Self-assessment* has on *Vocabulary*, although the cause and effect relationship here is somewhat unclear.

A multiple regression analysis is based on an assumption that the independent variables affect the dependent variable, and not vice versa. Sometimes, this cause and effect relationship is obvious, like for example when the dependent variable is fuel usage, and the independent variable is motor size. It is quite clear that fuel usage will not have an effect on motor size. However, in the current study, the relationship between the variables is relatively unclear. Some factors are clearer than others; it is for example obvious that vocabulary size will not affect the age of the participants. However, vocabulary size will plausibly have an effect on enjoyment of speaking English. In addition, the self-assessment and vocabulary relationship is quite uncertain. It seems plausible that L2 confidence will have an effect on vocabulary size, if *Enjoyment* does. However, it is even more likely that vocabulary size will have an effect on self-assessed proficiency. Therefore, one needs to be a little hesitant to state the actual cause and effect relationship between the variables in this study. It is preferable to focus on the correlation between the variables, as the effect might go both ways.

As this relationship is a little ambiguous, the first analyses were necessary to research a more realistic effect tendency. However, the results from the second *Vocabulary* analysis can be used to ascertain the strength of the relationship between *Vocabulary* and *Self-assessment*, and support or question the results from the first *Vocabulary* analysis.

Finally, a fourth multiple regression analysis was conducted, which also had *Self-assessment* as the dependent variable. In this analysis, *Vocabulary* was used as an independent variable,

and the *Abroad* factor was excluded. As previously mentioned, the cause and effect relationship between vocabulary size and self-assessed proficiency is uncertain, so these analyses researched how these variables affected each other. As with the second *Vocabulary* analysis, this *Self-assessment* model can also be compared to the previous one, and any differences can be discussed.

Regression analysis is technically designed to analyze continuous variables, which means that the distance between each number is known and equal. For example, the *Age* variable is continuous, as the distance between 25 and 26 is the same as between 45 and 46. However, ordinal numbers are not meant to be used in regression analysis. Ordinal numbers are characterized by the fact that the distance between each number is not known or equal. For example, when the participants are to rate their EFL proficiency on a scale from one to ten, the distance between one and two is not necessarily identical to the distance between eight and nine. This is not ideal for regression analysis. However, as multiple regression is a quite robust analysis tool, it can still work successfully when ordinal numbers are used. In these scenarios, one only needs to keep this in mind when interpreting the coefficients (Muijs 2004).

4 Results

Since there were several analyses conducted in this study, there are various results to present. Initially, the responses to the questionnaire are of interest, as they further illustrate who the participants are as a group. Additionally, they can be used to discuss whether the results in the multiple regression analyses are valid, as a certain amount of variation is preferred in order to find an accurate correlation between variables. Moreover, the similarities and differences between the age groups can shed light on tendencies within the different ages, although these results cannot be generalized to a larger population. Of course, the main results of interest in this thesis are those of the regression analyses. These show which factors appear to have an effect on EFL vocabulary and self-assessed proficiency, which can be further applied to EFL proficiency in general.

4.1 Presentation of Responses to the Questionnaire

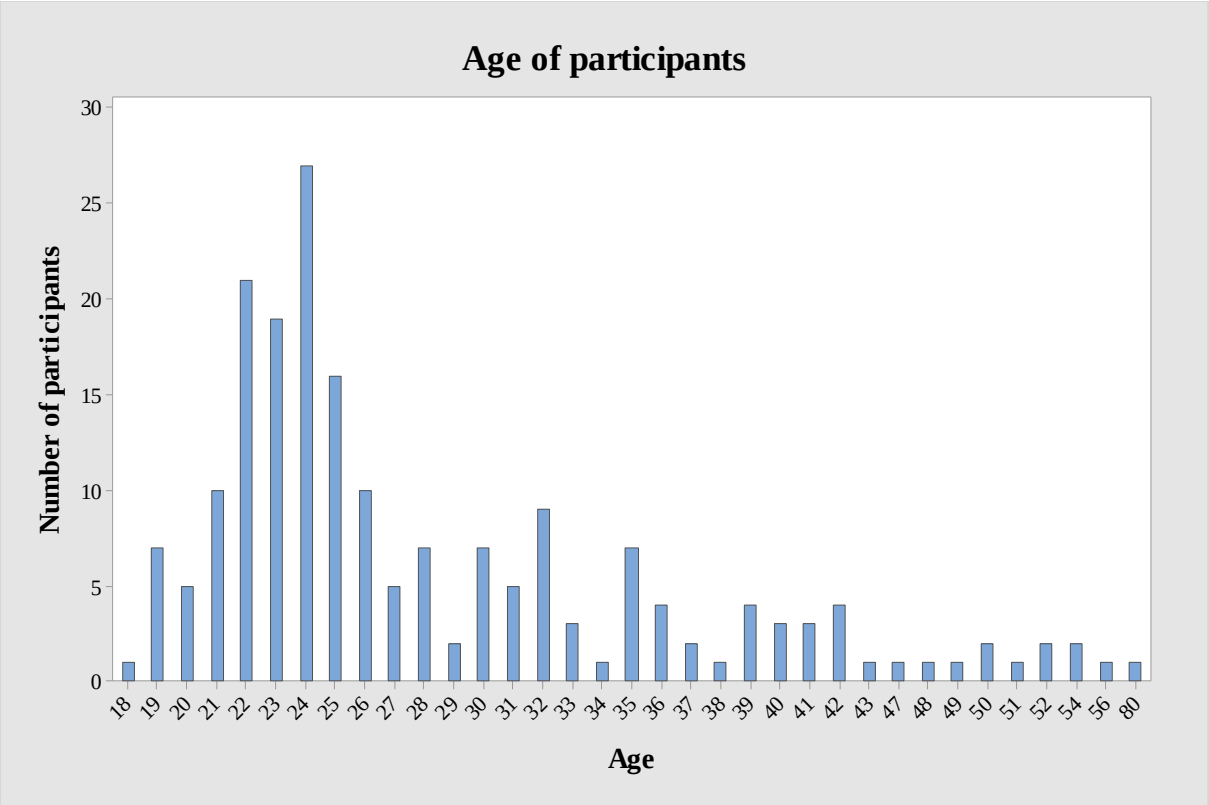

Figure 2 - Age of participants

From Figure 2, one can see that the most common age of the participants is between 19 and 30 years old; however, the total age range is from 18 to 80, which is a wide span. Still, there are no participants between the ages of 56 and 80, so the oldest generation is not represented very well. Therefore, one can more easily make generalizations about 20-30 year-olds than those above 30 years old. However, with the amount of ages represented in the study, the regression analysis should be able to analyze the importance of this factor. In section 4.2, the participants are divided into three age groups, and the differences between the age groups are looked at more closely.

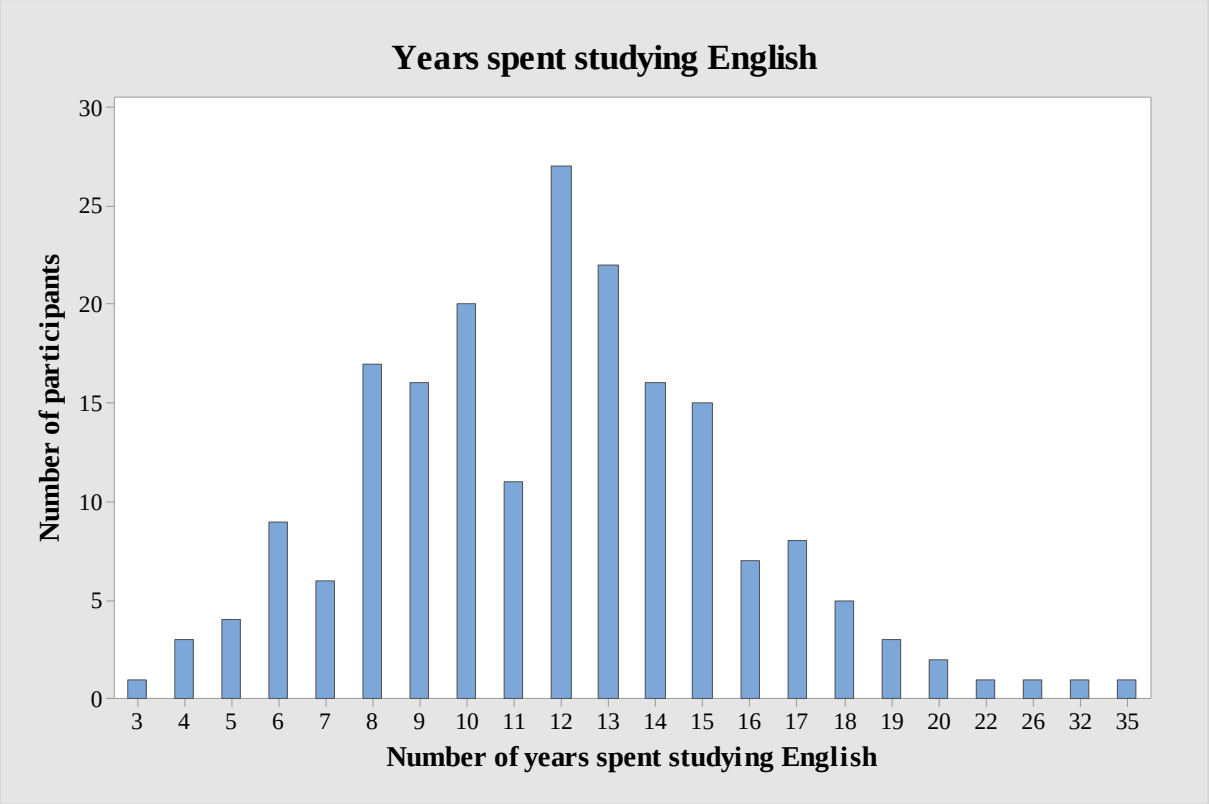

Figure 3 - Number of years participants spent studying English

Figure 3 shows that most participants had studied English for between eight and fifteen years. The participants who had studied English for less than six years are most likely not from Norway, as English is taught from the first years of elementary school in this country. There are also some very high numbers here, from participants who appear to have studied English for most of their lives. The variation within this factor is very wide, which means that it should definitely be possible to analyze the effect of this variable on *Vocabulary* and *Self-assessment*.

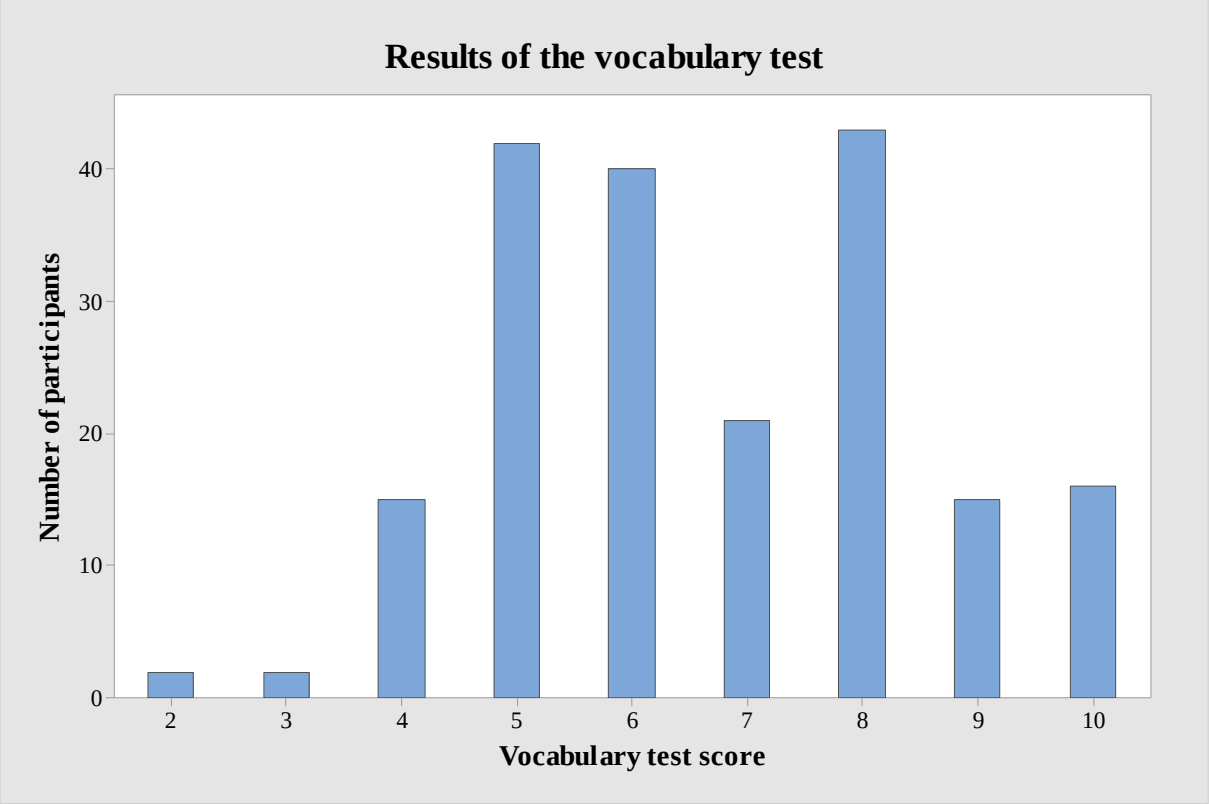

Figure 4 - Results of the Vocabulary test, on a scale from 1 to 10

Figure 5 - Results to the Self-assessment question, on a scale from 1 to 10

From Figure 4, one can see that a majority of participants were between level five and eight on the vocabulary test. As level ten is the approximate level of a native English speaker, the number of participants who scored a level eight or higher shows that the participants in this study are generally relatively proficient. Few participants scored lower than four, which means that most participants had at least basic English vocabulary.

As shown by Figures 4 and 5, there is a clear difference between the self-assessment and vocabulary test scores. While a majority of the participants received a vocabulary score between five and eight, their self-assessed proficiency scores lie mostly between seven and nine. Considering that the participants knew their vocabulary score, this suggests that they either believed that their vocabulary score was unfairly low, or that they in fact were more proficient than their vocabulary score suggested. It is also interesting that only seven people rated themselves as level four or below even though nineteen people received a vocabulary score of four or below. Proficiency certainly includes more than vocabulary, but this still suggests that people may overestimate their English abilities.

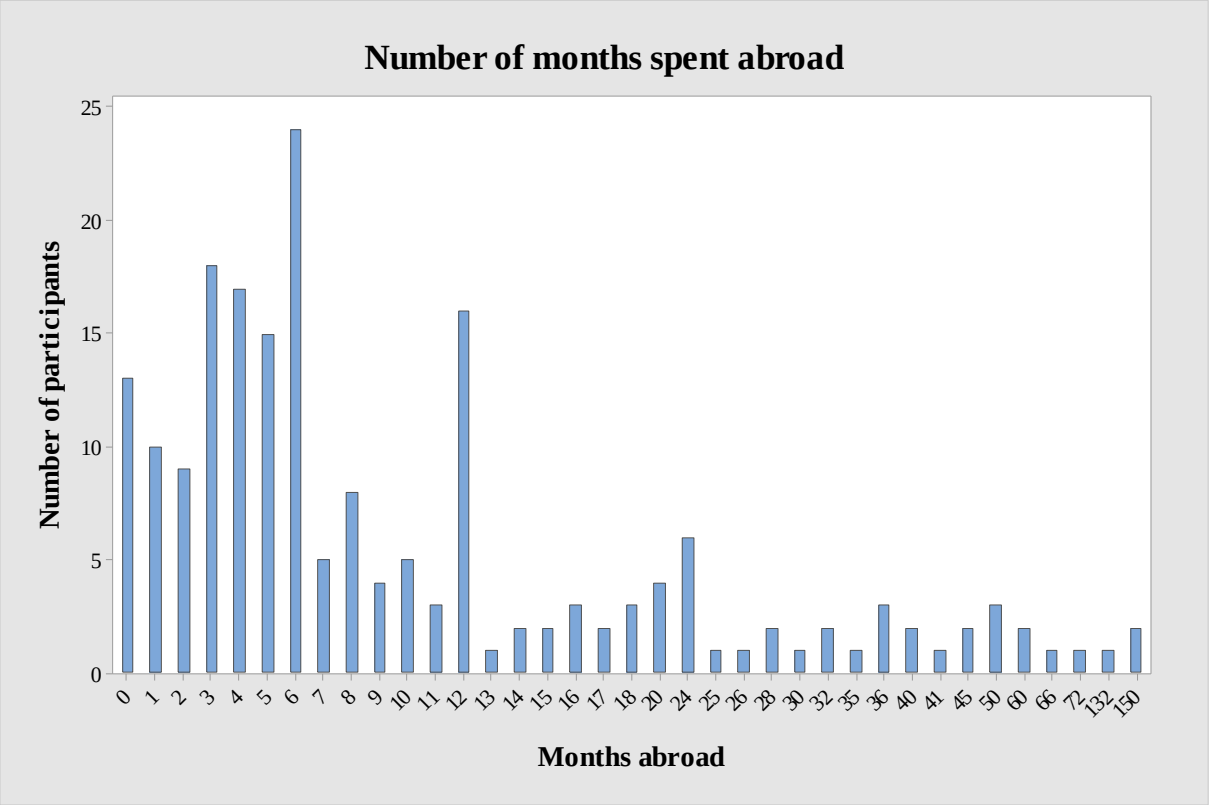

Figure 6 - Months participants have spent in countries where they needed to communicate in English

Figure 6 shows the responses to the *Abroad* question, in which the participants were to estimate the number of months throughout their lives they had spent in countries where they needed to communicate in English. Short vacations are included in this estimate, which is why the vast majority of these values is above zero. The number of months the participants had spent abroad varies greatly, with a lowest value of zero, and a highest value of 150 months. Still, a great number of participants had spent between zero and six months abroad, in addition to a large group who have spent 12 months abroad. There are several participants who have spent over 12 months abroad too, so the variation here should certainly increase the validity of the regression analysis.

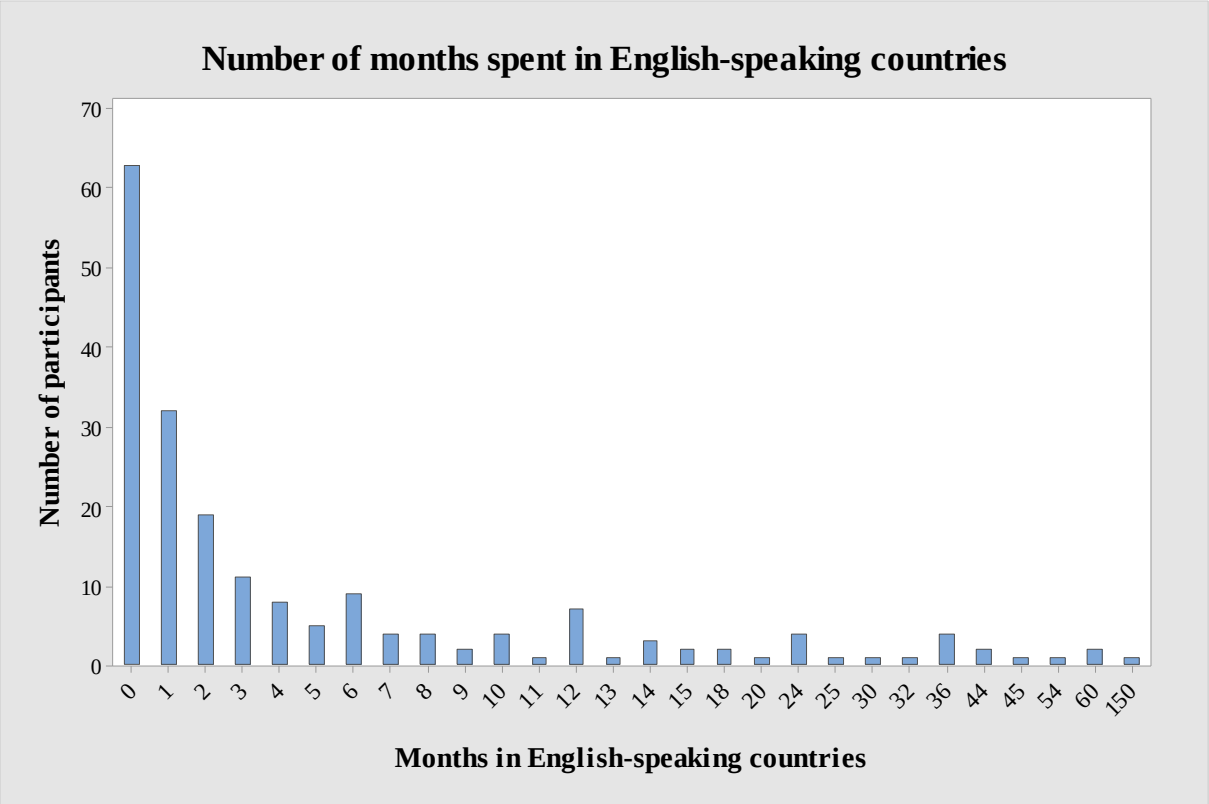

Figure 7 - Months participants have spent in English-speaking countries

Figure 7 shows the responses to the *EngCountries* question, in which the participants were to estimate how many months they had spent in English-speaking countries, and in this case they were also asked to include short vacations. If one compares Figures 6 and 7, one can see that these participants have mostly travelled to non-English-speaking countries. In fact, approximately 30% have spent zero months in English-speaking countries. Although there

would ideally be more variation and a higher number of participants in the six months and above range, there should still be enough differences to judge whether there is an effect from spending time in an English-speaking country.

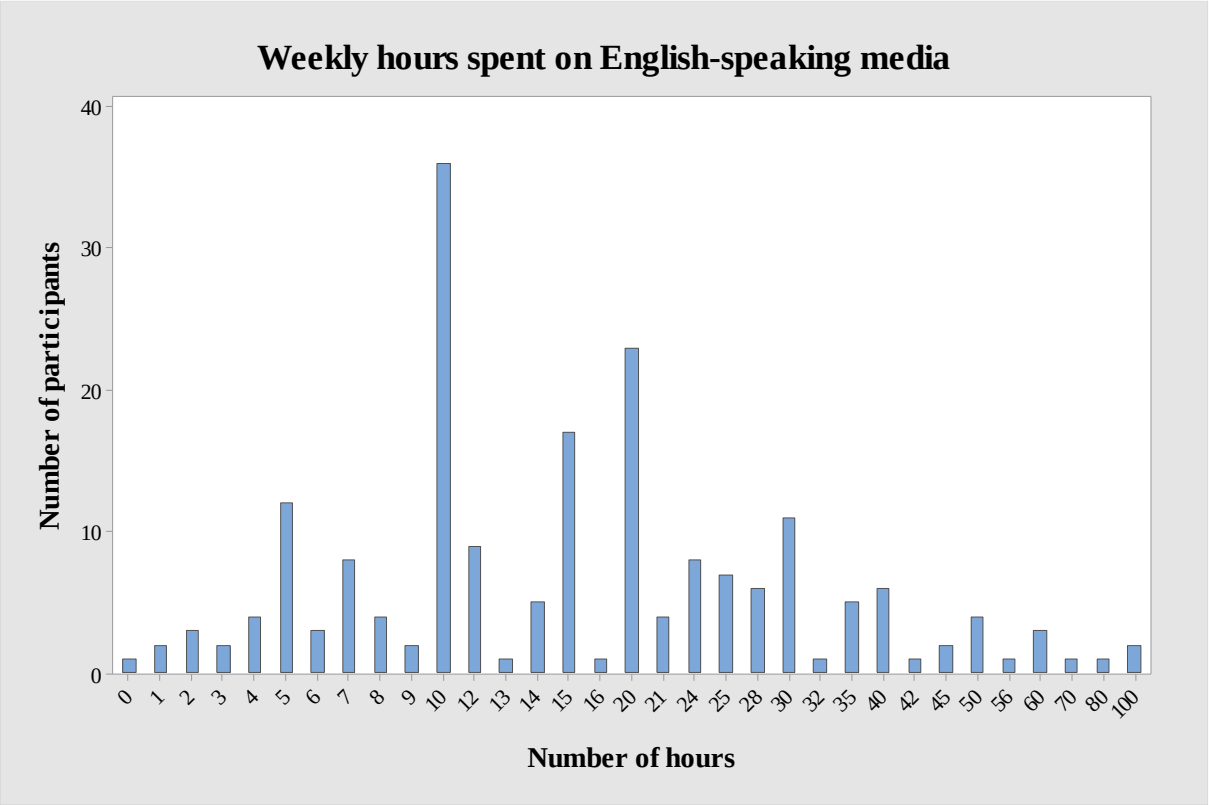

Figure 8 - Number of hours the participants spend on English-speaking media per week

As mentioned in section 3.3 (see p. 22), English-speaking media only refers to media with audio, such as YouTube and Netflix. The participants were to estimate the number of hours they spend on this type of media in an average week. As displayed by Figure 8, this is extremely varied, with responses from zero to one hundred. However, most participants are somewhere between these two extremes, and the average number of hours was 19.4. The variation within this factor is wide enough to work well with the multiple regression analysis.

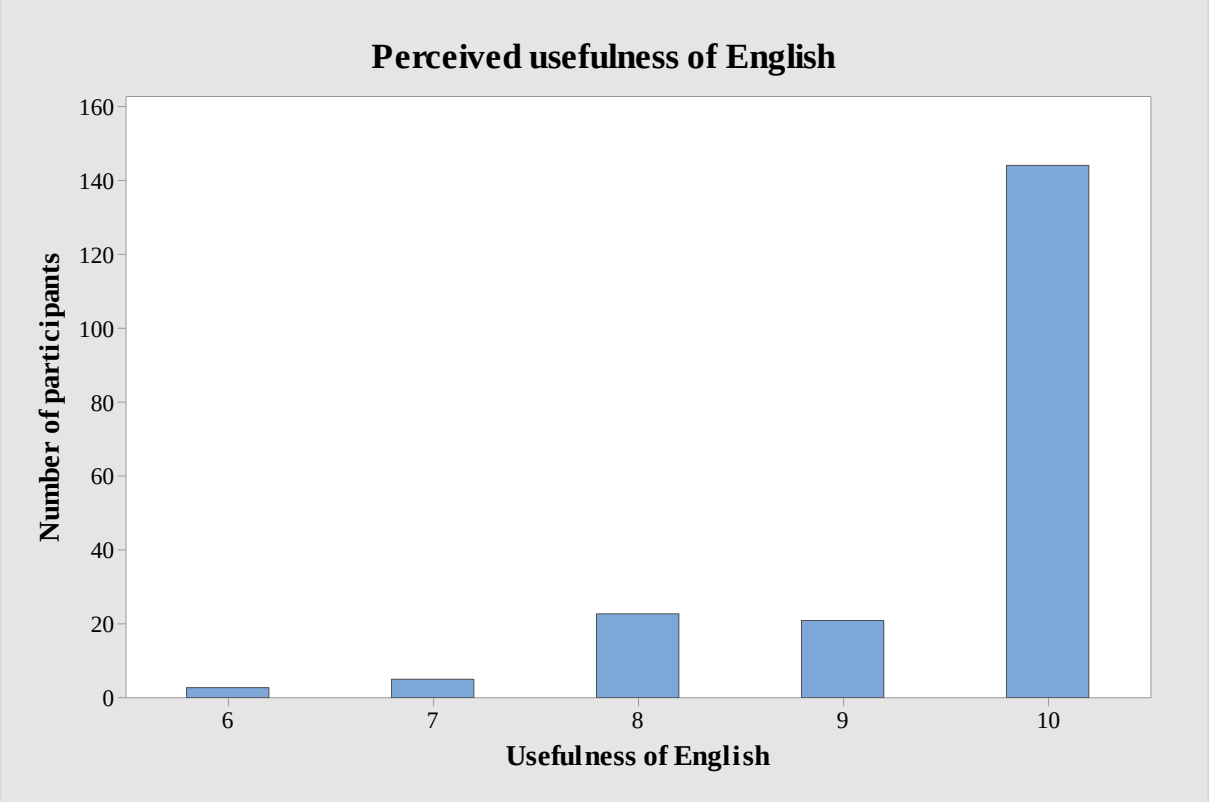

Figure 9 - Participants' opinion about the usefulness of English, rated on a scale from 1 to 10

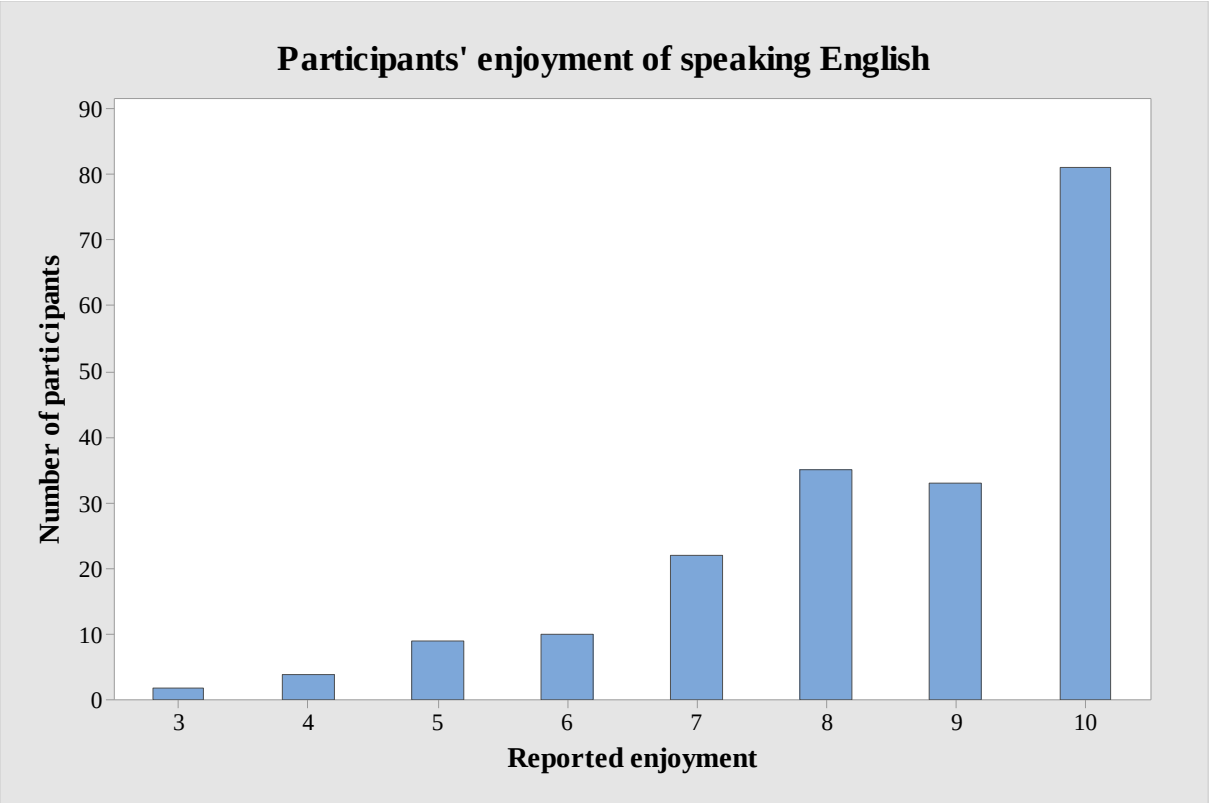

Figure 10 - Participants' reported enjoyment of speaking English, rated on a scale from 1 to 10

Figures 9 and 10 show that most participants both enjoy speaking English and believe that it is useful. On each question, over 50% of participants responded with a score of 9 or 10. However, there is more agreement on the usefulness of English than the level of enjoyment. In fact, 41% of participants rated the level of usefulness as 10, while 73% gave this rating for their level of enjoyment. Hence, it seems that even those that do not enjoy speaking English believe it is quite useful. Although the general results might be viewed as positive by a language teacher, considering the high ratings for both questions, the lack of variation does create a problem for assessing the effect of these variables in the regression analysis.

4.2 Comparison of Age Groups

The participants were divided into groups in order to compare the average and median values of the responses to each factor. 122 participants were between 20 and 29 years old, 43 participants were between 30 and 39 years old, and 22 participants were between 40 and 60 years old. Outside of these groups there were eight participants under 20 years old, and one participant who was 80 years old. The responses from these nine participants will not be presented in this section, as the small number of participants in these age groups makes it impossible to make any statements about them. Of course, the comparability of these groups can be discussed, but the intention of this is not to generalize this for the entire population of the study. It is only intended to show the tendencies found in this data. It is also important to note that these numbers are not used in the following analyses (sections 4.3-4.6).

The vocabulary test estimated the number of word families the participant knew, with a minimum value of 0 and a maximum value of 20 000. A vocabulary scale that ranged from 1 to 10 was created, and each level contained 2000 word families. Hence, a score between 0 and 2000 word families equaled a level 1 on the vocabulary scale, a score between 2001 and 4000 equaled a level 2 on the vocabulary scale, and so on. A scale from 1 to 10 was also used for the *Self-assessment*, *Usefulness* and *Enjoyment* questions.

	All participants		Ages 20-29		Ages 30-39		Ages 40-60	
	Average	Median	Average	Median	Average	Median	Average	Median
Vocabulary	**6.7**	6.0	**6.4**	6.0	**7.7**	8.0	**6.9**	7.0
Self-assessment	**7.5**	8.0	**7.5**	8.0	**7.7**	8.0	**7.4**	7.0
School	**11.9**	12.0	**12.7**	13.0	**10.9**	10.0	**10.5**	9.0
Abroad	13.3	**6.0**	12.4	**6.0**	14.9	**10.0**	18.2	**6.0**
EngCountries	6.9	**2.0**	6.3	**2.0**	7.5	**2.0**	11.6	**1.5**
Media	19.4	**15.0**	19.5	**15.0**	24.0	**20.0**	12.0	**9.5**
Usefulness	**9.5**	10.0	**9.5**	10.0	**9.4**	10.0	**9.5**	10.0
Enjoyment	**8.5**	9.0	**8.4**	9.0	**8.7**	9.0	**8.8**	9.0

Figure 11 - Answers to the questionnaire, presented in average and mean values for all participants, and three age groups.

As explained in section 3.5, either the average or median value can be used to represent data, depending on the distribution. Hence, when the lowest and highest value in the responses are relatively close, the average is used, as this is a more accurate representation of the data. This applies to all factors except *Abroad*, *EngCountries*, and *Media*. The responses to these three questions varied greatly, and the average values are therefore not appropriate statistics to use to describe the tendencies in these responses. Consequently, the median values are used when discussing these three questions.

The average and median values are very similar for the questions where the average will be used to describe the data. This is an indication that the average is appropriate to use, as these will always be approximate when the range in the data is narrow. However, for the remaining three questions, the average and median values differ substantially. The clearest case of this is the *Abroad* question for 40-60-year-olds. Here, the average value is 18.2, while the median value is 6.0. This is because some participants had spent several years abroad, which significantly increased the average value. It is therefore necessary to use the median values for such questions, as these are more representative of the entire group.

As shown in Figure 11, the average vocabulary score is 6.7, which is fairly high. According to the vocabulary site, a score of 10 is similar to a native speaker. The highest average score is for 30-39-year-olds, who had a score of 7.7. They also had the highest average self-assessment score, although the difference between the average scores was smaller here. It can seem as if the 30-39 years group had a more realistic assessment of their skills than the other groups. 20-29-year-olds had a gap of 1.1 between the vocabulary and self-assessment scores, which was the widest gap of these groups. However, it is important to note that the self-assessment score was their opinion of their proficiency, which involves much more than vocabulary. Therefore, the self-assessed score is not necessarily inaccurate even though it differs from the vocabulary score.

The 20-29 years group had the highest number of years spent studying English, with an average of 12.8 years. Both the 30-39 years and 40-60 years groups were slightly below 11, with averages of 10.9 and 10.5 respectively. Currently, there are eleven years of mandatory English teaching in Norwegian schools; however, this was not necessarily the case when these participants attended elementary school. Of course, there are also some non-Norwegian participants in the study, and some of these might also decrease the average value.

For both the *Abroad* and *EngCountries* questions, there are big individual differences, as shown by Figures 6 (p. 33) and 7 (p. 34). The responses to these questions ranged from 0 to 150 months spent abroad and in English-speaking countries. However, every group had 2.0 as their median value for the *EngCountries* question, so the differences between the groups as units are not very large. For the *Abroad* question, the median value was 6.0 for every group except the 30-39-year-olds. Here the median value was 10.0, and 88% of the participants in this group had spent more than 6 months abroad. Therefore, there appears to be a tendency that 30-39-year-olds have travelled more to countries where one needs to communicate in English than those that are younger or older. However, the variation within this factor is mostly individual.

Perhaps unsurprisingly, 40-60-year-olds appear to spend less time on English-speaking media than those that are younger. The median number of weekly hours for this group was 9.5, compared to 20-29-year-olds' 15.0 and 30-40-year-olds' 20.0. Unexpectedly though, 20-29-year-olds appear to spend less time on English-speaking media than 30-40-year-olds, although the difference is smaller when comparing the average values.

The factor where there appears to be the least variation is *Usefulness*, which one group rated as 9.4, and two groups rated as 9.5 out of 10. It is clear from this that people view English as

very useful, which should have an effect on motivation. In addition, it is evident that people enjoy speaking English, as the average scores for each group were between eight and nine. This enjoyment also appears to increase with age; however, considering how small the difference is and the lack of comparability between the groups, this is not certain. Although the scores for both of these factors were high, it seems that people believe that English is useful more than they enjoy speaking it. This could indicate that their extrinsic motivation is higher than their intrinsic motivation.

4.3 Analysis 1: Multiple Regression Analysis with *Vocabulary* as the Dependent Variable

In order to establish the extent to which the factors influence the vocabulary scores, a multiple regression analysis was conducted using SPSS, which is explained in section 3.4. *Vocabulary* is used as the dependent variable, and *Age*, *School*, *Abroad*, *EngCountries*, *Media*, *Usefulness* and *Enjoyment* are used as independent variables. This analysis shows which factors have an effect on the vocabulary scores, in addition to the strength of this effect. In this section, the main findings from this analysis are presented and explained. The complete report of the analysis can be found in Appendix II.

The R square for this analysis is 0.191, with an adjusted R square value of 0.161. According to Muijs (2004), anything between 0.11 and 0.3 is a modest fit, so the present results are just within this category. As explained in section 3.4, R square measures the amount of variation within the vocabulary test that is explained by the independent factors. Adjusted R square takes into account the fact that the results will be generalized to a larger population. Therefore, the adjusted R square value is used in the current and following regression analyses.

Since the adjusted R square value indicates a modest fit with the data, this suggests that only a modest amount of the variation within the vocabulary analysis is explained by the current model. Hence, it appears that there are several other important factors that are not included in this analysis. Figure 12 shows the main results from the analysis. Although the collinearity diagnostic produced two statistics, only tolerance is included, since only this is needed to discuss whether there is multicollinearity (see p. 25).

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics
	B	Std. Error	Beta			Tolerance
(Constant)	1,445	1,349		1,071	,285	
Age	,035	,014	,174	2,540	,012	,919
School	,022	,029	,052	,748	,456	,894
Abroad	,000	,009	,003	,030	,976	,441
EngCountries	,005	,012	,043	,433	,665	,433
Media	,025	,008	,220	3,248	,001	,936
Usefulness	,118	,153	,059	,776	,439	,746
Enjoyment	,269	,085	,250	3,162	,002	,687

Figure 12 - Coefficients from the multiple regression analysis with Vocabulary as the dependent variable.

"Beta" and "Sig." are the most interesting results from this analysis. The beta value shows how strongly the independent variable affects the dependent variable, which in this case is *Vocabulary*. This statistic ranges from zero to one, where zero signifies no effect, and one signifies absolute correlation. As previously mentioned (p. 24), the beta value can be either negative or positive, signifying a negative or positive effect from the independent variable. However, when the strength of the effect if assessed, the absolute value is used. This means that only the numeral is looked at, and the plus or minus sign is not relevant for this assessment.

From the beta values in Figure 12, one can see that *Enjoyment*, *Media*, and *Age* are the factors that have that greatest influence on vocabulary size. *Enjoyment* and *Media* have similar effects, with beta values of 0.250 and 0.220 respectively. Age has a slightly weaker effect, with a beta value of 0.174. It also appears that *Usefulness*, *School* and *EngCountries* have a moderate effect, while *Abroad* has a very small effect, with a beta value of 0.003.

"Sig." is a statistic between zero and one, and stands for statistical significance, also referred to as p-value. This signifies how likely it is that the effect of a factor would be this strong in our sample if it does not exist in the population. A statistical significance of one signifies a certainty that the effect in the analysis is purely a product of chance, and this can therefore not be used to generalize for the population the participants belong to. If the statistical significance

is zero, this signifies that the effect found cannot be a product of chance, and that there is certainly a corresponding effect in the population. Hence, the beta results can only be applied to a larger population if the statistical significance is low.

The effect is viewed as very likely to exist in a larger population if the statistical significance for the factor in question is below 0.01. Since *Abroad* has a statistical significance value of 0.976, it is very likely that the effect found in this analysis is not representative of the actual effect this factor has. Additionally, it is not unlikely that the effects found by the *EngCountries, School* and *Usefulness* factors are different in this analysis than those that exist in a larger population. This could either mean that this analysis was not able to discover the actual effect of these factors, or that they in reality do not affect vocabulary size. However, it is fairly unlikely that the *Age* relationship would be this strong if there was no relationship in a larger population. Additionally, the statistical significance values for the *Media* and *Enjoyment* factors are so low that this effect is certainly existent in a larger population.

The current analysis has found no real effect from the *Abroad* factor. This is quite surprising, as there was a high degree of variation within this factor in the questionnaire responses. This strongly indicates that there is no effect from spending time abroad on English vocabulary size. However, there appears to be a small effect from the *EngCountries* factor. Therefore, time abroad may have an effect if one spends time in English-speaking countries. Additionally, the effects from the *School* and *Usefulness* factors are also quite small. Since there was little variation within the *Usefulness* factor, this result is not unsurprising. This means that it is difficult to make any assessment about how this factor actually affects *Vocabulary*. In order to make such an assessment, there needs to be more information in the data. It is fairly unexpected that there was little effect found from the *School* factor, since there was a fair amount of variation within this variable. Because of the amount of variation, it is possible that this factor in fact does not have a big effect on English vocabulary size. However, it is undoubtedly also possible that an effect would have been found if the study was even more comprehensive, as the number of participants at the extremes of this variable is not very high.

The tolerance levels show that most of the independent variables are not closely correlated to each other. All factors except *Abroad* and *EngCountries* have tolerance levels >0.6, which is acceptable. However, both the *Abroad* and *EngCountries* factors have tolerance levels <0.5, which is quite low. This signifies that these two factors correlate strongly, which is fairly unsurprising, as *EngCountries* is included in the *Abroad* factor. To check whether this seriously

hindered the analysis, two additional analyses were conducted, in which one excluded *EngCountries*, and one excluded *Abroad* as an independent variable. The complete results of these analyses can be found in Appendix III and IV, respectively.

In both analyses, the model improves slightly, with adjusted R square values of 0.165 in the analysis that excluded *EngCountries* and 0.166 in the analysis that excluded *Abroad*. This signifies that the model that includes *EngCountries* is slightly better than the model that does not. Figures 13 and 14 show the main results of the analyses. Although the factors appear to affect *Vocabulary* quite similarly, it does seem that *EngCountries* has a stronger effect, with a beta value of 0.045 compared to *Abroad'*s 0.035. In addition, the significance level of *EngCountries* is somewhat lower, at 0.500 compared to 0.604 for *Abroad*. Therefore, *EngCountries* will be used in the following *Vocabulary* analysis, and *Abroad* will be excluded.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics
	B	Std. Error	Beta			Tolerance
(Constant)	1,424	1,345		1,059	,291	
Age	,036	,014	,175	2,560	,011	,920
School	,021	,029	,050	,720	,472	,899
Abroad	,003	,006	,035	,519	,604	,969
Media	,025	,008	,221	3,274	,001	,937
Usefulness	,117	,152	,058	,771	,442	,746
Enjoyment	,273	,084	,254	3,233	,001	,694

Figure 13 - Coefficients from the multiple regression analysis with Vocabulary as the dependent variable, and EngCountries excluded as an independent variable.

Analysis 1	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics
	B	Std. Error	Beta			Tolerance
(Constant)	1,446	1,345		1,075	,284	
Age	,035	,014	,174	2,548	,012	,919
School	,022	,029	,052	,752	,453	,896
Media	,025	,008	,220	3,260	,001	,937
Usefulness	,118	,152	,059	,778	,438	,746
Enjoyment	,269	,085	,250	3,170	,002	,687
EngCountries	,005	,008	,045	,677	,500	,952

Figure 14 - Coefficients from Analysis 1: the multiple regression analysis with Vocabulary as the dependent variable, and Abroad excluded as an independent variable.

The tolerance levels in Figure 14 show that this analysis is superior to the previous one, as all of them are >0.6. Although *Abroad* has been removed, the effect of *EngCountries* has not increased much. However, the statistical significance value has decreased, which means that the effect in Figure 14 is more likely to exist in a larger population. Henceforth, the model in Figure 14 will be referred to as Analysis 1.

4.4 Analysis 2: Multiple Regression Analysis with *Self-assessment* as the Dependent Variable

The following analyses are identical to those explained in section 4.3, except that *Self-assessment* acted as the dependent variable. This was done in order to see if there were any differences between the effect of the factors on *Vocabulary* and *Self-assessment*. In this section, the results from the analyses are presented, and the differences between this and the previous analysis are examined.

In order to avoid multicollinearity, two analyses were conducted, in which one excluded *Abroad*, and one excluded *EngCountries* as an independent variable. Although this was previously done for *Vocabulary* as the dependent variable, it was important to establish whether the same factor was most influential when *Self-assessment* was used as the dependent variable.

The following figures show the main results for these analyses, with the *EngCountries* factor excluded in Figure 15, and the *Abroad* factor excluded in Figure 16. Full reports can be found in Appendix V and Appendix VI.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics
	B	Std. Error	Beta			Tolerance
(Constant)	1,213	,925		1,312	,191	
Age	-,005	,010	-,028	-,476	,634	,920
School	,053	,020	,160	2,661	,008	,899
Abroad	,005	,004	,078	1,347	,180	,969
Media	,016	,005	,180	3,062	,003	,937
Usefulness	,274	,105	,173	2,620	,010	,746
Enjoyment	,328	,058	,387	5,661	,000	,694

Figure 15 - Coefficients from the multiple regression analysis with Self-assessment as the dependent variable, and EngCountries excluded as an independent variable.

Analysis 2	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics
	B	Std. Error	Beta			Tolerance
(Constant)	1,257	,920		1,365	,174	
Age	-,005	,010	-,031	-,527	,599	,919
School	,055	,020	,166	2,767	,006	,896
Media	,016	,005	,177	3,016	,003	,937
Usefulness	,277	,104	,174	2,657	,009	,746
Enjoyment	,320	,058	,377	5,509	,000	,687
EngCountries	,011	,006	,114	1,962	,051	,952

Figure 16 – Coefficients from Analysis 2: the multiple regression analysis with Self-assessment as the dependent variable, and Abroad excluded as an independent variable.

The analyses in Figures 15 and 16 have adjusted R square values of 0.367 and 0.373 respectively, which shows that the model in Figure 16 is slightly better than the model in Figure 14. Moreover, similar to the *Vocabulary* analysis, the beta and statistical significance values show which factor is most influential. *EngCountries* has a beta value of 0.114, compared to *Abroad*'s 0.078. Additionally, *EngCountries* has a significance level of 0.051, compared to *Abroad*'s level of 0.180. Hence, *EngCountries* appears to be a better predictor of self-assessed proficiency, and the model that includes this factor will therefore be used, and henceforth be referred to as Analysis 2.

This model was far superior to the *Vocabulary* analysis, as the adjusted R square value was 0.373, compared to 0.166 in Analysis 1. According to Muijs (2004), this a moderate fit, which means that it explains much of the variation within the *Self-assessment* variable. However, the R square value shows that *Self-assessment* is also influenced by other factors that are not researched in this study. In addition to a high R square value, Figure 15 shows that all tolerance levels in the model are >0.6, so there is no issue with multicollinearity.

Enjoyment is the factor with strongest effect on *Self-assessment*, according to this analysis. In fact, the beta value of this factor is approximately twice as high as the factor below it, namely *Media*. From this, it is clear that the enjoyment one obtains from speaking English is directly correlated with one's perceived level of proficiency. The effect from *Media* is also quite substantial in this analysis, with a beta value of 0.177. Directly following this factor is the *Usefulness* factor. This is quite surprising, as there was not much variation within this variable. Additionally, the *School* factor is apparently quite important to one's self-assessed abilities. This might be expected, as one can assume that studying a language would increase one's confidence in that language. In fact, it is a little unexpected that this factor is fourth on the list of important factors. One might have assumed that it would be even higher up. It appears to affect *Self-assessment*, but not as heavily as other factors. The *EngCountries* factor also has an effect on self-assessed proficiency, according to this analysis.

Age has a negative beta value in this analysis, which means that one is likely to have a lower perceived level of proficiency if one is older. This signifies that younger people believe they are more skilled English speakers than older people. Considering that the vocabulary test did not reflect this (see section 4.2), it is worth asking if this is imagined proficiency or if younger people are, in fact, more proficient. However, each of these beta values needs to be viewed in light of the statistical significance values that accompany them.

Age had a quite high statistical significance in this model, which indicates that the relationship found in this analysis is not representative of that which exists in reality. This can either mean that there is no relationship or that the data in this study are not sufficient to find this relationship. *EngCountries* also had a significance level too high to confidently make a statement about this factor's effect on a larger population. However, it is not unlikely that this factor does have an effect on self-assessed proficiency.

However, the remaining factors all have a statistical significance low enough to confidently state that the shown effect is existent in a larger population. If one studies English for a long time and believes that English is useful, one has a higher opinion of one's own proficiency. Time spent on English-speaking media surely increases confidence in own ability, as the statistical significance for this factor is as low as 0.002. Undoubtedly the clearest influential factor is *Enjoyment*, which has a statistical significance of 0.000. With a statistical significance value this low, *Enjoyment* is indubitably a factor that strongly influences *Self-assessment*.

4.5 Analysis 3: Complete Multiple Regression Analysis with *Vocabulary* as the Dependent Variable

The third analysis is quite similar to Analysis 1 (see section 4.3, p. 40), as both used the vocabulary score as the dependent variable. However, the model presented in this section used *Self-assessment* as an independent variable, in addition to *Age*, *School*, *EngCountries*, *Media*, *Usefulness* and *Enjoyment*. This was done in order to check whether *Self-assessment* also had an effect on *Vocabulary*. The full report from this analysis is found in Appendix VII.

This model was far superior to the *Vocabulary* analysis that did not include *Self-assessment* as an independent variable, as the adjusted R square value of this model was 0.361 compared to 0.166 in Analysis 1. Hence, this model explains much of the variation within the *Vocabulary* variable. However, there are still explanatory variables missing from this model. The main results from this analysis are shown in Figure 17.

Analysis 3	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics
	B	Std. Error	Beta			Tolerance
(Constant)	,549	1,183		,464	,643	
Self-assessment	,714	,093	,564	7,675	,000	,607
Age	,039	,012	,191	3,204	,002	,918
School	-,017	,026	-,041	-,672	,502	,861
EngCountries	-,002	,007	-,019	-,319	,750	,933
Media	,014	,007	,121	1,995	,047	,894
Usefulness	-,079	,136	-,039	-,583	,560	,719
Enjoyment	,041	,080	,038	,509	,612	,592

Figure 17 - Coefficients from Analysis 3: The multiple regression analysis with Vocabulary as the dependent variable and Self-assessment included as an independent variable.

If one compares the beta values in Figure 17 to those in Figure 14 (p. 40), there are some striking differences. Firstly, the effect from *Self-assessment* attracts attention. According to Analysis 3, *Self-assessment* has a very strong positive effect on *Vocabulary*, with a beta value of 0.564. Hence, a person who believes their English proficiency is high, is also expected to have a wide vocabulary. Although the effect from *Self-assessment* is decidedly the largest in Analysis 3, there is also an important effect from the *Age* factor. This analysis found that vocabulary grows with age, which supports this result in the analysis in section 4.3. In addition, there is a positive effect from the *Media* factor, which was also found in the previous studies.

The *Usefulness*, *School* and *EngCountries* factors all have a negative effect in Analysis 3, which means that an increase in these values is expected to decrease the vocabulary size. However, these negative effects are not very strong. The remaining factor, namely *Enjoyment*, also has a quite small effect on vocabulary size in Analysis 3. However, in Analysis 1, *Enjoyment* was a quite important factor in this model. Most likely, this inconsistency can be explained by the tolerance levels for this factor. Since the tolerance level for *Enjoyment* in the first *Vocabulary* analysis was 0.687, compared to the current 0.592, it seems that *Enjoyment* and *Self-assessment* are somewhat correlated. Considering the effect *Enjoyment* had on *Self-assessment*, this is not surprising. Since the previous analysis did not include *Self-assessment*,

the effect caused by *Self-assessment* was attributed to *Enjoyment*. However, according to Analysis 3, much of the effect attributed to *Enjoyment* in Analysis 1 is actually caused by *Self-assessment*, and the *Enjoyment* factor is therefore adjusted accordingly. According to Analysis 3, a strong effect was wrongly attributed to the *Enjoyment* factor, since the actual influencing factor, namely *Self-assessment*, was not included in the first analysis. A situation such as this, in which an effect from an omitted variable is wrongly attributed to an included variable, is known as omitted variable bias (Nizalova & Murtazashvili 2016).

Although some of these results may seem surprising, it is important to consider their corresponding statistical significance. *EngCountries*, *School*, *Usefulness* and *Enjoyment* have relatively high levels of statistical significance, so the effects found here are most likely not representative of the effect found in a larger population. The statistical significance for the *Media* factor is quite small, so it is rather likely that this effect exists in the population. However, the strongest factors, namely *Self-assessment* and *Age*, have the lowest statistical significance values. These values are so low that there should certainly be an effect in a larger population. In Analysis 3, where *Self-assessment* is included, it seems that *Self-assessment* accounts for so much of the variation within the *Vocabulary* variable that most of the other important factors become obsolete.

4.6 Analysis 4: Complete Multiple Regression Analysis with *Self-assessment* as the Dependent Variable

The analysis in this section is quite similar to Analysis 2 (see section 4.4, p. 44). *Self-assessment* is the dependent variable in this model as well; however, all the other factors, including *Vocabulary*, are used as independent variables. However, the *Abroad* factor is excluded in this analysis too, to avoid multicollinearity. As with Analysis 3 (see section 4.5), *Vocabulary* is included in order to research the correlation between *Self-assessment* and *Vocabulary*, and which other factors remain important. The entire report can be found in Appendix VIII.

This model undoubtedly has the best fit of the four presented in this thesis, with an adjusted R square value of 0.520. According to Muijs (2004), a score above 0.5 is a strong fit, and is the highest on the scale he presents. Hence, the factors in this model explain very much of the variation within the *Self-assessment* variable. Since both *Self-assessment* analyses had higher adjusted R square values than the *Vocabulary* analyses, it seems that the factors researched in

this study have a clearer effect on *Self-assessment* than *Vocabulary*. This is discussed further in section 5.2. Figure 18 shows the main results from the analysis.

Analysis 4	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics
	B	Std. Error	Beta			Tolerance
(Constant)	,773	,808		,957	,340	
Age	-,017	,008	-,105	-1,991	,048	,889
School	,048	,017	,144	2,739	,007	,893
EngCountries	,009	,005	,095	1,863	,064	,949
Media	,008	,005	,083	1,583	,115	,887
Usefulness	,237	,091	,149	2,598	,010	,743
Enjoyment	,230	,052	,271	4,411	,000	,652
Vocabulary	,334	,044	,423	7,675	,000	,809

Figure 18 - Coefficients from Analysis 4: The multiple regression analysis with Self-assessment as the dependent variable and Vocabulary included as an independent variable.

From Figure 18, the relationship between *Vocabulary* and *Self-assessment* again becomes evident. *Vocabulary*'s beta value is 0.423, which means that this strongly affects self-assessed proficiency. This supports the previous analysis in that there is a strong connection between *Vocabulary* and *Self-assessment*. If this analysis is compared to Analysis 2 (see section 4.4), one can see that several of the beta values have decreased after the *Vocabulary* variable was included. This can also be explained by omitted variable bias. According to Analysis 4, some of the effects found by the variables in the previous analysis were in fact generated by *Vocabulary*. Therefore, the beta values have been adjusted accordingly.

Figure 18 supports several of the results from the previous *Self-assessment* analysis, presented in Figure 16 (p. 44). *Enjoyment* has a strong effect in Analysis 4 as well, although the beta value has decreased from 0.377 in Analysis 2 (see Figure 16) to 0.271. The beta values of *Usefulness* and *School* have also decreased, but they still appear to have a significant effect on *Self-assessment*. Furthermore, the effect from *EngCountries* has decreased slightly.

Interestingly, the effect of the *Age* factor has strengthened substantially, from -0.031 to -0.105. A negative effect in both analyses supports the claim that self-assessed proficiency decreases with *Age*. However, as the *Age* factor highly influences *Vocabulary*, this change might be explained by an adjustment due to the correlation between these two factors. The most surprising result in Analysis 4 is perhaps the low effect shown from *Media*, with a beta value of 0.083, the lowest in this model. Considering the strength of the *Media* effect in Analysis 2, the most likely explanation is that the effect from this factor has been decreased because of the effect it also has on *Vocabulary*. Thus, there was probably omitted variable bias in Analysis 2.

All statistical significance levels in Analysis 4 are quite low, which means that the results found in this analysis are plausibly representative of the effects in a larger population. *Media* has the highest significance level in Analysis 4, with a value of 0.115. This level is too high to confidently make a generalization about the effect *Media* has on self-assessed proficiency. As previously mentioned, the beta value decrease, and corresponding significance level increase are likely caused by an omitted variable bias. Therefore, the majority of the effect from *Media* in Analysis 2 has been included in the *Vocabulary* factor in Analysis 4.

EngCountries' significance value is lower, although still too high to conclusively state that the effect from this factor is existent in a larger population. *Age* has a statistical significance value of 0.048, which is low enough to assume that there is an effect in a larger population, although a lower value would be needed to confidently make this conclusion. Nonetheless, it seems likely that self-assessed proficiency is negatively influenced by *Age*.

The *Usefulness* and *School* factors both have very low statistical significance values, 0.010 and 0.007 respectively. These levels signify that there is a 1% chance that the effect found from *Usefulness* in the current analysis is due to chance, and a 0.7% chance of this possibility for *School.* Since a significance value of 0.01 or lower is preferred in order to generalize results of the regression analysis, both of these significance values are low enough to quite confidently affirm an effect from these two factors.

The lowest statistical significance values in Analysis 4 are for *Enjoyment* and *Vocabulary*, which both have values of 0.000. A value this low signifies that both of these certainly have an effect in a larger population. Since *Vocabulary* has a very high beta value, such a low significance value for this factor is not unexpected. However, considering that *Enjoyment* still has a high beta value and low statistical significance after the effect has been adjusted due to

the corresponding effect on *Vocabulary*, it is evident that *Enjoyment* is a strong factor for self-assessed proficiency.

5 Discussion

The results from the previous chapter can be used to answer the research questions in the current thesis:

1. Which factors affect EFL vocabulary size?
2. Which factors affect self-assessed proficiency in EFL?
3. Which factors affect EFL skills in general?

Two analyses with vocabulary size as the dependent variable were conducted, and the conclusions made about the effect of the factors on this variable will be based on these analyses. Similarly, the influences on self-assessed proficiency are based on the two analyses with this as the dependent variable. When there is correlation between these two dependent variables, conclusions about the effect of the different factors on EFL vocabulary can be made. Additionally, the similarities and differences between the analyses and previous studies will influence these conclusions.

5.1 Factors that Affect Vocabulary Size

In order to determine which factors have an effect on EFL vocabulary size, the results of both Analysis 1 and 3 need to be discussed, and viewed in relation to previous studies. In this chapter, only the analyses that excluded the *Abroad* factor will be discussed, as these proved to be the best models. Self-assessed proficiency was undoubtedly the highest predictor of EFL vocabulary. Although the effect on vocabulary specifically was not researched by Pae (2008), he did find that L2 confidence was positively connected to L2 proficiency. As previously mentioned, L2 confidence had been defined by Clément *et al.* (1994 as cited in Pae 2008: 11) as a combination of "[…] low anxiety and high self-evaluation of L2 competence". Anxiety has not been accounted for in the self-assessment here; however, since self-evaluation is an important component in Clément's definition, the results from Pae's study can also be applied to this. It is therefore not unexpected that self-assessment positively affects vocabulary.

Media also appears to positively affect EFL vocabulary, even though the effect was stronger in Analysis 1 than Analysis 3, in which *Self-assessment* was included. As previously mentioned, this change is probably explained by the fact that *Media* had a strong effect on *Self-assessment*. Therefore, this effect is attributed to self-assessed proficiency, rather than *Media*, in the second analysis. However, *Media* is still an important factor, even when the beta value has been

reduced. Hence, based on the results of these analyses, it seems that *Media* has a positive effect on EFL vocabulary size.

This result is supported by previous studies mentioned in section 2.5. D'Ydewalle and Van de Poel (1999) conducted a study which researched the effect media had on foreign language vocabulary. In their study, a positive effect was only found in one of the languages studied, although the length of exposure to media was quite short. Therefore, there may have been a positive result for both languages with more exposure to the target-language media. In addition, Wang's study (2012) also found a positive effect from exposure to English-speaking situation comedies. Of course, this study relied on whether the participants felt their vocabulary had improved, rather than an objective assessment. Still, these previous studies support the results in this thesis. Moreover, Sundqvist (2009) found a significant, positive correlation between extramural English and vocabulary. In fact, the effect on vocabulary was stronger than the effect on oral proficiency. Therefore, the sum of these studies shows that exposure to English-speaking media positively affects EFL vocabulary size.

Age was also found to have a positive effect on EFL vocabulary. This was the third strongest factor in the analysis that excluded *Self-assessment* (Analysis 1), and the second strongest factor in the analysis that included *Self-assessment* (Analysis 3). This strongly suggests that vocabulary expands with age, in a larger population as well. Although this is not supported by previous studies, it does seem logical that vocabulary would expand with age, as one is constantly exposed to new vocabulary. However, it is important to note that this effect is found specifically for vocabulary. Hence, a prediction cannot be made about this factor's effect on EFL proficiency in general based on this result alone.

In this study, *Usefulness* and *Enjoyment* are used as motivation factors. Perceived usefulness of English is used as an extrinsic motivator, as this is an external factor that will likely affect motivation. Enjoyment of speaking English will also most likely influence motivation, and this is used as an intrinsic motivator. *Usefulness* was not found to have an effect in either of the analyses. This is not unexpected, as Zhang *et al.* (2017) also found no direct effect from extrinsic motivation. The concurrence of these results therefore leads to the likely conclusion that extrinsic motivation has no direct effect on EFL vocabulary size.

Enjoyment, on the other hand, did have a quite strong effect in the analysis where *Self-assessment* was excluded. In fact, it was the most influential independent variable in this analysis. Considering that Zhang *et al.* (2017) found that intrinsic motivation had a positive

effect on vocabulary size, this is not surprising. The effect from *Enjoyment* was not very strong when *Self-assessment* was included in the regression analysis. As previously mentioned, this is likely because this factor so strongly influenced *Self-assessment*. Consequently, much of the effect that was attributed to *Enjoyment* in the first analysis was attributed to *Self-assessment* when this factor was included. As is discussed in section 3.5 (see p. 28), the cause and effect relationship between *Self-assessment* and *Vocabulary* is uncertain. Because of this, it can be difficult to establish exactly how vocabulary is affected by *Enjoyment*, or intrinsic motivation in general. However, when the results from this study are combined with Zhang *et al.*'s study, it is safe to conclude that intrinsic motivation does positively affects EFL vocabulary size, either directly or indirectly.

It is not surprising that *Enjoyment* and *Media* have proven to be important factors for vocabulary size. Intrinsic motivation and extramural learning activities are often mentioned as very important for L2 learning (e.g. Sundqvist 2009; Noels, Clément, & Pelletier 1999; Pae 2008). However, the fact that *Vocabulary* appears to increase with *Age* is unexpected. It is often assumed that the English skills of younger generations are better than those of older generations. Still, it does seem logical that one's vocabulary grows with age, as one is constantly exposed to new words. Of course, a possible explanation is that the general assumption is wrong, and that younger people are not more proficient than older people. However, it is important to note that only vocabulary is part of this analysis. Therefore, the effect of *Age* on general proficiency cannot be assessed based on the present analysis.

The remaining factors were not found to have a significant effect on EFL vocabulary. For some of these factors, like for example *EngCountries*, this was quite surprising. As mentioned in section 2.5, Huensch and Tracy-Ventura (2017) found that residence in a country where they speak the target-language improves target-language fluency. Based on this finding, one might have expected a strong effect from *EngCountries* on target-language vocabulary as well. However, Analyses 1 (p. 40) and 3 (p. 47), which examined the effect of the factors on EFL vocabulary, could not confirm an effect from *EngCountries* on *Vocabulary*.

One can interpret the results of Analyses 1 and 3 to mean that *EngCountries*, *School* and *Usefulness* are factors that do not influence EFL vocabulary. On the other hand, it is also plausible that a larger study with a bigger, more varied sample, would have been able to find an effect from these factors.

5.2 Factors that Affect Self-Assessed EFL Proficiency

According to the results in this study, EFL vocabulary size has the strongest effect on self-assessed English proficiency, as shown in Analysis 4 (see section 4.6). Directly following this factor is *Enjoyment*, which had a very strong effect on *Self-assessment*. In fact, *Enjoyment* remained important in the second analysis which included *Vocabulary*, even when this effect had been decreased due to correlation between *Enjoyment* and *Vocabulary*. The results of the current study therefore suggest that *Enjoyment* has a clear positive effect on self-assessed proficiency. Previous studies mentioned in section 2.5 support these results. Zhang *et al.*'s study (2017) is related to this as well, as intrinsic motivation was shown to be important for vocabulary size in their study. In addition, Pae (2008) found that motivation was a strong influence on L2 proficiency in general. Consequently, one can conclude that intrinsic motivation, and *Enjoyment* specifically, strongly affects self-assessed proficiency.

Although *Usefulness* did not appear to be as influential on self-assessed proficiency as *Enjoyment*, it was a quite important factor in both analyses. The fact that there was little variation within the *Usefulness* variable makes this result quite surprising, since variation is usually very important in order to find a strong correlation with multiple regression analysis. However, as *Usefulness* is part of extrinsic motivation, a positive effect is not unexpected, considering the previous studies on motivation (Pae 2008; Zhang *et al.* 2017). As the extrinsic motivation factor did not prove to be as influential on *Self-assessment* as the intrinsic motivation factor, the results of this study support those found in the previous studies. Hence, one can conclude that motivation in general is an important factor, and that intrinsic motivation, specifically *Enjoyment*, is most influential.

In contrast to the *Vocabulary* analyses, *School* had a quite strong effect in both *Self-assessment* analyses. According to the current study, time spent studying English positively affects self-assessed proficiency. It is rather logical that believed proficiency increases as time spent studying the target language increases. Still, it is uncertain whether actual proficiency improves or just L2 confidence.

Even though *School* and *Usefulness* are both significant factors in the *Self-assessment* model, they did not appear important in the *Vocabulary* analyses. If one assumes that the participants have a fairly accurate perception of their proficiency, this means that these factors affect proficiency as a whole, but not necessarily vocabulary. Of course, it is also plausible that the participants have an imprecise assessment of their skills, so it is also a possibility that these

factors mainly affect L2 confidence, rather than actual proficiency. Regardless of which of these scenarios is accurate, it seems clear that perceived usefulness of English and time spent studying English are influencing factors on some aspects of EFL proficiency.

Media also appeared to be an important factor in Analysis 2 (p. 44), although the beta value decreased quite heavily in Analysis 4, in which *Vocabulary* was included. This can also be explained by the fact that *Vocabulary* was heavily influenced by *Media*. Consequently, the effect that initially was attributed to *Media* was later attributed to *Vocabulary*, when the latter was included in the analysis. Even though this conveys an uncertainty about how *Media* truly affects self-assessed proficiency, it seems clear that the former does affect the latter, either directly or indirectly.

EngCountries also appeared to have a quite strong effect on *Self-assessment*, although the significance levels were too high to confidently conclude that the effect found in this study would be existent in a larger population as well. This is rather unexpected, as previous studies have shown that residence in a target-language environment leads to increased fluency in the target language (Huensch & Tracy-Ventura 2017). Two plausible interpretations can be drawn from this. It is possible that residence in English-speaking countries does not significantly affect self-assessed EFL proficiency. However, it is more likely that the sample in this study was not varied or large enough for a sufficient significance level.

Age had a negative effect on self-assessed proficiency in these analyses, which means that one's self-assessed proficiency is expected to decrease as *Age* increases. However, in this case as well, the significance level is too high to conclude that the same outcome would be the case in a larger population. A larger sample would be required to make a confident prediction about the effect of *Age* on self-assessed proficiency. Still, the significance level was low enough to state that *Age* most likely negatively affects self-assessed proficiency.

Both *Self-assessment* analyses had higher adjusted R square values than their corresponding *Vocabulary* analyses. From this, one can deduce that the factors researched in this study had a stronger effect on self-assessed proficiency than EFL vocabulary size. Since the adjusted R square values for the *Vocabulary* analyses were quite low, it seems that vocabulary is influenced more by factors not considered in this thesis. Although this might also be the case for self-assessed proficiency, the factors in this study appear to be quite significant. This could either mean that they have an effect on L2 confidence, or EFL proficiency in general. This is discussed further in section 5.3.

5.3 Factors that Affect EFL Proficiency

Since there is no proficiency assessment test in the current study, it is difficult to make predictions about the factors' effect on proficiency in general. One might assume that the participants had a quite accurate opinion of their EFL proficiency, in which case the important factors in section 5.2, namely *Vocabulary, Enjoyment, Usefulness, School and Media*, are important for EFL proficiency in general as well. Although one cannot be certain of this, it seems probable that the self-assessment is somewhat correct, considering the significant correlation between the vocabulary and self-assessment scores. The fact that the factors appeared to strongly influence self-assessed proficiency, shown by the high R square values, also points to a certain level of accuracy in the self-assessment. Therefore, it is likely that the factors that were important in section 5.2 are also important for EFL proficiency in general.

However, as mentioned in section 3.5, the fact that this assessment type produces ordinal numbers is a little problematic. The distance between nine and ten on the scale is likely quite different from the distance between five and six. In addition, participants might have had different standards for English proficiency when they assessed themselves. For example, some might have compared themselves to native English speakers, while others might have compared themselves to their idea of an average EFL speakers. This could lead to a variety of meanings for one score. Hence, the results of the *Self-assessment* analysis will not be considered to apply to EFL proficiency in general in this thesis.

In order to make any conclusions about what influences EFL proficiency, the correlations between the *Vocabulary* and *Self-assessment* analyses have been considered. Firstly, it is important to note that self-assessed proficiency was highly correlated with English vocabulary. This is not really surprising, as one might expect that people have roughly the same level of proficiency in each aspect of EFL. This also suggests that *Vocabulary* and *Self-assessment* will be highly correlated with EFL proficiency in general. However, as the previous sections have shown, the factors researched in this study do not necessarily affect *Vocabulary* and *Self-assessment* in the same way. Therefore, each factor's impact on both *Self-assessment* and *Vocabulary* will be considered before a potential prediction about the factor's effect on EFL proficiency is made.

Enjoyment apparently has a strong effect on both self-assessed proficiency and vocabulary size. This was one of the strongest factors in the analyses, especially on *Self-assessment*. Since previous studies have found similar results, one can probably conclude that enjoyment, and

most likely intrinsic motivation in general, does have an effect on EFL proficiency. *Usefulness*, which was the extrinsic motivation factor in this study, did not have the same level of influence on the dependent variables. This was a significant factor on *Self-assessment*, but not on *Vocabulary*. As previously mentioned, there would likely be a clearer result for this variable if the study sample had been more varied. Consequently, one cannot safely make any conclusions about this factor's effect on EFL proficiency.

The second factor in the study with a clear effect on both dependent variables is *Media*. Previous studies found a significant effect from this factor on vocabulary size, although there were a few inconsistencies in the ones presented in section 2.5. In D'Ydewalle and Van de Poel's study (1999), a significant effect was only found for one of the languages, and the exposure to the target-language media was quite short. Wang's study (2012) found that students felt that their vocabulary improved, but there was no type of assessment to support this. Sundqvist (2009) also found a significant effect from extramural English on both vocabulary and oral proficiency. Therefore, the results in this study reinforce those found in previous studies, and one can conclusively state that exposure to English-speaking media positively affects EFL proficiency.

Age had an effect on both self-assessed proficiency and vocabulary size. However, the effect was positive for *Vocabulary*, and negative for *Self-assessment*. This means that *Vocabulary* is expected to increase with *Age*, while self-assessed proficiency is expected to decrease. Since this factor affects different aspects of EFL differently, a prediction cannot be made about its effect on EFL proficiency in general. Additionally, a prediction will not be made about *School*'s effect on EFL proficiency. This factor did not have a significant effect on EFL vocabulary, there was only an effect on self-assessed proficiency. Although it is likely that EFL proficiency would improve as a result of studying English, it is also plausible that mainly L2 confidence would improve. It is therefore impossible to confidently conclude anything about this factor's effect on EFL proficiency in general based on the results in the present study.

Although one would assume that EFL proficiency would improve after spending time in English-speaking countries, this has not been shown with the level of certainty that would be needed for confidently making this conclusion. It is certainly possible that a significant effect would be found with a larger sample with more variation. However, since a significant effect has been found for several of the other factors, one may conclude, based on the present results, that this factor does not have a very strong effect on neither *Vocabulary* size nor self-assessed

proficiency. Of course, since fluency is often researched in association with this factor, it is plausible that a stronger effect would be found if this EFL skill was researched. Still, based on the current study, a conclusion cannot be made about whether time spent in English-speaking countries has an effect on EFL proficiency.

6 Concluding remarks

6.1 Summary of Findings

This study has attempted to establish which factors affect EFL vocabulary size and self-assessed proficiency. According to four multiple regression analyses, enjoyment of English and time spent on English-speaking media are the main factors, of those researched in this study, that affect these EFL aspects. Both of these factors were found to have a significant effect on both *Vocabulary* and *Self-assessment*, and are therefore believed to have an effect on EFL proficiency in general as well. These are the only two factors that have proven to be important for both dependent variables in this thesis.

However, self-assessed proficiency was affected by several factors in the multiple regression analyses, and appeared to be more clearly affected by variables included in this study. Perceived usefulness of English and time spent studying English both proved to be significant predictors of self-assessed proficiency. Time spent in English-speaking countries seemed to positively affect self-assessed proficiency, although this could not be stated with certainty. This factor did not appear to have a significant effect on vocabulary size. *Age* influenced the different EFL aspects differently, with a negative effect on *Self-assessment*, and a positive effect on *Vocabulary*. This suggested that *Age* is a complex factor, which can both improve and worsen EFL proficiency. Still, it was quite clear that vocabulary size was less influenced than self-assessed proficiency by the factors in this thesis.

Finally, an important finding in the study is that vocabulary size and self-assessed proficiency are highly correlated. However, it is uncertain whether one affects the other, or the effect is mutual. Still, this correlation can lead to several plausible conclusions. Firstly, one could conclude that different aspects of EFL proficiency are most likely highly correlated, and that a high level of proficiency within one suggests a high level in others. Secondly, vocabulary might be a very influencing factor when learners assess their own skills. Finally, *Self-assessment*, or perhaps L2 confidence, might have a strong influence on vocabulary.

Since the cause and effect relationship is ambiguous in studies such as this, one cannot assume that the relationship between variables is one-sided. Rather, it is quite likely that this relationship forms a loop, in which the variables are constantly affecting each other. For example, high enjoyment might lead to a high level of self-assessed proficiency, which would

again lead to a high level of enjoyment. Hence, high levels of effect in this study signify a high level of correlation between variables. Although the effect may not be completely one-sided, these result do show which factors are important to consider in relation to EFL learning.

6.2 Limitations

Ideally, this study would be conducted over a long period of time, where developments could be observed. There would be a thorough proficiency test that measured several aspects of language competence, such as oral and written fluency, and accuracy. In addition, one could research a wider range of factors, which included for example tourism, reading and influence from other countries. Finally, more information about the background of the participants could be useful, as this might explain some of the results. However, a study this comprehensive was not possible, due to time constraints. Consequently, the current study was created by determining the most important factors, and creating the most comprehensive study that could be done in the amount of time available.

Since the questionnaire was posted on Facebook, the sample is not as representative as desired. The majority of participants are most likely from Norway, and the variation within the different variables is often more narrow than ideal. Of course, a larger group would be preferable, as there would likely be clearer results with lower significance levels if there were more information in the data. This does not mean that the results in this study are invalid, but rather that there could be conclusions about more factors if there was more information in the data.

The vocabulary test would ideally be the same length for all participants. Since the test varied automatically between 100 and 140 words, the results are not as comparable as one would hope. It is likely that a person who took the 140-word test would receive a more accurate vocabulary score than one who took the 100-word test. However, the score is based on the number of words tested, so the results are most likely not extremely different. In addition, the 100-word test is comprehensive enough to presume that the result is fairly accurate.

A multiple regression analysis is based on an assumption that the independent variables affect the dependent variable, and not vice versa. Sometimes, this cause and effect relationship is obvious. As previously mentioned, an example of this is when the dependent variable is fuel usage, and the independent variable is motor size. It is logical then that fuel usage will not have an effect on motor size. However, in the current study, the relationship between the variables is somewhat unclear. Some factors are clearer than others; it is for example obvious that

vocabulary size will not affect *Age*. However, vocabulary size will plausibly have an effect on enjoyment of speaking English. In addition, the *Self-assessment* and *Vocabulary* relationship is fairly uncertain. It seems plausible that L2 confidence will have an effect on vocabulary size, like enjoyment does. However, it is even more likely that vocabulary size will have an effect on self-assessed proficiency. Therefore, one needs to be a little hesitant to state the actual cause and effect relationship between the variables in this study. It is preferable to focus on the correlation between the variables, as the effect might go both ways.

There are some issues with the factors as well, because some of them might have varied throughout the participants' lives. For example, if a person spent much time on English-speaking media when they responded to the questionnaire, this does not necessarily mean that they did so when they were learning English, and vice versa. In the instance that a participant had spent much time on English-speaking media in the past, but not while responding to the questionnaire, it is possible that their EFL proficiency could have been affected by this factor, even though this would not become evident in the analyses in the current study. However, the opposite possible scenario, in which a participant reported a high number of weekly hours spent on English-speaking media while completing the questionnaire, and spent little time on English-speaking media when they were actively learning English, is less problematic. The fact that EFL vocabulary appears to increase with age implies that people continue their learning process throughout life. Therefore, the *Media* factor could still have an effect, even when the learner is not actively studying the language.

Additionally, as mentioned in section 2.3, Dörnyei (2009) criticized the use of motivation as a characteristic, because it fluctuated depending on the situation. Hence, it is not necessarily true that a person who responded highly on the motivation questions was motivated when they were learning English. However, as both of these factors were found to be highly correlated with the dependent variables, they certainly appear to have an effect on EFL proficiency.

For future research, an ideal study would use an objective assessment of EFL proficiency, preferably with both fluency and accuracy tasks. A large, varied sample would be used, and a greater number of factors would be researched. Additionally, one could conduct a longer study while the participants are actively learning English, as this would address the issues mentioned in the previous paragraphs.

6.3 Implications

The results of this study can particularly be of interest to EFL teachers and learners, as they show which things to focus on when one is learning a foreign language. Currently, many teachers base their student recommendations on personal experiences rather than objective studies. Although one should not underestimate personal experience, this study may help inform teachers about what might be most useful for their students. For instance, as *Enjoyment* has proven to be a very important factor, it follows that the enjoyment of the learners should be highly prioritized in language courses. Additionally, learners may be encouraged to find and spend time on extramural activities they find enjoyable, as this will likely have an effect in the classroom as well.

In addition, *Media* was shown to be very effective for both *Vocabulary* and *Self-assessment*, which implies that it is important for EFL skills in general as well. Therefore, it is probably effective to use media in the classroom, such as for example video clips to teach different subjects and vocabulary. Moreover, students who want to improve their vocabulary and proficiency in general may be advised to spend some time on English-speaking media outside of the classroom. This could either be TV, video games, or other types of media with English audio. It also strengthens the argument for distancing the dubbing culture that has been common in several countries. In other words, if there is focus within a country to improve English proficiency, they should refrain from dubbing English-speaking TV into their L1. Also, citizens in countries where they do dub most TV could seek entertainment from external sources.

Furthermore, the fact that *Usefulness* appears to have an effect on self-assessed proficiency suggests that it might be helpful to show EFL students how important English skills are in modern society. This is particularly important in countries where there is little exposure to English, like countries where English TV is not available, and there is little tourism, such as rural Russia and China. In these countries, it may be useful for English teachers to stress the importance of knowing English if one wants to communicate with people from other countries. Additionally, in certain professions, English skills will be essential. This can be used to increase motivation, and consequently EFL skills, in for example vocational studies.

Because of the correlation between *Vocabulary* and *Self-assessment*, it also seems probable that L2 confidence has a strong effect on EFL proficiency. Hence, it is important to encourage students and strengthen their self-esteem, as this is likely to increase both enjoyment and EFL

proficiency in general. This might also motivate students to spend time on their English-skills outside of class. Since the effect of time spent studying English is quite inconclusive, it is likely useful for EFL learners to spend time on extramural activities.

Finally, the results of this study could help EFL learners receive insight into their own language acquisition process, and help them decide how to further their progress. It might be helpful to learn that exposure to English-speaking media is a valuable use of one's time, as this might increase motivation to spend time on such activities. Furthermore, learners might focus on activities they find enjoyable, rather than those they believe to be most useful, as enjoyment appears to be very important.

As shown by the current thesis, the question of which factors influence EFL proficiency is quite complex. It appears that the same factor can influence only one EFL skill, or even have opposite effect on different EFL aspects. In addition, it appears that EFL vocabulary size in particular is influenced by a number of factors. Based on the R square values of the *Vocabulary* analyses in this thesis, many of the influencing factors have not been considered in this thesis. However, self-assessed proficiency seems to be highly affected by the factors in the current study. Additionally, the results of the thesis show a high correlation between self-assessed EFL proficiency and EFL vocabulary size. *Media* and *Enjoyment* are the only two factors that, based on the current study, appear to be important for vocabulary size, self-assessed proficiency and, consequently, EFL proficiency in general. This suggests that if a learner is able to find enjoyable extramural activities, it may not only increase motivation, but strongly affect proficiency as well.

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Appendix I: Questionnaire

Note: this is only for people who do not have English as a first language!

Thank you for participating in this questionnaire! It should take about 10-20 minutes. There is a vocabulary test, and a few questions afterwards. It is completely anonymous, and your time is very much appreciated!

First, please go to http://my.vocabularysize.com/ and finish the test. Your score will be the answer to the first question.

1. What was your vocabulary test score?

(1) ❑ 0-2000

(2) ❑ 2001-4000

(3) ❑ 4001-6000

(4) ❑ 6001-8000

(5) ❑ 8001-10000

(6) ❑ 10001-12000

(7) ❑ 12001-14000

(8) ❑ 14001-16000

(9) ❑ 16001-18000

(10) ❑ 18001-20000

2. How would you rate your English proficency on a scale from 1-10 (1 being the lowest, and 10 the highest)?

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑	(8) ❑	(9) ❑	(10) ❑

3. What is your age?

__

4. How many years have you studied English throughout your life (Including primary and secondary school)?

__

5. Throughout your life, how many months have your spent in a country where you had to communicate in English (please include all short vacations)?

___

6. Throughout your life, how many months have you spent in countries where English is the first language, for example the USA and the UK? (If it is less than a month, please put "0")

___

7. How many hours do you spend on English-speaking media in an average week? This includes media with audio, like TV, Netflix, video games, YouTube, etc. Media without audio, like Facebook, Tumblr and Twitter are not included.

___

8. How useful do you think it is to know English on a scale from 1-10?

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑	(8) ❑	(9) ❑	(10) ❑

9. How much do you enjoy speaking English on a scale from 1 to 10?

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑	(8) ❑	(9) ❑	(10) ❑

Thank you so much for your help!

Appendix II: Multiple Regression Analysis with Vocabulary as the Dependent Variable

REGRESSION

/MISSING LISTWISE

/STATISTICS COEFF OUTS R ANOVA COLLIN TOL

/CRITERIA=PIN(.05) POUT(.10)

/NOORIGIN

/DEPENDENT *Vocabulary*

/METHOD=ENTER *Age School Abroad EngCountries Media Usefulness Enjoyment*.

Regression

Notes

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	Cases Used	Statistics are based on cases with no missing values for any variable used.
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Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method

1	*Enjoyment, Age, Abroad, Media, School, Usefulness, EngCountries*[b]	.	Enter

a. Dependent Variable: Vocab

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,438[a]	,191	,161	1,67165

a. Predictors: (Constant), *Enjoyment, Age, Abroad, Media, School, Usefulness, EngCountries*

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	124,423	7	17,775	6,361	,000[b]
	Residual	525,353	188	2,794		
	Total	649,776	195			

a. Dependent Variable: *Vocabulary*

b. Predictors: (Constant), *Enjoyment, Age, Abroad, Media, School, Usefulness, EngCountries*

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics
		B	Std. Error	Beta	t	Sig.	Tolerance
1	(Constant)	1,445	1,349		1,071	,285	
	Age	,035	,014	,174	2,540	,012	,919
	School	,022	,029	,052	,748	,456	,894
	Abroad	,000	,009	,003	,030	,976	,441
	EngCountries	,005	,012	,043	,433	,665	,433
	Media	,025	,008	,220	3,248	,001	,936
	Usefulness	,118	,153	,059	,776	,439	,746
	Enjoyment	,269	,085	,250	3,162	,002	,687

Coefficients[a]

Model		Collinearity Statistics
		VIF
1	(Constant)	
	Age	1,089
	School	1,118
	Abroad	2,268
	EngCountries	2,309
	Media	1,069
	Usefulness	1,341
	Enjoyment	1,456

a. Dependent Variable: *Vocabulary*

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	*Age*	*School*	*Abroad*
1	1	6,058	1,000	,00	,00	,00	,00
	2	1,193	2,253	,00	,00	,00	,10
	3	,362	4,090	,00	,01	,01	,00
	4	,194	5,588	,00	,00	,00	,89
	5	,123	7,030	,00	,27	,48	,01
	6	,046	11,436	,01	,61	,48	,00
	7	,020	17,414	,12	,07	,01	,00
	8	,004	39,456	,87	,03	,01	,00

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions *EngCountries*	*Media*	*Usefulness*	*Enjoyment*
1	1	,00	,01	,00	,00
	2	,15	,00	,00	,00
	3	,00	,90	,00	,00
	4	,81	,00	,00	,00
	5	,02	,00	,00	,00
	6	,00	,08	,02	,13
	7	,01	,00	,04	,73
	8	,00	,00	,94	,13

a. Dependent Variable: *Vocabulary*

Appendix III: Multiple Regression Analysis with Vocabulary as the Dependent Variable, with *EngCountries* Excluded as an Independent Variable

REGRESSION

/MISSING LISTWISE

/STATISTICS COEFF OUTS R ANOVA COLLIN TOL

/CRITERIA=PIN(.05) POUT(.10)

/NOORIGIN

/DEPENDENT *Vocabulary*

/METHOD=ENTER *Age School Abroad Media Usefulness Enjoyment*.

Regression

Notes

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Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
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	Additional Memory Required for Residual Plots	0 bytes

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	*Enjoyment, Age, Abroad, Media, School, Usefulness*[b]	.	Enter

a. Dependent Variable: *Vocabulary*

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,437[a]	,191	,165	1,66806

a. Predictors: (Constant), *Enjoyment, Age, Abroad, Media, School, Usefulness*

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	123,899	6	20,650	7,422	,000[b]
	Residual	525,877	189	2,782		
	Total	649,776	195			

a. Dependent Variable: *Vocabulary*

b. Predictors: (Constant), *Enjoyment, Age, Abroad, Media, School, Usefulness*

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics
		B	Std. Error	Beta	t	Sig.	Tolerance
1	(Constant)	1,424	1,345		1,059	,291	
	Age	,036	,014	,175	2,560	,011	,920
	School	,021	,029	,050	,720	,472	,899
	Abroad	,003	,006	,035	,519	,604	,969
	Media	,025	,008	,221	3,274	,001	,937
	Usefulness	,117	,152	,058	,771	,442	,746
	Enjoyment	,273	,084	,254	3,233	,001	,694

Coefficients[a]

Model		Collinearity Statistics
		VIF
1	(Constant)	
	Age	1,087
	School	1,112
	Abroad	1,032
	Media	1,067
	Usefulness	1,341
	Enjoyment	1,440

a. Dependent Variable: *Vocabulary*

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	*Age*	*School*	*Abroad*
1	1	5,781	1,000	,00	,00	,00	,01
	2	,663	2,953	,00	,00	,00	,97
	3	,362	3,996	,00	,01	,01	,01
	4	,124	6,841	,00	,27	,49	,01
	5	,046	11,163	,01	,61	,48	,00
	6	,020	16,902	,12	,07	,01	,01
	7	,004	38,545	,87	,03	,01	,00

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions *Media*	*Usefulness*	*Enjoyment*
1	1	,01	,00	,00
	2	,00	,00	,00
	3	,90	,00	,00
	4	,00	,00	,00
	5	,09	,02	,13
	6	,00	,04	,73
	7	,00	,94	,14

a. Dependent Variable: *Vocabulary*

Appendix IV: Multiple Regression Analysis with *Vocabulary* as the Dependent Variable, with *Abroad* Excluded as an Independent Variable

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA COLLIN TOL
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Vocabulary
  /METHOD=ENTER Age School Media Usefulness Enjoyment EngCountries.
```

Regression

Notes

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	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT *Vocabulary* /METHOD=ENTER *Age School Media Usefulness Enjoyment EngCountries.*
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Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	*EngCountries, School, Media, Usefulness, Age, Enjoyment*[b]	.	Enter

a. Dependent Variable: *Vocabulary*

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,438[a]	,191	,166	1,66723

a. Predictors: (Constant), *EngCountries, School, Media, Usefulness, Age, Enjoyment*

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	124,420	6	20,737	7,460	,000[b]
	Residual	525,355	189	2,780		
	Total	649,776	195			

a. Dependent Variable: *Vocab*

b. Predictors: (Constant), *EngCountries, School, Media, Usefulness, Age, Enjoyment*

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics
		B	Std. Error	Beta	t	Sig.	Tolerance
1	(Constant)	1,446	1,345		1,075	,284	
	Age	,035	,014	,174	2,548	,012	,919
	School	,022	,029	,052	,752	,453	,896
	Media	,025	,008	,220	3,260	,001	,937
	Usefulness	,118	,152	,059	,778	,438	,746
	Enjoyment	,269	,085	,250	3,170	,002	,687
	EngCountries	,005	,008	,045	,677	,500	,952

Coefficients[a]

Model		Collinearity Statistics
		VIF
1	(Constant)	
	Age	1,088
	School	1,116
	Media	1,067
	Usefulness	1,341
	Enjoyment	1,456
	EngCountries	1,051

a. Dependent Variable: *Vocabulary*

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	*Age*	*School*	*Media*
1	1	5,658	1,000	,00	,00	,00	,01
	2	,788	2,680	,00	,00	,00	,00
	3	,361	3,961	,00	,01	,01	,91
	4	,123	6,788	,00	,28	,49	,00
	5	,046	11,050	,01	,61	,48	,08
	6	,020	16,822	,12	,07	,01	,00
	7	,004	38,130	,87	,03	,01	,00

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions *Usefulness*	*Enjoyment*	*EngCountries*
1	1	,00	,00	,01
	2	,00	,00	,94
	3	,00	,00	,02
	4	,00	,00	,01
	5	,02	,13	,00
	6	,04	,73	,02
	7	,94	,13	,00

a. Dependent Variable: *Vocabulary*

Appendix V: Multiple Regression Analysis with *Self-assessment* as the Dependent Variable, and *EngCountries* Excluded as an Independent Variable

REGRESSION

/MISSING LISTWISE

/STATISTICS COEFF OUTS R ANOVA COLLIN TOL

/CRITERIA=PIN(.05) POUT(.10)

/NOORIGIN

/DEPENDENT *Self-assessment*

/METHOD=ENTER *Age School Abroad Media Usefulness Enjoyment*.

Regression

Notes

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	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT *Self-assessment* /METHOD=ENTER *Age School Abroad Media Usefulness Enjoyment.*
Resources	Processor Time	00:00:00,02
	Elapsed Time	00:00:00,03
	Memory Required	3116 bytes
	Additional Memory Required for Residual Plots	0 bytes

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	*Enjoyment, Age, Abroad, Media, School, Usefulness*[b]	.	Enter

a. Dependent Variable: *Self-assessment*

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,621[a]	,386	,367	1,14684

a. Predictors: (Constant), *Enjoyment, Age, Abroad, Media, School, Usefulness*

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	156,400	6	26,067	19,819	,000[b]
	Residual	248,579	189	1,315		
	Total	404,980	195			

a. Dependent Variable: *Self-assessment*

b. Predictors: (Constant), *Enjoyment, Age, Abroad, Media, School, Usefulness*

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics
		B	Std. Error	Beta	t	Sig.	Tolerance
1	(Constant)	1,213	,925		1,312	,191	
	Age	-,005	,010	-,028	-,476	,634	,920
	School	,053	,020	,160	2,661	,008	,899
	Abroad	,005	,004	,078	1,347	,180	,969
	Media	,016	,005	,180	3,062	,003	,937
	Usefulness	,274	,105	,173	2,620	,010	,746
	Enjoyment	,328	,058	,387	5,661	,000	,694

Coefficients[a]

Model		Collinearity Statistics
		VIF
1	(Constant)	
	Age	1,087
	School	1,112
	Abroad	1,032
	Media	1,067
	Usefulness	1,341
	Enjoyment	1,440

a. Dependent Variable: *Self-assessment*

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	*Age*	*School*	*Abroad*
1	1	5,781	1,000	,00	,00	,00	,01
	2	,663	2,953	,00	,00	,00	,97
	3	,362	3,996	,00	,01	,01	,01
	4	,124	6,841	,00	,27	,49	,01
	5	,046	11,163	,01	,61	,48	,00
	6	,020	16,902	,12	,07	,01	,01
	7	,004	38,545	,87	,03	,01	,00

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions *Media*	*Usefulness*	*Enjoyment*
1	1	,01	,00	,00
	2	,00	,00	,00
	3	,90	,00	,00
	4	,00	,00	,00
	5	,09	,02	,13
	6	,00	,04	,73
	7	,00	,94	,14

a. Dependent Variable: *Self-assessment*

Appendix VI: Multiple Regression Analysis with *Self-assessment* as the Dependent Variable, and *Abroad* Excluded as an Independent Variable

REGRESSION

/MISSING LISTWISE

/STATISTICS COEFF OUTS R ANOVA COLLIN TOL

/CRITERIA=PIN(.05) POUT(.10)

/NOORIGIN

/DEPENDENT *Self-assessment*

/METHOD=ENTER *Age School Media Usefulness Enjoyment EngCountries*.

Regression

Notes

Output Created		02-MAY-2018 20:43:18
Comments		
Input	Data	C:\Users\mara_\OneDrive\Documents\Høst 2017\Høst 2017\MA thesis\MA analysis.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>

	N of Rows in Working Data File	196
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT *Self-assessment* /METHOD=ENTER *Age School Media Usefulness Enjoyment EngCountries.*
Resources	Processor Time	00:00:00,02
	Elapsed Time	00:00:00,04
	Memory Required	3116 bytes
	Additional Memory Required for Residual Plots	0 bytes

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	*EngCountries, School, Media, Usefulness, Age, Enjoyment*[b]	.	Enter

a. Dependent Variable: *Self-assessment*

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,627[a]	,393	,373	1,14077

a. Predictors: (Constant), *EngCountries, School, Media, Usefulness, Age, Enjoyment*

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	159,025	6	26,504	20,367	,000[b]
	Residual	245,955	189	1,301		
	Total	404,980	195			

a. Dependent Variable: *Self-assessment*

b. Predictors: (Constant), *EngCountries, School, Media, Usefulness, Age, Enjoyment*

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics
		B	Std. Error	Beta	t	Sig.	Tolerance
1	(Constant)	1,257	,920		1,365	,174	
	Age	-,005	,010	-,031	-,527	,599	,919
	School	,055	,020	,166	2,767	,006	,896
	Media	,016	,005	,177	3,016	,003	,937
	Usefulness	,277	,104	,174	2,657	,009	,746
	Enjoyment	,320	,058	,377	5,509	,000	,687
	EngCountries	,011	,006	,114	1,962	,051	,952

Coefficients[a]

Model		Collinearity Statistics
		VIF
1	(Constant)	
	Age	1,088
	School	1,116
	Media	1,067
	Usefulness	1,341
	Enjoyment	1,456
	EngCountries	1,051

a. Dependent Variable: *Self-assessment*

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	*Age*	*School*	*Media*
1	1	5,658	1,000	,00	,00	,00	,01
	2	,788	2,680	,00	,00	,00	,00
	3	,361	3,961	,00	,01	,01	,91
	4	,123	6,788	,00	,28	,49	,00
	5	,046	11,050	,01	,61	,48	,08
	6	,020	16,822	,12	,07	,01	,00
	7	,004	38,130	,87	,03	,01	,00

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions *Usefulness*	*Enjoyment*	*EngCountries*
1	1	,00	,00	,01
	2	,00	,00	,94
	3	,00	,00	,02
	4	,00	,00	,01
	5	,02	,13	,00
	6	,04	,73	,02
	7	,94	,13	,00

a. Dependent Variable: *Self-assessment*

Appendix VII: Complete Multiple Regression Analysis with Vocabulary as the Dependent Variable

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA COLLIN TOL
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Vocabulary
  /METHOD=ENTER Self-assessment Age School EngCountries Media Usefulness Enjoyment.
```

Regression

Notes

Output Created		03-MAY-2018 09:12:15
Comments		
Input	Data	C:\Users\mara_\OneDrive\Documents\Høst 2017\Høst 2017\MA thesis\MA analysis.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	196
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.

	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT *Vocabulary* /METHOD=ENTER *Self-assessment Age School EngCountries Media Usefulness Enjoyment.*
Resources	Processor Time	00:00:00,02
	Elapsed Time	00:00:00,01
	Memory Required	3540 bytes
	Additional Memory Required for Residual Plots	0 bytes

[DataSet1] C:\Users\mara_\OneDrive\Documents\Høst 2017\Høst 2017\MA thesis\MA analysis.sav

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	*Enjoyment, Age, EngCountries, Media, School, Usefulness, Self-assessment*[b]	.	Enter

a. Dependent Variable: *Vocabulary*

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,620[a]	,384	,361	1,45869

a. Predictors: (Constant), *Enjoyment, Age, EngCountries, Media, School, Usefulness, Self-assessment*

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	249,752	7	35,679	16,768	,000[b]
	Residual	400,024	188	2,128		
	Total	649,776	195			

a. Dependent Variable: *Vocabulary*

b. Predictors: (Constant), *Enjoyment, Age, EngCountries, Media, School, Usefulness, Self-assessment*

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics
		B	Std. Error	Beta	t	Sig.	Tolerance
1	(Constant)	,549	1,183		,464	,643	
	Self-assessment	,714	,093	,564	7,675	,000	,607
	Age	,039	,012	,191	3,204	,002	,918
	School	-,017	,026	-,041	-,672	,502	,861
	EngCountries	-,002	,007	-,019	-,319	,750	,933
	Media	,014	,007	,121	1,995	,047	,894
	Usefulness	-,079	,136	-,039	-,583	,560	,719
	Enjoyment	,041	,080	,038	,509	,612	,592

Coefficients[a]

Model		Collinearity Statistics
		VIF
1	(Constant)	
	Self-assessment	1,647
	Age	1,090
	School	1,161
	EngCountries	1,072
	Media	1,118
	Usefulness	1,391
	Enjoyment	1,690

a. Dependent Variable: *Vocabulary*

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	*Self-assessment*	*Age*	*School*
1	1	6,631	1,000	,00	,00	,00	,00
	2	,791	2,895	,00	,00	,00	,00
	3	,362	4,280	,00	,00	,01	,01
	4	,123	7,335	,00	,00	,29	,44
	5	,052	11,296	,00	,05	,53	,52
	6	,020	18,098	,14	,04	,11	,01
	7	,016	20,370	,01	,90	,03	,00
	8	,004	41,326	,85	,00	,03	,01

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions *EngCountries*	*Media*	*Usefulness*	*Enjoyment*
1	1	,00	,01	,00	,00
	2	,93	,00	,00	,00
	3	,02	,87	,00	,00
	4	,01	,00	,00	,00
	5	,01	,10	,01	,06
	6	,03	,00	,05	,45
	7	,01	,02	,01	,39
	8	,00	,00	,92	,10

a. Dependent Variable: *Vocabulary*

Appendix VIII: Complete Multiple Regression Analysis with *Self-assessment* as the Dependent Variable

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA COLLIN TOL
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Self-assessment
  /METHOD=ENTER Age School EngCountries Media Usefulness Enjoyment Vocabulary.
```

Regression

Notes

Output Created		03-MAY-2018 09:14:01
Comments		
Input	Data	C:\Users\mara_\OneDrive\Documents\Høst 2017\Høst 2017\MA thesis\MA analysis.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	196

Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT *Self-assessment* /METHOD=ENTER *Age School EngCountries Media Usefulness Enjoyment Vocabulary.*
Resources	Processor Time	00:00:00,02
	Elapsed Time	00:00:00,03
	Memory Required	3540 bytes
	Additional Memory Required for Residual Plots	0 bytes

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	*Vocabulary, School, EngCountries, Usefulness, Age, Media, Enjoyment*[b]	.	Enter

a. Dependent Variable: *Self-assessment*

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,733[a]	,538	,520	,99808

a. Predictors: (Constant), *Vocabulary, School, EngCountries, Usefulness, Age, Media, Enjoyment*

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	217,701	7	31,100	31,220	,000[b]
	Residual	187,279	188	,996		
	Total	404,980	195			

a. Dependent Variable: *Self-assessment*

b. Predictors: (Constant), *Vocabulary, School, EngCountries, Usefulness, Age, Media, Enjoyment*

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics
		B	Std. Error	Beta	t	Sig.	Tolerance
1	(Constant)	,773	,808		,957	,340	
	Age	-,017	,008	-,105	-1,991	,048	,889
	School	,048	,017	,144	2,739	,007	,893
	EngCountries	,009	,005	,095	1,863	,064	,949
	Media	,008	,005	,083	1,583	,115	,887
	Usefulness	,237	,091	,149	2,598	,010	,743
	Enjoyment	,230	,052	,271	4,411	,000	,652
	Vocabulary	,334	,044	,423	7,675	,000	,809

Coefficients[a]

Model		Collinearity Statistics
		VIF
1	(Constant)	
	Age	1,125
	School	1,120
	EngCountries	1,053
	Media	1,127
	Usefulness	1,345
	Enjoyment	1,534
	Vocabulary	1,237

a. Dependent Variable: *Self-assessment*

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	*Age*	*School*	*EngCountries*
1	1	6,604	1,000	,00	,00	,00	,00
	2	,791	2,889	,00	,00	,00	,94
	3	,361	4,276	,00	,01	,01	,02
	4	,124	7,293	,00	,24	,51	,01
	5	,054	11,036	,00	,47	,22	,00
	6	,041	12,737	,02	,17	,24	,00
	7	,020	18,234	,11	,07	,01	,02
	8	,004	41,200	,87	,03	,01	,00

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions *Media*	*Usefulness*	*Enjoyment*	*Vocabulary*
1	1	,01	,00	,00	,00
	2	,00	,00	,00	,00
	3	,87	,00	,00	,00
	4	,00	,00	,00	,01
	5	,13	,00	,02	,50
	6	,00	,03	,11	,48
	7	,00	,04	,73	,01
	8	,00	,93	,13	,00

a. Dependent Variable: *Self-assessment*