

# **The Influence of Autonomous Reading Motivation on the Relationship Between Socioeconomic Status and Reading Comprehension**

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## **ABSTRACT**

Reading is one of the most important skills to have in society, but there have been worrying trends about the development of reading worldwide. We know that socioeconomic status (SES) affects reading comprehension, indicating inequality in educational opportunities, but it is unclear through which variables, if any, this relationship goes. Reading motivation could be a possible mediator between the relation of SES on Reading Comprehension. This study tries to discover if that really is the case, by looking at existing standardized reading data and the data from questionnaires from children in the Netherlands from grade 3-5, and their parents. The results indicated that reading motivation did not mediate the relationship between SES and reading comprehension, although the hypothesized relationship between SES and reading comprehension was found. The current study contributed to our knowledge about how SES and Reading Motivation are related to Reading Comprehension and future studies could further disentangle how these factors might be related, or adjust the way in which these variables are measured.

## INTRODUCTION

Being able to read is essential to be able to participate in modern society (National Research Council, 1998). It is one of the first things one learns at school and is also essential for the first years in education. Students who are above grade level for reading in third grade, are more likely to graduate and enroll in college at higher rates than students who are at or below grade level in third grade (Lesnick et al., 2010). Fiester (2010) also stated the importance of reading in third grade, because until the end of third grade, most children are learning to read. From the beginning of fourth grade, Fiester argued, they are reading to learn. This is also why PIRLS (Progress in International Reading Literacy Study) chose this grade as the target group (Mullis et al., 2009). Three quarters of students who are poor readers in third grade will remain poor readers in high school (Hughes, 1999).

Unfortunately, worrying trends have been detected in the development of reading worldwide. For example, both the ability and pleasure to read of ten-year-olds has decreased between 2016 and 2021 (Swart et al., 2021). In the Netherlands, the problems seem to be more urgent than in other countries. For instance, the reading level of fifteen-year olds in the Netherlands is lower than the average in OECD-countries, and the drop-off between 2018 and 2022 has also been stronger than average in OECD-countries (OECD, 2023). This decrease in reading ability has been going on since 2006 (Gubbels et al., 2019) and is already present in primary school age (Gubbels et al., 2017). Also, the reading pleasure in secondary education in the Netherlands is the lowest of all fifty participating countries in the OECD, and this originates as early as in the second grade (Bosman et al., 2022). Because reading is so important, it is crucial to understand the mechanisms that determine or influence reading pleasure and reading ability. One of the most important mechanisms that is known to influence reading ability, is reading motivation (Wigfield et al., 2016; Becker et al., 2010; De Neaghel et al., 2012).

It has been extensively proven that socioeconomic status has an effect on reading comprehension, also in various populations, for example with fifteen-year-olds (De Chiu & McBride-Chang, 2006), children in fourth to sixth grade (Corso et al., 2016; Miñoza & Montero, 2019), and younger children from the first grade (Gentaz et al., 2013). This effect does not only hold for different age groups, but also for different contexts. De Chiu and McBride-Chang (2006) conducted their study in 43 countries from different continents and with different cultures. The study of Corso et al. (2016) took place with Brazilian children, while the effect has also been found in, among others, China (Cheng & Wu, 2017), France (Gentaz et al., 2013), Chile (Cáceres-Serrano & Alvarado-Izquierdo, 2017) and the United States (Neff, 2015).

The effect of SES on reading comprehension indicates inequality in educational opportunities (Buchmann, 2002). This is undesired, because inequality in SES is related to student achievement (Marchant & Finch, 2016), and because equality in education is a crucial factor in determining equal opportunities and ‘intergenerational mobility’ in societies (Schutz et al., 2008). However, although tremendously studied, it is not clear how SES exactly affects reading comprehension (Cheng & Wu, 2017; Yeung et al., 2022). Besides a direct impact, the effect of SES on reading comprehension could also be indirect, for example because children with a lower SES generally have less morphological awareness, word recognition and vocabulary (Bowey, 1995). In addition to cognitive and linguistic skills, it was proposed that the relation could also be mediated by reading motivation. Previous studies showed that SES and reading motivation are correlated with each other (Biyik et al., 2017; Guthrie et al., 2013), and it is also known that SES is related to motivation in general (Shin & So, 2018; Tucker-Drob & Harden, 2012; Troyer et al., 2019). We also know from previous research that reading motivation has an influence on reading comprehension (Wigfield et al., 2016; Becker et al., 2010; De Neaghel et al., 2012).

If this possible mediating factor indeed turns out to be present, that will shed new light on the way SES affects reading comprehension, namely in an indirect way instead of a direct way. That would extend our knowledge about how and why socioeconomic status has an effect on educational outcomes, such as reading comprehension. Extended knowledge on what factors influence reading comprehension, may eventually help the educational field to stimulate reading comprehension skills.

The current study has the aim to discover if reading motivation indeed mediates the relationship between SES and reading comprehension. The study is conducted in the context of primary schools in the Netherlands.

### **Reading Comprehension**

The simple view of reading from Gough and Tunmer (1986) is “the product of word decoding and linguistic comprehension (the interpretation of sentences and discourses)”. McKee (2012) defined reading comprehension as “the ability to understand a text, to analyze the information and to interpret correctly what the writer is stating”. According to this definition, reading comprehension is not just about being able to read the words, but about being able to really understand the text. Janzen and Stoller (1998) named ten processes that together form reading comprehension: “identifying a purpose for reading, previewing, predicting, asking questions, checking predictions or finding and answer to the questions, connecting the text to prior knowledge, summarizing, connecting one part of the text to another, and recognizing text structure”.

Several studies have proven that reading comprehension is influenced directly by SES (e.g. De Chiu and McBride-Chang, 2006; Miñoza & Montero, 2019). Miñoza and Montero explained their findings with the argument that parents with low SES are less likely to be able to purchase and provide reading materials at home and create a reading resource enriched home. This would explain that lower SES leads to lower reading comprehension.

## *Socioeconomic Status*

SES can be defined as “a measure of one’s combined economic and social status” (Baker, 2014). SES affects child development, but there is discussion in the field about what the actual cause of that phenomenon is (Letourneau et al., 2013): because parents are unable to provide the material resources for healthy child development (Becker, 1991), or because parental stress and behavior predict developmental outcomes in children (McLoyd & Wilson, 1990; McMahon & Peters, 2002), or a combination of those arguments: parents in stressful economic situations are unable to provide the resources for the development of the child (e.g. Conger et al., 1992).

SES is measured in different ways, but often consists of a combination of at least two of the following elements: parental education level, parental marital status, parental employment status, parental occupation prestige and household income and eligibility for subsidy (Ensminger & Fotherill, 2003).

As shown earlier, it is known that reading comprehension is influenced by socioeconomic status (e.g. De Chiu & McBride-Chang, 2006; Corso et al., 2016), but according to Cheng and Wu (2017) and Lawson et al. (2017) it is still unknown through exactly which psychological mechanisms this influence goes. Cheng and Wu did find in their study a mediating effect of vocabulary knowledge and morphological awareness on the relationship between SES and reading comprehension, but this was specifically for Chinese young children. The study is therefore not necessarily applicable to, for example, the Dutch context.

There are also other factors than only psychological ones that could mediate this relationship between SES and reading comprehension. Chesters and Daly (2017) and Chesters (2019) found in Australia a mediating effect for the school attended, which is also based on SES: attending a relatively low-SES school with more students from educationally

disadvantaged families leads to worse educational achievement. On top of that, Aikens and Barbarin (2008) found that there are several contextual factors that ‘help account for’ the relationship, such as factors in the family context (e.g. number of books in home, which was found to be a mediator of the relationship between SES and children’s initial reading competence), neighbourhood context (e.g. poor physical conditions around the school), and school characteristics (e.g. grouping and segregation). Concluding, there are different mediating factors found in different studies, conducted in different contexts, but there is not an one-dimensional view on the possible mediators of the relationship between SES and reading comprehension.

Interestingly, studies in China found that students from poorer families actually had better academic achievement than students from richer families (Kim et al., 2017). Motivation was able to explain this surprising finding (Kim et al., 2018). However, these effects have not been proven for the context of the Netherlands, and it is still unknown if this effect is also present specifically for reading comprehension. On top of that, the opposite effect was found in the study of Tomaszewski et al. (2020), who found in the context of Australia that students with lower SES have less engagement and ultimately lower educational achievement. Concluding, there is no clear view in the research field on if and how student motivation mediates the relationship between SES and academic achievement, or reading comprehension.

### ***Motivation to Read***

Motivation to read can be described as a complex construct that has an influence on the choices readers make of reading material, their willingness to engage in reading and ultimately, their competence in reading, especially related to academic reading tasks (Pitcher et al., 2007). In this study, a specific kind of motivation, namely autonomous reading motivation, is used. Autonomous reading motivation can be referred to as engaging in reading

activities for one's own enjoyment. It opposes controlled reading motivation: reading to meet internal feelings of pressure or to comply with an external demand (De Neaghel & Van Keer, 2013).

Autonomous reading motivation leads to more positive reading outcomes, such as higher reading engagement and reading comprehension (Becker et al., 2010; De Neaghel et al., 2012), while controlled reading motivation is related to less reading in spare time and lower reading comprehension (De Naeghel et al., 2012). The self-determination theory (SDT) of Ryan and Deci (2000) has revised this two-dimensional distinction by differentiating among different types of extrinsic (controlled) motivation, and stating that these are situated on a continuum of increasing self-determination, from controlled motivation to more autonomous motivation (De Neaghel & Van Keer, 2013). Recent reading motivation research has followed this continuum and has made a distinction between autonomous and controlled types of reading motivation, because SDT is a motivation theory with a rich empirical basis (De Naeghel & Van Keer, 2013). In the current study, there is a focus on autonomous motivation, because it leads to better reading comprehension and is therefore the type of motivation that should be stimulated in children.

Reading motivation is a requirement for reading (Akyol, 2011; Baker & Wigfield, 1999) and therefore also influences reading comprehension (Wigfield et al., 2016). What should be mentioned is that the reciprocal effect has also been hypothesized: better reading comprehension can lead to more reading motivation (Schiefele et al., 2016) creating a positive vicious circle, and vice versa (McKenna et al., 1995; McKenna, 1994).

Biyik et al. (2017) conducted a study in Turkey with students from second to fourth grade and found that students with higher SES have more reading motivation. This is in contrast with the studies in the Chinese context of Kim et al. (2018) and Chen et al. (2018), which found through interviews that wealthier students have less motivation than poorer

students, and therefore also have worse academic achievement. Kim et al. described with the help of conducted interviews that poorer children had more moral qualities, like determination, perseverance, industriousness and perseverance of learning, which resulted in better academic achievement. Also, wealthier parents were more busy with their jobs than normal parents and were therefore less involved with their children, which is also a predictor of worse academic achievement (Kim et al. 2018). Chen et al. also tried to explain the finding of Kim et al., by stating that students from poorer families grow up in a more difficult environment and want to change their current situation more urgently, leading to more motivation.

It is remarkable that the studies in China on the correlation of SES and motivation yielded contrasting results, compared to most studies conducted in Western populations, (e.g. McLoyd ,1998; Bornstein & Bradley, 2003; Kim et al., 2018). There could be several explanations for this. Kim et al. cited studies from Tobin et al. (2009) and Kipnis et al. (2001) and concluded that business-owning parents in China are often too busy to be involved in their children's education, opposite to the Western society, where business-owner parents have a positive influence on their children's achievement, for example by holding high aspirations for their children's education. Another possible explanation for the difference in findings between Chinese and Western contexts is a development in China: "the emergence of a wealthier business-owner class distinct from a more educated white-collar professional class with income levels closer to those of blue-collar workers than to those of business owners created a sharp division in our interviewees' minds, separating out the effects of education from the effects of wealth" (Kim et al., 2018). Kim et al. (2017) found that business-owning parents, the wealthiest among respondents' parents, had less time to tutor their children, and children from poorer parents had more motivation to "gain upward mobility" through academic achievement.



## **Present Study**

While it is known that socioeconomic status has an influence on reading comprehension (e.g. De Chiu & McBride-Chang, 2006; Corso et al., 2016) and reading motivation, and that reading motivation influences reading comprehension (Wigfield et al., 2016), it is remarkable that we do not have a clear insight into the possible indirect role of motivation in the relationship between SES and reading comprehension, because these variables have rarely been investigated altogether in one model (Yeung et al., 2022). The studies that did look at these variables in one model, yielded conflicting results (e.g. Kim et al., 2018; Tomaszewski et al., 2020). Although, studies that looked at this mediation model, but for general academic results, not specifically reading, yielded significant results (Steinmayer et al., 2012; Wang & Finch, 2018; Yeung et al., 2022). It is useful to know if these results also apply specifically to an important educational skill as reading. The knowledge about the role of reading motivation in the relationship between SES and reading comprehension would be important, because if it is found that reading motivation indeed mediates the relationship between SES and reading comprehension, it would shed new light on the knowledge about how to improve reading comprehension in education. The world of education could pay attention to motivational factors and assess how to react to the eventual found mediation effect of reading motivation on the relationship between SES and reading comprehension. This could then be a possible area for future research.

Because autonomous reading motivation has a positive influence on reading comprehension (Becker et al., 2010; De Naeghel et al., 2012), keeping children autonomously motivated to read is an important challenge (De Naeghel & Van Keer, 2013). To be able to keep children autonomously motivated to read, it is essential to know which factors influence this autonomous reading motivation. This could be SES, following earlier research that

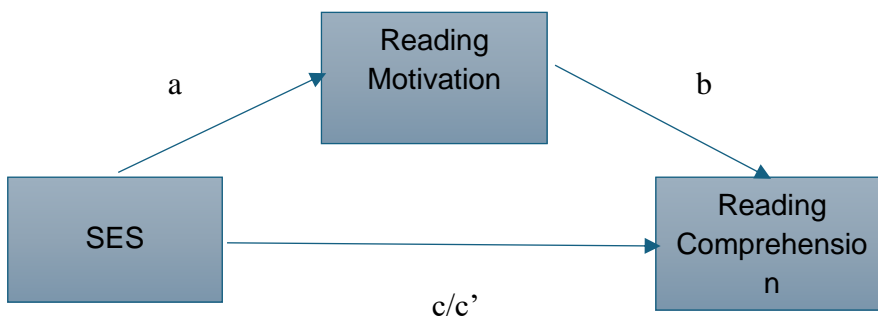
proves the connection between the two (e.g. Biyik et al., 2017; Kim et al., 2018; Chen et al., 2018).

This leads to the following research question: *To what extent does socioeconomic status (SES) affect reading comprehension and is this relationship mediated by reading motivation?* Figure 1 shows the conceptual mediation model (Hayes, 2009) that will be used to answer this research question. When answering this research question, there will be corrected for age, because we know that age can be a possible influence on reading motivation (Nielen & Bus, 2016; Miyamoto et al., 2020; Chall et al., 1990). For example, it is known that in the later stages of primary education, the reading motivation starts to decrease (Nielen & Bus, 2016; Miyamoto et al., 2020). Therefore, there is a so called dip in reading motivation around grade 4 (Chall et al., 1990). This is therefore also a factor that should be taken into account when looking at reading motivation.

While the studies in the Chinese context of Kim et al. (2017) and Kim et al. (2018) indicated that a lower SES leads to better motivation and in turn to better reading comprehension, the Western studies indicate that reading motivation would mediate the relationship between SES and reading comprehension in a positive way (e.g. McLoyd, 1998 and Bornstein & Bradley, 2003). Because the current study takes place in a Western context, namely the Netherlands, it is hypothesized that a higher SES leads to higher reading comprehension (e.g. De Chiu & McBride-Chang, 2006; Corso et al., 2016) and that reading motivation is a positive mediator of this relationship (e.g. Becker et al., 2010; De Naeghel et al., 2012, Biyik et al., 2017, Bornstein & Bradley, 2003) The fact that general motivation already has been proven to mediate the relationship between SES and general academic performance (Steinmayer et al., 2012; Wang & Finch, 2018), is another reason to expect that reading motivation would indeed influence the relationship between SES and reading comprehension in this study.

**Figure 1**

*Conceptual Mediation Model of the Role of Reading Motivation on the Relationship between SES and Reading Comprehension*



## **METHOD**

### **Study Design**

This study is part of the Road to Resilience project from a research team of the University Utrecht, which does research on the development of literacy and spelling of children with an increased risk of severe reading or spelling problems (Algemene informatie over WIL, n.d.). The data collection consisted of questionnaires for parents, teachers and students themselves, as well as taking standardized tests with the children and using existing data available at the school of the children. This is a quantitative study design in which is looked at a possible mediation effect of reading motivation on the relation between SES and reading comprehension. The project relied on cross-sectional assessment for children from grade 3, 4 and 5.

### **Participants**

The children who took part in this study are in grade 3 to 5, from primary schools in the Netherlands that have the CITO LVS system to monitor their children. All primary

schools in the Netherlands could theoretically qualify for this study, with the exception of so-called Vrije Scholen. In total, 123 children and their parents took part. Of those 123 participants, 62 are in grade 3 (50,4%), 36 in grade 4 (21,1%) and 25 in grade 5 (20,3%). Gender was equally represented in the sample (61 boys, 62 girls). Almost all the participants were born and raised in The Netherlands (121 of 123) and therefore spoke the Dutch language.

## **Instruments and Measurement**

### *Socioeconomic Status*

The SES of the child is determined by the education level of the parents. This is because students who perform poorly in school come from families where parents were less educated (Willms & Tramonte, 2019). A meta-analysis of studies from 1990-2000 found that SES was most of the time measured in this way, because it is one of the most stable aspects of SES. It is stable because it is determined at an early age and often stays the same over time (Sirin, 2005). It is also an indicator of the income of the parents, because in the United States, income and education have been found to be highly correlated (Hauser & Warren, 1997).

The education level of the parents is determined by a questionnaire taken by the parents, in which they gave information about their education level. Each education level is allocated to a number. The higher the education level, the higher the number. In total, there were 11 possible levels, varying from the lowest ('did not finish primary school'), which equals a score of 1, to the highest ('master at a university or higher'), which equals a score of 11. The ultimate SES score is determined by looking at the score of the one parent or caregiver with the highest education level, opposed to taking together the values of both parents or caregivers, in order to reduce the missing values (OECD, 2009). This also made it possible to determine the SES of children with one caregiver or more caregivers in a more equal manner, because there is always an 'occupational status' for each child, unless no adult

in the household works or has worked (Hauser, 1994). Parents who were not born in the Netherlands first got asked if they got a degree in the Netherlands. If they had, they got asked what their highest finished education is in the Netherlands. If they have not, they got asked what their highest finished education was in another country. The parent who was filling in the questionnaire, got asked to fill in the same questions about their partner, in order to determine the education level of both the caregivers of the child and ultimately determine the education level of the caregiver with the highest education level.

There is an awareness that the way participants are recruited is not representative, because the parents signed up for this study voluntarily. Therefore, there is a risk that the distribution of SES in the sample is not representative. In the Netherlands, 31,7% of the people has at least finished a HBO-bachelor (CBS Statline, 2021), and there is an expectation that this percentage could be higher in the sample of this study.

### ***Autonomous Reading Motivation***

Autonomous motivation is measured by a questionnaire, taken by the students themselves. The questionnaire for autonomous reading motivation consists of the question: “Why do you read in school?”. Students then get presented with eight possible reasons and they have to determine to which extent those reasons apply to them. For example, a possible reason for this question is “I read for school because I like reading”. The students have to grade each argument with either “Totally do not agree”, “Do not agree”, “I don’t know”, “Agree”, and “Totally agree”. This nominal scale is turned into a categorical scale by giving the categories a number from 1 to 5, with “Totally not agree” being 1 and “Totally agree” being 5. This categorical scale is interpreted as an interval scale to be able to do the analysis. This is something that is very commonly done (Knapp, 1990). The score on autonomous motivation is determined by the average of the scores on all eight reasons. The maximum

average score is 5, which represents maximum autonomous motivation, and the minimum average score is 1, which represents minimum autonomous motivation.

The autonomous reading motivation is measured with a questionnaire based on the SRQ-Reading Motivation Questionnaire (SRQ-RM), originally from De Naeghel et al. (2012), based on the self-determination theory (Ryan & Deci, 2000). This questionnaire has been validated and judged reliable before (Baker & Wigfield, 1999; De Naeghel et al., 2012), but a confirmatory factor analysis (CFA) is done to check if the questionnaire indeed measures what it should measure. Also, Cronbach's alpha is calculated to check the reliability of the questionnaire (Cronbach, 1951).

### ***Reading Comprehension***

Reading comprehension is measured with the help of the CITO learning monitoring system (CITO LVS), which has been scientifically accounted for (Feenstra et al., 2010; Tomesen et al. 2016; Tomesen et al., 2017; Tomesen et al., 2018). With this system, the school has collected information about the reading comprehension level of the participating children, through data about reading comprehension assignments they have made during their school career. The used data in this study is the data from grades 3 to 5. The score that is used is the so-called 'skill score', from the third and last test moment of the school year. The eventual score that is used for reading comprehension is determined by the last 'skill score' of the child, so the test of the most recent last test moment of the school year that the child has taken. The difficulty of the tests depends on the grade level at that moment: the difficulty of the tests grows as the reading comprehension of the children should grow. With a formula, it is made sure that the scores of these reading comprehension tests are comparable with each other across grades, because there is made use of relative standardization (Van der Vleuten et al., n.d.).

### ***Age***

In current analysis, there is controlled for the age of the children. Therefore, the age at the moment the data collection for this child started is taken into account, so when the parents signed up their child for this study. It is chosen to use the age in months, rather than age in years, to get a more detailed view of the age of the child.

## **Procedure**

Primary schools were recruited via the spread of information folders and flyers, but also through personal connections of the researchers working in the Road to Resilience Project. The participating schools then spread the information letters and flyers around the parents from children in grade 3-5. Parents were able to assign themselves and their child to the project through filling in a digital form, which also included informed consent.

Next, the researchers approached the teachers about which participating children they had to fill in a questionnaire about. Also, they approached the schools about which children they needed the CITO-data from. Next, the questionnaires were handed out to the children, the parents and the teachers.

The raw paper data is pseudonymized and stored in the archive of the University Utrecht. A backup will be made on an encrypted external hard drive. The responsible or executive researcher has access to the key that enables identification of the person whose data are being studied. The participant entry list with personal data and the key for identifying participants is stored in the faculty servers in separate folders, and the identifiable data (names and addresses) will be immediately deleted when the data collection has ended, which is planned in July 2026. The Road to Resilience project has been approved by the Ethics Committee of the Faculty of Social and Behavioural Sciences of Utrecht University.

## **Data Analysis Plan**

### ***Quality Checks***

Prior to the analysis, the quality of the questionnaires is checked using a CFA for reading motivation, to check if the questionnaire indeed measures what it intends to measure (validity). Also, Cronbach's alpha is calculated to check the reliability of the questionnaire (Cronbach, 1951).

### ***Missing Values***

When analyzing the data, some missing values were detected. First, there were three participants who did not have data on any of the variables that are looked at in this study, except for the covariate age. It was decided to remove the data of these participants from further analysis. But even after that, there were still participants who had missing values on one or more of the variables. That resulted in different sample sizes for each variable: SES (N=124), reading motivation (N=116), reading comprehension (N=111), and age (N=126). For reading comprehension, the number of missing values was above 10%, namely 13,3%. However, Little's MCAR Test indicated that these values were missing completely at random ( $p=.77$ ).

Only the participants who had complete data on all the variables, were included in the final mediation analysis. This resulted in an eventual sample size of 101.

### ***Mediation Analysis***

A mediation analysis is conducted to answer both research questions. This mediation analysis is done with the PROCESS Macro test of Hayes (Hayes, 2013), with SES as X variable, reading motivation as mediator, reading comprehension as Y variable, and age as covariate. The assumptions that are being checked beforehand, are those of the measure scale of the independent, dependent and mediating variable, linearity, multicollinearity, homoscedasticity, normality and outliers. The significance level that is followed when analyzing the data is  $p < .05$ . We expect that there will be very few missing values, so that we can proceed with the study.



## RESULTS

### Results of Quality Checks

The confirmatory factor analysis (CFA) indicated that the proposed model did not fit the data well:  $\chi^2(0) = .000$ , CFI = .79, TLI = .70, RMSEA = .19, SRMR = .14. This fit could be limitedly, but not totally sufficiently, improved by removing two items. However, Chronbach's alpha indicated that the reliability of the questionnaire was very good ( $\alpha = .83$ ), and that this reliability could not be improved by removing one of those two items. Because of the intention to leave the questionnaire as intact as possible, instead of developing a new questionnaire (and since it was based on reliable sources), it was decided to move forward with the questionnaire in the current state. This mediocre validity will be taken into account in interpreting the results.

### Descriptive Statistics

Table 1 shows the descriptive statistics for the variables that are used in this study.

**Table 1**

*Descriptive statistics of the variables*

	N	Mean	SD	Minimum	Maximum
SES	124	9.28	1.60	4	11
Reading Motivation	116	3.49	.74	1.38	5
Reading Comprehension	111	177.62	29.02	116	294
Age in months	126	114.75	10.77	97	139

### Assumption Checks

Before conducting the analysis, the assumptions for the mediation analysis were checked. There were no significant violations found on the assumptions of homoscedasticity, multicollinearity and normality. However, based on the statistical checks, there were some outliers found in the y-space and in the x-space. Because no irregularities could be detected of these outliers, and because an extreme high or low score could simply happen in reading motivation or reading comprehension, it was decided not to remove these outliers. On top of that, because SES was no continuous variable in the way it is measured in this study, the assumption of linearity was not met for the variables of SES and reading comprehension.

### Correlation Table

Figure 2 shows a correlation table with the correlations between the three variables. It shows that SES and reading comprehension are significantly correlated with each other, as well as reading motivation and reading comprehension. However, there was no significant correlation found between SES and reading motivation.

**Table 2. Pearson Correlations Among Variables**

	SES	Reading Motivation	Reading Comprehension
SES	-		
Reading Motivation	.14	-	
Reading Comprehension	.22*	.20*	-

\*Correlation is significant at the 0.05 level (2-tailed).

### Research Question 1

The mediation analysis indicated that there was a direct effect of SES on reading comprehension ( $B = 3.53, p=.04$ ). That means that SES did have a significant influence on reading comprehension, and also that path c of the mediation model was found to be

significant. In this model 14% of the variance in reading comprehension can be explained by SES ( $R^2=.14$ ).

## **Research Question 2**

### ***Direct effect of SES on Reading Motivation***

The mediation analysis indicated that SES did not have a significant effect on reading motivation ( $B = .04, p=.38$ ). That means that SES did not influence reading motivation.

### ***Direct effect of Reading Motivation on Reading Comprehension***

The mediation analysis indicated that there was a significant effect of reading motivation on reading comprehension ( $B=8.62, p=.02$ ). That means that path b of the mediation model was found to be significant.

### ***Results Mediation Analysis***

The mediation analysis indicated that there was no indirect effect of SES on reading comprehension ( $B= 3.20, p= .06$ ). That means that path c' of the mediation model was found to be insignificant. The bootstrap reliability interval indicated that there was no indirect effect of SES via reading motivation on reading comprehension (BootLLCI =  $-.01$ , BootULCI =  $.05$ ), and therefore that there was no mediation. This means that the found effect of SES on reading comprehension did not go via reading motivation.

## **DISCUSSION**

The goal of this study was to gain more insight into the role of motivation in the relationship between SES and reading comprehension. A direct effect of SES on reading comprehension was found. This is in line with earlier studies (e.g. De Chiu and McBride-Chang, 2006; Miñoza & Montero, 2019). Also, the effect of reading motivation on reading comprehension, was found, which was also to be expected when looking at previous literature (Becker et al., 2010; De Neaghel et al., 2012). However, no effect of SES on reading comprehension via reading motivation, was found. That means that according to these results,

reading motivation did not serve as a mediator for the relationship between SES and reading comprehension. These results were not in line with the hypothesis, because, based on literature from, for example, Yeung et al. (2022), McLoyd (1998) and Bornstein and Bradley (2003), it was hypothesized that reading motivation would mediate the relationship between SES and reading comprehension.

No effect was found of SES on reading motivation, which means that SES did not influence reading motivation. This was also unexpected, given that a relationship was found in earlier studies (e.g. Biyik et al., 2017). That means that SES did not influence reading motivation. The fact that there was no relationship found between the independent variable and the mediator, makes it unlikely that a mediation effect would be present. That is because for a mediator to have a mediating effect on the relationship between an independent and a dependent variable, the relationship between the independent variable and this mediator should be present in the first place. The absence of a relationship between SES and reading motivation also means that it might not be as useful as previously thought (Biyik et al., 2017; Guthrie et al., 2013) to focus on SES when aiming to explain differences in reading motivation.

A possible explanation for the absence of a relationship between SES and reading motivation could be because in this study, the sample was not representative for the population. In the current sample, 70,9% of the children in the sample had at least one parent with an education level of HBO or higher. In the whole of the Netherlands, only 52,2% of the people between 25 and 45 years old in 2023 have an education level of HBO or higher (CBR, 2024). This lack of representativity in the sample may be a reason why the results (no effect) are different than hypothesized, because the sample differs from the population on one of the relevant variables.

Also, with an average of 3.49 on a scale of 5, the average of reading motivation in this study was relatively high. For example, Guthrie et al. (2013) only reported an intrinsic reading motivation average of 1.98 on a scale of 4, which is way lower. This relatively high reading motivation is surprising, given the trend that reading motivation in the Netherlands is decreasing (Swart et al., 2021; Bosman et al., 2022). It could be the case that the relatively high average of reading motivation in this sample has had an impact on the influence of SES on reading motivation in this study.

### **Implications**

According to the results of this study, the role of reading motivation in the relationship between SES and reading comprehension should be approached with more caution. This means that the field of education should not automatically assume, as was hypothesized, that the relationship between SES and reading comprehension can be (partially) explained by reading motivation. On the contrary, this study confirmed the belief that SES has an influence on reading comprehension. This means that children from lower SES have a disadvantage when it comes to reading comprehension, compared to children from higher SES. It is important to get better insight in how and why a lower SES of the parents would cause lower reading comprehension skills. This is possibly an unwanted phenomenon, because it indicates inequality in educational opportunities (Buchmann, 2002), the research field should look at ways in which this inequality can be diminished.

This study also confirms the previous findings that reading motivation influences reading comprehension. This means that when aiming to improve reading comprehension with students, it is, according to the results of this study, useful to stimulate reading motivation. This is also in line with earlier studies from, for example, Wigfield et al. (2016), Becker et al. (2010) and De Naeghel et al. (2012). This is something that teachers could take

advantage of, by looking to stimulate the reading motivation of their students, in order to eventually improve reading comprehension.

### **Limitations**

This study has some limitations that have to be taken into account, while interpreting the results. First, as stated above, the distribution of SES in the sample was not representative for the population, since mostly higher SES children were included. This may have influenced the results, because the sample differs from the intended population on a relevant characteristic. Moreover, this makes it harder to generalize the results of this study to the population, because the population differs from the sample on a relevant characteristic. The lack of participants with lower SES also makes it harder to say something about the effect of SES on reading motivation and reading comprehension for those people with lower SES. Future studies should make sure that the sample is representative for the population, in order to make it easier to generalize the findings to the whole population.

There are several possible causes for this non-representative distribution of SES. A possible cause for this is that parents had to take the initiative themselves to sign up for the study, and it is very much possible that people from a higher SES tend to sign up for this kind of study earlier than people from a lower SES, because parental involvement from parents with low SES, is generally lower (Lareau, 1987; Arnold et al., 2008). This is something that should be addressed in future studies. This could for example be done by actively targeting parents and children with a lower SES. This could be done by personally approaching these parents, or by specifically targeting schools where the SES is generally lower than in other schools. This could make sure that the distribution of SES in the sample is more in line with the whole Dutch population.

Second, there were some flaws in the questionnaire used to measure reading motivation. The validity of the questionnaire was not good, which makes it unsure if we

measured what we intended to measure. While it was ultimately decided it was best not to adjust the questionnaire, for reasons stated in the Results section, these validity problems could have an influence on the way reading motivation was measured, which in turn could have an influence on the results. This is because we do not know for sure that the used questionnaire did properly measure reading motivation, because of the indicated bad fit. Because reading motivation might not have been measured properly in this study, found results with this variable should be looked at with caution. Future studies should make sure that, when replicating this model, reading motivation is measured properly, for example with a questionnaire with a good fit.

### **Recommendations**

There are several recommendations that can be formulated for future studies. First, it could be useful to test these variables in another model. While, based on the results of this study, reading motivation is not a mediator of the relationship between SES and reading comprehension, results of earlier studies (e.g. Corso et al., 2016; Miñoza & Montero, 2019, Biyik et al., 2017, Becker et al., 2010; De Neaghel et al., 2012) indicated that it is very much possible that there is a connection between these three variables. For example, reading motivation might not mediate, but moderate the relationship between SES and reading comprehension. While the correlation table of this study shows that there was no correlation found in this study between SES and reading motivation, both SES and reading motivation were found to be correlated to reading comprehension. This shows that those variables cohere with each other (Aarts & De Koning, 2018), and that makes it is possible that significant relations will be found in another model. It is worth finding out if these variables are connected in another model than the one used in this study, because it is important to know more about the relationships between these variables. That could help researchers and practitioners with developing effective literacy programs that also pay attention to the role of

reading motivation, and could also influence educational policy for improving reading achievement (Yeung et al., 2022).

Second, when looking at the reading motivation questionnaire, all the eight items are focused specifically on motivation for reading for or at school. It could also be interesting to take a broader view at reading motivation, and for example also take the motivation for leisure time reading into account, when looking at the relationship between SES, reading motivation and reading comprehension. It might be the case that it is more beneficial to stimulate motivation for reading in spare time to improve reading comprehension, instead of motivation for reading in a school context. We already know that Dutch children and youths read less in their spare time (Wennekers, Huysmans, & De Haan, 2018), and Segers and Van Steensel (2019) suggested that this development runs parallel with a decrease in the reading skills of students. In fact, De Naeghel et al. (2019) found that the effect for reading motivation on reading comprehension was even stronger for leisure time reading motivation, than for reading motivation in school. This contributes to the idea that it may be more beneficial to stimulate reading motivation for reading in leisure time to improve reading comprehension.

Third, the CFA of the current reading motivation questionnaire indicated that this questionnaire had a bad fit, as explained in the Limitations section. However, a two-factor CFA, with a 'reading for utility'-factor and a 'reading for pleasure'-factor, did indicate a good fit. While it was decided for this study not to adjust the questionnaire, as explained in the Method section, for future studies it might be interesting to replicate this study with a two-factor questionnaire for reading motivation, to see if then, reading motivation might indeed be a significant mediating factor.

Fourth, while this study has looked at these variables in a limited range of time, it could also be interesting to conduct a longitudinal study of these variables, to check if the effects



change over time. For example, it has already been proven that better reading motivation does not only lead to better reading comprehension, but that the reciprocal effect (better reading comprehension leads to better reading motivation), also is present (Schiefele et al., 2016), which could create a positive vicious circle. A longitudinal study could be a way to find out if it is indeed the case that reading motivation and reading comprehension strengthen each other over time. That could be useful, because we then can know more about the way in which reading motivation and reading comprehension are related to each other, for example if it is useful to stimulate the one to improve the other.

Fifth, as stated in the Implications section, the influence of SES on reading comprehension is unwanted, because it indicates inequality in educational opportunities (Buchmann, 2002). Future studies could look at ways this effect could be diminished. For example, children with low SES (and consequently low reading comprehension) could be stimulated in their reading motivation, to ultimately get their reading comprehension at a sufficient level, and therefore compensating the fact that their lower SES may give them a disadvantage. Yeung et al. (2022) suggested stimulating motivation at school would be possible, by for example giving them access to reading material, which is something that children from low SES often have less, compared to children from higher SES (Krashen, 2004), and presenting reading as an enjoyable activity. Next to this, it could also be useful to examine different variables this relationship between SES and reading comprehension could go through and that could help explaining and eventually diminish this relationship.

Sixth, as stated in the Implications section, this study confirms previous findings that it is useful to stimulate reading motivation, in order to improve reading comprehension. Future studies could look at the best ways for teachers to stimulate reading motivation, especially autonomous reading motivation.

## **Conclusion**

This study aimed to learn more about the role of motivation in the relationship between SES and reading comprehension. While there were significant relationships found between SES and reading motivation, as well as between reading motivation and reading comprehension, reading motivation did not mediate the relationship between SES and reading comprehension. This could possibly be due to a non-representative distribution in SES, or a non-fitting reading motivation questionnaire. Future studies could look at these variables in another model, or adjust the way in which these variables are measured, to potentially yield interesting significant relationships between these variables. Also, a longitudinal study could be done to track the development of these variables and their relationship to each other over time. Future studies could also look at how to diminish the unwanted effect of SES on reading comprehension, or what is the best way for teachers to improve reading motivation, in order to improve reading comprehension.

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