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Sex, Stereotypes, and Schooling:

How Education Level Relates to Pornographic Stereotypes in Implicit and Explicit Attitudes

A quantitative study on the role of education level in shaping implicit and explicit attitudes toward Asian submissiveness and Black dominance as racialized sexual stereotypes in pornography.

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Abstract

This study investigated the extent to which education level influences implicit and explicit associations between race (Asian/Black) and sexual stereotypes (submissiveness/dominance) in pornography among Dutch individuals. Implicit attitudes were measured through the use of an originally made Implicit Association Test (IAT), while explicit attitudes were measured through a questionnaire. Results of a Spearman's correlation supported the hypothesis that education level does not significantly predict IAT scores. Contrary to expectations, multiple regression analyses—controlling for age, gender, and ethnic background—found no significant relationship between education level and explicit attitudes. These findings suggest that education level does not substantially shape either implicit or explicit endorsement of racialized sexual stereotypes. The study highlights complexities in measuring socially sensitive topics such as gender, racism and pornography, and suggests that factors such as language barriers, social desirability, and sample composition may influence outcomes. Recommendations for future research recommendations include greater ethnic diversity in samples, and expansion of research to different stereotypes and cultural contexts.

Keywords: education level, stereotypes in pornography, implicit and explicit attitudes, ethnicity

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1. Introduction

Pornography is widely available in numerous types of genres, formats and categories around the internet, feeding the sexual desires of individuals. The term pornography is described as ‘’images of exposed genitals and/or depictions of sexual behaviours’’ (Morgan, 2011) and ‘’sexually explicit materials with the intention to arouse’’ (McKee et al., 2019). Notably, many sexual activities depicted in pornography contain stereotypical gender roles, racial attitudes and ethnic assumptions, which consequently generalize specific groups in a sexualized manner (Shor & Golriz, 2018). A content analysis on pornographic videos under the category ‘’Asian Women’’ on Xvideos.com shows that Asian women are often depicted as sexually submissive and docile (Zhou & Paul, 2016b), while Black men and women are often stereotyped as more dominant and assertive (Bao & Gries, 2024). With a large monthly traffic of 8.72 billion visitors on the world’s most popular online adult content platforms Pornhub and Xvideos (Statista, 2025), the high prevalence of these stereotypes in highly consumed media should be of concern.

Such stereotypical portrayals can reinforce implicit associations linking Asians with submissiveness and Black people with dominance. Specifically, it can reinforce individuals expressing more stereotypical behaviour towards members of the Asian and Black race, putting people in boxes (Duguid and Thomas-Hunt, 2014).

While this explicit material for adult entertainment is widely popular, thematic analysis reveals that pornography serves as a source of sexual learning and exploring sexual identities (Litsou et al., 2020). Especially for young adults between the age of 16 and 34, who consume pornography most frequently (Malki et al., 2021). The likelihood of exposure to and internalization of racialized sexual stereotypes through online pornography is high, starting from an early age. Examples of the 20 most searched terms on Pornhub in 2024 that reflect such stereotypes are hentai, Pinay, Japanese, Asian, Latina, Ebony and BBC (Big Black Cock),

all of which are related to ethnicity or race. Other popular search trends such as Trad(itional) Wife and Mormon Wife can be linked to the discussion of gender roles in sexual relationships, whereby especially the woman is submissive to the dominant man in heterosexual pornography (Sanchez et al., 2012; Pornhub Insights, 2024). Although these popular terms may not mean a lot by themselves, it suggests that these trends simultaneously play a role in the shaping of sexual learning and identities. As a result of the reinforcement of racialized sexual stereotypes, it influences perceptions and expectations of specific groups in society, such as Asian men and women, and Black men and women.

However, not all individuals who are exposed to stereotypes in pornography necessarily internalize those racialized sexual stereotypes as true. Several factors, such as education, have been shown to inhibit such acceptance of stereotypes. The cross-sectional study of Wodtke (2012) implies that generally, individuals with a higher education level will more likely reject racial stereotypes as opposed to individuals with a lower educational attainment. It is crucial to recognize that the relationship between education level and the rejection of such stereotypes is complex. Having awareness of untrue beliefs of stereotypes can result in a decrease in prejudice and discriminative behaviour in society, as a large body of research has previously discovered (Nelson, 2009; Steele, 2010).

Only few sociologists have investigated the impact of education level to provide insight into the rejection of racial stereotypes (Kuppens and Spears, 2014; Wodtke, 2016), however none is related to pornography. Yet, these studies mainly rely on explicit measures, rather than implicit measures, using data from large surveys, such as the General Social Survey (GSS), to collect information. A key issue with surveys, however, is their low reliability regarding topics such as racial stereotypes and racial and gender discrimination (Hout & Hastings, 2016). It suggests several types of response bias, whereby respondents consciously or unconsciously respond to survey questions or statements in a false or inaccurate manner, in order to present

themselves as socially accepted or aligning with the researcher's expectation (Stark et al., 2019; Kwak et al., 2021; Iarygina et al., 2024). Moreso, respondents may not be fully aware of their underlying attitudes.

With this in mind, drawing conclusions about people's beliefs and attitudes towards such themes should therefore be done in serious and careful manners by scholars. Methods such as surveys rely on self-reporting questionnaires, attempting to understand participants' behaviour. Yet, they primarily capture the explicit attitudes and beliefs, thus simultaneously neglecting the implicit biases and associations that individuals hold without being aware of them (Hong et al., 2021).

Therefore, using implicit measures rather than explicit measures is of great importance in social sciences, since it can determine different outcomes on the same subject. A widespread method to measure implicit views is the Implicit Association Test (IAT) by Greenwald et al. (1995). With implicit measures, the focus lies on capturing automatic responses and unconscious, implicit associations of stereotypes that participants hold (De Houwer et al., 2009). Despite extensive research on various pornographic stereotypes and their harmful consequences (Willis et al., 2022; Wei, 2023; Sanchez et al., 2012), the sociological reasoning behind the implicit associations of stereotypes projected in pornography remains underexplored in the literature.

Taking this into consideration, this study aims to conduct research on both implicit and explicit views regarding racial sexual stereotypes in pornography and determines how this is affected by the individual's education level, with the use of an IAT and questionnaire. This research focusses specifically on two popular stereotypes in pornography: Asian submissiveness and Black dominance. The choice for these particular stereotypes is due to the extensive research on these minority groups and their sexualization in pornography (Zhou & Paul, 2016c; Bao & Gries, 2024b; Thorpe et al., 2023b). While no scholar examined the

intersection of education level and Asian and Black stereotypes in pornography, this study explores how individuals of various of educational backgrounds may respond differently to these stereotypes. It investigates both unconscious implicit attitudes and explicit attitudes, as these might differ. Therefore, this study seeks to address the following research question: *"To what extent does education level of Dutch individuals shape the strength of implicit and explicit associations between race (Asian/Black) and sexual stereotypes (submissiveness/dominance) in pornography?"*

This research finds both scientific and societal relevance. First, the understanding of implicit associations in the context of a rather sensitive subject, that is stereotypes in pornography. While no scholar has done research on this topic before using an IAT, the uniqueness of this topic and method, combined with education level as independent variable, this study is expected to generate new and insightful findings in the field of sociology, with a crossover of social psychology. Second, by utilizing an IAT customized to this specific subject, this study provides a methodological advancement over using only explicit self-reporting methods such as surveys. By doing so, the results will offer a more objective measure of individuals' attitudes towards racialized sexual stereotypes across various education levels.

The societal relevance can be of value to (sex) educators and professionals, providing young adults information on the importance of rejecting stereotypes. In addition, when participants know the strength of their own implicit associations, it can help them to understand their own unconscious beliefs and attitudes towards Asian and Black men and women, resulting in possible changing behavior in real-world interactions. Lastly, since pornography is often used as a means for sexual learning, this research sheds light on existing harmful stereotypes and seeks to raise awareness on rejecting them.

2. Theoretical Framework

The theoretical framework focuses on relevant literature related to key topics of this research, to provide a better understanding of existing theories. The first theory that will be addressed is Dual process theory by Kahneman (2011), followed by a closer examination of the measurement of the Implicit Association Test (IAT) developed by Greenwald et al. (1998). The second theory is Sexual scripting theory by Gagnon & Simon (1973), which suggests that sexual behaviour is shaped by learned cultural scripts, also found in pornography. Altogether, these will offer valuable insights and form the foundation of this study.

2.1 Dual process theory

According to McGeorge et al. (1997), explicit learning is significantly linked with several factors, including intelligence. However, implicit learning is not. Kuppens and Spears (2014) presented evidence on educational differences in anti-Black attitudes among White individuals. Results from explicit self-report measures indicate that individuals with a higher educational attainment show less prejudice than individuals with a lower education. However, implicit measures reveal minimal difference in prejudice across different educational backgrounds. While implicit and explicit measures are both valuable, it is crucial to understand how they function differently.

Dual process theory suggests that the human brain has two operating systems for thinking and processing information (Kahneman, 2011). System 1, often referred to as ‘implicit’, functions fast, instinctive and automatic, whereby implicit biases are established to make quick judgements. System 2, ‘explicit’, works slower and more deliberate, and helps us to process conscious thoughts and reasoning (Kahneman, 2011; Da Silva, 2023).

One way to measure explicit attitudes towards stereotypes, is by using questionnaires that require self-reported answers by the respondent. Questions such as ‘’To what extent do you associate Asians in pornography with submissiveness?’’, ‘’To what extent do you associate Black people with dominance?’’ and ‘’To what degree do you believe these stereotypes are true?’’ help to identify explicit attitudes and beliefs. However, this method allows respondents to control the outcome by not answering to their true beliefs. Moreover, this method does not force participants to rely on System 1 by thinking fast, but rather promotes System 2, where intentional and slower thinking is allowed.

There are multiple reasons to distort answers in self-report questionnaires, especially regarding sensitive subjects as racial prejudice (Hout & Hastings, 2016). The first one is social desirability bias. Respondents may feel compelled to answer according to society’s norms and expectations and consequently want to present themselves as socially acceptable (Stark et al., 2019; Kwak et al., 2021). In relation to the topic, expressing strong beliefs in racialized sexual stereotypes can be viewed as socially undesirable. Moreover, when respondents are personally acquainted with the researcher and aware of their Asian background, they may be more inclined to answer in a more socially desirable way, suppressing potential biased attitudes to avoid negative judgement. A second common explanation for the phenomenon of not truthfully answering is demand characteristic, whereby respondents form assumptions about the hypothesis of the research and adjust their behaviour accordingly (Iarygina et al., 2024). Respondents may either attempt to confirm to the hypothesis, or conversely, may deliberately try to suppress any stereotypical behaviour. A third explanation is social identity threat, whereby individuals whose social group is negatively stereotyped, may report lower self-esteem and exhibit negative behaviour toward their group, or potentially result in stereotype conformity (Logel et al., 2009). All in all, this suggests that self-report is not always accurate (Schimmack & Diener, 2003).

The inaccuracy of explicit measures can be helped by additionally testing the implicit system. A social psychological method to reveal various unconscious associations and attitudes that people unknowingly have is an Implicit Association Test (IAT), that is first launched in 1998 by Greenwald, McGhee & Schwartz. The IAT has explored many belief associations involving racial groups, gender and sexuality themes. An example is the Race IAT, in which participants were given the task to categorize Black and White faces to positive and negative words as quickly as possible. While measuring the reaction time and mistakes, the participant's initial thoughts derived from the fast and automatic System 1 can be captured.

2.2 Sexual scripting theory

The second theory this research focuses on is Sexual scripting theory, developed in 1973 by Gagnon & Simon. It posits that sexual scripts help the individual to understand and act within sexual contexts, even suggesting to behave in a particular way that is appropriate (Simon & Gagnon, 1986; Machette & Montgomery-Vestecka, 2023; Beres, 2013). One example is holding certain expectations regarding sexual roles, such as who should initiate or take the lead during sexual activity, or who should obey. This behaviour is learned through various factors, such as media, culture and personal experiences. Thematic analysis of Litsou et al. (2020) argues that people use pornography as a way of sexual learning and exploring sexual identities. Research of Sun et al. (2014) explores the influence of pornography watching and argues that pornography creates a sexual script that will be used as a guide in real life sexual experiences. Results of this study show that men who watch pornography more frequently, will express and request similar sexual acts of their partner. However, oftentimes sexual scripts are implicitly adopted due to the exposure and high prevalence of stereotypes in pornography. The creation of implicitly adopted sexual scripts can thus go hand in hand with racial sexual stereotypes,

without individuals being aware of it. This can result in specific sexual fantasies or prejudice towards men and women from the Asian and Black race.

Two typical stereotypes of Asian women are ‘’Lotus Blossom’’ and ‘’Dragon Lady’’, narrowing down a set of expectations for Asian women to behave in such manners. A Lotus Blossom is described as an obedient, cute, docile, submissive wife that knows how to please their husband. A Dragon Lady is also sexually submissive, but rather seductive, exotic and sexy (Zhou and Paul, 2016). The content analysis of these authors reveals that pornographic videos under the category ‘Asian women’ are closely related to the Lotus Blossom stereotype, depicting a sexual script about Asians being sexually submissive. Additionally, Bao & Gries (2024) have found that this also accounts for Asian men, who are stereotyped as less muscular, assertive and dominant.

On the other hand, mainstream pornography perpetuates the focus on large genitalia and sexual performance of Black people with categories as Big Black Cock (BBC), contributing to the stereotype of animalistic and dominant behaviour in sex (Thorpe et al., 2023). In the same research of Bao & Gries (2024), Black men and women are stereotyped as more muscular, assertive and dominant, providing a unilateral narrative of black people.

All in all, this means that the high exposure of Asian-submissiveness and Black-dominant stereotypes may lead to the internalization of the sexual scripts. These sexual scripts will then be used as a guidance to associate these racial groups with such concepts, while simultaneously expecting them to behave in such manner. With the help of this theory, the impact of sexual scripts in pornography will be researched and determined by various education levels.

2.3 Hypotheses

Based on the foregoing theoretical discussion, the following hypotheses are proposed:

H1. Education level is not significantly related to implicit associations regarding Asian-submissive and Black-dominance stereotypes, as measured by the Implicit Association Test (IAT).

H2. A higher level of education is positively related with the rejection of sexual scripts, as measured by the self-report questionnaire.

These hypotheses suggest that individuals with a higher educational background explicitly reject racial sexual stereotypes and thus report lower explicit beliefs in Asian-submissive and Black-dominance, but still hold these unconscious associations at an implicit level as much as individuals with a lower educational background.

3. Methods

3.1 Research design

This research concerned a quantitative approach examining the relationship between one independent variable and two dependent variables. Whereas education level is the independent variable, results of the IAT-score and explicit attitudes questionnaire are the dependent variables. This study relied on the collection of primary data from participants and thus not using any secondary data. A brief description of the variables is as follows. First, education level was measured on ordinal scale with 12 categories (see Appendix A). Second, the IAT-score that was measured in *D*, reflects the strength of implicit association between the categories Asian, Black, submissiveness and dominance. Third, explicit attitudes of participants were measured through a small questionnaire consisting of 10 Likert-scale statements (see Appendix B).

The experiment started with an informed consent form, including a brief description of the study's purpose, the researcher, the participant's rights, privacy and ethical matters and an overview of the experiment. After agreeing to proceed, the experiment first started with a few demographic questions, followed by the IAT, and ended with a short questionnaire that captures explicit attitudes regarding sexual stereotypes in pornography. The experiment took approximately 10 minutes to complete.

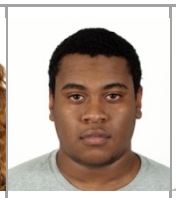
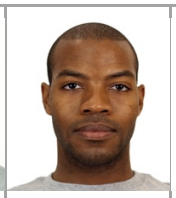
The IAT was imitated using existing adjustable software to create a new test with categories and items of choice. In the IAT, participants were instructed to match faces of Asian and Black people and/or words connected to either submissiveness or dominance. The task was to do this as quickly as possible, hereby using System 1 in the brain with fast and automatic responses. This way, the initiative association with concepts and elements of sexual stereotypes could be captured. The test consisted of five blocks of response trials and measured the reaction

time and errors when the participant chose the wrong item for the requested category. By pressing the key ‘a’ or ‘l’, the participant reacted to the face or word shown in the screen, and chose in which category the item belonged to, according to the label boxes in the screen. Block 1 and block 2 consisted of words and images, respectively. Block 3 was the congruent block in which words and images were presented together. The congruent block is considered as the easier block when participants hold a strong implicit association with the stereotypes Asian-submissiveness and Black-dominance. In block 4, images were switched sides, and block 5 was incongruent, where the task was is to pair Asian-dominance and Black-submissiveness together.

Prior to the test, an overview of the categories and the related items was shown to let the participant familiarize with the concepts. Table 1 depicts this overview with the four categories and the matching items that were used in the test. The first two categories contain facial images of the designated race. They were carefully selected from the Chicago Faces Database (CFD), displaying diverse features within each category to ensure representativeness and to maximize within-category variation (Ma et al., 2015). It is important to note that both male and female faces were used in the test, as stereotypes in pornography concerns an intersection of race and gender (Warner & Shields, 2013; Bond et al., 2021).

Table 1. *IAT categories and items*

Category	**Items**					
Asian						

Black						
Dominance	Power, Control, Aggressive, Assertive, Authority, Strong, Leader, Demanding					
Submissiveness	Soft, Passive, Obedient, Pleasing, Innocent, Weak, Fragile, Surrendering					

3.2 Target group and sampling

This study focused on various Dutch young adults between the age 18-34 years old, as this age group consumes pornography most frequently (Malki et al., 2021). Important was a variety in education levels for comparing the differences on the test outcomes. The participants were required to have a minimum age of 18 years old, due to the inability to give informed consent without parents or guardians. Reasonably, early intentionally exposures to the subject of pornography can lead to an overall long-term damaging effect on personal development (Adarsh & Sahoo, 2023).

The sample size of the test aimed at a minimum of 35 participants to ensure a great number of varieties in the education level. The experiment reached an estimate of 375+ potential participants through sharing and resharing a text message about the research, with a link to the online experiment for voluntary participation. Non-probability sampling was used as method, initially through convenience sampling via the personal network of the researcher. With the snowball effect, individuals of additional networks were invited to participate. In later stage, purposeful sampling was applied. During the process of data collection, an underrepresentation of participants with a lower education level was observed. To solve this problem, the researcher went to Grafisch Lyceum Rotterdam, an MBO college, to recruit more participants. This approach allowed for a more diverse distribution of educational backgrounds of participants crucial to this research. Data was collected between 2 and 14 May of 2025.

3.3 Data collection

The template of the IAT was available on OSF (Open Science Framework), a free and open platform for researchers to collaborate and share projects. The IAT template was developed by Scaife and Stafford in 2014, using the software program PsychoPy. After the installation of PsychoPy and downloading the template, all items for each new category were manually replaced with the correct pictures and words for this study.

In PsychoPy, various modifications were made to the rather basic template of the IAT to enhance professionalism and overall completeness of the test. This included adding a welcome screen, end screen and more detailed instructions to ensure more clarity for the purpose of the test. Furthermore, forced delays were implemented to ensure that participants read the instructions carefully, while simultaneously preventing them to continue to the next screen by accident, without having read the instructions. Establishing a professional environment in and around the test was intended to foster greater trust among participants regarding this study. The informed consent form, questionnaire for demographic questions and questionnaire for explicit attitudes were created in Pavlovia and integrated into the PsychoPy experiment.

After customization and identifying errors during pilot tests, the experiment was ready to be launched on Pavlovia.org, that was easily accessible by participants using their online web browser. A total of 40 credits was purchased and financed by the researcher. Credits were necessary to run the experiment and save results. The total investment of the credits was €11,54.

Demographic questions were asked to retrieve background information of the participants. This included age, gender, nationality, ethnicity, educational attainment, educational discipline and sexual orientation. Since the study revolves around the educational degree, participants were asked to answer the following question: ‘’What is the highest level of education you have completed?’’. The 12 ordinal categories were in ascended order from low to high (see

Appendix A). The test was conducted in English; however, answer categories were stated in both English and Dutch due to the ambiguous translation of the Dutch education system. This guaranteed clarity, as standard English descriptions could be challenging to interpret for everybody. The option for HBO and University were separated into two categories. The reason for this, is that there may be an adequate difference in age and life experience between the start and completion of the study.

For explicit attitudes, participants were asked to select the answer that best applied to each of the 10 statements on a 5-point Likert scale (see Appendix B). The answer categories ranged from Strongly disagree to Strongly agree, with a Neutral option in the middle, and a sixth option Don't know. The categories were given a value of 1 to 5 in SPSS, whereas the Don't know option, value 6, was specified as missing value. This questionnaire measured opinions and levels of agreement or disagreement with the given statements. Since there was no time restriction on the questionnaire, participants used System 2 by consciously choosing their answer. The statements were carefully formulated and checked to avoid leading or double-barrelled phrasing. Additionally, several statements included the pairings of opposite common stereotypes, i.e. Asian-dominance and Black-submissiveness, to measure contradictory sexual stereotypes. Lastly, neutral statements regarding sexual stereotype awareness and consequences were included.

3.4 Data analysis

The results of the IAT and questionnaire were analysed with statistical program SPSS. Various analyses were executed to calculate the relationship between education level, IAT-score and explicit attitudes. This included the descriptive statistics, *D*, correlation analysis, factor analysis, reliability analysis and multiple regression analysis.

3.4.1 Descriptive statistics

Descriptive statistics portray an overview of information about the sample, based on the demographic questions questionnaire. Data is presented in a table using numerical values and percentages as a visual summary that includes the mean, median, minimum, maximum and standard deviation. Additionally, descriptive statistics of the IAT-score are presented.

3.4.2 D

Results of the participant's performance on the IAT was determined by the *D* measure, that is the outcome of the difference between the incongruent and congruent block means divided by the standard deviation of all latencies in the two test blocks (Greenwald et al., 2003). Since the first publication on the IAT in 1998 by Greenwald et. al, studies have been using the conventional algorithm to determine the IAT-score. Five years later, researchers evaluated various alternative algorithms and concluded that the new measure *D* should replace the conventional method. By treating data differently with new calculations, *D* outperformed the original scoring procedure on five performance criteria, resulting in a higher implicit-explicit attitudes correlation. Moreover, *D* algorithm reduced the influence of general response speed on the IAT outcome. This means that the overall response speed did not distort the results, as the reaction time (RT) differences are standardized using the standard deviation of all RTs. Lastly, the conventional algorithm disregarded incorrect answers and set strict boundaries for reaction times, while authors of the new study calculated time penalties ranging from 200 to 1000 ms for each incorrect trial. Implementing such time penalties gained better results than IAT's without penalties, however, no specific time penalty is described as superior (Greenwald et. al, 2003)

The procedure of calculating *D* involved several steps. Each participant's *D*-score was calculated individually based on their own RTs. First, RTs smaller than 300 ms and larger than

10,000 ms were eliminated. Second, the mean RTs of block 3 (congruent) and block 5 (incongruent) were calculated using only the correct trials. Third, pooled standard deviation of both correct and incorrect trials was calculated for block 3 and 5 together. Fourth, mean RTs for block 3 and 5 were recalculated by replacing incorrect trials with the group's mean RT, plus adding a time penalty of 600 ms for each incorrect trial. Finally, *(Block 5 – Block 3) / Pooled standard deviation* was calculated to generate *D*.

A positive *D*-score indicated a stronger implicit association between the two concepts in the congruent block (block 3), which were Asian-submissiveness and Black-dominance. A negative *D*-score suggested the opposite, where an association with concept pairings from the incongruent block was stronger. *D* ranged from -2 to 2, however, -1 to 1 was most common. An interpretation of *D* was as follows: a score between 0.150-0.340 indicated a slight implicit association, 0.350-0.640 indicated a moderate association, and scores higher than 0.650 reflected a rather strong implicit association. Negative values could be interpreted similarly, but in opposite direction. Scores of 0 or close to it, suggested little to no implicit preference (Nosek & Sriram, 2007; Greenwald et. al, 2003).

3.4.3 Correlation analysis

A correlation analysis was executed to test hypothesis 1 by calculating the relation between education level and *D*. With the use of a scatterplot and Spearman's rho (ρ) this was determined. The choice for Spearman's rho was the suitability for analysing variables on ordinal scale, which cannot be realized with Pearson correlation (r). The correlation coefficient ranges between -1 and 1, where -1 indicates a perfect negative relationship and 1 indicates a perfect positive relationship. A ρ value of 0 signifies no relationship between variables (Dancey & Reidy, 2007). A scatter plot with linear least squares was used as a visual representation with dots representing data in a graph. The highest obtained level of education was displayed on the x-axis, while *D* was presented on the y-axis.

3.4.4 Factor analysis and reliability analysis

An Exploratory Factor Analysis (EFA) was executed for the explicit attitudes questionnaire to reduce the total of 10 statements into smaller dimensions or components. This method identified such underlying components that explain the relationship between those variables within the dimension. The next step was to check the reliability for each dimension with the use of reliability analysis, measured with the Cronbach's Alpha (α). As it measured the internal consistency within a set of questionnaire items, the Cronbach's Alpha should preferably be higher than 0.7, indicating a reliable measure (Nunnally, 1978).

3.4.5 Multiple regression analysis

To test hypothesis 2, a multiple regression analysis was conducted. Given the expectation that higher educated individuals are more likely to reject sexual scripts in pornography, this analysis allowed for the comparison of scores on the explicit attitudes questionnaire across various educational backgrounds. The analysis was separately conducted for each of the components.

Although this study focused on education level, it is important to recognize that factors beyond education level may influence an individual's explicit attitudes towards racialized sexual stereotypes. Therefore, three control variables were incorporated into the regression, hence the choice for multiple linear regression.

The first control variable was age, due to the wide age range among participants. A different age may lead to possible dissimilar life experiences, consequently affecting one's perspective on themes researched in this study. The second control variable was ethnic background, considering a rather high proportion of Asian participants. Since the experiment addressed stereotypical traits regarding the Asian race, this variable was additionally taken in consideration for extra careful analysis. A dummy variable was created where 0 = Not Asian and 1 = Asian. The third control variable was gender, as this could also influence the outcome.

A dummy female variable was created where 0 = Male/Other and 1 = Female. A dummy other was created where 0 = Female/Male and 1 = Other. Therefore, Male serves as the reference category. Overall, including these control variables allowed for a more accurate interpretation of data, considering potential influence of other factors than education level.

3.5 Ethics and privacy considerations

In the informed consent form, participants were asked to agree with the privacy statement regarding their right to withdraw and data being saved (see Appendix C and D for detailed information about ethics and privacy considerations, signed by the researcher and supervisor).

Participant data were filtered to include only those within the target group. Participants were required to manually enter their age in the text box, rather than selecting from pre-defined age options. The nationality question offered two options: Dutch and Other. Participants selecting Other were excluded from the analysis. All answers were saved anonymously, and no participant's information was or will be shared for any other purposes than this research.

3.6 Validity and reliability

For interpreting the findings of this study, it is essential to reflect validity and reliability of the chosen methods. Attitudes towards racialized sexual stereotypes were measured through two separate methods. Implicit attitudes were measured with an IAT that has been popular in social sciences for more than two decades (Greenwald et. al, 1995). Although the outcome can be related to behaviour, it should not be directly linked to real life behaviour decisions due to various factors. Among researchers, there has been no significant evidence that an IAT is a good predictor of an individual's behaviour at a single time point, however, it can predict behaviour on average at group level. This implies that even if an individual scores strongly on

implicit associations for common stereotypes, it does not necessarily translate into corresponding behaviour on a daily life basis.

Explicit attitudes were measured through a questionnaire regarding participants' views towards the specific combination of Asian-submissiveness and Black-dominance stereotypes and their view on stereotypes in general. A limitation of data collection through convenience sampling is the lack of representativeness, which undermines the ability to generalize. With a small sample size (N=39), the study's results are limited to the sample and may not fully represent the broader population.

4. Results

This chapter presents the results of various data analyses in order to answer the central research question of this study. First, the descriptive statistics of participants are described, which includes an overview of all participant's education level. Second, descriptive statistics of *D* are briefly discussed. Combined, a scatter plot reveals the correlation between the two variables. Third, a factor analysis and reliability analysis are conducted to analyse the outcome of the explicit attitudes questionnaire. Lastly, this is followed by a simple linear regression to understand the relation between education level and scores on explicit measures. All syntax can be found in Appendix E.

4.1 Descriptive statistics

In total, 71 participants who clicked on the link, agreed to the informed consent form. However, 39 participants fully completed the experiment, after which data was automatically saved securely. Yet, during data analysis, it was found that 27 participants had successfully completed all parts of the experiment. Running the experiment on a mobile device or tablet caused the online experiment to crash or fail to track reaction times and mistakes. Nonetheless, responses to the demographic questions and explicit attitudes statements were saved successfully on such devices. Therefore, data of 27 participants was used for the IAT analysis, while data of all 39 participants was used for the explicit attitudes analysis. The data of the 12 participants that could not be included in the IAT analysis was mainly of those with a University bachelor's and master's degree.

Table 2 firstly portrays a statistical overview of all participant's ages. The youngest participant was 18, whereas the oldest participant was 33, however most participants were

between 20-25 years old. The mean age is 23.7 and the standard deviation is 3.3 There were 9 participants aged 25, which represents the mode.

Table 2 continues with a list of categorical variables describing various demographics of participants in numbers and percentages that make up the whole sample. The goal of data collection was to have an adequate variety in participants' background and characteristics. The categories gender, educational attainment and primary field of study are more dispersed; however, educational attainment is slightly skewered to the left. Out of the 12 education level options, 9 were covered, ranging from a lower high school level to a university master's degree. Notably, the sample consists of mainly White and Asian participants, with fewer Black and Mixed individuals. A reason behind this, is that the sample likely reflects the researcher's personal network. Lastly, the sample consists predominantly of individuals identifying as heterosexual.

Table 2. *Descriptive statistics of demographics*

	N	Min	Max	Mean	Median	Mode	SD
Age (in years)	39	18	33	23.7	24	25	3.3

CATEGORICAL VARIABLES	**N**	**(%)**
Gender		
Female	20	51.3%
Male	18	46.1%
Other	1	2.6%
Nationality		
Dutch	39	100%
Ethnic background		
White	19	48.7%
Asian	14	35.9%
Black	3	7.7%
Mixed	3	7.7%
Educational attainment		
Prevocational secondary education (VMBO)	3	7.7%
Senior general secondary education (HAVO)	1	2.6%

Pre-university education (VWO)	3	7.7%
Secondary vocational education levels (MBO 2, 3 or 4)	6	15.4%
Higher vocational education (HBO year 1 or 2)	2	5.1%
Higher vocational education (HBO year 3 or 4)	8	20.5%
University bachelor's degree (WO year 1 or 2)	4	10.3%
University bachelor's degree (WO year 3)	6	15.4%
University master's degree (WO)	6	15.4%
Primary field of study or discipline		
Other	10	25.6%
Social Sciences	8	20.5%
Engineering or Technology	7	17.9%
Business or Economics	4	10.3%
Health Sciences	4	10.3%
Arts	2	5.1%
Humanities	2	5.1%
Natural Sciences	2	5.1%
Sexual orientation		
Heterosexual	36	92.3%
Queer	2	5.2%
Homosexual	1	2.6%

As previously explained in the methodology section, the IAT-score was calculated through the *D* measure, for which the formula is: *(Block 5 – Block 3) / Pooled standard deviation*. 66.7% of 27 participants had a positive *D* score, indicating that this group holds a stronger implicit association with Asian-submissiveness and Black-dominance concepts, whereas 33.3% holds an implicit association with the opposite. In Table 3, the descriptives of *D* are presented, including frequencies and interpretations of *D*.

Table 3. *Descriptive statistics of D*

	N	**Min**	**Max**	**Mean**	**Median**	**SD**
D	27	-0.730	1.185	0.250	0.313	0.561

INTERPRETATION	***D***	**FREQUENCY**
Strong implicit association	> 0.650	8
Moderate implicit association	0.350 – 0.650	3

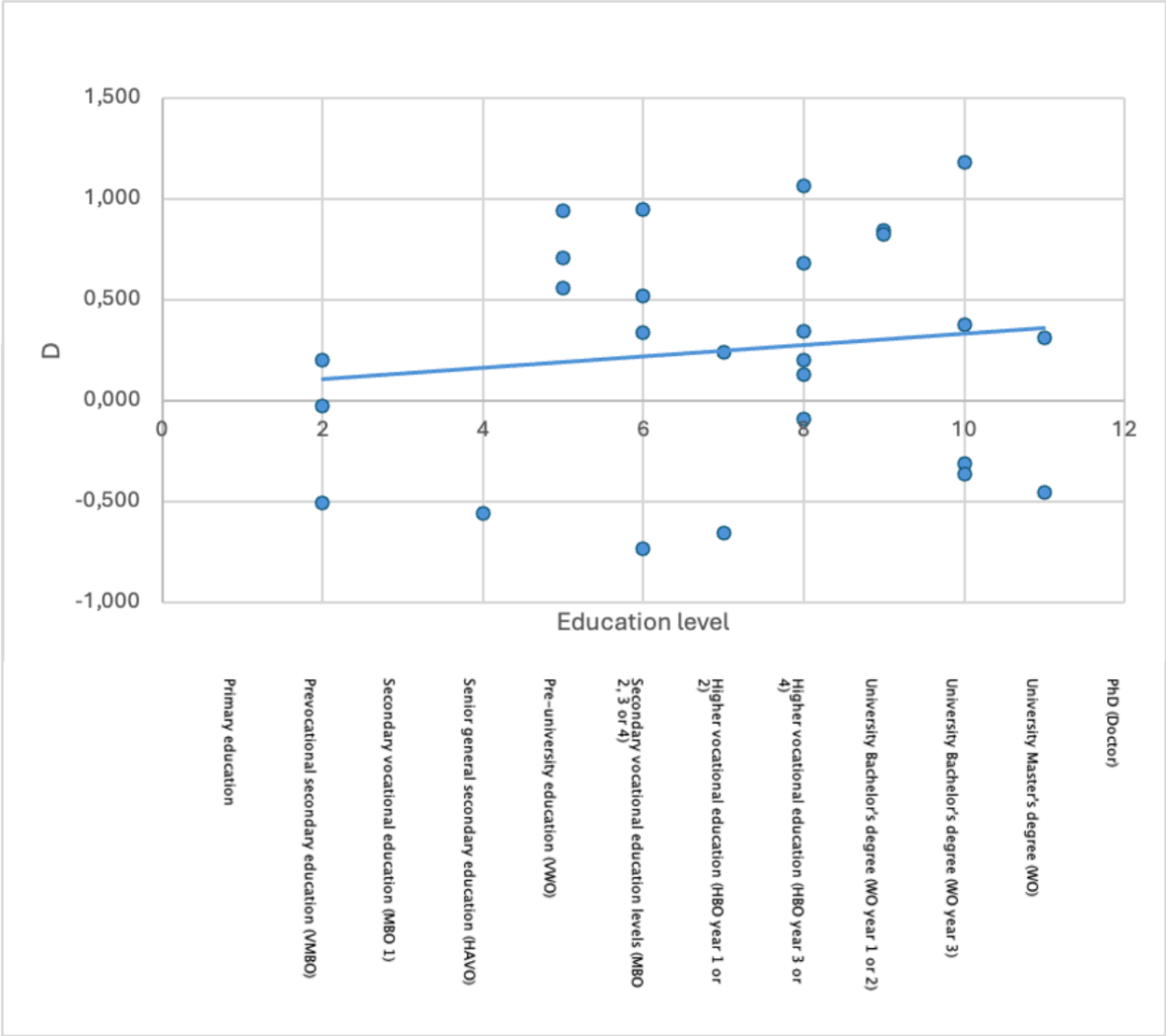
Slight implicit association	0.150 – 0.350	6
Little to no implicit association	-0.150 – 0.150	3
Slight opposite implicit association	-0.150 – 0.350	1
Moderate opposite implicit association	-0.350 – 0.650	4
Strong opposite implicit association	< -0.650	2

4.2 Correlation analysis

A Spearman's correlation was conducted to test hypothesis 1 by examining if there is a correlation between the independent variable, education level, and the dependent variable, IAT-score, also referred to as *D*. A very weak statistical relationship was found between the two variables, $\rho(27) = 0.109$, $p = 0.589$. A least square line was added for visual presentation of the regression, where $y = 0.052 + 0.028x$. Figure 1 presents a scatter plot that visually displays all participants' IAT-score.

It can be concluded that the negligible relationship is not statistically significant and provides no evidence that the level of education predicts an individual's performance on the IAT. These findings are in line with hypothesis 1.

Figure 1. *Scatter plot with least squares line for education level and D*



4.3 Factor analysis and reliability analysis

After analysing the relationship between education level and implicit attitudes, the next step was to test hypothesis 2. This was done by measuring the relationship between education level and explicit attitudes towards racialized sexual stereotypes.

An Exploratory Factor Analysis (EFA) with varimax rotation was conducted to compute the number of components in the 10-item questionnaire for explicit attitudes. Before the analysis, item 1, 3 and 6 were recoded in reverse direction. Indicated by Kaiser-Meyer-Olkin (KMO) with a value of 0.644, the data was suitable for a factor analysis due to the enough

common variance in the variables shared by the underlying factors (Field, 2009). Additionally, data scored signigicant correlation on Bartlett's Test of Sphericity, $p = < 0.001$. The scree plot revealed three components with an Eigenvalue greater than 1, suggesting three underlying constructs. These three components explain 70.6% of the total variance in the dataset.

The rotated component matrix revealed that statement 2, 4, 5 and 7 loaded strongly on component 1. This aligns with the thematic content of the statements, which all hold racialized sexual stereotypes, i.e. Asian-submissiveness and Black-dominance. Therefore, component 1 is described as the underlying construct of ''belief in racialized sexual stereotypes''. Statement 1, 8, 9 and 10 loaded strongly on component 2. These statements measured the ''general rejection of racialized sexual stereotypes and belief in equality of sexual roles across ethnic backgrounds''. Surprisingly, statement 3 and 6 loaded on a third component, rather than on component 1. Although these two statements reflect opposite racialized sexual stereotypes, i.e. Asian-dominance and Black-submissiveness, their nature is similar to statements of component 1 after recoding. With this logical reasoning in mind, together with the fact that a component typically requires at least three items to ensure reliability, statement 3 and 6 of component 3 were added into component 1. This is further discussed in detail the Discussion chapter.

The second step involved conducting a reliability analysis for each component to indicate the internal consistency and reliability. The orignial component 1 that consisted of 4 items scored higher on reliability (a = 0.834) than the renewed component 1 that consisted of 6 items ($\alpha = 0.677$). Cronbach's Alpha for component 2 was 0.712 and therefore found reliable. Table 4 portrays an overview of both components and its Cronbach's Alpha

Table 4. *Cronbach's Alpha (α) for all components*

COMPONENT	STATEMENT	UNDERLYING CONSTRUCT	CRONBACH'S ALPHA (α)
1 (old)	2, 4, 5, 7	Belief in racialized sexual stereotypes	0.834
1 (new)	2, 3 4, 5, 6, 7	Belief in racialized sexual stereotypes	0.677
2	1, 8, 9, 10	General rejection of racialized sexual stereotypes and belief in sexual role equality	0.712

4.4 Multiple regression analysis

After assessing the underlying components and measuring its reliability, the explicit attitudes questionnaire scores for each component were determined. This was done by calculating the mean score for each component and for each education level. The means ranged from 1 to 5, where 1 indicates Strongly disagree and 5 indicates Strongly agree. The Don't know responses of participants were treated as missing values and thus excluded from calculation. An overview of all means is portrayed in Table 5.

For example, the overall mean for component 2 is 4.00 across all 39 participants, indicating the average response of Agree to statements 1, 8, 9 and 10. As previously discussed, this component measured the rejection of racialized sexual stereotypes and belief in sexual role equality. Participants with a pre-university (VWO) education level scored 4.5, and thus higher than the average level of agreement compared to the whole sample. In contrast, participants with a senior general secondary education (HAVO) scored 3 on average, indicating a more neutral stance towards the statements of component 2, which is below the overall sample average.

A higher score on component 1 indicates a stronger agreement with the Asian-submissiveness and Black-dominance stereotypes, whereas a lower score indicates a more

neutral stance or disagreement to those stereotypes. A higher score on component 2 demonstrates a higher likelihood of rejecting them, while recognizing the potential of harmful consequences.

Table 5. *Means per component, specified by education level*

	COMPONENT 1 (new)	**COMPONENT 2**
MEAN	**3.29**	**4.00**
EDUCATION LEVEL		
Prevocational secondary education (VMBO)	3.64	3.42
Senior general secondary education (HAVO)	3.17	3
Pre-university education (VWO)	3.33	4.5
Secondary vocational education levels (MBO 2, 3 or 4)	2.96	4.09
Higher vocational education (HBO year 1 or 2)	3	3.5
Higher vocational education (HBO year 3 or 4)	3.41	4.18
University bachelor's degree (WO year 1 or 2)	3.63	3.90
University bachelor's degree (WO year 3)	3.56	4.17
University master's degree (WO)	2.95	3.89

After establishing the mean scores per education level for both components, the final step was conducting two separate multiple regression analyses for each component. The dependent explicit attitudes scores were investigated by education level and controlled by age, gender and ethnic background (Asian or not Asian), as shown in Table 6 and 7.

The first component, which measured the agreement with the Asian-submissive and Black-dominance stereotypes, was not found statistically significant, $F(5, 38) = 1.997$, $p = 0.105$. This model explained a very small proportion of the variance, R square = 0.232, adjusted

R square = 0.116. None of the three predictor variables were significant for the explicit attitudes score on component 1. Specifically, the unstandardized regression coefficient (B) and p value for education level (B = -0.006, p = 0.776), age (B = -0.015, p = 0.375), female (B = 0.149, p = 0.101), other (B = -0.283, p = 0.330) and ethnic background (Asian or not Asian) (B = 0.156, p = 0.095) suggest that those variables do not provide evidence to predict one's explicit attitude. The positive values for female and Asian background do suggest a tendency for females and Asian individuals to express stronger belief in the presented stereotypes, however, the unstandardized B is very small, and results are far from reaching statistical significance.

The second component, that measured the rejection of racialized sexual stereotypes and belief in sexual role equality was also not found statistically significant after comparing education level, controlled by age, gender and ethnic background, $F(5, 35) = 2.054$, p = 0.097. This model explained a very small proportion of the variance (R square 0.237, adjusted R square 0.122). The unstandardized B and p value for education level (B = 0.016, p = 0.505), age (B = 0.019, p = 0.309), female (B = 0.227, p = 0.032), other (B = -0.123, p = 0.710) and ethnic background (Asian or not Asian) (B = -0.035, p = 0.740) confirmed this. Although not statistically significant, the positive coefficients suggest that female, higher educated and individuals of a greater age have a larger tendency of having more awareness of stereotypes and a larger likelihood to reject them, whereas Asian individuals express less rejection of stereotypes.

Table 6. *Model summary*

COMPONENT	R	R SQUARE	ADJUSTED R SQUARE	DURBIN-WATSON
1 (new)	0.482	0.232	0.116	2.347
2	0.487	0.237	0.122	2.376

Table 7. *Coefficients*

DEPENDENT	INDEPENDENT	UNSTANDARDIZED B	*p*
COMPONENT 1 (new)	Education level	-0.006	0.776
	Age	-0.015	0.374
	Dummy Female	0.149	0.101
	Dummy Other	-0.283	0.330
	Dummy Asian	0.156	0.095
COMPONENT 2	Education level	0.016	0.209
	Age	0.019	0.625
	Dummy Female	0.227	0.581
	Dummy Other	-0.123	0.710
	Dummy Asian	-0.035	0.740

The findings of the multilevel regression analyses are not in line with hypothesis 2, as there appears no significant relationship between the scores on explicit attitudes questionnaire and education level, controlled by age, gender and ethnic background (Asian or not Asian).

Limitations of the IAT, questionnaire and sample will be discussed in the following chapter. Moreover, the interpretations of the results will be presented, and possible explanations will be critically examined in the Discussion.

5. Conclusion

This study aimed to answer the following research question: *"To what extent does education level of Dutch individuals shape the strength of implicit and explicit associations between race (Asian/Black) and sexual stereotypes (submissiveness/dominance) in pornography?"*. Drawing on existing literature and theoretical frameworks concerning the relationship between education and implicit and explicit attitudes towards stereotypes, this study focused specifically on prevalent race related sexual stereotypes commonly portrayed in sexual scripts in pornography. The two stereotypes this study focuses on are Asian-submissiveness and Black-dominance.

The first hypothesis posited that educational level would not be significantly related with IAT-score. Results of a Spearman's rank-order correlation was conducted and supported this hypothesis, indicating that education level indeed does not predict an individual's score on the IAT.

The second hypothesis proposed that individuals with a higher education would be more likely to reject sexual scripts, as measured through an explicit attitudes questionnaire. Contrary to this expectation, the results of two multiple regression analyses, controlling for age, gender and ethnic background, demonstrated no significant association between education level and explicit attitudes.

It can be concluded, based on both implicit and explicit measures, education level does not appear to significantly shape the strength racialized sexual stereotypes. The results of this study challenges common assumptions regarding the impact of education level on stereotypical thinking and simultaneously highlights the complexity of implicit and explicit measures for sensitive topics that comprises race, ethnicity, gender and pornography.

6. Discussion

The analysis of the quantitative data, using multiple statistical instruments, yielded several key findings. While the results of the Spearman's correlation analysis were in line with hypothesis 1, the multiple regression analyses revealed no significant support for hypothesis 2. This chapter provides an interpretation these findings, while offering possible explanations for the observed outcomes. Subsequently, the limitations of this study are discussed. The chapter will conclude with implications and recommendations for future research.

6.1 Interpretation of findings

IAT

The first noteworthy observation emerged from the IAT-score. Specifically, it was noted that several participants had a significant longer reaction time in block 3 (congruent) compared to block 5 (incongruent). There are multiple factors that may explain this. Firstly, several participants reported difficulty understanding the IAT, particularly the overall task, but also the meaning of words. This confusion may be due to a language barrier, since the experiment was conducted in English for all Dutch participants with varying English proficiency. In fact, during the test, some MBO-college students reported confusion on some English words and requested the translation for it, resulting in longer reaction times. Consequently, the combination of these factors led to an unintentionally negative *D,* indicating stronger implicit association with opposite of common stereotypes. Even after standardization, some participants had a negative score because they only fully comprehended the assignment in the latest stage of the IAT.

Factor analysis and questionnaire response patterns

The second unanticipated outcome arose in the factor analysis that loaded three components, instead of the theoretically expected two. Whereas statement 2, 4, 5, and 7 directly reflected Asian-submissiveness and Black-dominance stereotypes, statement 3 and 6 represented the opposite (Asian-dominance and Black-submissiveness). In essence, rejecting opposing stereotypes (statement 3, 6), consequently implies agreement with the more common stereotypes (statement 2, 4, 5, 7). For instance, one cannot simultaneously endorse both Black-dominance and Black-submissiveness.

Participants' responses to statement 2, 4, 5 and 7 were much more dispersed than answers from statement 3 and 6 (see Appendix F). Whereas a strong pattern is present in statement 3 and 6, a larger variety in answers for statement 2, 4, 5 and 7 is found. A possible explanation for this phenomenon is that most participants were more inclined to disagree with statement 3 and 6, since Asian-dominance and Black-submissiveness are not popular stereotypes and thus not generally believed as true. The different pattern in answers can therefore be seen as the main reason for the lower reliability of the component, after incorporating statement 3 and 6 into component 1.

Additionally, psychological mechanisms may explain why statement 2, 4, 5 and 7 were answered differently across all participants. Participants might have been more reluctant to explicitly agree with common stereotypes. By agreeing, participants would essentially think that they would present themselves as true believers of such racialized sexual stereotypes, for which they know is not socially desirable. Therefore, disagreeing with those statements may not indicate true opposition, but rather a neutral stance. Participants might not necessarily agree nor disagree with common stereotypes, however, still select 'Disagree' to avoid fully agreeing to stereotypes.

Regression analyses

Thirdly, the results of the multiple regression analyses must be interpreted in light with of dual process theory. Education level was not statistically found to be a predictor of explicit attitudes towards racialized sexual stereotypes. Even more, the unstandardized B was very small. Although not statistically significant, it is worth noting that Asian participants scored higher on component 1, suggesting a stronger belief in Asian-submissiveness and Black-dominance stereotypes. One possible reason behind this lies in the concept of social identity threat, as discussed in the theoretical framework. The stereotyping of Asian individuals for Asian participants may result in stereotype conformity, where the stereotyped group may internalize or conform to these expectations, also known as stereotype conformity.

Social desirability

Caution is warranted when interpreting the answers of the questionnaire due to potential social desirability bias. Many participants were acquaintances of the researcher or completing the experiment in the present of the researcher the MBO college visit, which both may have influenced responses of participants. Participants may have felt compelled to avoid answering to their true self by not wanting to come across as a true believer of the presented stereotypes.

Additionally, it was noted that Asian participants scored lower on component 2, although not statistically significant. The lower likelihood of rejecting racialized sexual stereotypes may be due to social identity threat and self-fulfilling prophecy. Since the high proportion of Asian participants, these results might be extra emphasized.

Moreover, few participants from the social sciences domain stated that they understood the study's purpose, reflecting demand characteristic, rather than genuine answering.

Temporal context

Lastly, the study from Kuppens and Spears (2014) that served as a foundation for this research, is dated from more than a decade ago. In this current sociopolitical climate of 2025, it is possible that an increased awareness racism, discrimination, quality, inequality and the harmful consequences of them may have contributed to a greater awareness and rejection of the presented stereotypes.

6.3 Limitations

There are limitations to this research that may have affected the reliability and validity. First, 27 of 39 participants successfully completed the IAT. Although participants were informed to use a laptop or computer, some participants overlooked this instruction and attempted to complete the experiment on their phone, resulting in a crash or reaction times and mistakes not saved. Despite this sample size (N = 27), results could have been more accurate when more participants could complete the IAT. Additionally, the confusion of participants regarding the test led to an incorrect IAT-score. Therefore, the generalizability of the IAT is limited to this sample.

A limitation for the explicit attitudes survey concerns the reliability of the components. This may be due to the relatively low number of statements, resulting in measuring problems in constructing dimensions. Statements could be more aligned.

A general limitation for this experiment is a language barrier, as participants' English proficiency differs per person, resulting in a quicker or slower understanding of words that were projected in the IAT.

6.5 Implications and suggestions for future research

There are various implications for this study, which can be modified for future research. The first implication focuses on the language of the experiment. For Dutch participants, it may be easier to conduct the experiment in the Dutch language for a better understanding of the test. This way, the IAT-scores will likely be more accurate to the implicit associations.

A second implication is the high proportion of acquaintances of the researcher participating in the research. Despite an adequate variety in education level, the importance of a large variety in ethnic background should also be highlighted for future research. In this study, a lack of Black participants resulted in a lack of perspective. For a higher reliability, this study can be replicated by conducting the experiment among different participants, in order to generate possible different results.

This study provides multiple starting points for further investigation on stereotypes in pornography. First, future studies could examine different types of racialized sexual stereotypes. Whereas this study focused on Asian-submissiveness and Black-dominance, other studies could lay their focus on various other race related stereotypes. Secondly, this study focused on a sample consisting of Dutch participants, however, it is unknown where these findings will be similar to a sample outside the Netherlands, since sociocultural dynamics vary across countries. Finally, future research could explore the relation between implicit and explicit attitudes with regard to other factors, such as participants's ethnic background.

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8. Appendices

Appendix A. Education level categorization

	DESCRIPTION
1.	Primary education
2.	Prevocational secondary education (VMBO)
3.	Secondary vocational education (MBO 1)
4.	Senior general secondary education (HAVO)
5.	Pre-university education (VWO)
6.	Secondary vocational education levels (MBO 2, 3 or 4)
7.	Higher vocational education (HBO year 1 or 2)
8.	Higher vocational education (HBO year 3 or 4)
9.	University bachelor’s degree (WO year 1 or 2)
10.	University bachelor’s degree (WO year 3)
11.	University master's degree (WO)
12.	PhD (Doctor)

Appendix B. Explicit attitudes statements

PAGE 1	
1.	Someone's ethnic background predicts how dominant or submissive someone is in sexual relationships.
2.	Asian people are often more submissive than people of other ethnic backgrounds.
3.	Black people tend to come across as more submissive than people of other ethnic backgrounds.
4.	In my opinion, Asian people are more likely to be sexually submissive rather than dominant.
5.	In my opinion, Black people are more likely to be sexually dominant rather than submissive.
PAGE 2	
6.	Asian people are often more dominant than people of other ethnic backgrounds.
7.	Black people tend to come across as more dominant than people of other ethnic backgrounds.
8.	People of all ethnic backgrounds are equally likely to be sexually dominant or submissive.
9.	Stereotypes about ethnic groups can have harmful consequences.
10.	Assumptions about dominance or submissiveness should not be based on someone's racial or ethnic identity.

Appendix C. Ethics and privacy checklist

ERASMUS UNIVERSITEIT ROTTERDAM

CHECKLIST ETHICAL AND PRIVACY ASPECTS OF RESEARCH

INSTRUCTION
This checklist should be completed for every research study that is conducted at the Department of Public Administration and Sociology (DPAS). This checklist should be completed *before* commencing with data collection or approaching participants. Students can complete this checklist with help of their supervisor.

This checklist is a mandatory part of the empirical master's thesis and has to be uploaded along with the research proposal.

The guideline for ethical aspects of research of the Dutch Sociological Association (NSV) can be found on their website (http://www.nsv-sociologie.nl/?page_id=17). If you have doubts about ethical or privacy aspects of your research study, discuss and resolve the matter with your EUR supervisor. If needed and if advised to do so by your supervisor, you can also consult Dr. Bonnie French, coordinator of the Sociology Master's Thesis program.

PART I: GENERAL INFORMATION

Project title	
Name, email of student	*Xannah Voortman, 710431xv@eur.nl*
Name, email of supervisor	*giffin@essb.eur.nl*
Start date and duration	February-June 2025
Is the research study conducted within DPAS?	YES ~~– NO~~

PART II: HUMAN SUBJECTS

1.	Does your research involve human participants? If 'YES': does the study involve medical or physical research?	YES ~~– NO~~ ~~YES –~~ NO
2.	Does your research involve field observations without manipulations that will not involve identification of participants?	~~YES –~~ NO
3.	Research involving completely anonymous data files (secondary) data that has been anonymized by someone else).	~~YES –~~ NO

PART III: PARTICIPANTS

1.	Will information about the nature of the study and about what participants can expect during the study be withheld from them?	~~YES –~~ NO
2.	Will any of the participants not be asked for verbal or written 'informed consent,' whereby they agree to participate in the study?	~~YES –~~ NO
3.	Will information about the possibility to discontinue the participation at any time be withheld from participants?	~~YES –~~ NO
4.	Will the study involve actively deceiving the participants?	YES ~~– NO~~

Note: almost all research studies involve some kind of deception of participants. Try to think about what types of deception are ethical or non-ethical (e.g. purpose of the studyis not told, coercion is exerted on participants, giving participants the feeling that they harm other people by making certain decisions, etc.).

5. Does the study involve the risk of causing psychological stress or negative emotions beyond those normally encountered by participants? ~~YES~~ – NO
6. Will information be collected about special categories of data, as defined by the GDPR (e.g. racial or ethnic origin, political opinions, religious or philosophical beliefs, trade union membership, genetic data, biometric data for the purpose of uniquely identifying a person, data concerning mental or physical health, data concerning a person's sex life or sexual orientation)? YES – ~~NO~~
7. Will the study involve the participation of minors (<18 years old) or other groups that cannot give consent? ~~YES~~ – NO
8. Is the health and/or safety of participants at risk during the study? ~~YES~~ – NO
9. Can participants be identified by the study results or can the confidentiality of the participants' identity not be ensured? ~~YES~~ – NO
10. Are there any other possible ethical issues with regard to this study? ~~YES~~ – NO

If you have answered 'YES' to any of the previous questions, please indicate below why this issue is unavoidable in this study.

4: The aim of the IAT is to test the unconscious bias with regard to typical sexual stereotypes in pornography. In this test, the participant is asked to categorize the easy associated categories with each other. To test the implicit associations, the categories will be mixed with each other, which might leave the respondent in confusion in the beginning, since the task will then be to match items that are not often associated with each other.

6: Demographic information will be collected. This includes the individuals age, gender, ethnicity, educational attainment, educational discipline, employment status, career and sexual orientation. It will be collected defined by the GDPR.

What safeguards are taken to relieve possible adverse consequences of these issues (e.g., informing participants about the study afterwards, extra safety regulations, etc.).

Participants will beforehand be informed about the aim of the study and the IAT. The participant also needs to agree to partaking in my research and that their data will be collected for research purposes only. Furthermore, participants can wish to discontinue the test at any time.

Are there any unintended circumstances in the study that can cause harm or have negative (emotional) consequences to the participants? Indicate what possible circumstances this could be.

No.

Please attach your informed consent form in Appendix D.

PART IV: SAMPLE

1. Where will you collect or obtain your data? *Pavlovia and GitLab*
2. What is the (anticipated) size of your sample? *35 participants*

3.	What is the size of the population from which you will sample?	*Any Dutch person between 18 and 34 years old*

PART V: DATA STORAGE AND BACKUP

1.	Where and when will you store your data in the short term, after acquisition?	*Pavlovia*
2.	Who is responsible for the immediate day-to-day management, storage and backup of the data arising from your research?	*Pavlovia*
3.	How (frequently) will you back-up your research data for short-term data security?	*The data will be backed up automatically by Pavlovia every day.*
4.	In case of collecting personal data how will you anonymize the data?	*Names will not be used in the research. Since the data is secured, the results of the IAT will not become available for anyone but me.*

PART VI: SIGNATURE

Please note that it is your responsibility to follow the ethical guidelines in the conduct of your study. This includes providing information to participants about the study and ensuring confidentiality in storage and use of personal data. Treat participants respectfully, be on time at appointments, call participants when they have signed up for your study and fulfil promises made to participants.

Furthermore, it is your responsibility that data are authentic, of high quality and properly stored. The principle is always that the supervisor (or strictly speaking the Erasmus University Rotterdam) remains owner of the data, and that the student should therefore hand over all data to the supervisor.

Hereby I declare that the study will be conducted in accordance with the ethical guidelines of the Department of Public Administration and Sociology at Erasmus University Rotterdam. I have answered the questions truthfully.

Name student: Xannah Voortman

Date: 22 March 2025

Name (EUR) supervisor: Michael Giffin

Date: 21-3-2025

Appendix D. Informed consent document

INFORMED CONSENT FORM	
Description details of the data controller's representative	Name: Xannah Voortman Email: 710431xv@eur.nl Affiliated with ESSB faculty of EUR
Data protection officer	For questions regarding this research, an email can be sent to 710431 xv@eur.nl. For concerns regarding privacy or ethical matters, you may contact the university's Data Protection Officer at privacy@eur.nl.
Legitimate interests pursued by the controller	This research is conducted by Xannah Voortman as part of the final thesis for the MSC in Sociology, under the supervision of the Erasmus School of Social and Behavioural Sciences (ESSB) at Erasmus University Rotterdam.The research project is part of the last course of the master thesis, in which the student applies skills and demonstrates knowledge acquired during the master.
Who will have access to the data	Xannah Voortman, the researcher. Data is saved on my laptop that has a lock, on Pavlovia account that requires a password and on Gitlab, where data is stored privately.
Data storage	The data will be kept until the duration of the master thesis with an extension of two months, that is until August 2025. Respondents will have the right to: access to their data; rectify, erase or restrict the processing of their personal data; withdraw consent at any time; lodge a complaint with a supervisory authority.
Special categories	''Your participation is entirely voluntary. You may withdraw from the study at any time without providing a reason and without any consequences. All data collected will be kept strictly confidential and used exclusively for academic research purposes. No personal identifiers will be collected, and your participation will remain fully anonymous. Participation is only permitted for Dutch individuals aged between 18 and 35 years. By participating, you consent to the

	processing of the following personal data: age, gender, education level, racial origin, and sexual orientation.''
	All information provided to the respondent will be concise, transparent, presented clearly without using academic jargon and is Intelligible and easily accessible (Article 12 GDPR).

Appendix E. Syntax SPSS

```
*Descriptives age variable.
DESCRIPTIVES VARIABLES=age
  /SAVE
  /STATISTICS=MEAN STDDEV VARIANCE RANGE MIN MAX.


*Descriptives demographic questions.
FREQUENCIES VARIABLES=age gender nationality ethnic_background education_level
discipline
    sexual_orientation
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN MEDIAN MODE
  /ORDER=ANALYSIS.
OUTPUT MODIFY
  /SELECT TABLES
  /IF COMMANDS=["Frequencies(LAST)"] SUBTYPES="Frequencies"
  /TABLECELLS SELECT=[VALIDPERCENT CUMULATIVEPERCENT]
APPLYTO=COLUMN HIDE=YES
  /TABLECELLS SELECT=[TOTAL] SELECTCONDITION=PARENT(VALID MISSING)
APPLYTO=ROW HIDE=YES
  /TABLECELLS SELECT=[VALID] APPLYTO=ROWHEADER UNGROUP=YES
  /TABLECELLS SELECT=[PERCENT] SELECTDIMENSION=COLUMNS
FORMAT="PCT" APPLYTO=COLUMN
  /TABLECELLS SELECT=[COUNT] APPLYTO=COLUMNHEADER REPLACE="N"
  /TABLECELLS SELECT=[PERCENT] APPLYTO=COLUMNHEADER REPLACE="%".
```

```
*Descriptives of D scores.
DESCRIPTIVES VARIABLES=D_score
  /SAVE
  /STATISTICS=MEAN STDDEV VARIANCE RANGE MIN MAX.

*Spearman correlation for education level and D, two-tailed.
NONPAR CORR
  /VARIABLES=D_score education_level
  /PRINT=SPEARMAN TWOTAIL NOSIG FULL
  /MISSING=PAIRWISE.

*Scatter plot with education level on X axis and D score on Y axis.
GRAPH
  /SCATTERPLOT(BIVAR)=education_level WITH D_score
  /MISSING=LISTWISE.

*Factor analysis for explicit attitudes questionnaire with recoded items.
FACTOR
  /VARIABLES explicit_1_recoded explicit_2 explicit_4 explicit_5 explicit_7 explicit_8
explicit_9
    explicit_10 explicit_3_recoded explicit_6_recoded
  /MISSING LISTWISE
  /ANALYSIS explicit_1_recoded explicit_2 explicit_4 explicit_5 explicit_7 explicit_8
explicit_9
```

```
  explicit_10 explicit_3_recoded explicit_6_recoded
 /PRINT INITIAL CORRELATION SIG KMO EXTRACTION ROTATION
 /PLOT EIGEN
 /CRITERIA MINEIGEN(1) ITERATE(25)
 /EXTRACTION PC
 /CRITERIA KAISER  ITERATE(25)
 /ROTATION VARIMAX
 /METHOD=CORRELATION.

*Reliability analysis component 1 (old): statement 2, 4, 5 and 7.
RELIABILITY
 /VARIABLES=explicit_2 explicit_4 explicit_5 explicit_7
 /SCALE('ALL VARIABLES') ALL
 /MODEL=ALPHA
 /STATISTICS=SCALE CORR
 /SUMMARY=TOTAL.

*Reliability analysis component 1 (new): statement 2, 3 (recoded), 4, 5, 6 (recoded) and 7.
RELIABILITY
 /VARIABLES=explicit_2 explicit_3_recoded explicit_4 explicit_5 explicit_6_recoded
explicit_7
 /SCALE('ALL VARIABLES') ALL
 /MODEL=ALPHA
 /STATISTICS=SCALE CORR
 /SUMMARY=TOTAL.
```

```
*Reliability analysis component 2: statement 1, 8, 9 and 10.
RELIABILITY
  /VARIABLES=explicit_1_recoded explicit_8 explicit_9 explicit_10
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=SCALE CORR
  /SUMMARY=TOTAL.

*Compare means per education level for component 1 (new).
MEANS TABLES=explicit_2 explicit_3_recoded explicit_4 explicit_5 explicit_6_recoded
explicit_7 BY
    education_level
  /CELLS=MEAN COUNT.

*Compare means per education level for component 2.
MEANS TABLES=explicit_1_recoded explicit_8 explicit_9 explicit_10 BY education_level
  /CELLS=MEAN COUNT.

*Regression for mean scores component 1 (new) and education level, controlled by age,
gender and ethnic background.
REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE
```

```
  /CRITERIA=PIN(.05) POUT(.10) TOLERANCE(.0001)
  /NOORIGIN
  /DEPENDENT mean_component1_new_recoded
  /METHOD=ENTER education_level age gender_woman gender_other ethnic_asian
  /SCATTERPLOT=(*ZRESID ,*ZPRED)
  /RESIDUALS DURBIN HISTOGRAM(ZRESID).
```

*Regression for mean scores component 2 and education level, controlled by age, gender and ethnic background.

```
REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE
  /CRITERIA=PIN(.05) POUT(.10) TOLERANCE(.0001)
  /NOORIGIN
  /DEPENDENT mean_component_2
  /METHOD=ENTER education_level age gender_woman gender_other ethnic_asian
  /SCATTERPLOT=(*ZRESID ,*ZPRED)
  /RESIDUALS DURBIN HISTOGRAM(ZRESID).
```

Appendix F. Answers explicit attitudes questionnaire

Table F1. *Component 1*

STATEMENT 2	STATEMENT 3 (recoded)	STATEMENT 4	STATEMENT 5	STATEMENT 6 (recoded)	STATEMENT 7
Disagree	Disagree	Agree	Strongly agree	Agree	Disagree
Disagree	Agree	Strongly disagree	Strongly disagree	Agree	Neutral
Agree	Agree	Disagree	Disagree	Agree	Neutral
Disagree	Agree	Disagree	Disagree	Neutral	Neutral
Disagree	Agree	Don't know	Don't know	Agree	Disagree
Neutral	Agree	Disagree	Disagree	Agree	Disagree
Agree	Agree	Agree	Neutral	Strongly agree	Neutral
Disagree	Agree	Disagree	Disagree	Agree	Disagree
Agree	Agree	Agree	Strongly agree	Agree	Strongly agree
Disagree	Agree	Disagree	Strongly disagree	Agree	Disagree
Disagree	Disagree	Neutral	Agree	Agree	Agree
Strongly disagree	Strongly agree	Strongly disagree	Strongly disagree	Strongly agree	Strongly disagree
Neutral	Agree	Disagree	Disagree	Neutral	Disagree
Agree	Agree	Agree	Agree	Agree	Agree
Disagree	Agree	Agree	Agree	Agree	Agree
Agree	Agree	Agree	Agree	Agree	Neutral
Agree	Agree	Agree	Neutral	Agree	Agree
Strongly disagree	Neutral	Agree	Agree	Neutral	Neutral
Agree	Agree	Agree	Agree	Agree	Agree
Disagree	Agree	Disagree	Disagree	Agree	Agree
Neutral	Agree	Disagree	Disagree	Neutral	Neutral
Disagree	Agree	Disagree	Disagree	Agree	Disagree
Disagree	Neutral	Disagree	Disagree	Agree	Disagree
Neutral	Agree	Don't know	Don't know	Agree	Agree
Strongly agree	Agree	Strongly agree	Neutral	Agree	Neutral
Agree	Agree	Agree	Agree	Strongly agree	Strongly agree
Agree	Agree	Agree	Agree	Agree	Agree
Disagree	Agree	Disagree	Agree	Neutral	Agree
Disagree	Neutral	Neutral	Strongly agree	Disagree	Agree
Agree	Agree	Disagree	Disagree	Agree	Neutral
Agree	Neutral	Agree	Agree	Agree	Neutral
Agree	Disagree	Don't know	Don't know	Agree	Agree
Disagree	Agree	Neutral	Neutral	Agree	Disagree
Agree	Neutral	Agree	Agree	Agree	Agree
Neutral	Agree	Agree	Agree	Agree	Agree
Don't know	Don't know	Neutral	Agree	Neutral	Neutral
Neutral	Neutral	Agree	Neutral	Agree	Neutral
Disagree	Agree	Disagree	Strongly disagree	Agree	Disagree
Agree	Don't know	Agree	Agree	Don't know	Agree

Table F2. *Component 2*

STATEMENT 1 (recoded)	STATEMENT 8	STATEMENT 9	STATEMENT 10
Agree	Disagree	Neutral	Neutral
Strongly agree	Agree	Strongly agree	Strongly agree
Agree	Agree	Strongly agree	Strongly agree
Neutral	Strongly agree	Agree	Neutral
Agree	Agree	Strongly agree	Strongly agree
Agree	Disagree	Disagree	Disagree
Agree	Agree	Agree	Agree
Agree	Agree	Agree	Strongly agree
Neutral	Disagree	Strongly agree	Strongly agree
Agree	Strongly agree	Strongly agree	Strongly agree
Disagree	Neutral	Neutral	Neutral
Strongly agree	Strongly agree	Strongly agree	Strongly agree
Agree	Agree	Agree	Agree
Disagree	Strongly agree	Strongly agree	Disagree
Disagree	Disagree	Strongly agree	Neutral
Agree	Agree	Strongly agree	Strongly agree
Neutral	Disagree	Agree	Agree
Agree	Strongly agree	Strongly agree	Strongly agree
Neutral	Don't know	Agree	Strongly agree
Agree	Strongly agree	Strongly agree	Strongly agree
Agree	Agree	Agree	Strongly agree
Agree	Agree	Strongly agree	Strongly agree
Strongly agree	Strongly agree	Agree	Strongly agree
Don't know	Agree	Agree	Strongly agree
Neutral	Disagree	Strongly agree	Agree
Disagree	Strongly disagree	Strongly agree	Don't know
Strongly agree	Agree	Agree	Strongly agree
Agree	Agree	Strongly agree	Strongly agree
Agree	Strongly agree	Strongly agree	Strongly agree
Agree	Agree	Strongly agree	Agree
Disagree	Disagree	Agree	Agree
Don't know	Agree	Don't know	Agree
Agree	Agree	Agree	Strongly agree
Agree	Agree	Agree	Agree
Neutral	Neutral	Agree	Agree
Agree	Strongly agree	Agree	Strongly agree
Agree	Neutral	Agree	Don't know
Strongly agree	Disagree	Agree	Agree
Neutral	Neutral	Don't know	Agree