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**NTNU**
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**PSY2900:** Bachelor thesis in Psychology

**Time and place:** Spring 2023,

Institute of psychology, NTNU Trondheim

**Supervisor:** Marius Stavang

## Preface

This thesis marks the end of my stint as a psychology bachelor student here at NTNU. It's been a great journey, with great experiences, and great people. I have been part of a bigger project with about 15 people, which focused on developing an instrument for either romantic seeking, acceptance, or rejection. The group had some fun and interesting discussions on the topic of romance, and its driving forces throughout the semester. It has been a very fun and educational project to be a part of. Even though our thesis statement as a group was more or less the same, we had individual influence when creating the instrument, and how we wanted to validate it. We all created our own hypotheses based on earlier theories.

Before leaving you with my work, I would like to offer my gratitude to the people who have helped me along the way. A big thanks to my supervisor Marius Stavang, who provided great insight into the research topic, and guided me when needed. A big thanks to my parents, who as always, gave me great support when they could. Also, a final thanks to my friends for keeping me sane, while working on this project.

# Abstract

This study sought to create a valid instrument capable of measuring romantic acceptance among singles, through developing a scale for romantic-sexual acceptance. The overarching goal is that such an instrument can be used as a valid instrument for measuring romantic acceptance in further research. It is also a hope that the insight provided by this study can give insight into romantic acceptance as a phenomenon. The questionnaire was created through the ACT nomination method, where different behaviors were turned into items in the questionnaire. The sample for this study consisted of 452 single students at NTNU, who answered a questionnaire. A factorial analysis gave us a 3-factorial structure, with 13 items. The factorial structure`s reliability was tested through using Cronbach's alpha and showed solid reliability. The instruments' validity was measured through a series of hypotheses. The hypothesizes gave mixed results, with 3 of them correlating significantly in the direction that was predicted, while the 3 others did not give the results that was predicted.

The desire for interpersonal attachment is one of the most well-known and integrative constructs currently available in our search to understand human nature (Baumeister & Leary, 1995). From an evolutionary perspective, humans have faced two major challenges: survival and reproduction. Forming social bonds and actively trying to find an ideal mate has proven successful strategies to overcome those challenges, making both social and romantic acceptance important for us humans. (Zhang et al., 2015). Many theorists suggest human beings have prospered as a species only because we lived in groups, and that natural selection favored those who behaved in ways that led to social acceptance (Leary et al., 1995). In earlier times, forming interpersonal connections could be beneficial in competing for scarce resources, making it a vital part of survival (Baumeister & Leary, 1995; Ainsworth, 1985). Therefore, we humans seem to have developed strong emotional responses to social bonds, to the degree where we seem to be born with the biological need for positive response, from people with whom we share a social bond with (Uddin et al, 2006). The lack of meaningful relationships is linked to different effects on health and well-being in general. Many of the strongest feelings people experience, both positive and negative, are linked to belonging. (Baumeister & Leary, 1995). When individuals experience stressful or threatening events, they often turn to other people they feel a bond to, for comfort and support (Collins & Feeney, 2000). The need for social acceptance, therefore, is engrained in most of us, and serves as a motivational driving force to act in certain ways that we deem beneficial to acquire and maintain these relationships.

Furthermore, a close romantic attachment to a partner seems to have benefits that differ from other types of social bonds (Baumeister & Leary, 1995) making romantic acceptance a form of acceptance that is significant to most. People use romantic acceptance as a source of self-confidence and self-worth, through compensating for their shortcomings in different arenas, by reminding themselves that their romantic partner loves and values them (Murray et al, 2001). Sexual/romantic relationships have been one of the main strategies for survival and reproduction and are therefore an important driving force in our motivational systems (Zhang et al., 2015). Sexual selection is the causal process of the evolution of characteristics that evolve into a reproductive advantage. Whatever these characteristics evolve to be, they lead to

success in the mating market (Buss, 1995). Everyone alive today descends from people who managed to successfully acquire romantic acceptance. Simply put, those who fail to attract a mate fail to become ancestors (Buss & Schmitt, 1993).

*The sociometer theory*

Because acceptance by others has been so historically important, it is thought that we humans have developed biopsychological mechanisms that create an emotional response to acceptance and rejection. Initiating positive emotions when we feel acceptance, and negative responses when we feel rejected. This mechanism has been characterized as a sociometer, that carefully monitors our social surroundings for cues of acceptance and rejection (Leary, 2015). It has been proven that the neural region of activity for the sociometer in the same regions that are associated with physical pain, explaining why we experience pain when we feel rejected. Activity in these regions is also associated with changes in people's feelings about themselves, linking romantic acceptance directly to self-esteem (Leary, 2015). Self-esteem is very important, as it is a huge contributor to positive thoughts and emotions regarding the environment around us, thus creating a buffer against feelings of anxiety, and enhancing coping and physical health (Leary et al., 1995). People who possess low self-esteem experience virtually every negative emotion more than people with high self-esteem. Taking this idea further, one could argue that the need for self-esteem reflects the need to avoid social exclusion, and that self-esteem emerged from primitive affective motivational mechanisms to ensure interpersonal acceptance (Leary et al., 1995). Showing just how potent romantic acceptance can be to our wellbeing as humans.

*The act nomination*

Understanding the phenomenon of romantic acceptance is an important field of study. Despite this, there hasn't been an overwhelming amount of research in the field. An important aspect of understanding human mating strategies and the consequences romantic acceptance has for the individual, is to be able to reliably measure romantic acceptance. There is a need to create and validate such an instrument, as there are very few, if any, such instruments that exist so far. This study sought out to do just this. The measurement was created by using the ACT

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nomination. The theory behind the ACT nomination method is to identify behaviors associated with a psychological phenomenon. Furthermore, the ACT nomination method is said to be a good method of investigating a phenomenon we know very little about (Buss, 1983). In this case the ACT nomination method was used to create an instrument for measuring romantic acceptance. To validate this new instrument, earlier and already validated instruments were used, to see if the new instrument correlates significantly in areas where earlier theories in the field, predict it should. A series of hypotheses were created based on these previous studies.

*Acceptance and romantic loneliness*

As explained in the sociometer theory, romantic acceptance is important to us humans, and therefore we have evolved different emotional reactions to acceptance and rejection. One of the hypothesized emotional reactions to less acceptance, is to feel lonely. We feel loneliness as a signal that we aren't experiencing enough social acceptance. The lack of a romantic partner may be an important casual factor for the individual's feeling of loneliness. A study from the United States showed that being in or starting a new romantic relationship seemed to work as an anti-loneliness pill for loneliness (Seepersad et al, 2008). An important distinction though, should be made between general loneliness and romantic loneliness. An individual can be surrounded by friends and family all the time, but still feels a sense of romantic loneliness, that only a romantic relationship can eliminate (DiTomassi et al, 2004). Involuntary single individuals report a higher level of romantic loneliness than all other groups, also those who claim to be voluntary single (Adamczyk, 2017; Apostolou et al, 2019). A statement that makes rational sense, but still important to look at when validating our new measurement. H1 then is: Lower levels of romantic acceptance will lead to higher levels of romantic loneliness.

*Personality and romantic acceptance*

The innate motivation to reproduce, and to reproduce in the best possible way for our genes to pass on, lies in all of us (Buss, 1995). Neither women nor men prefer all members of the opposite sex equally. We all have different characteristics we prefer over others when we look for a mate. Nonetheless, some characteristics stand out as bigger positives or negatives for obtaining romantic acceptance on a group level (Buss, 1989). Findings also suggest that partner

selection could shape personality patterns in humans, through natural selection (Alvergne et al, 2010), making it important to look at which personality traits are most preferred when looking for a partner.

Multiple studies over the years have consistently singled out high extraversion as having positive linear relationship with sexual frequency for both genders (Alvergne et al, 2010; Buss & Barnes, 1989; Figuredo et al, 2006; Liu et al, 2018; Whyte et al, 2019). Studies also show that people tend to want a partner that is more extraverted than themselves (Figuredo et al, 2006). There is no reason to believe our data should prove otherwise, giving rise to H2; Extraversion will be a positive trait for gaining romantic acceptance. High Extraversion is linked with more social interactions, more risk-taking, and more positive emotions. Much of the reason then, for extraversion to have a positive correlation with sexual frequency, comes from increased contact with potential partners, and more risk-taking in making a move on potential partners (Kennair & Hagen, 2015, s. 32). Being an incel is a shortened term for a person who wishes they had a sexual/romantic partner but is unable to obtain this. Studies show that people who fall in this category appeared to have significantly lower extraversion than those who engaged in sexual activities more frequently (Grunau et al, 2022). Especially in men, extraversion was found to be a strong predictor of high social status (Alvergne et al, 2010). Women have traditionally favored men of higher status, given the increased resources, and therefore increased survival chances of genes.

Being reliable correlates with being high in the conscientiousness trait (Kennair & Hagen, 2015, s. 112). Being reliable was the fourth most valued trait in a study that evaluated mate characteristics (Figuredo et al, 2006), and most singles want a partner that has a higher level of conscientiousness compared to themselves (Liu et al, 2018) High conscientiousness coupled with high extraversion showed to have a positive correlation to sexual activity, while having low on both results in predominantly lower frequencies of sexual activity (Whyte et al, 2019). Having a stable and reliable partner creates a stable and consistent interpersonal bond and leads to greater commitment to the relationship, making it less likely that said partner would leave you and break off the relationship (Sumter et al, 2013) Being romantically rejected can cause a lot of distress and doubts and is therefore something we as humans naturally try to

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avoid (Leary, 2001). Reliability should be a very much sought after trait in a partner. H3 states that being reliable is a positive trait for both genders in gaining romantic acceptance.

*Gender differences*

Biological sex is important to look at when investigating romantic acceptance, because men and woman differ in their fundamental reproductive biology (Buss & Schmitt, 1993). Studies show that sex is a larger predictor in mating strategies than any personality trait (Schmitt & Shackelford, 2008). Men and women have faced different adaptive survival challenges throughout evolution. Women, for example, have faced the problem of childbirth, something that men never have never had to deal with. They also needed to find a mate capable of providing for them when they were pregnant and more vulnerable. Men on the other hand have faced the problem of paternity uncertainty. It is predicted that to overcome these adaptive challenges, men and women have developed differences in personality traits, and mating strategies on a group level (Buss, 1995).

A large difference between the two sexes is that females invest way more into the offspring than males do (Buss, 1995; Lippa, 2010). Women must go through nine months of pregnancy, and care for the child through nurturing and breastfeeding, while men's obligatory investment stops after the sexual act. Before modern contraception's, women ran the risk of going through this after every sexual act. Therefore, women are choosier in who they mate with. Making sure they find a partner with the best possible genes and resources to invest in their offspring (Buss & Schmitt, 1993). Men on the other hand, did not have to invest equally much in offspring, making the direct costs of sexual acts much less pertinent for men. Before today's modern DNA tests, men also had to deal with the paternity uncertainty. Due to this, gaining access to as many sexual partners as possible, to maximize the chances of your genes passing on to future generations, became an important mating strategy for men. In the same notion, chastity in women would provide the best cue for men to be sure that the offspring were their own (Buss, 1989). Consequently, a good mating strategy to attract partners for women, would be to keep the number of sexual partners as low as possible, before getting a male to invest in her. These strategies create a gender difference in openness towards casual sex, with men being more

open to having one or multiple sex partner without commitment. (Buss & Schmitt, 1993; Symons, 1979). In fact, in a study where people were approached by an attractive stranger asking for sex, 75% of men complied to the request, while close to 0% of females complied. (Clark & Hatfield, 1989). We suspect to see the same tendencies in our data, with H4 stating; that men who experience high romantic acceptance would be more open to having multiple partners without commitment, than women who experience high romantic acceptance.

Studies show that agreeableness and neuroticism are the personality traits where the two sexes differ the most (Hyde, 1996). H5 proposes that high agreeableness is a bigger positive for females to have as a trait than men, regarding romantic acceptance. High agreeableness correlate with the number of offspring that females have, but not with the number of offspring males have. In fact, males with high extraversion and low agreeableness are the ones who report the highest frequency of sexual activity (Whyte et al, 2019). Personality-wise, men tend to naturally have higher levels of aggressiveness, risk-taking, and status-seeking. Being less agreeable has been linked with more social dominance (Paulhus and Williams, 2002), which can help acquire more social status and power. And as women tend to favor men with high status and resources, to make sure that their offspring is well taken care of (Buss & Schmitt, 1993), being low in some aspects of agreeableness might be favorable for men. Females on the other hand tend to have higher levels of nurturance and tender mindedness, that evolved as good traits to have when fostering children (Hyde, 1996). Some of the sub-categories of agreeableness is tender mindedness and sympathy, making the case that women with high agreeableness will experience more romantic acceptance. Even though some sub-categories of agreeableness such as altruism and trust are positives for both genders (Buss & Barnes, 1986), being high on some sub-categories for men, such as being too cooperative, modest, and sympathetic, can halt their quest for that high status, which is seen as so valuable to females.

H6 proposes that women with above average neuroticism will report less romantic acceptance, but not have fewer romantic encounters. As stated over, neuroticism is one of the traits with the biggest difference among the two sexes, with reported higher female neuroticism in almost every country (Hyde, 1996). If we buy into the idea that partner selection shape our personality traits, maybe scoring above average on neuroticism won`t have that much impact on mate

value for women. One study in rural Senegal showed that neuroticism is associated with a higher number of children and that intermediate levels of neuroticism was associated with the maximum reproductive success (Alvergne et al, 2010). Meanwhile for men, high neuroticism had a stronger negative effect on their romantic acceptance ((Whyte et al, 2019), and incels scored significantly higher on neuroticism than non-incels (Grunau et al, 2022). A theory behind this is that neurotic women tend to seek more sexual activity than others, as a way of seeking validation. In rural Senegal, this will produce more children. However, it may not be as visible in areas of the world where modern contraception is widespread (Alvergne et al, 2010). Indeed, earlier theories on attachment anxiety, which correlates with neuroticism, shows an increased sexual motivation (Eysenck, 1971). Other theories behind the increased sexual seeking amongst women with high neuroticism, is because neuroticism is linked to competitiveness, and women could then seek to outcompete their peers in societies and cultures where sexual activity is highly valued (Nettle, 2006).

**Method**

*Design and sample*

The sample consisted of 452 individuals, not in a relationship, that were voluntarily taking part in our survey. The sample was a convenience sample, picking the participants that was easiest to access, and closest in proximity. 292 (64,6%) were female and 159 (35,2%) were male, with one participant not stating their sex. The age of the participants, *M* = 22.15, *SD* = 2.84, varied from 18 to 40 years old. All the participants in the survey were students from NTNU. 393 (87.1%) participants reported being heterosexual, while 9 (2%) homosexual, 38 (8.4%) bisexuals, and 11 (2,4%) had another sexual orientation. 78 (%) stated that their highest degree of education was high school, (19,5) had a bachelor's degree, and (2,4%) had a master's degree or higher.

*Procedure*

The data sampling was done by presenting an invitation to a questionnaire at different lectures at NTNU, posting the link to the questionnaire on blackboard, and hanging up posters of the questionnaire with a QR code throughout the university campus. At the final slide of the questionnaire, participants were asked if they gave their consent to use their answers in our study. The ones who said "no" to this are excluded from the study. It was not necessary with approval from NSD, as the questionnaire was anonymous, which makes it within their guidelines. The bachelor project group the year prior to us had used the "act nomination" method to identify behaviors that can be received as being romantically accepting and were the ones who developed our questionnaire. The questionnaire measured both romantic searching, rejection, and acceptance through a series of items, for both singles and those in a relationship. This study solely focuses on the measurement of romantic acceptance among singles. The prior group had come up with around 60 different behaviors that measured romantic acceptance. The questionnaire measured how often the participants had experienced these types of behaviors within a period of the last 30 days. The participants chose between the options of "never", "rarely", "weekly", "daily", "multiple times a day". In the dataset these options were measured ordinally and were given values ranging from 0-4, with never being 0, and multiple times a day being 4.

Our task was then to remove and shorten these items down to about 12-16 items that sum up these behaviors for the purpose of creating a satisfying instrument. We ran a factor analysis of the acceptance items to identify different dimensions of romantic acceptance, and then reducing the scale by removing items that either had to low factor loading, had a factor loading among multiple factor dimensions, or items that were multi-correlational. When an item is multi-correlational with one or multiple other items, it means the correlation among them are of such magnitude, that they basically measure the same behavior. Correlations above 0.8 usually indicate that they are multi-correlational (Field, 2018). The items also had to have a high face validity. The items who didn't really measure what they were supposed to measure in context of the different dimensions, were cut from the final instrument. In the attempt to reduce the scale, a theme was made for each factor. And if the item didn't make sense to fit in with any of the themes, there was little reason to have it there.

*Instruments*

The questionnaire and the dataset consisted of various previously validated measurements along with the newly created measurements for romantic searching, rejection, and acceptance, through the act nomination. On top of this, the questionnaire included demographic measurements such as age, gender, education, sexual orientation, number of lasting relationships, marital-status satisfaction, and number of different romantic interactions.

*Personality*

The personality test that was used was a 15 items five-factorial model (Soto & John, 2017), and measured neuroticism, extraversion, conscientiousness, agreeableness, and openness, with 3 items (questions) per factor. An example of a question is "I am a person who is often worried", which is one of the 3 questions linked to measure neuroticism. The questions options were presented like a "Likert-scale", with the participant able to choose from "strongly disagree", "disagree", "neither agree nor disagree", "agree", and "strongly agree". A mean was created for the five personality traits with data from the 15 items. Out of all the participants, there were 3 who consistently didn't answer on any of the 15 FFM items, and therefore are not included in the mean for each FFM-factor.

*Sociosexual orientation*

This validated measurement gave us insight into how inclined the participants were to have sexual relations without any commitments (Penke & Asendorpf, 2008). The measurement is called SOI-R and consists of 9 questions, which had an internal consistency $\alpha$ = .865. The measurement was divided into three categories: behavior, attitude, and desire. Each category had three questions each. An example of a questions connected to the behavior category would be "how many partner have you had sex with once, and only once?" $\alpha$ = .906. An example of a question connected to the attitude category would be "I am comfortable with the idea of casual sex with multiple partner" $\alpha$ = .807. And finally, an example of a question connected to the desire category would be "How often do you fantasize about having sex with someone you are not in a committed relationship with?" $\alpha$ = .851.

*Romantic loneliness*

Our measurement of romantic loneliness was based on Sternberg's triangular theory of love (Sternberg, 1986) Sternberg's triangularity involves 3 different perceptions of love; intimacy, passion (sexual), and commitment. Our measurement consists of a total of 6 questions, α = .903. This was divided into 3 categories, with 2 questions each. The categories measure intimate loneliness, sexual loneliness, and commitment loneliness. An example of a question connected to the intimate loneliness category would be "I miss having a partner to share my inner thoughts and emotions with" α = .873. An example of a question connected to the sexual loneliness category would be "I miss someone to have sexual contact with" α = .929. An example of a question connected to the commitment loneliness category would be "I wish a had a boyfriend/girlfriend to share my life with" α = .965.

*Statistical analysis*

Statistical analysis for this study was produced through the software platform IBM SPSS statistics version 27. Multiple PCAs (principal component analysis) were used to reduce the items into different factors. Kaisers criteria and a scree plot were used to decide what the best number of factors were. Kaisers criteria states that factors with an eigenvalue above 1 can be kept (Field, 2018, s 792). Items with a charge of less than 0.3 were seen as zero-charges and did not show up in the factorial-solutions, making them easier to interpret. An oblique rotation was used, mainly because the oblique rotation allowed for the factors to correlate with each other, clustering the items in a more uncomplicated way. It was natural to assume that some of the 60 items in our questionnaire would correlate with each other to some degree. At the same time, oblique rotations don't force correlations between the factors if there aren't any. So, non-correlated factors would give the same results regardless of what rotations were used (Osborne, 2015).

To measure the reliability of the scale, Cronbach's alpha was used. The inner consistency of the new instrument was measured with Cronbach's Alpha. Having a high inner consistency indicates that if the participants were to take the questionnaire multiple times, they would end up with the same results. Values under .70 are usually viewed upon as problematically low

(Tavakol & Dennick, 2011). Checking the inner consistency of the factorial solutions also helps us determine which items should be removed or kept in the solutions, through looking at the changes in Cronbach's alpha when removing certain items. Once the factorial-solution had been developed, the validity of the factorial-solution was measured through a series of Pearson's correlation tests with the already validated measurements.

## Results

*Factor analysis and scale reduction*

Based on Kaisers criterion, which keeps any number of factors with eigenvalues above 1.00, a PCA analysis extracted 8 factors. The scree plot on the other hand showed a substantial dip in explained variance both after 3 factors and 4 factors. Kaisers criterion tends to overestimate the number of factors which should be kept (Field, 2018, s. 1005), so in some cases the scree plot should be used in the final judgement of factor dimensions. A PCA analysis with a Direct Oblimin rotation and 4 extracted factors was run. The items gathered in 4 different factors, with the items in factor 1 resembling general/behavioral acceptance, the items in number 2 resembling social media/dating apps acceptance, the items in number 3 resembling long-term acceptance, and the items in number 4 resembling short-term acceptance. A choice was made to leave out the social media/dating app factor and items all together and create the measurement with only 3 factors. The reason behind this was that those items weren`t completely up to par. Especially the items on dating apps failed to include those who aren`t active on those platforms, and no way of telling if the participants never experienced acceptance in this domain, or just never used those apps/media. Furthermore, the items regarding different social media behavior were highly multi-correlational.

After checking for multicollinearity between the items, removing those that correlated with each other, and removing those items that had a low factor loading, we were left with a 3 factorial – 13 item structure. The PCA of these 13 items had a significant Bartlett`s test, *p* <.001, and had a KMO-value of .882. These are good values and indicate good correlation patterns, and a sufficient sample for a factorial analysis. Factor number 1 consisted of item number 9, 10,

11, 17 and 35. It was named Behavioral acceptance and had an internal consistency of: α = .908. Factor number 2 consisted of item number 45, 48, 56, and 57. It was named Long-term acceptance and had an internal consistency of: α = .722. Factor number 3 consisted of item 29, 31, 55, and 59. It was named Short-term acceptance and had an internal consistency of: α = .865. All factors show a solid internal consistency. 3 different indexes were created based on these factors, that measured the average acceptance of the questions in the factor. An index named "total acceptance" was also created and measured the average acceptance of all 13 items, α = .908.

**Table 1** – *Principal component analysis (PCA) with factor scores*

|  | F1 | F2 | F3 | Communalities |
|---|---|---|---|---|
| *F1. Behavioral acceptance* | | | | |
| The other person held eye contact with you | **.925** | .018 | .112 | .75 |
| The other person showed interest in you as a person | **.887** | -.001 | -.012 | .80 |
| The other person showed the same level of interest as you | **.855** | -.044 | -.017 | .73 |
| The other person smiled at you | **.778** | .096 | -.071 | .73 |
| The other person showed interest in your looks | **.725** | -.028 | -.164 | .68 |
| | | | | |
| *F2. Long term acceptance* | | | | |
| The other person posted content of you two on social media | .035 | **.797** | .216 | .56 |
| The other person introduced you to their family | -.105 | **.746** | -.141 | .60 |
| The other person gave you gifts | .107 | **.634** | -.170 | .58 |
| The other person told you they had feelings for you | .089 | **.601** | -.237 | .59 |
| | | | | |
| *F3. Short term acceptance* | | | | |
| The other person said yes to a date | -.011 | .039 | **-.828** | .70 |
| The other person showed up on the date you had planned | -.010 | .066 | **-.809** | .70 |
| The other person went to bed with you | .078 | .016 | **-.783** | .69 |
| The other person went home with you | .133 | -.043 | **-.767** | .70 |
| Eigenvalues | 6.15 | 1.65 | 1.03 | |
| % of variance | 47 | 13 | 8 | |
| Total variance | | | 68 | |

PCA analysis with a Direct Oblimin rotation. Factor scores over .40 are marked with a bold font.

Below is a table showing frequencies for the 13 items in the new romantic acceptance measurement. The items organize themselves in a way where the items connected to behavioral acceptance are at the top, the items connected to short term acceptance gather in the middle, and the items connected to long term acceptance gather at the bottom. In a period of 30 days, it is most likely to experience different forms of behavioral acceptance and least likely to experience different forms of long-term acceptance.

**Table 2** – *descriptive statistics romantic acceptance* (N = *452)*

| Variables | *M* | *SD* |
|---|---|---|
| The other person showed interest in you as a person | 1.61 | 1.01 |
| The other person smiled at you | 1.58 | .95 |
| The other person held eye contact with you | 1.51 | .94 |
| The other person showed interest in your looks | 1.48 | 1.04 |
| The other person showed the same level of interest as you | 1.41 | 1.05 |
| The other person went to bed with you | .87 | .96 |
| The other person went home with you | .74 | .93 |
| The other person showed up on the date you had planned | .67 | .93 |
| The other person said yes to a date | .65 | .91 |
| The other person told you they had feelings for you | .30 | .62 |
| The other person gave you gifts | .20 | .50 |
| The other person introduced you to their family | .17 | .52 |
| The other person posted content of you two on social media | .09 | .31 |
| **Indexes** | | |
| Behavioral acceptance | 1.52 | .86 |
| Short term acceptance | .73 | .78 |
| Long term acceptance | .19 | .38 |
| TOTAL acceptance | .81 | .58 |

*Validation*

H1 predicted that lower romantic acceptance would lead to higher romantic loneliness. A Pearson's correlation test showed that there is a significant correlation in the direction that was predicted, $r(448) = -.165$, $p < .001$. H2 predicted that extroversion as a trait would lead to more

romantic acceptance. This also showed to have a significant correlation in the direction that was predicted, r(448) = .183, p < .001. This was also true for both genders; Women, r(289) = .125, p < .001, and Men, r(158) = .299, p < .001.

Table 3 – *Correlations and descriptive statistics for total acceptance, extraversion, and romantic loneliness* (N = 449)

| Variable | M | SD | 1 | 2 | 3 |
|---|---|---|---|---|---|
| 1.Total acceptance | 0.81 | 0.58 | - | | |
| 2.Total romantic loneliness | 3.17 | 0.79 | -.17** | - | |
| 3.Extraversion | 4.87 | 1.48 | .18** | .02 | - |

H3 predicted that being a reliable person would be a positive trait to have and would lead to higher romantic acceptance for both genders. This did have the positive significant correlation with acceptance that was predicted for men, correlating with the subcategory long term romantic acceptance, r(155) = -.096, p < .001,  but not for women r(289) = -.054, p < .001. H4 predicted that men who experience higher romantic acceptance would be more open to having multiple partners without commitment, than women who experience higher romantic acceptance. Correlation testing shows that short-term acceptance for both men, r(157) = .303, p < .001, and women r(288) = .333, p < .001. This differs from what the theory predicted, as both men and women seem equally open to having multiple partners without commitment. H5 predicted that agreeableness would be a more positive trait for women to have, in gaining romantic acceptance. The correlation is significant, but the size of the correlation is small. It correlated negatively for men, r(158) = -.028, p < .001,  and positively for women, r(289) = .026, p < .001, suggesting that there indeed is a difference, although it isn't big.

**Table 4** – *correlations and descriptive statistics for total acceptance, short-term acceptance, long-term acceptance, SOI behavior, agreeableness, and reliable personality trait, with gender as control variable (N = 449)*

| Variable | 1W | 2W | 3W | 4W | 5W | 6W | 1M | 2M | 3M | 4M | 5M | 6M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WomenW | | | | | | | | | | | | |
| 1.total accept | - | | | | | | | | | | | |

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.shortterm accept | .90** | - | | | | | | | | | | | |
| 3.longterm accept | .67** | .52** | - | | | | | | | | | | |
| 4.SOI attitude | .31** | .33** | .11 | - | | | | | | | | | |
| 5.Agreeableness | .03 | .03 | .00 | -.15** | - | | | | | | | | |
| 6.FFM13_C_reliable | -.04 | -.02 | -.05 | .04 | .30** | - | | | | | | | |
| Men^M | | | | | | | | | | | | | |
| 1.total accept | | | | | | | | - | .88** | .63** | .30** | -.03 | .17* |
| 2.shortterm accept | | | | | | | | | - | .51** | .32** | -.06 | .11 |
| 3.longterm accept | | | | | | | | | | - | .11 | -.01 | .10 |
| 4.SOI attitude | | | | | | | | | | | - | -.24** | -.10 |
| 5.Agreeableness | | | | | | | | | | | | - | .13 |
| 6.FFM13_C_reliable | | | | | | | | | | | | | - |
| M | 0.86 | 0.80 | 0.20 | 4.05 | 3.82 | 4.28 | | 0.75 | 0.62 | 0.19 | 3.29 | 3.75 | 4.23 |
| SD | 0.59 | 0.81 | 0.40 | 2.16 | 0.68 | 0.68 | | .055 | 0.72 | 0.35 | 2.28 | 0.63 | 0.64 |

*Note*: *p < .05, **p < .01

Finally, H6 predicted that neuroticism in women would lead to less reported romantic acceptance, but that they still wouldn't have fewer romantic interactions than the mean. This is a two-part hypothesis, where we first needed to check if neuroticism leads to less romantic acceptance, and then see if neuroticism has an impact on the number of romantic interactions. Indeed, as predicted neuroticism led to less romantic acceptance, $r(289) = -.149$, $p < .001$. However, neuroticism did have a negative impact on the number of romantic interactions as well. Neuroticism correlated negatively with number of dates, $r(288) = -.085$, $p < .001$, number of flirts, $r(289) = -.014$, $p < .001$, number of kisses, $r() = -.065$, $p < .001$, number of times having sex, $r() = -.089$, $p < .001$, and number of sex partners, $r() = -.177$, $p < .001$.

**Table 5 –** *Correlations and descriptive statistics for Total romantic acceptance, Neuroticism, and number of romantic interactions*

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 1.Num_Date | - | | | | | | |
| 2.Num_Flirts | .05 | - | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3.Num_kiss | .23** | .00 | - | | | | |
| 4.Num_sex | .51** | .04 | .32** | - | | | |
| 5.Num_sex partners | .23** | .07 | .09 | .55** | - | | |
| 6.Neuroticism | -.09 | -.01 | -.07 | -.09 | -.18** | - | |
| 7.Total Accept | .46** | .04 | .29** | .55** | .42** | -.15* | - |
| M | 0.86 | 4.43 | 5.28 | 2.22 | 0.96 | 3.08 | 0.86 |
| SD | 1.77 | 12.41 | 20.05 | 3.31 | 1.22 | 0.95 | 0.59 |

## Discussion

The goal of this study was to create an instrument for measuring romantic acceptance, with the ambition that this new instrument could be used in future research in the field. A PCA test showed that it was possible to extract different factors from the 60 items in the questionnaire. Looking at the scree plot it was decided that 3 factors were the best number of factors to explain the different categories of behaviors created by the groups of students that came before us, through the ACT-nomination. The new instrument featured 13 items, which is a decent number of questions for an instrument. The questions cover a lot of theoretical basis and different ways of experiencing romantic acceptance. On the other hand, maybe the scale could have benefited from removing 1 or 2 questions. The more you can cover with as few questions as possible, the better. This makes it less tedious for a participant to take a future questionnaire that involves this new instrument. The factorial solution had solid inner reliability scores, which indicated that if the participants were to take the survey multiple times over a period, they would most likely get approximately the same scores.

*The validity of the instrument*

The validating analyses showed mixed results, with some hypotheses being confirmed, and others not. H1 predicted that lower romantic acceptance would lead to higher romantic loneliness. The tests showed that this is indeed accurate with the data, with romantic loneliness correlating significantly in the negative direction with romantic acceptance. There are however speculations if this hypothesis is valid globally or just in our wester society, with studies showing that individualistic cultures places greater importance on romantic love than

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collectivistic cultures (Seepersad et al, 2008). Suggesting that it is not only the absence of love that predicts romantic loneliness, but also the social expectations that one should try to find a romantic partner. It would be of great benefit to see if the results in our data would remain the same if measured in a more collectivistic society. H2 predicted that extraversion would be a positive trait for gaining romantic acceptance. This hypothesis was also confirmed by our data, with extraversion correlating significantly in a positive direction with romantic acceptance. Multiple studies (Alvergne et al, 2010; Buss & Barnes, 1989; Figuredo et al, 2006; Liu et al, 2018; Whyte et al, 2019) put forth extraversion as the single most important personality trait for attracting a romantic partner and is one of the most stable findings in studies regarding sexuality and personality. With extraversion being connected to higher sociableness and higher confidence, the chance of finding a romance also becomes higher. This, also being shown in our data with the new instrument, is a sign of predicative validity.

Contrary to theory, being a reliable person didn't correlate in equal direction for both genders, meaning H3 was not supported by the data. Being reliable correlated in the positive direction for men, but for women it correlated in the negative direction. There are a few reasons why this may have occurred. Firstly, although having a reliable partner would in theory be beneficial for both genders, maybe it's even more important for women. Historically, women had bigger investment in offspring, and was therefore reliant on finding a partner who could reliably invest in them during pregnancy and nurturing (Buss, 1995). In today's world, genders are more equal in their societal roles, and women are more than capable of obtaining enough resources to manage life independently. Still, evolution can be slow, and our results may be an indicator of the residual effects of the more traditional gender roles from the past. Another reason why the data may not have supported H3 could be because of the low general frequency of the long-term acceptance factor in our instrument. All the items are measured with the same values in our data, even though not all behaviors naturally occur with the same frequencies. The items in long-term acceptance are much less frequent than the rest, which may lead to some limitations in our data. This will be discussed further in the strength and limitations section.

H4 predicted that men who experienced high romantic acceptance would be more open to having multiple partners without commitment, than women who experienced high romantic

acceptance. This hypothesis was not supported by our data, with both genders SOI attitude correlating equally much in the positive direction. According to our data then, both genders are equally open to having multiple partners without commitment. A little contradictory maybe to our findings in H3, showing that reliability was more important to have in a partner for women than it was for men. Nonetheless, these findings can most likely be explained by the growing sexual liberty that we have experienced these past decades. People are generally more self-sufficient and are not as reliant on a partner for survival as earlier generations were. Also, the emergence of contraception's has eliminated the investment cost for women regarding sexual intercourse, liberating them from those shackles. Furthermore, there are theories suggesting that humans do not have a single mating motive that remains stable across all domains, but rather have mating adaptations sensitive to circumstances such as culture (Goetz et al, 2012). In this instance, results show that cultural changes have a bigger impact on sexual strategies than evolutionary theories would predict.

H5 looked at the interaction between agreeableness and romantic acceptance, predicting that it would correlate negatively for men and positively for women. Although the size of the correlation was small, there was still a difference between the genders. Furthermore, as predicted, agreeableness correlated negatively for men, and positively for women. Showing that higher agreeableness is a more positive trait for women to have, in order to obtain romantic acceptance, in our new instrument as well.

Lastly, although neuroticism had a negative impact on romantic acceptance as predicted, it also had a negative impact on the number of romantic interactions women had. It was predicted that neuroticism would not lead to less romantic interactions for women, even if they reported less romantic acceptance. This was based on the theory that women high in neuroticism would engage in more romantic activities as a form of seeking validation. A counterargument that could explain the results in our study, is the fact that neuroticism in general is linked with fear and anxiety, and that this fear could transferred over to fear and anxiety connected to romantic and sexual acts (Eysenck, 1971). There aren't any studies indicating that people high in neuroticism have less sexual drive than others, but that this drive may rather have its outlet in

sexual stimuli that doesn't involve other people, such as porn and masturbation (Eysenck, 1971).

*Strengths and limitations*

There are multiple notable limitations concerning this project. The sample was a convenience sample where students that were available chose to answer the questionnaire. It was the easiest and least resource draining method. Unfortunately, this also weakens the representability of the study. The sample group are exclusively students at NTNU. Therefore, educational levels of the whole population are not represented in this study, as 78% of the sample haven't yet finished a higher education than high school. The age group was also quite young, $M$ = 22.15, and only 1.9% of the sample being over the age of 30. Then you have the usual problems with a questionnaire, such as dishonesty and misinterpreting questions. The anonymity of the questionnaire does, however, improve the chances of honesty in answers. The questionnaire is quite long. A positive consequence is that the questions cover a lot of theoretical ground. The number of items created from the act nomination ranges for each segment; acceptance, rejection and seeking, ranges from 55-80 questions each. This covers a whole lot of behavioral ground, but it can also become lengthy and tedious for the participant. As a negative consequence of this, the participant may lose focus or interest, and therefore not be as thorough in their answers. Also, the items on romantic acceptance, rejection, and seeking, have no questions with a reversed score. A reversed score on some questions may help with acquiescence bias, or "yay-saying" as it is commonly referred to. Acquiescence bias is the participants tendency to be agreeable towards the questions because of our natural desire for compliance (Hellevik, 2020). Many already validated instruments, such as the 15 items FFM (Soto & John, 2017) and the SOI-R (Penke & Asendorpf, 2008), use reversed score questions to stop this from falsifying data. In the other hand, the act nomination method measures frequencies of behavior, and one could argue that the reversed score questions for the romantic acceptance category, are the questions regarding romantic rejection.

A potential weakness for the new instrument arises from the fact that the questions are created to obtain data at an ordinal level. The answer option on each question being either

"never", "rarely", "weekly", "daily", and "multiple times a day". And in the dataset, every question is programmed with a value ranging from 0-4 depending on the answer the participant gave. The problem with this is that we are then measuring ordinal data in an interval level. Measuring at an interval level implies that that there is an equal distance between each answer option on every question. Which, in reality, there is not. This simplifies the data, making it easier to categorize, but it also comes when a cost. Those costs become clear when looking at frequencies between the different items in our new 13-item instrument. As pointed out earlier, the items connected to the long-term acceptance factor have a much lower frequency than the rest. This is mainly because these behaviors are measured with the same values as every other item. And it makes sense that you are not going to encounter long-term acceptance behavior as much as certain other behaviors, but that does not make it any less important to look at when measuring romantic acceptance. Unfortunately, because of its lower frequencies, the results in our analysis may have failed to detect effects that we would otherwise have, if those items were given different values from the more reoccurring behaviors. So then, maybe an improvement to the questionnaire/dataset would be to either have different answer options based on the expected frequency on some of the items or code the values of the items in a different way in SPSS. On the other hand, maybe long-term acceptance is a weaker category in our new instrument, and the instrument would have benefited from removed those items all together. An alternative idea would then be to create the instrument with two factors: Factor 1 = "behavioral acceptance" and looking at the short factor in terms of a more Factor 2 = "explicit acceptance".

*Implications for further research*

There is a need for an instrument capable of capturing romantic acceptance as a phenomenon, and this study can be viewed as its humble beginnings. Our newly created instrument has its limitations and can therefore be regarded as a building block towards future instruments, rather than a finished product, as there is still work to be done to validate it properly. For our instrument to become more valid, it would be important to further develop it alongside multiple other validated measurements, in addition to the ones we had at our disposal in this study. For example, it would be interesting to look at how romantic acceptance correlated with

self-esteem, and perceived mate-value. Also, it would be of great benefit to measure romantic acceptance alongside romantic seeking, as seeking behavior might help explain levels of romantic acceptance.

 The procedure of creating the acts in the act nomination might also need to be tweaked, as we see a huge difference in frequencies for the different acts throughout the data. If the relationship between the acts and how we measure their value in the questionnaire is fixed, it will strengthen the instrument a great deal.  There is also a need for a more representative sample that is more diverse than what was used in this study. People of all ages and professions should be included in the data. Preferably, at some point, it would also be beneficial for the validity of the instrument to collect data from different parts of the world, as cultural differences could have a major impact on how we experience and relate to romantic acceptance. Despite its early beginnings, the instrument has a lot of potential. If we could create a reliable instrument for romantic acceptance, it would come in handy for future research in multiple fields. Some of those fields would be understanding how romantic acceptance could affect our self-esteem, anxiety, loneliness, motivation, and so on.

## Conclusion

This study has tried to create and validate an instrument to measure romantic acceptance. A factorial analysis gave us a 13-item instrument, divided into 3 categories: Behavioral acceptance, Short-term acceptance, and Long-term acceptance. The newly created instrument showed good inner consistency, although some of the items had quite low frequencies. Romantic loneliness, Five-factor model of personality, sociosexual attitude, and number of romantic interactions were used to validate our instrument. 6 hypotheses were created based on earlier theories on romantic acceptance, to see how our instrument would correlate with the already validated instruments. 3 of the 6 hypotheses were supported by the data, showing that our instrument still has room for improvement. A more diverse sample and an improved value system for the ACTs would go a long way in improving the validity.  Nonetheless, the

instrument has its value as a steppingstone that could help further develop a more accurate instrument down the road.

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