The Impact of Social Comparison on Identity Development: a Mediation Model

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Abstract

Developing one's own unique identity is an important process among young adults, but susceptible to many internal and external factors. While empirical research shows that the amount of comparing oneself to others can be an important predictor of the development of an identity, this has scarcely been investigated. Previous research provides reason to focus on two dimensions of identity development, namely identification with commitment, the degree to which adolescents can identify with their identity, and ruminative exploration, the amount of difficulty giving answers to identity questions. In the present research, it was therefore examined whether social comparison of ability and the two dimensions of identity development were significantly related, and whether both relationships were mediated by self-esteem. The current, longitudinal study from a Dutch-speaking sample of young adults who were pursuing a master's degree in different fields of science at universities in the Netherlands (N = 205) demonstrated that social comparison of ability is a predictor of identification with commitment and ruminative exploration over time. In addition, the relationship between social comparison of ability and identification with commitment and the relationship between social comparison of ability and ruminative exploration were both mediated by self-esteem. This indicates the importance of social comparison of ability and self-esteem in relation to adaptive identity development. Overall, these findings illustrate that it is important to understand the effects of social comparison, and the possible factors influencing identity development.

Keywords: Social Comparison, Self-esteem, Identity Development, Commitment, Identification, Rumination, Exploration

Introduction

Our personal identity provides an answer to the question: "Who am I and what do I want to do in my life?" (Luyckx et al., 2013). The theory of psychosocial development states that personality develops through eight stages of psychosocial development, from infancy to adulthood (Erikson, 1963, 1968). In each stage an individual will need to confront and deal with a psychosocial crisis, such as considering trust versus mistrust, and intimacy versus isolation. This contributes to an individual's development of a personality (Marcia, 1980). Identity distress, described as the uncertainty about one or more personal identity issues, is a possible negative outcome of identity development and is common during a time of transition, for example the change from university to work (Berman et al., 2004; Yang et al., 2018). Gaining a better insight in the processes contributing to the development of an adaptive identity is of great importance for individuals who struggle with their identity (Beyers & Luyckx, 2016). Above mentioned, accentuate the importance of getting a deeper understanding towards the development of an identity and the possible factors which could influence this. The current study will examine how social comparison of ability and self-esteem may affect the process of adaptive identity development.

The amount of social comparison an individual is involved in can possibly influence the development of an identity. According to the Theory of Social Comparison of Festinger (1954), people have the tendency for self-evaluation, based on comparison with other persons. Social comparison is defined as the evaluation of opinions and abilities by comparison with the opinions and abilities of others. As described by Buunk and Gibbons (2007), the goal of social comparison is to gain information about the self. However, there is a difference in the propensity of people to compare themselves with others. This is defined as Social Comparison Orientation

(SCO), which is an individual's tendency to engage in social comparison (Gibbons & Buunk, 1999).

Social networking sites provide a lot of possibilities for social comparison, which could possibly affect someone's well-being (Yang, 2016). Unlike the current study, previous research has focused on social comparison in combination with social media. For example, Vogel et al. (2015) showed that participants who had a high level of SCO and viewed others' Facebook profiles reported lower levels of self-esteem, compared to participants with a low level of SCO. In addition, a significant negative association between social comparison on social media and subjective well-being was found (Gerson et al., 2016; Park & Baek, 2018). Overall, these previous findings show that social comparison is prominently present these days and the possible effects are important to explore thoroughly.

To understand the possible relationship between social comparison and identity development, the following section will give a deeper understanding of the construct identity development. According to the 5-dimensional model of identity formation, individuals form an identity through a dynamic process of five different identity dimensions, namely commitment making, identification with commitment, exploration in breadth, exploration in depth and ruminative exploration (Luyckx et al., 2008). In the current study the focus will be on identification with commitment and ruminative exploration. Identification with commitment is described as the degree to which adolescents feel certain about, can identify with, and internalize their choices, with regard to identity. Individuals who have a high level of ruminative exploration may experience difficulty giving answers to identity questions. These individuals keep asking themselves the same questions, resulting in feelings of uncertainty and incompetence (Luyckx et al., 2008). The following findings provide reason on why the current study focuses on these two

dimensions. Results from Luyckx et al. (2013) show that self-esteem is an important predictor of identification with commitment and ruminative exploration over time. In addition, identity commitment is positively and ruminative exploration negatively related with different indicators of well-being (Ritchie et al., 2013; Luyckx et al., 2008). This indicates a possible mediator between social comparison and identity development which will be discussed below.

Only a few studies have examined the relationship between social comparison and identity development (Yang et al., 2018). Research from Yang et al. (2018) shows that social comparison of ability on social media was related to lower identity clarity. However, social comparison of opinion on social media did not predict identity clarity through identity processing styles. In addition, research found that social comparison of ability on social media was related to a higher level of concurrent rumination and subsequently higher identity distress (Yang et al., 2018). Previous research has included social media when examining the relationship between social comparison of ability and identity development and no previous research specifically mainly focused on the two dimensions identification with commitment and ruminative exploration. As previously indicated, the current study pays attention to the possible relationship between social comparison of ability and two dimensions of identity development. Based on above mentioned research, young adults who compare their abilities less with others will identify more strongly with their commitments, and will experience less ruminative exploration regarding identity questions. To gain a better insight into the relationship, the following section focuses on a possible mediator between social comparison and identity development, namely self-esteem.

The potential mediator between social comparison of ability and the two dimensions of identity development may be self-esteem. According to Coopersmith (1967), self-esteem refers to a person's positive or negative evaluation of the self and is probably one of the most often

studied constructs in the social sciences (Bleidorn et al., 2016). In general, the amount of

self-esteem changes during young adulthood (Orth et al., 2010). In this line of reasoning, it is

meaningful to broaden our knowledge on self-esteem in research focusing on young adults.

Next to the importance of the construct itself, the relationship between social comparison

and self-esteem is emphasized in recent studies. Results of a literature review from Krause et al.

(2019) show that the use of social networking sites to compare oneself with others, mainly

results in decreased self-esteem. Furthermore, social comparison predicts lower levels of

self-esteem (Fuhr et al., 2015; Lee, 2020; Vogel et al., 2015). Next to this, important in

understanding the possible negative relationship between social comparison and self-esteem is

"upward comparison". As stated by the Theory of Social Comparison of Festinger (1954), this

means comparing yourself to others who are better-off. In addition, Festinger suggested the

unidirectional drive upward, to reflect people's desire to improve their abilities. According to

this, young adults are expected to compare themselves with others who are better-off. Upward

comparison can negatively affect the level of self-esteem (Vogel et al., 2014). In line with this,

the upward comparison of abilities could negatively affect the level of self-esteem. Overall,

above mentioned research suggests that comparing oneself to others could negatively affect the

level of self-esteem. Although previous research focused on social comparison, the concrete

relationship between social comparison of ability and self-esteem is missing.

In addition to its relation with social comparison, self-esteem may also be related to

identity development. The 'self-esteem main-effects model' states that self-esteem is an

important predictor of the formation of an identity and particularly could be a resource for

making strong identity commitments (Grotevant, 1987). Additionally, previous research indicates

the importance of self-esteem in terms of adaptive identity development (Beyers & Luyckx,

2016; Luyckx et al., 2013). Moreover, a higher level of self-esteem enables individuals to make identity choices and protects themselves against identity worry or confusion (Erikson, 1968; Luyckx et al., 2013). Furthermore, longitudinal research by Luyckx et al. (2013) among high school and college students showed that self-esteem is an important resource for how individuals challenge identity-related questions and issues. Notably, the findings show that self-esteem positively predicts identification with commitment and negatively predicts ruminative exploration over time. This underlines the self-esteem main-effects model. To conclude, there is a small amount of research which examines the relationship between self-esteem and identity development over time (Luyckx et al., 2013). The current study attempts to provide an in-depth understanding of the relationship by making use of longitudinal data.

The present study aims to investigate the relationship between social comparison of ability and identity development, and the mediating role of self-esteem over time. Focusing on the dimensions: identification with commitment and ruminative exploration. The current knowledge will be broadened by a) Investigating the relationship between social comparison and identity development, and b) Testing whether the effect of social comparison on identity development is mediated by self-esteem. The following hypotheses will be examined in order to investigate these matters:

I a) It was expected that young adults who compare their abilities less with others will identify more strongly with their commitments.

b) It was expected that young adults who compare their abilities less with others, will experience a higher level of self-esteem and in turn will identify more strongly with their commitments.

II a) It was expected that young adults who compare their abilities less with others will experience less ruminative exploration regarding identity questions.

b) It was expected that young adults who compare their abilities less with others, will experience a higher level of self-esteem and in turn will experience less ruminative exploration regarding identity questions.

Method

Participants

For the current study, the initial sample consisted of Dutch-speaking students who were pursuing a master's degree in different fields of science (e.g., economics, law, mathematics, social sciences, medical sciences and technical sciences) at universities in the Netherlands and who could potentially graduate during the summer of 2020. In total, 309 students participated in the study. Due to missing values in the variables in at least one of the two measurements, 205 participants were selected in the analyses. The gender distribution of the selected sample significantly differed from the not selected sample, with more females participating in relation to males and individuals who filled in "different", $t(164) = -3.02$, $p = .003$, $d = -.39$. The mean age of the selected sample did not significantly differ from the not selected sample, both had a mean age of 24 years old. The mean self-esteem scores significantly differed between the selected ($M = 36.35$, $SD = 6.59$) and not selected sample ($M = 38.46$, $SD = 5.91$), $t(297) = 2.65$, $p = .009$, $d = 0.33$. The mean scores of social comparison, identification with commitment and ruminative exploration did not significantly differ between the two samples. The Monte Carlo Power Analysis for Indirect effects was used to identify the power (Schoemann et al., 2017), using a sample size of 205. Correlations were estimated based on previous findings and the standard deviations were set to value one. Based on previous findings, the correlation between

social comparison of ability and self-esteem was -.14, the correlation between self-esteem and identification with commitment was .30 and the correlation between social comparison of ability and identification with commitment was -.23 (Luyckx et al., 2013; Yang et al., 2018). Results showed a power of .53, with identification with commitment as outcome variable. Based on previous findings, the correlation between self-esteem and ruminative exploration was -.33 and the correlation between social comparison of ability and ruminative exploration was .31 (Luyckx et al., 2013; Yang et al., 2018). The power, with ruminative exploration as outcome variable, was .54.

Procedure

The students were invited to participate in project GradLife via several sources, namely email, social media, university papers or university student accounts. To make sure the students were well informed, they were referred to the website of project GradLife. The website contained information about the current study, participation, and a link to the consent form which the participants had to fill in. Last, all students who indicated to graduate between April and December 2020 were invited to participate in the study. The procedure of the current study consisted of two measuring moments. The first measurement (T1) started in May 2020 and the second (T2) in September 2020. Each measurement consisted of an online questionnaire. After each participation, the participants received a newsletter and a financial compensation. The participants included in the current study participated in both measurements.

Measures

Social Comparison

Social comparison of ability was measured using a short scale of the Iowa–Netherlands Comparison Orientation Measure (INCOM) (Schneider & Schupp, 2014). This is a 6-item

self-report measure that measures the tendency to engage in social comparison (Gibbons &

Buunk, 1999). The subscale of social comparison of ability consists of three items. Example

statements are: "I always pay a lot of attention to how I do things compared with how others do

things", and "I am not the kind of person who compares often with others". The possible

answers, on a 5-point Likert-type rating scale, ranged from: 1 = "I disagree strongly" to 5 = "I

agree strongly". Social comparison of ability was included in the first measurement (T1). A

previous study indicated that the shortened version of the INCOM has a high reliability and

sufficient construct and discriminant validity (Schneider & Schupp, 2014). In the current study

Cronbach's alpha of social comparison of ability was .77.

Identity Development

Identity development was measured with the Dimensions of Identity Development Scale

(DIDS) (Luyckx et al., 2008). This is a 25-item self-report measure that measures five identity

dimensions regarding future plans. The two subscales of the questionnaire which were included

in the current study are identification with commitment and ruminative exploration. Each

subscale consists of five items. Example statements of identification with commitment are "My

future plans give me self-confidence" and "Because of my future plans, I feel certain about

myself". Example statements of ruminative exploration are "I worry about what I want to do

with my future" and "I keep looking for the direction I want to take in my life". The possible

answers, on a 5-point Likert-type rating scale, ranged from: 1 = "Strongly disagree" to 5 =

"Strongly agree" (Luyckx et al., 2008). The two dimensions of identity development were

included in the second measurement (T2). A previous study indicated that the DIDS has a

sufficient reliability and both internal and external construct validity (Luyckx et al., 2008). In the

current study, the Cronbach's alpha of identification with commitment was .86, and the

Cronbach's alpha of ruminative exploration was .89.

Self-esteem

Self-esteem was measured using the Rosenberg Self-Esteem Scale (RSE) (Franck et al.,

2008). This is a 10-item self-report measure that measures global trait-like self-esteem. The 10

items are divided into five positive and five negative items. An example of a positive item is "I

feel that I have a number of good qualities" and an example of a negative item is "All in all, I am

inclined to feel that I am a failure". The possible answers, on a 5-point Likert-type rating scale,

ranged from: 1 = "Strongly disagree" to 5 = "Strongly agree" (Franck et al., 2008). Self-esteem

was included in the first measurement (T1). A previous study indicated that the RSE has a high

internal consistency and a high congruent validity (Franck et al., 2008). In the current study the

Cronbach's alpha was .88.

Statistical Analysis

To conduct the analyses, IBM SPSS Statistics Version 27 was used. The independent

variable in the current study was social comparison of ability, the mediator was self-esteem and

the dependent variables were the two dimensions of identity development. To investigate the

relationship between social comparison and identity development, and to test whether the

possible direct effect of social comparison on identity development was mediated by self-esteem,

analyses were conducted to provide answers to the multiple hypotheses.

To determine the relationship between social comparison of ability (T1) and the

dimensions of identity development (T2), and whether self-esteem (T1) had a mediating role in

the relationship between social comparison of ability (T1) and the dimensions of identity

development (T2), PROCESS macro v3.5 model 4 (Hayes, 2017) was used. The analysis was

conducted twice to analyze the relationships between social comparison of ability and both dimensions of identity development separately.

Prior to this, the variables were put in the modelling tool, with X (independent variable) = social comparison of ability, Y (dependent variable) = dimension of identity development, and M (mediator) = self-esteem. In addition, it was checked if the assumptions related to performing a regression analysis were met. The assumptions were linearity, homoscedasticity, and normality of residuals. Lastly, the bootstrapping method was applied to test the significance of the indirect effects (Preacher & Hayes, 2008). A significance level of $\alpha < .05$ was used during the execution of the analyses.

Results

Descriptive statistics and Pearson correlations of the variables of interest are displayed in Table 1. The model used in the analyses and the results can be found respectively in Table 2 and Figure 1. According to the sensitivity power analysis calculated with G*Power, based on a power of .80, the possible effect size of the analyses was small, namely .19 (Faul et al., 2007). Before the analyses were conducted in PROCESS macro (Hayes, 2017), it was confirmed that the assumptions of linearity, homoscedasticity and normality were met (Figure 2 to 5). To start with, the analysis focusing on the dimension identification with commitment was conducted. When performing the analysis in PROCESS macro (Hayes, 2017), results revealed that a lower level of social comparison of ability was significantly related to a higher level of identification with commitment, without taking into account self-esteem. In addition, a lower level of social comparison of ability was significantly related to a higher level of self-esteem. A higher level of self-esteem was also significantly related to a higher level of identification with commitment. Furthermore, when taking into account self-esteem, a lower level of social comparison of ability

was no longer significantly related to a higher level of identification with commitment. Using the bootstrapping method, a significant indirect effect was found (Preacher & Hayes, 2008). This indicates that the relationship between social comparison of ability and identification with commitment is fully mediated by self-esteem.

In addition, as shown in Table 2, the analysis focusing on the dimension ruminative exploration was conducted. When performing the analysis in PROCESS macro (Hayes, 2017), a lower level of social comparison of ability was significantly related to a lower level of ruminative exploration, without taking into account self-esteem. Additionally, a lower level of social comparison of ability was significantly related to a higher level of self-esteem. A higher level of self-esteem was also significantly related to a lower level of ruminative exploration. Furthermore, when taking into account self-esteem, a lower level of social comparison of ability was no longer significantly related to a lower level of ruminative exploration. Using the bootstrapping method, a significant indirect effect was found (Preacher & Hayes, 2008). This indicates that the relationship between social comparison of ability and ruminative exploration is fully mediated by self-esteem.

Discussion

The current study investigated the relationship between social comparison of ability and two dimensions of identity development and whether both relationships were mediated by self-esteem. As expected, the effect of social comparison of ability on both identification with commitment and ruminative exploration was significant, without taking into account self-esteem. After taking into account self-esteem, the relationships between social comparison of ability and both dimensions of identity development were no longer significant. The relationships were both mediated by self-esteem.

The first objective of the study was to investigate the relationship between social comparison of ability and the two dimensions of identity development, namely identification with commitment and ruminative exploration. Previous research has indicated a possible relationship between these constructs (Yang et al., 2018; Yang et al., 2018). It was hypothesized that a lower level of social comparison of ability would increase the level of identification with commitment and decrease the level of ruminative exploration. The present study finds these effects to be significant. These findings provide additional evidence that social comparison of ability is both a predictor of identification with commitment and ruminative exploration. In addition to previous research on this relationship, an explanation for the significant relationship could be that individuals who score high on social comparison, have a higher tendency to be more concerned about the comparisons (Vogel et al., 2015). This may negatively impact the development of their identity.

The second objective of the study was to investigate whether the relationships between social comparison of ability and the two dimensions of identity development, identification with commitment and ruminative exploration, were mediated by self-esteem. It was hypothesized that self-esteem would mediate both relationships. The present study finds the mediation effect to be significant. The findings confirm that young adults who compare their abilities less with others, will experience a higher level of self-esteem and in turn will identify more strongly with their commitments, and that young adults who compare their abilities less with others, will experience a higher level of self-esteem and in turn will experience less ruminative exploration regarding identity questions. This is in line with previous research which indicated that social comparison of ability is negatively associated with self-esteem (Krause et al., 2019; Fuhr et al., 2015; Lee, 2020; Vogel et al., 2015). In addition, the 'self-esteem main-effects model' (Grotevant, 1987),

which states that self-esteem is an important predictor of the formation of an identity, is confirmed by the results of the current study. This indicates the importance of self-esteem in relation to adaptive identity development. As mentioned by Luyckx et al. (2013), self-esteem is increasingly important during the development of one's own unique identity. Having a higher level of self-esteem makes individuals more confident in relying on personal identity standards, which makes them able to create their identity and protect themselves against rumination.

Implications

Given the readjustment young adults need to make when making the transition from university to work, they may be vulnerable to the negative impact of social comparison of ability (Yang et al., 2018). An implication of the current study is the importance of creating awareness among young adults about the concept of social comparison, the effects and arising possibilities to compare yourself with others. This potentially can be done by providing coaches who can inform and support young adults during university and at the start of their work life. To be specific, helping young adults dealing with social comparison could improve their identity development.

In addition, the current study indicates that self-esteem is important when it comes to forming an identity. Due to the finding that there is a strong relationship between self-esteem and identity processes, promoting and strengthening a stable level of self-esteem could be interesting to implement in the curriculum or an intervention at university. A possibility is creating an intervention that stimulates self-esteem among individuals, especially individuals who are struggling with their identity development (Luyckx et al., 2013). What is important for such an intervention in the long term is focusing on both individuals' identity development and their self-esteem at the same time. Namely, due to the interdependence of the development of an

identity and self-esteem, changes in one of the constructs should be strengthened by reciprocal changes in the other construct (Swann et al., 2007).

Strengths

One of the strengths of the present study is the longitudinal approach. This study provides a better understanding of how the development of the constructs during an important transition period evolve. In addition, the current study is the first to assess the relationship between social comparison of ability, identity development, and self-esteem which in combination with the significant effects, may lead to an opening for future research among these constructs and possible other samples.

Limitations and Possibilities for Future Research

Although the current study includes important findings, there are limitations which raise recommendations for future research. A possible limitation is the presence of a confounder. One remarkable finding is that after adding the mediator self-esteem, the relationships between social comparison of ability and both identification with commitment and ruminative exploration are mediated by self-esteem. Research from Yang et al (2018) showed that social comparison of ability is related to lower identity clarity, with the concurrent diffuse-avoidant identity processing style as a mediator between the constructs. The concurrent diffuse-avoidant style can be described as actively avoiding conflicts and decisions about the identity and is a significant predictor of self-esteem. This construct could affect the significance of self-esteem mediating the relationship between social comparison of ability and both dimensions of identity development. Future research should take into account correcting for confounding variables to create a clear understanding of the relationships researched.

Another limitation is the focus on two dimensions of identity development, namely identification with commitment and ruminative exploration, which means three of the five dimensions of identity development have not been considered. This could lead to a less clear picture of the development of an individual's identity. A recommendation for future research is to include all five dimensions of identity development to get a more holistic view of the identity development of an individual. This may lead to a better understanding of which aspects of identity development need more attention and possibly could use interventions for improvement.

In addition, social comparison of ability, identification with commitment, ruminative exploration, and self-esteem were assessed through self-report questionnaires. This may affect the correlations between the constructs, due to the reliance on a single measurement. A possibility for future research to obtain results based on multiple measurements is to additionally use the 'Experience Sampling Method' (ESM). ESM provides insight into fluctuations over time and in the person-environment interactions that underlie them by repetitive measurements in daily life (Hektner et al., 2007).

Further, the concept of upward comparison is important in understanding the possible negative relationship between social comparison and self-esteem. The upward comparison of abilities could negatively affect the level of self-esteem. The current study did not take into account the upward or downward way of comparing oneself with others, which is of great importance in interpreting the results and the possible effect on self-esteem. Future research should take this into account.

Lastly, due to the fact that the selected sample significantly differed from the not selected sample in gender and mean level of self-esteem, no well balanced sample has been used in the analyses. A possible recommendation for future research is to take demographic characteristics

in consideration to get a more balanced sample. The limitations of the current study provides reasons for further research in this field.

Conclusion

The aim of the current study was to investigate the relationship between social comparison of ability and identity development, focusing on the dimensions: identification with commitment and ruminative exploration, and the mediating role of self-esteem over time. The findings showed that social comparison of ability is a predictor of identification with commitment and ruminative exploration. In addition, the relationship between social comparison of ability and identification with commitment and the relationship between social comparison of ability and ruminative exploration were both mediated by self-esteem. This indicates the importance of social comparison of ability and self-esteem in relation to adaptive identity development. This study underlines the importance of understanding the factors influencing identity development in young adulthood. Future research should focus on getting a better understanding of social comparison, the effects and growing possibilities in which comparison can take place, as this is of great influence on identity development, especially for individuals during a major transition period.

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Appendix

Table 1

Descriptive Statistics and Pearson Correlations

Variables	*M* (*SD*)	1	2	3	4
1. Social comparison of ability	3.4 (0.9)				
2. Self-esteem	36.3 (6.6)	-.46**			
3. Identification with commitment	3.5 (0.7)	-.23**	.41**		
4. Ruminative exploration	2.9 (1.0)	.18**	-.39**	-.45**	

*Note*. **. Correlation is significant at the 0.01 level (2-tailed).

Table 2

*Results of Analyses on Identification with Commitment and Ruminative Exploration, Conducted with PROCESS macro*

Variable	*b*	*B*	*SE*	*p*	95% CI	R^2
Identification with commitment						
A	-.46	-3.28	0.44	< .001		
B	.38	.04	0.01	< .001		
C	-.23	-.16	0.05	.001		.05
C'	-.05	-.04	0.05	.486	[-0.18, -0.08]	.17
Ruminative exploration						
A	-.46	-3.28	0.44	< .001		
B	-.39	-.06	0.01	< .001		
C	.18	.19	0.07	< .010		.03
C'	.00	.00	0.75	.994	[0.11, 0.28]	.16

Note. A: the direct effect of social comparison of ability on self-esteem. B: the direct effect of self-esteem on the dimension of identity development. C: the direct effect of social comparison of ability on the dimension of identity development, without taking into account self-esteem. C': the effect of social comparison of ability on the dimension of identity development, respecting self-esteem.

Figure 1

Structure of Variables
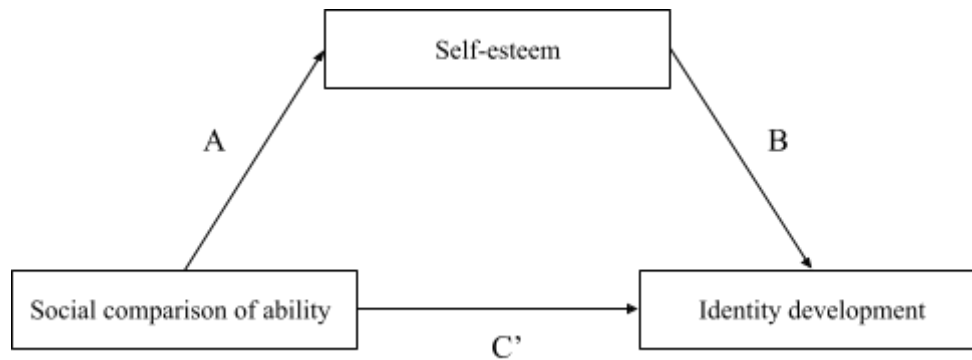
Note. A: the direct effect of social comparison of ability on self-esteem. B: the direct effect of self-esteem on the dimension of identity development. C: the direct effect of social comparison of ability on the dimension of identity development, without taking into account self-esteem. C': the effect of social comparison of ability on the dimension of identity development, when taking into account self-esteem.

Figure 2

Scatterplot with Identification with Commitment: Checking for Linearity and Homoscedasticity
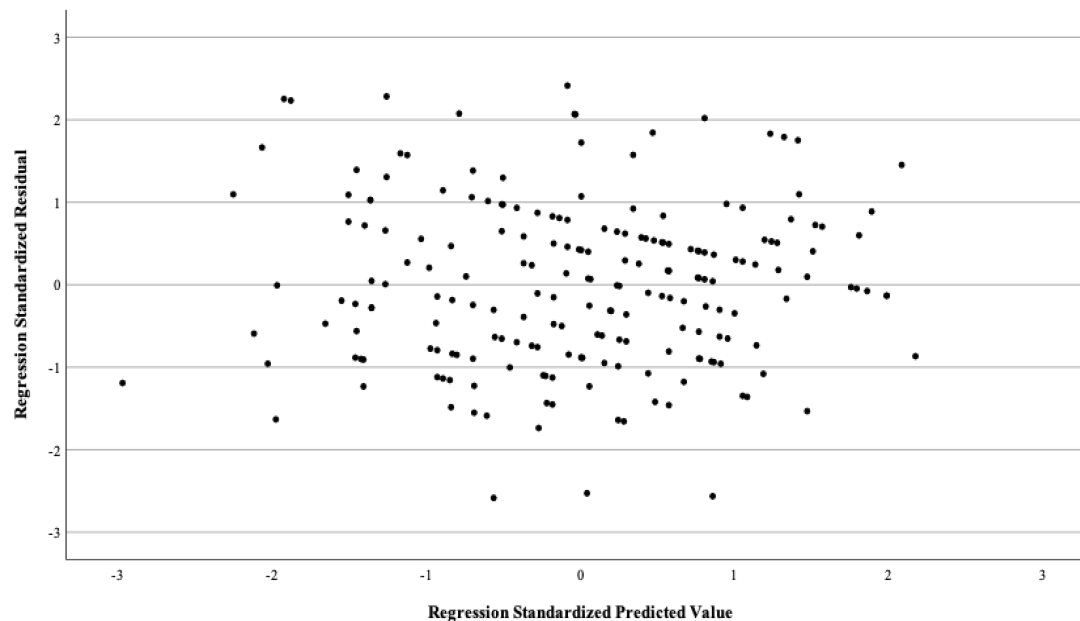
Note. Independent variable: social comparison of ability. Dependent variable: identification with commitment. Mediator: self-esteem. The values in this plot are randomly distributed, this means that the assumptions of linearity and homoscedasticity are met.

Figure 3

Histogram with Identification with Commitment: Checking for Normality
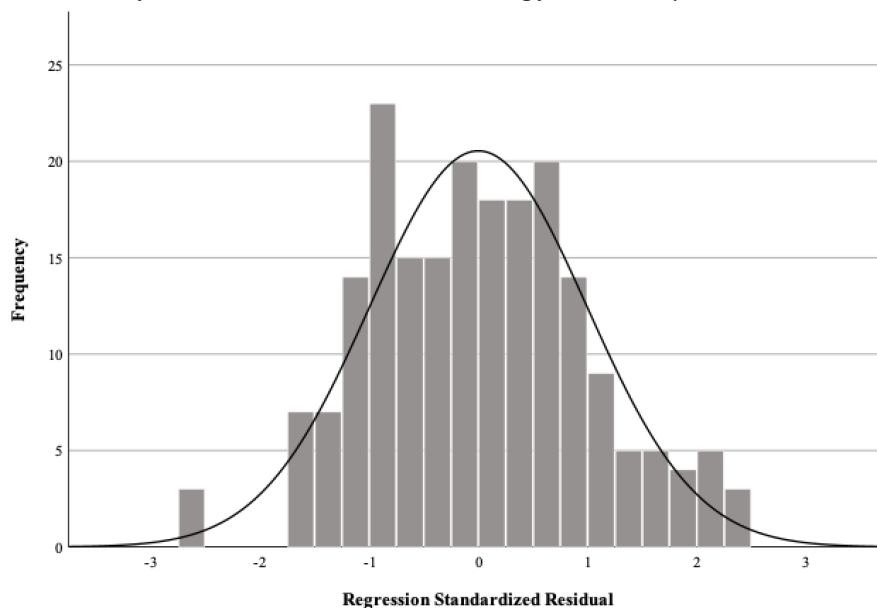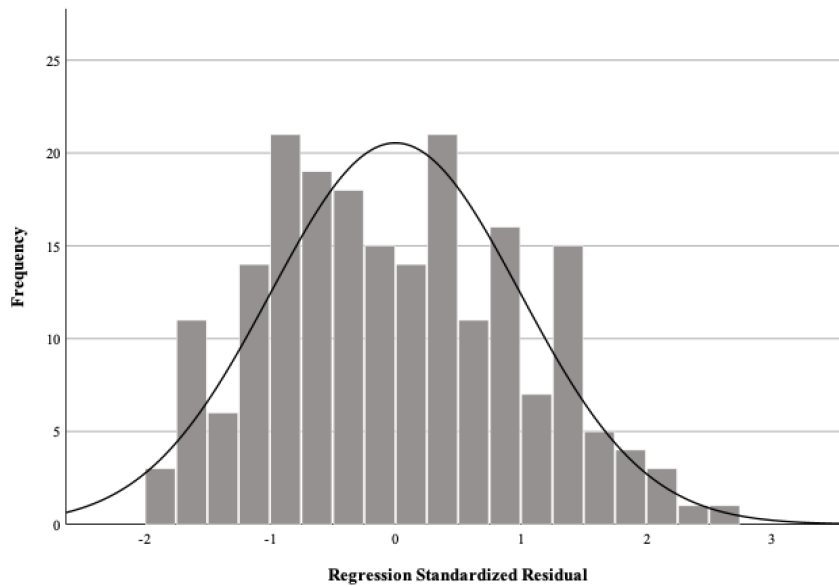

Note. Independent variable: social comparison of ability. Dependent variable: identification with commitment. Mediator: self-esteem. The observed frequencies and the theoretical normal distribution are largely similar, this means that the assumption of normality is met.

Figure 4

Scatterplot with Ruminative Exploration: Checking for Linearity and Homoscedasticity
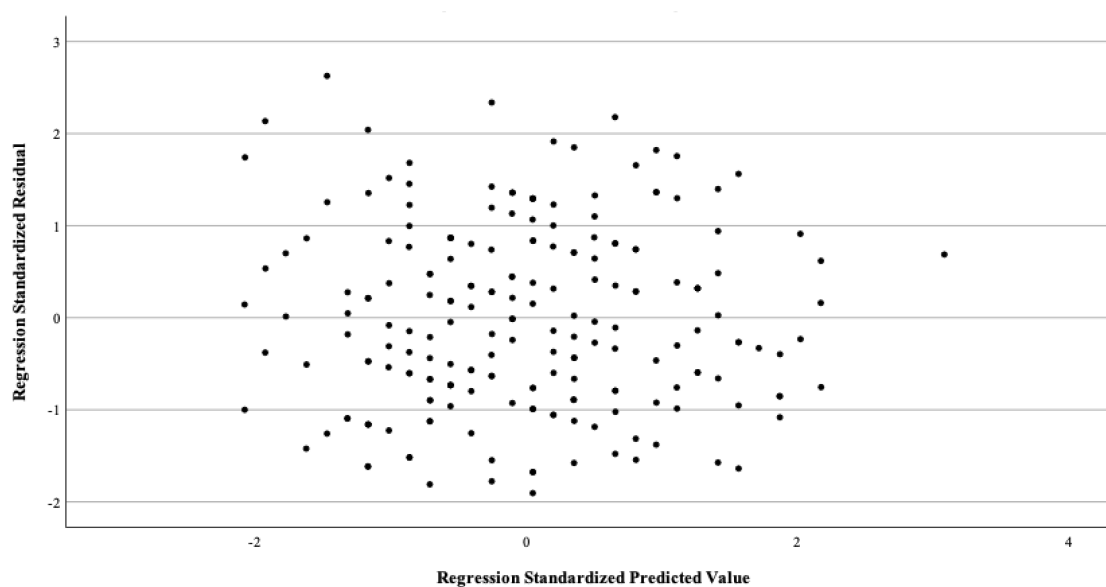
Note. Independent variable: social comparison of ability. Dependent variable: ruminative exploration. Mediator: self-esteem. The values in this plot are randomly distributed, this means that the assumptions of linearity and homoscedasticity are met.

Figure 5

Histogram with Ruminative Exploration: Checking for Normality

Note. Independent variable: social comparison of ability. Dependent variable: ruminative exploration. Mediator: self-esteem. The observed frequencies and the theoretical normal distribution are largely similar, this means that the assumption of normality is met.