Psychological Consequences of Clothing:

The Effects of Clothes on Inner Voice and Self-Esteem

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Abstract

Several authors have studied how a person's psychological, cognitive, and performance processes are affected by their clothes or self-talk. Their findings suggest that specific types of garments and positive thoughts related to themself have great benefits for a person's well-being and overall performance. Yet, it is unknown how to elicit positive self-talk. Therefore, the present study tested the hypothesis that different clothing styles can influence the inner voice by provoking positive or negative thoughts that can affect a person's self-esteem by raising or diminishing it. Naturally, the clothes' influence on the participants could be moderated by their self-esteem levels and use of clothes as self-expression. Thus, two moderated mediation analyses and a simple mediation analysis were performed. The data (N=93) was gathered from an online experiment where the participants completed several questionnaires assessing their use of clothes as self-expression and their self-esteem levels before and after the experiment. Afterward, the participants were randomly assigned to two conditions: "good clothes" or "bad clothes". Then, five hypothetical scenarios were presented to elicit and record their inner voice. Results show that self-esteem and clothes as self-expression did not moderate the relationship between clothes, inner voice, and self-esteem. Clothes did not affect the post-self-esteem scores, and inner voice did not mediate this relationship. Herewith, the presented study sheds some light on the clothing's psychological consequences on the inner voice and self-esteem.

Keywords: Inner voice, self-esteem, clothes.

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"When you don't dress like everyone else then you don't have to think like everyone else"

Iris Apfel in Iris Apfel: Accidental Icon

Iris Apfel makes an interesting point by connecting clothes to the way people think. After all, clothing has a significant role besides covering the body. Lee (1997) suggests that clothing has evolved from the most basic physical need (from Maslow's model of human motivation) into a medium to satisfy higher-order needs, such as self-actualization, belonging, or self-esteem needs. For example, before the mass consumerism of American collegiate sweaters, wearing a Harvard university sweater implied a sense of belonging to a global elite. Yet, this example falls short of explaining the functions and influences that clothes can have on someone's psychological processes, such as performance and cognition (Adam & Galinsky, 2012; Dreiskaemper et al., 2013; Slepian et al., 2015).

Adam and Galinsky (2012) coined the term *enclothed cognition* to describe the clothes' influence on what we think, feel, and act. A good way to explain this theory is by referring to the analogy, "*Clothes may make the person, but costumes make the character*" (Dawn, 2017). An interesting and common phenomenon in acting is how professional actors use specific clothes to connect with their characters, even in the early stages of the project. This was true in the Harry Potter series, where Lucius Malfoy's original look had short hair and wore a pinstripe suit. However, the actor Jason Isaacs who played the part, changed it after getting familiar with the character, as Lucius would never dress up or look like a "muggle". It is fascinating how actors can think, feel and act like others through clothes. It is not imitation but the ability to generate the same thoughts or inner voice as the counterpart.

Inner voice are self-generated thoughts that can be "listened to" when reading silently or in the form of questions, comments, guesses, etc. (Larrain & Haye, 2012). They are vital

because they influence everyday cognitive tasks such as problem-solving situations or memory retrieval (Perrone-Bertolotti, 2014; de Rooij, 2022). This phenomenon can vary in functions (Hermans, 1996) and quality (Alderson-Day et al., 2018). For example, it can be experienced in a regulatory manner or critically when we have "*if-only*" or catastrophic thoughts. According to the embodied cognition theory, the mind, body, and environment interact and influence one another, yet little is known about the mind and the body, in terms of clothes and the inner voice synergy. This gap needs to be filled because the inner voice that arises when wearing specific garments can improve or decrease a person's daily activities, mental health, and self-esteem (Kwon, 1991).

Self-esteem is a person's positive or negative attitude towards themselves (Rosenberg, 1965). It has been suggested that self-esteem is not constant and fluctuates over a person's lifespan (Robins et al., 2002). The fluctuation can be the result of many factors. For example, Danielsson and Bengtsson (2016) found that self-relevant cognition was associated with self-esteem, implying that thinking positively about yourself may increase self-esteem. Nevertheless, little is known about what people can do to elicit or decrease positive and negative inner voice. However, as explained before, it is suspected that clothing could affect the inner voice as both are closely related to a person's perception (Keogan, 2013). Thus a relationship between clothes, inner voice, and self-esteem could exist.

Lastly, psychologists provide several mental techniques to change from negative inner voice to positive self-talk, but it is a process that takes time and requires consistency. This inconvenience arises as the motivation for the present study to "*hack*" the inner voice through clothing in order to achieve quicker results to boost self-esteem. Thus, the present research sought to answer the following question: *How does clothing affect self-esteem?* The benefits of "hacking" the self-speech into regulatory thoughts could result in higher self-esteem levels, and life satisfaction since these two have a close direct relationship (Pepping et al., 2013).

Theoretical Framework

Inner Voice: A voice Without a Mouth

Inner voice or speech, sometimes known as the "voice inside our head," is a typical and self-generated experience in humans. In fact, Lev Vygotsky discovered in 1920 that the inner voice develops simultaneously as social speech; when children learn to communicate with other humans, they also learn to communicate with themselves, first out loud and then inside their heads as a by-product of the internalization process. Children's inner voice eventually helps them to regulate task engagement and social processes (Flanagan & Symonds, 2022). Thus, it is safe to say that inner speech is the materialization of the consciousness (Riley, 2004) that unknowingly influences a person's cognitive performance by improving or perturbing it (Perrone-Bertolotti et al., 2014).

It is easy to confuse this mental facility with regular thinking, yet according to Charles Fernyhough (2013), inner speech is a subset of the former and has several different functions. To illustrate, the inner voice plays a role in motivation, emotional expression, imagination (Fernyhough, 2013), self-examination (Riley, 2004), guiding further memory search (de Rooij, 2022), performance (Nedergaard et al., 2021), and possibly for self-regulation functions (Flanagan & Symonds, 2022). Naturally, wide varieties of this phenomenon have been observed in the form of self-criticism, self-management, social assessment, instructional, etc. (Oleś et al., 2020) but not all of them are equally effective or work the same way for everyone (Hardy et al., 2008).

Depending on the type of inner voice, its influence can positively or negatively impact cognitive tasks and overall performance. For example, self-talk in athletes has been reported to enhance attentional control (Chroni et al., 2007). Meanwhile, the result of excessive rumination can produce social anxiety, depression, and in some cases, suicide (Firestone, 1986). For the matter of the present research, the main focus will be on two broad types of inner voice, namely, positive and negative inner voice.

Types of Inner Voice

Negative Inner Voice

When a person's thinking pattern is predisposed to remember bad experiences over pleasant ones, they develop a negative inner voice that will replay every time they make a mistake resulting in unpleasant feelings (Jantz, 2016).

For some authors, it is believed that if the negative thoughts become constant, it has a long-term effect on a person's mood, life satisfaction (Wignall, 2021), or detrimental consequences on their performance (Zinsser et al., 2006). Conversely, according to other authors, a negative inner voice has no harmful effects, at least on motor skill performance (Tod et al., 2011).

According to Nick Wignall, clinical psychologist, there are seven types of negative inner speech, as shown in Table 1.

Table 1

Types of Negative Inner Voice

Type	Definition	Example
Mind-reading	Negative assumption of what someone else thinks based on little or no proof.	After pitching a new idea at work, you notice someone is shaking his head slightly. "*He didn't like it... I knew I shouldn't have volunteered to do this!*"
Catastrophizing	Anticipation of the worst-case scenario.	The coffee shop gets your order wrong, and you automatically think that the rest of your day will be a disaster.
If-only Mind	Oversimplification of the factors that contribute to a person's happiness or pain.	*If only my boyfriend were more supportive, then our relationship wouldn't be so stressful and unhappy.*
Black and White Thinking	Forcing everything into false dichotomies.	*God, she's always so negative!*
Personalizing	The inappropriate assumption that things are a reflection of your	Your editor gives you harsh criticism on your new manuscript's section.

	worth as a person.	*"I'm probably not meant to be a writer"*.
Should	The habit of constantly telling yourself what you should do in an inquisition matter?	*I should work out extra hard today.*
Emotional Reasoning	Making decisions based on how you feel or want to feel instead of your principles and what you believe to be right.	You're considering sharing an idea at work: *"I do think it's a good idea, but what if someone thinks it's dumb? That'd be too shameful. Maybe I'll bring it up later..."*

Positive Inner Voice

Positive inner voice is a person's narrative that opts for a self-compassion and understanding tone of voice (Jantz, 2019). This type of voice looks to make the best out of any situation and has great benefits for a person. For example, to reduce stress (Iwanaga et al., 2004), boost confidence and resilience (Zinsser et al., 2006; Lyubomirsky, 2008), build better relationships (Assad et al., 2012), reduce anxiety and depression (Leung & Poon, 2001) and to increase performance (Wrisberg, 1993).

For other authors, the previous benefits or findings regarding positive self-talk on self-confidence are inconsistent (Tod et al., 2011), or there are not sufficient effects in creative performance improvement (de Rooij, 2022).

Unlike the seven types of negative inner voice proposed by Nick Wignall, there are no suggested types of positive inner voice; thus, in an attempt to better understand how positive inner voice works, a couple of examples are provided in Table 2.

Table 2

Types of Positive Inner Voice

Type	Definition	Example
Positive Affirmations	Switch up the self-talk even before a situation arises that might incite negative self-talk.	*Even though I feel afraid, I won't shrink away from fear and will do this.*

Supportive Dialogue	"I can do this" mindset rather than self-defeating thoughts.	*I can do (...)better next time.*
Self-reinforcement	Positive statements to oneself about (daily) events.	*Although this didn't go as expected, I'm proud of myself for trying.*
Social Reinforcement	Refers to past, present, or future social interactions in a positive manner.	*I'm interested in this person, and this person seems interested too. Maybe I'll make a new friend.*

Clothes

The clothes' function has changed over time, moving beyond its original purpose of merely covering up our bodies to affect psychological processes like self-esteem (Lee, 2005). This shift is thought to have strengthened in feudally-ordered societies where distinctive garments were used to differentiate social classes, making the pursuit of belonging to social elites fueled by fashion (Simmel, 1904/ 1971).

The clothes' effect on the wearers' behaviors, self-objectification processes, knowledge activation, etc. has been documented by a number of authors (Frank & Gilovich, 1988; Fredrickson et al., 1998; Hannover & Kuhnen, 2002; Gino et al., 2010). In 2012, Adam and Galinsky discovered that clothes have a significant positive and consistent intrapersonal effect on their wearers and dubbed it "enclothed cognition". The theory holds that any preferred garment can encourage a person to act in ways they desire by triggering qualities that will lead them there as long as two assumptions are met: the clothes have a symbolic meaning associated with them, and going through the physical experience of wearing such garments. These assumptions need to be met because, according to embodied cognition theory, the body is not only connected to the mind but also influences it.

Self-Esteem

Self-esteem is a person's positive or negative attitude towards themselves and how they rate their overall thoughts and feelings about their persona (Rosenberg, 1965).

Factors that make self-esteem fluctuate in a person's life span include age, life experiences (Robins et al., 2002), self-relevant cognition, i.e., a person's thoughts about themselves (Danielsson & Bengtsson, 2016), etc. According to Beck (1979), people with low self-esteem believe that life is too painful to live and that they are worthless, helpless, and hopeless. In extreme cases, their negative inner voice leads them to consider suicide as a way to end their emotional suffering, whereas people with high self-esteem have a positive inner voice making them think highly of themselves, be confident in their abilities, and have a positive outlook on life.

As a result, building a positive self-image is crucial because once a person has created their own identity they act in ways to confirm it, whether in a positive or destructive manner (Gover, 1991).

Clothes and Inner Voice

Inner voice is the manifestation of consciousness (Riley, 2004), which unwittingly affects a person's cognitive functions or performance by enhancing or inhibiting it (Perrone-Bertolotti et al., 2014). Similarly, clothes can also enhance a person's performance. For example, it was found in two separate studies involving athletes that self-talk was used as a strategy to improve their focus on the task (Hatzigeorgiadis et al., 2011), while wearing red uniforms had a significant impact on the athletes' strength test (Dreiskaemper et al., 2013), likely as a result of the symbolic association that people have with this color.

To the state of art, there is a lack of research regarding the cross effects that clothes and inner voice can have on a person in order to see if they work as a synergy, independently, or if one can influence the other. Thus, since a person's self-image is mirrored by their clothes (Kwon, 1991; Masuch & Hefferon, 2014), and the inner voice is a manifestation of the person's consciousness, the following hypotheses are raised (note that for the study, "good clothing" refers to the participant's preferred garments, whereas "bad clothing" is the piece of clothing that is not of the participant's preferences).

H1a: Compared to bad clothing, good clothing increases positive inner voice.

H1b: Compared to good clothing, bad clothing increases critical inner voice.

Clothes and Self-Esteem

Although enclothed cognition theory has been the subject of substantial research, to my knowledge, no study has linked the theory with the implicit differences across individuals' self-esteem levels or their tendency to use clothes as a means of self-expression. The connection is important because, for those who, through high levels of self-esteem, have reached higher levels of self-actualization, i.e., the final stage of an individual's linear growth, clothing may no longer be necessary for self-expression, whereas, for some other people, clothing may be necessary to satisfy certain psychological needs. To illustrate, while teenagers rely on fashion to express themselves and define their worth (Ji, 2002; Piacentini & Mailer, 2004), the elderly are not particularly attached to clothing because they tend to live more holistic or spiritual lives (Lee, 2005/2009).

To conclude, a way to confirm or influence a positive or negative self-image is through fashion (Kwon, 1991; Masuch & Hefferon, 2014), making clothes a tool to directly influence self-esteem. Thus to properly observe the effect that clothes can have on self-esteem through the inner voice, the following hypotheses come to light:

H2: The effect of clothing on the inner voice is strengthened in participants with low levels of self-esteem.

H3: The effect of clothing on post-self-esteem is increased by people's tendency to use clothing as self-expression.

Clothes, Self-esteem, and Inner Voice

As pointed out earlier, a way to confirm or influence a positive or negative self-image is through fashion (Kwon, 1991; Masuch & Hefferon, 2014), making clothes a source of positivity in people's lives since it has positive effects on well-being through selfhood, befriending the body, and mood management (Masuch & Hefferon, 2014). Conversely, clothes can negatively

affect someone's self-esteem and self-acceptance (Kwon, 1991). For instance, some people judge their worth and the worth of others by comparing their belongings (Nesselroade et al., 1999), making certain clothing brands linked to lower levels of self-worth (Ji, 2002).

As it can be seen, clothes have been the subject of many studies concerning the body, identity, and agency (Twigg, 2007). Yet, there is a lack of research on the relationship between clothes and the inner voice, which is surprising due to the significant impact that self-talk has on all facets of our daily lives. In fact, Tod et al. (2011) did a literature and research review and came to the unanimous conclusion that positive self-talk interventions are effective in mediating cognitive and behavioral change and impact what modern psychology refers to as cognitive mediation. Therefore, to study the mediating effect that the inner voice could have on the relationship between clothes and self-esteem, the following hypothesis arises:

H4: The effect of good clothes, compared to bad clothes, on self-esteem is mediated by the person's inner voice.

As a result of the previous hypotheses, the hypothesized model path is presented below.

Figure 1

Hypothesized Model Path
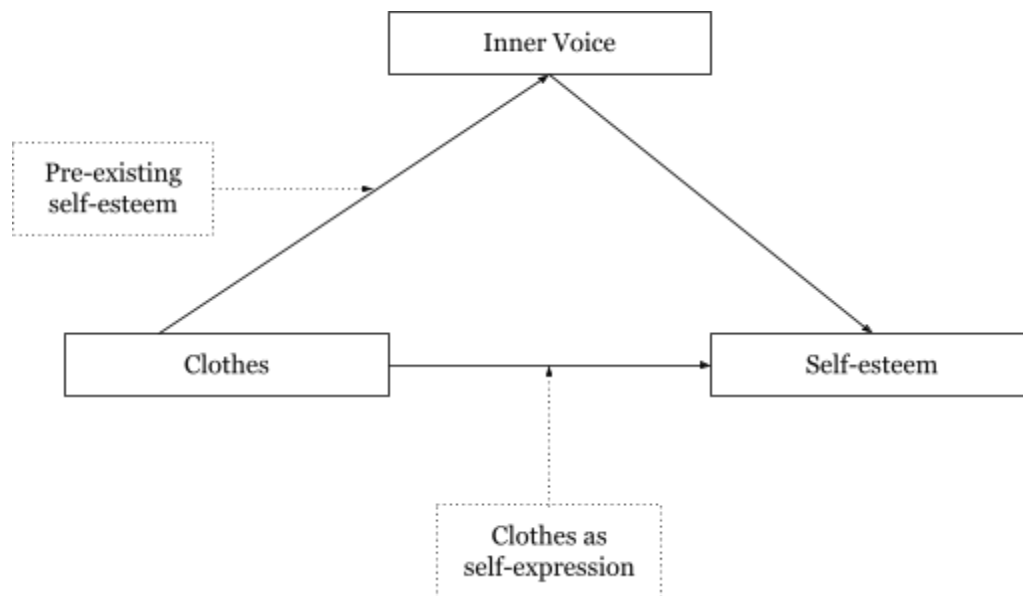
Methodology

Design

The study used an experimental design to test the causal relationship between the independent variable, i.e., clothing, and the dependent variables, i.e., the participant's inner voice, and self-esteem. As a result, a 1x1 between-subject experiment was devised. Depending on the participant's preferences, clothes were divided into "good clothes" and "bad clothes". Naturally, each participant had their self-esteem built up prior to the experiment, as well as their preference to use their clothes for self-expression or not, which makes these two bias confounding variables. To reduce their impact on the study's internal validity, participants completed two questionnaires related to the use of clothing for self-expression (see Appendix A), and their self-esteem (see Appendix B and C).

Participants

Demographics

The study's sample initially consisted of 104 participants; however, due to incomplete responses, the analyzed questionnaires were from 93 people whose age fall between 18 and 56 years old (M = 26.51, SD = 6.70). From the sample, 68 identified as female, 24 as male, and one person preferred not to disclose their gender. The participants were mainly from Peru (N = 33) and The Netherlands (N = 16). The rest of the participants (N = 44) came from 22 countries, e.g., Belgium, Germany, Spain, Colombia, Ecuador, Brazil, Vietnam, Russia, Iran, etc.

Sample Technique and Size

Snowball sampling was used to recruit participants through the author's network. Aside from being over the age of 18, there were no prerequisites for participating. Those who volunteered for the experiment received no compensation or reward for their participation. As a result, the study gathered the responses from 104 participants. A a sample size between 30 and 500 at a 5% confidence level is substantially sufficient for several authors (Altunışık et al., 2004, s. 125), also the sample size goes in hand with similar studies that have studied clothes,

self-esteem, and inner voice (see, e.g., Brocklehurst & Corley, 2011; Keogan, 2013; Danielsson & Bengtsson, 2016).

Materials

Rosenberg Self-Esteem Scale (RSES)

Rosenberg developed the RSES questionnaire in 1965 to assess self-esteem. It is one of the most widely used measures of self-esteem for its reliability in student populations from age 12 and up (Sinclair et al., 2010). Since the purpose of the study is to compare short-term changes in the self-esteem, also known as state self-esteem (Linton & Marriott, 1996), the test's sentences were slightly modified to assess past and present self-statements; for example, the first questionnaire included "*At times I think I am no good at all*" and in the second questionnaire it was adapted to "*While wearing this outfit, there were times when I thought I was not good at all*".

In the 10-item questionnaire, the person is presented with statements to which they must respond on a four Likert scale from "strongly agree" to "strongly disagree". In the current study, the participants were asked to take this test twice, once at the start and at the end of the experiment, to measure if their state self-esteem changed after the stimuli.

Previous researchers have satisfactorily examined the RSES reliability and validity. For example, the RSES test-retest made in a period of two weeks has proven to be remarkably high in reliability since it shows correlations of .85 to .88. Moreover, considering that a Cronbach's alpha greater than .70 is acceptable to estimate a sufficient internal consistency, the RSES has an outstanding internal consistency since the measurement from several samples has fallen between .77 to .88 (M = 0.81) (Torrey et al., 2000; Schmitt & Allik, 2005; Sinclair et al., 2010). In the present study, the RSES test scored a Cronbach's alpha value of .90 and .80.

In the questionnaire, each item was given a fixed value from the four Likert-scale to keep the participant's self-esteem score on a continuous scale. From the sum scores of all ten items, the maximum score that can be achieved is 30, and for the lowest, it is zero, which means

that higher scores represent higher self-esteem levels. Note that from the list of statements, numbers 2, 5, 6, 8, and 9 were reverse scored.

Stimuli

The stimuli consisted of six different outfit styles for each gender (female and male) (see Appendix D) and five hypothetical scenarios (see Appendix E) in which the participant experienced anticipated and unexpected events to evoke their inner voice. Needless to say, each person has their own preference and aesthetic in which they feel most comfortable or confident. Thus, the outfits were not labeled as "good" or "bad," but rather the participant chose which was the "good" or "bad" clothes, which strengthened the criterion, and content validity of the experiment. According to the participant's preferences, the experiment developed, which is explained in the procedure section.
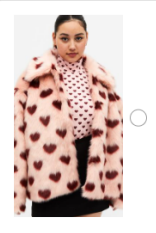
Hypothetical Scenarios

Moore et al. (2012) suggested that responsive situations can mirror the respondents' actual behavior, while the elaboration of the instructions (e.g., "*please think carefully about your response*") can also influence the impact of those scenarios by increasing the participants' engagement.
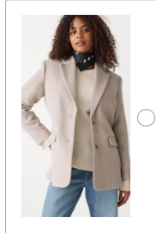
The format in which the scenarios were presented was also important because, depending on the stimuli, the brain responds differently (Villena-González, 2016). To explain, previous researchers (McGuire et al., 1996; Kosslyn et al., 2001) discovered that because inner speech and visual imagery activate auditory and visual perception-related brain regions, respectively, the attention to external auditory or visual stimuli may decrease because the same sensory modality is already being used. Therefore, the scenarios were presented in plain text and supported by images (see Figure 3).
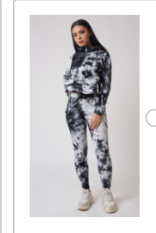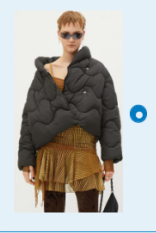
Figure 3

Example of Hypothetical Scenario Presentation
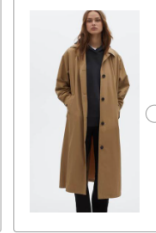
Inner Voice Assessment

There are several cognitive assessment methods at disposal to assess a participant's reaction. However, similar studies that have researched inner voice have mainly focused on endorsement measures (e.g., a checklist or questionnaire) rather than production measures (e.g., think aloud or thought listing). The present study has selected the latter to elicit inner voice as a result of the hypothetical scenarios.

Production Measure

Production measure is a method that evokes and captures the participant's actual inner speech as well as the nature of their thoughts (Chamberlain & Haaga, 1999). To the best of my knowledge, this modus operandi is seldom in empirical research; instead, the inner voice has been mostly appraised through self-report questionnaires, i.e., endorsement measures. (Chamberlain & Haaga, 1999). While endorsement measures use structured self-statements that must be recognized and endorsed by the participant, making them more susceptible to selective

memory and social desirability bias (Clark, 1988; Genest & Turk, 1981), production measures actually allow the participant to produce their inner voice while still enforcing sufficient structure to induce self-talk that is relevant to the study (Clark, 1988; Genest & Turk 1981).

The lack of empirical studies using production measures has made it difficult to determine the method's validity. However, it is to my knowledge that only one study conducted by Sturmer et al. (2002), compared the convergent validity between production and endorsement methods while assessing cognitive self-statements related to social anxiety. In their study, the convergent validity failed in favor of the production measures due to its focus on situationally specific self-talk, whereas the endorsement measure focuses on the participant's overall self-evaluation.

The participant's inner thoughts were coded as positive or negative inner voices following the guidelines mentioned in the theoretical framework (see Table 1 and Table 2).

Procedure

Figure 3

Experiment Procedure in Qualtrics.
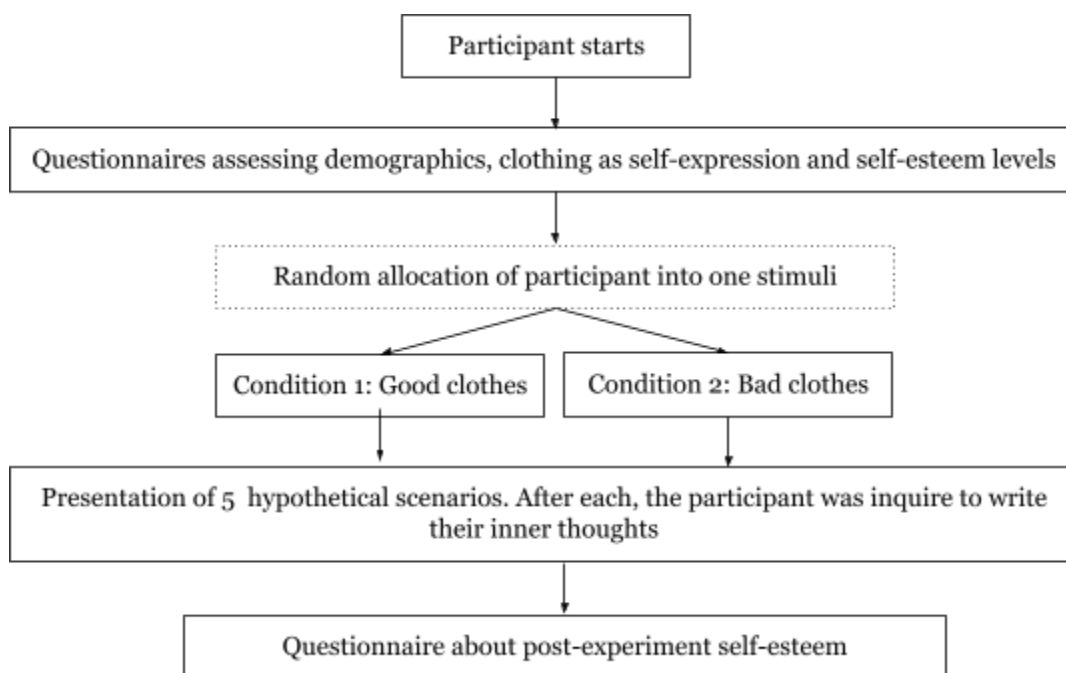
Before starting the test, participants were required to fill out a consent form if they wished to continue. As a result, they were informed of the study's purpose and the option to withdraw from the experiment at any time.

The participants were then asked to answer three questionnaires. The first was a demographic survey, followed by a five-item survey about the effects of clothing on their daily lives, and finally, a questionnaire that measured their self-esteem state; the results of this last test were dubbed "pre-existing self-esteem", referring to the self-esteem scores before the experiment's task.

The third step involved showing the participants five images of various outfit styles based on their gender. Those who did not identify as male or female were asked if they wanted to see the outfits in a woman's or a man's body. Following the presentation of the stimuli, the participants were asked to select the best or worst outfit for a casual Saturday.

Qualtrics randomly assigned the participants to one of two conditions (good or bad clothes). To ensure equal distribution, the program was configured to assign participants evenly across conditions. However, due to some participants' dropouts, the frequency was affected.

After the participants were assigned to one stimuli, they were instructed to read and imagine themselves in each hypothetical scenario presented. They were also told to consider what they would do in every situation carefully. Finally, they were asked to write down the inner thoughts they experienced during each scenario.

Upon the task completion, the participants were asked to fill out again the Rosenberg Self-Esteem Scale (adapted) test. Lastly, the participants were debriefed and thanked for their time and participation.

Data Analysis

After collecting the data from Qualtrics, the datasheet was imported to the statistical software IBM® SPSS® Statistics 28 and IBM® SPSS® Amos 26 for different tests. Due to the hypothesized moderated mediation model (see Figure 1), a structural equation modeling (SEM)

was used. The analysis and model were chosen because a moderated mediation analysis tests the conditional indirect effects of the moderating variables (i.e., "pre-existing self-esteem" and the use of "clothing as self-expression") on the relationship between the predictor (i.e., "good clothes" vs. "bad clothes" condition) and the outcome variable (i.e., "post-self-esteem") via the potential mediator (i.e., "inner voice").

To start, in IBM® SPSS® Statistics 28, the Cronbach's alpha for the questionnaires was run along with the descriptive statistics and the Pearson Correlation Matrix. Then, in IBM® SPSS® Amos 26, after revising the model's assumptions, reliability, and model fit, two moderated mediation analyses were run to observe the indirect effects of the moderators. Lastly, a simple mediation analysis and a binary logistic regression test were performed in IBM® SPSS® Statistics 28.

SEM, which is run in IBM® SPSS® Amos 26, was used over other approaches, i.e., Hayes's PROCESS Model 7 in IBM® SPSS® Statistics, due to its convenience of testing dichotomous variables -"clothes" and "inner voice"- unlike its counterpart. Note that the moderators were tested separately in SEM rather than in one major model to avoid bad model fit indices and collinearity problems.

Results

Descriptives and Correlations

To provide general insight into the data, the descriptive statistics and correlations are presented in the tables below and were retrieved from IBM® SPSS® Statistics 28.

Table 3

Descriptive Statistics

Variable	Condition	N	Mean	Std. Deviation
Pre-Existent Self-Esteem	Good Outfit	42	2.75	.51
	Bad Outfit	51	3.12	.52

Post-Self-Esteem	Good Outfit	42	2.78	.44
	Bad Outfit	51	2.83	.54
Clothes as Self-Expression		93	3.24	.89

Table 4

Pearson Correlation Matrix

Variable	1	2	3	4	5
1. Clothes	–				
2. Pre-Existent Self-Esteem	.34**	.19	–		
3. Clothes as Self-Expression	.01	.05	.00	–	
4. Post-Self-Esteem	.05	.59**	.47**	.02	–

Note. **$p < .01$ (2-tailed), $N = 93$.

Assumptions, Reliability, and Model Fit

Before running the structural equation model to test the hypothesis, the assumption checks, reliability tests, and model indices were calculated.

First, standard residuals were analyzed and showed no outliers (Std. Residual Min = -1.69, Std. Residual Max = 1.65). The data also met the assumption of collinearity, and indicated that multicollinearity was not a concern (Inner Voice, Tolerance = .64, VIF = 1.55; Post-self-esteem, Tolerance = .52, VIF = 1.91; Pre-existent self-esteem, Tolerance = .77, VIF = 1.29; Clothes as self-expression, Tolerance = 1, VIF = 1). The dataset also met the assumption of independence (Durbin-Watson value = 2.04).

Secondly, the variables "clothes as self-expression", "Pre-existent self-esteem" and "Post self-esteem" were measured using a questionnaire. The scores of the three scales showed a normal distribution except for the variable "clothes as self-expression" (z-score skewness, = -2.06, z-score kurtosis = 14.94); thus, the *p*-value may not be reliable and more weight should be placed

on the bootstrapped 95% (*N*= 5000) confidence interval. Also, based on Levene's test, the three scales' scores met the assumption of homogeneity of variances.

To test the reliability of the previous variables, a Cronbach's alpha test was run on IBM® SPSS® Statistics. For the variable, clothes as self-expression, a 5-point scale was used and showed good reliability (*N* = 5, α = .77). The participant's pre-existent self-esteem and post-self-esteem scores were measured using the 4-point Rosenberg Self-esteem Scale (RSES). They showed good reliability in the first test (*N* = 10, α = .90), and the second (*N* = 10, α = .80).

Lastly, using IBM® SPSS® Amos 26 to test the model fit of the structural equation modeling (SEM), it was found that most of the fit indices did not fall within the recommendable values (see Appendix F). However, based on Anderson and Gerbing (1984), and Kenny et al. (2015), the authors argue that fit indices should not be computed for models with small degrees of freedom and small sample sizes. Since this was the case (*df* = 8, *N* = 93), the analyses went forward but tested the moderators separately because collinearity is frequently caused by interaction effects, and moderating effects can make this problem worse. Additionally, the moderators affect the same dependent variable, i.e., post-self-esteem scores, so this was another reason for testing them separately.

Hypotheses Test

To test the hypotheses, several tests, i.e., two moderated mediation analyses, a simple mediation analysis, were performed in IBM® SPSS® Amos 26, and a binary logistic regression test was run in IBM® SPSS® Statistics 28. The unstandardized results from those tests are reported below.

A moderated mediation analysis was performed to investigate if the effect of clothing on the inner voice is moderated by the participants' pre-existent self-esteem (H2). The interaction between clothes and pre-existent self-esteem was found to be statistically insignificant as zero crosses de confidence intervals [β =-.073, 95% C.I (-.285 , .140), *p* = .496]. The finding suggests that pre-self-esteem does not influence inner voice. This rejects H2.

To test if the effect of clothing on post-self-esteem is increased for people with a stronger tendency to use clothing as self-expression (H3), a second moderated mediation analysis was run. The interaction between clothes and clothes as self-expression was also found to be statistically insignificant [β =-.137, 95% C.I (-.280 , .002), p = .053]. This means that using clothes as self-expression did not moderated the post-self-esteem scores. Thus, H3 is rejected.

To examine if the effect of good or bad clothes on self-esteem is mediated by the participant's inner voice (H4), a simple mediation analysis was used to test the significance of the indirect effects. The indirect effect of clothes on post-self-esteem was found to be statistically insignificant since zero crossed the confidence interval range [β = -.118, 95% C.I (-.250 , .007), p = .064]. Furthermore, the direct effect of clothes on post-self-esteem was also found to be insignificant [β = -.171, 95% C.I (-.001 , .345), p = .051]. Hence, since clothes did not predict the post-self-esteem scores and inner voice did not mediate this relationship, H4 is rejected.

Finally, to study if compared to bad clothing, good clothing increases the positivity of the inner voice (H1a), and if compared to good clothing, bad clothing increases the criticalness of the inner voice (H1b), a binary logistic regression test was performed and indicated a p-value = .069, 95% C.I. (-.167 , 1.068), indicating no statistically significant difference between groups. Therefore, the odds ratio was unreliable, and H1a and H1b were rejected.

Discussion

Although it is well known that what we wear affects how others perceive or make assumptions about us (Howlett et al., 2013), this study sought to determine whether the choices people make regarding their clothing can also affect how they feel about themselves and how it can influence their inner voice. Thus, this section seeks to suggest possible interpretations of the results while acknowledging current results and literature limitations.

The Effect of Clothes on Self-Esteem Scores

Contrary to expectations, the participants' clothing did not influenced their post-self-esteem scores. This outcome is consistent with a study that also used a cross-sectional

methodology (Keogan, 2013). However, it differs from a longitudinal research carried out over three months (Tondl & Henneman, 1994). Given the previous comparison, it is plausible to suggest that the clothes a person wears may have a longer-term impact on their self-esteem rather than an immediate effect; this could explain why the current study did not find a direct effect.

To fully understand the immediate impact that clothing can have on someone's self-esteem, the participants' nationality should be considered, which the current study did not assess. To give an example, a study that solely looked at women from India found that wearing garments from prestigious fashion labels significantly increased their self-esteem (Khare et al., 2012). The result of some societies placing higher importance on prominent apparel brands than others can influence the direct effects that clothes can have on self-esteem. These differences among societies could explain why the moderator "use of clothes as self-expression" did not have any effect on the study since the participants' pool was too diverse.

Based on the previous remarks, a further study on cultural background or nationality influencing the relationship between clothing and self-esteem is suggested. Also, it would be worth conducting a longitudinal study as they seemed to observe direct effects in the relationship.

The Effect of Clothes on The Inner Voice

According to the enclothed cognition theory (Adam & Galinsky, 2012), the clothes we wear have an interpersonal and intrapersonal effect that extends to some psychological process, to the point that, if used correctly, it can also increase performance. Therefore, the present study expected to see a mediating effect of the inner voice in the relationship between clothes and post-self-esteem scores.

The results did not have a mediating effect in the previous relationship mentioned. The current state of the art limits the possibilities to compare this finding to similar research because, to my knowledge, no other study has examined the three variables together.

Nonetheless, if we compare these results with a large body of studies that have only focus on the enclothed cognition theory, the clothes' lack of effect is inconsistent with them (see, e.g., Kraus & Mendes, 2014; Pine, 2014; Van Stockum & DeCaro, 2014; Slepian et al., 2015; López-Pérez et al., 2016; Burger & Bless, 2017; Civile & Obhi, 2017).

The inconsistency might be a product of the small sample size since there was no evidence of multicollinearity among variables, but it could also be due to the methodology's instrumentation. To explain, one of the two basic factors that underlie the enclothed cognition theory is the physical experience of wearing it (Adam & Galinsky, 2019), which was not assessed by the study as the experiment was purely online. Future research should therefore discard online environments and focus on physical experiences only.

Moreover, the inner voice might be susceptible to gender and age bias. To elaborate, a study carried out by DeVore and Pritchard (2013) found significant differences in self-talk statements between genders, where women experience more negative, poor coping, and depressive self-talk than men. Similarly, a different study focused on children's self-talk also found that their inner speech was mediated by age and gender (Flanagan & Symonds, 2022). This inner voice's susceptibility could explain why clothes did not have an effect in it since the present study did not assess the participants' gender or age.

Self-Esteem and Inner Voice

The present study failed to find a moderation effect between pre-self-esteem and the relationship between clothes and inner voice. The results differ from previous research that established people with low levels of self-esteem have a more vicious and vociferous critical inner voice (Gover, 1991; Noordenbos et al., 2014). However, when comparing the present results to Noordenbos et al. (2014), it must be pointed out that their results were based on two group samples, one with eating disorder patients with low self-esteem and a healthy control group; whereas the present study had one group sample where the majority of the participants scored relatively high in their pre-self-esteem test. The lack of a between-subject design, i.e.,

participants with high and low levels of self-esteem, or at least diversity in self-esteem scores, might explain the absence of a moderation effect in the results.

The importance of studying how to elicit a positive inner voice is transcendental, as it has been observed that replacing negative thoughts with positive thinking and positive self-evaluations can build higher self-esteem levels and relieve depressive and anxiety symptoms (Kendall & Treadwell, 2007; Korrelboom et al., 2012; Smith, 2019). These benefits might be more beneficial to women since depression and social anxiety are more prevalent in them than in men (Eaton et al., 2012; Asher et al., 2017; Lim et al., 2018). Unfortunately, this study concludes that clothes are not an alternative to eliciting a positive inner voice nor increasing self-esteem, and other options should be studied.

Limitations

Sample Size

The present study had a sample of 93 participants (after removing those with incomplete answers to the hypothetical scenarios and incomplete questionnaires). Based on previous work, it was estimated to count around 100 participants to have reliable results. Nevertheless, the sample ended up being too short, failing to provide statistically reliable estimates of direct and indirect coefficients and leading the confidence intervals and hypothesis to produce wrong inferences. Hence, the sample size that followed previous studies and was affected by attrition threatened the study's population validity, make the results unfitting to generalize them to a larger group of people.

Instrumentation

The production measure approach evaluated the participant's depicted inner voice in five hypothetical scenarios. Although this method allows a seemingly fair descriptive experience sampling, there is a natural disconnection between what the participants were truly experiencing in their heads and what they wrote down. To explain, self-talk runs at an average rate of 4,000 words per minute, which is 10 times faster than verbal speech (Korba, 1990).

Hence, it is plausible to think that the participant's positive or negative inner voice was categorized as only a portion of their full inner speech, representing a threat to the study's internal validity.

The current study also assessed elicit inner voice rather than spontaneous inner voice. According to Hurlburt et al. (2016), as per MRI testing, both phenomena occur in different parts of the transverse temporal gyrus (TTG), which is the part of the brain most involved in language comprehension. As a result, the main threat to the study's ecological validity is that the results from task-elicited inner voice may differ from those obtained when investigating the natural phenomena. Nevertheless, Hurlburt et al. (2016) contend that, while these phenomena are not the same, they are often neurophysiologically and psychologically similar.

Hawthorne effect

In the experiment, the participants were aware that their written self-talk would be appraised, which sadly jeopardized the experiment's internal validity. Philosopher Rousseau (1855), believed that society has a significant impact on human development and behavior, to the point that an individual can no longer express their actual sentiments or thoughts due to the pressure of adhering to social norms. Moreover, according to Leuenberger (2021), self-loss can not only happen in the company of close friends and family but even in private and states, "*If a person has been sufficiently corrupted by society, her (his) inner voice and natural dispositions no longer lead her (him)*". As a result, the inner voice that the participants experienced during the experiment might be influenced by social norms impeding them from expressing their authentic thoughts.

Future Work

Further research should be undertaken considering the mediating effect that cultural background, gender, and age can have on the participant's relationship between clothes, inner voice, and self-esteem. For the sampling method, it would be ideal to use larger sample sizes evenly distributed between genders and employ a stratified random sampling procedure based

on cultural differences. An additional approach would be through a between-subject design based on the participants' levels of self-esteem (high vs. low). Also, future studies should advocate for longitudinal studies since they have been more successful in observing the direct effects in the relationship between clothes and self-esteem.

For the materials, along with self-esteem, assessing self-confidence levels after the participant is exposed to the stimuli is strongly recommended. Note that self-esteem is unrelated to confidence, which the latter varies depending on the situation (Burton, 2015; Fernstrom, 2019). For example, Pine (2014), observed that university students, who wore a Superman t-shirt, had higher levels of mental and physical confidence than those who did not wear it. Pine credits this finding to the impact clothing can have on people's moods and thoughts. Thus, assessing self-confidence might bring significant results to future research.

Lastly, future studies could improve their experiment's internal validity by examining how the process of physically wearing the garments can influence the inner voice, self-confidence, and self-esteem levels. This would be even more significant to research on those suffering from anxiety or depression since it has already been suggested that positive thinking can help them feel better (Brockman et al., 2017).

Contribution statement

To my knowledge, the present study is the first to examine the effect of clothing on inner voice and self-esteem together. The results do not support evidence of such causal relationship. Nevertheless, it still elicits the promotion of mental health studies to investigate pragmatic methods to elicit positive inner voice or avoid critical inner voice in order to increase self-esteem, which is lacking in previous research.

On the other hand, if the effect that clothes were expected to have in the experiment had been significant, its finding would have suggested and justified the demand for ever-increasing quantities of clothing that compels the fast-fashion industry. By contrast, the lack of statistical significance raises awareness around fashion purchases. Notwithstanding,

given that clothing had no short-term impact on a person's self-esteem or inner voice, the following inquiry arises: How have marketers been successful in influencing how a person feels about themselves through clothing and profit from it? Is it due to prolonged publicity exposure?

Society and fashion industries had and still use clothes such as swimwear to corrupt women's inner voices regarding their bodies to gain profit (see Figure 4). For example, throughout advertising history, the "ideal" woman has taken several forms, with marketers encouraging women to buy a product or service in order to bridge the gap between them and the perfect woman that society expects of them (Ichsani, 2016). As a result, it is no surprise that advertisers want women to feel self-conscious (Attest, 2017), and those who feel this way make the best customers for most beauty or fashion brands (Valenti, 2014; Novicov, 2017; The recovery clinic, 2021).

Figure 4

Examples of Advertisement Through History

Note. By Ironized Yeast Tablets (1920) and Protein World (2015).

The previous observation on society and fashion industries tendencies raise the following questions: What factors beyond our control can elicit or corrupt our inner voice? And are they more impactful than a person's own initiatives? Can publicity and advertisement affect a person's inner voice after prolonged exposure? Clearly, studying how positive or negative inner

voice is induced is far from complete, and more research is needed to uncover additional connections.

Conclusions

Understanding how clothing influences an individual's sense of self, such as their inner voice and self-esteem, was a major focus of the current study as it can affect how a person behaves and interacts with their surroundings. This study expanded on an area of research that is still largely unknown, namely, what can people do to cause or prevent positive and negative inner voices? According to the results, the question remains open as clothes did not have any psychological payoff either in the inner voice or the self-esteem.

As stated in the study's introduction, the benefits of positively "*hacking*" self-speech through fashion did not result in immediate higher self-esteem levels since the self-esteem scores between pre and post-experiment did not change significantly. However, acknowledging that there is still room to figure out the options we have to avoid negative-inner voices is a starting point to making proactive life choices to pursue an achievable ideal self and happier life.

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Appendix A

Clothes as Self-Expression Questionnaire

1. Do you dress to impress?

   Never - Occasionally - Sometimes - Frequently - Always

2. The clothes you wear affect your behavior?

   Never - Occasionally - Sometimes - Frequently - Always

3. The clothes you wear affect how you feel?

   Never - Occasionally - Sometimes - Frequently - Always

4. Do you dress according to your mood?

   Never - Occasionally - Sometimes - Frequently - Always

5. Do you dress to express yourself?

   Never - Occasionally - Sometimes - Frequently - Always

Appendix B

Rosenberg Self-Esteem Scale (RSES)

1. On the whole, I am satisfied with myself.

   Strongly Agree - Agree - Disagree - Strongly Disagree

2. At times I think I am no good at all.

   Strongly Agree - Agree - Disagree - Strongly Disagree

3. I feel that I have a number of good qualities.

   Strongly Agree - Agree - Disagree - Strongly Disagree

4. I am able to do things as well as most other people.

   Strongly Agree - Agree - Disagree - Strongly Disagree

5. I feel I do not have much to be proud of.

   Strongly Agree - Agree - Disagree - Strongly Disagree

6. I certainly feel useless at times.

   Strongly Agree - Agree - Disagree - Strongly Disagree

7. I feel that I'm a person of worth, at least on an equal plane with others.

   Strongly Agree - Agree - Disagree - Strongly Disagree

8. I wish I could have more respect for myself.

   Strongly Agree - Agree - Disagree - Strongly Disagree

9. All in all, I am inclined to feel that I am a failure.

   Strongly Agree - Agree - Disagree - Strongly Disagree

10. I take a positive attitude toward myself.

    Strongly Agree - Agree - Disagree - Strongly Disagree

Appendix C

Rosenberg Self-Esteem Scale (RSES) (Adapted)

1. In general, I was satisfied with how I felt in the given outfit.

   Strongly Agree - Agree - Disagree - Strongly Disagree

2. While wearing this outfit, there were times when I thought I was not good at all.

   Strongly Agree - Agree - Disagree - Strongly Disagree

3. While wearing this outfit, I felt I could bring up all my good qualities.

   Strongly Agree - Agree - Disagree - Strongly Disagree

4. While wearing this outfit, I felt I was able to perform as well as my colleagues.

   Strongly Agree - Agree - Disagree - Strongly Disagree

5. While wearing this outfit, I felt like I had not much to be proud of.

   Strongly Agree - Agree - Disagree - Strongly Disagree

6. While wearing this outfit, I felt like I was not important.

   Strongly Agree - Agree - Disagree - Strongly Disagree

7. While wearing this outfit, I feel that I'm a person of worth, at least on an equal plane with my

   colleagues.

   Strongly Agree - Agree - Disagree - Strongly Disagree

8. While wearing this outfit, I felt I had more respect for myself.

   Strongly Agree - Agree - Disagree - Strongly Disagree

9. While wearing this outfit, I felt like a failure.

   Strongly Agree - Agree - Disagree - Strongly Disagree

10. While wearing this outfit, I take a positive attitude toward myself.

    Strongly Agree - Agree - Disagree - Strongly Disagree

Appendix D

Figure 1

Men's Stimuli

Figure 1

Woman's Stimuli

Appendix E

Hypothetical Scenarios

1. First, you see yourself in a mirror wearing this outfit. Please take a moment to think carefully about this, and then write down the thoughts you experienced..

2. You are on your way to the supermarket, and you unexpectedly see your colleagues from work or university from a distance. Please write what your thoughts are.

Your colleagues noticed you too and approached you. They invite you to have a drink with them in a nearby cafe. Since you are new in the city, you want to make an effort to meet new people, so you agree to hang out with them.

3. Once in the cafe, a person you are romantically interested in arrives and sits near you. The person says to you, "*You look different today*". Please take a moment to think about this carefully. Then, write all the types of thoughts you had.

4. One of your colleagues wants to take a group picture to upload it on their social media. You are considering if you would like to be in the picture or not. How do your thoughts develop from here? Please write them down.

After a couple of hours, you decide to go home, but you realize you still need to go to the supermarket, so you go there.

5. After you finish your groceries shopping, you and another person are leaving the supermarket at the same time, but the alarm goes off. What do you think of yourself in this situation? Please write your thoughts down.

Appendix F

Model Fit Indices

Model Fit Indices	Model with mediator inner voice only	Model with first moderator (Pre-self-esteem)	Model with second moderator (Self-expression)	Model with both moderators
p	not computed	0.00	0.26	0.00
df	0.00	2.00	2.00	8.00
CMIN/DF	not computed	8.52	1.35	29.26
GFI	1.00	0.94	0.99	0.76
CFI	1.00	0.97	1.00	0.69
TLI	not computed	0.83	0.99	0.19
SRMR	0.00	0.08	0.03	0.19
RMSEA	0.40	0.29	0.06	0.55