

A Work Project, presented as part of the requirements for the Award of a Master's degree in  
International Management from the Nova School of Business and Economics.

**HOW PLASTIC SURGERY INFLUENCES PERCEIVED AUTHENTICITY-  
THE MODERATING ROLE OF PERSONALITY TRAITS  
EXTROVERSION VERSUS INTROVERSION**

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**Abstract:** This research aims to analyse if personality traits such as extroversion and introversion impact the relationship between perceived authenticity and plastic surgery. The author predicted that extroverted individuals would perceive body enhancements as more authentic, whereas introverts would perceive these influences as less authentic. The experiment results show that personality traits influence the correlation between perceived authenticity and plastic surgery. However, these effects were only relevant at higher extroversion scores, which means that extroverts perceive surgically altered bodies as less authentic. Finally, managerial implications are presented based on the study results.

**Keywords:** *Plastic surgery, perceived authenticity, introversion, extroversion, personality, public perception*

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## **1. INTRODUCTION**

Cosmetic surgery refers to a specialty primarily concerned with the preservation, reconstruction, and enhancement of the individual's physical appearance (Behravan 2018). Plastic surgery is defined by the International Society of Aesthetic Plastic Surgery ISAPS as "procedures or operations that alter the appearance, texture, colour, position or structure of body features and are rarely performed for medical reasons" (ISAPS 2019). Plastic surgery is also associated with physiological, psychological, and financial risks. Infections, loss of sensation, scarring, significant discomfort, and more are potential medical risks and side effects of plastic surgery, according to Slevic and Tiggemann (2010). In addition, psychological problems such as dissatisfaction and anxiety may appear due to treatment. According to Castle et al. (2002), cosmetic surgery improves patients' long-term well-being and psychosocial functioning by enhancing their self-esteem and self-confidence and even enhancing their work-life (Zojaji, et al. 2014).

Cosmetic surgery is becoming more common and socially accepted after decades of rejection. Meanwhile, the idea of surgical changes to the body has become part of everyday life (Swami et al. 2011). The popularity is due to several factors, including the development of safe (minimal invasive) procedures and an increasing mass media attention to cosmetic surgery and the patients themselves, who seek to look young and acquire an excellent social image (Boyle 2012). As a result, the global number of cosmetic operations and procedures has increased. Today, around 10 million more procedures are performed than in 2010, increasing around 74% (Radtke 2022). According to data received from ISAPS, over 24 million cosmetic procedures worldwide, almost half of them surgical, were performed. Breast enlargement is the most frequent surgical procedure, followed by Botox injections as the most common non-surgical technique (ISAPS 2019). Typically, women are associated with cosmetic procedures because they perform them on a larger scale. They undergo such procedures to improve their appearance

and be considered beautiful by others (Nickson et al. 2005). Nowadays, the media's emphasis on physical attractiveness is probably more enticing than ever, particularly for the younger generation, constantly exposed to idealized images via social media platforms like Instagram, Facebook and YouTube. These platforms are designed to change people's appearance by imitating filters that make the nose look narrower, the lips fuller, and many more functions. This is consistent with prior study, which found that women who undertake cosmetic surgery are perceived as inauthentic and try to hide behind a false mask (Lefebvre and Cowart 2021), (Negrin 200).

Nonetheless, it is worth considering whether this finding is always valid. Indeed, cosmetic surgical improvements do not always generate an inauthentic appearance under certain conditions. Inauthenticity disappears when surgical enhancements are made for personal growth rather than in response to societal expectations (Lefebvre and Cowart 2021). Their findings imply that the function of cosmetic surgery influences people's judgments of authenticity. This raises the question of what other factors might influence the impression of authenticity. Could personality characteristics such as extroversion or introversion influence how observers perceive cosmetic surgery? As far as the author is aware, little research has been done on the differential effects of personality traits on the perception of plastic surgery. Studies show that extroverts are more inclined to participate in and enjoy public interactions. It stands to reason that they perceive their appearance as attractive to avoid feeling restricted in social situations. Extroverts, thus, are more prone than introverts to take actions that improve their satisfaction with their appearance. Soest et al. (2009) discovered that extroverts engaged in more activities to improve their appearance, such as modifying their style of hair or dress to increase their status. This study will look at how personality traits extroversion vs introversion affect the perceived authenticity of plastic surgery. It will build on previous research and own experiments by demonstrating how people's perceptions of enhanced bodies are influenced by

their very own personality traits of extroversion and introversion. Finally, this research aims to examine management implications and how organizations might improve their marketing strategies based on the profile of their target audience.

## **2. LITERATURE REVIEW**

### **2.1 PLASTIC SURGERY**

Plastic surgery is the perfection of fine surgical work, creativity and artistic ability to shape what is present, replace what is missing and remove what is excessive (Zühlke 2010). Reconstructive surgery, hand surgery, burn surgery, and aesthetic surgery are a few specialties covered by plastic surgery.

*"Plastic surgery not only restores body functions but also helps to correct a patient's body image and thus improve their sense of self." (Zühlke 2010)*

The quote above addresses the importance of reconstructive and aesthetic functions in plastic surgery. For the scope of this thesis, aesthetic surgery and its impacts on perceived authenticity are particularly relevant. Aesthetic surgery includes operations that are described as non-functional. The body functions are (ideally) not changed in any way by the operation, whereas the operations serve only to improve the aesthetics of the body. For reference, aesthetic surgery is equated with "cosmetic surgery". According to Stroop (2011) such improvements include various changes to the breast (breast augmentation, breast lifts, breast reduction), fat removal (liposuction), nose correction (rhinoplasty), tummy tuck (abdominoplasty), and facelift (rhytidectomy). In addition, there are minimally invasive procedures (procedures without surgery), e.g. Botox injections (botulinum toxin), Hyaluronic acid and Hair removal which are, however, often listed in connection with cosmetic surgery (Lefebvre and Cowart 2021).

According to Meili (2008), the specific forms of intervention are considered legitimate to varying degrees. While reconstructive surgery enjoys broad social recognition, cosmetic surgery interventions are viewed critically, leading to more significant pressure to justify themselves on patients who have such procedures performed (Stroop 2011).

## 2.2 PUBLIC PERCEPTION OF PLASTIC SURGERY

Body changes through surgical procedures are perceived positively when the procedures are for personal fulfilment but not when they are based on societal pressures (Lefebvre and Cowart 2021). Individuals react negatively to an appearance that could not be achieved naturally due to cosmetic surgery results (Lefebvre and Cowart 2021). Ultimately, when people undergo plastic surgery, their character is seen as inauthentic and untrustworthy (Negrin 2000). Gimlin (2000) reinforces this by asserting that cosmetic surgery can not only result in an unnatural appearance for some individuals but also devalue the original, organic shape of the body. According to Sarwer, Magee, and Clark (2003), the surgically altered body is a deception rather than an inauthentic representation of the self. Dubbs et al. (2017) believe that cosmetic surgery may cause dishonesty by convincing people that the improvements are natural.

Moreover, beauty achieved through cosmetic surgery contradicts the ideals of feminists who plead that women should maintain their natural and authentic appearance (Roll Bennet 2021). Lefebvre and Cowart (2021) found that women generally perceive others with cosmetic surgery alterations as unnatural. Critics point out that a cosmetic procedure interferes with nature, while proponents focus on the right to self-determination over one's own body.

*"Cosmetic surgery embodies the belief in the absolute feasibility of the beautiful body. The end justifies the means, no matter how brutal they may be. The body becomes a manipulable thing, beauty a plannable undertaking, the surgeon the creator of new life." (Posch 1999)*



Also, the study by Riedel (2022) revealed contradicting results to the critics of plastic surgery. In this case, the altered perception of others after surgical facial enhancement was retrospectively investigated. The subjects of the study perceived the faces of the treated patients as more sympathetic, attractive, and feminine. The women were also perceived to have far greater social competence after the procedure. In addition, the person pictured was rated as trustworthy more often than before (Riedel 2022). Thus, previous research has shown that plastic surgery can be perceived positively by society, but at the same time, there is growing concern about its adverse effects. It emerges that observers' low perception of authenticity is based on the fact that cosmetic surgery is driven by a desire for self-improvement and mainly intends to mask one's appearance. This context is coherent with a basic account of the self in which the most authentic components are those that are innate or unaltered. The following chapters highlight aspects of perceived authenticity on plastic surgery.

### 2.3 PERCEIVED AUTHENTICITY

Since the late 20th century, the concept of authenticity has become a common term. Today, authenticity is subject to many cultural studies: psychology, education, political science, philosophy, aesthetics, etc. Consequently, there is no unified definition of authenticity; the definition adopted in this paper follows Bermes (2015), who associates the term with the meaning of (1) "authorship", something is authentic exactly when it is produced, created, or made by oneself. As well as (2) "originality" of the product; something is authentic precisely when it is understood as an original and not a copy. According to Schlegel and Hicks (2011), the theory of authenticity involves existing in a way that reveals one's authentic self. Being authentic has been proved to offer numerous benefits, such as better mental health and well-being (Sedikides et al. 2019), more cheering and fewer negative feelings (Thomaes et al. 2017). On the other hand, inauthentic behaviour may indicate that a person will not be accepted for who they are if they express their real self (Sedikides et al. 2019), it might contribute to mental

problems, including anxiety (Cheng 2004) and depression (Erickson and Wharton 1997). Plastic surgery successfully transforms an 'abnormal' body into a 'normal' one. Women who have undergone plastic surgery believe they possess the physical expression of a normative self that they did not have before, intending to improve their appearance and self-esteem (Northrop 2010), (Margraf et al. 2013). Davis (1995) understands and accepts plastic surgery as an expression of an era that perceives the body as an instrument of self-expression. Controversially, Margraf et al. (2013) state that the long-lasting effects of cosmetic surgery and the feeling of authenticity as an improvement in well-being have not yet been confirmed. At the same time, plastic surgery fails. When women try to recreate themselves with the help of plastic surgery to show who and what they are through their bodies, they also have to deal with the accusation of shallowness (Lefebvre and Cowart 2021). According to Gimlin (2000), women who have undergone cosmetic surgery testify that the altered body is not an adequate representation of the self. These findings are consistent with those of McCoy (2021), noting that authenticity can be challenging to achieve in the beauty industry. Clients are caught between the desire to alter one's appearance and the fear of misrepresenting the self. Given the ambiguity in the previous finding, it is crucial to determine how plastic surgery can affect perceived authenticity. Thus, a person may feel alienated by their 'new self', but on the other hand, may identify positively with the new, enhanced self and thereby gain more self-worth and recognition from the social environment (Huber 2014). Therefore, the effects of plastic surgery on personality traits and authenticity needs to be uncovered, as different personality types respond differently to perceptions of authenticity, as discussed below.

## 2.4 EXTROVERSION VERSUS INTROVERSION

Kassarjian (1971) describes personality as a complex concept since researchers cannot agree on a standard definition. According to Goldberg (1993), the five-factor model of personality, commonly known as the "Big Five," can be used to classify all personality traits. This model has five dimensions, which include: "Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience" (Goldberg 1990). The focus of this study is extroversion and introversion, which present the contrary ends of the model. Nonetheless, people tend to be more extroverted or introverted, even if they exhibit characteristics from the five dimensions above. According to Jung (1923), the main difference between personalities is the individual energy expression that determines personality. Extroverts flourish in a social environment and are enthusiastic, more assertive, optimistic, and outward-looking, i.e. they can present themselves well in public (Goldberg 1992), (Bossom 2022).

Introversion and extroversion were also dealt with in the personality theory of Carl Jung (Jung 1923). The author distinguished two contrasting attitudes: introversion and extraversion. According to the author, they are not only opposites but also represent complementary forces. Extroverts are more impulsive than introverts, enjoy human interactions, and actively seek joyful activities (Watson and Clark 1997). On the other hand, introverts are perceived as more reserved or reflective and enjoy being alone (Helgoe 2008). In addition, introverts are more aware of their inner world, while extroverts attach more importance to the external environment (Jung 1923). According to Lowman et al. (2019), physical appearance serves as an informational indicator of a person's perception. Borkeanu and Liebler (1992) found that attractive people are mostly considered extroverted and appreciate a higher status in society (Anderson et al. 2001). Von Soest et al. (2009) state that satisfaction with one's appearance can influence social interaction. Feeling unattractive can have adverse effects on social

interactions. Since extroverted individuals are more likely to experience and possess social contacts, it is reasonable to suggest that it is more relevant for extroverted people to perceive their physical appearance as attractive so that they will not be constrained by it in a social setting. Within von Soest et al. (2009) study, extroverts reported engaging in more activities to improve their appearance, such as changing their hairstyle or clothing style introverts did to improve their status. Therefore, it is reasonable to assume that extroverts are more likely than introverts to perceive plastic surgery procedures as authentic to better match their appearance to their behaviour in the social environment. Section three of this study (see Figure 1) investigates this.

### **3. HYPOTHESES**

The hypotheses are defined as follows, taking into account the previously mentioned points:

**H1:** *Extroverts are more likely to perceive others with plastic surgery (vs no plastic surgery) as authentic.*

**H2:** *Introverts perceive people who have had plastic surgery as less authentic than those who have not.*

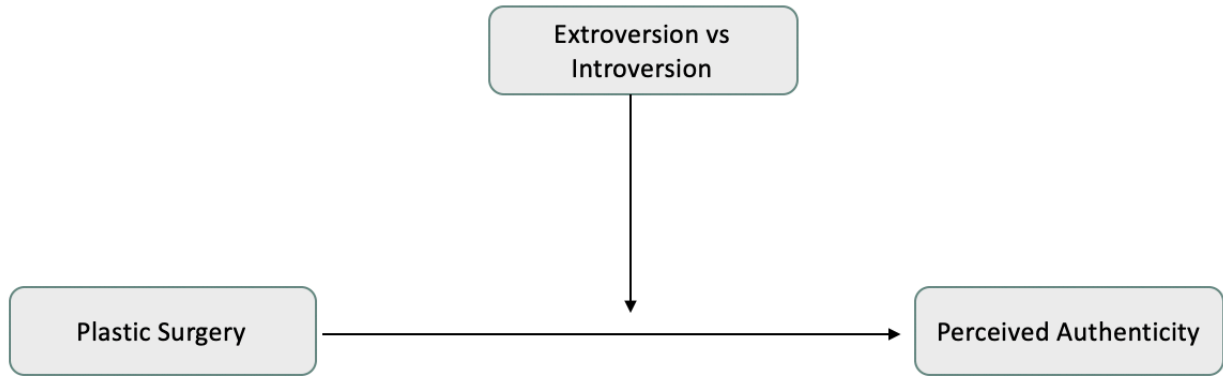


FIGURE 1: EXTROVERSION VS. INTROVERSION FRAMEWORK

## 4. METHODOLOGY

### 4.1 SAMPLE

The sample comprised 201 respondents, of whom 38 did not answer any of the questions, resulting in 163 participants (N = 163). Each participant willingly answered a short online Qualtrics questionnaire and was randomly assigned to one of the two conditions: plastic surgery vs control. Of the 163 responses, 76.7% indicated being female, 21.5% male, and 0.6% implied being non-binary or preferred not to say ([see Appendix 1.1](#)). The 25-34 age group had the highest proportion of participants, 38%, followed by the 18-24 age group, 24.5% ([see Appendix 1.2](#)). Additionally, replies were collected from 24 different countries of origin, with Germany accounting for 64.4% of all participants, followed by Brazil at 4.3%. ([see Appendix 1.3](#)).

### 4.2 DESIGN AND PROCEDURE

The survey was divided into two sections and was published in English ([see Appendix 2.1](#)). Respondents were approached through social media platforms like Instagram, Facebook, and WhatsApp. An introduction to the survey led participants through the process of providing pertinent information, such as the survey's motive, author, or contact person ([see Appendix](#)

[2.1](#)). In this study, participants were allocated to one of two experimental conditions using a between-subjects, single-factor plastic surgery approach (Yes vs No). The first part outlined a fictional image showing a woman in a bikini on the beach with a drink in her hand, in which participants were instructed to visualize themselves. The second part contained questions about this situation. *Shutterstock* was used to obtain the picture of the women (Shutterstock 2022). The photo was not altered in the control group (N= 81), so the woman's normal body form and features were maintained ([see Appendix 2.2](#)). Besides, in the experimental plastic surgery group (N= 80), Adobe Photoshop and a body adjuster tool for Apple iOS were used to modify the woman's body. The image was edited to correspond to extreme body shapes that can only be obtained by frequent body augmentation surgery, e.g. the proportion of waist to hips and the breast volume ([see Appendix 2.3](#)). These body parts were selected because breast enlargement, fat removal, and buttock augmentation were the top three plastic surgeries performed in 2019 (ISAPS 2019). The waist-to-hip ratio has been exaggerated to guarantee that the augmentation appears noticeably abnormal. Although the manipulation appears to be excessive, it reflects body enhancement.

***Perceived authenticity.*** Participants were asked to record the women's perceived authenticity after the fictional conversation on the beach ([see Appendix 2.4](#)). The Wood et al. (2008) method was used to assess these questions on a 7-point Likert scale (1= Not at all, 7= Very much so), where respondents were asked to express their thoughts on four topics: "Eva is true to herself in most situations", "She lives in accordance with her values and beliefs", "Eva is true to who she really is" and lastly, the reverse-coded item: "She is strongly influence by the opinions of others".

***Extroversion versus Introversion.*** Extroversion and introversion were measured by asking respondents how they reflect on their personality traits on a seven-point Likert scale (1=

Introverted; 7= Extroverted). In addition, the I-E personality scale by Grove (2016) was used to examine the participants' personality traits (see [Appendix 2.5](#)). Participants were given eight sentences in which to express their feelings. The extroverted personality is represented by four statements, including "I dislike test questions in which the information tested is in a different form from that in which it was learned", "I shed tears when I hear a sad story", "I prefer to have a theory or principle explained rather than studying it out for myself", and finally "I lose control when I get angry". The remaining sentences represent the introvert personality; these include "I show individuality and originality in written reports", "I avoid exaggeration when sharing personal experiences", "I engage in reflective, philosophical thought", and lastly ", When people displease me, I refrain from saying anything".

***Control variables.*** The study includes six control measures to see if other factors influence the findings and their effects on perceived authenticity (see [Appendix 2.6](#)). The preliminary research included the control variables to see if the results were impacted by extroversion and introversion or by anything else, such as the perceived attractiveness of the fictional woman "Eva.". A seven-point Likert scale (1= Not at all, 7= Very much so) was adopted for each control variable. The first section examined perceived features to see if they impacted the study's outcome. Previous studies have identified sincerity as an essential criterion influencing perceived authenticity (Kadirov 2015). Participants were therefore asked to estimate the following statements about Eva's personality: "She is confident", "Eva is trustworthy", and "She got great social competence". Riedel (2022) states that the outcomes of her study were altered by attractiveness, so attractiveness is controlled in another part.

Additionally, three items were used to assess participants' perceptions of Eva's abilities and appearance. These objects were utilized because previous studies have shown that a surgically altered body can reduce the perceived authenticity of a person (Lefebvre and Cowart 2021).

As a result, the following statements were included in the second part: "Eva is attractive", "Eva is a convincing representation of herself", and lastly", She is satisfied with her appearance".

## **5. RESULTS**

### 5.1 OUTLIERS AND MISSING DATA

The data were analyzed using SPSS statistical software. Thirty-eight instances were eliminated and excluded from the analysis because the survey was not completed, and critical data was missing. The tasks perceived authenticity and personality traits had missing values in all cases. Outlier analysis was also carried out. Outliers could be identified for the variables perceived authenticity, extroversion, and introversion ([see Appendix 3.1](#), [3.2](#) and [3.3](#)). Including or omitting these outliers had no discernible effect on the study's results; thus, they were not excluded. The data collection yielded 163 responses and was ready for further investigation.

### 5.2 RELIABILITY ANALYSIS

Before examining the data set, a reliability analysis was performed. The purpose of this investigation was to ensure that the scales were consistent. Cronbach's alpha was employed as a reliability measure to determine item correlation and internal consistency. Because the perceived authenticity scale contained a reverse-coded item ("The opinions of others strongly influence her"), it was reverse coded in the same direction as the other items before the reliability analysis. Cronbach's reliability statistics indicate that a scale is reliable when the reliability statistics show  $\alpha > .70$  (Peterson 1994). The perceived authenticity scale ( $\alpha = .76$ ) was found reliable. Extroversion and introversion were measured on one scale. The items measuring introversion were recoded, and an average overall score for personality was determined for each survey participant. A higher score means more extroverted and a lower score more introverted. To measure the consistency of the statements, the introversion and extroversion statements were grouped, and a Cronbach's alpha was determined for each group. The



statements measuring extroversion ( $\alpha = .76$ ) and introversion ( $\alpha = .83$ ) were all found to be equally reliable, making the extroversion vs introversion scale valid. Since each scale has a value greater than .70, this indicates internal consistency and reliability ([see Appendix 4.1, 4.2 and 4.3](#)).

### 5.3 MAIN ANALYSIS

***Perceived Authenticity.*** An independent sample t-test with equal variances was used to test if respondents in the plastic surgery condition (Yes vs No) perceived the imaginary women as authentic. When the p-value is greater than .05, the variance homogeneity assumptions are given (Keyes and Levy 1997). The variance homogeneity was given (Levene-test:  $p > .05$ ). The results showed that neither the groups without plastic surgery nor those with plastic surgery significantly affected perceived authenticity ( $M_{no\ surgery} = 4.28, SD = 1.11; M_{surgery} = 4.08, SD = 1.09$ ),  $t(159) = 1.11, p = 0.27$  ([see Appendix 5.1](#)). These results revealed that the overall model is insignificant ( $p = .27$ ). If the p-value is less than 0.5, significance can be determined (Pillemer 1991).

***Moderation Extroversion versus Introversion.*** A moderation analysis based on Hayes' process model 1 was performed to determine whether personality factors (extroversion vs introversion) influence the relationship between plastic surgery and perceived authenticity (Hayes 2013). The two different levels of plastic surgery (No: 0, Yes: 1) acted as the independent variable in the regression analysis, while personality traits (extroversion vs introversion) functioned as the moderator. The perceived authenticity was the dependent variable. A moderation analysis was run to determine whether the interaction between these personality traits and plastic surgery significantly predicts perceived authenticity. The overall moderating effect for extroversion-introversion was significant, ( $B = -.55, SE = .27, t = -2.05, p = .042$ ; [see Appendix 5.2](#)). This finding implies that extroversion and introversion

significantly influence the relationship between plastic surgery and perceived authenticity. Additionally, the moderating analysis revealed that the effect is only significant for higher levels of extroversion ( $B = -.57$ ,  $SE = .24$ ,  $t = -2.35$ ,  $p = .019$ ). Nevertheless, the findings for the effect on introversion is not significant ( $B = .13$ ,  $SE = .13$ ,  $t = .54$ ,  $p = .588$ ) ([see Appendix 5.2](#)).

**Control Variables.** The control variables for the fictive woman's character, attractiveness, and abilities were measured. To examine if there were any variations in group means between plastic surgery (Yes vs No), an independent sample t-test was conducted. As a result, Levene's test was used to pretest the assumption of variance homogeneity. According to Levene's test, since none of the variables were significant, variance homogeneity was presumed for all variables ([see Appendix 5.3](#)). However, differences in the control variables could not be identified, as each of the demonstrated variables provided non-significance; these contained *confidence*, *trustworthiness*, *social competence*, *appearance* and *convincingness*. Hence, no further analysis was conducted, except for the attractiveness variable which showed a higher significance for the control group ( $M_{no\ surgery} = 5.75$ ,  $SD = 1.23$ ) than for the experimental plastic surgery group ( $M_{surgery} = 5.05$ ,  $SD = 1.37$ ),  $t(157) = 3.42$  and  $p < .001$ .

Besides including the variable attractiveness as a covariate in the moderation model, the overall moderating effect remained significant ( $B = -.50$ ,  $SE = .25$ ,  $t = -1.97$ ,  $p < .048$ ). Additionally, the outcome of the regression analysis demonstrated that the control variable impacted the study as *attractiveness* has a significant effect on perceived authenticity ( $B = .27$ ,  $SE = .06$ ,  $t = 4.38$ ,  $p < .000$ ). Accordingly, attractiveness can influence perceptions of authenticity. The more attractive the woman was perceived to be by the participants, the more authentic she appeared, independent of her body image ([see Appendix 5.3](#)).

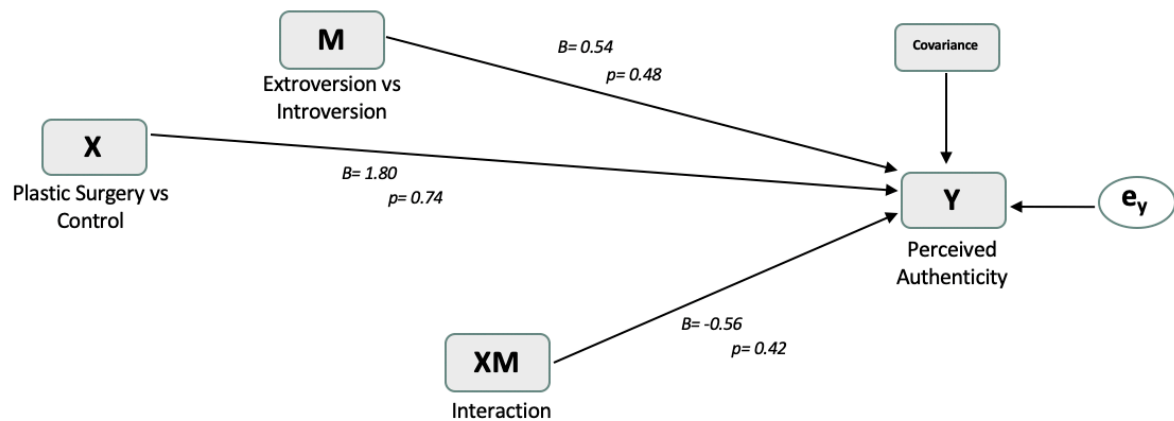


FIGURE 2: RESULTS HAYES (2013) MODERATION MODEL 1.

## 6. DISCUSSION

### 6.1. SUMMARY OF FINDINGS

The results of the moderation analysis indicate that the personality traits extroversion vs introversion had a significant influence on the perceived authenticity of plastic surgery. Furthermore, the findings revealed a negative effect on the relationship between plastic surgery (Yes vs No) on perceived authenticity for a higher level of extroversion. This implies that more extroverted people perceive plastic surgery enhanced bodies as less authentic. Consequently, those findings contradict H1, which predicted a positive effect on the relationship between plastic surgery and perceived authenticity for more extroverted people. This could be because extreme cosmetic procedures are perceived as unnatural and consequently inauthentic, so people nowadays aim for "natural cosmetic procedures" that are ideally not noticeable. Furthermore, the findings are not consistent with the study by von Soest et al. (2019), which predicted that extroverts are more engaging in activities that improve their appearance to maintain their high social status.

Additionally, prior studies predicted that people are more likely to react negatively when plastic surgery results in fakeness (Lefebvre and Cowart 2021). One possible explanation for this

outcome is the perception that plastic surgery is seen as an attempt to disguise one's actual self. The results of the moderation analysis are in favor of the prior studies, which revealed that the experiment did not affect introverts. Thus, H2 could not be rejected by statistical findings. This might result from the characteristic traits that are allocated to introverts. Jungs (1923) explained that introverts tend to be more reflective and self-contained, suggesting that they accept their bodies as the way they are. Therefore, they may perceive plastic surgery as an intrusion into their true self and may be unable to accept it. No significant effects were found when controlling for confidence, trustworthiness, social competencies, convincingness and appearance. This partly contradicts Riedel's (2022) and von Soest et al. (2009) findings, who found a significant influence on trustworthiness and appearance. Aside from that, the results suggest that participants in the control group rated the control variable attractiveness higher than those in the plastic surgery group.

The variable was also significant when integrated as a covariate in the moderation analysis. Consequently, attractiveness can influence perceptions of authenticity on plastic surgery but does not affect the overall outcome of the model. In conclusion, personality traits extroversion vs introversion moderated the effect between perceived authenticity and plastic surgery. Nevertheless, both hypotheses had to be rejected because the results are contradicting.

## 6.2 MANAGERIAL IMPLICATIONS

This study's outcome contributes to the current literature and benefits marketing managers by updating the existing journalism on cosmetic surgery. First, although these services continue to overgrow, there is little knowledge outside the medical literature about consumer attitudes and perceptions of plastic surgery services. Second, results have indicated that extroverts perceive plastic surgery as less authentic. Regarding Marketing, especially Social Media Marketing, companies must cooperate with authentic models and influencers. If a company

wants to address a more extroverted target group, it would be advisable to not include or rely on models and influencers with noticeable unnatural enhancements. Those models would be perceived as inauthentic by the extrovert customer, which could negatively affect the product and brand perception.

Moreover, Doctors are generally prohibited from advertising in the classical sense. However, they are allowed to communicate professionally, which they can achieve through social media presence on the internet by, for instance, establishing their clinic or specialist as a brand. It is essential to attract the attention of the appropriate target group and, therefore, segment their customers. This can be done through exciting information, essential facts about plastic surgery, insights into the clinic's everyday life, and authentic, personal contributions. Additionally, during patient conversations, Surgeons can identify more extroverted patients and inform them about the risk that they are more prone to perceive themselves as more inauthentic after a surgical procedure. The most crucial fact when selling services and products is to create trust and create a more satisfied customer base but also potentially prevent mental health issues. Consequently, the results contribute to determine a marketing strategy based on the segmentation of personality traits (extroversion vs. introversion).

## **7. LIMITATIONS AND FUTURE RESEARCH GUIDELINES**

This study must consider specific aspects because every research has its limitations. First of all, the sample was homogeneous regarding nationality and age. Germans accounted for 76.7% of the 201 respondents. The findings remained independent of the country of origin, the type of personality, or perceived authenticity. However, more variance in participant origin would be beneficial. Such an inquiry would be particularly intriguing because beauty and cosmetics norms, judgments of authenticity, and personality traits may differ between cultures. In addition, the age groups of 18 to 25-year-olds and 25 to 34-year-olds were most heavily

portrayed, making it difficult to generalize the study's findings, especially given the prevalence of Germans. Therefore, including more diverse samples regarding nationality, gender, and age groups in future studies would be interesting. Furthermore, a national comparison would be helpful for future research, as leading countries in cosmetic surgery, such as the United States or Brazil, may have distinct outcomes.

Additionally, time and financial constraints were also factors in the study's limitations. Since the survey was published on online platforms such as Facebook and Instagram, the researcher could not regulate the respondents' circumstances such as concentration, attention, and engagement. A greater sample size would possibly influence the significance of the questionnaire results. Second, it should be emphasized that extroversion and introversion are difficult to assess in a survey because they are very abstract concepts. Grove (2016)'s I-E scale examines both extroverted and introverted thinking and emotions. Emotions are difficult to measure through surveys, as external factors can influence the respondent when responding to the survey. For instance, an extrovert might feel emotionally down or unstable, thus reflecting the personality type of an introvert. Third, I communicated in the survey that the stimuli used in the study had done plastic surgery on her body, which may lead to pre biases. Future research should focus on showing an image where physical improvements are less dramatic. Finally, when attractiveness was included as a covariate in the moderation analysis, it was found to be significant and influenced the results. Therefore, it is important to learn more about how this control variable affects the perceived authenticity of plastic surgery on extroversion and introversion. Future studies should address more complicated structural models regarding the dependence of perceived authenticity on plastic surgery and personality traits. Finally, online questionnaire research is restricted by the need for respondents to place themselves in the scenario, which is often challenging. To produce relevant results for managers and consumer

behavior research in the future, it is recommended that future studies are conducted in behavioral workrooms or as field studies.

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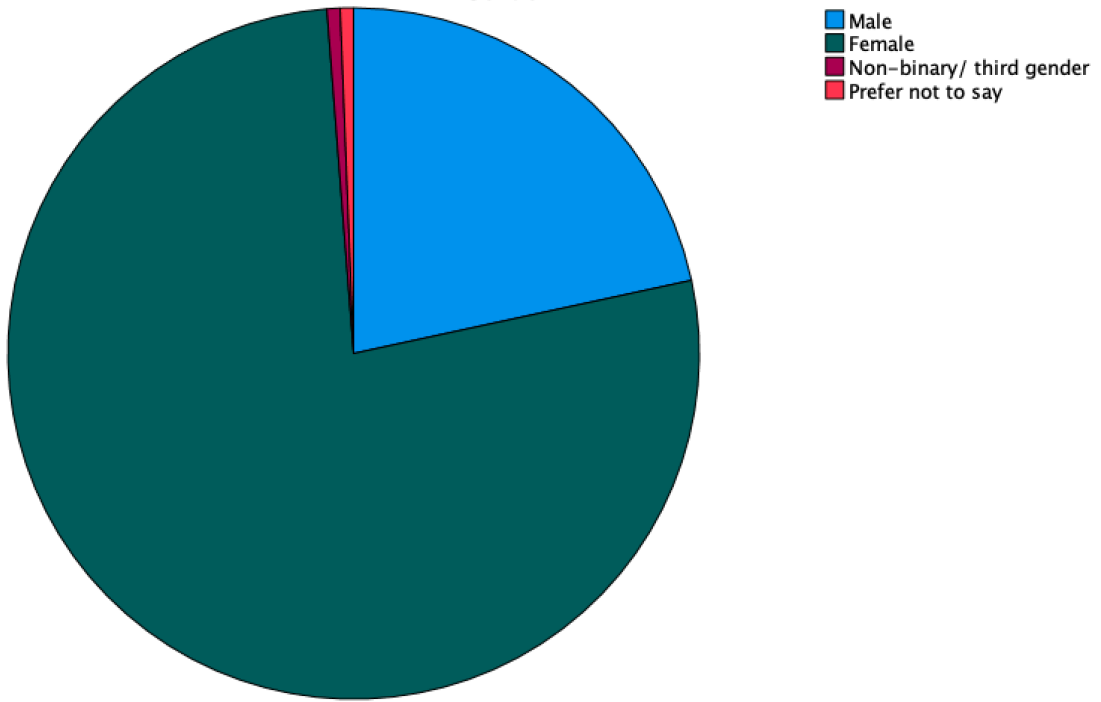
## 9. APPENDICES

### APPENDIX 1: SAMPLE

#### APPENDIX 1.1: GENDER

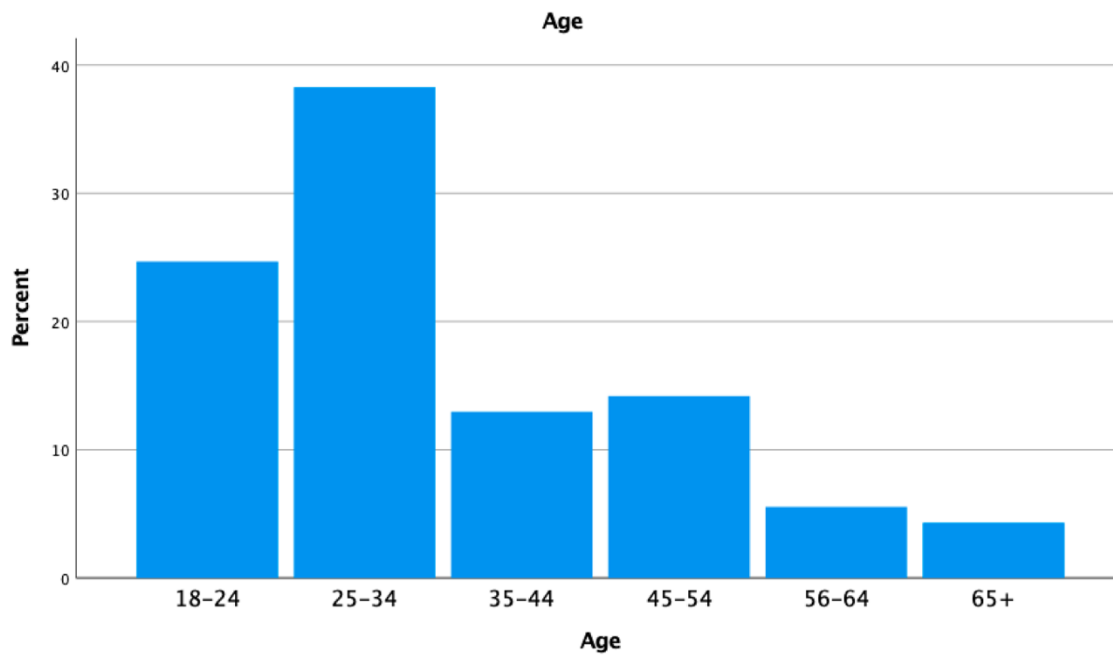
		Gender			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	35	21.5	21.6	21.6
	Female	125	76.7	77.2	98.8
	Non-binary/ third gender	1	.6	.6	99.4
	Prefer not to say	1	.6	.6	100.0
	Total	162	99.4	100.0	
Missing	System	1	.6		
Total		163	100.0		

**Gender**



APPENDIX 1.2: AGE

		Age			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-24	40	24.5	24.7	24.7
	25-34	62	38.0	38.3	63.0
	35-44	21	12.9	13.0	75.9
	45-54	23	14.1	14.2	90.1
	56-64	9	5.5	5.6	95.7
	65+	7	4.3	4.3	100.0
	Total	162	99.4	100.0	
Missing	System	1	.6		
Total		163	100.0		



APPENDIX 1.3: NATIONALITY DISTRIBUTION

		<b>Nationality</b>			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		17	10.4	10.4	10.4
	Argentinean	1	.6	.6	11.0
	Austrian	1	.6	.6	11.7
	Bosnian	1	.6	.6	12.3
	Brazilian	7	4.3	4.3	16.6
	British	2	1.2	1.2	17.8
	Canadian	2	1.2	1.2	19.0
	Colombian	1	.6	.6	19.6
	Croatian	1	.6	.6	20.2
	Dutch	1	.6	.6	20.9
	French	1	.6	.6	21.5
	German	105	64.4	64.4	85.9
	Greek	1	.6	.6	86.5
	Hungarian	1	.6	.6	87.1
	Indian	2	1.2	1.2	88.3
	Italian	5	3.1	3.1	91.4
	Macedonian	3	1.8	1.8	93.3
	Namibia	1	.6	.6	93.9
	New Zealand	1	.6	.6	94.5
	Polish	1	.6	.6	95.1
	Portuguese	3	1.8	1.8	96.9
	Serbian	2	1.2	1.2	98.2
	Syrian	1	.6	.6	98.8
	UK	1	.6	.6	99.4
	USA	1	.6	.6	100.0
	Total		163	100.0	100.0



## APPENDIX 2: QUESTIONNAIRE

### APPENDIX 2.1: INTRODUCTION



#### DISCLAIMER

Dear participant,

my name is Zara-Kostadina Mitrev and I am an International Management student at Nova School of Business and Economics. The following questionnaire aims to collect data for my Master thesis.

Your participation in this research study is voluntary. The data will be collected anonymously and remain that way. It will take less than 3 minutes to complete the following survey. Your help will be extremely appreciated and will contribute to the completeness of my thesis.

If you have any questions about the research study, please reach out to me at: 46431@novasbe.pt

Clicking on the 'agree' button below indicates that:

- you have read the above information
- you voluntarily agree to participate
- you are at least 18 years of age

If you do not wish to participate in this research study, please decline participation by clicking on the 'disagree' button.

Agree



Disagree



## APPENDIX 2.2: SCENARIO WITH CONTROL GROUP



Imagine you are walking along the beach on a sunny day. You are enjoying the weather and suddenly feel the need for a good cocktail. A young woman with a cocktail glass in her hand approaches you. You ask her where she got this cocktail and you engage in a conversation with her. Her name is Eva and she looks like this:



## APPENDIX 2.3: SCENARIO WITH PLASTIC SURGERY



Imagine you are walking along the beach on a sunny day. You are enjoying the weather and suddenly feel the need for a good cocktail. A young woman with a cocktail glass in her hand approaches you. You ask her where she got this cocktail and you engage in a conversation with her. During the chat she tells you that she has recently had **cosmetic surgery procedure**. Her name is Eva and she looks like this:



## APPENDIX 2.4: PERCEIVED AUTHENTICITY



Please state your personal opinion in the following sentences.

	1 Not at all	2	3	4 Neutral	5	6	7 Very much so
Eva is true to herself in most situations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
She lives in accordance with her values and beliefs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eva is true to who she really is.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
She is strongly influenced by the opinions of others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## APPENDIX 2.5: EXTROVERSION VS INTROVERSION



How do you consider yourself?

1 Introvert	2	3	4 Neither Introvert nor Extrovert	5	6	7 Extrovert
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please let me know which sentence describes your opinion about your own self.

	1 Not at all	2	3	4 Neutral	5	6	7 Very much so
I show individuality and originality in written reports.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I dislike test questions in which the information tested is in a different form from that in which it was learned.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I avoid exaggeration when sharing personal experiences.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I lose control when I get angry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I engage in reflective, philosophical thought.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer to have a theory or principle explained rather than studying it out for myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I shed tears when I hear a sad story.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When people displease me, I refrain from saying anything.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## APPENDIX 2.6: CONTROL VARIABLES



Please state your personal opinion in the following sentences.

	1 Not at all	2	3	4 Neutral	5	6	7 Very much so
Eva is attractive.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
She is confident.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eva is trustworthy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
She got great social competence.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eva is a convincing representation of herself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
She is satisfied with her appearance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## APPENDIX 2.7: DEMOGRAPHICS OF AGE, GENDER, EDUCATION AND COUNTRY OF BIRTH



What is your age?

18-24 <input type="radio"/>	25-34 <input type="radio"/>	35-44 <input type="radio"/>	45-54 <input type="radio"/>	56-64 <input type="radio"/>	65+ <input type="radio"/>
--------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------	------------------------------

What gender do you identify as?

Male <input type="radio"/>	Female <input type="radio"/>	Non-binary/ third gender <input type="radio"/>	Prefer not to say <input type="radio"/>
-------------------------------	---------------------------------	--	---

What is the highest degree or level of education you have completed?

High school graduate <input type="radio"/>	Bachelor degree <input type="radio"/>	Master degree <input type="radio"/>	Other higher education degree <input type="radio"/>	Doctorate <input type="radio"/>
--	---	---	---	------------------------------------

What is your nationality?

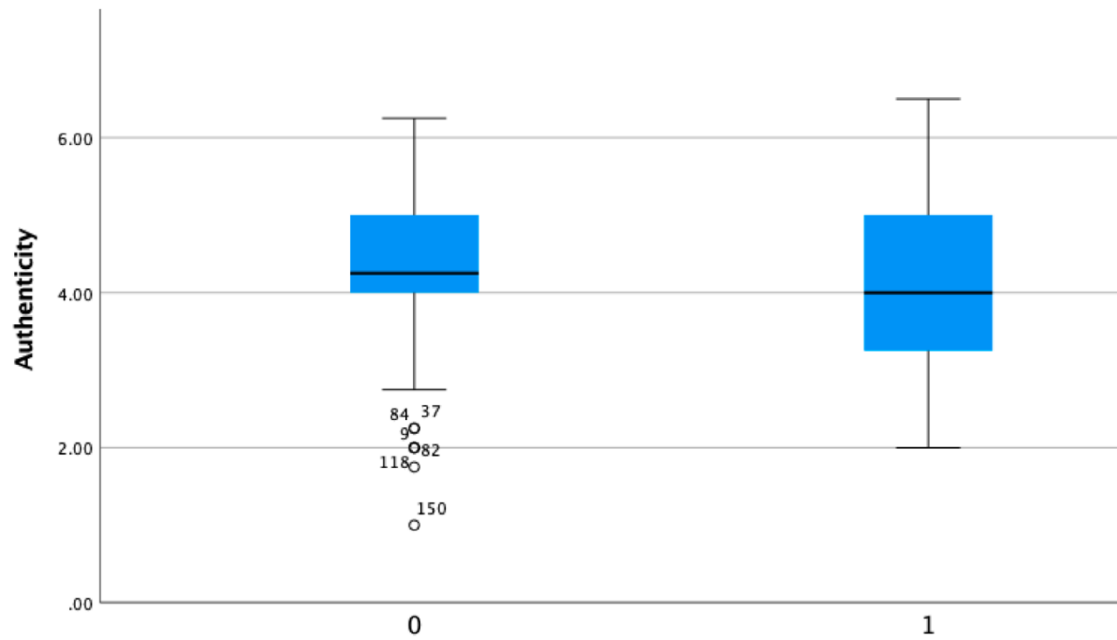
## APPENDIX 2.8: CLOSING SENTENCE AND THANK YOU



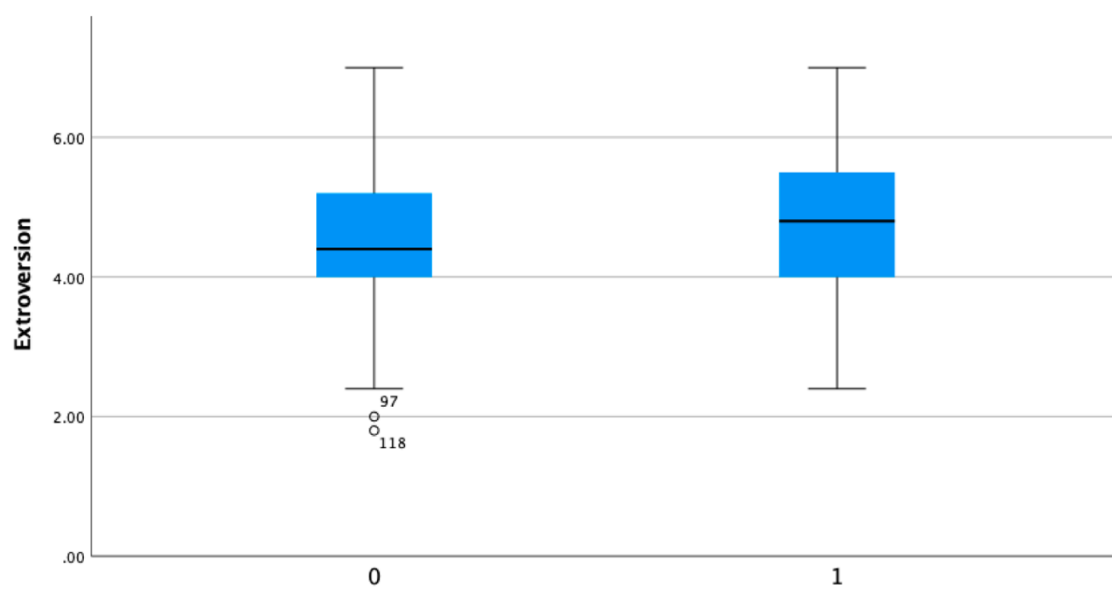
We thank you for your time spent taking this survey.  
Your response has been recorded.

## APPENDIX 3: OUTLIERS

### APPENDIX 3.1: PERCEIVED AUTHENTICITY

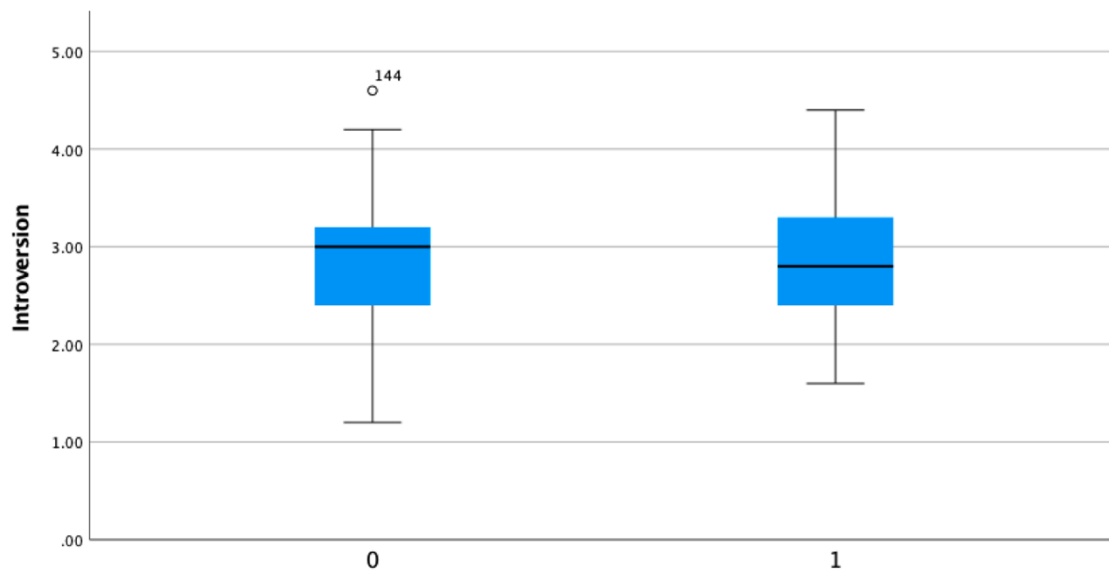


### APPENDIX 3.2: EXTROVERSION





### APPENDIX 3.3: INTROVERSION



### APPENDIX 4: RELIABILITY ANALYSIS

#### APPENDIX 4.1: PERCEIVED AUTHENTICITY

##### Case Processing Summary

		N	%
Cases	Valid	162	99.4
	Excluded <sup>a</sup>	1	.6
	Total	163	100.0

a. Listwise deletion based on all variables in the procedure.

##### Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.757	.767	4

##### Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	.451	.167	.733	.566	4.397	.044	4

## APPENDIX 4.2: EXTROVERSION

### Case Processing Summary

		N	%
Cases	Valid	162	99.4
	Excluded <sup>a</sup>	1	.6
	Total	163	100.0

a. Listwise deletion based on all variables in the procedure.

### Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.762	.764	5

### Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	.394	.250	.456	.206	1.824	.006	5

## APPENDIX 4.3: INTROVERSION

### Case Processing Summary

		N	%
Cases	Valid	162	99.4
	Excluded <sup>a</sup>	1	.6
	Total	163	100.0

a. Listwise deletion based on all variables in the procedure.

### Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.825	.826	4

### Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	.542	.444	.625	.181	1.408	.004	4

## APPENDIX 5: MAIN RESULTS

### APPENDIX 5.1: PERCEIVED AUTHENTICITY INDEPENDENT SAMPLE'S T-TEST

#### ➔ T-Test

#### Group Statistics

	Dummy_plastic	N	Mean	Std. Deviation	Std. Error Mean
Authenticity	0	81	4.2778	1.11243	.12360
	1	80	4.0844	1.09656	.12260

#### Independent Samples Test

		Levene's Test for Equality of Variances				t-test for Equality of Means				95% Confidence Interval of the Difference	
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	Lower	Upper
						One-Sided p	Two-Sided p				
Authenticity	Equal variances assumed	.442	.507	1.111	159	.134	.268	.19340	.17411	-.15046	.53727
	Equal variances not assumed			1.111	158.999	.134	.268	.19340	.17409	-.15043	.53724

APPENDIX 5.2: MULTIPLE REGRESSION MODEL EXTROVERSION VS INTROVERSION

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Beta Release 120212 \*\*\*\*\*

Written by Andrew F. Hayes, Ph.D. <http://www.afhayes.com>

\*\*\*\*\*

Model = 1  
 Y = Authent  
 X = Dummy\_pl  
 M = Personal

Sample size  
 161

\*\*\*\*\*

Outcome: Authent

Model Summary

	R	R-sq	F	df1	df2	p
	.2386	.0569	3.1592	3.0000	157.0000	.0264

Model

	coeff	se	t	p
constant	2.3254	.6927	3.3572	.0010
Personal	.5430	.1897	2.8622	.0048
Dummy_pl	1.8018	1.0030	1.7963	.0744
int_1	-.5546	.2710	-2.0464	.0424

Interactions:

int\_1 Dummy\_pl X Personal

R-square increase due to interaction(s):

	R2-chng	F	df1	df2	p
int_1	.0252	4.1878	1.0000	157.0000	.0424

\*\*\*\*\*

Conditional effect of X on Y at values of the moderator(s)

Personal	Effect	se	t	p
3.0109	.1319	.2430	.5428	.5881
3.6453	-.2199	.1714	-1.2835	.2012
4.2796	-.5718	.2425	-2.3579	.0196

Values for quantitative moderators are the mean and plus/minus one SD from mean

\*\*\*\*\* ANALYSIS NOTES AND WARNINGS \*\*\*\*\*

NOTE: Some cases were deleted due to missing data. The number of such cases was:  
 2

----- END MATRIX -----

## APPENDIX 5.3: CONTROL VARIABLES INDEPENDENT SAMPLES T-TEST

		Independent Samples Test				t-test for Equality of Means					
		Levene's Test for Equality of Variances				Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p			Lower	Upper
Control Condition- Eva is attractive.	Equal variances assumed	.084	.773	3.417	159	<.001	<.001	.703	.206	.297	1.109
	Equal variances not assumed			3.415	156.564	<.001	<.001	.703	.206	.296	1.110
Control Condition- She is confident.	Equal variances assumed	1.453	.230	-.510	159	.305	.611	-.103	.202	-.502	.296
	Equal variances not assumed			-.510	159.000	.305	.611	-.103	.202	-.502	.296
Control Condition- Eva is trustworthy.	Equal variances assumed	5.914	.016	.930	159	.177	.354	.158	.170	-.177	.493
	Equal variances not assumed			.932	152.465	.177	.353	.158	.169	-.177	.493
Control Condition- She got great social competence.	Equal variances assumed	3.343	.069	1.846	159	.033	.067	.278	.151	-.020	.576
	Equal variances not assumed			1.849	148.294	.033	.066	.278	.150	-.019	.576
Control Condition- Eva is a convincing representation of herself.	Equal variances assumed	.660	.418	.007	159	.497	.994	.001	.197	-.387	.390
	Equal variances not assumed			.007	157.448	.497	.994	.001	.197	-.388	.390
Control Condition- She is satisfied with her appearance.	Equal variances assumed	.139	.710	-1.221	159	.112	.224	-.252	.206	-.658	.155
	Equal variances not assumed			-1.222	157.669	.112	.224	-.252	.206	-.658	.155

### Group Statistics

		FL_13 - Block Randomizer - Display Order Conditionplastic		N	Mean	Std. Deviation	Std. Error Mean
		0	1				
Control Condition- Eva is attractive.	0			81	5.75	1.230	.137
	1			80	5.05	1.377	.154
Control Condition- She is confident.	0			81	5.25	1.290	.143
	1			80	5.35	1.274	.142
Control Condition- Eva is trustworthy.	0			81	4.37	1.188	.132
	1			80	4.21	.951	.106
Control Condition- She got great social competence.	0			81	4.74	1.081	.120
	1			80	4.46	.810	.091
Control Condition- Eva is a convincing representation of herself.	0			81	4.89	1.194	.133
	1			80	4.89	1.302	.146
Control Condition- She is satisfied with her appearance.	0			81	5.12	1.373	.153
	1			80	5.38	1.236	.138

## APPENDIX 5.4: COVARIATE ATTRACTIVENESS IN THE MODERATION ANALYSIS

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Run MATRIX procedure:

***** PROCESS Procedure for SPSS Beta Release 120212 *****

      Written by Andrew F. Hayes, Ph.D.  http://www.afhayes.com

*****
Model = 1
  Y = Authenti
  X = Dummy_pl
  M = Personal

Statistical Controls:
CONTROL= Control_

Sample size
      161

*****
Outcome: Authenti

Model Summary
      R      R-sq      F      df1      df2      p
      .4003   .1602    7.4404   4.0000  156.0000   .0000

Model
      coeff      se      t      p
constant   .8970    .7323   1.2249   .2225
Personal   .5028    .1798   2.7960   .0058
Dummy_pl   1.8243    .9496   1.9212   .0565
int_1     -.5076    .2568  -1.9767   .0498
Control_   .2734    .0624   4.3802   .0000

Interactions:

int_1  Dummy_pl  X  Personal

R-square increase due to interaction(s):
      R2-chng      F      df1      df2      p
int_1   .0210    3.9074   1.0000  156.0000   .0498

*****

Conditional effect of X on Y at values of the moderator(s)
      Personal  Effect      se      t      p
      3.0109    .2959    .2331   1.2698   .2060
      3.6453   -.0260    .1681  -.1549   .8771
      4.2796   -.3480    .2352  -1.4800   .1409

Values for quantitative moderators are the mean and plus/minus one SD from mean

***** ANALYSIS NOTES AND WARNINGS *****

NOTE: Some cases were deleted due to missing data.  The number of such cases was:
2

----- END MATRIX -----

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