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The Halo Effect Revisited: Unpacking the Influence of Attractiveness on Trustworthiness

Halo-effekten granskad: En analys av hur fysisk attraktivitet påverkar upplevd trovärdighet

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Abstract

The current study investigated the halo effect and its connection to trustworthiness by examining whether perceived physical attractiveness affects perceived trustworthiness. Two hypotheses were proposed, one regarding how individuals perceived as more physically attractive are also perceived as more trustworthy and one regarding whether perceived physical attractiveness has a greater positive impact on perceived trustworthiness in combination with positive reviews as compared to negative ones. 129 individuals rated the perceived trustworthiness of two randomly assigned writers of restaurant reviews, including images of the writer's faces. The results revealed main effects of both perceived physical attractiveness and review valence on perceived trustworthiness. However, there was no significant interaction between the two variables, meaning that the halo effect was not affected by review valence. Although further research is necessary, this study serves as an important addition to the overarching research of the phenomenon of the halo effect.

Keywords: halo effect, trustworthiness, physical attractiveness, consumer behavior, review valence

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The Halo Effect Revisited: Unpacking the Influence of Attractiveness on Trustworthiness

Physical attractiveness has become a crucial social currency, beneficial in most aspects of life in contemporary society where sexual attractiveness has emerged as the utmost important criteria in mate selection (Illouz, 2012, p. 53). Its impact on our everyday lives through marketing and sociocultural ideals appear to affect everything from our careers, romantic lives and lifestyles. However, while it may seem unfair and confusing that physically attractive people benefit socially from their appearance, they may not be at fault for it. Not at all in fact, according to extensive research spanning over a century on the *halo effect*, the tendency to judge someone's overall character based on a single positive trait such as physical attractiveness, first explored as a psychological concept in 1920 (Thorndike, 1920). Succinctly, individuals make automatic judgments of one another upon first interaction, primarily based on initial presentations, particularly physical appearance (Palmer & Peterson, 2021). These judgments subsequently shape individuals' opinions of one another: attractive individuals are often perceived as possessing better qualities, while less attractive people are viewed more negatively in comparison.

The concept of a halo effect might be daunting at first, especially when one starts exploring the many different aspects of life where it might have an impact. For example, physically attractive individuals are perceived to have more successful careers and get better jobs (Dion et al., 1972). Moreover, Watkins and Johnston (2000) found that physical attractiveness significantly influences evaluations of job applications, with attractive images enhancing the perceived quality of mediocre resumes. Their results indicate that an appealing appearance can elevate a resume's status, regardless of its actual content (Watkins & Johnston, 2000). For this study however, another potential perceptual bias of character, specifically the personality trait of trustworthiness, will be examined. It is deemed to be of great importance when exploring the halo effect, since as a construct it consists of a plurality of factors applicable in many dimensions of life such as honesty, competence, benevolence and integrity (Mayer et al., 1995). This study will attempt to clarify the actuality of the halo effect in order to make it more approachable and to relieve the potential burden of its vast and complex nature. Lastly, the following study aims to revisit and further prove the validity of the halo effect, while attempting to broaden the perspective of its connection to trustworthiness.

Theoretical framework

Trustworthiness

To be perceived as trustworthy there are a number of factors that contribute to the overall outcome, making trustworthiness as a characteristic multidimensional. While some authors suggest the single determining factor of being perceived as trustworthy to be the responsibility of the trustee, ergo, the capability of being responsible for trust (Strickland, 1958), others attempt to define the outlines of trustworthiness more precisely. To clarify the dimensions of perceived trustworthiness, Mayer et al (1995) identified three key factors that capture a major proportion of the construct; *ability, integrity and benevolence*. Ability refers to the competence and skill one has to their disposal within a certain domain. This suggests that in order to be trustworthy, one needs to be perceived as competent in the area they want to be trusted in. Benevolence indicates that in order to be trustworthy, there has to be a belief that the trustee seeks to act in the best interest of the trustor, meaning that they need to be perceived as supportive and appear to have good intentions. The last characteristic of trustworthiness, integrity, refers to the perceived credibility of the trustee. The trustor requires the trustee to follow a set of principles that align with what the trustor deems acceptable to be considered trustworthy. Mayer et al. (1995) disclose that ability, benevolence and integrity are important to trust and if all three are perceived as high, the trustee would be considered trustworthy. The authors argue that each of these factors contribute an independent perceptual perspective from which a trustee can be viewed. Further, the set as a whole provides a foundation for trust to be investigated empirically. (Mayer, et al., 1995, p. 717)

Another important variable to consider in examining perceived trustworthiness is the trustor, the individual making judgments about trust. While this study defines trustworthiness through characteristics such as ability, benevolence, and integrity, it is essential to acknowledge the perspective of the trustor. Kumar et al. (2020) argue that the definition of trustworthiness varies depending on context. However, a common feature is the trustor's willingness to place themselves in vulnerable situations with the trustee. Thus, the perceived trustworthiness of an individual is inherently linked to the trustor's perceptions (Kumar, Capraro, Perc, 2020, p. 2). Romano (2003) further emphasizes the role of the trustor by noting that while their circumstances may vary, trustworthiness as a construct remains conceptually stable. This stability allows for a flexible definition of trust as an attitude of the trustor while maintaining its conceptual integrity as an examinable construct. In the context of perceived trustworthiness, it is crucial to focus on the trustor's perceptions, as these will be the primary subject of investigation.

To further articulate the importance of trustworthiness in the context of the halo effect and perceptive evaluation from visual stimuli, the findings of Rudoy & Paller (2009) were considered. They presented the results of two experiments conducted to examine the influence of facial features and memory retrieval when deciding whether or not to trust someone. In these experiments, a structured process involving training, rating, and recall phases was applied. Participants evaluated faces under varying conditions while their brain activity was recorded to explore the neural mechanisms behind their trustworthiness judgments. They found that together, the results from both experiments suggest that perceptual information was processed for trustworthiness more quickly and further influenced behaviour and attitudes sooner than memory based information.

In conclusion, prior empirical research points toward the importance of physical appearance when perceiving trustworthiness. Although a number of factors need to be considered by the trustor (Mayer et al., 1995), their assessment will likely be dependent on their initial perception, rather than memory based influences of the trustee (Rudoy & Paller, 2009), so long as they are willing to put themselves in a vulnerable situation in relation to another individual (Kumar, Capraro, Perc, 2020).

The halo effect

The constant error of the halo, or the halo effect, is a term first coined by Edward Thorndike in *A Constant Error in Psychological Ratings* (1920). This theory is based around the cognitive bias of an individual's perception when attempting to evaluate or rate another person. For instance, when asked to evaluate a peer on certain attributes such as intelligence or trustworthiness, the perception of that person's physical attractiveness can influence the evaluation. The magnitude of this error in peer evaluation is thought to be quite large, though it is difficult to determine its exact size. (Thorndike, 1920)

Despite there being little to no evidence of a relationship between perceived physical attractiveness and actual intelligence, research does lean toward a consensus on the relationship between perceived physical attractiveness and perceived intelligence (Talamas, Mavor, & Perrett, 2016). This uncertainty or inaccuracy between the perception of an individual's level in a specific attribute and its actual level might very well be caused by the unconscious judgements one automatically applies when initially interacting with someone, in other words, the halo effect. According to Palmer & Peterson (2021), individuals make these automatic judgements specifically when triggered by the physical appearance of the people they interact with. Furthermore, these "appearance cues" can produce highly influential halo effects (Palmer & Peterson, 2021).

Similarly to the way one's perception influences assessments of other individuals due to these appearance cues, customers are according to researchers Ozanne, Liu & Mattila (2019) positively biased in their inclination to purchase a service when reading a positive review written by an attractive reviewer as opposed to a less attractive one (Ozanne, Liu, & Mattila, 2019, p. 733). In their study, participants evaluated a hotel post featuring a review that varied in valence (positive or negative) and reviewer attractiveness. The study found that attractive reviewers enhanced brand evaluations when providing positive reviews, while negative reviews did not produce the same effect. This suggests that not only does the halo effect influence one's judgement of other people, and in extension their attributes (such as perceived trustworthiness), but also how much value to put in their statements. However, the absence of this effect in negative reviews indicates a noteworthy potential relationship between perceived attractiveness and valence of a review, which will be explored.

Moreover, on the topic of the halo effect playing an important role in the value of a trustee's opinions and judgement, which extends to their perceived trustworthiness, a study by Calvin Kai-Ching Yu, Jasvinda Ng and Siu-Sing Wong (2022) found that the physical attractiveness of a therapist could prompt a client to think more favourably of them in other attributes, such as trustworthiness (Yu, Ng, & Wong, 2022). Meaning that attractive individuals are more likely to be considered trustworthy in the context of giving advice, similar to, although not exactly the same as the advice given in a review.

Finally, while evidence appears to point toward the causality of perceived physical attractiveness on trustworthiness, an extensive meta-analysis of the physical attractiveness stereotype by Eagly et al. (1991) found that physical attractiveness had "little impact on beliefs about integrity and concern for others." (Eagly, et al., 1991, p. 124). This finding suggests that more research is needed on the dimensions of the relationship between attractiveness and trustworthiness, which serves as the theoretical framework from which this study will be conducted.

Purpose

The purpose of this study is to examine the effect of perceived physical attractiveness on perceived trustworthiness. Thorndike's theory of the constant error of the halo (1920) claims to provide theoretical evidence that objectivity is difficult to achieve when an observer attempts to rate their peers on multiple attributes (Thorndike, 1920). Therefore, one might assume that the physical attributes (in this case attractiveness) of an individual will affect how an observer perceives their other qualities. This study aims to further prove the validity of this

concept, while attempting to shine light on the specific connection between perceived physical attractiveness and the quality of trustworthiness.

Specifically, the following study will conduct an experiment to investigate whether perceived physical attractiveness is the deciding variable or simply a confounding variable to perceived trustworthiness. Additionally, another aim of this study is to investigate whether there is a distinction in intensity of the halo effect on perceived trustworthiness dependent on the valence of the review. Moreover, this study aims to discuss the magnitude of the halo effect in this specific field while determining the tenability of claims that attractiveness might even be a more important factor than trustworthiness (Jaeger, B et al., 2018).

Finally, conducting this study with significant results will provide valuable insight into how the halo effect is applied while attempting to mitigate the negative consequences of this effect through amplifying the public's awareness of its existence.

Research questions and hypothesis

To explore the effects of perceived physical attractiveness on perceived trustworthiness, several key questions need to be addressed. These research questions aim to provide insight into the halo effect and its specific impact on perceived trustworthiness. Furthermore, the questions will explore how this effect might be influenced by the valence of contextual information provided in addition to an individual's physical attractiveness. The following research questions are designed to investigate these key aspects:

How does the perceived physical attractiveness of an individual affect their perceived trustworthiness to an observer?

What does the relationship between the valence of an online review and the perceived physical attractiveness of the writer look like?

Based on these research questions, the following hypothesis reflects the expectations regarding the relationship between the halo effect, trustworthiness and the valence of an online review.

H1: Perceived physically attractive individuals are perceived as more trustworthy than less attractive individuals.

H2: Perceived physical attractiveness will have a more significant positive impact on perceived trustworthiness in combination with positive reviews as opposed to negative ones.

Method

Participants

A total of 129 participants took part in the survey. The participants' demographics were as follows: 81 identified as male, 46 as female, and 2 as non-binary. In terms of age, 85 participants were 21–25 years old, 19 were 18–20, 13 were 26–30, 7 were 31–35, 4 were 36–40, and 1 was 41 or older. Participants were required to be between the ages of 18-40 and further, have lived in or live in Sweden to qualify for participation in the study. Three individual respondents ended up not meeting these criteria, and therefore were excluded from the results.

Material

Reviews

Two fictive online reviews of hypothetical restaurants served as the stimuli for this study. The two reviews were written by the authors of this study, one positive review and one negative. The reviews were based on other studies that had analysed restaurant reviews and had determined what makes a review positive or negative. For the positive review, Anderson (1998), Bilgihan et al. (2017), and Tian et al. (2021) were used as a way to operationalise what a good restaurant review entails. In contrast, for the negative review, Bilgihan et al. (2017), Anderson (1998), and Johnson (2016) served as the basis. Each review was written based on the typical components identified in the studies regarding dining reviews, such as common words used in reviews, and what the review usually focused on.

To further ascertain that these reviews were clearly positive and negative, a pilot study was conducted to determine the clarity of each review and to guarantee that they were perceived as intended. The pilot study was done on Survey&Report (Sunet) and sent out to individuals through convenience sampling. Everyone participating was 45 or older and a total of 14 people participated. Each participant was presented with both reviews and a set of questions and statements to answer (see Appendix B). The pilot study helped make minor adjustments to the reviews, ensuring they were as clear and comprehensible as possible. For the negative review, it was noted that when the reviewer mentioned traffic on the way to the restaurant it brought some confusion to the reader, and therefore it was removed. For the

positive review, the timing of how quickly the reviewer received their table was clarified, due to a comment mentioning that it didn't state how quickly they were given their table.

Chicago Face Database

The four faces used for this study were selected from the Chicago Face Database (Ma, Correll, Wittenbrink, 2015. Ma, Kantner, Wittenbrink, 2020), consisting of images of male and female faces of varying ethnicity and age. Moreover, norming data for the faces regarding both physical attributes as well as subjective ratings by independent judges is included in the database. To operationalise attractiveness, the attractive faces were required to be ranked higher than a score of 5 on the physical attractiveness norming data provided by the database, and the unattractive faces were required to be scored below 2 on a scale ranging from 1-7. Two male and two female faces were selected. The male faces were scored 5.07 and 1.54 while the female faces scored 5.48 and 1.61 respectively.

Trustworthiness scale

In order to measure perceived trustworthiness, an index of four items was created. Three of the items were based on Meyer et al. (1995) and one item specifically asked about trustworthiness (see Appendix E). Items 3, 4 and 5 were based on the identified components of trustworthiness, these being integrity, benevolence and ability and item 2 was a direct question regarding trustworthiness (Meyer et al. 1995). All items were measured on a 7-point Likert scale (see Appendix E). The three remaining items were not used in the analysis but were included to mask the true purpose of the study and also help reduce response bias from the participants (see Appendix E, items 1, 6, and 7). Using Cronbach's Alpha, a trustworthiness index was formed after the items in the survey were analysed and showed good internal reliability. The analysis that was conducted presented a Cronbach's Alpha of $\alpha = 0.778$. This was done to ensure internal consistency. The results from Cronbach's Alpha confirmed that the survey questions tested were related to and measured trustworthiness. An overall trustworthiness index score was created, ranging from 1 - 7, where seven was considered very trustworthy.

Survey

Each survey included a positive and negative review, paired with an attractive and less attractive face determined in accordance with the norming data provided by the Chicago Face Database (see *Chicago Face Database* section). In order to control for order effects the latin square method was applied, resulting in four individual surveys (see Table 1). The surveys were created through an online survey tool tailored to use for academic and institutional purposes called Survey & Report (Sunet). Each survey began with brief information about the

study and the participants had to consent in order to be a part of the survey. After reading a review paired with a visual, 7 different statements were presented for the participants to rate on a likert scale ranging from 1 to 7. The items were always shown in a fixed order. They then repeated this procedure for a secondary review. For a complete list of survey items and reviews, see Appendix E-I.

Table 1

Latin- square of Survey order

Survey 1	Positive review & attractive male face	Negative review & unattractive female face
Survey 2	Positive review & unattractive female face	Negative review & attractive male face
Survey 3	Negative review & attractive female face	Positive review & unattractive male face
Survey 4	Negative review & unattractive male face	Positive review & attractive female face

Procedure

The surveys were sent out by using an online tool called Nimble links which ensured that the versions were randomised. The participants were selected through convenience sampling and snowball sampling and the survey was shared through social media channels such as Instagram and Facebook, as well as interactive marketing around Lund University campus. Participants were informed that it was voluntary to participate and that their answers were completely anonymous. To be able to partake in the survey, participants had to consent to their data being collected before seeing the actual contents. The actual aim of the survey was only explained after they finished the survey, due to the risk of it affecting how participants responded to the survey. For the complete information provided before the survey began, see Appendix D .

Ethics

The survey collected no sensitive or private information from the participants. Further, participation was completely voluntary and the respondents were informed that they were free to exit the survey whenever they liked, and for any reason. Moreover, no information about the participants could be traced back to them, and no information would be stored after the

experiment was concluded. Before the participants could partake in the survey, they were asked to carefully read the information regarding the survey and give their consent to collect their responses. After the survey was finished, the participants were informed of ways to contact the authors with any questions, as well as opportunities to be provided with the results.

Furthermore, the usage of facial images obtained from the Chicago Face Database were used in accordance with the database's terms and conditions. Before getting access to the images a request had to be made and approved by the database.

Results

PCA

The trustworthiness index was compiled of items 2, 3, 4 and 5 in the survey sent out to participants. To ensure that these items accounted for as much variation as possible while also reducing the dimensionality of the data, a Principal Components Analysis was conducted. Firstly, the assumption of sphericity was tested through Bartlett's Test of Sphericity ($\chi^2 = 317$, $df = 6$, $p < .001$), yielding a significant result. This means that the data's covariance structure is suitable for the linear mixed-effects model analysis, indicating that variables are related in such a way that allows for meaningful interpretation of the model results.

The PCA produced one component which accounted for a substantial amount of the variance across the variables (Table 2). These results were sufficient to conclude that the four items were interrelated enough to be formulated into the trustworthiness index used as the dependent variable for further analysis of the data.

Table 2

PCA: Component Loadings and Uniqueness Values

Variable	Component Loading	Uniqueness
Trustworthy	0.888	0.212
Integrity	0.628	0.605
Benevolence	0.807	0.349
Ability	0.782	0.388

Note. Varimax rotation was used.

Descriptives

The descriptive statistics for trustworthiness ratings based on reviewer attractiveness and review valence are presented in Table 3. On average, attractive reviewers appeared to receive higher trustworthiness ratings compared to unattractive reviewers based on the descriptive data. Additionally, positive reviews appeared to be rated more favorably than negative reviews. For a more detailed view of the descriptive data, see Figure 1.

Reliability analysis

To ensure the internal consistency of the survey items that would be used to form the trustworthiness index, they were assessed using Cronbach's Alpha. The analysis revealed a Cronbach's Alpha of $\alpha = 0.778$, indicating a good internal reliability.

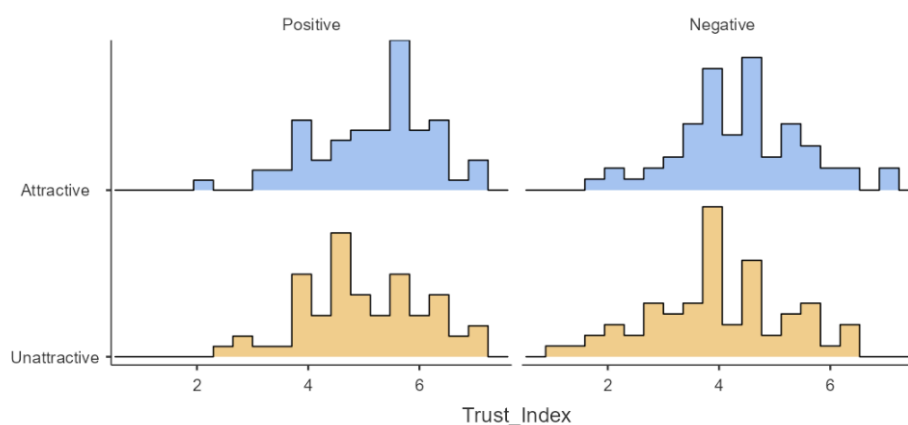
Table 3

Descriptives

	Attractive	Unattractive	Positive Review	Negative Review
N	126	126	126	126
Mean	4.79	4.49	5.12	4.16
Median	4.88	4.50	5.25	4.13
SD	1.15	1.28	1.05	1.20

Note. This table shows descriptive data from the trustworthiness index scores. *Range*, 1-7.

Figure 1



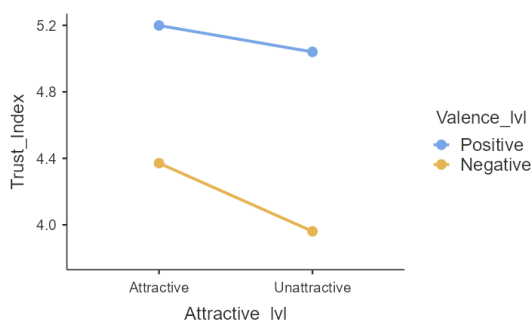
Linear Mixed-Effects Model

The data was analysed through a Linear Mixed-Effects Model with the trustworthiness index as the dependent variable. The residuals for the data were determined to be normally distributed. The Shapiro-Wilk test that was conducted yielded a p-value of ($p = 0.149$). The results showed that faces perceived as more attractive were rated as more trustworthy than their less attractive counterparts, which provided support for **H1**. The model found a significant main effect of perceived attractiveness on trustworthiness ratings, $F(1, 124) = 5.693$, $p = 0.019$. The fixed effects parameter estimate of -0.284 on level of attractiveness further indicates that trustworthiness ratings were lower for unattractive reviewers as compared to attractive ones. See Figure 2 for a more detailed view of the main effect.

A main effect of valence of review was also identified through the analysis, where the positive reviewers were perceived as more trustworthy than their negative counterparts. There was a highly significant main effect of valence on trustworthiness ratings $F(1, 124) = 64.005$, $p < .001$. Further, the fixed effects parameter estimate of -0.954 indicates that trustworthiness ratings were lower for negative reviews than positive ones. See Figure 2 for a more detailed view of the main effect.

The interaction effect between perceived attractiveness and valence of review was not significant, $F(1, 124) = 0.614$, $p = 0.435$, meaning that the halo-effect of attractiveness on trustworthiness does not significantly depend upon the valence of the review. This is further indicated by the parameter estimate (-2.051) and corresponding non-significant p-value. These results contradict **H2**, which predicted a positive interaction between perceived attractiveness and valence of review.

Figure 2



Note. Mean values for trustworthiness index. *Range, 1-7.*

Post-hoc tests

After conducting the initial analysis, post-hoc testing was done to further investigate the differences between factors. The analysis presented significant differences between groups, the largest of which being between Attractive - Positive reviews and Unattractive - Negative reviews, where the former were perceived as more trustworthy than the latter. The same order goes for Unattractive - Positive reviews compared to Unattractive - Negative reviews, which were the groups with the second largest differences. Attractive - Positive reviews compared with Attractive - Negative reviews provided the third largest specific differences, where Attractive - Positive reviews were perceived as more trustworthy (see Table 4). The post-hoc test also provided insight on another relationship of note, between Unattractive - Positive reviews and Attractive - Negative reviews (see Table 4). In this case, the unattractive faces were perceived as more trustworthy. This relationship indicates that perceived attractiveness has an impact on the differences in perceived trustworthiness when the attractive faces were combined with negative reviews. Moreover, the difference in perceived trustworthiness between attractive and unattractive faces was greater when the attractive faces were paired with negative reviews and the unattractive faces were paired with positive reviews than the general post-hoc comparisons for the Attractiveness factor. For a more detailed view of the post-hoc analysis, see Tables 4, 5 and 6.

Additionally, when accounting for the gender of the faces as an independent variable, values for the initial independent values changed slightly. When conducting a separate linear mixed-effects model with the addition of gender of face as a fixed effect, the model found a significant main effect of perceived attractiveness $F(1, 122) = 5.6104, p = 0.019$ and valence of review $F(1, 122) = 63.0985, p < .001$. However, these slight adjustments did not lead to any significant effects on the p-values. Moreover, the model found an insignificant main effect of face gender $F(1, 122) = 0.1771, p = 0.675$. This indicates that the gender of an individual does not affect perceived trustworthiness.

Table 4*Post-hoc Comparisons: Attractiveness - Valence of Review*

Comparison									
Attractiveness	Valence	-	Attractiveness	Valence	Difference	SE	t	df	p _{bonferroni}
Attractive	Negative	-	Unattractive	Negative	0.410	0.200	2.053	229	0.247
Attractive	Positive	-	Attractive	Negative	0.828	0.200	4.147	229	< .001
Attractive	Positive	-	Unattractive	Negative	1.238	0.167	7.403	124	< .001
Attractive	Positive	-	Unattractive	Positive	0.159	0.200	0.796	229	1.000
Unattractive	Positive	-	Attractive	Negative	0.669	0.170	3.939	124	< .001
Unattractive	Positive	-	Unattractive	Negative	1.079	0.200	5.404	229	< .001

Note. Bonferroni corrections were applied to the p-values to adjust for multiple comparisons.

Table 5*Post-hoc Comparisons - Valence_lvl*

Comparison							
Valence_lvl	Valence_lvl	-	Difference	SE	t	df	p _{bonferroni}
Positive	-	Negative	0.954	0.119	8.00	124	< .001

Note. Bonferroni corrections were applied to the p-values to adjust for multiple comparisons.

Table 6*Post-hoc Comparisons - Attractive_lvl*

Comparison							
Attractive_lvl	Attractive_lvl	-	Difference	SE	t	df	p _{bonferroni}
Attractive	-	Unattractive	0.284	0.119	2.39	124	0.019

Note. Bonferroni corrections were applied to the p-values to adjust for multiple comparisons.

Discussion

The aim of this study was to examine if perceived physical attractiveness affects perceived trustworthiness and the relationship between the two. The results indicate that participants rated the individuals perceived as attractive as more trustworthy, regardless of the valence of the review, which reinforces the halo effect. This entails that the more attractive the person writing the review was perceived as, the more trustworthy they were perceived as. In turn, participants also perceived the unattractive individuals as less trustworthy. These results suggest that when shaping perceptions of trustworthiness, perceived attractiveness plays an essential role. The strong influence of perceived attractiveness emphasizes the importance of visual cues in shaping judgments about various traits, which is in line with theories on appearance cues and their ability to produce highly influential halo effects (Palmer & Peterson, 2021). These results help reinforce the existing literature on the halo effect, which suggests that perceived physical attractiveness positively influences judgments in unrelated areas, such as trustworthiness.

Furthermore, it was found that the valence of the review had a clear impact on perceived trustworthiness, with negative reviews leading to lower trustworthiness ratings compared to positive reviews. Conclusions to be made from this are that the participants found the positive review more trustworthy than the negative one and that the overall valence of the reviews strongly influenced participants' perceptions of trustworthiness, independent of the attractiveness of the reviewer. The strong main effect of valence asserts that the content dominates trustworthiness ratings. The reasons as to why valence has a more influential role compared to perceived attractiveness on trustworthiness could be plentiful, but to draw any conclusions, more research is needed on the topic.

Though there were two significant main effects, no significant interaction existed between them. This implies that the effects of perceived attractiveness and valence are additive but not synergistic. For instance, according to the findings of this study, attractive individuals are perceived as more trustworthy regardless of how they phrase themselves.

In addition, an analysis of gender of the faces as an independent variable was done to see if it yielded any differing results. While there were slight changes in variance on valence and perceived attractiveness when adding gender to the model, the results were not significant. This means that perceived trustworthiness is not affected by the gender of an individual.

After conducting the survey and analysing the results, it is reasonable to assert that **H1** is supported and confirmed by the results. Specifically, our results indicate that physically

attractive individuals indeed are perceived as more trustworthy than their less attractive counterparts. Moreover, our findings suggest that this relationship is not affected by the valence of statements, in this case reviews, which contradicts **H2**. This conclusion is based on our results showing that both factors, perceived physical attractiveness and valence of the review, had a main effect regardless of one another.

Looking at our post hoc tests, one could see that perceived attractiveness has an effect on perceived trustworthiness so long as the valence of the review is inconsistent, meaning that the reviews are not both positive nor both negative. This implies that the valence is a significant factor in determining perceived trustworthiness. While our findings suggest that perceived attractiveness did not affect perceived trustworthiness when the valence of the reviews were the same, it would be hasty to conclude that valence is the only determining factor based on these findings.

Comparison to prior research

Comparing our findings to a similar study by Ozanne, Liu & Mattila (2019) the results differ. In their study, the results indicated that customers are positively biased only when attractive reviewers write positive reviews, as compared to less attractive reviewers. However, this effect did not appear when reviews were negative, meaning that perceived attractiveness of the reviewer only influenced the evaluation if the review was positive. With these results in mind, the study (Ozanne, Liu & Mattila, 2019) suggests that the halo effect is absent in the negative review condition, but present in the positive one. However, the results from our study indicate that the participants, regardless of reading a positive or negative review, perceive the attractive reviewers as more trustworthy than their less attractive peers. Candidly, this could be due to a number of factors, such as our methods not being identical, the population being different, or the usage of a different hypothetical statement (in this case restaurant reviews).

Strength and limitations

For the survey, two reviews were created and used; one positive and one negative. However, the inclusion of a neutral review to serve as a control group for the valence variable could have been beneficial for the validity of the results. This is due to the fact that the actual reviews that were included in our study were obviously positive and obviously negative, leaving no room for a middle ground between the two. A neutral review could have been useful in determining whether trustworthiness ratings were solely affected by the appearance of the reviewer or whether the review content contributed to trustworthiness ratings independently. Furthermore, since positive and negative reviews are opposite extremes, the use of a neutral review could have provided an insightful perspective on the halo effect, due to

it not being emotionally charged. Although a neutral review could have been useful, the two reviews that were included in our study were ascertained to be positive and negative. The pilot study that was conducted helped determine the clarity and valence of the reviews, which made us confidently be able to say whether or not they were positive or negative. Furthermore, when creating our questions for perceived trustworthiness, meticulous effort was put into ensuring construct validity by using sources that extensively and empirically explained what trustworthiness was.

Another aspect to consider for this study was the method of the experiment. A survey was the most efficient way of obtaining answers in this study. However, while surveys are good for getting many responses, they're difficult to control. When our participants responded to the survey, it was impossible for us to control the experimental setting, meaning that we aren't able to know for certain that the setting they were in was quiet and calm and that they were not influenced by others or worked together. This could, on our part, also have been more clarified to the participants, by informing them of this before starting the survey.

In addition, it is possible that not everybody answering the survey completely understood each question and statement due to it being in English, which could have potentially affected the results. Albeit, the amount of participants expressing that they did not understand a certain part of the survey was not significant enough to have affected the results as a whole. Further, it was assumed that individuals over the age of 18 in Sweden would generally understand English enough to be able to participate, and refrain from participating if they didn't.

Furthermore, the participants were selected through convenience sampling which could have led to us not fully obtaining a varied enough sample. This could potentially make generalising the result for the Swedish population more difficult, due to our sample being too homogenous and like minded to one another. However, due to our wide demographic including a broad age span and generally evenly distributed genders, it does create a heterogenous enough sample to be representative of the Swedish population. In addition, the survey was spread across a plurality of cities in Sweden and through snowball sampling it potentially could've covered vast areas.

Moreover, in total four different faces were used for the surveys. We made sure to have perceived attractive and perceived unattractive faces of both genders. Even though the faces were well-validated, it doesn't negate the fact that only four faces were used, and could have potentially impacted the results. It could have been beneficial to have used several

perceived attractive and perceived unattractive faces rather than the four that were chosen to get more well rounded results and potentially differing ones.

Although there are aspects of our methods that can be improved, there are several strengths to it as well. In summary, four versions of the survey were created and sent out through a link that randomised which survey each participant were to receive. In doing this, we managed to minimise order effects such as the primacy and recency effect and can for certain say that our results weren't affected by what image or review they first saw. Moreover, no sensitive questions were asked nor collected, and the participants remained anonymous in the survey and were able to leave at any time. This illustrates that the study conducted was done in an ethical manner. Additionally, the database used to obtain the images (Chicago Face Database) is reliable, intended for scientific research and further provided us with images of good quality and varied gender, ethnicity and age. The images were rated subjectively by independent judges and presented with norming data for us to easily be able to find the images rated as attractive and unattractive using a likert scale.

Future research

Although previous extensive research on the halo effect is already present in the field of psychology, this study aims to further investigate the specific relationship between perceived physical attractiveness and perceived trustworthiness. This study serves as a new approach to a topic with the potential of being widely investigated and thoroughly picked apart. Moreover, there are many implications to be made from this study that can in turn serve as the structure for future research. Additionally, the study holds potential for replication with minor adjustments that could continue to add perspective to the phenomenon at hand.

Firstly, utilising a more diverse sample than the one used for this specific study could broaden the perspective from which the topic is examined. The current study limited itself to a sample of individuals that have lived in or are currently living in Sweden, between the ages of 18-40. Widening the sample to include a broader demographic could provide more insightful implications and may yield differing results. Moreover, there are arguments to be made that the specific context of restaurant reviews may have skewed the results due to the participants' predispositions. Therefore, a similar or replicated study where nothing but the context of the hypothetical statements is changed could possibly contribute to a stronger argument for the effects seen in this study.

Secondly, future research should be conducted with the implications of this one in regard. With the knowledge provided by this study in mind, one might begin to investigate how the halo effect on trustworthiness could be applied in actuality. For example, exploring to

what extent the advantage of physical attractiveness has an effect on individuals psychological well being, confidence or overall quality of life could be beneficial for overarching research on prejudice and the sociological aspects of physical ideals. Furthermore, findings regarding this topic could be applied to professional settings in terms of determining how businesses can utilise physical attractiveness in marketing or employer branding to enhance perceived trustworthiness.

Conclusion

In summary, perceived physical attractiveness has an effect on perceived trustworthiness. Participants were more inclined to trust attractive individuals than less attractive individuals. Review valence also had a clear impact on perceived trustworthiness, with negative reviews being perceived as less trustworthy compared to positive ones. Moreover, results revealed that if the reviewer was attractive, they were perceived as more trustworthy regardless of the valence of the review.

This study was diligent in making sure that the results wouldn't be affected by order effects or vague reviews and made sure that images used were factually differing in perceived attractiveness. However, this doesn't negate the fact that some parts of the study could have been more refined. Although the reviews were clear, the lack of a neutral review is noteworthy, since it could have been valuable for the study. Factors such as the experimental setting could for this study not be controlled and could therefore potentially have affected how participants responded to the survey. Furthermore, the use of convenience sampling could have resulted in a less varied group of participants and therefore holds the potential of skewing the results.

In final remarks, it would be of interest to see a similar study be conducted but with a broader demographic to investigate the halo effect on a larger scale. Including sexuality in a future study could also provide insightful knowledge on the subject, along with researching physical attractiveness and its impact on one's emotional well being. The insights obtained from conducting this study could be of value to the already vast research on the halo effect and further highlight the impact of physical attractiveness when being perceived by others and making an impression.

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Appendix

Appendix A. Consent form for pilot study.

Thank you for participating in our pilot study! We are two students currently writing our thesis in psychology at Lund University, investigating how online reviews affect people's will to dine at a restaurant. The purpose of this survey is to ensure the clarity of the online reviews, making sure that they convey the information we intend for them to do.

In this survey, you will be presented with two fictive reviews of a restaurant; one positive and one negative. The reviews are designed to reflect actual online restaurant reviews as closely as possible, having been created based on common sentiments and vocabulary used in actual reviews.

Please take your time to carefully read the reviews thoroughly before answering a few questions regarding your understanding and opinions of the reviews presented to you. Your honest feedback is essential in improving our future study!

Before you begin, please note that your answers are anonymous and will be kept confidential and further only be used for academic purposes. You are free to exit the survey at any time. If you have any questions or concerns about this study, feel free to contact us at any time by sending an email to: ra6862do-s@student.lu.se

Let's get started!

1. I have read and understood the information above and consent to my personal data being collected and processed in accordance with GDPR

Note. The consent form for the pilot study that had to be filled out to participate.

Appendix B. Pilot study reviews, questions and statements.

Reviews

Review 1

The customer service was amazing! When we arrived the staff was very friendly and warm and were quick to give us our table. Our waiter was highly attentive and informative and answered all our questions about the food and drinks which was helpful and greatly appreciated. The food itself was flavorful and delicious, and most definitely worth the price. Overall, the place was inviting and cosy, and the service was great. Can't wait to come back!

Review 2

The customer service was terrible. On top of being stuck in traffic for two hours, we had to wait 20 minutes to be seated. Once given our table, our waiter was rude and forgot to give us menus and we had to wait another 10 minutes. The food took too long and we got the wrong order. When the correct food arrived it was bland and greasy. The prices were way too high and not worth it. Overall the staff were unfriendly and rude when I expressed my displeasure with the food and service. I will not be coming back!

2. Rate to what degree you agree with the following statements about Review 1.

	1 - Strongly disagree	2	3	4	5	6	7 - Strongly agree
Review 1 was clear and easy to understand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Review 1 was clearly a positive review.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Review 1 was realistic and authentic.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Rate to what degree you agree with the following statements about Review 2.

	1 - Strongly disagree	2	3	4	5	6	7 - Strongly agree
Review 2 was clear and easy to understand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Review 2 was clearly a negative review.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Review 2 was realistic and authentic.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Did you find anything confusing about Review 1?

Yes
 No

5. If yes, please motivate your answer.

6. Did you find anything confusing about Review 2?

Yes
 No

7. If yes, please motivate your answer.

8. It was obvious which review was positive and which review was negative

Yes
 No

9. If no, please motivate your answer.

Note. The reviews that had to be read first, followed by the statements and questions regarding the reviews.

Appendix C. Demographic items for pilot study.

10. What is your gender? (Please select one)

Male
 Female
 Non-binary
 Prefer not to say

11. What is your age? (Please select one)

Under 18
 18-24
 25-34
 35-44
 45-54
 55 or older

12. What is your nationality? (Please specify your nationality)

Note. Demographic questions.

Appendix D. Consent form.

Thank you for participating in our survey! We are interested in how online reviews can influence people's dining choices and further how these reviews are perceived by readers and consumers. In this survey, you will be presented with a scenario where you're looking for a restaurant to dine at and come across two different online reviews of hypothetical restaurants, *Restaurant 1* and *Restaurant 2*. We ask you to carefully look over the reviews before answering a few questions regarding your thoughts and opinions.

Your responses will help us gain valuable insight in how consumers perceive online reviews and reviewers, please take your time reading the reviews carefully and providing your honest answers.

Before you begin, please note that participating in this survey is completely voluntary, and you are free to exit the survey whenever you like. Further, your responses will be kept anonymous and used only for research purposes. There are no right or wrong answers.

If you have any questions or concerns about this study, please feel free to contact us at any time through sending an email to either one of us.

Ramona Doniaeeziba ra6862dc-s@student.lu.se

August Falkström august.falkstrom@gmail.com

Or our supervisor

Ase Innes-Ker ase.innes-ker@psy.lu.se

Let's get started!

I have read and understood the information above and consent to my data being collected and processed in accordance with GDPR.

Note. The consent form that was presented before all four surveys.

Appendix E. Survey items.

1. This review makes me inclined to dine at this restaurant

1 - Not at all inclined	2	3	4	5	6	7 - Very inclined
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. The writer of this review seems trustworthy

1 - Not at all trustworthy	2	3	4	5	6	7 - Very trustworthy
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. I believe that the writer of this review is not trying to deceive me

1 - Strongly disagree	2	3	4	5	6	7 - Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. I believe that the writer had good intentions writing this review

1 - Strongly disagree	2	3	4	5	6	7 - Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. The writer of this review seems competent about the subject they're talking about

1 - Strongly disagree	2	3	4	5	6	7 - Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. I would recommend this review to a friend

1 - Strongly disagree	2	3	4	5	6	7 - Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. I believe the writer of this review to be unreliable

1 - Strongly disagree	2	3	4	5	6	7 - Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Note. Survey items that were shown for each review and image in all four surveys.

Appendix F. Demographic items.

15. What is your gender? (Please select one)

- Male
- Female
- Non-binary
- Prefer not to say

16. What is your age? (Please select one)

- Under 18
- 18-20
- 21-25
- 26-30
- 31-35
- 36-40
- 41 or older

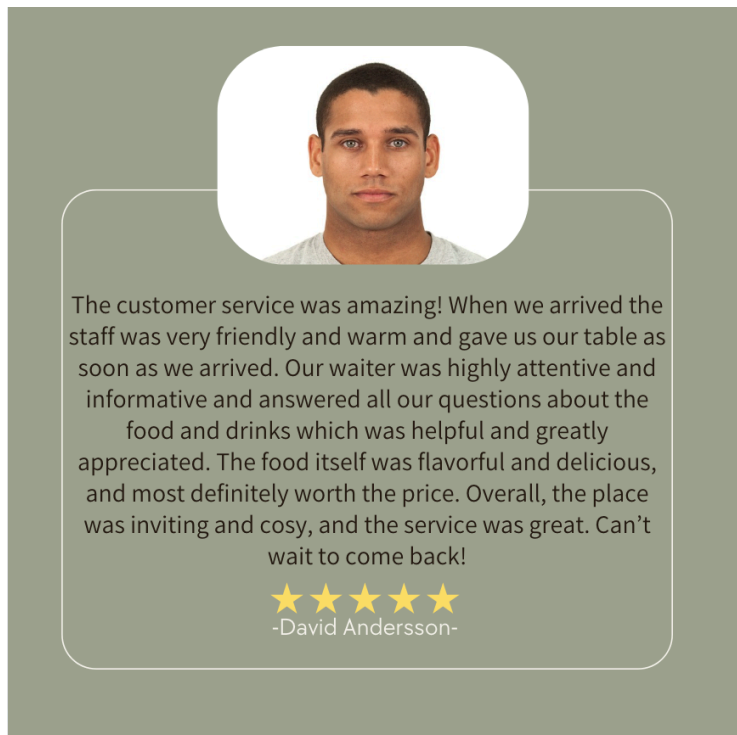
17. Have you ever lived in Sweden, or do you currently reside there?

- Yes
- No

18. What are your thoughts on this survey? Do you have any suggestions or observations?

Note. Demographic questions were asked in all four survey combinations.

Appendix G. Example of review and image in survey.



Note. This is one of eight combinations of the review and image that was used in the surveys.

Appendix H. Positive and negative reviews used in the survey.

Positive review

The customer service was amazing! When we arrived the staff was very friendly and warm and gave us our table as soon as we arrived. Our waiter was highly attentive and informative and answered all our questions about the food and drinks which was helpful and greatly appreciated. The food itself was flavorful and delicious, and most definitely worth the price. Overall, the place was inviting and cosy, and the service was great. Can't wait to come back!

Negative review

The customer service was terrible. Once given our table after a 20 minute wait, our waiter was rude and forgot to give us menus and we had to wait another 10 minutes. The food took too long and we got the wrong order. When the correct food arrived it was bland and greasy. The prices were way too high and not worth it. Overall the staff were unfriendly and rude

when I expressed my displeasure with the food and service. I will not be coming back!

Note. Reviews were presented as shown in Appendix G in the surveys.

Appendix I. Images from the Chicago Face Database.



Note. These were the images used in the four surveys provided from the CFD. Two of which were rated attractive and two were rated unattractive.