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The role of facial expression and tie strength in sender presence effects on consumers’ brand responses towards visual brand-related user generated content

Annemarie J. Nanne, Marjolijn L. Antheunis, Guda van Noort

1. Introduction

With over one billion monthly active users, visual oriented platform Instagram is one of the most popular social network sites (SNSs) of this era (Instagram, 2020; Statista, 2019a). Via Instagram, users can easily share their daily activities, meals, or latest holiday with their online social network through pictures. The popularity of this platform also has consequences for the marketing field, because with the increasing popularity of visual-oriented SNSs comes a rising amount of visual brand-related user-generated content (Br-UGC; Omnicore, 2020).

Seven out of 10 hashtags underneath Instagram posts are brand-related, and 60% of Instagram users say that they discover new products on Instagram (Instagram, 2020; Omnicore, 2020).

A common way of displaying brand experiences in visual Br-UGC is by portraying oneself with the brand (also referred to as brand-related “selfies”; Barbro, 2019; Hartmann, Heitmann, Schamp, & Netzer, 2019). Visual Br-UGC featuring the sender is of particular interest in marketing research because traditional advertising literature indicates that the portrayal of a person together with the product has a positive effect on consumers’ brand responses (e.g., Droulers & Adil, 2015; Sajjacholapunt & Ball, 2014). However, initial research looking into the role of sender presence in SNSs suggests that the effects of sender presence in visual Br-UGC are different from the same effects in traditional advertising (Hartmann et al., 2019).

In line with evolutionary theories and credibility literature (Bradley, 2009; Xu, 2014), traditional advertising literature showed that the presence of a person in advertising increases attention towards the ad (Droulers & Adil, 2015) and positively influences consumers’ brand attitude (i.e., how they feel about a brand) and purchase intention (Adil, Lacoste-Badie, & Droulers, 2018). The presence of a sender in SNSs has a positive effect on reactions towards the post, which usually takes the form of liking and commenting (Hartmann et al., 2019; Mazloom, Rietveld, Rudinac, Worring, & Van Dolen, 2016). However, as opposed to traditional advertising, the presence of the sender is not related to
reactions towards the brand, such as brand attitude and purchase intention (Hartmann et al., 2019). Literature points to two prominent explanations for the lack of effect on brand attitude and purchase intention, which are both rooted in the social character of SNSs (Voorveld, Van Noort, Muntinga, & Bronner, 2018): the facial expression of the sender and the bond between sender and receiver.

Hartmann et al. (2019) theorized that the social character of SNSs would make sender presence more influential in SNSs than in traditional advertising, because, when browsing SNSs, people pay more attention to other people than they do when encountering a traditional advertisement. However, the social character of SNSs is associated with two factors that differentiate the content displayed on SNSs from traditional advertising. First, the facial expression of the sender. As opposed to traditional advertising, consumers do not have an interest in selling the product, but rather want to interact with fellow consumers or share product experiences (Muntinga, Moorman, & Smit, 2011). Since these experiences can be both positive and negative (e.g., Herhausen, Ludwig, Grewal, Wolf, & Schoegel, 2019), the facial expression of the person in the picture can differ. As a result, there is more variety in the facial expressions of consumers in visual Br-UGC compared to what is typically found in traditional advertising. The second factor is the bond between sender and receiver (i.e., tie strength; Granovetter, 1973). Content on SNSs is often shared with the personal network of the sender, which means that the receivers of the content share a bond with the sender of the content (Reich, Subrahmanyam, & Espinoza, 2012). This can affect the persuasion process.

The current research aims to deepen our understanding of sender presence effects in visual Br-UGC by examining the effects of facial expression and tie strength on consumers’ brand responses. In order to do so, we distinguish between responses towards the content (i.e., liking and commenting intention) and responses towards the brand (i.e., brand attitude and purchase intention), in line with previous research conducted in both traditional advertising and SNSs (e.g., Adl et al., 2018; Hartmann et al., 2019).

1.1. The role of facial expression in visual Br-UGC effectiveness

Facial expression is one of the oldest forms of human communication (Vuilleumier, 2005). Throughout evolution, people became wired to automatically direct attention to other people and instantly read facial expressions (Bradley, 2009; Vuilleumier, 2005). This attention-grabbing mechanism is beneficial for survival, because information read from a facial expression can indicate possible threats or pleasures in the environment. Noting these expressions and acting on it can be crucial (Vuilleumier, 2005; Wilson, 1975).

Similarly, facial expression has proved itself a powerful tool in the context of advertising. Especially happy facial expressions in the form of a smile are effective (Berg, Soderlund, & Lindstrom, 2015). Smiling is considered a universal sign of friendliness, and subsequently evokes a halo-effect for other positive traits (Lau, 1982). For example, smiling individuals are perceived as more attractive, trustworthy, and intelligent than neutral looking people, and were found to elicit more feelings of warmth in the receiver of the content (Krumhuber et al., 2007; Lau, 1982; O’Doherty et al., 2003). Moreover, the presence of a smiling sender in advertising has a favorable effect on consumers’ brand responses (Berg et al., 2015).

This favorable effect can be explained via the emotional contagion theory (Hatfield, Rapson, & Cacioppo, 1993), which states that people experience, to a certain extent, the emotions of people they observe. In other words: seeing someone who is happy makes you feel happy. These feelings of happiness can subsequently influence brand outcomes via spillover effects (Howard & Gengler, 2001). According to the spillover effect, feelings that are experienced can be (wrongly) attributed to other objects that are around simultaneously. In this way, warm or happy feelings that someone might have towards the person displayed in the picture might be attributed to the product the person is holding.
Moreover, the effects of trustworthiness are further enhanced because people are less aware of the fact that they are being influenced by content received from a strong tie (Van Noort, Antheneis, & Van Reijmersdal, 2012). According to the persuasion knowledge model (PKM; Friestad & Wright, 1994), knowledge about persuasion will only be activated when people realize they are being influenced. As content received from stronger ties elicits less perceived persuasive intent, persuasion knowledge is not activated (Zorouali, Poels, Walraven, & Ponnet, 2018) and subsequently, nor are defense mechanisms like ignoring the message or counter-arguing. As a result, the messages from stronger ties are considered more trustworthy and have a greater effect on brand outcomes (Van Reijmersdal, Neijens, & Smit, 2010) than messages from weaker ties.

Moreover, seeing a strong tie often elicits a positive emotional response (Gobbin & Haxby, 2007). This effect also seems to hold in social media (Pittman & Reich, 2016). For example, Pittman and Reich (2016) showed that the use of visual SNSs leads to more happiness than textual SNSs. They explain this effect with the ability of pictures to create feelings of intimacy, or the idea that you are talking to a real person (Pittman, 2018; Pittman & Reich, 2016). Subsequently, positive feelings individuals’ experience when seeing their ties might be transferred to the brand via the spillover effect (Howard & Gengler, 2001).

Finally, processing a familiar face is easier than unknown faces (Claypool, Hugenberg, Housley, & Mackie, 2007), which makes the process more fluent (Claypool et al., 2007). More fluent stimuli are often liked better (Reber, Schwarz, & Winkielman, 2004), and these favorable feelings can therefore transfer to the brand via spillover effects. As a result, we expect that merely seeing a tie (regardless of facial expression) already positively influences brand responses:

H2: The effect of sender presence in visual Br-UGC on (a) attitude towards the brand, (b) like intention, (c) comment intention, and (d) purchase intention is moderated by tie strength, with stronger effects for stronger tie strength.

Similar to the presence of the sender, we expect that the effect of the facial expression of a person might be influenced by the tie strength between sender and receiver. Lin and Utz (2015) examined emotional responses to Facebook posts of weak and strong ties. They found that looking at posts from stronger ties is related to stronger feelings of happiness than weaker ties. These elevated positive feelings are expected to lead to higher spillover effects towards the brand. This idea is supported by research examining the source expressive display hypothesis, which found higher effects of smiling endorsers when the endorsers were familiar to the receiver of the content (Kulczyński et al., 2016). Therefore, the third hypothesis reads:

H3: The effect of a happy, compared to neutral, facial expression in visual Br-UGC on (a) attitude towards the brand, (b) like intention, (c) comment intention, and (d) purchase intention is moderated by tie strength, with stronger effects for stronger tie strength.

1.3. The mediating role of source credibility

In examining the effects of sender presence on brand outcomes, source credibility is an important factor (Xu, 2014; Ismagilova, Slade, Rana, & Dwivedi, 2020). Source credibility describes the receiver’s perceived believability of the sender (O’Keefe, 1990). The credibility of the source proved a significant determinant of eWOM success (Ismagilova, Slade, & Williams, 2016). Wu and Wang (2011) illustrated this by employing an online experiment on positive eWOM messages and finding that eWOM messages with a credible source generated more brand trust, brand affect, and purchase intention than the same messages with low source credibility.

Visual presence of the sender is one of the factors that improves perceived credibility (Xu, 2014). For example, Xu (2014) found that product reviews written by someone with a profile picture are considered more credible than the same review without a profile picture. This effect of sender presence on credibility might be explained by people’s ability to accurately judge another person’s trustworthiness (Willis & Todorov, 2006). Seeing a face allows people to instantly judge the sincerity of that person and these judgements guide human behavior (Van’t Wout and Sanfey, 2008). Other factors that increase the credibility of a source involve similarity between sender and receiver, and appeal (Chapple & Cownie, 2017; Hershkovitz & Hayat, 2020). Both of those factors are also easier to judge when the sender is visually present. Following this theory, we expect that seeing the sender in the content will allow the receiver to judge his/her credibility and when the sender is considered credible, his/her presence will influence brand responses:

H4: Credibility mediates the effect of the presence of the sender in visual Br-UGC on (a) attitude towards the brand, (b) like intention, (c) comment intention, and (d) purchase intention.

Moreover, we expect the same results for the effect of a happy facial expression, as research repeatedly showed that a happy facial expression can increase trustworthiness (Krumhuber et al., 2007; Schmidt, Levensstein, & Ambadar, 2012):

H5: Credibility mediates the effect of a happy as compared to a neutral facial expression in visual Br-UGC on (a) attitude towards the brand, (b) like intention, (c) comment intention, and (d) purchase intention.

To further understand the role of credibility, we also pay attention to the interplay between credibility and tie strength. As noted above, source credibility can be judged based on a person’s trustworthiness, similarity, and appeal (Chapple & Cownie, 2017; Hershkovitz & Hayat, 2020). These factors usually apply more to strong ties than to weak ties. Strong ties often share similarities in demographic characteristics and attitudes (McPherson, Smith-Lovin, & Cook, 2001). Moreover, strong ties are usually characterized by feelings of mutual trust (Granovetter, 1973). As a result, it is not surprising that strong ties are in general considered as more credible sources than weak ties (Samuel-Azran & Hayat, 2019).

However, in previous research the difference in credibility of weak and strong ties was examined by merely displaying the tie’s name (e.g., Koo, 2016; Samuel-Azran & Hayat, 2019). No previous research examined the interplay between credibility and tie strength when the sender is visually present. We argue that the interplay between tie strength and credibility will be different when the sender is visually present, because the visual presence allows the receiver to assess the credibility of the sender, which is particularly relevant for weak ties (Van’t Wout and Sanfey, 2008).

When there is a strong tie between sender and receiver, there is no need to assess the credibility of the sender, because strong ties already know each other’s similarities, appeal, and trustworthiness (Gobbin & Haxby, 2007; Brown & Reingen, 1987). In other words, the credibility of strong ties is already assessed and can be easily retrieved by seeing only the name of the tie (Koo, 2016). Hence, the effect of visual presence is expected to be weak when there is a strong tie between sender and receiver. For weak ties on the other hand, the effect of sender presence is expected to be strong. For weak ties, this knowledge about similarities, appeal and trustworthiness may not be present (or to a lesser extent). Hence, only seeing the name of a weak tie is not enough to retrieve knowledge about their credibility (Gobbin & Haxby, 2007). However, seeing weak ties in a picture opens up the possibility to assess their credibility (Xu, 2014; Van’t Wout and Sanfey, 2008). When the sender is visually present, the receiver can judge the sender’s trustworthiness, similarity and appeal. Therefore, we expect that visual presence will be more important for weak ties as compared to strong ties. The sixth and seventh hypotheses read:

H6: The effect of sender presence on credibility is moderated by tie strength, with a stronger effect of sender presence for weaker tie strength.

H7: The effect of a happy as compared to a neutral facial expression on credibility is moderated by tie strength, with a stronger effect of happy facial expression for weaker tie strength.

For the full conceptual model see Fig. 1.
Fig. 1. Visual representation of the hypothesized model.

2. Materials and methods

2.1. Design

This study employed a 2 (sender: not present vs. present) x 2 (facial expression: neutral vs. happy) between-subjects design. Normally this would result in four conditions (2 x 2 = 4). However, in this case there were only three conditions. This because, when a person is absent in the image, a neutral or happy expression is absent as well. The fourth condition is therefore non-existent. This translates into the following three conditions: 1) no sender present, 2) sender present with a neutral facial expression, and 3) sender present with a happy facial expression. In all conditions, tie strength was measured as a moderator. The Research Ethics and Data Management Committee of the School of Humanities and Digital Sciences at Tilburg University approved this research.

2.2. Materials

To establish the stimulus materials, we approached 18 people who volunteered to feature in the stimuli. Throughout the sampling procedure, we chose volunteers that would mimic the Instagram demographics as much as possible. In line with the age distribution on Instagram (Statista, 2019b), all volunteers were between 18 and 35 years old. Moreover, we ensured variability in gender and physical appearance, such as posture and hair color. We expect this variability to cancel out possible influence of age, gender, or attractiveness of the sender. To further account for this, we added the sender participants saw as control variable in the analyses.

Every sender was photographed twice, once with a neutral facial expression and once with a happy facial expression. A neutral expression condition was developed by taking a photo of the sender, with the instruction to look neutral. A happy expression condition was developed by taking a photo of the same sender, with the instruction to look happy. After the pictures were created, we administered a pre-test to ensure that all pictures conveyed the intended facial expressions (i.e., neutral or happy). During the pretest, 20 participants (M_age = 25.00, SD_age = 7.95, 60% women, 40% men) were asked to indicate to which extent they saw each of the seven basic emotions (i.e., anger, contempt, disgust, fear, happiness, sadness, and surprise; Ekman, 1992) in the picture on a nine-point scale ranging from 1 (not at all) to 9 (a lot). A paired sample t-test revealed that happy pictures (M = 7.36, SD = 0.89) scored significantly higher than neutral pictures (M = 2.45, SD = 1.24) on the emotion happiness (t(19) = 16.33, p < .001). Moreover, the scores on the six other emotions were low and below the midpoint of the scale (<3.66) in all conditions.

Next to the neutral sender and happy sender condition, we created a no sender stimulus. This picture only featured a donut, lying on the white napkin. All pictures were edited to look like Instagram posts using the online program Zeoob (2020). Each post contained the username and profile picture of the volunteer (also in the no sender condition). The number of likes and comments the picture received was not included in the post in order to prevent these numbers from influencing the results (see Fig. 2).

2.3. Participants

To ensure variability in tie strength, this study employed a two-step approach to collect participants. In the first step, we gathered 18 volunteers to feature in the stimuli (see Materials). In the second step, we asked these volunteers to distribute the survey amongst their own network, via WhatsApp, Facebook, Instagram or face-to-face contacts. In order to do so, we provided each volunteering sender with a personalized distribution link. The personalized link made sure that the sender who distributes the survey is also the sender that will be shown to the participants who take the survey, which was necessary to find ties between sender and receiver. Because the message was distributed both via social media and via face-to-face contact, the open invitation to participate was spread under a large group of people who share various levels of tie strength with the sender. Every person between 18 and 35 years old (Statista, 2019b) and with an Instagram account was welcome to participate in the study. Only people with an Instagram account were included in this study because people who have an Instagram account have experience with the platform and can thus make a better estimation of their engagement behavior.

A total of 181 participants between 18 and 34 (M = 22.78, SD = 3.05, 71.3% women, 28.6% men, 0.6% did not identify with either genders) participated in the study. In order of popularity, most of our participants (23.8%) finished a university bachelor degree, followed by a university of applied sciences degree (18.8%), and a university master degree (15.5%). When asked how much time they spend on Instagram, 27.6% answered less than 30 min, 44.2% indicated 30-60 min, and 22.2% indicated more than 60 min per day. Out of these participants, 58 (M_age = 22.83, SD = 3.29) were assigned to the product only condition, 61 (M_age = 22.80, SD = 2.60) to the neutral sender condition, and 62 (M_age = 22.78, SD = 3.06) to the happy sender condition. A one-way ANOVA was performed to control for differences between the conditions. No significant differences were observed between conditions for age (F(2,180) = 0.025, p = .975), education level (F(2,180) = 0.32, p = 0.727), or Instagram usage (F(2,180) = 1.00, p = 0.369).

2.4. Procedure

Before the start of the experiment, participants were informed about the study and asked for active consent. The information participants received initially fully disclosed what participants could expect during the questionnaire without specifically mentioning the purpose of the study. Once they agreed to participate, participants were randomly assigned to one of the three conditions. The survey started by showing the Instagram post. After seeing the post, participants answered questions about the dependent variables (e.g., brand attitude; see Measures). During the questionnaire, the stimulus stayed on screen, so participants had the opportunity to look at the stimulus again. When they finished the questions about the stimulus, a second set of questions asked about their attitude toward donuts (as control variable) and demographic characteristics. During these questions, the stimulus was no longer present. After the experiment, we informed participants about the purpose of the study, provided them with contact information of the researchers, and thanked them for their participation. They did not receive any incentives in return for participation.

2.5. Measures

2.5.1. Like intention

Like intention was measured by asking participants how likely it is that they would like the post, answered on a 7-point scale ranging from 1
2.5.3. Brand attitude

Previous engagement research (e.g., Sicilia et al., 2020) showed that single constructs, such as a specific behavior, could be measured just as reliably with a single item as compared to multiple items. Moreover, this method is similar to previous engagement research in the context of visual social media (e.g., Sicilia et al., 2020).

2.5.2. Comment intention

Similar to like intention, comment intention was measured by asking participants how likely it is that they would comment on a post on a scale ranging from 1 (not likely at all) to 7 (very likely) ($M = 2.29, SD = 1.39$). Also for comment intention, one item was chosen based on the research of Konstabel et al. (2017). Moreover, the item was in line with previous engagement research (e.g., Sicilia et al., 2020).

2.5.3. Brand attitude

Brand attitude was measured with an adapted version of Spears and Singh’s (2004) attitude scale, as this scale is widely used in brand attitude research and has high correlations with other brand attitude scales (Zarantonello, Formisano, & Grappi, 2016), indicating this is not only a widely adopted but also a valid measurement of the brand attitude construct. The scale consisted of five differential scales (For a full overview see online material). Participants were asked to indicate for each item where they would place “Tasty Donuts” on a 7-point scale. Factor analysis showed that all items loaded on the same factor, with an eigenvalue of 4.09 and a total explained variance of 81.7%. Therefore, all five items were used to calculate brand attitude ($M = 4.47, SD = 1.39, \text{Cronbach’s} \alpha = 0.95$).

2.5.4. Purchase intention

Purchase intention was also assessed with the scale developed by Spears and Singh (2004), in line with previous research (e.g., Lee & Lee, 2009). Similar to the brand attitude scale, participant were asked to indicate to what extent they have the intention to buy products of “Tasty Donuts” by means of a set of five differential scales (e.g., I would never buy this product – I would definitely buy this product) on a 7-point scale. All items loaded on the same factor, with an eigenvalue of 3.98 and a total explained variance of 79.7%. All items are used to calculate the mean purchase intention ($M = 3.35, SD = 1.29, \text{Cronbach’s} \alpha = 0.94$).

2.5.5. Tie strength

The measure of tie strength was based on the article of Marsden and Campbell (1984), which is often used to study tie strength in the context of communication (e.g., Dubois, Bonezzi, & De Angelis, 2016; Petröcz, Nepusz, & Baszó, 2007). Participants were asked to indicate to which extent they agreed with a set of four statements about the sender of the post (e.g., I feel close to this person) on a 5-point Likert scale ranging from 1 (completely disagree) to 5 (completely agree). All items loaded on the same factor, with an eigenvalue of 3.39 and a total explained variance of 84.7% ($M = 3.48, SD = 1.21, \text{Cronbach’s} \alpha = 0.95$).

2.5.6. Source credibility

The source credibility scale was based on West’s 1994 article, in line with previous research (e.g., Flanagin & Metzger, 2003). Participants were asked to indicate to what extent they agreed with each one of five statements (e.g., this person is believable; For a full overview see Appendix) about the sender of the post using a 7-point Likert scale ranging from 1 (completely disagree) to 7 (completely agree). Factor analysis showed that all items loaded on the same component, with an eigenvalue of 3.81 and a total explained variance of 76.2%. All items were therefore used to calculate the source credibility score ($M = 4.99, SD = 1.35, \text{Cronbach’s} \alpha = 0.92$).

2.5.7. Attitude towards donuts

In addition to the outcome variables, attitude towards donuts in general was assessed as a control variable, by adopting the attitude scale of Spears and Singh (2004), consisting of five differential scales (e.g., Not appealing – Appealing) answered on a 7-point scale. The items all loaded on the same factor with an eigenvalue of 3.22 and a total explained variance of 64.5%. All five items were therefore used to calculate the mean donut attitude ($M = 4.54, SD = 1.23, \text{Cronbach’s} \alpha = 0.85$).

3. Results

Before running the analyses, we used the Harman’s one factor test to
check for common method bias to make sure that the method of data collection did not bias our results. To perform this test, we loaded all variables onto one factor. If the factor has a total explained variance of above 50%, this indicates problems with common method bias. The total explained variance of the factor was 33.8%. Therefore, common method bias is not an issue in the current study, and we could analyze the data.

To analyze the data, we use the PROCESS macro (Hayes, 2012) in SPSS version 24. The PROCESS macro is a commonly used tool to test mediation effects in behavioral science (e.g., Peng et al., 2019). It uses a path analysis framework to analyze all proposed mediation and/or moderation effects in one model (Hayes, 2012). This integrated approach lowers the chance of a type 1 error. Moreover, the macro provides 95% bootstrapped confidence intervals (CIs) to assess the validity of the results. Bootstrapped CIs are not sensitive to power issues and therefore we will rely on both the p-values and bootstrapped CIs when drawing conclusions about the hypotheses (Sun, Chernik, & LaBudde, 2011).

We make use of PROCESS model 8, which allows for the testing of the complete hypothesized model (see Fig. 1). Because we have four dependent variables, we ran the analysis four times (once per dependent variable). We chose to do this because PROCESS cannot handle multiple dependent variables simultaneously. Moreover, since the correlations between the dependent variables were relatively low (all correlation below r = 0.051), we did not want to combine the dependent variables, as this would result in a loss of information. To account for the multiple testing, we use a Bonferroni correction (Andrade, 2019). This correction divides the threshold for the p-value by the number of performed tests. It is an often-used correction method to account for multiple testing via PROCESS (e.g., Mérida-López, Extremera, Quintana-Ortiz, & Rey, 2019). For this study, we divided the standard threshold of p < .05 by four tests, giving us the new threshold of p < .0125.

Each analysis included the assigned condition as independent variable, source credibility as mediator, and tie strength as moderator of the effect. The three conditions were Helmer coded, resulting in two dummy variables. The first dummy differentiated between sender not present (0) and sender present (1), and the second dummy differentiated between sender with a neutral facial expression present (0) and sender with a happy facial expression present (1). The variables tie strength and credibility were centered to allow for easier interpretation. Finally, each model included the attitude towards donuts as general and the sender that the participants saw as control variable.1 As dependent variable, the models included brand attitude (F(8, 172) = 8.92, p < .001, R² = 0.29), like intention (F(8,172) = 18.40, p < .001, R² = 0.46), comment intention (F(8,172) = 10.78, p < .001, R² = 0.33), or purchase intention (F(8,172) = 5.43, p < .001, R² = 0.20), respectively. See Table 1 for an overview of the means and standard deviations per condition.

### 3.1. The role of facial expressions in visual Br-UGC effectiveness

The first hypothesis predicted a positive effect of the presence of a sender on (a) brand attitude, (b) like intention, (c) comment intention, and (d) purchase intention. In general, the presence of a sender increased consumers’ like intention and comment intention but had no effect on consumers’ brand attitude and purchase intention (see Table 2). To analyze the effects of a happy facial expression, we looked at the direct effects of a dummy that differentiated between a neutral and happy facial expression. Results showed that a happy as compared to a neutral facial expression has a positive effect on brand attitude (b = 0.81, p < .001) and like intention (b = 1.07, p < .001), but not on comment intention (b = 0.19, p = .522) and purchase intention (b = 0.35, p = .107). Therefore, hypothesis 1a and 1b are accepted (see Table 2).

### 3.2. The role of tie strength in visual Br-UGC effectiveness

When looking at the direct effect of tie strength, both like intention (b = -0.68, p < .001) and comment intention (b = 0.69, p < .001) are positively influenced by the strength of tie by sender and receiver. However, brand attitude and purchase intention are not (see Table 2). The second and third hypotheses predicted an interaction effect between tie strength and sender presence (hypothesis 2), and tie strength and the facial expression of the sender (hypothesis 3). To analyze the moderating effect of tie strength, the interaction effects between the presence of the sender and tie strength and between the facial expression and tie strength are examined. No significant interaction between the presence of the sender and tie strength was found for brand attitude (b = -0.22, p = .159), like intention (b = -0.09, p = .677), or purchase intention (b = -0.20, p = .194). Therefore, hypotheses 2a, 2b and 2d are rejected. For comment intention, however, the interaction effect was significant (b = 0.51, p = .011), indicating that presence of a sender has a stronger effect on comment intention for higher levels of tie strength (see Fig. 3 and Table 2). Hypothesis 2c was therefore accepted.

With regard to facial expressions, no significant interaction effect was observed between the presence of a happy facial expression and tie strength for brand attitude (b = -0.31, p = .118), like intention (b = 0.04, p = .889), comment intention (b = -0.09, p = .737), or purchase intention (b = -0.11, p = .557); therefore hypotheses 3a through 3d are rejected.

To assess the added value of tie strength as moderator we also examine the effects of the interaction terms on R-squared. The addition of tie strength does not lead to a significant improvement of R-squared for brand attitude (R²-change = 0.006, F(2, 172) = 2.26, p = .108), like intention (R²-change = 0.006, F(2, 172) = 0.97, p = .098), or purchase intention (R²-change = 0.010, F(2, 172) = 1.03, p = .359). Only for comment intention the addition of tie strength as moderating variable led to a slight increase in R-squared (R²-change = 0.026, F(2, 172) = 3.32, p = .038). However, we consider this increase not significant as we use p < .0125 as cut-off point, because of the Bonferroni correction. In conclusion, tie strength as moderator of the direct effect of sender presence and facial expression does not increase the explained variance of the model.

### 3.3. The mediating role of source credibility

Next, we analyze the mediating role of source credibility on the effect of the presence of the sender (hypothesis 4) and the facial expression of the sender (hypothesis 5). The overall model with credibility was significant (R² = 0.31, F(7, 173) = 13.90, p < .001). In order to examine the mediating effect, we look at the direct effects of sender presence and facial expression on credibility (path a) and of credibility on the

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1 Analyses were run with- and without control variables, both analyses did not yield different results in terms of significance. Because the attitude towards donuts proved a significant predictor, analyses with the control variables are reported.

2 All scales were translated to Dutch via the translation - back translation procedure to ensure reliability.

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<table>
<thead>
<tr>
<th>Table 1</th>
<th>Means and standard deviations per condition for all dependent variables.</th>
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<tbody>
<tr>
<td></td>
<td>Brand Attitude</td>
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<tr>
<td></td>
<td>M (SD)</td>
</tr>
<tr>
<td>No Sender</td>
<td>4.35 (1.41a)</td>
</tr>
<tr>
<td>Present</td>
<td>(1.41a)</td>
</tr>
<tr>
<td>Sender Neutral</td>
<td>4.03 (3.13a)</td>
</tr>
<tr>
<td>Expression</td>
<td>(3.13a)</td>
</tr>
<tr>
<td>Sender Happy</td>
<td>5.03 (1.28b)</td>
</tr>
<tr>
<td>Expression</td>
<td>(1.28b)</td>
</tr>
</tbody>
</table>

Note: All variables were measured on a 7-point scale. Different superscripts in a column indicate significant differences at p < .05.
Table 2

Results of the moderated mediation models.

<table>
<thead>
<tr>
<th>Model (DV)</th>
<th>Predictors</th>
<th>b</th>
<th>SE</th>
<th>t</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Model 1</td>
<td>Intercept</td>
<td>1.52*</td>
<td>0.57</td>
<td>2.67</td>
<td>0.40, 2.63</td>
</tr>
<tr>
<td></td>
<td>Sender</td>
<td>0.055</td>
<td>0.19</td>
<td>0.28</td>
<td>0.32</td>
</tr>
<tr>
<td></td>
<td>Presence (SP)</td>
<td>0.81**</td>
<td>0.22</td>
<td>3.66</td>
<td>0.37, 1.24</td>
</tr>
<tr>
<td></td>
<td>Facial Expression (FE)</td>
<td>0.34***</td>
<td>0.083</td>
<td>4.13</td>
<td>0.18, 0.51</td>
</tr>
<tr>
<td></td>
<td>Credibility</td>
<td>–0.028</td>
<td>0.092</td>
<td>−0.30</td>
<td>−0.21</td>
</tr>
<tr>
<td></td>
<td>Tie Strength</td>
<td>–0.22</td>
<td>0.15</td>
<td>−1.41</td>
<td>−0.51</td>
</tr>
<tr>
<td></td>
<td>SP X Tie</td>
<td>–0.31</td>
<td>0.20</td>
<td>−1.57</td>
<td>−0.70</td>
</tr>
<tr>
<td></td>
<td>Strength</td>
<td>0.039</td>
<td>0.28</td>
<td>0.14</td>
<td>−0.51</td>
</tr>
<tr>
<td></td>
<td>Attitude</td>
<td>0.35**</td>
<td>0.11</td>
<td>3.17</td>
<td>−0.058</td>
</tr>
<tr>
<td></td>
<td>towards Donuts</td>
<td>–0.006</td>
<td>0.026</td>
<td>−0.24</td>
<td>−0.24</td>
</tr>
<tr>
<td></td>
<td>Volunteering Sender</td>
<td>0.001</td>
<td>0.018</td>
<td>0.031</td>
<td>−0.006</td>
</tr>
<tr>
<td>Direct Model 2</td>
<td>Intercept</td>
<td>0.98</td>
<td>0.80</td>
<td>1.22</td>
<td>−0.61, 2.57</td>
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<tr>
<td></td>
<td>Sender</td>
<td>1.10**</td>
<td>0.27</td>
<td>4.02</td>
<td>0.56, 1.64</td>
</tr>
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<td>Presence (SP)</td>
<td>1.07***</td>
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<td>3.44</td>
<td>0.46, 1.69</td>
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<tr>
<td></td>
<td>Facial Expression (FE)</td>
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<td>0.12</td>
<td>2.91</td>
<td>0.11, 0.57</td>
</tr>
<tr>
<td></td>
<td>Credibility</td>
<td>0.68***</td>
<td>0.13</td>
<td>5.24</td>
<td>0.42, 0.94</td>
</tr>
<tr>
<td></td>
<td>Tie Strength</td>
<td>–0.090</td>
<td>0.22</td>
<td>−0.42</td>
<td>−0.51</td>
</tr>
<tr>
<td></td>
<td>SP X Tie</td>
<td>–0.31</td>
<td>0.20</td>
<td>−1.57</td>
<td>−0.70</td>
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<tr>
<td></td>
<td>Strength</td>
<td>0.039</td>
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<td>0.031</td>
<td>−0.006</td>
</tr>
</tbody>
</table>

Note. Significance levels indicated with * p < .05, ** p < .01, *** p < .001.

Fig. 3. The effects of the presence of the sender on comment intention for weak (16th percentile), medium (50th percentile), and strong (84th percentile) ties.

outcome variables (path b). The results showed that there was no significant effect of condition on credibility (path a, see Table 2), but there were significant effects of credibility on brand attitude (b = 0.34, p < .001), like intention (b = 0.34, p < .004), and purchase intention (b = 0.28, p < .001). For comment intention, there is no significant effect of credibility (b = −0.001, p = .928). Because there was no significant effect of the conditions on credibility, the hypotheses that source credibility mediated the effect of the presence of the sender (hypothesis 4) or the facial expression of the sender (hypothesis 5) are rejected.

Finally, the negative moderation of tie strength was examined for the effect of sender presence (hypothesis 6) and facial expression (hypothesis 7) on credibility. There was no moderating effect of tie strength on credibility for sender presence (b = 0.046, p = .743), nor for the facial expression of the sender (b = −0.20, p = .274). Adding these interaction terms did not lead to a significant improvement of the model (R²-change = 0.005, F(2,173) = 0.65, p = .521). The sixth and seventh hypotheses, predicting that the effects of sender presence and facial expression of the sender on credibility would be weaker for higher levels of tie strength, are thus not confirmed.

4. Discussion

4.1. The role of facial expression in visual Br-UGC effectiveness

The first research aim of this study was to examine how facial expression influences the effects of sender presence in visual Br-UGC on brand responses. Results showed that a happy facial expression leads to significantly higher like intention and brand attitude than a neutral facial expression. These findings complement previous research examining person presence in visual Br-UGC (e.g., Hartmann et al., 2019). Research on traditional advertising identified person presence as significant predictor of advertising success (e.g., Droulers & Adil, 2015). However, this notion, backed up by evolutionary theories (e.g., Bradley, 2009), was not previously found in visual Br-UGC on SNSs (e.g., Hartmann et al., 2019). For example, Hartmann and colleagues found a positive effect of person presence on like and comment behavior, but
these do not translate to brand attitude. They explain this finding by the social character of Instagram, which makes people so focused on other people that they forget about the brand that is portrayed in the picture. The results of our study give rise to a second explanation, namely the crucial role of facial expression. Maybe seeing a sender in a picture is not enough to be convinced of the brand the sender displays in the post. When the sender is looking neutral, the content of the post does not give a clue about the sender’s attitude towards the brand. As a result, seeing someone with a neutral expression holding a product from a specific brand does not provide enough information to judge the brand. Seeing someone with a happy facial expression, though, can be an indication of the sender’s positive attitude towards the brand (Hatfield, Cacioppo, & Rapson, 1993). The fact that we did find an effect on brand attitude for happy compared to neutral senders is in line with this idea.

A happy facial expression on a sender appears to increase consumers’ brand attitude and like intention, but has no effect on consumers’ comment intention and purchase intention. These findings indicate a split between affective and cognitive responses. Seeing a smiling sender elicits positive feelings towards the post, which are easily expressed by clicking the “like-button”. Moreover, in line with the spillover effect (Howard & Gengler, 2001), these positive feelings towards the post are attributed to the brand as well. However, the smiling sender does not induce cognitive responses in the form of comment or purchase intention. An explanation might be that comment and purchase intention, demand more cognitive effort. To decide whether one wants to purchase a product of a brand is more cognitively demanding than merely deciding whether one likes a brand or not. In a similar vein, commenting is a more active behavior than liking (Antheunis, Van Kaam, Liebrecht, & Van Noort, 2016), because commenting involves deciding what to comment and actually typing the comment, which takes considerably more time than clicking one button to indicate engagement with the content. To perform these cognitive-heavy behaviors, a consumer might need more than just a smiling sender.

4.2. The role of tie strength in visual Br-UGC effectiveness

The second factor that was examined in the present research involves the tie strength between sender and receiver. Contrary to our expectations, we did not find a moderating effect of tie strength on sender presence for like intention, brand attitude, or purchase intention. For commenting intention, on the other hand, we did find the expected interaction effect: a stronger effect of sender presence for higher levels of tie strength. The fact that we only found the moderating effect for comment intention might also be explained via cognitive effort. Liking a post takes only little effort; therefore it is an easy behavior to perform when seeing a nice picture, regardless of the tie between sender and receiver. Commenting, on the other hand, is harder to perform, as it takes more effort. Therefore, receivers will be more reluctant to comment, and only engage in this behavior when they feel it is worth the effort, for example because the sender is someone close to them. When seeing the sender in the picture, the tie becomes more salient, causing receivers to be more aware of the sender, and, as a result, more willing to engage by posting a comment. The explanation as to why this interaction did not occur for facial expression might lie in the nature of commenting behavior. Commenting allows for more variation in responses than liking. When hitting the like button, it always conveys a positive emotion, whereas commenting can also be used for less positive emotions or emotionally neutral comments.

Moreover, it is noticeable that there was no moderating effect of tie strength for brand attitude and purchase intention. Results seem to suggest that even for stronger ties, the presence of the sender has no effect on what they think about the portrayed brand, nor whether they would like to buy it or not. The same holds for the effects of facial expression (i.e. happy compared to neutral). No moderating effect of tie strength was observed for any of the brand responses. To gain more insight into these surprising results, we took a closer look at the conditional effects of sender presence and facial expression on brand outcomes at different levels of tie strength. Results showed that the conditional direct effect of a happy facial expression on brand attitude is significant for weak (16th percentile; $b = 1.27, p = .001$) and medium (50th percentile; $b = 0.72, p = .002$) ties. For strong ties ($b = 0.34, p = .350$), no significant differences are found between a happy and neutral facial expression. This suggests that facial expression might positively affect brand outcomes, but only for weaker ties.

4.3. The mediating effect of source credibility

Finally, we examined the mediating effect of source credibility. Following existing literature on person presence and credibility, we had expected that both the presence of a person and the facial expression of a person would increase credibility, which in turn would lead to stronger brand responses. Moreover, contrary to the other expected interaction effects, we had expected the effect of person presence on credibility to be stronger for weaker levels of tie strength. Results did not show a mediation effect of credibility for person presence, nor for the facial expression of the person. The moderating effect of tie strength was not significant either. We have two possible explanations for these findings. The first possibility is that credibility in general was relatively strong ($M = 4.99, SD = 1.35$ on a 7-point scale). This suggests a ceiling effect might have occurred. A possible reason for the high levels of credibility may be that there are relatively more medium to strong ties in the sample, as the mean tie strength is slightly above the middle of the scale ($M = 3.49$ on a 5-point scale). A second possible explanation is that all conditions (including the no sender condition) gave enough information about the sender of the content, as every stimulus included the sender’s username and profile picture. As consumers were able to judge the credibility of the sender based on this information, further portrayal of the sender in the picture might have had less of an effect.

Even though no mediation effect of source credibility was found, the direct effect of credibility on the outcome measures was significant for all brand responses except comment intention. Apparently, considering someone credible or not does have an influence on consumers’ like intention, brand attitude, and purchase intention, but no effect on the intention to comment on the content. This can also be explained with the variability of reactions that can be expressed through commenting, such as positive, neutral, or negative comments.

4.4. Limitations and future research

A limitation of the current study involves the data collection procedure. We asked the volunteering senders to spread the survey within their own networks through an open invitation, not targeted to specific people. This method ensured that the message was received by a large part of the social network of the sender. On the other hand, it may be that a specific subset of the social network, for example strong ties, are more inclined to respond to the message than weaker ties, which could have influenced the sample. In future research, it may be preferable to invite participants individually. This would give us more control over the distribution of tie strength, and would also allow for better assessment of possible non-response problems.

Results suggest that seeing a happy sender in visual Br-UGC has a positive effect on consumer’s liking intention and brand attitude. In future research, it would be interesting to further explore this finding by analyzing Instagram posts overall instead of merely focusing on the picture. We argued that the presence of a happy facial expression is important because it allows the receiver of the content to derive information about the product from the facial expression of the sender. To examine this, the stimulus material of the current study consisted of an Instagram post without any accompanying text. In real-life, Instagram pictures are often combined with a short text (“caption”) or hashtags. The content of this text and the combination of picture and text could potentially give more insight into the effects of sender presence on brand
responses. For example, maybe the presence of a smile becomes less important when there is a very positive text underneath the picture.

Finally, it is worth noting that most of the interaction effects with tie strength were not significant. Though the factors that were the point of interest in this study were based on a vast amount of literature, it might be that there are factors influencing the effects of tie strength and facial expression that were not included in the current model. An example of such a factor could be individual differences. Research from Wang, Yu, and Wei (2012) showed that the effect of UGC in general is weaker when the receiver of the content has a high need for uniqueness. Maybe that is also true for the specific effects of tie strength and facial expression.

To fully grasp the effects of tie strength and facial expression on visual Br-UGC effectiveness, this research can also be extended to other brands and product categories. The topic of this research was a donut, which can be considered a low involvement hedonic product according to the Foote, Cone and Belding grid (PCB-grid; Ratchford, 1987). Following the elaboration likelihood model (ELM; Petty & Cacioppo, 1986), the effects of a simple hedonic cue such as a smiling sender, can be different for different levels of involvement. Hence, it might be that the effects found in the current paper would be different for products of other involvement levels, such as headphones.

5. Conclusions

The current study introduced two factors that can explain the effects of sender presence in visual Br-UGC. Specifically, we examined how the facial expression of the sender (i.e., neutral or smiling) and the tie strength between sender and receiver influences consumers’ responses towards the post (i.e., like and comment intention), brand (i.e., brand attitude), and product (i.e., purchase intention). Results show that a happy facial expression can increase a receiver’s like intention and brand attitude. Moreover, a higher tie strength increases the effects of sender presence on comment intention.

5.1. Theoretical and practical implications

The current research has several important theoretical and practical implications. This research examined the role of facial expression and tie strength between sender and receiver in effectiveness of visual Br-UGC with the sender in it. Results showed that a happy sender leads to a higher attitude towards the brand than a neutral-looking sender. This means that the mere presence of a sender in a picture does not necessarily help to increase brand responses, but rather displaying a happy facial expression is what is crucial to achieve this effect. Where previous research seems to suggest that sender presence does not have the same effect on brand attitude in SNSs as it does in traditional advertising (e.g., Hartmann et al., 2019), the current study does find support for similar underlying mechanisms. Similar to findings in traditional advertising (Berg et al., 2015) the current study finds a positive effect of happy compared to neutral senders. This critical function of the positive facial expression might also explain why Hartmann et al. (2019), when looking at person presence in general, did not find these effects. In conclusion, the current research seems to indicate that theories that apply to traditional advertising research, such as the emotion contagion theory, might also hold up in visual Br-UGC spread through SNSs.

Another theoretical implication involves the extension of tie strength research to visual Br-UGC. Previous research on tie strength already established that knowing that a message comes from a strong tie can benefit advertising outcomes (e.g., Van Noort et al., 2012). The current research extends this knowledge by focusing on the effects of tie strength when the sender is visually present in the picture. Results show that the effect of sender presence was stronger for stronger ties, but only with regard to comment intention. This means that seeing a tie in the picture has weaker effects on brand responses than expected. Merely knowing that a tie sent the message seems to be enough for the tie strength effects to occur, and thus seeing this tie does not strengthen the effect. Because the effect of sender presence is less strong than expected, this research also serves as a stimulus for future research examining tie strength effects in visual Br-UGC. The findings indicate that the effects of tie strength on sender presence in visual Br-UGC are different than what could be expected based on the literature. Given the growing importance of visual Br-UGC it is crucial to know if and how tie strength affects visual Br-UGC outcomes. Future research in this area can build upon the framework presented in the current study.

Our findings also bring along practical implications for marketers. This study emphasizes the importance of a happy facial expressions in visual Br-UGC. When the goal of a campaign is to generate more favorable brand attitudes, it is important that the content features the sender with a happy facial expression, especially when low levels of tie strength exist between the sender and receiver of the content. A possible option for marketers that want to stimulate the creation of visual Br-UGC that positively affects consumer’s brand responses is the use of a UGC-campaign. Following the findings of the current research, the content would be most useful if marketers ask consumers to take a picture of someone (themselves or a friend) with the product and share the picture in their own network to optimize both liking and commenting. Moreover, it is important that the created content contains happy faces. In order to increase the chance on a happy face, marketers can attach a specific assignment to the contest that is fun to do, like doing a dance or trying out a stunt. This may help to ensure smiling faces of consumers in visual Br-UGC.

Author credit statement

Annemarie J. Nanne: Conceptualization, Methodology, Formal analysis, Investigation, Data curation, Writing – original draft, Marjolijn L. Antheunis: Conceptualization, Methodology, Writing – review & editing, Guda van Noort: Conceptualization, Methodology, Writing – review & editing.

Declaration of competing interest

None.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.chb.2020.106628.

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