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# **Logo with or without eyes?: The effect of brand anthropomorphism on consumer self-disclosure of sensitive information**

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# 1 | ABSTRACT

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This study is a replication study of Horváth et al.'s (2021) prior research. The purpose of this study was to investigate *when* and *why* brand anthropomorphism changes consumer self-disclosure in a non-commercial context (i.e., COVID-19 pandemic). In total, 245 Dutch respondents were randomly assigned to one of the four conditions in a 2 (brand anthropomorphized vs. not-anthropomorphized) x 2 (sensitive information vs. non-sensitive information) between-subjects design of an online experiment. The results partially supported Horváth et al.'s (2021) hypotheses, since brand anthropomorphism only negatively affected the *depth* (and not *breadth*) of consumer self-disclosure of sensitive information. Additionally, this negative effect was not mediated by the perceived intrusiveness of questions or feelings of embarrassment. Possible explanations for these differences between the two studies are thoroughly discussed, as well as the managerial implications of these findings. This study ends with an elaborative discussion on the limitations of this research and avenues for future research.

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### 3 | INTRODUCTION

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In the contemporary marketplace, businesses must distinct themselves from the competition by using their databases for customer insights (Keller & Swaminathan, 2019, pp. 181-185). By using these customer insights, businesses can implement personalization and customization strategies, which in turn can increase the quality of customer experiences (Aguirre et al., 2015; Keller & Swaminathan, 2019, pp. 181-185; Lamberton & Stephen, 2016; Tucker, 2014). In fact, a recent study found that investing in these customer experiences can increase customers' willingness to pay by 86% and has the potential to double a business' revenue within 36 months (Kulbyté, 2021). However, in order to use valuable customer insights, businesses first need to collect personal information from consumers. This typically involves that consumers need to self-disclose – “the act of communicating or revealing personal information to another party” (Collins & Miller, 1994; Cozby, 1973; Horváth et al., 2021) - to a business. Nonetheless, getting consumers to self-disclose is not as easy as it might seem, especially not in times where privacy issues and data leaks are increasing (Henriquez, 2021). For instance, a recent research of the Identity Theft Resource Center found that in 2021 alone over 130 data leaks occurred, including over 60 million victims in several sectors (i.e., manufacturing & utilities, healthcare, financial services, government, and professional services) (Henriquez, 2021). Therefore, it could be argued that consumers are reluctant to share their information to businesses; especially so-called sensitive information which include very intimate information about consumers' deepest emotions, attitudes, preferences, and aspirations (Derlega et al., 1993; Horváth et al., 2021; Moon, 2000).

Therefore, previous research has focused on when and why consumers self-disclose. More specifically, it was found that consumers self-disclose more to a recipient they feel close to, trust, and like (Collins & Miller, 1994; Jourard and Jaffe, 1970; Jourard, 1964; Moon, 2000; Powell, 1968; Tolstedt & Stokes, 1984). As a consequence, many brands put a more human-like face on their brands, which increases brand-liking (Delbaere, McQuarrie & Phillips, 2011), brand relationships (Aggarwall & McGill, 2012), and brand trust (Chen, Wan & Levy, 2017; Hudson et al., 2016). This branding strategy is hereafter defined as brand anthropomorphism, which is “the tendency to attribute humanlike characteristics, intentions, and behaviour to nonhuman objects” (Aggarwall and McGill, 2007; Kim & McGill, 2011, p. 95). For instance, several companies have used this strategy by implementing a brand character (e.g., McDonald's clown, Mr. Proper, Michelin Man), or by imbuing the external appearance of a product with humanlike features (e.g., Dior's perfume bottles).

Although most of the research on brand anthropomorphism highlights its positive effects (e.g., Aggarwal & McGill, 2012; Burgoon et al., 2000; Delbaere et al., 2011; Kiesler & Goetz, 2002; Nenkov & Scott, 2014), the more recent stream of literature on brand anthropomorphism argues that it can also have detrimental consequences. More specifically, anthropomorphizing a brand can decrease consumer brand evaluation even further in the case of product wrongdoings (Puzakova, Kwak & Rocereto, 2013), heightens perceived unfairness of price increases (Kwak, Puzakova & Rocereto, 2015) and can stimulate hoarding among consumers (Timpano & Shaw, 2013). Moreover, as of recently it was not yet known whether brand anthropomorphism could also negatively affect consumer self-disclosure. The recent article of Horváth et al. (2021) investigated this phenomenon and found that anthropomorphizing brands indeed leads to a decrease in consumers' self-disclosure of sensitive information. Moreover, they found that this effect was mediated by the perceived intrusiveness of questions - requests or questions that violate a consumer's privacy and is not appropriate for day-to-day conversations (Tourangeau & Yan, p. 860) - and feelings of embarrassment. Although Horváth et al.'s (2021) hypothesized effects are already substantiated by four studies, the effects have not yet been examined in a non-commercial context. Therefore, the aim of this current study is to replicate the research of Horváth et al. (2021) in a new, non-commercial context, namely the COVID-19 pandemic. More specifically, it will be studied whether consumers differ in their disclosure of their compliance to the regulations set by governments, and their disclosure of their experiences during the COVID-19 pandemic to a (non-) anthropomorphic brand. Additionally, it will be examined whether perceived intrusiveness of questions and feelings of embarrassment will mediate the negative effect of brand anthropomorphism on consumer self-disclosure.

Consequently, the main research question that will be answered during this study is: *when and why* does brand anthropomorphism change consumer self-disclosure behaviour?

### ***Theoretical relevance***

The theoretical relevance of this article is fourfold. First, this study is one of the few studies that have researched the effect of brand anthropomorphism on consumer self-disclosure. Moreover, it adds to the existing research on this topic by testing Horváth et al.'s (2021) hypotheses in a non-commercial context. This could potentially indicate some boundary conditions to their hypotheses or make their findings more robust. Second, this study adds to the body of literature on consumer behaviour during the COVID-19 pandemic. To date, the literature on the effect of brand anthropomorphism on consumer behaviour during the COVID-

19 is very scarce. Third, this study adds to the newer stream of literature on brand anthropomorphism's detrimental consequences, by showing that it leads to a decrease in consumer self-disclosure of sensitive information in the new context. Fourth, this study provides more insights into *when* and *why* consumers self-disclose.

### ***Managerial relevance***

This study is also relevant from a managerial perspective. As previously discussed, consumer self-disclosure is becoming increasingly more important in the contemporary marketplace in order to use valuable consumer insights. The findings of this study are relevant for managers who want to increase their retrieval of customer information. More specifically, the findings of this study can show them how or how not, they can increase self-disclosure among their consumers. For instance, this study shows managers that they might want to exclude anthropomorphic elements into requests for consumer self-disclosure. Additionally, this study provides insights into the boundary conditions of brand anthropomorphism, as its effects are not guaranteed in every context. For branding managers, this information is relevant to make informed and detailed decisions about the implementation of their branding strategies.

The remainder of this study will first focus on reviewing the literature on self-disclosure and brand anthropomorphism. Next follows a thorough argumentation on why brand anthropomorphism could affect consumer self-disclosure, after which the hypotheses and conceptual model are introduced. Additionally, there will be elaborated upon how this study was conducted, after which the results will be presented. Lastly, this study will end with an overall conclusion and elaborative discussion of the findings.

## 4 | LITERATURE REVIEW

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### ***Brand anthropomorphism***

Brand anthropomorphism is defined as “the tendency to attribute humanlike characteristics, intentions, and behaviour to nonhuman objects” (Aggarwall and McGill, 2007; Kim & McGill, 2011, p. 95). Different variations of brand anthropomorphism have already been widely adopted in practice. For example, brands can choose to implement a face in their brand (e.g., Elon Musk for Tesla), include a smile in a logo (e.g., Amazon), incorporate humanlike features into the external appearance of products (e.g., Dior’s perfume bottles), or design a brand character (e.g., Mr. Proper, Michelin Man, McDonald’s clown). By incorporating humanlike elements into a brand, consumer perceive a brand as a human being (Aggarwall and McGill, 2012; Epley, Waytz & Cacioppo, 2007; Epley, Waytz, Akalis & Cacioppo, 2008; Kiesler, Powers, Fussell & Torrey, 2008) and consequently consumers are better able to emotionally connect and engage with the brand (Delbaere et al., 2011; Jansson-Boyd & Zawisza, 2016, p. 610). Moreover, anthropomorphism is not limited to products and brands, as it can also be extended to other entities like power, control and risk perceptions, patience and pro-social behaviour (Ahn, Kim & Aggarwal, 2013; Jansson-Boyd & Zawisza, 2016; Kim & McGill, 2011).

Additionally, brand anthropomorphism is seen as a multidimensional construct as it might occur in two distinct, but not mutually exclusive, processes (Guido & Peluso, 2015). First, it can occur when there is a similarity between human characteristics and a brand’s external appearance (e.g., a smile in a logo, a character, packaging that resembles a human body) (Aggarwall & McGill, 2007; Guido & Peluso, 2015). Second, it can occur when there is a congruity between a consumer’s self-concept and the brand (e.g., the brand’s image is similar to a consumer’s personality trait) (Aaker, Fournier & Basel, 2004; Guido & Peluso, 2015). This paper will study the effects of anthropomorphizing a brand by altering its external appearance.

Several positive effects of brand anthropomorphism have been shown. First of all, brand anthropomorphism has been found to positively influence consumer brand evaluations and attitudes by several authors (Aggarwall & McGill, 2012; Burgoon et al., 2000; Delbaere et al., 2011; Kiesler & Goetz, 2002). More specifically, it has been found that anthropomorphizing leads to a higher emotional connection with a brand and more positive evaluations of a brand’s personality, resulting in an increase of brand liking (Delbaere et al., 2011). This can in turn positively influence consumer behaviour (Aggarwall & McGill, 2012; Kiesler & Goetz, 2002; Burgoon et al., 2000). Second, brand anthropomorphism has been found to improve consumer-brand relationships (Aggarwall & McGill, 2012; Ali et al., 2021; Fournier, 1998; Tuškej &

Podnar, 2018). More concretely, the consumer-brand relationship is improved through anthropomorphism because it results in consumer-brand identification (Tuškej & Podnar, 2018) and fulfills consumers' needs for social affiliation, as the brand is seen as a likeable, trustworthy, social agent (Chen et al., 2017; Hudson et al., 2016). These closer, human-like relationships can consequently result in an increased brand loyalty (Rauschnabel & Ahuvia, 2014), purchase intention (Han 2021; Yen and Chiang 2021), and unwillingness to replace a product (Chandler & Schwarz, 2010). The unwillingness to replace a product is based on the theory that anthropomorphism will result in consumers treating the brand as 'a friend'. Therefore, consumers will encounter empathy and concern for the brand, and replacing the product is incongruent with the human schema of how one should treat a friend (Chandler and Schwarz, 2010; Heider, 1958; Waytz, Cacioppo & Epley, 2010). Third, several studies have shown that brand anthropomorphism can lead to greater sales and profits for companies. For example, anthropomorphizing can increase consumers' willingness to pay or donate (Ahn et al., 2013; Yuan & Dennis, 2017), and can result in consumers choosing the more indulgent options of a brand's assortment (Nenkov & Scott, 2014).

However, recent studies have found some detrimental consequences of brand anthropomorphism. More specifically, brand anthropomorphism can reduce enjoyment in gaming (Kim, Chen & Zhang, 2016), heighten perceived unfairness of price increases (Kwak et al., 2015), stimulate hoarding (Timpano & Shaw, 2013), negatively influences consumers' attitudes towards the brand when sensitive information is requested (Puzakova et al., 2013) and decrease consumers' brand evaluation in the case of product wrongdoings (Puzakova, Kwak & Rocererto, 2013). The latter is based on the finding that customers interact with an anthropomorphized brand as though it is a human being (Kiesler et al., 2008). In turn, resulting in increased customer expectations and a belief that brands should be held accountable and punished for their wrongdoings (de Visser et al., 2016; Gray, Gray & Wegner, 2007; Waytz, Epley & Cacioppo, 2010). Additionally, this newer stream of literature argues that the effectiveness of anthropomorphism in a business' branding strategy has boundary conditions and depends on consumer characteristics and the context (Valenzuela & Hadi, 2017). For example, specific consumer emotions (e.g., anger or guilt) can downplay the effects of brand anthropomorphism, resulting in lower customer satisfaction and purchase intentions and more negative brand evaluations and attitudes (Crollic, Thomaz, Hadi & Stephen, 2021; Liu & Wang, 2017). Moreover, in a risky context, consumers perceive more risk when the brand is anthropomorphized (Kim & McGill, 2011), and in a crowded environment anthropomorphizing harms customer's responses to a brand (Puzakova & Kwak, 2017).



As can be concluded, brand anthropomorphism is a double-edged sword; its effects can be highly beneficial and profitable, when used on the right customers and in the correct context. Therefore, insights into the effects and boundary conditions of brand anthropomorphism are of importance. Hence, this study will add to the body of literature of brand anthropomorphism's effects and boundary conditions, specifically focusing on its effect on consumer self-disclosure.

### ***Consumer self-disclosure***

In today's world, which is characterized by the growing importance of customer experiences, personalization of media (vs. mass communication), and customization, data is becoming increasingly important (Aguirre et al., 2015; Keller & Swaminathan, 2019, pp. 181-185; Lamberton & Stephen, 2016; Tucker, 2014). More specifically, a study of the McKinsey Global Institute showed that a data-driven business, which uses personalization strategies, generates 40% more revenue than a non-data-driven business (McKinsey & Company, 2021). Besides these financial metrics, personalization and customization through customer insights can also increase 'softer' metrics, like customer satisfaction and loyalty (Holzwarth, Janiszewski, & Neumann, 2006; Srinivasan, Anderson, and Ponnavaolu, 2002). However, in order to obtain data from consumers, consumers first need to be willing to provide a business with their personal information. This "act of communicating or revealing personal information to another party" (Collins & Miller, 1994; Cozby, 1973; Horváth et al., 2021, p. 7) is called self-disclosure, and is thus becoming increasingly more important.

Nowadays, companies can easily access a vast amount of customer data that contains non-sensitive information (e.g., demographics, nature of transactions) (Moon, 2000). However, it is sensitive information that can provide a business with valuable customer insights, which could drive personalization and customization (Reutterer, Mild, Natter & Taudes, 2006; Winer, 2001), and eventually increase consumers' brand commitment and loyalty (Altman & Taylor, 1973; Fournier, 1998; Kumar & Shah, 2004). This sensitive information – information about discloser's deepest emotions, attitudes, feelings, preferences, and aspirations (Derlega et al., 1993; Horváth et al., 2021; Moon, 2000) – is very intimate of nature, and can therefore make the discloser emotionally, physically, or materially vulnerable (Derlega et al., 1993; Kelly & McKillop, 1996; Laurenceau, Barrett, & Pietromonaco, 1998; Moon, 2000).

Due to the growing importance of consumer self-disclosure in practice, the literature focuses especially on *when* and *why* consumers self-disclose. More specifically, several studies have found that reciprocity leads to more self-disclosure, in which a recipient also reveals personal information about him/herself (Acquisti, John & Loewenstein, 2012; Chittick &

Himelstein, 1967; Jourard, 1959; Moon, 2000). Moreover, following the social penetration (Altman & Taylor, 1973) and social exchange theory (Worthy, Gary & Kahn, 1969), consumers have been repeatedly found to disclose more information to recipients that they feel close and connected to, trust, and like (Collins & Miller, 1994; Jourard and Jaffe, 1970; Jourard, 1964; Moon, 2000; Powell, 1968; Tolstedt & Stokes, 1984). Since this reduces the discloser's perceived psychological cost of vulnerability and the disclosure of information is seen as a 'reward' for the recipient (Cozby 1972; Worthy et al., 1969). At the same time, the disclosure of sensitive information is also accompanied by an increase of perceived intrusiveness and embarrassment, which heightens consumers' perceived psychological cost of vulnerability and in turn decreases self-disclosure (Dahl, Manchanda & Argo, 2001; John, Acquisti & Loewenstein, 2011; TRUSTe, 2016). Especially nowadays, where data leaks are prevalent and increasing – more than 17% increase of data leaks in 2021 compared to 2020 (Hendriquez, 2021) - the perceived psychological cost of vulnerability might play an even more important role in consumers' need for privacy and willingness to disclose. This study will therefore investigate whether an anthropomorphized entity will influence consumers' self-disclosure, through the perceived psychological cost of vulnerability associated with the disclosure of sensitive information. Thereby, adding to the body of literature of *when* and *why* consumers self-disclose.

### ***Brand anthropomorphism and consumer self-disclosure***

Due to the several positive effects of brand anthropomorphism, many companies imbue their brands with humanlike features to elicit better relationships with their customers (Aggarwall & McGill, 2012; Ali et al., 2021; Fournier, 1998; Tuškej & Podnar, 2018) which could potentially lead to greater self-disclosure (Collins & Miller, 1994; Moon, 2000). In addition, a recent article showed that this relationship also works the other way around, in which a brand's self-disclosure towards a customer increases their relationship; this effect was heightened when the brand was anthropomorphized (Huaman-Ramirez, Lunardo & Vasquez-Parraga, 2021).

However, the findings of several studies also provide reasons to believe that brand anthropomorphism might in fact decrease consumer self-disclosure. The reason for this is that consumers interact with an anthropomorphized brand as if it is an actual human being (Kiesler et al., 2008). The underlying motivation behind this comes from the literature on social cognition. People anthropomorphize (unknown) entities to fulfill their need for a social connection and to gain explanatory power. The latter entails that people cannot easily access information about unknown entities (e.g., a brand). Therefore, they activate related, better-

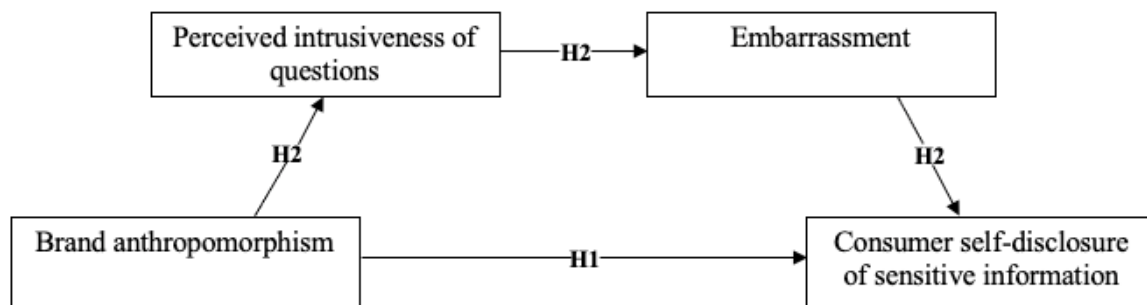
known human schemas, to better understand and predict the unknown entity's behaviour (Epley et al., 2008). Subsequently, as consumers view anthropomorphized brands as human beings, they might disclose less because they do not want to expose their deepest emotions, attitudes, and preferences to others in order to avoid negative evaluations (Bartneck, Bleeker, Bun, Fens, Riet, 2010; Miller, 1997) and to avoid losing face (Adler & Proctor, 2007). Therefore, it is hypothesized that (copied hypothesis from Horváth et al., 2021):

***H1: Consumers self-disclose less to an anthropomorphic (vs. a non-anthropomorphic) brand when the information requested is sensitive (but not when it is non-sensitive)***

Additionally, consumers can experience more embarrassment – “an aversive and awkward emotional state following events that increase the threat of unwanted evaluation from a real or imagined social audience” (Dahl et al., 2001) - to disclose very personal, sensitive information to a brand that is imbued with humanlike characteristics compared to a brand that is more so seen as an ‘object’. This assumption is supported by prior studies that have shown that embarrassment influences consumer buying behaviour (Dahl et al., 2001; Holthöwer & van Doorn, 2022; Ye, Yan, Lin & Huang, 2022). For instance, Ye et al. (2022) showed that consumers' purchase intentions decrease when embarrassing products (e.g., beriberi creams) contain natural (vs. artificial pictures) and use first-person pronouns (vs. third person), when the purchase takes place in a crowded environment. In addition, Holthöwer and van Doorn (2022) showed that consumers feel less judged by a robot than a human employee when having to buy embarrassing products. Consequently, the perceived psychological cost of vulnerability, resulting from self-disclosure, might be more apparent when interacting with an anthropomorphized brand (vs. a non-anthropomorphized brand) and could result in a decrease of consumer self-disclosure. Furthermore, the request for sensitive information can increase the perceived intrusiveness of the brand – requests or questions that violate a consumer's privacy and is not appropriate for day-to-day conversations (Tourangeau & Yan, 2007, p. 860) - which subsequently can increase the experienced embarrassment felt by consumers (Acquisti et al., 2012; Dahl et al., 2001; Tourangeau & Yan, 2007). More precisely, previous research has found that respondents were less likely to divulge intrusive behaviour (vs. non-intrusive behaviour) (Acquisti et al., 2012) and respondents were also less likely to divulge when an intrusive questioning method (vs. less intrusive method) was being used, because perceived intrusiveness increased feelings of embarrassment (Moon, 2000; Tourangeau & Yan, 2007). Consequently, it is hypothesized that (copied hypothesis from Horváth et al., 2021) (see Figure 1):

**H2:** *Perceived intrusiveness of information and feelings of embarrassment (respectively and successively) mediate the negative effect of brand anthropomorphism on consumer self-disclosure of sensitive (but not non-sensitive) information<sup>1</sup>*

**Figure 1: Conceptual model**



***Horváth et al.’s (2021) findings of brand anthropomorphism on consumer self-disclosure***

To date, there are few studies that investigated the effect of anthropomorphism on consumer self-disclosure. One study that investigated this effect before Horváth et al. (2021), was the study by Kiesler et al. (2008), in which they found that consumers disclosed less socially undesirable behaviour to an anthropomorphized entity (vs. non-anthropomorphic). This is in accordance with the findings that consumers want to avoid negative evaluations by others and tend to save their face in conversations with another human being (Adler & Proctor, 2007; Bartneck et al., 2010). However, the study of Kiesler et al. (2008) included *robot* anthropomorphism. Therefore, the study of Horváth et al. (2021) was the first to study the effect of *brand* anthropomorphism on consumer self-disclosure.

As previously said, Horváth et al. (2021) found that brand anthropomorphism indeed negatively influenced the amount of sensitive information that consumers disclose, and that this effect was mediated through perceived intrusiveness and embarrassment. Moreover, their two hypotheses, which are also used in this study, were supported in four different studies that used both service brands (i.e., online dating website & Amazon) and product brands (i.e., feminine hygiene products & beer consumption). Additionally, the hypothesized effects were supported for fictitious (e.g., Boost) and non-fictitious brands (i.e., Amazon). Furthermore, Horváth et al. (2021) found a potential remedy for anthropomorphized brands to request sensitive information. More specifically, instead of changing anthropomorphic elements in logos, which

<sup>1</sup> The individual relationships between the variables in the serial mediation will be individually discussed in the Chapter ‘Results’.

could be very costly, the questions could also be asked in an indirect (vs. direct) manner. By doing so, consumer self-disclosure did not differ between the brand anthropomorphism conditions (Horváth et al., 2021, Appendix L).

### ***COVID-19, brand anthropomorphism and consumer self-disclosure***

The aim of this study is to test the robustness of the findings of Horváth et al. (2021) in a new context. This new context is the COVID-19 pandemic. More specifically, this study will investigate to what extent consumers disclose sensitive information about their compliance to the regulations and their experiences (e.g., loneliness) during the COVID-19 pandemic. It is expected that Horváth et al.'s (2021) hypotheses still hold in this new context, since the COVID-19 pandemic includes several sensitive topics. For instance, admitting that one is/was lonely or depressive might be hard for respondents as these are very painful, individual emotions (Ali et al., 2021). Moreover, consumers' social media usage increased tremendously during the COVID-19 pandemic (i.e., 61%) (Holmes, 2020). Subsequently, this increased social media usage was also accompanied by an increase in 'social-media shaming' on incompliance to the government's regulations (Brown, 2020; Fox, 2020; Harris, 2020). As previously discussed, this might imply that consumers are more reluctant to share their personal information with others, to avoid these negative evaluations (Bartneck et al., 2010) and to avoid losing face (Adler & Proctor, 2007). More specifically, this could imply that consumers will be hesitant to admit to their conversation partner that they did not comply to the government's regulations. This in turn, is in accordance with Horváth et al.'s (2021) hypotheses.

However, this new context could also show potential boundary conditions to Horváth et al.'s (2021) findings. More concretely, a recent study discussed that during the COVID-19 pandemic, consumers turned more to their social media for entertainment, to connect with others, and to cope with the COVID-19 pandemic (Nabity-Grover, Cheung & Thatcher, 2020). As a result, they shared and disclosed more on their social media accounts (Nabity-Grover et al., 2020). For this current study, this could therefore imply that consumers might be more willing to disclose their personal information to both conditions (i.e., (non-) anthropomorphized), as this might offer them the opportunity to cope with the COVID-19 pandemic. Moreover, this study could show some boundary conditions since it is conducted in a non-commercial context, as opposed to the commercial contexts used in Horváth et al.'s (2021) research. More precisely, commercial businesses are (generally) operating for their own financial gain, while non-commercial businesses operate for the benefit of others (Abzug & Webb, 1999). Previous research has found that for this reason, non-commercial businesses are

often trusted more and seen as warmer (Aaker, Vohs & Mogilner, 2010). Therefore, it could be assumed that consumers might be more willing to share their data with a non-commercial (vs. commercial) business as consumers trust those businesses more (Jourard, 1964; Jourard & Jaffe, 1970; Powell, 1968). Consequently, the effect between brand anthropomorphism and consumer self-disclosure might be smaller in the context of non-commercial businesses.

## 5 | METHOD

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In order to test the hypotheses, an experiment was conducted. By using an experiment, causal inferences could be made by manipulating the independent variables (i.e., brand anthropomorphism and information sensitivity), while holding other factors constant (Field & Hole, 2003). Therefore, experiments offer the opportunity for the isolation of cause (i.e., brand anthropomorphism and information sensitivity) and effect (i.e., consumer self-disclosure), and was consequently the best suited method to test the hypotheses that brand anthropomorphism decreases consumer self-disclosure of sensitive information. Moreover, the book of Field and Hole (2003) and Horváth et al.'s (2021) article were used as a guidance to conduct this experiment.

Additionally, the hypotheses were researched in the context of the COVID-19 pandemic. More specifically, it was investigated how likely respondents were to disclose sensitive information about their experiences and compliance to the regulations during the COVID-19 pandemic, to an anthropomorphic (vs. a non-anthropomorphic) brand.

### *Design of the experiment*

As this study was a replication study of Horváth et al.'s (2021) research, the design of the experiment was quite similar. Consequently, a 2 (brand anthropomorphized vs. not-anthropomorphized) x 2 (sensitive information vs. non-sensitive information) between-subjects design was designed for this research. The main reason to choose for a between-subjects design was to avoid fatigue and practice effects (Field & Hole, 2003). More specifically, this design ensured that previous self-disclosure in one condition did not influence self-disclosure in another condition, as respondents were only questioned once (Field & Hole, 2003). For instance, when customers previously decided to disclose their sensitive information in one condition, they could have been more inclined to disclose more in another condition as they already disclosed something previously. Additionally, the respondents were randomly allocated to one of the four different conditions, in order to minimize random influences in the experiment (Field & Hole, 2003).

Moreover, this experiment was conducted online by using Qualtrics. The reason for this was that previous research has found that human social presence can affect and determine consumer behaviour and attitudes (Argo, Dahl & Manchanda, 2005; Dahl et al., 2001; Holthöwer & van Doorn, 2022). Especially in the case of embarrassing situations, consumers are more inclined to avoid them when there is human social presence (Argo et al., 2005; Dahl

et al., 2001; Holthöwer & van Doorn, 2022). Consequently, it could be argued that the presence of a researcher could affect the outcomes of this research. Moreover, an online experiment enabled the researcher to disseminate the survey as quickly as possible. For these two reasons, the experiment was conducted online. However, it should be noted that the choice for an online experiment also brought some disadvantages compared to a lab experiment. For example, prior research found that respondents tend to have less attention and understand the instructions less in an online experiment (vs. lab experiment) (Finley & Penningroth, 2015), as an online experiment is unsupervised (Huber & Gajos, 2020). Nevertheless, the possible disadvantages of an online experiment were accounted for by (1) pretesting the instructions and questions to ensure clarity, and (2) incorporating attention checks in the main study. More precisely, the attention checks measured how long respondents took to fill in the entire survey and how long they were exposed to the manipulation. Consequently, respondents were excluded from the analysis once they were exposed to the manipulation too shortly and/or took too long to fill in the survey.

Furthermore, this research measured *actual* self-disclosure, and not *intended* self-disclosure, by making respondents believe that a certain brand wanted to gain insights into their compliance to the regulations and their experiences during the COVID-19 pandemic. Therefore, this resembled a real-life setting, in which a brand wanted to gain consumer insights. The reason to choose for a real-life setting lies in the fact that experiments have the disadvantage, compared to correlational research, that it cannot be used to observe natural events. Consequently, it could be difficult to collect *real* consumer insights (Field & Hole, 2003). Therefore, the experiment was conducted in a real-life setting, so it would be possible to collect *actual* consumer self-disclosure.

Additionally, like Horváth et al.'s (2021, Study 1 & 2) research, a fictitious brand (i.e., Soocial) was used for this experiment. By doing so, current biases based on previous experiences with the brand were avoided (Horváth et al., 2021).

***Brand anthropomorphism manipulation:*** Brand anthropomorphism was manipulated by altering the logo of the brand and the linguistic features used. In line with previous, successful manipulations of brand anthropomorphism, the anthropomorphized brand included a logo with humanlike features (i.e., a character with eyes) and an introductory text with first-person language. While the non-anthropomorphized brand included a logo without humanlike features and an introductory text with third-person language (Aggarwall & McGill, 2007; Horváth et al., 2021; Puzakova et al., 2013). Moreover, previous research has found that including eyes in the manipulations is a successful way of anthropomorphizing a brand (e.g.,



Haley & Fessler, 2005). Furthermore, in order to avoid random influences, the logos and introductory texts from both conditions were designed in such a way that all elements were as similar as possible. Additionally, to ensure that respondents, in both the anthropomorphized and non-anthropomorphized condition, were always exposed to the manipulation, the brand logo was visible during the entire survey (Aggarwall & McGill, 2007; Horváth et al., 2021). Moreover, the brand anthropomorphism manipulation was pretested to test whether the manipulation was perceived as humanlike, and thus to ensure the validity of the measure (Field & Hole, 2003). For this pretest, Waytz et al.'s (2010) six-item (e.g., *[Brand] looks like person*), seven-point scale (1 = strongly disagree; 7 = strongly agree) was used (see Table 1 & Appendix A for all items) (Waytz et al., 2010, retrieved from Horváth et al., 2021). The results from this pretest will be discussed below. In addition, the final manipulations for brand anthropomorphism can be found in Appendix B.

**Information sensitivity manipulation:** The sensitivity of information was manipulated by asking intrusive questions in the sensitive condition and non-intrusive questions in the non-sensitive condition (Horváth et al., 2021). These questions can be found in Appendix C. Moreover, the manipulation of information sensitivity was pretested by using a seven-point bipolar scale (1 = not sensitive at all, not intrusive at all, not intimate at all; 7 = very sensitive, very intrusive, very intimate) (Horváth et al., 2021) (see Table 1 & Appendix A). The results of the pretest will be presented below. Furthermore, the order of the sensitive and non-sensitive questions was not randomized in the main experiment, as previous research on self-disclosure has found that the order of intrusiveness can influence the self-disclosure of respondents (Moon, 2000). Therefore, to avoid random influences, the order of the questions was constant for all respondents (i.e., from least intrusive to most intrusive). Lastly, the main experiment also contained an extra information sensitivity manipulation check.

**Table 1. Overview of all scales (Extended version in Appendix A)**

	Items (Question in survey)	Variable	Source
Pretest	6 (1-12)	Brand anthropomorphism manipulation check	Waytz et al., 2010, used in Horváth et al., 2021

**Table 1. Continued**

	<b>Items</b> <b>(Question in survey)</b>	<b>Variable</b>	<b>Source</b>
	3(13-23)	Sensitivity of information manipulation check	Horváth et al., 2021
<b>Main study</b>	1 (1-3)	<i>Depth</i> of self-disclosure	Moon, 2000, used in Horváth et al., 2021
	1 (1-3)	<i>Breadth</i> of self-disclosure	Collins & Miller, 1994; Moon, 2000, used in Horváth et al., 2021
	4 (4-7)	Embarrassment	Dahl et al., 2001, Study 2, used in Horváth et al., 2021 (Study 3)
	3 (8-10)	Perceived intrusiveness	Horváth et al., 2021
	3 (11-13)	Brand attitudes	Horváth et al., 2021
	3 (14-16)	Brand trust	Horváth et al., 2021
	3 (17-19)	Brand sincerity	Horváth et al., 2021

***Pretest of the manipulations***

The manipulations of this research were pretested with a sample of 32 Dutch students (18 males,  $M_{\text{age}} = 22.81$ ,  $SD_{\text{age}} = 1.65$ , 22 with a Bachelor's degree) in a 2 (brand anthropomorphized vs. not-anthropomorphized) x 2 (sensitive information vs. non-sensitive information) within-subjects design. This design was chosen for the pretest in order to reduce errors based on individual errors (Edmonds & Kennedy, 2017). Moreover, this design enabled the researcher to pretest the manipulation with a minimum number of respondents. This was beneficial since

access to respondents was limited, and respondents from the pre-test were not allowed to participate in the main study (Edmonds & Kennedy, 2017). Additionally, respondents were recruited from the researcher's personal network, and respondents did not receive any incentives for participating.

**Brand anthropomorphism pretest:** As previously mentioned, Waytz et al. (2010) scale was used to check whether respondents perceived the anthropomorphized brand manipulation as more humanlike than the non-anthropomorphized brand manipulation. The reliability of this scale was good (six items;  $\alpha_{\text{anthro}} = .86$ ,  $\alpha_{\text{non-anthro}} = .87$ ). Additionally, a  $t$ -test revealed that the anthropomorphized brand 'Soocial' was indeed perceived as more humanlike than the non-anthropomorphized brand 'Soocial' ( $M_{\text{anthro}} = 4.17$ ;  $SD = 1.25$  vs.  $M_{\text{non-anthro}} = 2.47$ ;  $SD = 1.09$ ,  $t(31) = 7.44$ ,  $p < .001$ ). Consequently, it was concluded that the brand anthropomorphism manipulation successfully altered respondents' perceptions about the humanness of 'Soocial'. The final brand anthropomorphism manipulations can be found in Appendix B.

**Information sensitivity pretest:** In total, six intrusive (i.e., sensitive condition) and five non-intrusive questions (i.e., non-sensitive condition) were pretested on the same scale used in Horváth et al.'s (2021) article (see Table 1 & Appendix A for all items). The reliability of this scale was good (18 items;  $\alpha_{\text{sensitive}} = .79$  & 15 items;  $\alpha_{\text{non-sensitive}} = .88$ ). Respondents rated the 11 questions on this scale to indicate to what extent they felt the questions were sensitive, intrusive, and intimate. The  $t$ -test revealed that the participants perceived the questions as more sensitive in the sensitive condition than in the non-sensitive condition ( $M_{\text{sensitive}} = 4.71$ ;  $SD = .68$  vs.  $M_{\text{non-sensitive}} = 2.72$ ;  $SD = .93$ ,  $t(31) = 11.80$ ,  $p < .001$ ). Additionally, the mean scores of all 11 questions can be found in Table 2, the questions that are highlighted in bold and italics were chosen for the main experiment. These questions were the top three questions that scored the highest (i.e., sensitive condition) and the lowest (i.e., non-sensitive condition) on the scale based on their mean scores. However, one exception was made. Following Table 2, one might conclude that question S2 is more sensitive than question S6. Nevertheless, S6 was chosen for the main study since S2 contained sexual content similar to question S1. Moreover, S6 contained content about the compliance of regulations during the COVID-19 context, and the mean scores varied slightly (i.e., 0.13). Therefore, question S6 was perceived as more relevant regarding the context of the main experiment. Additionally, for both conditions the questions were slightly altered to induce respondents to disclose more information (e.g., '*as detailed as possible*' was added to questions). The final manipulations can be found in Appendix C.

**Table 2. Mean scores and SD of all questions in pretest\***

Question	<i>M</i>	<i>SD</i>
<i>S1 – Please describe your most extreme sexual experience during the COVID-19 pandemic.</i>	5.79	1.05
<i>S2 – In what way was it different from your sexual experiences before the COVID-19 pandemic?</i>	4.60	1.17
<i>S3 – Please describe the most extreme experience you had, while drinking alcohol, during the COVID-19 pandemic.</i>	4.00	1.28
<i>S4 – Please recall the moment in which you were most upset about the restrictions imposed by the government during the COVID-19 pandemic. What were your thoughts and feelings in that moment?</i>	3.55	1.31
<i>S5 – Please describe your darkest thoughts when you felt lonely during the COVID-19 pandemic.</i>	5.86	.88
<i>S6 – Please describe the most serious incident during the COVID-19 pandemic when you did not comply to the government’s regulations? How did it make you feel?</i>	4.47	1.32
<i>NS1 – Please describe a moment in which you complied to the government’s regulations during the COVID-19 pandemic. How did it made you feel and why?</i>	2.30	1.00
<i>NS2 – Could you describe a positive aspect of the COVID-19 pandemic for you?</i>	2.24	1.00
<i>NS3 – What did you do when you felt bored during the COVID-19 pandemic?</i>	2.23	1.24
<i>NS4 – Please describe what you would have done differently than the government during the COVID-19 pandemic?</i>	3.11	1.52
<i>NS5 – COVID-19 offered more opportunities to cheat during exams. Please describe your thoughts and feelings about this?</i>	3.70	1.53

*\*S = sensitive condition, NS = non-sensitive condition*

### ***Population and sample***

The population for this study was native Dutch speakers. Moreover, there were no other additional characteristics for the population. This population was relevant for this study, since Horváth et al.’s (2021) findings were based on the American and French population. Therefore,

this study could assess the effect of brand anthropomorphism on native Dutch speakers' self-disclosure of sensitive information, which had not been researched yet.

Consequently, a sample was drawn from this population. In total 337 respondents were randomly assigned to one of the four conditions in the main experiment (51.9% female [3 respondents were non-binary];  $M_{\text{age}} = 32.09$ ,  $SD = 12.09$ ; 30.6% with an HBO degree). This sample exceeds the minimum of 50 respondents per group/condition ( $4 \times 50 = 200$  respondents), and was therefore considered a reliable sample (Hair et al., 2018). Moreover, the main criterion for this sample was that they were native Dutch speakers. Additionally, respondents were informed that by participating they could win one of the three Bol.com giftcards valued at €15,- each. Furthermore, 201 respondents were retrieved from Prolific, and in exchange for participating they received €1.20.

In addition, the sample was contacted by a link that was shared on social media (i.e., Facebook and Instagram) and WhatsApp. After participating the respondents were asked to share the link with their friends and families. Therefore, the sampling techniques that were used were convenience sampling and the snowballing technique. It should be noted that these sampling techniques have some disadvantages. More specifically, these sampling techniques are prone to selection bias (Beauchemin & González-Ferrier, 2011; Galloway, 2005). Therefore, respondents were also retrieved outside of the researcher's own network by using Prolific. As most respondents, retrieved from the researcher's own network, were students, quota sampling was used for the Prolific platform. More precisely, to ensure equality between age groups in the sample, the respondents on Prolific had to be 25+ in order to participate. By doing so, the sample would be more representative to the Dutch population.

Notably, the respondents from the pretest might not fully reflect the population and sample of the main experiment. (i.e., regarding age). However, this should not have led to different results regarding the manipulation checks, as everyone was affected by the COVID-19 pandemic, as well as the fact that the (non-)sensitive questions were general questions. Therefore, it was argued that for the manipulation checks, the respondents for the pretest were similar than the population and sample of the main experiment.

### ***Procedure and measurement of key concepts***

In this section, the operationalization of the key concepts and the structure of the survey will be discussed (see Appendix D). It should be noted that, since this study was a replication study of Horváth et al.'s (2021) research, the same scales were used for all variables (see Table 1 & Appendix A for an overview of all items). Therefore, it can be argued that the reliability and

validity of these scales were already substantiated. Moreover, since the respondents were all Dutch natives, the questions and items of the scales were translated in Dutch. To ensure that these translations were done correctly, the translations were checked by an independent individual who translated them back to English. Additionally, this research consisted of different types of scales (i.e., Likert- and bipolar) to avoid response bias.

**Self-disclosure:** First, respondents began the survey by reading a text about a fictitious anthropomorphized or non-anthropomorphized brand (i.e., Soocial). Moreover, the time that respondents spend on this manipulation page was timed, to ensure that they had paid enough attention to the manipulation. This manipulation page also asked respondents if they were Dutch natives and if they gave the researcher consent to use their data for this research. More specifically, when respondents answered ‘no’ to one of these questions, they were redirected to the end of the survey. When respondents answered ‘yes’ to both questions they continued with the survey, and subsequently filled in either sensitive or non-sensitive questions. Additionally, their *actual* self-disclosure regarding these questions were measured on two dimensions: (1) the *depth* of self-disclosure, which was the quality of the information that was disclosed, and (2) the *breadth* of self-disclosure, which was the quantity of the information that was disclosed (Moon, 2000; Horváth et al., 2021). Similarly to Horváth et al.’s (2021) and Moon’s (2000) research, the *depth* of self-disclosure was assessed on a five-point scale (1 = low intimacy; 5 = high intimacy). These assessments were made by the researcher and an independent judge, to ensure reliability. The independent judge was instructed by reading Moon’s (2000, pp. 323-324) definition of intimate self-disclosure and the definition of disclosure of sensitive information that was provided in this study (p. 8). In addition, the ratings of both coders were averaged to form the self-disclosure measure of *depth* (interrater reliability = .61, moderate reliability). Moreover, the *breadth* of self-disclosure was assessed by simply counting the words that were disclosed in participants’ responses to all three questions (Collins & Miller, 1994; Horváth et al., 2021; Moon, 2000).

**Embarrassment:** Second, respondents were asked to indicate to what extent they felt embarrassed to answer the questions. The level of experienced embarrassment was measured on four seven-point scales, which were previously used in Dahl et al.’s (2001, Study 2) and Horváth et al.’s (2021, Study 3) research (ranging from 1 = not embarrassed at all/very comfortable/not awkward at all/not self-conscious at all, to 7 = very embarrassed, not comfortable at all/very awkward/very self-conscious,  $\alpha = .90$ ).

**Perceived intrusiveness:** Third, respondents were asked to what extent they felt the questions were intrusive. This was measured on the same seven-point bipolar scale as the one

used in the pretests to check the sensitivity of questions (ranging from 1 = not sensitive at all, not intrusive at all, not intimate at all; 7 = very sensitive, very intrusive, very intimate,  $\alpha = .91$ ) (Horváth et al., 2021). Moreover, these questions acted as an additional manipulation check for the information sensitivity manipulations in the main experiment.

**Covariates:** Additionally, six covariates were included to rule out that other factors influenced the effect of brand anthropomorphism on consumer self-disclosure. Therefore, respondents filled in general questions at the end of the survey about how they perceived the brand and questions about their demographics. First, as discussed in the literature review, prior work found that brand anthropomorphism increases brand liking and the trustworthiness of the brand (Chen et al., 2017; Delbaere et al., 2011; Hudson et al., 2016) and in turn consumers disclose more to whom they like and trust (Jourard, 1964; Powell, 1968; Jourard and Jaffe, 1970; Tolstedt & Stokes, 1984; Collins & Miller, 1994; Moon, 2000). Therefore, questions were included in the survey to measure consumer brand attitudes, brand trust and perceived brand sincerity (Horváth et al., 2021). More specifically, brand attitudes were measured on a three item, seven-point bipolar scale (1 = dislike/unfavorable/bad; 7 = like/favorable/good,  $\alpha = .94$ ) (Horváth et al., 2021). Furthermore, brand trust was measured on a three item (e.g., *[Brand] appears to be reliable*), seven-point Likert scale (1 = strongly disagree; 7 = strongly agree,  $\alpha = .94$ ) (Horváth et al., 2021). Additionally, perceived brand sincerity was measured on a three item (e.g., *[Brand] is sincere*), seven-point scale (1 = not at all; 7 = very much,  $\alpha = .90$ ) (Horváth et al., 2021). Second, respondents ended the survey with some questions about their demographics, most importantly was the variable gender (1 = male, 2 = female, 3 = other) as several studies have shown that females tend to disclose more than men (Chelune, 1976; Derlega & Chaikin, 1976; Dindia & Allen, 1992; Jourard & Lasakow, 1958). The other two demographic questions included questions about their age and education.

Lastly, respondents were debriefed and thanked for their participation. This debriefing will be discussed in the ‘Research Ethics’ section of this study.

### ***Data analysis procedure***

First of all, respondents who did not meet the criteria for the attention check were excluded from the analysis. Second, the reliability and internal consistency of the scales were tested with an exploratory factor analysis (EFA) and several Cronbach’s alpha tests. In order to be considered reliable, the Cronbach’s alpha values had to be  $>.70$  (Hair et al., 2018). Third, the differences between the conditions of the independent variables (IV’s) in the manipulation checks were tested with two paired sample *t*-tests. Fourth, in order to analyse H1, two two-way

ANCOVA's were conducted. For the first ANCOVA, the sensitivity of information and brand anthropomorphism were the IV's, the *depth* of self-disclosure was the dependent variable (DV), and brand attitudes, brand trust, brand sincerity, gender, age, and education were the covariates. The second ANCOVA included the same variables except for the DV, which was the *breadth* of self-disclosure. This test was accurate, since the IV's were of categorical measurement levels, and the DV's and covariates were of interval measurement level (Hair et al., 2018). Lastly, in order to test the serial mediation in H2, PROCESS Model 6 (Hayes, 2018) was used.

### ***Research ethics***

Before respondents had started the survey, they were informed that a brand (i.e., Soocial) wanted to investigate their experiences during the COVID-19 pandemic. Therefore, they were not fully 'informed' about the main purpose of this study, which was whether brand anthropomorphism affected their self-disclosure. Otherwise, it would not represent a real-life setting, and subsequently hurt the validity and reliability of the findings. However, the respondents were fully informed about their rights, which was (1) the freedom to withdraw at any time from the research, (2) the guarantee that their answers were anonymous and remained confidential, (3) the expected duration of the experiment, and (4) the incentives that (could be) received for participating (i.e., a chance to win a giftcard and/or €1.20 for Prolific respondents). In addition, anonymity was ensured by never asking the respondents' names, and confidentiality was ensured by not sharing the dataset with anyone that is not involved in this research. Of note, respondents were redirected to another survey once they wanted to participate in the giveaway of the gift cards, in order to ensure that their email addresses could not be linked to their responses. Additionally, the data was safely stored on the researcher's computer, to ensure that participants' responses were not leaked.

Moreover, after respondents had submitted their response, a debriefing was presented to them (see Appendix D). This debriefing was important for this experiment because the sensitive questions could have induced embarrassment among the respondents, which is not ethically responsible (Field & Hole, 2003). Therefore, the aim of the debriefing was to inform the respondents that some questions were designed to make them feel embarrassed and awkward. Besides that, in the debriefing respondents were also thanked for their participation, and once again reassured that their answers were completely anonymous and confidential. Additionally, the debriefing included the researcher's contact information, which provided the opportunity for respondents to ask questions or to sign-up for information about the results.



Furthermore, during the entire research process, the researcher was fully transparent of all research goals, findings, theoretical and managerial implications. Moreover, the researcher signed an integrity form. By doing so, she believes that she fully complied to the APA Ethics Code (Smith, 2003) and the discussion of ethics in the book of Field & Hole (2003, p. 93-96).

## 6 | RESULTS

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### *Exclusion criteria:*

As previously mentioned, respondents had to be Dutch natives in order to participate in this research. Therefore, participants had to confirm that they were Dutch natives and had to give consent for the usage of their data in this research. As a result, one respondent was deleted from the analysis.

Moreover, this research included attention checks, in which respondents were timed during the entire survey and during their exposure to the manipulation. Subsequently, respondents that took too long to fill in the survey were excluded, as they might have taken a pause from the survey and consequently had forgotten about the manipulation. Furthermore, the mean for the total duration of the survey, including extreme scores (e.g., 55 hours), was around 22 minutes. As a result, respondents that took longer than 20 minutes were excluded from the analysis (i.e.,  $N = 12$ ). Although the specified time for the survey was 10 minutes, this criterion is set on 20 minutes to ensure that possible dyslexic or elderly respondents were given enough time to read and fill in the survey.

Additionally, respondents were excluded from the analysis when they were exposed too shortly to the manipulation page. On average, respondents were  $M = 19.89$  seconds on the manipulation page consisting of around 150 words. According to previous research, people can read 200-400 words per minute (Rayner et al., 2016). Therefore, respondents indeed should have taken around 20 seconds to read the manipulation page. However, excluding all respondents who were exposed to the manipulation page shorter than 20 seconds, resulted in a remaining sample of  $N = 87$ . Therefore, it was decided to ask five independent readers, who were not included in the research, to read the manipulation page fast but thoroughly. Consequently, these five readers were timed and after they were done the researcher asked them questions about the content of the text and the manipulation itself. The fastest reader read the manipulation in 12 seconds and, afterwards, was still able to indicate whether the text was written in first-person or third-person pronouns. Also, after 12 seconds the faster reader was still able to redraw the logo. Moreover, since the brand logo manipulation was visible during the entire survey, it was decided to set the minimum time spent on the manipulation at 10 seconds. As a result, 79 respondents were excluded from the analysis.

Furthermore, one respondent was deleted that was not yet 18 years old, since surveying children without parental consent is not ethically approved (Smith, 2003).

Applying these criteria yielded a final sample of  $N = 245$  respondents (53.90% female [3 respondents were non-binary],  $M_{\text{age}} = 33.38$ ,  $SD_{\text{age}} = 12.56$ ). Additionally, 78 respondents had received an HBO degree, 74 a university Master's degree, 49 a university Bachelor's degree, 16 a MBO degree, and 16 had only finished high school.

### ***Validity and reliability of scales***

In order to check the validity and reliability of the scales, an EFA, principal axis factoring with oblimin rotation was conducted. In total, 16 items of the five scales measuring perceived intrusiveness, embarrassment, brand attitudes, brand trust and brand sincerity were examined.

First of all, the Kaiser-Meyer-Olkin measure revealed a sampling adequacy of .93, which is above the minimum criterium of .50 (Field, 2017), and the Bartlett's test of sphericity was significant ( $\chi^2(120) = 3982.53$ ,  $p < .001$ ), indicating an adequate sample (Field, 2017; Hair et al., 2018).

Second, the factor analysis revealed that all items had commonalities  $> .20$  after extraction. Additionally, two factors were extracted with an Eigenvalue  $> 1$ , explaining 75.44% of the variance. These two factors had a correlation of  $-.47$ , which justified the use of oblimin rotation. Furthermore, the pattern matrix confirmed the absence of cross-loaders (see Table 3). Consequently, the nine items that loaded only on factor 1 were all related to the scales that measured respondents' perceptions about the brand (i.e., brand attitudes, brand trust or brand sincerity) and the seven items that loaded only on factor 2 were related to the scales that measured respondents' perceptions about the self-disclosure questions (i.e., perceived intrusiveness and embarrassment). Therefore, no items were deleted, as the scales were considered reliable and valid for this analysis.

Moreover, additional reliability tests were conducted to examine the reliability of the items for each individual scale. The Cronbach's alphas showed a good reliability for all scales (i.e., ranging from  $\alpha = .902 - .939$ ).

**Table 3. Factor scores**

	<b>Factor 1</b>	<b>Factor 2</b>
Trust - item 2	.900	
Trust - item 3	.883	
Attitudes - item 3	.875	

**Table 3. Continued**

Items	Factor 1	Factor 2
Trust – item 3	.870	
Sincerity – item 1	.857	
Sincerity – item 3	.822	
Attitudes – item 1	.818	
Sincerity - item 2	.813	
Attitudes – item 2	.812	-.108
Perceived Intrusiveness – item 1		.860
Perceived Intrusiveness – item 3		.838
Embarrassment – item 3		.834
Embarrassment – item 1		.827
Embarrassment – item 4		.806
Embarrassment – item 2		.796
Perceived Intrusiveness – item 2	-.296	.698

***Manipulation checks***

Similarly to what was found earlier in the pretest, an independent samples *t*-test revealed that the participants perceived the self-disclosure questions as more sensitive in the sensitive condition than in the non-sensitive condition ( $M_{sensitive} = 5.14$ ;  $SD = 1.45$  vs.  $M_{non-sensitive} = 2.33$ ;  $SD = 1.17$ ,  $t(244) = -16.71$ ,  $p < .001$ ).

Additionally, as mentioned earlier, prior research indicated that brand anthropomorphism increases brand liking and the trustworthiness of the brand (e.g., Chen et al., 2017), which in turn increases consumer self-disclosure as consumers disclose more to whom they like and trust (e.g., Jourard and Jaffe, 1970). Therefore, it was tested whether the brand anthropomorphism manipulation increased brand attitudes, brand trust, and brand sincerity. Consequently, no significant effects were found between the brand anthropomorphism manipulations on the covariates brand attitudes ( $M_{anthro} = 4.17$ ;  $SD = 1.31$  vs.  $M_{non-anthro} = 3.96$ ;  $SD = 1.18$ ,  $t(244) = -1.35$ ,  $p = .179$ ), brand trust ( $M_{anthro} = 4.14$ ;  $SD = 1.33$  vs.  $M_{non-anthro} = 3.96$ ;  $SD = 1.32$ ,  $t(244) = -1.12$ ,  $p = .265$ ), and brand sincerity ( $M_{anthro} = 4.04$ ;  $SD = 1.10$  vs.  $M_{non-anthro} = 3.96$ ;  $SD = 1.11$ ,  $t(244) = -.54$ ,  $p = .592$ ). As a result, the potential effect of brand anthropomorphism on self-disclosure is unlikely to be based on differences in brand attitudes, trust, and sincerity. Moreover, as will be elaborated extensively below, the

effect of brand anthropomorphism on consumer self-disclosure *depth* also stayed significant when these covariates were included.

### ***Disclosure depth***

In order to find an answer to H1, a two-way ANCOVA was conducted which examined the effect of brand anthropomorphism on the *depth* of consumer self-disclosure. This ANCOVA consisted of brand anthropomorphism and information sensitivity as independent variables, self-disclosure *depth* as dependent variable, and brand attitudes, brand trust, brand sincerity, gender, age and education as covariates.

**Assumptions:** First of all, the assumptions for an ANCOVA were tested. More precisely, the metric dependent variable and covariates had to be normally distributed (Hair et al., 2018). A univariate analysis showed that the metric variables had skewness and kurtosis values between -3 and +3, which indicated a normal distribution (see Table 4) (Hair et al., 2018).

**Table 4. Skewness and kurtosis values for all metric variables in this research**

<b>Variable</b>	<b>Skewness</b>	<b>SE of skewness</b>	<b>Kurtosis</b>	<b>SE of kurtosis</b>
<b>Self-disclosure <i>depth</i></b>	.91	.16	.30	.31
<b>Self-disclosure <i>breadth</i></b>	1.41	.16	2.55	.31
<b>Brand attitudes</b>	-.31	.16	.28	.31
<b>Brand trust</b>	-.25	.16	-.71	.31
<b>Brand sincerity</b>	-.66	.16	.58	.31
<b>Age</b>	1.36	.16	1.26	.31
<b>Embarrassment</b>	.51	.16	-.78	.31
<b>Perceived intrusiveness</b>	.09	.16	-1.22	.31

Regarding the second assumption, the sample size had to be larger than 30 respondents for each condition (Hair et al., 2018). This assumption was met as 65 respondents were in the non-anthropomorphized/non-sensitive condition, 61 respondents were in the non-anthropomorphized/sensitive condition, 61 respondents were in the anthropomorphized/non-sensitive condition, and 58 respondents were in the anthropomorphized/sensitive condition. Moreover, the third assumption that was tested was whether the covariates correlated with the dependent variable (Hair et al., 2018). More specifically, the only two correlations found with

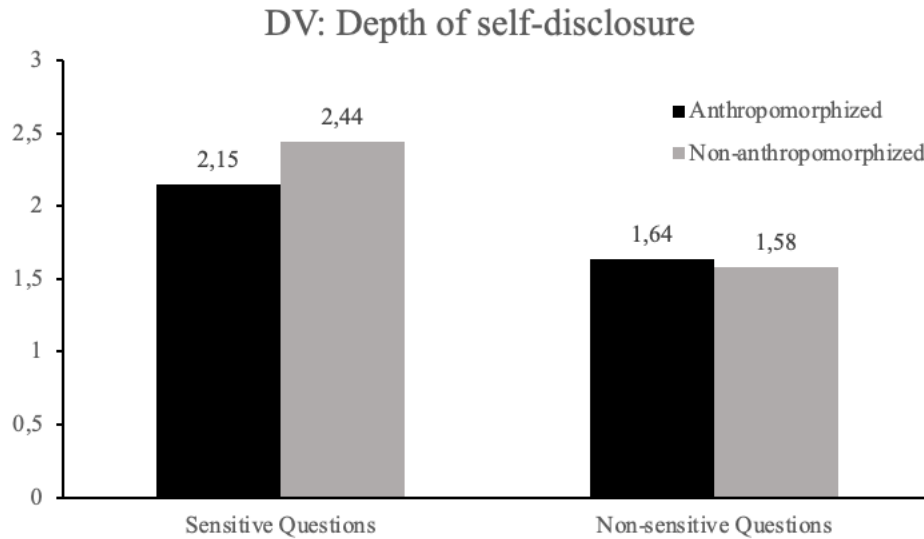
the *depth* of self-disclosure were brand trust ( $r(245) = -.12, p = .047$ ), and age ( $r(245) = -.22, p = .001$ ), indicating that brand attitudes, brand sincerity, gender and education did not meet this assumption. Additionally, the fourth assumption tested the homogeneity of regression. More precisely, the covariates did not interact significantly with the independent variables (i.e.,  $p$  values ranging from .230-.960), indicating homogeneity of the regression and thus that the assumption was met (Hair et al., 2018). The last assumption tested the homogeneity of variances using Levene's test of equality of error variances. This test was not significant which indicated homogeneity of variances (i.e.,  $F(3, 242) = 2.33, p = .08$ ) (Hair et al., 2018). Although some covariates did not meet the third assumption, it was still decided to include them in the analysis. The reason for this is that no correlation with the dependent variable would most likely not affect the relationship between the IV and DV, and would most likely only result in non-significant covariates (Hair et al., 2018).

**ANCOVA results:** Second, the two-way ANCOVA was performed. Indeed, the covariates brand attitudes ( $p = .214$ ), brand trust ( $p = .211$ ), brand sincerity ( $p = .297$ ), gender ( $p = .687$ ), and all dummy variables for education (ranging from  $p = .475$  -  $.759$ ) were non-significant. Moreover, the two-way ANCOVA showed no main effect of brand anthropomorphism ( $F(1, 240) = 1.46, p = .228, \eta_p^2 = .006$ ). However, it did show a significant main-effect of information sensitivity ( $F(1, 240) = 59.14, p < .001, \eta_p^2 = .198$ ). Nevertheless, this main effect will not be further interpreted as the brand anthropomorphism x information sensitivity interaction was also found to be significant ( $F(1, 240) = 4.88, p = .028, \eta_p^2 = .020$ ) (Field, 2017, Hair et al., 2018). More specifically, the *depth* of respondents' self-disclosure in the *sensitive questions* was lower in the anthropomorphized (vs. non-anthropomorphized) condition ( $M_{\text{anthro}} = 2.15, SD = .75$  vs.  $M_{\text{non-anthro}} = 2.44, SD = .81, p = .042$ ). However, the *depth* of self-disclosure in the *non-sensitive questions* did not differ for either of the brand anthropomorphism conditions ( $M_{\text{anthro}} = 1.64, SD = .66$  vs.  $M_{\text{non-anthro}} = 1.58, SD = .58, p = .555$ ) (see Figure 1).

Moreover, the only covariate that was found to be significant was age ( $F(1,240) = 13.05, p < .001, \eta_p^2 = .052$ ). Therefore, age significantly adjusted the dependent variable *depth* of self-disclosure (Hair et al., 2018). More specifically, the coefficient showed that age had a negative effect on the *depth* of self-disclosure ( $\beta = -.013$ ). Furthermore, when controlling for age the brand anthropomorphism x information sensitivity interaction was still significant. Lastly, by incorporating the significant covariate age, the Adjusted  $R^2$  increased from .203 (i.e., without any covariates) to .241. This means that the covariate age explains  $\pm 4\%$  of the variance in the dependent variable and should therefore be included in the analysis. Concluding, the model

with age as a covariate explains 24.1% of the total variance in the dependent variable, the fit of this model is therefore moderate (Hair et al., 2018).

**Figure 1. The interactive effect of brand anthropomorphism and information sensitivity on *depth* of consumer self-disclosure**



### ***Disclosure breadth***

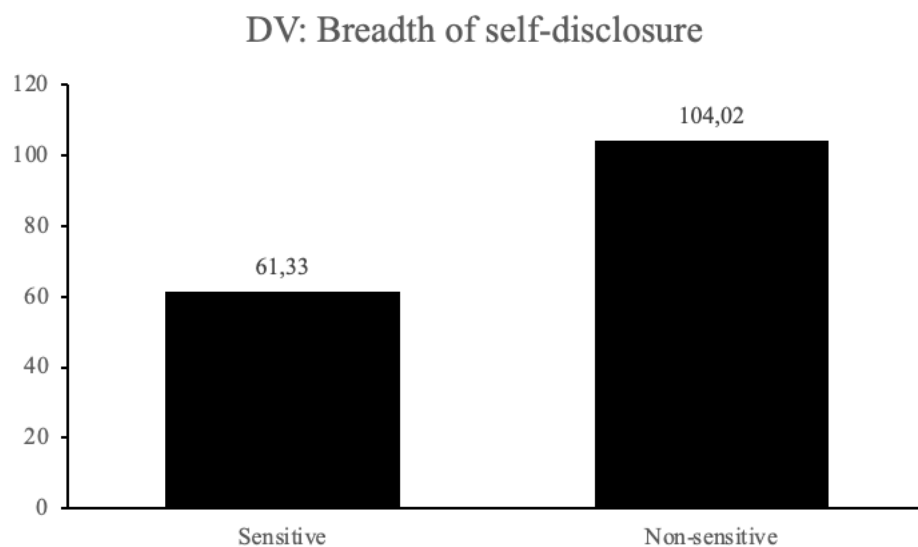
In order to find an answer to H1, a second two-way ANCOVA was performed with the same variables, but this time with *breadth* of self-disclosure as the dependent variable.

**Assumptions:** First of all, the assumptions for an ANCOVA were tested. The first two assumptions were already previously discussed. More specifically, the metric variables were all normally distributed (see Table 4), and all conditions had a sample size larger than 30 (Hair et al., 2018). Additionally, the third assumption for ANCOVA stated that the dependent variable *breadth* of self-disclosure should correlate with the covariates (Hair et al., 2018). For this assumption, results showed that brand attitude ( $r(245) = .26, p < .001$ ), brand trust, ( $r(245) = .27, p < .001$ ), brand sincerity, ( $r(245) = .28, p < .001$ ), gender, ( $r(245) = .160, p = .01$ ), and age, ( $r(245) = -.19, p = .004$ ) were significantly correlated with the *breadth* of self-disclosure. However, the covariate education was not significantly correlated with the dependent variable. Additionally, the fourth assumption implied that the covariates should not interact significantly with the independent variables, which would indicate homogeneity of regression (Hair et al., 2018). No covariates interacted with the independent variables (i.e.,  $p$  values ranging from .211-.906), except for age which interacted with sensitivity ( $F(1, 224) = 7.17, p = .008, \eta_p^2 = .031$ ), and thus did not meet the assumption. Lastly, the homogeneity of variances assumption was tested by using Levene's test of equality of error variances. This test was not significant, which

indicated homogeneity of variances ( $F(3,242) = 1.11, p = .347$ ). Furthermore, although education and age did not meet the third and fourth assumption, respectively. It was still decided to still include them in the analysis for the same reason as described in the section above.

**ANCOVA results:** Second, a two-way ANCOVA was conducted. This analysis showed that there was no significant main effect of brand anthropomorphism on the *breadth* of self-disclosure ( $F(1, 239) = .07, p = .786, \eta_p^2 < .001$ ). Moreover, there was no significant brand anthropomorphism x information sensitivity interaction ( $F(1, 239) = .96, p = .328, \eta_p^2 = .004$ ). However, a significant main effect of information sensitivity was found ( $F(1, 239) = 37.29, p < .001, \eta_p^2 = .135$ ). More specifically, this implied that the responses of participants contained less words in the sensitive conditions (vs. non-sensitive conditions) ( $M_{\text{sensitive}} = 61.33; SD = 50.7$  vs.  $M_{\text{non-sensitive}} = 104.02; SD = 61.56$ ) (see Figure 2). Lastly and remarkably, the average self-disclosure *breadth* in this study was double the size as the average self-disclosure *breadth* in Horváth et al.'s (2021) study,  $M_{\text{Horváth et al. (2021)}} = 40.38, M_{\text{current study}} = 83.28$ .

**Figure 2.** The main effect of information sensitivity on the *breadth* of consumer-self disclosure



Additionally, the covariates gender ( $F(1,239) = 4.34, p = .038, \eta_p^2 = .018$ ), and age ( $F(1,239) = 10.23, p = .002, \eta_p^2 = .041$ ) were found to be significant. Therefore, gender and age significantly adjusted the dependent variable *breadth* of self-disclosure (Hair et al., 2018). More specifically, the covariates showed that gender had a positive effect ( $\beta = 14.43$ ), and age had a negative effect on the *breadth* of self-disclosure ( $\beta = -.91$ ). Furthermore, when controlling for gender and age the significant main effect of information sensitivity remained significant. Moreover, by incorporating the covariates age and gender, the Adjusted  $R^2$  increased from .118



(i.e., without any covariates) to .167. This implied that the covariates explain  $\pm 5\%$  of the variance in the dependent variable, and should therefore be included in the analysis. In addition, this model explains 16.7% of the total variance in the dependent variable, which is considered a moderate fit (Hair et al., 2018). Notably, the covariate age did not meet the assumption of homogeneity of regression. Therefore, its significant effects should be considered with caution. Nevertheless, to ensure that the covariate age did not affect other significant results of this model, the same ANCOVA was conducted without the covariate age. Consequently, this yielded the same significant results as reported above.

### ***Mediation analysis with depth of self-disclosure as dependent variable***

In order to test H2, a serial mediation PROCESS model (i.e., Model 6; Hayes, 2018) was used (see Figure 3). More specifically, it was examined whether the interaction between brand anthropomorphism and information sensitivity on the *depth* of consumer self-disclosure, was mediated by the perceived intrusiveness of the questions and embarrassment. Moreover, the covariates that were used in the ANCOVA's were also included in the PROCESS model (i.e., brand attitudes, brand trust, brand sincerity, age, gender, education).

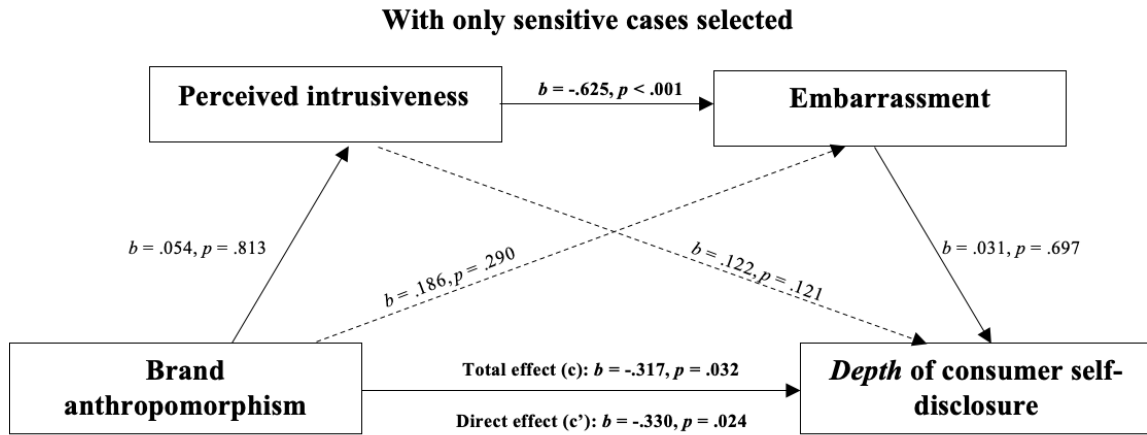
**Assumptions:** Furthermore, the assumptions for the PROCESS model were checked. First of all, the data was screened for potential outliers by using the Mahalanobis distances. The values of the Mahalanobis did not exceed the cutoff point of  $\chi^2 = 29.59$  (i.e.,  $df = 10$  variables,  $p = .001$ ), and consequently no outliers were detected. Second, the metric variables that were included in this analysis had kurtosis and skewness levels between -3 and +3 (see Table 4) (Hair et al., 2018), which indicated that the normality assumption was not violated. Third, the assumption of homoscedasticity, i.e., constant variance of the error terms, was met since the scatterplot did not reveal any patterns (see Appendix E) (Hair et al., 2018). Fourth, the assumption of linearity was also met, as the residual plot did not show any extreme deviations from the linear line (see Appendix E) (Hair et al., 2018). Lastly, all VIF values were below 10, indicating that the assumption of multicollinearity was also met (Hair et al., 2018).

Moreover, since the PROCESS model 6 only allows one independent variable, it was chosen to first select the *sensitive* condition in SPSS after which the *non-sensitive* condition was selected. The results for both sensitive and non-sensitive conditions will be individually discussed below.

**PROCESS results for sensitive cases:** First of all, the bootstrapping results for self-disclosure *depth* for the *sensitive* cases did not reveal a serial mediation ( $b = .001$ ,  $se = .001$ , 95% CI =  $[-.026, .037]$ ). Moreover, the path brand anthropomorphism  $\rightarrow$  perceived

intrusiveness  $\rightarrow$  self-disclosure *depth* was not significant ( $b = .007$ ,  $se = .033$ , 95% CI = [-.049, .089]). Additionally, the path brand anthropomorphism  $\rightarrow$  embarrassment  $\rightarrow$  self-disclosure *depth* was not significant ( $b = .006$ ,  $se = .014$ , 95% CI = [-.026, .037]). Consequently, it can be concluded that the significant interaction effect of brand anthropomorphism and information sensitivity on self-disclosure *depth* is not mediated by perceived intrusiveness and embarrassment. Furthermore, as for the direct effects, perceived intrusiveness had a significant effect on embarrassment ( $b = .625$ ,  $t(107) = 8.425$ ,  $p < .001$ ), and brand anthropomorphism had a significant effect on self-disclosure *depth*, ( $b = -.330$ ,  $t(106) = -2.286$ ,  $p = .024$ ) (see Figure 3).

**Figure 3. Results PROCESS model 6 with only sensitive cases selected and self-disclosure *depth* as dependent variable**

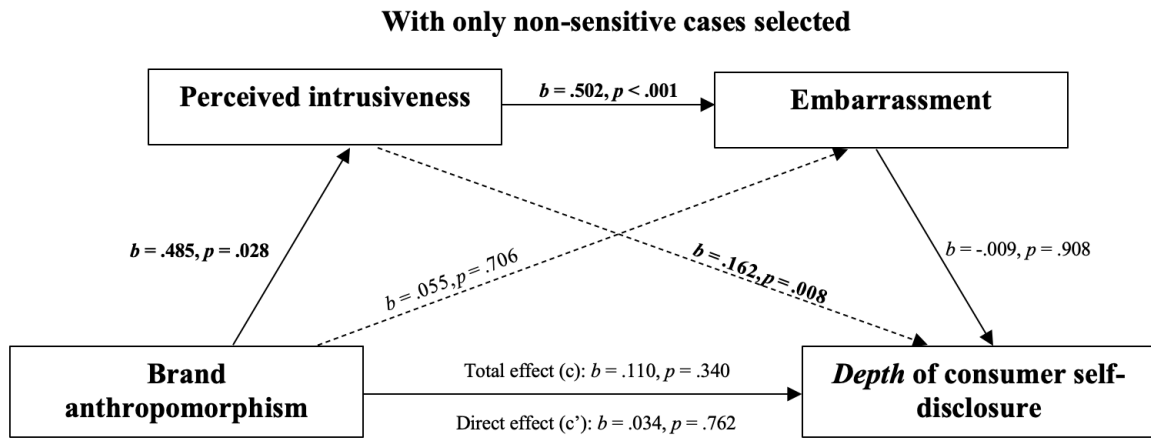


In addition, the covariate age had a significant effect on the mediator perceived intrusiveness ( $b = -.027$ ,  $t(108) = -2.680$ ,  $p = .009$ ), and embarrassment ( $b = -.022$ ,  $t(107) = -2.718$ ,  $p = .008$ ). These results could imply that the older people are, the less they felt embarrassed and perceived the questions as intrusive. Lastly, the covariate brand trust had a significant effect on the mediator perceived intrusiveness ( $b = -.428$ ,  $t(108) = -2.384$ ,  $p = .019$ ), while the covariate brand attitudes significantly impacted the mediator embarrassment ( $b = -.290$ ,  $t(107) = -2.093$ ,  $p = .039$ ). Subsequently, these results could imply that lower brand trust resulted in higher perceived intrusiveness, and lower brand attitudes could have resulted in more embarrassment.

**PROCESS results for non-sensitive cases:** Strikingly, the bootstrapping results for self-disclosure *depth* for the *non-sensitive* cases did reveal an indirect effect, even though the direct (i.e.,  $p = .762$ ) and total effects (i.e.,  $p = .340$ ) of anthropomorphism on self-disclosure *depth* were not significant. More specifically, the path brand anthropomorphism  $\rightarrow$  perceived intrusiveness  $\rightarrow$  self-disclosure *depth* was significant ( $b = -.078$ ,  $se = .048$ , 95% CI = [.003,

.189]) (see Figure 4). Nevertheless, although this indirect path is significant, one cannot mention a mediation when the direct and total effects are not significant. The reason for this is that the effect of the independent variable on a dependent variable must (partially) work through an intervening variable (i.e., mediator) in order to mention a mediation (Hair et al., 2018). However, in this case the independent variable did not influence the dependent variable, and thus in this case one cannot conclude a mediation. In addition, the path brand anthropomorphism  $\rightarrow$  embarrassment  $\rightarrow$  self-disclosure *depth* ( $b = -.001$ ,  $se = .021$ , 95% CI =  $[-.052, .041]$ ), and the path brand anthropomorphism  $\rightarrow$  perceived intrusiveness  $\rightarrow$  embarrassment  $\rightarrow$  self-disclosure *depth* ( $b = -.003$ ,  $se = .040$ , 95% CI =  $[-.087, .079]$ ) were not significant. Moreover, the direct effect perceived intrusiveness  $\rightarrow$  embarrassment was significant ( $b = .502$ ,  $t(114) = 8.243$ ,  $p < .001$ ). Furthermore, apart from the variables in the mediation, there were no other significant direct effects between independent variables, mediators and/or the dependent variable (see Figure 4).

**Figure 4. Results PROCESS model 6 with only non-sensitive cases selected and self-disclosure *depth* as dependent variable**



Lastly, the covariate age predicted perceived intrusiveness ( $b = -.021$ ,  $t(115) = -2.442$ ,  $p = .016$ ), and self-disclosure *depth* ( $b = -.010$ ,  $t(115) = -2.161$ ,  $p = .033$ ). More specifically, this could indicate that the older people are, the less they disclosed in *depth*. However, it also implies that the older people are, the less intrusive they perceived the questions.

#### ***Mediation analysis with breadth of self-disclosure as dependent variable***

The PROCESS model 6 (Hayes, 2018) was also conducted with self-disclosure *breadth* as a dependent variable (i.e., all other variables were the same). However, even though the previous ANCOVA's already found that brand anthropomorphism does not affect the *breadth* of self-

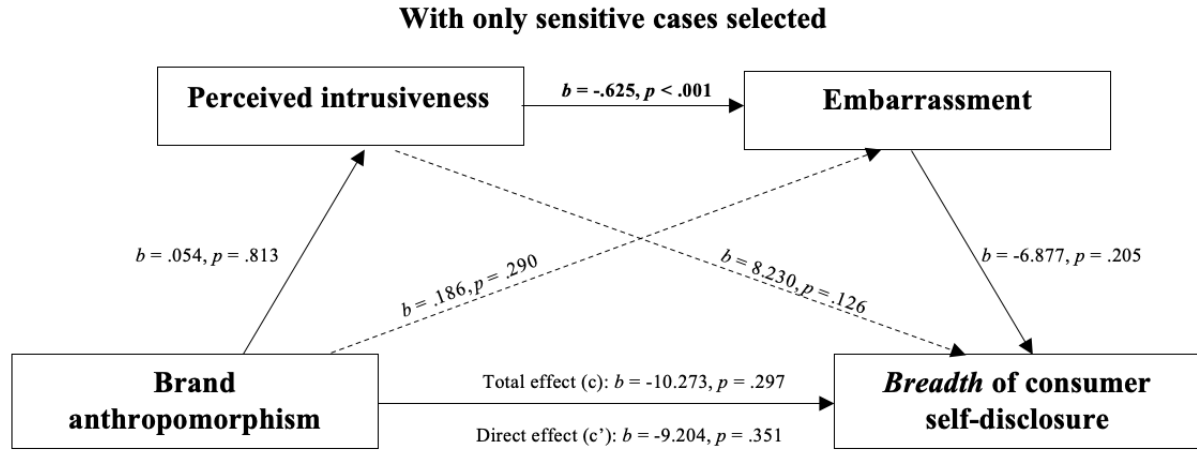
disclosure, this analysis was still conducted to see if there were any other interesting effects. Moreover, equivalently to the previous PROCESS analyses, these analyses will also be divided into *sensitive* and *non-sensitive* conditions as PROCESS model 6 only allows one independent variable. More specifically, the first model only includes the *sensitive* condition cases, while the second model only includes the *non-sensitive* condition cases.

**Assumptions:** Before conducting the PROCESS analysis, the assumptions had to be checked. First of all, the data was already screened for outliers in the previous PROCESS analyses. Second, it can be concluded that all variables were normally distributed, as their skewness and kurtosis values range between -3 and +3 (Hair et al., 2018) (see Table 4). Third, since the scatterplot did not reveal any patterns, the assumption of homoscedasticity, i.e., constant variance of the error terms, was met (Hair et al., 2018) (see Appendix E). Fourth, the residual plot did not reveal any extreme deviations from the linear line, indicating that the assumption of linearity was also met (Hair et al., 2018) (see Appendix E). Lastly, the assumption of multicollinearity was met as all VIF values were below 10 (Hair et al., 2018).

**PROCESS results for sensitive cases:** First of all, just as expected, the bootstrapping results revealed that all indirect paths were non-significant. More precisely, the path brand anthropomorphism → perceived intrusiveness → self-disclosure *breadth* ( $b = .443$ ,  $se = 2.296$ , 95% CI = [-4.143, 5.775]), the path brand anthropomorphism → embarrassment → self-disclosure *breadth* ( $b = -1.281$ ,  $se = 1.922$ , 95% CI = [-6.407, 1.280]), and the path brand anthropomorphism → perceived intrusiveness → embarrassment → self-disclosure *breadth* ( $b = -.232$ ,  $se = 1.314$ , 95% CI = [-3.287, 2.347]) were not significant. Furthermore, as for the direct effects, it was found that perceived intrusiveness had a significant relationship with embarrassment ( $b = .625$ ,  $t(107) = 8.425$ ,  $p < .001$ ). Additionally, no other direct effects between independent variables, mediators and/or the dependent variable were found (see Figure 5). Expectedly, the same covariates as in the PROCESS analysis of self-disclosure *depth*, with only the *sensitive* cases selected, were significant in this PROCESS analysis. More precisely, the covariate age had a significant effect on both perceived intrusiveness ( $b = -.027$ ,  $t(108) = -2.680$ ,  $p = .009$ ), and embarrassment ( $b = -.022$ ,  $t(107) = -2.718$ ,  $p = .008$ ). Moreover, the covariate brand trust significantly affected the mediator perceived intrusiveness ( $b = -.428$ ,  $t(108) = -2.384$ ,  $p = .019$ ), and the covariate brand attitudes significantly affected the mediator embarrassment ( $b = -.290$ ,  $t(107) = -2.093$ ,  $p = .039$ ). Concluding, this additional PROCESS with self-disclosure *breadth* and only the *sensitive* cases selected, did not reveal any other effects than the PROCESS analysis with self-disclosure *depth* and only the *sensitive* cases

selected. Therefore, this additional analysis can be seen as an extra confirmation of the previously found results.

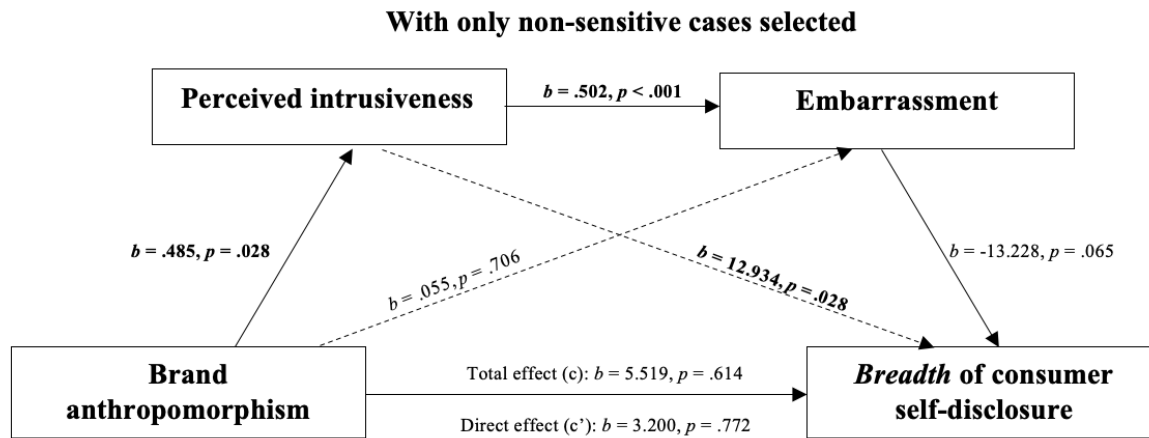
**Figure 5. Results PROCESS model 6 with only sensitive cases selected and self-disclosure *breadth* as dependent variable**



**PROCESS results for non-sensitive cases:** Similarly, to the previous PROCESS analysis on self-disclosure *depth* with only the *non-sensitive* cases selected, the bootstrapping results revealed the significant indirect path<sup>2</sup> brand anthropomorphism → perceived intrusiveness → self-disclosure *breadth* ( $b = 6.302$ ,  $se = 4.049$ , 95% CI = [.185, 15.587]). This is notable, as the direct (i.e.,  $p = .705$ ) and total effect (i.e.,  $p = .561$ ) of brand anthropomorphism on self-disclosure *breadth* were not significant. Therefore, as discussed previously, one cannot conclude that this indirect path is a mediation when the independent and dependent variable do not have a significant, initial effect with each other (Hair et al., 2018). Furthermore, neither of the other two paths were significant. More specifically, the path brand anthropomorphism → embarrassment → self-disclosure *breadth* ( $b = -.727$ ,  $se = 2.057$ , 95% CI = [-5.029, 3.593]), and the path brand anthropomorphism → perceived intrusiveness → embarrassment → self-disclosure *breadth* ( $b = -3.221$ ,  $se = 2.460$ , 95% CI = [-9.024, .378]) were not significant. Moreover, the direct effect of perceived intrusiveness on embarrassment was found to be significant ( $b = .502$ ,  $t(114) = 8.243$ ,  $p < .001$ ). However, apart from the variables in the mediation, there were no other significant, direct effects (see Figure 6).

<sup>2</sup> This indirect path was only significant when the least significant covariate (i.e., education) was removed from the analysis. With *all* covariates included, the indirect path was not significant, i.e.,  $b = 6.271$ ,  $se = 4.166$ , 95% CI = [-.087, 16.019].

**Figure 6. Results PROCESS model 6 with only non-sensitive cases selected and self-disclosure *breadth* as dependent variable**



Expectedly, the same covariate (i.e., age) as in the previous PROCESS model for self-disclosure *depth*, with only the *non-sensitive* cases, was found to be significant on perceived intrusiveness ( $b = -.021, t(115) = -2.442, p = .016$ ). Moreover, age also had a significant effect on self-disclosure *breadth* ( $b = -.010, t(115) = -2.161, p = .033$ ). This could imply that the older people were, the less intrusive they perceived the question and the less they disclosed in *breadth*. Concluding, this additional analysis showed that the same indirect path exists for self-disclosure *breadth* as for *depth*, when the *non-sensitive* cases are selected. Additionally, it showed that the covariate age also influences self-disclosure *breadth*.

## 7 | CONCLUSION

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This chapter includes an interpretation of the results that are most important in order to answer the hypotheses and the research question. A more elaborative discussion and interpretation of these results and some additional results will be given in the chapter ‘Discussion’. Additionally, the main aim of this research was to find an answer to the research question ‘*when* and *why* does brand anthropomorphism change consumer self-disclosure behaviour?’. Moreover, two hypotheses (copied from Horváth et al., 2021), were designed in order to find an answer to this research question.

H1 stated that consumers will self-disclose less to an anthropomorphic (vs. a non-anthropomorphic) brand when the information requested is sensitive. However, this effect would not occur when the information requested is non-sensitive. Contrary to Horváth et al.’s (2021) findings, it can be concluded that H1 is only partially supported. More precisely, consumers disclosed less *depth* to an anthropomorphic (vs. a non-anthropomorphic) brand when the information requested was sensitive (but not when it was non-sensitive). These findings imply that when a brand requests sensitive information, consumers will be generally less intimate in their responses to an anthropomorphic brand than they will be to a non-anthropomorphic brand. Consequently, H1 is supported regarding the *depth* of self-disclosure. However, brand anthropomorphism did not affect the *breadth* of consumer self-disclosure of sensitive information or non-sensitive information. More specifically, this implies that the number of words in consumer responses did not differ for an anthropomorphic or non-anthropomorphic brand. Nevertheless, a main effect of information sensitivity on self-disclosure *breadth* was found, indicating that respondents’ responses generally contained more words in the non-sensitive condition compared to the sensitive condition. Subsequently, H1 is not supported regarding the *breadth* of self-disclosure.

H2 stated that the negative effect of brand anthropomorphism on consumer self-disclosure of sensitive information (but not non-sensitive), was mediated by perceived intrusiveness of information and feelings of embarrassment. More specifically, since brand anthropomorphism only negatively affected the *depth* of consumer self-disclosure of *sensitive* information (not *non-sensitive* information), H2 will only be interpreted for the *depth* of self-disclosure and *sensitive* information (i.e., not for self-disclosure *breadth* and *non-sensitive* information). Subsequently, following the results it could be concluded that the negative effect of brand anthropomorphism on consumer self-disclosure *depth* of sensitive information was not mediated by perceived intrusiveness and embarrassment. Thus, H2 is not supported in this

study. However, some other remarkable and noteworthy results were found during these analyses, which will be discussed in the following chapter ‘Discussion’.

In conclusion, the answer to the main research question is, brand anthropomorphism only changes the *depth* of consumer self-disclosure behaviour *when* the information requested is *sensitive*, in the context of the COVID-19 pandemic. Of note, brand anthropomorphism does not change the *depth* of consumer self-disclosure behaviour when the information requested was *non-sensitive*, and brand anthropomorphism did not affect the *breadth* of consumer self-disclosure behaviour at all. Moreover, the question *why* brand anthropomorphism changes consumer self-disclosure behaviour remains, as perceived intrusiveness and embarrassment did not mediate this effect in the context of the COVID-19 pandemic. Consequently, the following chapter will, among other things, focus on possible explanations on *why* brand anthropomorphism changed the *depth* of consumer self-disclosure behaviour of *sensitive* information.



## 8 | DISCUSSION

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In times where privacy issues and data leaks are prevalent and increasing (Henriquez, 2021), consumers might be more reluctant to share their sensitive, personal data with businesses as this could make them emotionally, physically or materially vulnerable (Derlega et al., 1993; Kelly & McKillop, 1996; Laurenceau et al., 1998; Moon, 2000). Nevertheless, consumers' disclosure of sensitive information is the most valuable for businesses, as sensitive information provides a business with customer insights about a consumer's deepest emotions, attitudes, feelings, preferences and aspirations (Derlega et al., 1993; Horváth et al., 2021; Moon, 2000). Consequently, these customer insights can be used to improve customer experiences, which subsequently improves a business' revenue (Aguirre et al., 2015; Keller & Swaminathan, 2019, pp. 181-185; Kulbyté, 2021). Therefore, it can be argued that self-disclosure is becoming increasingly more important in today's data-driven world. Subsequently, a lot of research has already been devoted to finding the antecedents of consumer self-disclosure (e.g., Acquisti et al., 2012; Jourard, 1959; Jourard and Jaffe, 1970; Moon, 2000). However, up until Horváth et al.'s (2021) research, researchers have failed to investigate how the commonly used branding strategy 'brand anthropomorphism' affects consumer self-disclosure. More specifically, they found that brand anthropomorphism affects consumer self-disclosure of sensitive information, in which consumers disclose less sensitive information to an anthropomorphic (vs. non-anthropomorphic) brand (Horváth et al., 2021). This effect was found to occur in several commercial contexts (e.g., dating sites, beer consumption, feminine hygiene products). However, the effect was not yet examined in a non-commercial context. Therefore, this study was designed to investigate whether Horváth et al.'s (2021) hypotheses also held in a non-commercial context, namely the COVID-19 pandemic. From the previous chapter it can be concluded that in the current study the effect merely arose when sensitive information was requested, and only affected the *depth* of consumer self-disclosure. The following section of this chapter will focus on comparing the results of the current study with Horváth et al.'s (2021) research and other research, while giving possible explanations for potential differences.

### ***Discussion of main results***

First of all, similarly to Horváth et al.'s (2021) research, the current study found that brand anthropomorphism negatively affects the *depth* of consumer self-disclosure of sensitive (but not non-sensitive) information, in the non-commercial COVID-19 pandemic context (i.e., H1). This effect is in accordance with previous research which explains that consumers view

anthropomorphized brands as human beings (Kiesler et al., 2008), and legitimate, trustworthy, social agents (Chen et al., 2017; Hudson et al., 2016). Consequently, consumers are less likely to expose their deepest emotions, attitudes, and preferences to them, in order to avoid negative evaluations (Bartneck et al., 2010; Miller, 1997) and to avoid losing face (Adler & Proctor, 2007). Moreover, by showing that brand anthropomorphism can act as a negative antecedent of consumer self-disclosure, the current study contributes to the existing body of literature on the detrimental consequences of brand anthropomorphism (e.g., Kim et al., 2016; Kwak et al., 2015; Timpano & Shaw, 2013; Puzakova et al., 2013) and the literature on *when* and *why* consumers self-disclose (e.g., Acquisti et al., 2012; Jourard, 1959; Jourard and Jaffe, 1970; Moon, 2000). Additionally, the current study therefore also challenges most of the research that assumes that brand anthropomorphism generally is interwoven with positive outcomes (e.g., Aggarwall & McGill, 2012; Delbaere et al., 2011; Nenkov & Scott, 2014; Tuškej & Podnar, 2018). In addition, the most important contribution of this research is that these findings prove that Horváth et al.'s (2021) hypotheses only partially held in a non-commercial context (i.e., only H1 was supported regarding self-disclosure *depth*).

Second, the information sensitivity manipulations in this study did affect the *breadth* of self-disclosure, i.e., respondents used less words in the sensitive conditions (vs. non-sensitive conditions). This is in accordance with Horváth et al.'s (2021, Study 2 and 3) findings and earlier self-disclosure literature that stated that self-disclose will decrease once the sensitivity of questions increases (e.g., Dahl et al., 2001; John et al., 2011; TRUSTe, 2016). However, contrary to Horváth et al.'s (2021) findings, brand anthropomorphism did not seem to affect consumer self-disclosure *breadth* in the current study (i.e., H1). A possible explanation for this is that consumers might have been more willing to self-disclose in both anthropomorphic conditions, as a way to cope with the COVID-19 pandemic. This is in line with previous research on consumer self-disclosure during the COVID-19 pandemic, which found that consumers disclosed more on their social media accounts to get through the COVID-19 pandemic (Nabity-Grover et al., 2020). Consequently, this could have been the reason why respondents in the current study might have been willing to disclose more words with the brand, in both brand anthropomorphism conditions. This possible explanation could be backed up by the fact that the average of self-disclosure *breadth* in this study was more than double the size of the average in Horváth et al.'s (2021) study. Additionally, another explanation for the difference between the two studies, is that the context of this study was a non-commercial context. For instance, non-commercial (vs. commercial) businesses are often trusted more and seen as warmer (Aaker et al., 2010), and consumers disclose more to whom they trust (Jourard,

1964; Jourard and Jaffe, 1970; Powell, 1968). Therefore, this could be a possible explanation as to why consumer used more words in their self-disclosures in this study, despite the brand anthropomorphism conditions, compared to Horváth et al.'s (2021) research. Additionally, this could be an indication for a potential boundary condition to Horváth et al.'s (2021) hypotheses.

Third, the negative effect of brand anthropomorphism on consumer self-disclosure *depth* in the *sensitive* condition was not mediated by perceived intrusiveness and embarrassment in the current study (i.e., H2), which is not in accordance with Horváth et al.'s (2021) hypotheses. Two explanations for this difference between the two studies can be given. The first explanation is that consumers might not have been embarrassed to self-disclose in the COVID-19 pandemic context. More specifically, the COVID-19 pandemic has globally affected everyone of all ages, and the self-disclosure questions therefore included topics that were relatable for everyone (Gupta, et al., 2020; United Nations, n.d.). Whereas the self-disclosure questions used in Horváth et al.'s (2021) study were more subjects of taboo (e.g., sex, menstruation, alcohol consumption) (White, 2022), which often go hand in hand with more embarrassment (Harrington, 1992). However, it should be noted that, although most of the self-disclosure questions in this study were related to the COVID-19 pandemic, this study also included one sexually oriented question. The second explanation is that the respondents in this study might have been embarrassed, but that it differed between respondents. More specifically, previous research has found that consumers that did not agree with the government's regulations during the COVID-19 pandemic, were less inclined to comply to the regulations (Zitek & Schlund, 2021). Therefore, this could imply that in the current study, respondents that did not agree with the regulations, were more willing to disclose their incompliance and their negative opinions. While respondents that did agree with the regulations, knew that incompliance to the regulations was wrong and therefore did not disclose their incompliance and opinions in order to avoid 'losing their face' (Adler & Proctor, 2007). Therefore, respondents' agreement towards the regulations might be a moderator or boundary condition to Horváth et al.'s hypotheses in the context of the COVID-19 pandemic.

Fourth, although the direct effect of brand anthropomorphism on consumer self-disclosure *depth* and *breadth* for the *non-sensitive* cases was not significant, a significant indirect path was found in the current study. More specifically, brand anthropomorphism seemed to increase perceived intrusiveness, which subsequently increased the self-disclosure of respondents in the *non-sensitive* conditions (see Figure 4 and 6). This finding is completely opposite of the theory that was provided in the literature review, as perceived intrusiveness should decrease consumer self-disclosure (Acquisti et al., 2012; Moon, 2000; Tourangeau &

Yan, 2007). One possible explanation for this is that the *non-sensitive* questions were primarily asking questions about ‘socially desirable behaviour’ (see Appendix C). Therefore, this might have induced respondents to disclose more, as disclosing this information was not an incitement for negative evaluations by others (Bartneck et al., 2010) or a threat to their face (Adler & Proctor, 2007). However, the interpretation of this indirect path remains questionable, since the direct effect of brand anthropomorphism on consumer self-disclosure of *non-sensitive* information was not significant.

Fifth, contrary to Horváth et al.’s (2021) hypotheses and findings, brand anthropomorphism did not seem to affect perceived intrusiveness in the *sensitive* conditions (see Figure 3 and 5). One possible explanation for why perceived intrusiveness did not differ between the brand anthropomorphism conditions, is the sampling method and the role of the researcher in this study. More specifically, a large part of the respondents was retrieved via convenience sampling and the snowballing technique. As a result, respondents might have experienced high perceived intrusiveness in both brand anthropomorphism conditions, since they felt human social presence (i.e., the researcher) when answering the sensitive questions.

Sixth, similarly to Horváth et al.’s (2021) research, perceived intrusiveness did seem to affect embarrassment in all four conditions of the current study (see Figure 3-6). This is in accordance with previous research that found that perceived intrusiveness leads to more feelings of embarrassment (Acquisti et al., 2012; Dahl et al., 2001; Tourangeau & Yan, 2007).

Concluding, as reported above, the findings that were similar to Horváth et al.’s (2021) research contribute to their hypotheses by making them more robust in this new context. However, the differences between the current study and Horváth et al.’s (2021) study also contribute to their hypotheses, as the findings of this study highlight potential boundary conditions to these hypotheses in a non-commercial context.

### ***Discussion of covariates***

First of all, the brand anthropomorphism manipulation did not affect the covariates brand attitudes, brand trust and brand sincerity in the current study. This is in accordance with Horváth et al.’s (2021) study. However, it contradicts earlier literature on the positive effects of brand anthropomorphism on, for instance, brand attitudes (Aggarwall & McGill, 2012; Burgoon et al., 2000; Delbaere et al., 2011; Kiesler & Goetz, 2002), brand liking (Delbaere et al., 2011), and brand trust (Chen et al., 2017; Hudson et al., 2016).

Second, the covariate age seemed to be an important variable in this study as it negatively affected consumer self-disclosure *depth* and *breadth*, perceived intrusiveness, and

embarrassment. More precisely, this implies that respondents generally disclosed less when they were older. However, this is not due to increasing feelings of embarrassment and perceived intrusiveness, as older respondents generally found the questions to be less intrusive and experienced less feelings of embarrassment. Therefore, it could be assumed that age might be an important variable to consider when analyzing the effect between brand anthropomorphism and consumer self-disclosure in a non-commercial context.

Third, contrary to Horváth et al.'s (2021) findings, the covariate gender positively affected consumer self-disclosure *breadth*. This result implied that female respondents generally disclosed more words in their responses. Additionally, this is in accordance with previous research that found that females tend to disclose more than men (Chelune, 1976; Derlega & Chaikin, 1976; Dindia & Allen, 1992; Jourard & Lasakow, 1958).

Lastly, the covariate brand trust and brand attitudes were significant on perceived intrusiveness and embarrassment, respectively. These findings are in accordance with previous research which found that consumers' brand attitudes and evaluations decrease when a brand requests sensitive information (Puzakova et al., 2013).

### ***Managerial implications***

The current study shows managers that the branding strategy 'brand anthropomorphism' can negatively impact the way in which consumers disclose sensitive information to a (non-commercial) business. Moreover, this study measured actual (vs. intended) self-disclosure. This does not only make the research more theoretically valid, but also resembles a real-life setting in which managers ask their customers to self-disclose. The results of this study are therefore valuable for (branding) managers.

From a theoretical point of view, the difference between *depth* (i.e., quality of information) and *breadth* (i.e., quantity of information) of self-disclosure is important and valuable. However, from a managerial point of view the *depth* of self-disclosure might be more important, as quantity without quality is not very valuable for a business and might be more seen as 'clutter'. Therefore, in general it can be assumed that including anthropomorphic elements into requests for sensitive information to consumers, is not beneficial when the aim is to retrieve valuable consumer self-disclosures.

Moreover, although the results of this study indicated a negative effect of brand anthropomorphism, this study does not argue against the use of brand anthropomorphism. On the contrary, in many previous studies brand anthropomorphism has been found to have positive outcomes on consumer attitudes and evaluations (Aggarwall & McGill, 2012; Burgoon et al.,

2000; Delbaere et al., 2011; Kiesler & Goetz, 2002), consumer-brand relationships (Aggarwall & McGill, 2012; Ali et al., 2021; Fournier, 1998; Tuškej & Podnar, 2018) and financial metrics (Ahn et al., 2014; Nenkov & Skott, 2014; Yuan & Dennis, 2017). However, through the current study it is argued that managers might need to take a closer, holistic look at *all* the effects of brand anthropomorphism, as its effectiveness depends on the desired outcome and the context. More specifically, brand anthropomorphism can be seen as a double-edged sword and the decision to anthropomorphize should be made with complete knowledge about all the possible effects. For instance, when the business' goal is to improve consumer-brand relationships, anthropomorphizing might be a valuable branding strategy to consider. However, including anthropomorphized elements into a branding strategy might not be beneficial when the business' goal is to increase consumer self-disclosure of sensitive information.

Additionally, it is too short sighted to conclude that businesses with anthropomorphic brand elements, should simply delete all these elements in their branding strategy if they want to increase consumers' self-disclosure of sensitive information. More precisely, changes into current brand elements can be quite costly, not only financially in terms of redesigning costs but also in terms of losing brand recognition (Keller & Swaminathan, 2019). Therefore, for these businesses it is advised, if legally and ethically possible, to leave out the anthropomorphic elements in requests for sensitive information. However, if this is not possible, Horváth et al. (2021, Appendix L) found a solution for these businesses, namely, to ask the question indirectly. Moreover, for start-ups or for businesses that want to redesign their current brand elements, it is advised to not include brand anthropomorphism into brand elements that are not easily changed, and that are visible in requests for sensitive information (e.g., brand logo, brand symbols, brand names). Meanwhile, in order to reap the benefits of brand anthropomorphism, these businesses can include anthropomorphism in brand elements that are easily changed, or that are not visible during requests for sensitive information (e.g., external appearance of products, packaging).

Lastly, the current study found that brand anthropomorphism also influences the intimacy of self-disclosure in the non-commercial, COVID-19 pandemic context. This could be important for (branding) managers that operate in the health-related market, as previous research has indicated that consumers endanger their own health by avoiding to disclose in an embarrassing situation in health-care (Helweg-Larsen & Collins, 1994; Kiefe, Funkhouser, Fouad & May, 1998). By using the findings from the current study, the (branding) managers of these non-commercial businesses could gain more insightful information from their consumers.

### ***Limitations and directions for future research***

The current study has multiple limitations that will be discussed below. Additionally, most of the limitations of the current study are linked to directions for future research, in order to complete or possibly change certain aspects of the research for improved future research.

The first limitation of this study is that the Adjusted  $R^2$ , for all models, indicated a moderate fit. Desirably, these values would have been higher. However, since human behaviour is predicted in this research, a lower model fit is admissible and still valuable (Hair et al., 2018). In addition, the partial  $\eta^2$  of the interaction effect between brand anthropomorphism and consumer self-disclosure was rather low (i.e., 2%). Nevertheless, although this interaction effect explains a relatively small amount of the total variance in the dependent variable, it is still valuable as it was found to be significant.

A second limitation is the role of the researcher in this study and the sampling methods used. More precisely, the researcher sent most of the surveys to direct contacts, which could have led these respondents to experience human social presence. Consequently, this might have affected respondents' behaviour and responses during the survey (Argo et al., 2005; Dahl et al., 2001; Holthöwer & van Doorn, 2022). However, all possible measures were taken in order to diminish human social presence in the current study. For instance, this survey was an online survey, administered via Qualtrics and was completely anonymous. Additionally, in order to diminish the role of the researcher, regarding human social presence, respondents were also retrieved from Prolific. These respondents had no connection to the researcher.

A third limitation of this study is that brand anthropomorphism was only manipulated by altering the external appearance of a brand. However, as previously discussed, brand anthropomorphism can also occur when there is congruity between a consumer's self-concept and the brand (Aaker et al., 2004; Guido & Peluso, 2015). Consequently, it might be the case that respondents disclose more to a brand that has similar personality traits, and self-concept anthropomorphism might act as a moderator to Horváth et al.'s (2021) hypothesized effects. Therefore, it might be valuable for future research to manipulate the self-concept anthropomorphism, to see what its effect on consumer self-disclosure is. For instance, future research could manipulate a brand by attributing (one of) the Big Five personality traits (i.e., extraversion, neuroticism, openness to experience, agreeableness, and conscientiousness) to a brand, as it was already found that these personality traits have an influence on consumer self-disclosure (Loiacono et al., 2012).

A fourth limitation of this study is that information sensitivity was only manipulated via either a sensitive or non-sensitive condition. Previous research found that consumer self-

disclosure differs once the intrusiveness of questions gradually vs. abruptly increases. However, the results are ambiguous. On the one hand, it was found that consumers disclosed more when the intrusiveness of questions gradually increased (Moon, 2000). On the other hand, it was found that when the order of intrusiveness gradually increased (vs. abruptly), respondents were less likely to admit to sensitive behaviours (Acquisti et al., 2012). Consequently, it might be a fruitful direction for future research to investigate if and how the order of perceived intrusiveness of questions affects the effect of brand anthropomorphism on consumer self-disclosure.

Additionally, this study was only conducted on Dutch respondents, and thus did not take culture into account. Similarly to Horváth et al.'s (2021) research, the population included respondents of a Western country. As a consequence, the results of the current study might not apply to respondents from Eastern countries. For instance, Chinese respondents might perceive the questions as more sensitive and intrusive, as 'saving face' is a powerful social force for decision-making in China (Kim & Nam, 1998), and as a result disclose less regardless of whether a brand is anthropomorphized. On the contrary, it could be the case that Eastern countries might disclose more to an anthropomorphic brand, as these countries are in general more collectivistic and therefore more willing to help others (e.g., a brand) (Pae, 2020). Thus, the role of culture in the effect of brand anthropomorphism on consumer self-disclosure might be an interesting avenue for future research.

In addition, not only are there cultural differences between countries and regions, the effect of the COVID-19 pandemic might not have been the same for everyone globally. More specifically, some countries have had stricter governmental regulations than other countries (Bergkamp, 2020). For example, in contrast to China, the regulations in the Netherlands were relatively loose (e.g., Dutch citizens were not forced to vaccinate) (Bergkamp, 2020). Suggesting the way the COVID-19 pandemic was handled per country, could have affected respondents' responses to the self-disclosure questions. For instance, if this study was conducted in China, respondents might have experienced more embarrassment when they had to admit that they did not comply to the regulations, since they experienced stricter regulations. Therefore, the results of the current study might be different from countries that had more stricter rules, as the current study is only conducted in the Netherlands. Consequently, it might be an interesting direction for future research to include or control for the strictness of governmental regulations in different countries, when examining the effect of brand anthropomorphism on consumer self-disclosure in the COVID-19 pandemic.



Lastly, as this study is only conducted in one non-commercial context, it might be interesting if future research would focus on extending this research into other non-commercial contexts. For instance, avenues for future research could include charities (e.g., willingness to disclose greediness or donation behaviour) and general practitioners (e.g., willingness to disclose body measures). This future research should also consider including age as either a covariate or moderator, as this variable was found to be important in the current study. Consequently, future research into the effect of brand anthropomorphism on consumer self-disclosure in other non-commercial contexts would be valuable. As additional research is needed to ensure that the results of this study can be attributed to non-commercial businesses in general, and not only to the COVID-19 pandemic.

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# 10 | APPENDICES

## Appendix A: Extended overview of all scales

	Items (Question in survey)	Specific items	Scale	Variable	Source
<b>Pretest</b>	6 (1-12)	(1) [Brand] looks like a person (2) [Brand] seems almost as if it had come alive (3) [Brand] seems almost as if it has intentions (4) [Brand] seems almost as if it has a mind of its own (5) [Brand] seems almost as if it has consciousness (6) [Brand] seems almost as if it has desired and beliefs	Seven-point (1 = strongly disagree; 7 = strongly agree)	Brand anthropomorphism manipulation check	Waytz et al., 2010, used in Horváth et al., 2021
	3 (13-23)	The specific (non-)sensitive questions	Seven-point bipolar (1 = not sensitive at all, not intrusive at all, not intimate at all; 7 = very sensitive, very intrusive, very intimate)	Sensitivity of information manipulation check	Horváth et al., 2021
<b>Main study</b>	1 (1-3)	Respondents' self-disclosure regarding the questions	Five-point (1 = low intimacy; 5 = high intimacy)	Depth of self-disclosure	Moon, 2000, used in Horváth et al., 2021
	1 (1-3)	Respondents' self-disclosure regarding the questions	Counting words	Breadth of self-disclosure	Collins & Miller, 1994; Moon, 2000, used in Horváth et al., 2021
	4 (4-7)	"These questions made me feel..."	Seven-point bipolar (1 = not embarrassed at all, very comfortable, not awkward at all, not self-conscious at all; 7 = very embarrassed, not comfortable at all, very	Embarrassment	Dahl et al., 2001, Study 2, used in Horváth et al., 2021 (Study 3)

*Appendix A: Continued*

Items (Question in survey)	Specific items	Scale	Variable	Source
3 (8-10)	"These questions were..."	awkward, very self-conscious  Seven-point bipolar (1 = not sensitive at all, not intimate at all; 7 = very sensitive, very intrusive, very intimate)	Perceived intrusiveness	Horváth et al., 2021
3 (11-13)	"My overall impression of [Brand] is ..."	Seven-point bipolar (1 = dislike/unfavorable/bad; 7 = like/favorable/good)	Brand attitudes	Horváth et al., 2021
3 (14-16)	(1) [Brand] appears to be reliable (2) I feel that I can trust [Brand] (3) I feel that [Brand] can be counted on to help me and other consumers	Seven-point (1 = strongly disagree; 7 = strongly agree)	Brand trust	Horváth et al., 2021
3 (17-19)	(1) [Brand] is sincere (2) [Brand] is caring (3) [Brand] is considerate	Seven-point (1 = not at all; 7 = very much)	Brand sincerity	Horváth et al., 2021

## *Appendix B: Brand anthropomorphism manipulation*

### Anthropomorphized:



Original, Dutch manipulation (as included in the main experiment)	Translation
Hi, mijn naam is Soocial. Ik ben een adviesbureau dat gespecialiseerd is in marktonderzoek.	Hi, my name is Soocial. I am an advice bureau specialized in market research.
Momenteel ben ik aan het onderzoeken hoe de COVID-19 pandemie de Nederlandse bevolking heeft getroffen, en ik vroeg mij af of u mij zou willen helpen door deze vragen in te vullen ( $\pm$ 10 minuten). Uw deelname aan dit onderzoek zou mij helpen met het verkrijgen van betere inzichten in deze ervaringen tijdens de COVID-19 pandemie.	I am currently researching how the COVID-19 pandemic affected the Dutch population and I'm wondering if you could help me by filling in these questions ( $\pm$ 10 minutes). Your participation in this research would help me with greater insights into such experiences during the COVID-19 pandemic.
Ik wil u alvast bedanken voor uw deelname aan mijn onderzoek! Ik zorg ervoor dat uw antwoorden anoniem en vertrouwelijk blijven. Daarnaast maakt u met uw deelname kans op één van de drie Bol.com cadeaukaarten t.w.v. €15,-. Tot slot, wil ik vermelden dat u op elk moment kunt stoppen met deze survey.	I want to thank you in advance for participating in my research! Please note that I ensure that your answers remain anonymous and confidential. Moreover, by participating you have a chance to win one of the three Bol.com gift cards valued at €15,. Lastly, I want to address that at any given moment you can quit this survey.

Non-anthropomorphized:



Original, Dutch manipulation (as included in the main experiment)	Translation
Soocial is een adviesbureau dat gespecialiseerd is in marktonderzoek.	Soocial is an advice bureau specialized in market research.
Het adviesbureau is momenteel aan het onderzoeken hoe de COVID-19 pandemie de Nederlandse bevolking heeft getroffen, en vroeg zich af of u zou willen helpen door deze vragen in te vullen ( $\pm$ 10 minuten). Uw deelname aan dit onderzoek zou het bureau helpen met het verkrijgen van betere inzichten in deze ervaringen tijdens de COVID-19 pandemie.	The bureau is currently researching how the COVID-19 pandemic affected the Dutch population and was wondering if you could help by filling in these questions ( $\pm$ 10 minutes). Your participation in this research would help the bureau with greater insights into such experiences during the COVID-19 pandemic.
Alvast bedankt voor uw deelname aan dit onderzoek! Uw antwoorden zullen anoniem en vertrouwelijk blijven. Daarnaast maakt u met uw deelname kans op één van de drie Bol.com cadeaukaarten t.w.v. €15,-. Tot slot, kunt u op elk moment stoppen met deze survey.	Thank you in advance for participating in this research! Please note that your answers are anonymous and remain confidential. Moreover, by participating you have a chance to win one of the three Bol.com gift cards valued at €15,-. Lastly, at any given moment you can quit this survey.

## ***Appendix C: Information sensitivity manipulation***

### ***Sensitive condition:***

<b>Original question in Dutch</b>	<b>Translation in English</b>
1. Beschrijf zo gedetailleerd mogelijk het ernstigste incident waarin u zich niet aan de regels van de overheid hield tijdens de COVID-19 pandemie.	1. Please describe as detailed as possible the most extreme incident, during the COVID-19 pandemic, in which you did not comply to the government's regulations.
2. Beschrijf zo gedetailleerd mogelijk uw meest extreme seksuele ervaring tijdens de COVID-19-pandemie.	2. Please describe as detailed as possible the most extreme sexual experience you had during the COVID-19 pandemic.
3. Beschrijf zo gedetailleerd mogelijk uw donkerste gedachten toen u eenzaam was tijdens de COVID-19 pandemie.	3. Please describe as detailed as possible your darkest thoughts when you felt lonely during the COVID-19 pandemic.

### ***Non-sensitive condition***

<b>Original question in Dutch</b>	<b>Translation in English</b>
1. Omschrijf uitgebreid een moment wanneer u zich verveelde tijdens de COVID-19 pandemie en wat u toen deed.	1. Please describe as detailed as possible a moment in which you were bored during the COVID-19 pandemic, and what you did.
2. Beschrijf uitgebreid een positief gevolg van de COVID-19 pandemie voor u en leg uit waarom dit een positief gevolg is.	2. Please describe as detailed as possible a positive consequence of the COVID-19 pandemic for you, and please explain why this is a positive consequence for you.
3. Beschrijf een moment tijdens de COVID-19 pandemie waarin u zich hield aan de regels van de overheid. Hoe voelde u zich daarbij en waarom?	3. Please describe a moment in which you complied to the government's regulations during the COVID-19 pandemic. How did it make you feel and why?



## ***Appendix D: Overview of survey***

### **1. Introduction page/Brand anthropomorphism manipulation page**

*-- First, respondents saw one of the brand anthropomorphism conditions (see Appendix B)--*

Door hieronder 'ja' aan te vinken, geeft u aan dat u de Nederlandse taal goed beheerst, en dat u ermee akkoord gaat dat uw gegevens gebruikt zullen worden voor dit onderzoek.

- Ja, ik beheers de Nederlandse taal goed en ik ga akkoord.
- Nee, ik beheers de Nederlandse taal niet goed en/of ik ga niet akkoord

*Translation:*

*By answering 'yes', you agree that you have a good command of the Dutch language, and that you agree that your data will be used for this research.*

- *Yes, I have a good command of the Dutch language and I agree.*
  - *No, I do not have a good command of the Dutch language and/or I do not agree.*
- 

### **2. Self-disclosure questions**

Beantwoord de onderstaande vragen zo uitgebreid mogelijk.

Er zijn in totaal maar drie open vragen over uw ervaringen tijdens de COVID-19 pandemie (deze zullen opgevolgd worden door een paar meerkeuzevragen)!

*Translation:*

*Please answer the questions below as elaboratively as possible.*

*In total there are three open questions about your experiences during the COVID-19 pandemic (these will be followed up by a couple of multiple-choice questions)*

*-- Then respondents answered the self-disclosure questions from either the sensitive or non-sensitive condition (see Appendix C) --*

*-- Above each question the non-anthropomorphized OR anthropomorphized brand logo was portrayed --*

---

### **3. Perceived intrusiveness and embarrassment questions**

Geef hieronder aan hoe u zich voelde tijdens het beantwoorden van de vorige vragen.

-- The non-anthropomorphized OR anthropomorphized logo was portrayed again –

Door deze vragen voel(de) ik mij:...

- ...helemaal niet beschaamd O O O O O O O ...heel beschaamd
- ...heel comfortabel O O O O O O O ...helemaal niet comfortabel
- ...helemaal niet ongemakkelijk O O O O O O O ...erg ongemakkelijk
- ...helemaal niet onzeker O O O O O O O ...heel onzeker

De vragen waren...

- ...helemaal niet gevoelig O O O O O O O ...heel gevoelig
- ...helemaal niet opdringerig O O O O O O O ...heel opdringerig
- ...helemaal niet intiem O O O O O O O ...heel intiem

*Translation:*

*Please indicate below how you felt while answering the previous questions.*

-- The non-anthropomorphized OR anthropomorphized logo was portrayed again –

*These questions made me feel: ...*

- ...not embarrassed at all O O O O O O O ...very embarrassed
- ...very comfortable O O O O O O O ...not comfortable at all
- ...not awkward at all O O O O O O O ...very awkward
- ...not self-conscious at all O O O O O O O ...very self-conscious

*These questions were: ...*

- ...not sensitive at all O O O O O O O ...very sensitive
- ...not intrusive at all O O O O O O O ...very intrusive
- ...not intimate at all O O O O O O O ...very intimate

---

#### **4. Brand attitudes, brand trust and brand sincerity questions**

Hou nog even vol, u heeft nog maar een paar vragen te gaan!

-- The non-anthropomorphized OR anthropomorphized logo was portrayed again –

Mijn algemene indruk van het merk Soocial is: ...

- ...niet leuk O O O O O O O ...leuk
- ...ongunstig O O O O O O O ...gunstig
- ...slecht O O O O O O O ...goed

Geef aan in hoeverre u het eens bent met onderstaande stellingen:

- Soocial lijkt betrouwbaar
  - o Zeer oneens O O O O O O O Zeer eens
- Ik heb het gevoel dat ik Soocial kan vertrouwen
  - o Zeer oneens O O O O O O O Zeer eens
- Ik heb het gevoel dat er op Soocial gerekend kan worden om mij en andere consumenten te helpen
  - o Zeer oneens O O O O O O O Zeer eens

Geef aan in hoeverre u het eens bent met onderstaande stellingen.

- Soocial is oprecht
  - o Helemaal niet O O O O O O O heel erg
- Soocial is zorgzaam
  - o Helemaal niet O O O O O O O heel erg
- Soocial is attent
  - o Helemaal niet O O O O O O O heel erg

*Translation:*

*Hang in there, you only have a few more questions to go!*

*-- The non-anthropomorphized OR anthropomorphized logo was portrayed again --*

*My overall impression of the brand Soocial is: ...*

- ...dislike O O O O O O O ...like
- ...unfavorable O O O O O O O ...favorable
- ...bad O O O O O O O ...good

*Please indicate to what extent you agree with the following statements:*

- *Soocial appears to be reliable*
  - *Strongly disagree O O O O O O O Strongly agree*
- *I feel that I can trust Soocial*
  - *Strongly disagree O O O O O O O Strongly agree*
- *I feel that Soocial can be counted on to help me and other consumers*
  - *Strongly disagree O O O O O O O Strongly agree*

*Please indicate to what extent you agree with the following statements:*

- *Soocial is sincere*
    - *Not at all O O O O O O O very much*
  - *Soocial is caring*
    - *Not at all O O O O O O O very much*
  - *Soocial is considerate*
    - *Not at all O O O O O O O very much*
- 

### **5. Demographics**

Wat is uw geslacht?

- Man
- Vrouw
- Anders, namelijk...

Wat is uw leeftijd?

.....

Wat is uw hoogst afgeronde opleiding?

- Middelbare school
- MBO
- HBO
- WO Bachelor
- WO Master

Geef hieronder aan of u wilt deelnemen aan de winactie voor de Bol.com cadeaukaarten. Wanneer u 'ja' in vult, zal u worden doorgestuurd naar een andere survey waarin u uw emailadres kan achterlaten. Hierdoor wordt uw anonimiteit gewaarborgd. Vult u 'nee' in, dan zult u niet deelnemen aan de winactie en beëindigt u de survey.

- Ja, ik wil deelnemen aan de winactie
- Nee, ik wil niet deelnemen aan de winactie

*Translation:*

*What is your gender?*

- *Male*
- *Female*
- *Other, namely...*

*What is your age?*

.....

*What is your highest completed education?*

- *High school*
- *MBO*
- *HBO*
- *University Bachelor*
- *University Master*

*Please indicate below whether you want to participate in the giveaway for the Bol.com gift cards. If you fill in 'yes', you will be forwarded to another survey in which you can leave your email address. This guarantees your anonymity. If you fill in 'no', you will not participate in the giveaway and you will end the survey.*

- *Yes, I want to participate in the giveaway*
  - *No, I do not want to participate in the giveaway*
- 

## **6. Debriefing**

Bedankt voor uw deelname aan deze survey! Ik wil nogmaals benadrukken dat uw gegevens anoniem en vertrouwelijk zullen blijven. Daarnaast wil ik vermelden dat sommige vragen

ontworpen waren om u ongemakkelijk en beschaamd te maken. Mocht u zich tijdens de survey zo gevoeld hebben, dan weet u dat dit dus volkomen normaal is!

Mocht u nog vragen hebben over deze survey of wilt u de uitkomsten van dit onderzoek weten, dan kunt u een mailtje sturen naar: *'insert researcher's email address'*

*Translation:*

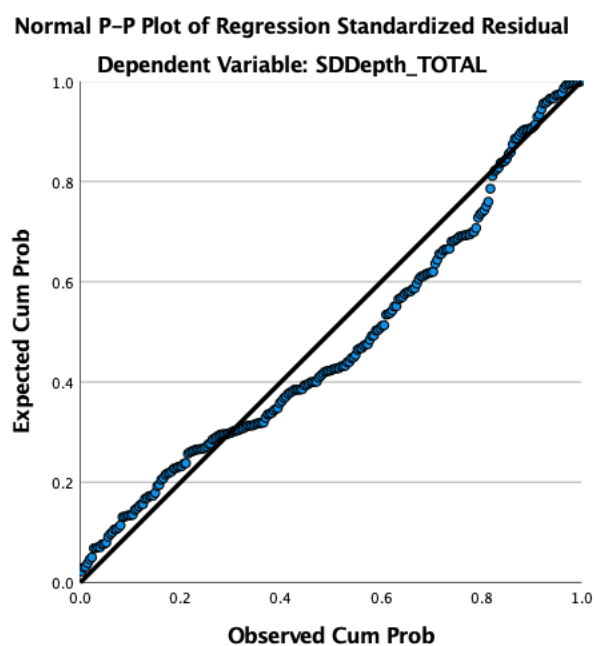
*Thank you for participating in this survey! I would like to emphasize again that your data will remain anonymous and confidential. In addition, I would like to mention that some of the questions were designed to make you uncomfortable and embarrassed. If you felt this way during the survey, then you know that this is completely normal!*

*If you have any questions about this survey or if you want to know the results of this survey, you can send an email to: 'insert researcher's email address'*

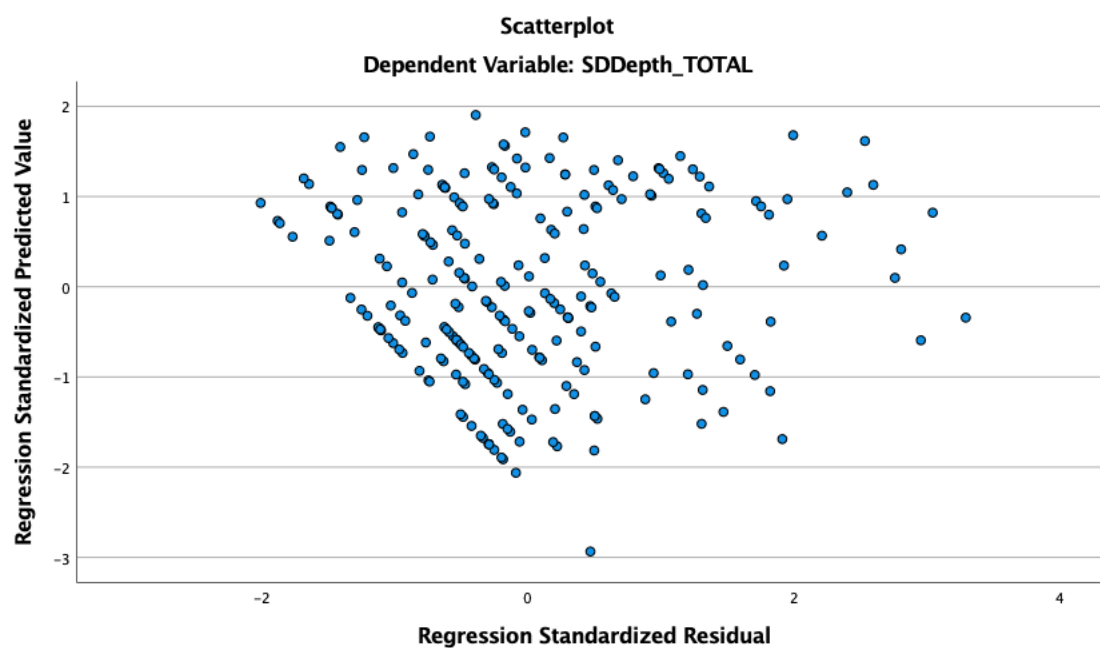
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## Appendix E: Plots for assumptions from PROCESS models

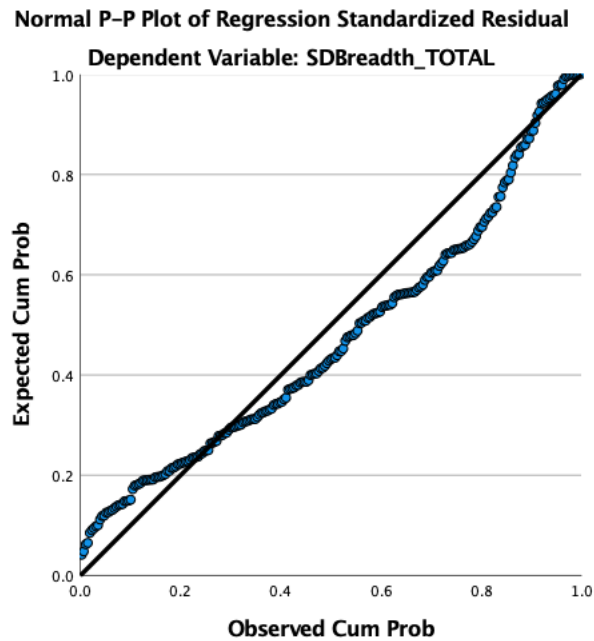
DV = self-disclosure depth, plot for linearity assumption



DV = self-disclosure depth, plot for homoscedasticity of variances assumption



DV = self-disclosure breadth, plot for linearity assumption



DV = self-disclosure breadth, plot for homoscedasticity of variances assumption

