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Item Type	Article
Authors	Trivedi, Rohit;Teichert, T.
Citation	Trivedi RH and Teichert T (2021) Consumer reactions to nudity in print advertising: Comparing same-gender and opposite-gender effects. Psychology and Marketing. 38(5): 819-833.
DOI	<a href="https://doi.org/10.1002/mar.21471">https://doi.org/10.1002/mar.21471</a>
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Download date	2025-04-30 11:15:16
Link to Item	<a href="http://hdl.handle.net/10454/18440">http://hdl.handle.net/10454/18440</a>

# Consumer reactions to nudity in print advertising: Comparing same-gender and opposite-gender effects

Rohit H. Trivedi<sup>1</sup>  | Thorsten Teichert<sup>2</sup>

<sup>1</sup>Faculty of Management, Law and Social Sciences, University of Bradford, Bradford, UK

<sup>2</sup>Chair of Marketing and Innovation, University of Hamburg, Hamburg, Germany

## Correspondence

Rohit H. Trivedi, Faculty of Management, Law and Social Sciences, University of Bradford, Richmond Rd, Bradford BD7 1DP, UK.  
Email: [R.Trivedi1@bradford.ac.uk](mailto:R.Trivedi1@bradford.ac.uk)

## Abstract

It is often assumed that exposure to nude stimuli in advertising influences consumer behavior positively. However, the empirical evidence concerning the effects of nudity on consumer reactions is inconclusive. The goal of this study is to disentangle the effects of opposite-gender and same-gender nudity on female and male consumers' reactions. This study, thereby, offers a framework for the appropriate choice of seminude or fully clothed human stimuli based on advertisers' objectives and consumer-model gender interactions. The empirical data were derived from a large-scale market research initiative from Germany with 61,399 consumer evaluations of 147 real ads from 16 product categories. Female consumers show positive same-gender results for both seminude and fully clothed female models, indicating strong homophily, but nonsignificant opposite-gender effects on information search, positive attitude change, integration of brand into consideration set, and purchase intentions. In contrast, male consumers demonstrate a significantly positive and equally strong influence of opposite-gender and same-gender seminude stimuli on all of the four variables.

## KEYWORDS

advertising effectiveness, consumer reactions, erotic plasticity, homophily, nudity, opposite gender, same gender

## 1 | INTRODUCTION

Withstanding major societal changes and shifts in ethical standards, nude or scantily clad models are still widely used in advertising by marketers to arouse consumer emotions. Accompanying business practice, researchers have investigated the effects of sexual appeals on consumer reaction since the late 1960s (e.g., Morrison & Sherman, 1972; Steadman, 1969; Venkatesan & Losco, 1975). Critical reviews of advertising have found that "... women's bodies, and men's bodies too these days, are dismembered, packaged, and used to sell everything from chain to chewing gum" (Kilbourne, 1999, pp. 26–27). Some empirical studies on advertising effectiveness have shown that such use of blatant sexual content in

advertising results in an orienting response, that is, a short-term increase in attention (Dianoux & Linhart, 2010; Dudley, 1999; Grazer & Keesling, 1995) as well as a more lasting voluntary attitudinal response with a change in cognitive preferences (LaTour, 1990; Pope et al., 2004). However, other studies have demonstrated that the use of sexual stimuli in an advertisement can result in either negative (Ford et al., 1991; Peterson & Kerin, 1977; Reichert, LaTour, Lambiase, et al., 2007) or no effects on consumers' reactions (Bello et al., 1983; Jones et al., 1998; Reichert, LaTour, Lambiase, et al., 2007).

A closer inspection of the extant literature regarding the effects of nude or seminude models in advertising on consumer reactions reveals several limitations which may have caused confusing and

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contradictory findings. Previous studies measuring the effectiveness of nudity on consumer reactions either drew their conclusions from mostly small sample sizes (e.g., Putrevu, 2008; Read et al., 2018; Weller et al., 1979), often consisting of student participants (e.g., Dianoux & Linhart, 2010; Wyllie et al., 2014; Zimmerman & Dahlberg, 2008), or derived results based on only one or two product categories (e.g., Putrevu & Swimberghek, 2013; Severn et al., 1990; P. M. Simpson et al., 1996), involving a very limited number of real (e.g., Amyx & Amyx, 2011; Putrevu, 2008; Tai, 1999; Widing et al., 1991) or fictitious advertisements (e.g., Black et al., 2010; Kassem & John, 1973; Lombardot, 2007; Reichert et al., 2011).

The inconsistent findings of previous studies, which provide little empirical guidance to marketers, most likely result from empirical studies dating back over a period spanning more than 50 years. For example, a recent meta-analysis of 72 publications (Wirtz et al., 2018) that appeared since 1969, with nearly half (42%) of the analyzed articles published before the millennium's turn. During this period, both gender roles and sexual lifestyles changed drastically, thereby questioning the representativeness of the derived meta-analytic findings for contemporary society. The inconsistent findings could also have been the result of the omission to consider the interplay of consumer–model gender relations. Thus far, as a consequence, the findings fail to fully disentangle the gender-specific effects of nudity on consumer reactions. This limitation contrasts starkly with sociological research showing that attitudes toward both sexuality and gratuitous stimuli are significantly influenced by gender, leading to noticeably different reactions (Conley, 2011; Greer & Buss, 1994; Kozak et al., 2009). Advertising literature, across the board, also provides robust empirical evidence of consumer–model gender effects in various marketing communication contexts (Berg, 2015; Eisend, 2010; Trivedi & Teichert, 2019). It has been shown that females respond differently than males to advertisements, resulting in different levels of advertising effectiveness (Moore, 2007; Teichert et al., 2018). We, therefore, estimated consumer–model gender interactions by focusing upon opposite-gender and same-gender effects (i.e., female consumer–male model, female consumer–female model, male consumer–female model, male consumer–male model) in a single study setting using large-scale consumer data based on real advertisements. This study posits that there are consumer and model gender-dependent effects when using nudity in print advertising, and that disentangling these will provide rich theoretical insights that have important implications for advertising professionals. For example, it is imperative for advertisers to understand the potential (dis)advantages of using seminude female or male stimuli to avoid offending the target audience when targeting female consumers.

In addition, previous studies largely focused on stimuli effects on attitudes and purchase intention (e.g., Liu et al., 2009; Sabrina et al., 2018; Wirtz et al., 2018; Wyllie et al., 2014). The effects on other intermediate but nonetheless critical variables underlying consumer reactions—such as knowledge acquisition, brand preference development, and conviction—have received limited attention (Patti et al., 2017). Rather than limiting the measurement of consumer reactions only to a subset of expected behaviors, this study investigates the effectiveness of nudity in print advertising through major four variables of consumer responses, ranging

from information search, through attitude change and conviction, to action (Hansen, 2005; Scholten, 1996). We, thus, differentiate four outcome variables that consumers go through as they form brand attitudes and purchase intention: (1) information search intention, (2) positive brand attitude change, (3) integration of brand into a relevant set, and (4) brand purchase intention.

The empirical data for the measurement of effects of nudity comes from a large-scale market research initiative of a major German print media initiative (Ad Impact Monitor). The study benefits from a sample of 61,399 consumer evaluations of 147 real ads from 16 product categories. Such a large-scale sample consisting of evaluations of real advertisements offers unique empirical advantages in terms of external validity and generalizability and aids the measurement of the effectiveness of nudity in advertisements on consumer reactions. In summary, this study provides insights into the effectiveness of the use of nudity in print advertisements by disentangling and comparing the same-gender and opposite-gender consumer–model gender insights, differentiating results across the consumer persuasion process, and using large-scale consumer data with real advertisements across a broad spectrum of product categories.

## 2 | LITERATURE REVIEW

The interdisciplinary literature on sexual appeals in advertisement has a longstanding tradition. Since early works in the late 1960s (Morrison & Sherman, 1972; Steadman, 1969), scholars from different disciplines have continued to investigate the effects of nudity displayed in advertising on different types of consumer reactions. Thus, there is ample empirical material to draw upon when looking for scientific recommendations for effective advertisement design. However, there were larger changes in prevailing attitudes in society toward sexual and gender-related issues (e.g., homosexuality, feminism). Thus, the applicability of yesterday's findings for today's environment need not be taken for granted. Instead, we will provide an overview of historical findings and relate them to actual considerations to derive our hypotheses among mixed empirical evidence.

### 2.1 | Nudity in advertising and overall consumer reactions

It is commonplace for marketers to use a range of intrinsic and extrinsic cues in advertising to influence consumer reactions (Dean, 1999). Sex appeal is a long and widely used extrinsic cue employed by advertisers to grab consumers' attention and arouse emotions, in turn, influencing behavioral reactions (Hyllegard et al., 2009; Reid & Soley, 1983). Gratuitous sexual stimuli are used across the media vehicles by marketers based on the notion that “sex sells” (Richmond & Hartman, 1982; Wyllie et al., 2014). In an effort to trigger primal biological instincts of consumers, thereby promoting attention to and interest in the advertisement (Dahl et al., 2009), marketers have increasingly resorted to using completely nude or partially clad models in advertising (Beetles &

Harris, 2016; Sugiarto & de Barnier, 2019). In line with Reichert et al. (2011), seminude models are identified as the ones that are partially clad (e.g., a female model in bra and underwear, while a male model in underwear or shorts). It has been believed that nudity in advertising automatically evokes positive feelings among consumers as the responses are largely "... spontaneous, noncontrolled and different from more carefully considered responses" (Dahl et al., 2009). In the past, although some studies found negative or nonsignificant effects, the majority of studies found significant positive effects of using nude or partially clad human stimuli on overall consumer reactions (Amyx & Amyx, 2011; Dahl et al., 2009; Huang, 2004; LaTour & Henthorne, 1993; Putrevu, 2008; Reichert, LaTour, & Kim, 2007; Sherman & Quester, 2005; P. M. Simpson et al., 1996; Wyllie et al., 2014). This leads us to posit that:

**H1:** *Usage of seminude stimuli in print advertisements exerts a positive effect on consumers' attitude and intention formation.*

An in-depth literature review (Table 1) suggests that the mixed and contradictory findings of the previous studies are often due to differences in the target audience (Van Hellefont & Van den Bulck, 2012; Wise et al., 1974), the context in which sex appeal is used (Boddewyn, 1991; Garcia & Yang, 2006; Vohs et al., 2014), the intensity of sexual stimuli (Reichert et al., 2011; P. M. Simpson et al., 1996), consumer involvement (LaTour et al., 1990; Putrevu, 2008), and product category settings (Chang & Tseng, 2013; J. H. Ferguson et al., 1990; Nelson & Paek, 2015). During the early and mid-1970s, the research focused exclusively on female nudity in advertising and found that the use of female models had negative effects on consumers' attention, attitude toward ad and brand, and purchase intention. However, later studies focused on both female and male nudity in advertising and often found positive consumer reactions. For example, Lass and Hart (2004) observed that using female seminude models in alcohol advertising across the United Kingdom, Germany, and Italy results in positive reactions from both male and female respondents.

To further understand the effectiveness of sexual appeal in advertising, we refer to the broader literature focusing on gender differences and sexual psychology. These works permit us to identify important opposite-gender and same-gender reactions to nudity in advertising.

## 2.2 | Gender-specific responses to opposite-gender nudity displayed in advertising

Objectification (Calogero et al., 2011; Money & Ehrhardt, 1972) is presented in socio-psychological literature as a process whereby individuals are treated as an object containing sexual attributes, and approached on the basis of their utility as sex object independent of other qualities (Fredrickson & Roberts, 1997). Contrary to a common preconception, objectification is not restricted to female stimuli, but rather is a process whereby a person, who may be male or female, adopts a purely externalized view of either the self or another (Calogero et al., 2011, p. 35; Gültzow et al., 2020). Studies have shown that the process of objectification can also be observed when analyzing male erotic stimuli

(Hallsworth et al., 2005; Rohlinger, 2002), and when analyzing other social targets (Gruenfeld et al., 2008). Newer studies have shown that some females objectify males in certain situations (Evans, 2017; Neville, 2015). Despite those more recent findings, it has generally been observed that males are more likely to engage in the process of objectification and are therefore more attracted to opposite-gender visuals, whereas females tend to assess a person's attractiveness by reference to personality traits instead of purely on the basis of visual appeal (Kozak et al., 2009). Other studies have also noted that males are more likely than females to adopt an instrumental, purely pleasure-seeking attitude toward sexual relations (Baumeister et al., 2001; Greer & Buss, 1994). In line with this, advertising studies have found that male consumers are more likely to see opposite-gender people as desirable objects, resulting in pleasant feelings and consequent actions (Reichert & Walker, 2006), with stronger opposite-gender reactions (Gray et al., 2011).

Barring a few of the studies conducted during the 1970s and early '80s, which showed negative or no significant effects of female nudity in advertising on male consumer reactions (e.g., Alexander & Judd, 1978; Reidenbach & McCleary, 1983; Steadman, 1969), most studies have found that female nudity positively influences male consumers' attitudes and intention formation. Studies starting from Peterson and Kerin (1977) have shown that male consumers form favorable attitudes toward advertisements, products, and manufacturers using female nudity. Male consumers not only exhibit increased arousal, but also positive feelings and attitudes toward nude stimuli (LaTour, 1990). Patzer (1980) studied body soap as a product category and found that male consumers exhibit more positive cognitive, conative, and affective responses to a sexually appealing female model. LaTour (1990) and LaTour and Henthorne (1993) conducted experiments using female nudity in perfume advertising and found that male respondents display a higher level of arousal, and a more positive attitude toward the brand as a consequence of the use of seminude female models. Reichert, LaTour, and Kim (2007) studied opposite-gender reactions to nudity in advertising and found that males respond positively to the use of female nudity in advertising. Effects of this kind have been observed across product categories. For example, Jones et al. (1998), using bicycles as a neutral-product category, found male consumers to have significantly more favorable reactions to an ad using female nudity. Sabrina et al. (2018) also recently reported that using suggestive female models in print advertising results in more favorable male consumer responses. The overwhelmingly positive responses of male consumers to female nudity in advertising leads us to posit that:

**H2:** *Usage of seminude female stimuli in print advertisements exerts a positive effect on male consumers' attitude and intention formation.*

Past studies have shown that compared with male respondents, less positive opposite-gender reactions to displayed sexual stimuli are observed among female respondents (Gray et al., 2011). Psychological and advertising literature report that female consumers react less positively to nudity in advertising than male consumers (Gould, 1994; LaTour, 1990; Manceau & Tissier-Desbordes, 2015). This difference in response is illustrated by the fact that the

TABLE 1 Nudity, gender effects, and key results of major studies

No. Study	Stimuli	Sample	Context	Independent variables	Dependent variables	Results
1	Steadman (1969) Six photographs of female nude models	60 male students	Effect of female sexual stimuli on brand recall	Attitude toward stimuli	Brand recall	Fewer brand names accompanying sexual illustrations were correctly recalled. No testing for gender effects
2	Alexander and Judd (1978) Ads with three levels of female nudity	141 male students	Effect of female nudity	Attitude toward ad	Brand recall	Significantly more brand names were recalled for ads containing nonsexual stimuli than for those with a female nude model. No testing for gender effects
3	Judd and Alexander (1983) 18 fictitious as with three female nudity levels	48 male and 48 female students	Sexually suggestive ads	Exposure to advertisements	Attitude toward sex and nudity in advertising, brand recall	Ad copy with sexual appeal results into a decline in brand recall, although males were more positive than females
4	Reidenbach and McCleary (1983) 12 fictitious advertisement with male nudity	160 male and 160 female students	Male nudity	Product type and level of nudity	Ad liking, believability, and willingness to buy	No significant effect of nude stimuli on male and female reactions
5	LaTour (1990) Three fictitious advertisements	202 business students	Female nudity in print advertisements	Demure, seminude, and nude female model	Gender activation and deactivation	Male had positive feelings associated with nude model whereas results for women respondents were negative
6	Severn et al. (1990) One real ad with a male and female nude model in a single frame	180 students	Sexual and nonsexual appeal	Ad exposure	Cognitive processing and communication effectiveness	The use of sexual appeal interfere with message comprehension and communication effectiveness for both male and female
7	Ford et al. (1991) Survey	296 female respondents	Women's evaluation of female role portrayals in advertising	Ad exposure	Attitude toward role portrayal, effect on company image, purchase intention	Women respondents were critical and negative toward women role portrayal as compared with their male counterpart
8	LaTour and Henthorne (1993) Four fictitious ads with female nudity	202 business students	Female nudity and advertising strategy	Ad exposure	Attitude toward ad, brand, and tension	Females had a more favorable attitude toward ad and brand for the seminude treatment. Male had higher favorable attitudes for all the sexual appeals
9	LaTour and Henthorne (1994) Two black and white real advertisements	199 respondents	Ethical judgment of sexual appeals	Advertisement exposure	Attitude toward ad, brand, and purchase intention	Regardless of respondent gender, the use of a strong overt sexual appeal negatively affects consumer reaction
10	P. M. Simpson et al. (1996) 16 fictitious advertisements	169 male and 172 female students	Male nudity	Respondent gender, product type, and advertisement type	Consumer mood, attitude toward ad, brand, and purchase intention	Female attitude toward ad enhances by increasing levels of nudity but decline with suggestion of full nudity

TABLE 1 (Continued)

No.	Study	Stimuli	Sample	Context	Independent variables	Dependent variables	Results
11	Mittal and Lassar (2000)	Four fictitious perfume advertisements	108 students	Sexual liberalism and ethics toward nudity in ad	Low- and high-sex ad	Ethical unjustness, attitude toward ad, brand, and purchase intention	While the ad with high sexual content was uniformly judged to be ethically more unjust, the adverse effect on attitude toward the ad and brand was not significant. Gender did not influence any ad evaluations
12	Reichert et al. (2001)	Two fictitious ads	106 undergrad students	Effects of sexual appeal on social marketing topics	Ad exposure (sexual vs. nonsexual appeal)	Thoughts and cognitions, persuasions and communications	Sexual appeals were more persuasive overall than matched nonsexual appeals for social marketing topics. No testing for gender effects
13	Huang (2004)	Four fictitious print ads	90 male and 108 undergrad students	Romantic love and sexual role portrayal	Pleasure and arousal	Ad attitude	Passionate love having a pattern of impact on ad attitudes, rather than to companionate love. No testing for gender effects
14	Pope et al. (2004)	Eight photographs	391 adult subjects	Provocative advertising	Stimulus type and product category	Attitude to ad	Women are more responsive to mild erotica in cause appeals than are men
15	Dens et al. (2008)	Four fictitious ad	215 men and women	Effects of scantily dressed models in advertising on body esteem	Scantily dressed model in ad	Body esteem	Scantily dressed models had a negative effect on individuals' body esteem compared with dressed models, especially among male consumers
16	Putrevu (2008)	Nine fictitious ad	103 students	Consumer response toward sexual and nonsexual appeals	Involvement, need for cognition, and gender	Recall, attitude, and purchase intention	Women respond favorably to sexual appeals when there is a strong fit between the ad and brand, but not when the fit is weak. In contrast, men respond favorably to sexual appeals irrespective of the level of fit
17	Sengupta and Dahl (2008)	Eight fictitious ad	70 undergrad students	Consumers' spontaneous reactions to sexual appeals	Gender, ad type, liberal attitude to sex	Sex role rating, attitude to ad, picture liking	Men on average will exhibit a more positive attitudinal response to gratuitous sex appeals than women
18	Zimmerman and Dahlberg (2008)	One real ad with woman primarily as a sex object	94 female students	Attitudes of women to sexually objectified advertising	Ad exposure	Ad acceptance, attitude toward brand, and purchase intention	Respondents agreed the displayed advertisement was highly sexualized, yet they did not think it was offensive or unethical
19	Hyllegard et al. (2009)	Four fictitious ad	425 consumers	Gen Y consumers' responses to fair labor and sex appeal	Fair trade and sexual appeal	Attitude toward ad, subjective norm	Participants' attitudes were more positive when they were exposed to the fair labor message, than when they were exposed to the fair labor message in conjunction with one of the three sex appeal messages
20	Liu et al. (2009)	Four fictitious ad	481 consumers	Consumers' responses to sex appeal advertising in different cultures	Country, gender, sex appeal	Attitude toward ad, brand, and purchase intention	Female consumers have significantly less favorable attitudes toward sex appeal in advertising as compared with male consumers across three countries

(Continues)



TABLE 1 (Continued)

No.	Study	Stimuli	Sample	Context	Independent variables	Dependent variables	Results
21	Black et al. (2010)	Eight fictitious ad	156 students	Role of personality in how people respond to sexual appeals	Gender, level of sex appeal, personality type	Attitude toward ad and brand	Attitude toward ad and brand for male participants are higher than those for female participants
22	Dianoux and Linhart (2010)	Six fictitious ad	514 students	Reasons for advertisers to use nudity in advertising	Country, gender, sex appeal	Attention, memory, attitude toward ad	Women adopt a more negative attitude toward ad when they see nudity compared with when they do not, in contrast with men
23	C. J. Ferguson et al. (2010)	12 TV commercials	212 young adults	Effects of television violence and sex on consumer reactions	Ad exposure	Memory for commercial, purchase intention	Sexual and violent content in the commercials themselves increased memory for those commercials. No testing for gender effects
24	Reichert et al. (2011)	Seven fictitious ad	1506 respondents	Affinity for graphic sexual appeals in advertising	Levels of nudity in female ads, sexual self-schema, and sensation seeking,	Emotions, attitude toward ad, brand, and purchase intention	Those who were more morally intransigent were more incensed by nudity than those who are more morally adaptable. No testing for gender effects
25	Sabri and Obermiller (2012)	Four fictitious ads	240 respondents	Consumer perception of taboo in advertising	Perception of taboos in ads	Brand attitude, social norms, and purchase intention	The use of sexual taboos in ads produces a negative brand attitude and triggers social normative pressure that reduces intention to purchase the advertised product. No testing for gender effects
26	Chang and Tseng (2013)	Six fictitious ads	252 undergrad students	Effect of product type and individual consumer differences on sex appeal	Sexual appeals, product type	Attitude toward ad and purchase intention	Explicit sexual appeal was more effective in promoting a sexually related product, while an implicit sexual appeal was more effective in promoting a non-sexually related product. No testing for gender effects
27	Wyllie et al. (2014)	Three advertisements	246 respondents	Different levels of sexual stimuli	Ad exposure (explicit and mild sexual stimuli)	Attitude toward ad, brand, and purchase intention	Female consumers exposed to a mild intensity of sexual stimuli in the advertisement had a positive influence in contrast to the female consumers exposed to an explicit intensity
28	Manceau and Tissier-Desbordes (2015)	Survey	760 respondents	Sex and death as taboo in advertising	Age, gender, social class	Consumer opposition to showing death and nudity in advertising	Women have a more negative attitude than men concerning the use of all taboos in advertising

Note: Summary of key studies focusing on nudity in advertising published in leading international journals with an impact factor of more than 2.00.

multibillion-dollar pornography industry mainly targets the male population (Rupp & Wallen, 2008). In line with this, Reichert, LaTour, Lambiase, et al. (2007) studied sexual objectification in advertising and found that female consumers are more offended by nudity in advertising than are male consumers.

As an explanation for the differences between male and female responses to the use of sexual stimuli, it has been argued that females' motivations for entering into sexual relationships are significantly influenced by ideals of intimacy and commitment as well as the pursuit of mere sexual pleasure (Conley, 2011). Evolutionary psychologists and sociobiologists have found relatively weaker opposite-gender effects for females as compared with males (Baldwin & Baldwin, 1997; Greer & Buss, 1994), and have portrayed women's interest in sex as being more occasion-based than that of men (Baumeister et al., 2001). The theory of differential plasticity propounded by Baumeister (2000) suggests that females' sex drive is more malleable than that of males due to the greater influence of cultural, social, and situational factors. Accordingly, female consumers find nudity acceptable only when it is used in a manner that is moderate and congruent with the product and ad-setting (Peterson & Kerin, 1977; Tissier-Desbordes & Manceau, 2002). For example, P. M. Simpson et al. (1996) studied ratchet wrench set and body oil categories and found that female consumers' mood and attitude toward advertisements grow more positive with the increased use of suggestive male stimuli, but decline in positivity as the use of male nudity becomes more pronounced. Whereas a mild intensity of sexual stimuli creates positive effects on attitude toward the ad and brand (Putrevu, 2008; Sengupta & Dahl, 2008), negative reactions result from blatant nudity in advertisements (Lundstrom & Sciglimpaglia, 1977; Wise et al., 1974).

Recent studies continue to confirm these historic findings across different cultural settings: Sabrina et al. (2018) found that the use of male nudity fails to generate a positive response among female consumers. Lanseng (2016) experimented using skin protection cream and found that female respondents have higher negative reactions than male respondents when opposite-gender seminude models are used in advertisements. Liu et al. (2006) studied Chinese consumers' attitude toward nudity in an ad for bakery products and found a significantly positive effect of a male seminude model with a low sexual appeal on female consumer reactions. However, the effects were found to become non-significant as the level of male sexual appeal was increased.

In total, only a few studies point to positive effects (Putrevu, 2008; Sengupta & Dahl, 2008; P. M. Simpson et al., 1996), while a large number of studies show negative female reactions to male nudity in print advertising (e.g., Lanseng, 2016; Liu et al., 2006; Lundstrom & Sciglimpaglia, 1977; Sabrina et al., 2018; Wirtz et al., 2018; Wise et al., 1974). Given that females are in general (still) not considered to be culturally adept at interpreting nude male images (Eck, 2003), and also considering that the more recent publications (Lanseng, 2016; Sabrina et al., 2018) hint at enduring negative effects of male nudity in advertisements, we hypothesize that:

**H3:** *Usage of seminude male stimuli in print advertisements exerts a negative effect on female consumers' attitude and intention formation.*

## 2.3 | Gender-specific responses to same-gender nudity displayed in advertising

In addressing consumer responses to same-gender nudity in advertisements it is necessary to make reference to factors different from those considered in relation to opposite-gender nudity, namely homophily and the countervailing factor of homophobia (Streukens & Andreassen, 2013). As outlined below, we postulate that homophobia is the stronger factor for male respondents (Morin & Garfinkle, 1978), whereas homophily is the stronger factor for female respondents (Lazarsfeld & Merton, 1954).

Controlling for sexual orientation, Chivers et al. (2007) found homophobia to be stronger in men than in women. Elliott et al. (1995), and Eck (2003) opined that males try to protect themselves against any suspicion of homosexuality and that this leads to negative reactions to same-gender stimuli. Another explanation refers to a stronger stimulus-evoked comparison of own attractiveness (Blond, 2008), leading to decreased satisfaction with males' own bodies (Baird & Grieve, 2006). Thus, Dens et al. (2008) found that scantily-dressed male models in advertising exert a negative effect on male consumers' body esteem. These arguments are mirrored by the empirical findings of a series of earlier studies. Sciglimpaglia et al. (1979) observed the negative effect of seminude male models on male consumers' reactions to advertisements. Belch et al. (1982) observed male respondents' negative reactions to nude or partially nude male models. P. M. Simpson et al. (1996) found that male consumers' purchase intent is negatively affected by the use of male nude stimuli in advertising. Thomas and Gierl (2015), furthermore, investigated the effects of different levels of eroticism in advertisements in an experimental setting. They also found negative effects of male nudity on male consumers' feelings, beliefs about the use of the model, and product evaluations. Therefore, we hypothesize that:

**H4:** *Usage of seminude male stimuli in print advertisements exerts a negative effect on male consumers' attitude and intention formation.*

Originally proposed by Lazarsfeld and Merton (1954), a homophily effect refers to a tendency for demographically similar people to associate with each other. This homophily effect is considered to be one of the most robust conceptualizations in sociopsychology (Brashears, 2008; McPherson et al., 2001). It has been observed in gender and racial studies (Shrum et al., 1988), social network formations (McPherson et al., 2001), religious and ethnic group dynamics (Marx & Spray, 1972), and other contexts studied by social psychologists (for details, refer to the meta-analysis by Brechwald & Prinstein (2011)). In the marketing literature, a strong homophily effect has been observed in studies of ethnic consumer behavior (E. M. Simpson et al., 2000), social media communication (Colleoni et al., 2014), services marketing (Line et al., 2012), and advertising effectiveness (DeShields et al., 1999).

Past studies investigating the effectiveness of female nudity have found that females evaluate same-gender images far more favorably, indicating the presence of strong homophily (Buunk &



Dijkstra, 2011; Dudley, 1999). LaTour and Henthorne (1993) found positive reactions of female respondents toward sex appeal using female models in advertisements. Reichert and Fosu (2005) also observed that female consumers with positive sexual schema show positive reactions toward female nudity in advertisements. Pope et al. (2004) studied the effects of sexual appeal on cause-related and product-based advertising and found that overall reactions of female consumers are more favorably affected by provocative than by nonprovocative stimuli. Wyllie et al. (2014) found that the use of a suggestive female model in advertising generates a positive influence on female consumers' affect and attitudes. Thomas and Gierl (2015) reported that only the use of moderate female nudity positively influences female consumers' product evaluations. On the contrary, Dianoux and Linhart (2010) conducted an experiment across three European countries and found that females adopt more negative attitudes toward ads when they see female nudity in magazine advertising. Based upon the majority of the evidence pointing to positive female reactions to female nudity in print advertising, indicating a homophily effect, we hypothesize that:

**H5:** *Usage of seminude female stimuli in print advertisements exerts a positive effect on female consumers' attitude and intention formation.*

### 3 | METHODS

The hypotheses were evaluated using secondary data provided by Ad Impact Monitor, a market research initiative by major German print media companies. Between 2013 and 2015, Ad Impact Monitor assigned three market research agencies to survey between 4000 and 8200 consumers online on a monthly basis. Each questionnaire presented the interviewees with six real print ads from a pool of up to 120 ads placed in magazines during the previous months. Rotation of advertisements across respondents prevented primacy and recency effects. Every respondent provided his or her evaluations of the six ads presented and his or her resulting actions. The respondents were chosen on a per stratum basis of gender, age, degree, and residence to ensure an adequate population representation. We used print advertisements in magazines as nudity appears most frequently in this medium. This trend was confirmed by Reichert et al. (1999) and a large number of previous studies that also used magazine ads in various experimental settings to measure the effects of nude stimuli on consumer reactions (Baker & Churchill, 1977; Stafford, 1998; Wyllie et al., 2014). For this study, advertisements from 16 major product categories were selected as the empirical base. The advertisements evaluated cover a wide range of products and services, although our analysis includes only advertisements that may facilitate a purchase, with nonprofit associations excluded from the sample. In total, we analyzed 61,399 consumer evaluations for 147 real advertisements. Out of these, 21 advertisements used seminude human stimulus (14 advertisements with a seminude female model, and 7 advertisements with a seminude male model), 81 advertisements had a fully clothed human stimulus (64 advertisements with a fully clothed female model, and 17 advertisements with a fully clothed male model) and the

remaining 45 advertisements had no human stimulus (control group). In line with previous studies (e.g., LaTour & Henthorne, 1993; Reichert et al., 2011), we removed any ads with more than one human model (i.e., a couple, family, or group of people) so as to derive same-gender and opposite-gender results. Of the respondents, 51.2% were men and 48.8% women. The average age was 38 years, with 32.3% under age 30 and 23.7% over age 50. Approximately one-third of the respondents had a general qualification for university entrance or a university degree. The underlying sample thus represents a broad spectrum of consumers. No information about the respondents' sexual orientation was available in the data set, thus we were unable to control for it.

The hierarchy-of-effects model, originally proposed by Lavidge and Steiner (1961), was used to measure the major variables of consumers' attitude and intention formation, beginning with *knowledge*, *preference*, and *conviction* and concluding with *purchase* (Hansen, 2005). From the original conceptualization of the attention-interest-desire-action (AIDA) model in the late 1800s (Yoo et al., 2004) to the recent associated model of Preston and Thorson (1984), variants of this hierarchy-of-effects model have clarified consumer reactions and facilitated the deduction of specific recommendations for marketing action (T. E. Barry, 1987; Jain et al., 2015). Different underlying variables of consumers' attitudes and intention formation have been operationalized by various studies along with variants of hierarchy-of-effects models (refer T. F. Barry & Howard (1990) for detailed review) and there seems to be little or no consensus on the variables or on their sequence (Scholten, 1996). Broadly, an advertisement is effectively designed if it supports the marketer in achieving any single marketing objective or a set of these objectives (Trivedi & Teichert, 2020). For example, a marketer introducing a new product may aim to build knowledge about the product's unique selling propositions, whereas a marketer featuring a mature brand may strive to reinforce conviction and to directly induce purchases in a target market.

To empirically assess the effectiveness of nudity's presence in print advertisements, four specific consumer actions along the hierarchy-of-effects model are identified based on the works of Teichert et al. (2018) and Trivedi et al. (2019). As the results are derived at the level of the single persuasion variable, most of the reasoning applies independently of the specific sequence undergone by consumers. Specifically, *information search intention* serves as an indicator to measure the process of creating *knowledge* about the product among the target audience. *Positive attitude change* represents the advertising goal of increased *liking* of a brand. Creating *preference* and building *conviction* are assessed by using *integration into a relevant set* as an indicator. Finally, *purchase intention* serves as a proxy to measure the advertising goal of *purchase*.

Respondents were asked to specify which of these possible actions, if any, they would pursue after exposure to the advertising stimulus. Respondents were also asked to choose a single response in reaction to the advertisement stimuli and they did so with very few exceptions. Thus, the results were derived at the level of the single persuasion variable (information search to purchase intention) and "no relevant action taken" served as an overall reference value in the analyses. In total, 13.3% resulted in an information search intention, 8.1% led to a positive change in attitude, 13.8% led to integration into a relevant set, and 6.9% led to a purchase intention. In total,

57.9% of the advertisement viewings led to none of these four relevant actions, that is, either to no action at all or solely to a closer visual inspection of the advertisement. In the specific settings of this investigation, a closer visual inspection was treated as a nonrelevant action as it may have been a reaction to the visually attractive stimulus unrelated to the advertised products, potentially causing viewers' distraction (Parker & Furnham, 2007). There were very few cases of multiple answers (only 1.3% of the consumers reported more than one action), which we excluded from the analysis.

The questionnaire-based research method is in line with prior research regarding the usage of questionnaires as an appropriate tool to identify intentions (e.g., Geuens et al., 2011; Golden & Johnson, 1983). As the hierarchy-of-effects model is more of a conceptualization than a prescriptive model (Vakratsas & Ambler, 1999), the underlying four relevant consumer reactions are interpreted as a nominal, rather than an ordinal variable (see Teichert et al., 2018; Trivedi et al., 2019). Overall, the data collection is based on real advertisements covering a broad range of product categories from a large number of respondents with broad demographics. This ensures high external validity for the study.

## 4 | ANALYSIS AND RESULTS

### 4.1 | Nudity in print advertisements: Overall effects on consumer reactions

We applied a multinomial logit model to simultaneously investigate how the use of nudity in print advertisements affects consumer reactions. For this purpose, we used advertisements that do not contain any human stimuli as a reference basis. This is in line with previous studies that had used ads without human stimuli, such as ads with only the product images (Chang & Tseng, 2013; Gould, 1995; Severn et al., 1990) or ads with other types of images such as a scenic place or a specific destination (Alexander & Judd, 1978; Grazer & Keesling, 1995; Hyllegard et al., 2009) as reference or control condition (for details refer to meta-analysis by Wirtz et al. (2018)). The model shows a significantly improved model fit (significantly lower  $-2$  log-likelihood) than a baseline model, with Akaike's information criterion of 57.91 and Schwarz's Bayesian information criterion of 14.04 (see Table 2). The overall statistical measures, therefore, confirm the adequacy of the model.

Table 3 describes the logit parameter estimates in relation to a shared baseline of no consumer reaction. We find that advertisements that use seminude human stimuli have a significantly positive effect on consumer reactions, that is, information search intention ( $b = 0.157$ ;  $p < 0.01$ ), positive attitude change ( $b = 0.277$ ;  $p < 0.001$ ), integration into a relevant set ( $b = 0.318$ ;  $p < 0.001$ ), and purchase intention ( $b = 0.393$ ;  $p < 0.001$ ). These results lead to acceptance of H1. Overall, the use of seminude models positively influences consumer reactions, and advertisers may use them to trigger consumers' information search intention, followed by positive attitude change, integration of the brand into a relevant set, and ultimately leading to increased purchase intention.

**TABLE 2** Model fit

Model-fitting criteria	Model fit		
	AIC	BIC	-2 Log-likelihood
Only intercept	182.27	232.29	174.27
Ad nudity	124.36	218.25	100.36

Abbreviations: AIC, Akaike's information criterion; BIC, Bayesian information criterion.

### 4.2 | Effects of opposite-gender seminude stimuli on male and female consumer reactions

To understand the hypothesized effect of opposite-gender seminude stimuli on consumer decision making, we divided the sample into two groups of male and female consumers, respectively. The analysis of the opposite-gender seminude stimuli on male consumers shows significant positive effects on information search intention ( $b = 0.162$ ;  $p < 0.05$ ), positive attitude change ( $b = 0.464$ ;  $p < 0.001$ ), integration of brand into relevant set ( $b = 0.221$ ;  $p < 0.05$ ), and purchase intention ( $b = 0.3342$ ;  $p < 0.01$ ), resulting in acceptance of H2 (Table 4).

Compared with the male consumers, the analysis of the opposite-gender seminude stimuli on female consumers shows a very different picture on consumers' attitudes and intention formation

**TABLE 3** Nudity in advertising and overall consumer reactions

	B (SE)	95% CI for OR		
		Lower	OR	Upper
Information search intention versus no relevant action				
Intercept	-2.521 (0.030)***			
Fully clothed human model	0.043 (0.037)	0.971	1.044	1.122
Seminude human model	0.156 (0.051)**	1.058	1.169	1.292
Positive attitude change versus no relevant action				
Intercept	-3.598 (0.049)***			
Fully clothed human model	0.189 (0.060)**	1.208	1.074	1.358
Seminude human model	0.277 (0.082)***	1.123	1.319	1.549
Integration into a relevant set versus no relevant action				
Intercept	-2.856 (0.035)***			
Fully clothed human model	0.075 (0.043)	.991	1.078	1.172
Seminude human model	0.317 (0.057)***	1.228	1.373	1.535
Purchase intention versus no relevant action				
Intercept	-3.473 (0.046)***			
Fully clothed human model	0.186 (0.056)**	1.078	1.205	1.346
Seminude human model	0.393 (0.075)***	1.280	1.481	1.714

Note: Advertisements without human model serve as the base category; ns, nonsignificant.

Abbreviations: CI, confidence interval; OR, odds ratio.

\*\* $p < 0.01$ .

\*\*\* $p < 0.001$ .

**TABLE 4** Nudity in advertising and male consumer reactions

	B (SE)	95% CI for OR		
		Lower	OR	Upper
Information search intention versus no relevant action				
Intercept	-2.658 (0.043)***			
Fully clothed male model	0.141 (0.078)	0.987	1.151	1.342
Fully clothed female model	-0.198 (0.059)***	0.731	0.821	0.921
Seminude male model	0.228 (0.110)*	1.013	1.257	1.559
Seminude female model	0.162 (0.086)*	1.094	1.176	1.392
Positive attitude change versus no relevant action				
Intercept	-3.663 (0.070)***			
Fully clothed male model	0.198 (0.124)	0.956	1.219	1.555
Fully clothed female model	0.086 (0.090)	0.914	1.090	1.199
Seminude male model	0.234 (0.177)*	1.193	1.264	1.788
Seminude female model	0.464 (0.125)***	1.245	1.591	2.032
Integration into relevant set versus no relevant action				
Intercept	-2.951 (0.050)***			
Fully clothed male model	0.121 (0.090)	0.946	1.129	1.348
Fully clothed female model	-0.145 (0.067)*	0.759	0.865	0.985
Seminude male model	0.189 (0.128)*	1.040	1.208	1.554
Seminude female model	0.221 (0.097)*	1.032	1.247	1.507
Purchase intention versus no relevant action				
Intercept	-3.640 (0.069)***			
Fully clothed male model	0.224 (0.122)	0.986	1.251	1.588
Fully clothed female model	-0.001 (0.090)	0.837	0.999	1.192
Seminude male model	0.418 (0.163)*	1.105	1.519	2.089
Seminude female model	0.332 (0.129)**	1.282	1.394	1.795

Note: Advertisements without human model serve as the base category; ns, nonsignificant.

Abbreviations: CI, confidence interval; OR, odds ratio.

\* $p < 0.05$ .

\*\* $p < 0.01$ .

\*\*\* $p < 0.001$ .

(see Table 5). The effect of using male nudity in print advertisements is negative but nonsignificant for female consumer reactions, except integration of the brand into a relevant set where the effect is also not pronounced, resulting in rejection of H3.

### 4.3 | Effects of same-gender seminude stimuli on male and female consumer reactions

To test the hypothesized same-gender effects of nudity in print advertising on consumer decision-making, we again divided the sample into male and female consumers, respectively. For the male consumer, Table 4 shows that the effects of a seminude male model are

significantly positive for information search intention ( $b = 0.229$ ;  $p < 0.05$ ), positive attitude change ( $b = 0.235$ ;  $p < 0.05$ ), integration of the brand into a relevant set ( $b = 0.190$ ;  $p < 0.05$ ), and purchase intention ( $b = 0.419$ ;  $p < 0.01$ ), resulting in rejection of H4.

It can be observed from Table 5 that female nudity positively influences female consumers' attitude and intention formation with significant results for information search intention ( $b = 0.224$ ;  $p < 0.01$ ), positive attitude change ( $b = 0.234$ ;  $p < 0.05$ ), integration of the brand into a relevant set ( $b = 0.553$ ;  $p < 0.001$ ), and purchase intention ( $b = 0.641$ ;  $p < 0.001$ ). Overall, in line with H5, we find that using seminude stimuli with same-gender model results in positive effects with female consumers.

## 5 | DISCUSSION, PRACTICAL IMPLICATIONS, AND LIMITATIONS

For almost as long as print advertisement has existed, nude and seminude stimuli have been used, not only to catch consumers' fleeting attention, but also to trigger lasting voluntary attitudinal responses by influencing cognitive preferences (Black et al., 2010; Pollay, 1986). Marketers have long believed that the use of sexual stimuli of various kinds induces consumers to search for information about the product, promotes positive attitudes toward advertised brands, and may even accelerate purchase intentions. Although multiple studies have empirically tested the effectiveness of nudity in print advertisements, results have been mixed and often contradictory, and the consequences for the consumer reactions have been unclear. For this reason, the present study measures and compares the effectiveness of opposite-gender and same-gender seminude stimuli in advertisements on male and female consumers' reactions across four variables of consumers' attitude and intention formation as outlined by Lavidge and Steiner (1961). A large scale data set of real advertisements shows that marketers should not use sex appeal pervasively or indiscriminately in their advertisements but rather for predefined marketing objectives, comparing possible positive and negative effects against the effects that would result from the use of an appropriate fully clothed model, and taking consumer gender into consideration.

Without considering the effects of consumer and model gender, the findings indicate that using seminude stimuli in print advertisements positively influences consumers' attitude and intention formation. This appears to conform with the assertion of Dahl et al. (2009) and LaTour (1990) that seminude stimuli can trigger primal biological instincts of consumers and thus can assist in quite heterogeneous marketing objectives of influencing consumers' information search intention, increasing liking and brand, promoting the integration of an advertised brand into a relevant consideration set, and inducing consumers to make a purchase decision.

Numerous past studies in psychology, sociology, and evolutionary biology have demonstrated that differences in physiological and biological needs underlie sexual motivations and desires, and that males and females, therefore, react differently to sexual imagery (Baldwin & Baldwin, 1997; Rellini et al., 2005). While advertising

**TABLE 5** Nudity in advertising and female consumer reactions

	B (SE)	95% CI for OR		
		Lower	OR	Upper
Information search intention versus no relevant action				
Intercept	-2.385 (0.041)***			
Fully clothed male model	-0.165 (0.080)*	0.725	0.848	0.992
Fully clothed female model	0.262 (0.052)***	1.175	1.300	1.438
Seminude male model	-0.065 (0.114)	0.749	0.937	1.072
Seminude female model	0.225 (0.080)**	1.170	1.352	1.465
Positive attitude change versus no relevant action				
Intercept	-3.528 (0.070)***			
Fully clothed male model	-0.094 (0.134)	0.699	0.910	1.184
Fully clothed female model	0.359 (0.087)***	1.208	1.432	1.698
Seminude male model	-0.042 (0.195)	0.655	0.959	1.106
Seminude female model	0.235 (0.137)*	1.167	1.364	1.653
Integration into relevant set versus no relevant action				
Intercept	-2.758 (0.048)***			
Fully clothed male model	-0.185 (0.096)	0.689	0.831	1.003
Fully clothed female model	0.313 (0.061)***	1.215	1.368	1.541
Seminude male model	0.071 (0.129)	0.834	1.074	1.382
Seminude female model	0.554 (0.086)***	1.471	1.740	2.057
Purchase intention versus no relevant action				
Intercept	-3.312 (0.062)***			
Fully clothed male model	-0.213 (0.126)	0.631	0.808	1.035
Fully clothed female model	0.416 (0.078)***	1.303	1.517	1.765
Seminude male model	-0.196 (0.188)	0.569	0.822	1.188
Seminude female model	0.642 (0.108)***	1.539	1.901	2.347

Note: Advertisements without human model serve as the base category; ns, not significant.

Abbreviations: CI, confidence interval; OR, odds ratio.

\* $p < 0.05$ .

\*\* $p < 0.01$ .

\*\*\* $p < 0.001$ .

literature has generally acknowledged gender as an important variable determining consumers' reactions, our study further disentangles the effects of both consumer gender and model gender on consumers' attitude and intention formation, highlighting results for both seminude and fully clothed models.

We concur with previous studies that male consumers demonstrate a positive reaction to opposite-gender nudity in print advertisements, with significant results across all four variables. Our results here are broadly in concurrence with those of previous studies which highlighted the positive influence of female nudity on male consumer reactions (e.g., Jones et al., 1998; Patzer, 1980; Reichert, LaTour, & Kim, 2007), and they indicate that marketers should use appropriate seminude female stimuli to influence male consumers' reactions, taking account of overall ad copy criteria. However, marketers should be considerate when using opposite-

gender seminude stimuli in print advertisements when targeting female consumers. Although feminism led to a strengthened embracement of females' own sexuality (Travis & White, 2000), the results of the present study clearly slide with majority of the previous studies that the use of seminude male stimuli still does not positively influence female consumer actions (Lanseng, 2016; Sabrina et al., 2018; P. M. Simpson et al., 1996) and do not concur with results of Putrevu (2008). Conceptually, this finding is in line with the well-established theory of differential plasticity (Baumeister, 2000) as well as findings of evolutionary psychologists and sociobiologists such as Baldwin and Baldwin (1997) and Greer and Buss (1994) highlighting the relative weakness of females' opposite-gender reactions as compared with those of males.

Surprisingly, we found significantly positive effects of seminude male stimuli on male consumers. Increased response ratios are not only

observed for information search intention, positive attitude change, and integration of brand into evoked set, but there is also a positive influence on purchase decisions. The effects of same-gender nudity on male consumer reactions thus reveal a strong homophily rather than a homophobia effect, providing strong evidence against findings of previous studies (Baron, 1982; Sciglimpaglia et al., 1979; Thomas & Gierl, 2015). Similarly, female consumers show a very strong homophily effect, in line with Lazarsfeld and Merton (1954), by positively reacting to female seminude models across the five variables. Thus, our same-gender results for female consumers concur with Reichert and Fosu (2005) as well as Wyllie et al. (2014) but contradict the findings of Dianoux and Linhart (2010). From a practical perspective, advertisers may prefer seminude female stimuli over male stimuli while targeting female consumers, given suitable ad settings.

This study has several limitations, being limited to print advertisements evaluated by German consumers. Different effects could emerge in different cultural and media settings: Future research could, for example, investigate the effects of nude or seminude stimuli in digital media settings. We purposefully did not discriminate between brands or product categories and their possible effects on nudity in print advertisements. In this regard, future studies could investigate moderating effects of either brands or product categories, especially the effect of consumers' product category involvement on their attitude and intention formation.

"Sex in advertising" constitutes a cluster of concepts: sex, sexual appeal, nudity, sexual suggestiveness, eroticism, and others. This article focuses on nudity which does not necessarily equate to erotic. Nude and seminude stimuli containing depictions of couples were omitted from the analysis. The study also did not differentiate nudity across different levels or types of nudity. An in-depth inspection of real advertisements revealed only a few instances of completely nude models of either gender. With a larger data set of real advertisements, future studies could explore the model's attractiveness, the sexual orientation of the respondents, ethnicity, and brand familiarity as moderating variables affecting consumer reactions. We have provided the results separately for male and female respondents to disentangle the effects of opposite-gender and same-gender nudity on female and male consumers' reactions. Future studies that do not intend to look at cross-gender effects but either customer or model gender combined with study-specific moderators could use interaction effects estimation suitable to specific research settings.

Finally, we have to acknowledge that the paper assumes a very narrow perspective of advertising efficiency. Social or cultural concerns or what Pollay (1986) classifies as the "unintended social consequences of advertising" are beyond the scope of our analysis. Practitioners and future researchers, however, need to overcome "moral myopia" (Drumwright, 1994) and recognize the unintended social consequences caused by advertising. Future research should therefore aim to align nudity in advertising with the design of responsible advertising messages.

#### CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

#### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from Ad Impact Monitor, Germany. Restrictions apply to the availability of these data, which were used under license for this study. Data are available with the permission of Ad Impact Monitor, Germany.

#### ETHICS STATEMENT

All procedures performed in studies involving human participants were in accordance with the ethical standards of the University of Hamburg and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

#### ORCID

Rohit H. Trivedi  <https://orcid.org/0000-0001-9013-1458>

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**How to cite this article:** Trivedi, R. H., & Teichert, T. (2021). Consumer reactions to nudity in print advertising: Comparing same-gender and opposite-gender effects. *Psychol Mark*, 38, 819–833. <https://doi.org/10.1002/mar.21471>