



The Effect of Social Exclusion on Tactile Product's Response in Online Shopping

Eun-Young PARK¹

Received: August 07, 2024. Revised: September 02, 2024. Accepted: September 10, 2024.

Abstract

Purpose: This study aims to explore the relationship between exclusion experiences and tactile sensations in online contexts, moving beyond existing frameworks of social exclusion research. Social exclusion induces psychological and physiological pain similar to physical pain, which can lead to various behavioral responses aimed at overcoming these distressing experiences. This study focuses on the potential of touch to mitigate psychological and physiological pain. Individuals who experience social exclusion feel emotional distress, leading to an increased desire for physical contact, which is expected to influence their responses to positive tactile products. **Data and methodology:** To validate this, the study examines how individuals who have experienced social exclusion respond to tactile products, such as sweaters, in online environments. **Results:** The results indicate that participants in the exclusion condition had a higher purchase intention for tactile products compared to those in the control condition, confirming the psychological mechanism of the desire to touch these products. **Conclusions:** This research is the first to analyze the relationship between social exclusion and tactile products, contributing to the expansion of the field of social exclusion studies. Additionally, it provides practical implications for marketers regarding the exposure of products targeting individuals experiencing social isolation and emotional loneliness.

Keywords : Social Exclusion, Tactile Product, Desire to Touch, Psychological Pain, Purchase Intention

JEL Classification Code: M31, M37, M39

1. Introduction

Social exclusion is a phenomenon frequently encountered in various social contexts, such as workplaces, schools, and social gatherings with friends. This exclusion occurs in both large and small ways and can be considered a common aspect of daily life. Recently, social exclusion has become more prevalent due to intensified social competition arising from factors such as population aging, the increase in single-person households, and job reductions related to the Fourth Industrial Revolution. Furthermore, although social media platforms like Facebook and Twitter were anticipated to mitigate feelings of isolation, research indicates that frequent users of social media may experience

greater social isolation compared to those who use it less (Primack et al., 2017).

What impacts does this experience of exclusion have on individuals? Exclusion has been shown to evoke negative emotions and threaten four fundamental human needs: belonging, self-esteem, control, and meaningful existence (Williams et al., 2000). Physiologically, it can lead to a decrease in body temperature (IJzerman et al., 2012) and cause pain similar to physical suffering (Eisenberger & Lieberman, 2004; Eisenberger, Lieberman, & Williams, 2003). Such painful experiences can trigger a variety of behavioral responses, including imitation of others' behaviors (Lakin et al., 2008) and increased likelihood of prosocial actions such as charitable giving (Lee & Shrum,

¹ First and Corresponding Author. Assistant Professor, Department of General Education, Kookmin University, Korea.
 Email :eypark317@kookmin.ac.kr

© Copyright: The Author(s)
 This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted noncommercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

2012). Conversely, it may also lead to aggressive reactions (Twenge et al., 2001; Warburton et al., 2006), a decrease in prosocial behavior (Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007), or ostentatious consumption (Lee & Shrum, 2012). These studies offer both theoretical and practical insights into how social exclusion influences consumer behavior.

This study aims to explore the relationship between social exclusion and touch in the context of general online consumer behavior, deviating from traditional research frameworks on social exclusion. Prior research on touch and consumer responses indicates that touch conditions positively influence product evaluations, purchase intentions, and persuasiveness compared to no-touch conditions (Grohmann et al., 2007; McCabe & Nowlis, 2003; Peck & Shu, 2009). Among the various types of information used to assess products, temperature, hardness, texture, and weight are tactile information that can only be obtained through direct physical contact with the product (Lederman & Klatzky, 1987).

The sensory experiences of consumers are more limited in online shopping compared to offline markets. While visual and auditory stimuli can be effectively provided in online shopping environments, tactile stimuli are difficult for consumers to directly perceive (Parsons & Conroy, 2006). As a result, consumers who are interested in tactile products, which rely on tactile information to evaluate product quality, may avoid online shopping.

However, this study investigates whether social exclusion can lead to more positive responses towards tactile products even in online settings. The experience of social exclusion inflicts psychological and physiological pain similar to physical suffering (Eisenberger & Lieberman, 2004; Eisenberger et al., 2003). To alleviate this painful experience, individuals may engage in various behavioral responses, including the use of touch to overcome psychological and physiological discomfort. Touch and tactile stimulation are known to reduce pain and shorten its duration (Koo, 1998). Touch is a fundamental need for social interaction and emotional development from birth. Harlow (1958) conducted extensive research with infant rhesus monkeys and artificial mothers made from various materials. The study found that infant monkeys preferred a soft, cloth-covered surrogate mother that provided physical comfort and warmth over a wire mother that only provided milk (Harlow, 1958; Harlow & Zimmermann, 1958). This preference highlights the innate need for warmth and physical contact. Additionally, Harlow (1958) explored social isolation in monkeys, which induced depressive symptoms. The depression was alleviated through social contact and affection from other monkeys, demonstrating that social contact and affection help overcome psychological and physiological pain.

Individuals who experience social exclusion often endure emotional and psychological pain. To mitigate this discomfort, there emerges a desire for warmth and physical contact, which can positively influence attitudes towards objects that provide pleasant tactile sensations. This study aims to investigate how individuals who have experienced social exclusion respond to tactile products such as sweaters, plush toys, and scarves, which offer expectations of warmth and softness, in an online shopping context. This research is pioneering in examining the relationship between social exclusion and tactile products, an area that has not been extensively explored. By elucidating the impact of exclusion experiences within the context of consumer behavior, this study contributes to expanding the research domain of social exclusion and enhances academic understanding. Additionally, it highlights an important boundary condition: that tactile products, which rely on direct physical contact, may evoke positive responses in online shopping settings. Furthermore, this study offers practical implications by suggesting that the type of products exposed to individuals experiencing social isolation and emotional loneliness during online activities could be crucial.

2. Literature Review

2.1. Social Exclusion

Humans develop and grow through social relationships. Baumeister and Leary (1995) posited that the need for belonging is a fundamental human need that influences an individual's self-esteem and overall life satisfaction. Consequently, when individuals are excluded from social inclusion, they experience various changes. Social exclusion refers to the overall situation in which an individual is rejected or marginalized by others within their social relationships (Blackhart et al., 2009), or the deliberate exclusion or neglect by social groups to which the individual belongs (Williams, 2007). Historically, social exclusion was primarily addressed within socio-economic contexts such as poverty, gender, age, and disability. However, more recent understandings of social exclusion have become more comprehensive and multidimensional, extending into fields like psychology and marketing (Oh & Hwang, 2014). Thus, existing research often defines social exclusion through everyday experiences of conversational disconnection, feelings of marginalization, and exclusion (Duclos et al., 2013). For example, modern individuals experience social exclusion even in aspects like social media use, where those with higher engagement in social media report 2-3 times greater feelings of social isolation compared to those who engage less (Primack et al., 2017). Researchers have explained that the inability to participate in visible events,

such as parties or gatherings, as seen through social media, leads individuals to experience social exclusion. In contemporary Korean society, rapid aging, the increase in single-person households, and the rise of individualism suggest that various age groups are likely to experience a lack of social connection.

Social exclusion is thus commonly experienced not only in real-life contexts like home, school, and work, but also in virtual environments such as online chats and games. The impact of social exclusion is profound. For instance, experiencing social exclusion threatens fundamental needs such as belonging, self-esteem, meaningful existence, and control (Williams et al., 2000), and induces negative emotions (Williams, 2007). In addition to these psychological responses, social exclusion is associated with elevated cortisol levels and increased blood pressure (Stroud et al., 2000), activation of brain areas related to physical pain (Eisenberger et al., 2003), and physiological effects such as reduced fingertip temperature (IJzerman et al., 2012). Notably, Eisenberger et al. (2003) used functional magnetic resonance imaging (fMRI) to reveal the relationship between social exclusion and psychological pain through a Cyberball game study. Their findings showed that the same brain region (dorsal anterior cingulate cortex) activated during physical pain was also activated during the Cyberball exclusion experience.

Due to the psychological and physiological pain caused by social exclusion, excluded individuals exhibit various behavioral responses to alleviate or escape from this pain. Previous research on social exclusion indicates two primary behavioral responses. Some studies have found that social exclusion increases aggressive and antisocial behavior (Chow et al., 2008; Lee & Shrum, 2012; Twenge et al., 2001; Twenge & Campbell, 2003). Conversely, other studies have found that social exclusion leads to more prosocial and friendly behavior (Maner et al., 2007; Lakin et al., 2008; Loveland et al., 2010).

While research has accumulated on the dichotomous outcomes of social exclusion leading to either prosocial or antisocial behavior, there is relatively less exploration of the relationship between social exclusion and tactile sensations or tactile products. This study aims to investigate consumer responses related to touch as a behavioral response to alleviate emotional and psychological pain caused by social exclusion.

2.2. The Impact of Touch on Social Perception and Behavior

Touch, as a sensory modality, involves sensations aroused through the stimulation of receptors in the skin (Stevens & Green, 1996). The perception of haptics includes aspects such as texture, hardness, weight, and temperature

(Klatzky et al., 1987). The significance of tactile input is clearly demonstrated in research involving children. Touch is the first sense to develop in infants (e.g., Atkinson & Braddick, 1982), and the hands are used from the moment of birth to gather information (e.g., Piaget, 1952). Infants and young children distinctly use touch to explore and evaluate their surroundings (e.g., Bushnell & Boudreau, 1991; Piaget, 1952). Because touch is so crucial during early childhood, it may be the most relevant sense for later theoretical learning (Ackerman et al., 2010).

The continued interest in tactile sensory experiences into adulthood is evident in the ways consumers engage with products. This interest is reflected in the empirical perspective that encourages consumers to explore multi-sensory psychophysical relationships (Holbrook & Hirschman, 1982). Evidence of this empirical perspective is particularly prominent in everyday consumer experiences such as clothing shopping. Consumers utilize both visual and tactile senses to assess the suitability of garments. Notably, tactile evaluation can sometimes serve as a peripheral cue in the decision-making process (Peck & Wiggins Johnson, 2011), suggesting that tactile surfaces can influence us at a subconscious level. Therefore, in clothing shopping, regardless of whether tactile input acts as a peripheral cue, when consumers are dissatisfied with the tactile feel of a material, they typically continue shopping elsewhere (Gladwell, 1996). Such everyday consumer activities underscore the critical role that touch plays in understanding consumer behavior.

2.3. The Role of Touch in Interpersonal Dynamics

Research related to touch can be broadly categorized into three types: interpersonal touch (person-to-person), products touching products, and person touching products. Notably, interpersonal touch, often referred to as the "Midas Touch" (Crusco & Wetzel, 1984), has been shown to yield positive effects through touch alone. Fisher et al. (1976) tested the emotional and evaluative outcomes when library staff lightly touched students' arms while checking out books. Subsequently, students were asked to complete a questionnaire measuring their perceptions of the staff and the library facilities. The results indicated that students who were touched rated the staff significantly more favorably than those who were not touched.

Brockner et al. (1982) also elucidated how interpersonal touch can lead to increased compliance. In their study, they asked public telephone users for the return of a 10-cent coin that had been left behind. When a light touch was applied to the arm during the request, the compliance rate increased from 63% in the non-touch condition to 96% in the touch condition. This influence was further corroborated by Steward and Lupfer (1987), who had

college students evaluate an instructor after being touched (or not touched) by them. Instructors who had touched the student were more likely to be rated as patient and understanding. Another example of consumer compliance was identified in the research by Eaton et al. (1986). They instructed staff working in a home for the elderly to combine verbal encouragement with interpersonal touch during mealtimes. As a result, the elderly individuals consumed more food, leading to an increase in caloric and protein intake. This effect persisted for several days after the tactile interaction, clearly demonstrating the significant influence of interpersonal touch.

The impact of interpersonal touch on compliance is also evident in consumer-related settings. For instance, Crusco and Wetzel (1984) investigated the effects of various types of touch in a restaurant context. Waitresses were instructed to either touch the customer's hand, shoulder, or refrain from touching at all while returning change after the bill was settled. The results indicated that customers who were touched left larger tips than those who were not. Hornik's research also highlights the increase in consumer compliance through interpersonal touch, finding that it heightened shoppers' willingness to participate in interviews (Hornik & Ellis, 1988). Consumers were more likely to comply with requests to taste new foods in supermarkets when they received touch from the requester (Hornik, 1992). Levav and Argo (2010) suggested that the effectiveness of female touch may stem from its ability to evoke feelings similar to the comfort provided by maternal touch during infancy. If Levav and Argo's assertion regarding the connection between touch and feelings of safety is valid, it can explain why individuals who receive touch are more likely to comply with requests. The touched individual may interpret the action as a sign of trust, implying that the toucher likes them.

2.4. Social Exclusion and Tactile Products

The experience of social exclusion is inherently negative, and the subsequent behavioral tendencies can be highly variable. As previously mentioned, individuals may either strive for social reconnection (Maner et al., 2007; Williams et al., 2000) or react with overt antisocial behavior and aggression (Baumeister et al., 2007; Twenge et al., 2007). Another behavioral tendency is that the excluded individuals may choose to withdraw (Wesselmann et al., 2015). While withdrawing from social interactions when social connection is threatened may seem counterproductive, isolated individuals may choose to distance themselves from others as a means to protect themselves from additional pain. Consistent with this hypothesis, researchers have found that excluded individuals, particularly those with high levels of introversion, tend to prefer isolation and are more likely to

engage in a new game alone rather than with a partner (Ren et al., 2016).

Individuals who seek solitude may look for effective ways to address the emotionally negative experience of social isolation without interacting with others. Those who experience negative emotions from social exclusion may yearn to fulfill unmet feelings of 'safety, comfort, and warmth' through alternative means (Kasser et al., 2007). The experience of social exclusion has been shown to cause distress, which can be alleviated through touch. Specifically, people who have experienced social exclusion may develop a preference for products with warm tactile sensations over those with cold tactile sensations (Sheldon & Kasser, 2008). Other research has also demonstrated that touch therapy can alleviate pain, stress, and anxiety (Field, 1995).

Ultimately, individuals experiencing psychological and emotional pain from social exclusion will seek psychological stability and are likely to prefer products that offer tactile comfort. This study aims to investigate whether social exclusion affects response toward tactile products and to explore why such effects occur. The specific hypotheses related to this investigation are as follows.

- H1:** Individuals who experience social exclusion will have a higher intention to purchase tactile products compared to those in a control condition.
- H2:** The effect of social exclusion on the intention to purchase tactile products will be mediated by the desire to touch.

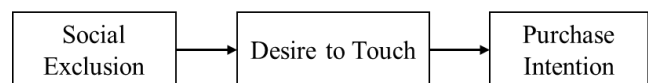


Figure 1: Research Model

3. Methodology

3.1. Experimental Design

This study aimed to investigate the impact of social exclusion on the purchase intention of tactile products through an online survey using a 2 (social exclusion: exclusion vs. control) between-subjects design. The study specifically manipulated social exclusion to assess the differences in purchase intention for tactile products between the social exclusion and control conditions.

3.2. Participants and Procedure

The study involved 100 students from a university in Seoul (58 males, 58%; 42 females, 42%; Mean age = 22.01 years, SD = 1.17). Participants were randomly assigned to one of two experimental conditions (exclusion condition, $n = 50$; control condition, $n = 50$). Participants received extra credit as compensation for their participation. To manipulate the social exclusion conditions (control/exclusion), participants completed an essay task where they recalled and wrote about a past experience for 5 minutes. Two situational examples were provided to aid understanding of the conditions. Participants in the social exclusion condition wrote about experiences of being socially ignored or rejected, describing the situation and their emotions at the time (Bargh & Shalev, 2012; Duclos et al., 2013; Mead et al., 2011; Su et al., 2017; Zhong & Leonardelli, 2008). Participants in the control condition wrote about everyday shopping experiences, detailing the situation and their emotions. After completing the writing task, participants rated the extent to which they felt rejected or ignored in the condition on a 7-point scale for manipulation checks (Lee & Shrum, 2012). Following this, participants completed a seemingly unrelated shopping-related survey. They were instructed to assume they were shopping for a sweater and were shown an image of a sweater typically found in a store. They then evaluated the sweater. All participants answered questions measuring their attitudes towards the given product, purchase intention, desire to touch, perceived warmth, and demographic characteristics.

3.3. Stimulus Selection

This study aims to examine the effect of social exclusion on the purchase intention of tactile products. As explained in the literature review, clothing products were chosen as the tactile product category (Levin et al., 2003; Cho & Workman, 2015; Wu et al., 2015). Fenko et al. (2010) demonstrated that texture is a crucial characteristic of clothing and home interior products, and that tactile experience helps in judging materials and colors. Therefore, for this study, a sweater made of soft wool was selected as the final research stimulus.

3.4. Measurement Variables

To check the manipulation of the independent variable, social exclusion, participants' perceived level of social exclusion was measured. The manipulation check was assessed using a 7-point Likert scale with two items ("I feel ignored," "I feel rejected"; 1 = strongly disagree, 7 = strongly agree (Su et al., 2019). These two items were combined to form a single index of social exclusion for analysis (Cronbach's $\alpha = .78$).

The dependent variables in this experiment, purchase

intention was measured using Likert scales with single items ("I am willing to purchase this product"; 1 = strongly disagree, 7 = strongly agree). Finally, the mediating variable, desire to touch, was measured using a 7-point Likert scale with a single item ("I want to touch this product"; 1 = strongly disagree, 7 = strongly agree; Hong, Li, & Sung, 2020).

3.5. Results

3.5.1. Manipulation Check

Before testing the hypotheses, an independent samples t-test was conducted to verify whether social exclusion was adequately manipulated. The analysis revealed that participants in the social exclusion condition ($M = 5.45$, $SD = 1.28$) felt more excluded than those in the control condition ($M = 4.86$, $SD = 1.41$) ($t(98) = -2.174$, $p = .032$). This result confirms that the manipulation of social exclusion was successful.

3.5.2. Hypothesis Testing

To test the hypotheses, an independent samples t-test was conducted for social exclusion (exclusion vs. control). The analysis showed a statistically significant difference between the social exclusion and control groups in terms of purchase intention for the tactile product ($t(97) = -2.87$, $p = .005$). As shown in <Table 1>, participants in the social exclusion condition ($M = 4.73$) had a higher purchase intention for the tactile product compared to those in the control condition ($M = 3.76$). This indicates that participants who experienced social exclusion preferred products that evoke warmth, aligning with previous research. This finding supports Hypothesis 1.

To investigate whether participants' purchase intention was influenced by their desire to touch the product, the effect of social exclusion on the desire to touch was examined. The independent samples t-test revealed a statistically significant difference between the social exclusion and control conditions regarding the desire to touch ($t(97) = -3.65$, $p = .000$). Specifically, participants in the exclusion condition ($M = 5.65$) had a significantly higher desire to touch the tactile product compared to those in the control condition ($M = 4.80$). This pattern is consistent with the analysis of purchase intention (Baron & Kenny, 1986).

Table 1: Comparison of Means for Purchase Intention and Desire to Touch

Dependent Variable	Condition	N	Mean (SD)	p-value
Purchase Intention	Control	50	3.76 (1.68)	.005
	Exclusion	49	4.73 (1.69)	
Desire to Touch	Control	50	4.80 (1.37)	.000

Exclusion	49	5.65 (0.90)
-----------	----	----------------

3.5.3 Mediation Effect Analysis

To test Hypothesis 2 regarding the mediation effect of the desire to touch the tactile product, PROCESS macro Model 4 was employed with 5,000 bootstrap samples and a 95% confidence interval. Social exclusion (0 = control, 1 = exclusion) was set as the independent variable, the desire to touch the tactile product (continuous variable) as the mediator, and the purchase intention for the tactile product (continuous variable) as the dependent variable.

Table 2: Comparison of Means

Path	effect	se	t	95% CI
Mediator (Desire to Touch)				
constant	4.80	.16	29.19**	[4.47, 5.13]
social exclusion	.85	.23	3.65**	[.39, 1.32]
Dependent variable (Purchase Intention)				
constant	1.41	.71	2.00*	[.01, 2.82]
social exclusion	.56	.34	1.63	[-.12, 1.24]
Desire to touch	.49	.14	3.51**	[.21, .77]
Direct effect	.56	.34	1.63	[-.12, 1.24]
Indirect effect	.42	.14		[.19, .71]

* $p > .05$, ** $p > .01$

As shown in Table 2, while the direct effect of social exclusion on purchase intention was not significant (effect = .56, $t = 1.63$, 95% Boot CI [-.12, 1.24]), the indirect effect of social exclusion on purchase intention through the desire to touch the product was significant (effect = .42, Boot SE = .14, 95% Boot CI [.19, .71]). This indicates that the desire to touch the product mediates the relationship between social exclusion and purchase intention for tactile products.

4. Conclusion

4.1. Summary of Research and Implications

This study examined the responses of individuals who have experienced social exclusion in the context of online shopping, specifically focusing on tactile products. The experimental results indicated that, as expected, participants in the exclusion condition exhibited a higher purchase intention for tactile products in online shopping situations compared to those in the control condition. This finding confirms that the desire to touch tactile products stems from

the need for psychological comfort among individuals who experience social exclusion.

From this result, several implications can be drawn. First, despite being in an online context, the findings reveal both the preference for tactile products due to social exclusion and the psychological mechanism of the desire to touch. While previous research has established that social exclusion leads to a preference for physical warmth, there have been no studies examining reactions to tactile products in online shopping situations. The results of this study align with earlier findings indicating that social exclusion leads to a preference for physically warm items, such as warm beverages (Zhong & Leonardelli, 2008) and warm showers (Bargh & Shalev, 2012). However, this study distinguishes itself by confirming that social exclusion leads individuals to seek psychological comfort through tactilely positive products, extending beyond mere physical warmth.

Secondly, this study confirmed the role of social exclusion as a factor that can elicit positive responses to tactile products even in online situations where direct touching is not possible. Previous research has indicated that positive responses to tactile products typically arise from direct experience (Grohmann et al., 2007; McCabe & Nowlis, 2003; Parsons & Conroy, 2006; Peck & Shu, 2009). However, based on the findings of this study, marketers can target online users who have experienced social exclusion with advertisements for products that evoke a tactilely positive feeling. This approach can be readily applied to tactile products such as clothing, dolls, scarves, blankets, and rugs, thereby providing significant practical implications.

4.2. Limitations and Future Research

Despite the contributions of this study, several limitations remain. First, prior research indicates a strong correlation between loneliness and social exclusion (Jones, 1990), suggesting that loneliness appears as one of the consequences of social exclusion (Baumeister & Tice, 1990; Stillman et al., 2009). Nevertheless, this study focused solely on the impact of social exclusion on tactile products. Future research should further investigate the relationship between loneliness and tactile products. Second, as this study emphasized the effects of social exclusion, it only compared the social exclusion condition with the control condition (Campbell et al., 2006; Zhong & Leonardelli, 2008). If a social acceptance condition had been included, it could have provided a more nuanced understanding of the effects of social exclusion. Future researchers are encouraged to design social exclusion conditions in various ways to address this limitation. Third, this study selected sweaters as representative experimental stimuli to investigate responses to tactile products. There is a need to diversify the stimuli to enhance the generalizability of the results. Finally, the

measurement items used in this study were somewhat concise. Utilizing a wider variety of measurement items may enhance the validity of the experimental results. It is recommended to reference prior research to incorporate a broader range of measurement items.

References

- Ackerman, J. M., Nocera, C. C., & Bargh, J. A. (2010). Incidental haptic sensations influence social judgments and decisions. *Science*, 328(5986), 1712-1715.
- Atkinson, J., & Braddick, O. (1982). *The development of visual perception in infants*. In *The development of perception* (pp. 25-45). Academic Press.
- Bargh, J. A., & Shalev, I. (2012). The role of social exclusion in self-control and impulse regulation. *Social and Personality Psychology Compass*, 6(9), 669-682.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
- Baumeister, R. F., Brewer, L. E., Tice, D. M., & Twenge, J. M. (2007). Thwarting the need to belong: Understanding the interpersonal and inner effects of social exclusion. *Social and Personality Psychology Compass*, 1(1), 506-520.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117(3), 497-529.
- Baumeister, R. F., & Tice, D. M. (1990). Point-counterpoint: The social self and the need to belong. *Psychological Inquiry*, 1(2), 127-140.
- Blackhart, G. C., Nelson, B. C., Knowles, M. L., & Baumeister, R. F. (2009). Rejection elicits emotional reactions but neither causes immediate distress nor lowers self-esteem: A meta-analytic review of 192 studies on social exclusion. *Personality and Social Psychology Review*, 13(4), 269-309.
- Brockner, J., Pressman, B., Cabitt, J., & Moran, P. (1982). Nonverbal intimacy, sex, and compliance: A field study. *Journal of Nonverbal Behavior*, 6, 253-258.
- Bushnell, E. W., & Boudreau, J. P. (2013). *The development of haptic perception during infancy*. In *The psychology of touch* (pp. 139-161). Psychology Press.
- Cho, S., & Workman, J. E. (2015). Effects of need for touch, centrality of visual product aesthetics and gender on channel preference for apparel shopping. *Journal of Global Fashion Marketing*, 6(2), 120-135.
- Chow, R. M., Tiedens, L. Z., & Govan, C. L. (2008). Excluded emotions: The role of anger in antisocial responses to ostracism. *Journal of Experimental Social Psychology*, 44(3), 896-903.
- Crusco, A. H., & Wetzel, C. G. (1984). The "Midas Touch": The effects of interpersonal touch on restaurant tipping. *Personality and Social Psychology Bulletin*, 10(4), 512-517.
- Duclos, R., Wan, E. W., & Jiang, Y. (2013). Show me the honey! Effects of social exclusion on financial risk-taking. *Journal of Consumer Research*, 40(1), 122-135.
- Eaton, M., Mitchell-Bonair, I. L., & Friedmann, E. (1986). The effect of touch on nutritional intake of chronic organic brain syndrome patients. *Journal of Gerontology*, 41(5), 611-616.
- Eisenberger, N. I., & Lieberman, M. D. (2004). Why rejection hurts: A common neural alarm system for physical and social pain. *Trends in Cognitive Sciences*, 8(7), 294-300.
- Eisenberger, N. I., Lieberman, M. D., & Williams, K. D. (2003). Does rejection hurt? An fMRI study of social exclusion. *Science*, 302(5643), 290-292.
- Fenko, A., Otten, J. J., & Schifferstein, H. N. (2010). Describing product experience in different languages: The role of sensory modalities. *Journal of Pragmatics*, 42(12), 3314-3327.
- Field, T. (1995). Massage therapy for infants and children. *Journal of Developmental & Behavioral Pediatrics*, 16(2), 105-111.
- Fisher, J. D., Rytting, M., & Heslin, R. (1976). Hands touching hands: Affective and evaluative effects of an interpersonal touch. *Sociometry*, 416-421.
- Gladwell, M. (1996). Black like them. *The New Yorker*, 72(10), 74.
- Grohmann, B., Spangenberg, E. R., & Sprott, D. E. (2007). The influence of tactile input on the evaluation of retail product offerings. *Journal of Retailing*, 83(2), 237-245.
- Harlow, H. F. (1958). The nature of love. *American psychologist*, 13(12), 673.
- Harlow, H. F., & Zimmermann, R. R. (1958). The development of affectional responses in infant monkeys. *Proceedings of the American Philosophical Society*, 102(5), 501-509.
- Holbrook, M. B., & Hirschman, E. C. (1982). The experiential aspects of consumption: Consumer fantasies, feelings, and fun. *Journal of Consumer Research*, 9(2), 132-140.
- Hong, Y. H., Li, X., & Sung, Y. (2020). The Effect of Social Exclusion on Consumer Preference for Metaphorically Warm Products. *Korean Journal of Consumer and Advertising Psychology*, 21(4), 559-581.
- Hornik, J. (1992). Tactile stimulation and consumer response. *Journal of consumer research*, 19(3), 449-458.
- Hornik, J., & Ellis, S. (1988). Strategies to secure compliance for a mall intercept interview. *Public Opinion Quarterly*, 52(4), 539-551.
- IJzerman, H., Gallucci, M., Pouw, W. T., Weißgerber, S. C., Van Doesum, N. J., & Williams, K. D. (2012). Cold-blooded loneliness: Social exclusion leads to lower skin temperatures. *Acta psychologica*, 140(3), 283-288.
- Jones, W. H. (1990). Loneliness and social exclusion. *Journal of Social and Clinical Psychology*, 9(2), 214-220.
- Kasser, T., Cohn, S., Kanner, A. D., & Ryan, R. M. (2007). Some costs of American corporate capitalism: A psychological exploration of value and goal conflicts. *Psychological Inquiry*, 18(1), 1-22.
- Klatzky, R. L., Lederman, S. J., & Reed, C. (1987). There's more to touch than meets the eye: The salience of object attributes for haptics with and without vision. *Journal of experimental psychology: general*, 116(4), 356.
- Koo B. (1998). Touch Therapy. *Korea Journal of Child Care and Education*, 15, 97-132.
- Lakin, J. L., Chartrand, T. L., & Arkin, R. M. (2008). I am too but I won't: Nonconscious mimicry as an antecedent of social exclusion. *Psychological Science*, 19(8), 816-822.
- Lederman, S. J., & Klatzky, R. L. (1987). Hand movements: A window into haptic object recognition. *Cognitive psychology*, 19(3), 342-368.
- Lee, J., & Shrum, L. J. (2012). Conspicuous consumption versus

- charitable behavior in response to social exclusion: A differential needs explanation. *Journal of Consumer Research*, 39(3), 530-544.
- Levav, J., & Argo, J. J. (2010). Physical contact and financial risk taking. *Psychological Science*, 21(6), 804-810.
- Levin, A. M., Levin, I. R., & Heath, C. E. (2003). Product category dependent consumer preferences for online and offline shopping features and their influence on multi-channel retail alliances. *J. Electron. Commer. Res.*, 4(3), 85-93.
- Loveland, K. E., Smeesters, D., & Mandel, N. (2010). Still preoccupied with 1995: The need to belong and preference for nostalgic products. *Journal of Consumer Research*, 37(3), 393-408.
- Maner, J. K., Richey, J. A., Cromer, K., Mallott, M., Lejuez, C. W., Joiner, T. E., & Schmidt, N. B. (2007). Dispositional anxiety and risk-avoidant decision-making. *Personality and Individual Differences*, 42(4), 665-675.
- McCabe, D. B., & Nowlis, S. M. (2003). The effect of examining actual products or product descriptions on consumer preference. *Journal of Consumer Psychology*, 13(4), 431-439.
- Mead, N. L., Baumeister, R. F., Stillman, T. F., Rawn, C. D., & Vohs, K. D. (2011). Social exclusion causes people to spend and consume strategically in the service of affiliation. *Journal of consumer research*, 37(5), 902-919.
- Oh, M. J. & Hwang, Y. Y. (2014). Does Social Exclusion Decrease Ethical Consumption Behavior? *Journal of Consumer Studies*, 25(4), 181-203.
- Parsons, A., & Conroy, D. (2006). Sensory stimuli and e-tailers. *Journal of Consumer Behaviour: An International Research Review*, 5(1), 69-81.
- Peck, J., & Shu, S. B. (2009). The effect of mere touch on perceived ownership. *Journal of consumer Research*, 36(3), 434-447.
- Peck, J., & Johnson, J. W. (2011). Autotelic need for touch, haptics, and persuasion: The role of involvement. *Psychology & Marketing*, 28(3), 222-239.
- Piaget, J., & Cook, M. (1952). *The origins of intelligence in children* (Vol. 8, No. 5, pp. 18-1952). New York: International Universities Press.
- Primack, B. A., Shensa, A., Sidani, J. E., Whaitte, E. O., yi Lin, L., Rosen, D., ... & Miller, E. (2017). Social media use and perceived social isolation among young adults in the US. *American journal of preventive medicine*, 53(1), 1-8.
- Ren, D., Wesselmann, E., & Williams, K. D. (2016). Evidence for another response to ostracism: Solitude seeking. *Social Psychological and Personality Science*, 7(3), 204-212.
- Sheldon, K. M., & Kasser, T. (2008). Psychological threat and extrinsic goal striving. *Motivation and Emotion*, 32, 37-45.
- Stevens, J. C., & Green, B. G. (1996). *History of research on touch. In Pain and touch* (pp. 1-23). Academic Press.
- Steward, A. L., & Lupfer, M. (1987). Touching as teaching: The effect of touch on students' perceptions and performance. *Journal of Applied Social Psychology*, 17(9), 800-809.
- Stillman, T. F., Baumeister, R. F., Lambert, N. M., Crescioni, A. W., DeWall, C. N., & Fincham, F. D. (2009). Alone and without purpose: Life loses meaning following social exclusion. *Journal of experimental social psychology*, 45(4), 686-694.
- Stroud, L. R., Tanofsky-Kraff, M., Wilfley, D. E., & Salovey, P. (2000). The Yale Interpersonal Stressor (YIPS): Affective, physiological, and behavioral responses to a novel interpersonal rejection paradigm. *Annals of Behavioral Medicine*, 22(3), 204-213.
- Su, L., Jiang, Y., Chen, Z., & DeWall, C. N. (2017). Social exclusion and consumer switching behavior: A control restoration mechanism. *Journal of Consumer Research*, 44(1), 99-117.
- Su, L., Wan, E. W., & Jiang, Y. (2019). Filling an empty self: The impact of social exclusion on consumer preference for visual density. *Journal of Consumer Research*, 46(4), 808-824.
- Twenge, J. M., Baumeister, R. F., DeWall, C. N., Ciarocco, N. J., & Bartels, J. M. (2007). Social exclusion decreases prosocial behavior. *Journal of personality and social psychology*, 92(1), 56.
- Twenge, J. M., Baumeister, R. F., Tice, D. M., & Stucke, T. S. (2001). If you can't join them, beat them: effects of social exclusion on aggressive behavior. *Journal of personality and social psychology*, 81(6), 1058.
- Twenge, J. M., & Campbell, W. K. (2003). "Isn't it fun to get the respect that we're going to deserve?" Narcissism, social rejection, and aggression. *Personality and Social Psychology Bulletin*, 29(2), 261-272.
- Warburton, W. A., Williams, K. D., & Cairns, D. R. (2006). When ostracism leads to aggression: The moderating effects of control deprivation. *Journal of Experimental Social Psychology*, 42(2), 213-220.
- Wesselmann, E. D., Ren, D., & Williams, K. D. (2015). Motivations for responses to ostracism. *Frontiers in psychology*, 6, 40.
- Williams, K. D. (2007). Ostracism. *Annu. Rev. Psychol.*, 58(1), 425-452.
- Williams, K. D., Cheung, C. K., & Choi, W. (2000). Cyberostracism: effects of being ignored over the Internet. *Journal of personality and social psychology*, 79(5), 748.
- Wu, K., Vassileva, J., Noorian, Z., & Zhao, Y. (2015). How do you feel when you see a list of prices? The interplay among price dispersion, perceived risk and initial trust in Chinese C2C market. *Journal of Retailing and Consumer Services*, 25, 36-46.
- Zhong, C. B., & Leonardelli, G. J. (2008). Cold and lonely: Does social exclusion literally feel cold? *Psychological Science*, 19(9), 838-842.