# Should you apologize or ingratiate after a service failure? An examination of relationship familiarity and gender on appreciative service recovery framing.

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**Abstract**

Service recovery strategies have become exceedingly important as a tool to retain customer confidence after service failures. We examined the effects of apology vs. ingratiation service recovery communication for male vs. female service providers and high familiarity vs. low familiarity customers through an online study utilizing experimental vignettes (N= 345). We did not find any significant difference in customer perceptions between apology vs. ingratiation conditions, but we found that customers who received an apology after a service failure were more likely to tip, tipped higher and rated greater customer satisfaction than control; whereas customers who received a gratitude recovery response only rated greater customer satisfaction than control. Additionally, our analysis posited that the type of message framing (i.e., gratitude vs. apology) had a significant effect on service perceptions for male service providers, especially for different gender interactions (i.e., male service provider and female customer).

## 1. Introduction

Based on a recent survey of 1,000 consumers, 96% of consumers would at least consider switching brands for subpar service (Hyken, 2020). Customer service is at the heart of a business, and neglect of this can cause long-lasting damage to a business's brand (Hays & Hill, 2009). Customers who are unsatisfied with service are more critical of their previous service encounters (Andreassen & Olsen, 2008) and more likely to spread negative word-of-mouth (Richins, 1983; Swanson & Hsu, 2010). However, despite a business's best efforts, it is impossible to satisfy every customer. A service failure is when a business fails to meet a customer's expectations (Michel, 2001). Businesses engage in service recovery as a response to services failures to attempt to regain consumer confidence. Excellent service recoveries have been shown to restore a business's consumer sentiment to close to or above pre-service failure levels (Andreassen, 2001; Maxham, 2001; Michel & Meuter, 2008).

Common factors that can affect service recovery include preferential treatment, compensation (e.g., gifts or discount), and dimensions of communication (e.g., timeliness, credibility, and apology) (Davidow, 2003). Previous research on service recovery procedures has focused mainly on compensation strategies (Smith et al., 1999; Mattila, 2001b; Wirtz & Mattila, 2004; Roschk & Gelbrich, 2017) and preferential treatment (Neira et al., 2010; Luo et al., 2021). Compensation and preferential treatment can often be costly and may not produce desired results if not well executed (Stakhovych & Tamaddoni, 2020). A significant component of service recovery often neglected is the communication process with customers (i.e., how should you contact customers after a service failure?); a robust service recovery communication strategy can frequently mean the difference between a lost or retained customer. There is evidence that communication after service failures (e.g., apologizing) can significantly increase customer

satisfaction (Bradley & Sparks, 2009). In addition, combining both strong communication and compensation can yield higher post-recovery satisfaction than either alone (Goodwin & Ross, 1992).

Recent research has shown that ingratiation (i.e., thanking the customer) after a service failure may be more beneficial than apologizing (You et al., 2019). Nonetheless, existing research does not consider moderating factors such as gender and customer familiarity that may impact this ingratiation advantage. Previous research suggests that customers with opposite-gender service interactions tend to have higher customer satisfaction than same-gender interactions (Lynn & McCall, 2000) and that customer familiarity can significantly impact service recovery expectations after service failure (Hess et al., 2003). The purpose of this paper is to examine the effect of gender and customer familiarity on appreciation and apologetic message framing after a service failure through an online study that examines consumer reactions to different experimental vignettes.

## 2. Review of Literature and Hypothesises

### 2.1 Message Framing

Message framing is the linguistic manner a message is communicated. For example, framing a message positively vs. negatively (e.g., gain vs. loss) has been shown to affect persuasion (Maheswaran & Levy, 1990). Previous research demonstrates that the effects of message framing can be wide-ranging. For instance, there is evidence that message framing can lead to higher goal-directed behaviour (Patrick & Hagtvedt, 2012), influence peer-to-peer fundraising (Sepehri et al., 2021), and even alter user experience with AI voice assistants (Qu et al., 2020). Message framing is an important tool within the services industry where customer

communications are abundant. There is an indication that message framing can directly affect consumer satisfaction, especially when stimuli are ambiguous (Hoch & Ha, 1986; Levin & Gaeth, 1988).

Existing research on customer satisfaction and message framing has explored the various components and contexts of effective framing. For example, a study by Seiter & Weger (2013) examining message framing and customer satisfaction found that messages framed with a customer's name relative to other forms of address (e.g., titles, sir/ma'am, or no address) tended to elicit higher tips from customers. And a more recent study by Packard et al. (2018) suggests that using personal pronouns during customer-firm interactions can increase customer satisfaction and purchase intentions. The way a message is described (e.g., concreteness vs. abstract and vividity vs. pallid) can also influence customer satisfaction and purchase intentions (Shiv et al., 2004; Yao & Shao, 2019; Packard & Berger, 2020). An optimally framed message can improve brand engagement (Labrecque et al., 2020) and customer involvement in pertinent issues such as environmental sustainability (Bertolotti & Catellani, 2014; Do et al., 2021).

Framing a message differently can directly shift the locus of attention which can affect customer perceptions. Five field studies by Mogilner & Aaker (2009) showed that framing a product's description emphasizing time led to more favourable customer attitudes than emphasizing money. Additionally, there is evidence that framing promotional messages as questions can lead to greater customer favourability under low arousal conditions (Hagtvedt, 2015).

Effective message framing can facilitate stronger service recovery communication. The most common form of service recovery communication is apologizing (Lutzky, 2021). Apologies tend to have varying levels of effect based on the manner of apology (e.g., timeliness

and empathy) and severity of service failure (Davidow, 2003). Based on existing research, apologies are more effective when the service provider is intensely empathetic and accepts fault (Roschk & Kaiser, 2012; Fehr & Gelfand, 2010; Boshoff & Leong, 1998; Pizzi & Scarpi, 2013). Also, apologizing promptly (i.e., immediately after service failure) tends to be more effective than delayed apologies (Shams et al., 2020). However, in high severity service failures, apologies tend not to work well alone but need to be accompanied by compensation to be effective (Goodwin & Ross, 1992; Shams et al., 2020)

Recent findings have indicated that gratitude may be an effective driver for positive behavioural and relational outcomes. For example, individuals receiving expressions of gratitude are more likely to vote (Panagopoulos, 2011), form healthier interpersonal relationships (Algoe et al., 2008), and perceive greater national support after major state-wide disasters (Raggio & Folse, 2009; Raggio & Folse, 2011). Individuals are theorized to be receptive to ingratiation due to self-enhancement motivations (Vonk, 2002). Current research on gratitude framing in service encounters has demonstrated that displaying gratitude can lead to higher tips (Rind & Bordia, 1995; Seiter & Dutson, 2007; Seiter, 2007) and customer compliance (Jacob & Gueguen, 2014). After a service failure, gratitude can be an effective communication frame as it highlights the positive characteristics of the customer instead of focusing on the service provider's fault.

There is evidence that consumer satisfaction may be higher for gratitude framed messages vs. apology framed messages. Through a series of seven studies, You et al. (2019) demonstrated that consumers receiving gratitude (apology) framed messages after service failures felt higher satisfaction, even in higher service failure severity situations. The researchers attributed the higher satisfaction from appreciative message framing to the heightened self-esteem caused by ingratiation. Additionally, a study by Luo et al. (2021) found that mandatory

mask policies framed as appreciatory messages led to higher compliance and customer satisfaction than apologetic message framing.

Based on the existing research outcomes for ingratiation vs. apology framing for service failures, it is expected that service providers displaying ingratiation will lead to better service recovery outcomes than apology framing or no framing (i.e., control).

Therefore, we predict the following:

**H1: Gratitude framed recovery messages will lead to higher customer satisfaction than both apology framed and control (no apology).**

### 2.2 Gender & Existing customer relationships

Considerable research has been directed towards the role of gender in service interactions. Although there is no evidence of differences in average tips between male and female servers (Lynn & Simons, 2000; Seiter & Weger, 2010), there is evidence that gender similarity may be consequential to service outcomes (Fischer, 1997). In a meta-analysis of 36 studies (22 published and 14 unpublished), Lynn & Mccall (2000) found that opposite-gender customer-server interactions tipped more than their same-sex counterparts due to higher sexual appeal. The effects of this gender similarity effect extend beyond the restaurant industry; Moshavi (2004) found that customer satisfaction for phone-based service encounters was higher for same-sex service interactions. However, the existence of this gender similarity effect remains in debate as a recent study by Pinar et al. (2017) on ten service industries in Turkey and the U.S. failed to find evidence for improved service outcomes from opposite-gender service interactions. Experiences of gratitude also differ between gender (Kashdan et al., 2009). Expressions of gratitude from female (male) service providers were more likely to be interpreted as friendly and

rewarded by customers (Rind & Bordia, 1996). Additionally, there is evidence that genders may react differently to types of message framings. A study by Mayer & Tormala (2010) found that males rated statements beginning with "I think" ("I feel") to be more persuasive; in contrast, females found "I feel" statements to be more persuasive.

As customers have shown to be more receptive to messages of gratitude from female providers due to increased friendliness perceptions, female interactions should elicit higher customer satisfaction.

Therefore, we predict the following:

**H2: Gratitude framed recovery messages from females will induce higher customer satisfaction**

Consumers generally associate their identities with the brands they most frequently purchase from (Lin & Sung, 2013). This identity and brand fusion can directly alter customer-firm relationship expectations and interactions. Existing research suggests that a customer's existing relationship type with a firm (e.g., communal vs. exchange relationship) can influence customer perceptions and responses towards service failures (Goodwin, 1996; Wan et al., 2011). In this study, a customer's level of recurring visits and emotional engagement will designate their relationship type (e.g., high familiarity customer vs. low familiarity customer). High familiarity customers have been demonstrated to be more receptive to service recovery procedures (Mattila, 2001a), have lower recovery expectations, and be less likely to attribute service failures to stable causes (Hess et al., 2003). It is predicted that high familiarity customers will be more receptive to ingratiation framed recovery messages due to their increased likelihood to conjure self-esteem from gratitude framed messages.

Therefore, we predict the following:

**H3: High familiarity customers will be more receptive to gratitude framed recovery messages than low familiarity customers**

## 3. Methods

### 3.1 Participants

350 participants (*M*age= 39, *SD*age= 10.2, 38% female) were recruited through MTurk. Participants were required to be geographically in North America and to have a 98% MTurk HIT approval rating over at least 5000 HITS. Participants received $0.55 USD for completing the questionnaire. Participants were randomly assigned to each vignette condition through the Qualtrics randomization function. Four participants were removed from the survey due to failing to complete the survey (i.e., leaving blanks for the dependent variable); in total, 346 participants were legible for statistical inclusion.

### 3.2 Materials & Design

The study was a between-subjects factorial (3x2x2x2) design. The factors of this study included the type of service recovery framing (factor 1), the existing relationship of the customer (factor 2), the gender of the service provider (factor 3).

A basic questionnaire collecting demographic information (i.e., WorkerID, age, gender, & sex) and reactions to an experimental vignette was issued. The experimental vignette outlined a situation where the participant was asked to vividly imagine a scenario where they were grabbing lunch at a restaurant and the food came fifteen minutes late with various factors within the situation altered based on the experimental scenario. The three levels in factor 1 (service recovery message framing) dictated the type of message the participant received after the service

failure. The participant could have received a message with no acknowledgment (i.e., “Here is your food”), an apology (i.e., “Sorry for the wait, here is your food”), or gratitude (i.e., “Thank you for your patience, here is your food”). The two levels in factor 2 (familiarity) concerned whether the participant is dining at a restaurant that they knew intimately (i.e., high familiarity) or a new restaurant they have never been to (i.e., low familiarity). Factors for factor 3 (gender) concerned whether the server is male (i.e., Matthew) or female (i.e., Mary). We used the names Matthew and Mary because of their similar level of salience (i.e., linguistic and popularity similarity). In total, there were 12 unique experimental conditions and participants were randomly assigned evenly to each of the 12 scenarios.

After imagining the hypothetical scenario, participants were asked a series of questions, including whether they would tip this server, how much they would tip this server (on a scale of 0-30%), and customer satisfaction (on a scale of 0-5); these three variables serve as the dependent variables for this study.

### 3.3 Procedure

The questionnaire ad on MTurk was minimally titled “Experience Survey” with a description of “Survey 2–3-minute completion” to minimize the possibility of self-selection from workers (Hauser et al., 2018). Upon accepting the MTurk request, workers were given a Qualtrics link to complete the questionnaire. After completing the questionnaire, workers received a six-digit confirmation code to paste into MTurk for their compensation. During the survey, workers received captchas to prevent bots.

# 4. Results

## 4.1 Tipping Likelihood

An additional derived variable, gender similarity, was created, which measures whether the gender of the service provider and customer is the same (0) or different (1). Amongst the 345 eligible responses, 272 respondents (78.8%) responded that they would tip the service provider despite the service failure. A binary logistic regression was conducted to examine the likelihood to tip accounting for factors such as message framing condition, existing relationship, gender, and gender similarity (see Table 1 in Appendix A for full outcomes). The results indicated that individuals who were given an apology after the service failure had 2.82 times higher odds (*OR* 95% CI [1.43 - 5.55], $p < 0.01$) of tipping than control (i.e., individuals who did not receive an apology or gratitude-based message). We did not find a significant difference for tipping likelihood between individuals who received an appreciative service recovery message vs. control (*OR* = 1.55, 95% CI [0.84 – 2.85], $p = 0.16$) or between individuals who received an apology-based service recovery message vs. appreciation-based service recovery message (*OR* = 1.84, 95% CI [0.91 – 3.74, $p = 0.09$). Additionally, we did not find a significant difference for tipping likelihood between server genders (*OR* = 1.36., 95% CI [0.79 – 2.36], $p = 0.27$), familiarity (*OR* = 1.23, 95% CI [0.71 – 2.15], $p = 0.46$) or gender similarity (*OR* = 0.8, 95% CI [0.46 – 1.39], $p = 0.43$).

## 4.2 Tipping Percentage & Customer Satisfaction

Individuals who did not tip were coded as tipping 0% for the tip percentage condition. A multivariate analysis of variances (MANOVA) examining recovery messaging framing, gender of service-provider, gender similarity, and existing customer relationships (IVs) on customer

satisfaction and tip percentage (DVs) was conducted (see Table 2 in Appendix B for full outcomes). We found that service recovery message framing had a significant impact on both customer satisfaction and tip percentage (Roy's Largest Root = 0.05, $F[2, 321] = 8.1$, $p < 0.001$, partial eta squared = 0.048). When considered separately, we found a significant main effect of service recovery framing on both satisfaction ($F[2, 321] = 7.48$, $p < 0.001$, partial eta squared = 0.045) and tip percentage ($F[2, 321] = 3.55$, $p < 0.05$, partial eta squared = 0.022).

Individuals who received an apology ($M_{tip} = 11.32$, $SD_{tip} = 6.68$) gave higher tips than control ($M_{tip} = 9.32$, $SD_{tip} = 7.57$) by a significant margin $p < 0.01$ but did not give significantly higher tips than customers receiving gratitude messages ($M_{tip} = 10.21$, $SD_{tip} = 7.01$, $p = 0.16$). Contrary to results from previous research, customers who received gratitude framed messages did not receive significantly higher tips than control ($p = 0.246$).

Individuals who received post-service failure acknowledgment in general had higher satisfaction than control conditions (apology condition [$M_{satisfaction} = 2.828$, $SD_{satisfaction} = 0.942$, $p < 0.001$] and appreciation condition [$M_{satisfaction} = 2.768$, $SD_{satisfaction} = 0.859$, $p < 0.01$] vs. control condition [$M_{satisfaction} = 2.393$ $SD_{satisfaction} = 0.989$]). Similarly, we failed to find a significant difference between customer satisfaction between apology and appreciation message framing conditions $p = 0.443$.

A multivariate test indicated that gender did not have a significant effect on customer satisfaction and tip percentage (Roy's Largest Root < 0.001, $F[1, 321] = 0.055$ , $p = 0.946$, partial eta squared < 0.001). Interaction effects between gender and message framing was not significant (Roy's Largest Root = 0.011, $F[1, 321] = 1.806$ , $p = 0.166$, partial eta squared = 0.011); however, when examined separately we found that the type of message framing was highly significant on service quality perceptions for male service providers (Roy's Largest Root

= 0.049, $F[1, 321] = 7.794$ , $p < 0.001$, partial eta squared = 0.046) but not for female service providers (Roy's Largest Root = 0.012, $F[1, 321] = 1.979$ , $p = 0.14$, partial eta squared = 0.012). Although gender similarity and message framing also did not produce significant interaction effects (Roy's Largest Root = 0.009, $F[1, 321] = 1.487$, $p = 0.228$, partial eta squared < 0.001), we found that when examined independently, a multivariate test of different gender and message framing was highly significant (Roy's Largest Root = 0.046, $F[1, 321] = 7.387$, $p < 0.001$, partial eta squared < 0.044), whilst same gender and message framing was not significant (Roy's Largest Root = 0.019, $F[1, 321] = 2.976$, $p = 0.052$, partial eta squared = 0.018). Opposing our hypothesis, female servers (vs. male servers) who gave appreciation framed messages did not receive a higher customer satisfaction rating ($M_{difference}$ = -0.82, $SE = 0.193$, $p = 0.67$*)*; female serves (vs. male servers) who gave an apology also did not receive higher tips ($M_{difference}$ = -0.212, $SE = 1.473$, $p = 0.89$).

A univariate test indicated that familiarity did not significantly effect tipping percentage ($F[1, 321] = 2.22$, $p = 0.137$) or customer satisfaction ($F[1, 321] = 2.15$, $p = 0.144$). There were no significant interaction effects between familiarity and recovery message framing either (Roy's Largest Root = 0.006, $F[1, 321] = 0.917$, $p = 0.401$, partial eta squared = 0.006). High familiarity (vs. low familiarity) customers did not tip more under the appreciation condition ($M_{difference}$ = 0.85, $SE = 1.473$, $p = 0.954$); although this effect was much stronger for high familiarity (vs. low familiarity) customers who received the apology condition (($M_{difference}$ = 2.683, $SE = 1.398$, $p$ = 0.056).

## 5. Discussion

Contrary to H1, we found that apologizing better redressed customer dissatisfaction after a service failure than ingratiation. Customers who received an apology after a service failure were more likely to give tips, gave higher tips and rated higher customer satisfaction than control. In contrast, customers who received an appreciative message only rated higher customer satisfaction than control. These findings were rather surprising as it differs drastically from recent research denoting appreciative message framing to be more effective at retaining customer satisfaction (You et al., 2019; Luo et al., 2021). Previous research on appreciation framing linked the strong positive post-recovery customer satisfaction to an increase in customer self-esteem. The primary methodological differences between our study and previous research (i.e., You et al's [2019] paper) was that the service failure scenario was less severe (i.e., food was late for a shorter period: 15min vs. 30 and 60 min), and that our focus was on server gender and familiarity instead of other factors such as compensation, severity, recovery timing, and self-esteem. We suspect that the appreciation recovery advantage may be attenuated for less severe service failures. With a minor inconvenience, individuals may be less likely to feel elevated self-esteem from gratitude-based encounters due to lack of emotional commitment into the encounter; in these types of scenarios, expressions of empathy (i.e., apology) may be more effective. As well, vignette-based studies are generally unable to accurately measure the positive emotions (e.g., contentment with recovery efforts and overall satisfaction) associated with service failures and recoveries (Kim & Jang, 2014). This effect may have resulted in previous studies over-reporting the positive impact of gratitude-based service recovery.

Previous research has generally noted apology as an effective service recovery strategy (Bradley & Sparks, 2009; Radu et al., 2019). Apologizing has been theorized to be effective

because of its ability to convey empathy and is a strategy often used in modern customer and firm interactions (Lutzky, 2021). Giving an apology serves to acknowledge the customer's inconveniences and affirms the service provider's guilt for the mishap. An apology indicates the service provider taking responsibility for the customer's troubles, whereas showing gratitude may be interpreted as an attempt to avert responsibility. Taking responsibility is crucial in the post-service failure reconciliation process and can significantly affect post-recovery satisfaction (Boshoff & Leong, 1998; Pizzi & Scarpi, 2013).

In general, we found that having a post-service failure strategy (i.e., apology or ingratiation) after a service failure led to greater overall customer satisfaction than not. This finding aligns with previous research that noted disregard (i.e., no response) to be the least effective recovery strategy (You et al., 2019). Commenting about the service failure acknowledges the customer's grievances, which can lead to increased post-failure satisfaction.

We also did not find sufficient evidence to support H2. The gender of the service provider did not significantly impact tippling likelihood, tip percentage, or customer satisfaction. Also, customers did not react any differently when female service providers (male service providers) gave appreciation-based comments after the service failure. Based on previous evidence that patrons were more receptive to female gestures of appreciation (Rind & Bordia, 1996), we expected female (male) appreciation interactions to be more effective. On the other hand, interestingly, we found that message framing was much more significant towards service perceptions for male service providers (female service providers). The cause of this effect might be because males are typically stereotyped as being less empathetic (Moore et al., 2014), and so their acknowledgment of the service failure may have been more impactful and impression forming. This finding is in line with previous research indicating that patron service impressions

of male servers tended to be more swayed by contextual factors such as server competence (Lynn & Simons, 2000). Implications for this is that male service providers may need to be especially aware of their verbiage during service encounters; based on our finding, the importance of this effect may be amplified for male service providers interacting with opposite genders.

We did not garner enough evidence to support H3. Low and high familiarity customers did not differ in customer service impression based on recovery framing conditions; in the gratitude condition, we found no significant differences between customer service opinion between high familiarity and low familiarity customers. This result was unexpected as existing research on familiarity suggests that highly familiar customers tended to have lower recovery thresholds (Mattila, 2001a). We suspect that the concept of familiarity was not fully translated in an online vignette scenario as familiarity is a complex emotional process that is difficult to replicate fully, which may have affected the results.

## 6. Limitations & Future Research

A glaring methodological limitation of this study is that the design revolves around using experimental vignettes administered online via mTurk. Our study utilized mTurk because of COVID-19 limitations restricting in-person field experiments. Self-selection bias (i.e., bias resulting from participants' autonomy to decide whether to opt-in/out of a study) is a significant concern for online questionnaire-based studies (Greencare, 2016). Although we attempted to minimize this bias by limiting our study description, no doubt some degree of self-selection still existed.

Often, vignettes cannot fully capture the elements of reality relative to other research tools (Erfanian et al., 2020). As previously mentioned, vignette-based studies have difficulty measuring the positive emotions of service failures (Kim & Jang, 2014). This effect may have inflated the overall tipping likelihood and percentage of participants. As well, in-field service interactions generally involve situational subtleties such as social gestures and small talk. For example, the concept of doing gender is when individuals subconsciously enact gender roles during social exchanges (West & Zimmerman, 1987); this can be prominent during opposite gender service encounters where subtle flirting can lead to improved service perceptions (Moshavi, 2004). Doing gender is a phenomenon that is difficult to replicate in vignette-based studies. Future studies could benefit significantly by examining appreciative message framing in in-field settings, such as setting up temporary pop-up restaurants and examining consumer reactions to service recovery strategies in different contexts.

This study primarily explored the effects of gender and familiarity on apology vs. gratitude recovery framing. Future research could benefit from examining recovery message framing in other contexts such as repeated service failures (i.e., continuous back-to-back service failures). As little as two repeated service failures could negatively affect recovery attempts by businesses (Maxham & Netemeyer, 2002); future research could investigate how best to communicate with a customer who has experienced repeated service failures. Additionally, existing research examining message framing as a tool to service recovery tool has primarily focused on B2C (business-to-consumer) interactions. Service recovery processes in B2B (business-to-business) can be markedly different from B2C interactions (Baliga et al., 2020), so it may be worthwhile for future research to examine the efficacy of different recovery message framing formats in B2B environments.

Another limitation of this study is that this study only investigated the restaurant industry. The efficacy of different types of recovery message framing could vary based on the context of the service failure. For example, service recovery strategies to mitigate a service failure in a high stakes industry such as medicine could differ drastically from a service failure in a low stakes industry such as recreational dining. Even within the context of the restaurant industry, a customer's service recovery expectations can differ drastically from higher-end restaurants vs. lower-end restaurants (Jerger & Wirtz, 2017; Kowalczuk & Gebski, 2021). Future research could study the effectiveness of service recovery in multiple industries as consumers generally change expectations with different industries (Mattila, 2001b; Johnson et al., 2002).

Finally, this study propounds the idea that apologizing can be more effective than gratitude for remedying service failures. The effectiveness of apologies can be influenced greatly by situational factors; for example, culturally, apologies can be more effective in east Asian cultures than Western ones (Lee & Park, 2010; Sugimoto, 1997). And at times, apologies may not work, such as apologizing in combination with social rejection (Freedman et al., 2017). It would be wise to examine contextual factors of the service failure before defaulting to apologizing.

## References

Algoe, S. B., Haidt, J., & Gable, S. L. (2008). Beyond reciprocity: Gratitude and relationships in everyday life. *Emotion*, *8*(3), 425–429. https://doi.org/10.1037/1528-3542.8.3.425

Andreassen, T. W. (2001). From Disgust to Delight. *Journal of Service Research*, *4*(1), 39–49. https://doi.org/10.1177/109467050141004

Andreassen, T. W., & Olsen, L. L. (2008). The impact of customers' perception of varying degrees of customer service on commitment and perceived relative attractiveness. *Managing Service Quality: An International Journal*, *18*(4), 309–328. https://doi.org/10.1108/09604520810885581

Baliga, A. J., Chawla, V., Sunder M, V., Ganesh, L. S., & Sivakumaran, B. (2020). Service Failure and Recovery in B2B Markets – A Morphological Analysis. *Journal of Business Research*. https://doi.org/10.1016/j.jbusres.2020.09.025

Bertolotti, M., & Catellani, P. (2014). Effects of message framing in policy communication on climate change. *European Journal of Social Psychology*, *44*(5), 474–486. https://doi.org/10.1002/ejsp.2033

Boshoff, C., & Leong, J. (1998). Empowerment, attribution and apologising as dimensions of service recovery. *International Journal of Service Industry Management*, *9*(1), 24–47. https://doi.org/10.1108/09564239810199932

Bradley, G. L., & Sparks, B. A. (2009). DEALING WITH SERVICE FAILURES: THE USE OF EXPLANATIONS. *Journal of Travel & Tourism Marketing*, *26*(2), 129–143. https://doi.org/10.1080/10548400902862010

Christov-Moore, L., Simpson, E. A., Coudé, G., Grigaityte, K., Iacoboni, M., & Ferrari, P. F. (2014). Empathy: Gender effects in brain and behavior. *Neuroscience & Biobehavioral Reviews*, *46*(4), 604–627. https://doi.org/10.1016/j.neubiorev.2014.09.001

Davidow, M. (2003). Organizational Responses to Customer Complaints: What Works and What Doesn't. *Journal of Service Research*, *5*(3), 225–250. https://doi.org/10.1177/1094670502238917

Do, K. T., Wang, C., & Guchait, P. (2021). When normative framing saves Mr. Nature: Role of consumer efficacy in proenvironmental adoption. *Psychology & Marketing*, *38*(8). https://doi.org/10.1002/mar.21486

Erfanian, F., Roudsari, R. L., Heydari, A., & Bahmani, M. N. D. (2020). A Narrative on Using Vignettes: Its Advantages an Drawbacks. *Journal of Midwifery & Reproductive Health*, *8*, 2134–2145. https://doi.org/10.22038/jmrh.2020.41650.1472

Fehr, R., & Gelfand, M. J. (2010). When apologies work: How matching apology components to victims' self-construals facilitates forgiveness. *Organizational Behavior and Human Decision Processes*, *113*(1), 37–50. https://doi.org/10.1016/j.obhdp.2010.04.002

Fischer, E. (1997). The sex of the service provider: Does it influence perceptions of service quality? *Journal of Retailing*, *73*(3), 361–382. https://doi.org/10.1016/s0022-4359(97)90023-3

Freedman, G., Burgoon, E. M., Ferrell, J. D., Pennebaker, J. W., & Beer, J. S. (2017). When Saying Sorry May Not Help: The Impact of Apologies on Social Rejections. *Frontiers in Psychology*, *8*. https://doi.org/10.3389/fpsyg.2017.01375

Goodwin, C., & Ross, I. (1992). Consumer responses to service failures: Influence of procedural and interactional fairness perceptions. *Journal of Business Research*, *25*(2), 149–163. https://doi.org/10.1016/0148-2963(92)90014-3

Greenacre, Z. A. (2016). The Importance of Selection Bias in Internet Surveys. *Open Journal of Statistics*, *06*(03), 397–404. https://doi.org/10.4236/ojs.2016.63035

Hagtvedt, H. (2015). Promotional phrases as questions versus statements: An influence of phrase style on product evaluation. *Journal of Consumer Psychology*, *25*(4), 635–641. https://doi.org/10.1016/j.jcps.2014.12.005

Hauser, D., Paolacci, G., & Chandler, J. J. (2018). *Common Concerns with MTurk as a Participant Pool: Evidence and Solutions*. Springer.

Hays, J. M., & Hill, A. V. (2009). THE MARKET SHARE IMPACT OF SERVICE FAILURES. *Production and Operations Management*, *8*(3), 208–220. https://doi.org/10.1111/j.1937-5956.1999.tb00305.x

Hess Jr., R. L., Ganesan, S., & Klein, N. M. (2003). Service Failure and Recovery: The Impact of Relationship Factors on Customer Satisfaction. *Journal of the Academy of Marketing Science*, *31*(2), 127–145. https://doi.org/10.1177/0092070302250898

Hoch, S. J., & Ha, Y.-W. (1986). Consumer Learning: Advertising and the Ambiguity of Product Experience. *Journal of Consumer Research*, *13*(2), 221. https://doi.org/10.1086/209062

Hoffman, M. L. (1977). Sex differences in empathy and related behaviors. *Psychological Bulletin*, *84*(4), 712–722. https://doi.org/10.1037/0033-2909.84.4.712

Hyken, S. (2020, July 12). *Ninety-Six Percent Of Customers Will Leave You For Bad Customer Service*. Forbes. https://www.forbes.com/sites/shephyken/2020/07/12/ninety-six-percent-of-customers-will-leave-you-for-bad-customer-service/?sh=4f1f9cc30f82

Jacob, C., & Guéguen, N. (2014). The effect of compliments on customers' compliance with a food server's suggestion. *International Journal of Hospitality Management*, *40*, 59–61. https://doi.org/10.1016/j.ijhm.2014.03.010

Jerger, C., & Wirtz, J. (2017). Service Employee Responses to Angry Customer Complaints. *Journal of Service Research*, *20*(4), 362–378. https://doi.org/10.1177/1094670517728339

Johnson, M. D., Herrmann, A., & Gustafsson, A. (2002). Comparing customer satisfaction across industries and countries. *Journal of Economic Psychology*, *23*(6), 749–769. https://doi.org/10.1016/s0167-4870(02)00137-x

Kashdan, T. B., Mishra, A., Breen, W. E., & Froh, J. J. (2009). Gender Differences in Gratitude: Examining Appraisals, Narratives, the Willingness to Express Emotions, and Changes in Psychological Needs. *Journal of Personality*, *77*(3), 691–730. https://doi.org/10.1111/j.1467-6494.2009.00562.x

Kim, J.-H., & Jang, S. (Shawn). (2014). A scenario-based experiment and a field study: A comparative examination for service failure and recovery. *International Journal of Hospitality Management*, *41*, 125–132. https://doi.org/10.1016/j.ijhm.2014.05.004

Kowalczuk, I., & Gębski, J. (2021). Factors influencing restaurant tipping behaviour – the case of Poland. *International Journal of Culture, Tourism and Hospitality Research*, *15*(2), 172–182. https://doi.org/10.1108/ijcthr-10-2019-0189

Labrecque, L. I., Swani, K., & Stephen, A. T. (2020). The impact of pronoun choices on consumer engagement actions: Exploring top global brands' social media communications. *Psychology & Marketing*, *37*(6). https://doi.org/10.1002/mar.21341

Lee, H. E., & Park, H. S. (2010). Why Koreans Are More Likely to Favor "Apology," While Americans Are More Likely to Favor "Thank You." *Human Communication Research*, *37*(1), 125–146. https://doi.org/10.1111/j.1468-2958.2010.01396.x

Levin, I. P., & Gaeth, G. J. (1988). How Consumers are Affected by the Framing of Attribute Information Before and After Consuming the Product. *Journal of Consumer Research*, *15*(3), 374. https://doi.org/10.1086/209174

Lin, J.-S., & Sung, Y. (2013). Nothing Can Tear Us Apart: The Effect of Brand Identity Fusion in Consumer-Brand Relationships. *Psychology & Marketing*, *31*(1), 54–69. https://doi.org/10.1002/mar.20675

Luo, A., Ye, T., Xue, X., & Mattila, A. S. (2021). Appreciation vs. apology: When and why does face covering requirement increase revisit intention? *Journal of Retailing and Consumer Services*, *63*, 102705. https://doi.org/10.1016/j.jretconser.2021.102705

Lutzky, U. (2021). "You keep saying you are sorry". Exploring the use of sorry in customer communication on Twitter. *Discourse, Context & Media*, *39*, 100463. https://doi.org/10.1016/j.dcm.2020.100463

Lynn, M., & McCall, M. (2000). Gratitude and gratuity: a meta-analysis of research on the service-tipping relationship. *The Journal of Socio-Economics*, *29*(2), 203–214. https://doi.org/10.1016/s1053-5357(00)00062-7

Lynn, M., & Simons, T. (2000). Predictors of Male and Female Servers' Average Tip Earnings. *Journal of Applied Social Psychology*, *30*(2), 241–252. https://doi.org/10.1111/j.1559-1816.2000.tb02314.x

Maheswaran, D., & Meyers-Levy, J. (1990). The Influence of Message Framing and Issue Involvement. *Journal of Marketing Research*, *27*(3), 361. https://doi.org/10.2307/3172593

Mattila, A. S. (2001a). The Impact of Relationship Type on Customer Loyalty in a Context of Service Failures. *Journal of Service Research*, *4*(2), 91–101. https://doi.org/10.1177/109467050142002

Mattila, A. S. (2001b). The effectiveness of service recovery in a multi-industry setting. *Journal of Services Marketing*, *15*(7), 583–596. https://doi.org/10.1108/08876040110407509

Maxham, J. G. (2001). Service recovery's influence on consumer satisfaction, positive word-of-mouth, and purchase intentions. *Journal of Business Research*, *54*(1), 11–24. https://doi.org/10.1016/s0148-2963(00)00114-4

Maxham, J. G., & Netemeyer, R. G. (2002). A Longitudinal Study of Complaining Customers' Evaluations of Multiple Service Failures and Recovery Efforts. *Journal of Marketing*, *66*(4), 57–71. https://doi.org/10.1509/jmkg.66.4.57.18512

Mayer, N. D., & Tormala, Z. L. (2010). "Think" Versus "Feel" Framing Effects in Persuasion. *Personality and Social Psychology Bulletin*, *36*(4), 443–454. https://doi.org/10.1177/0146167210362981

Michel, S. (2001). Analyzing service failures and recoveries: a process approach. *International Journal of Service Industry Management*, *12*(1), 20–33. https://doi.org/10.1108/09564230110382754

Michel, S., & Meuter, M. L. (2008). The service recovery paradox: true but overrated? *International Journal of Service Industry Management*, *19*(4), 441–457. https://doi.org/10.1108/09564230810891897

Mogilner, C., & Aaker, J. (2009). "The Time vs. Money Effect": Shifting Product Attitudes and Decisions through Personal Connection. *Journal of Consumer Research*, *36*(2), 277–291. https://doi.org/10.1086/597161

Moshavi, D. (2004). He Said, She Said: Gender Bias and Customer Satisfaction With Phone-Based Service Encounters. *Journal of Applied Social Psychology*, *34*(1), 162–176. https://doi.org/10.1111/j.1559-1816.2004.tb02542.x

Neira, C., Vázquez-Casielles, R., & Iglesias, V. (2010). Lack of preferential treatment: effects on dissatisfaction after a service failure. *Journal of Service Management*, *21*(1), 45–68. https://doi.org/10.1108/09564231011025119

Packard, G., & Berger, J. (2020). How Concrete Language Shapes Customer Satisfaction. *Journal of Consumer Research*, *47*(1). https://doi.org/10.1093/jcr/ucaa038

Packard, G., Moore, S. G., & McFerran, B. (2018). (I'm) Happy to Help (You): The Impact of Personal Pronoun Use in Customer–Firm Interactions. *Journal of Marketing Research*, *55*(4), 541–555. https://doi.org/10.1509/jmr.16.0118

Panagopoulos, C. (2011). Thank You for Voting: Gratitude Expression and Voter Mobilization. *The Journal of Politics*, *73*(3), 707–717. https://doi.org/10.1017/s0022381611000405

Patrick, V. M., & Hagtvedt, H. (2012). "I Don't" versus "I Can't": When Empowered Refusal Motivates Goal-Directed Behavior. *Journal of Consumer Research*, *39*(2), 371–381. https://doi.org/10.1086/663212

Pinar, M., Wilder, C., Shaltoni, A. M., & Stück, J. M. (2017). Effects of Gender, Occupational Stereotyping, and Culture on Perceived Service Quality in Anglo-Saxon and Middle Eastern Cultures. *Services Marketing Quarterly*, *38*(2), 57–73. https://doi.org/10.1080/15332969.2017.1289786

Pizzi, G., & Scarpi, D. (2013). When Out-of-Stock Products DO Backfire: Managing Disclosure Time and Justification Wording. *Journal of Retailing*, *89*(3), 352–359. https://doi.org/10.1016/j.jretai.2012.12.003

Qu, J., Zhou, R., Zou, L., Sun, Y., & Zhao, M. (2020). The Effect of Personal Pronouns on Users' Emotional Experience in Voice Interaction. *Lecture Notes in Computer Science*, 234–243. https://doi.org/10.1007/978-3-030-49062-1_16

Radu, A. G., Arli, D., Surachartkumtonkun, J., Weaven, S., & Wright, O. (2019). Empathy and apology: the effectiveness of recovery strategies. *Marketing Intelligence & Planning*, *37*(4), 358–371. https://doi.org/10.1108/mip-03-2018-0080

Raggio, R. D., & Folse, J. A. G. (2009). Gratitude works: its impact and the mediating role of affective commitment in driving positive outcomes. *Journal of the Academy of Marketing Science*, *37*(4), 455–469. https://doi.org/10.1007/s11747-009-0144-2

Raggio, R. D., & Folse, J. A. G. (2011). Expressions of Gratitude in Disaster Management: An Economic, Social Marketing, and Public Policy Perspective on Post-Katrina Campaigns. *Journal of Public Policy & Marketing*, *30*(2), 168–174. https://doi.org/10.1509/jppm.30.2.168

Richins, M. L. (1983). Negative Word-of-Mouth by Dissatisfied Consumers: A Pilot Study. *Journal of Marketing*, *47*(1), 68. https://doi.org/10.2307/3203428

Rind, B., & Bordia, P. (1995). Effect of Server's "Thank You" and Personalization on Restaurant Tipping1. *Journal of Applied Social Psychology*, *25*(9), 745–751. https://doi.org/10.1111/j.1559-1816.1995.tb01772.x

Rind, B., & Bordia, P. (1996). Effect on Restaurant Tipping of Male and Female Servers Drawing a Happy, Smiling Face on the Backs of Customers' Checks. *Journal of Applied Social Psychology*, *26*(3), 218–225. https://doi.org/10.1111/j.1559-1816.1996.tb01847.x

Roschk, H., & Gelbrich, K. (2017). Compensation Revisited. *Journal of Service Research*, *20*(4), 393–408. https://doi.org/10.1177/1094670517716333

Roschk, H., & Kaiser, S. (2012). The nature of an apology: An experimental study on how to apologize after a service failure. *Marketing Letters*, *24*(3), 293–309. https://doi.org/10.1007/s11002-012-9218-x

Seiter, J. S. (2007). Ingratiation and Gratuity: The Effect of Complimenting Customers on Tipping Behavior in Restaurants. *Journal of Applied Social Psychology*, *37*(3), 478–485. https://doi.org/10.1111/j.1559-1816.2007.00169.x

Seiter, J. S., & Dutson, E. (2007). The Effect of Compliments on Tipping Behavior in Hairstyling Salons. *Journal of Applied Social Psychology*, *37*(9), 1999–2007. https://doi.org/10.1111/j.1559-1816.2007.00247.x

Seiter, J. S., & Weger, Jr., H. (2010). The Effect of Generalized Compliments, Sex of Server, and Size of Dining Party on Tipping Behavior in Restaurants. *Journal of Applied Social Psychology*, *40*(1), 1–12. https://doi.org/10.1111/j.1559-1816.2009.00560.x

Seiter, J. S., & Weger, H. (2013). Does a customer by any other name tip the same?: The effect of forms of address and customers' age on gratuities given to food servers in the United States. *Journal of Applied Social Psychology*, *43*(8), 1592–1598. https://doi.org/10.1111/jasp.12110

Sepehri, A., Duclos, R., Kristofferson, K., Vinoo, P., & Elahi, H. (2021). The Power of Indirect Appeals in Peer-to-Peer Fundraising: Why "S/He" Can Raise More Money for Me Than "I" Can For Myself. *Journal of Consumer Psychology*, *31*(3), 612–620. https://doi.org/10.1002/jcpy.1232

Shams, G., Rehman, M. A., Samad, S., & Rather, R. A. (2020). The impact of the magnitude of service failure and complaint handling on satisfaction and brand credibility in the banking industry. *Journal of Financial Services Marketing*, *25*(1-2), 25–34. https://doi.org/10.1057/s41264-020-00070-0

Shiv, B., Edell Britton, J. A., & Payne, J. W. (2004). Does Elaboration Increase or Decrease the Effectiveness of Negatively versus Positively Framed Messages? *Journal of Consumer Research*, *31*(1), 199–208. https://doi.org/10.1086/383435

Smith, A. K., Bolton, R. N., & Wagner, J. (1999). A Model of Customer Satisfaction with Service Encounters Involving Failure and Recovery. *Journal of Marketing Research*, *36*(3), 356. https://doi.org/10.2307/3152082

Stakhovych, S., & Tamaddoni, A. (2020). Mix&Match: A Resource-Based Complaint Recovery Framework for Tangible Compensation. *Journal of Service Research*, *23*(3), 109467051989852. https://doi.org/10.1177/1094670519898521

Sugimoto, N. (1997). A Japan-U.S. Comparison of Apology Styles. *Communication Research*, *24*(4), 349–369. https://doi.org/10.1177/009365097024004002

Swanson, S. R., & Hsu, M. K. (2010). The Effect of Recovery Locus Attributions and Service Failure Severity on Word-of-Mouth and Repurchase Behaviors in the Hospitality Industry. *Journal of Hospitality & Tourism Research*, *35*(4), 511–529. https://doi.org/10.1177/1096348010382237

Vonk, R. (2002). Self-serving interpretations of flattery: Why ingratiation works. *Journal of Personality and Social Psychology*, *82*(4), 515–526. https://doi.org/10.1037/0022-3514.82.4.515

Wan, L. C., Hui, M. K., & Wyer, R. S. (2011). The Role of Relationship Norms in Responses to Service Failures. *Journal of Consumer Research*, *38*(2), 260–277. https://doi.org/10.1086/659039

West, C., & Zimmerman, D. H. (1987). Doing Gender. *Gender & Society*, *1*(2), 125–151. https://doi.org/10.1177/0891243287001002002

Wirtz, J., & Mattila, A. S. (2004). Consumer responses to compensation, speed of recovery and apology after a service failure. *International Journal of Service Industry Management*, *15*(2), 150–166. https://doi.org/10.1108/09564230410532484

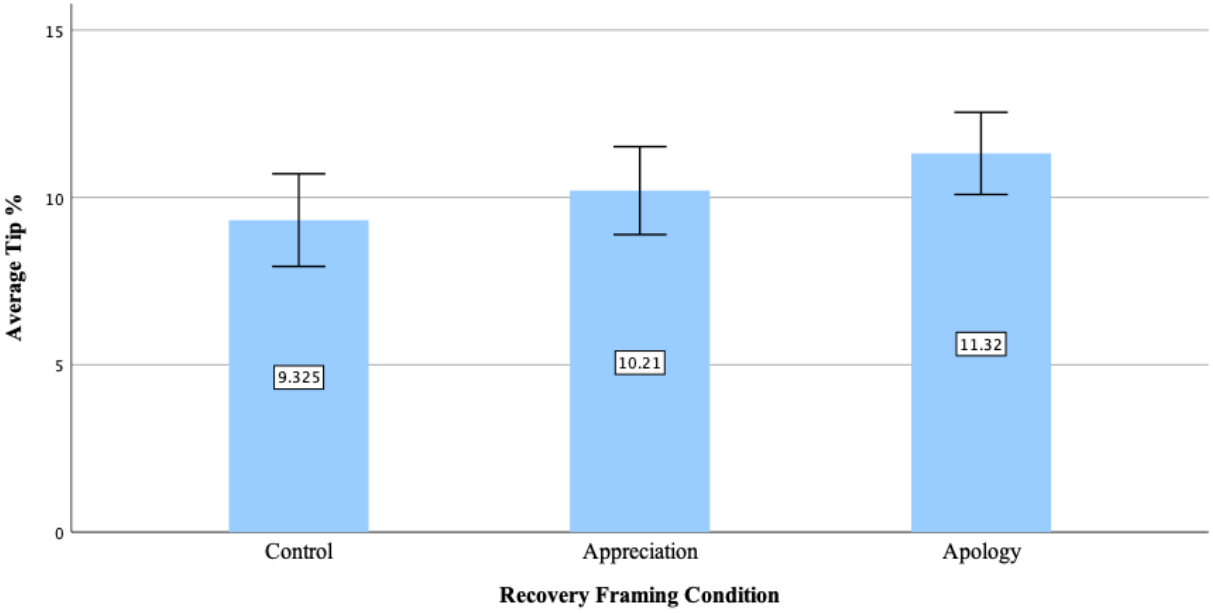
Yao, F.-S., & Shao, J.-B. (2019). When and why vivid description is effective: The role of message involvement and utilitarian attitude. *Current Psychology*. https://doi.org/10.1007/s12144-019-00404-9

You, Y., Yang, X., Wang, L., & Deng, X. (2019). When and Why Saying "Thank You" Is Better Than Saying "Sorry" in Redressing Service Failures: The Role of Self-Esteem. *Journal of Marketing*, *84*(2), 133–150. https://doi.org/10.1177/0022242919889894

# Appendix A

**Figure 1**

*Average Tip Based on Recovery Framing Condition*




Note: average tip% of participants based on message conditions. Individuals who did not tip were coded as tipping 0%, 95% CI displayed.

**Table 1**

*Binary Logistic Regression*

| | | | | | | | | 95% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|---|
| | | B | S.E. | Wald | df | Sig. | Exp(B) | Lower | Upper |
| Step 1 | Control Framing | | | 9.007 | 2 | 0.011** | | | |
| | Appreciation Framing | 0.438 | 0.312 | 1.976 | 1 | 0.160 | 1.550 | 0.841 | 2.854 |
| | Apology Framing | 1.035 | 0.346 | 8.954 | 1 | 0.003** | 2.816 | 1.429 | 5.549 |
| | Gender | 0.309 | 0.280 | 1.215 | 1 | 0.270 | 1.362 | 0.786 | 2.358 |
| | Familiarity | 0.210 | 0.283 | 0.551 | 1 | 0.458 | 1.234 | 0.709 | 2.148 |
| | Gender Similarity | -0.221 | 0.280 | 0.622 | 1 | 0.430 | 0.802 | 0.463 | 1.389 |
| | Constant | 0.757 | 0.292 | 6.732 | 1 | 0.009** | 2.131 | | |

*p < 0.05, **p < 0.01, ***p < 0.001

# Appendix B

**Table 2**

*Multivariate Anova*

| Effect | | Value | F | Hypothesis df | Error df | Sig. | Partial Eta Squared |
|---|---|---|---|---|---|---|---|
| Intercept | Pillai's Trace | 0.890 | 1288.311[b] | 2.000 | 320.000 | <0.001*** | 0.890 |
| | Wilks' Lambda | 0.110 | 1288.311[b] | 2.000 | 320.000 | <0.001*** | 0.890 |
| | Hotelling's Trace | 8.052 | 1288.311[b] | 2.000 | 320.000 | <0.001*** | 0.890 |
| | Roy's Largest Root | 8.052 | 1288.311[b] | 2.000 | 320.000 | <0.001*** | 0.890 |
| Recovery Message Framing | Pillai's Trace | 0.051 | 4.190 | 4.000 | 642.000 | 0.002** | 0.025 |
| | Wilks' Lambda | 0.949 | 4.221[b] | 4.000 | 640.000 | 0.002** | 0.026 |
| | Hotelling's Trace | 0.053 | 4.252 | 4.000 | 638.000 | 0.002** | 0.026 |
| | Roy's Largest Root | 0.050 | 8.095 | 2.000 | 321.000 | <0.001*** | 0.048 |
| Gender | Pillai's Trace | 0.000 | .055[b] | 2.000 | 320.000 | 0.946 | 0.000 |
| | Wilks' Lambda | 1.000 | .055[b] | 2.000 | 320.000 | 0.946 | 0.000 |
| | Hotelling's Trace | 0.000 | .055[b] | 2.000 | 320.000 | 0.946 | 0.000 |
| | Roy's Largest Root | 0.000 | .055[b] | 2.000 | 320.000 | 0.946 | 0.000 |
| Familarity | Pillai's Trace | 0.010 | 1.565[b] | 2.000 | 320.000 | 0.211 | 0.010 |
| | Wilks' Lambda | 0.990 | 1.565[b] | 2.000 | 320.000 | 0.211 | 0.010 |
| | Hotelling's Trace | 0.010 | 1.565[b] | 2.000 | 320.000 | 0.211 | 0.010 |
| | Roy's Largest Root | 0.010 | 1.565[b] | 2.000 | 320.000 | 0.211 | 0.010 |
| Gender Similarity | Pillai's Trace | 0.001 | .186[b] | 2.000 | 320.000 | 0.831 | 0.001 |
| | Wilks' Lambda | 0.999 | .186[b] | 2.000 | 320.000 | 0.831 | 0.001 |
| | Hotelling's Trace | 0.001 | .186[b] | 2.000 | 320.000 | 0.831 | 0.001 |
| | Roy's Largest Root | 0.001 | .186[b] | 2.000 | 320.000 | 0.831 | 0.001 |
| Recovery Message Framing * Gender | Pillai's Trace | 0.012 | 0.959 | 4.000 | 642.000 | 0.430 | 0.006 |
| | Wilks' Lambda | 0.988 | .958[b] | 4.000 | 640.000 | 0.430 | 0.006 |
| | Hotelling's Trace | 0.012 | 0.957 | 4.000 | 638.000 | 0.431 | 0.006 |
| | Roy's Largest Root | 0.011 | 1.806 | 2.000 | 321.000 | 0.166 | 0.011 |
| Recovery Message Framing * Familarity | Pillai's Trace | 0.009 | 0.706 | 4.000 | 642.000 | 0.588 | 0.004 |
| | Wilks' Lambda | 0.991 | .704[b] | 4.000 | 640.000 | 0.589 | 0.004 |
| | Hotelling's Trace | 0.009 | 0.702 | 4.000 | 638.000 | 0.591 | 0.004 |
| | Roy's Largest Root | 0.006 | 0.917 | 2.000 | 321.000 | 0.401 | 0.006 |
| Recovery Message Framing * Gender Similarity | Pillai's Trace | 0.012 | 0.954 | 4.000 | 642.000 | 0.432 | 0.006 |
| | Wilks' Lambda | 0.988 | .952[b] | 4.000 | 640.000 | 0.433 | 0.006 |
| | Hotelling's Trace | 0.012 | 0.950 | 4.000 | 638.000 | 0.434 | 0.006 |
| | Roy's Largest Root | 0.009 | 1.487 | 2.000 | 321.000 | 0.228 | 0.009 |
| Gendercondition * Familarity | Pillai's Trace | 0.000 | .070[b] | 2.000 | 320.000 | 0.932 | 0.000 |
| | Wilks' Lambda | 1.000 | .070[b] | 2.000 | 320.000 | 0.932 | 0.000 |
| | Hotelling's Trace | 0.000 | .070[b] | 2.000 | 320.000 | 0.932 | 0.000 |
| | Roy's Largest Root | 0.000 | .070[b] | 2.000 | 320.000 | 0.932 | 0.000 |
| Gender * Gender Similarity | Pillai's Trace | 0.006 | .887[b] | 2.000 | 320.000 | 0.413 | 0.006 |
| | Wilks' Lambda | 0.994 | .887[b] | 2.000 | 320.000 | 0.413 | 0.006 |
| | Hotelling's Trace | 0.006 | .887[b] | 2.000 | 320.000 | 0.413 | 0.006 |
| | Roy's Largest Root | 0.006 | .887[b] | 2.000 | 320.000 | 0.413 | 0.006 |
| Familarity* Gender Similarity | Pillai's Trace | 0.003 | .503[b] | 2.000 | 320.000 | 0.605 | 0.003 |
| | Wilks' Lambda | 0.997 | .503[b] | 2.000 | 320.000 | 0.605 | 0.003 |
| | Hotelling's Trace | 0.003 | .503[b] | 2.000 | 320.000 | 0.605 | 0.003 |
| | Roy's Largest Root | 0.003 | .503[b] | 2.000 | 320.000 | 0.605 | 0.003 |
| Recovery Message Framing * Gender * Familarity | Pillai's Trace | 0.006 | 0.459 | 4.000 | 642.000 | 0.766 | 0.003 |
| | Wilks' Lambda | 0.994 | .458[b] | 4.000 | 640.000 | 0.767 | 0.003 |
| | Hotelling's Trace | 0.006 | 0.457 | 4.000 | 638.000 | 0.767 | 0.003 |
| | Roy's Largest Root | 0.005 | 0.882 | 2.000 | 321.000 | 0.415 | 0.005 |
| Recovery Message Framing * Gender * Gender Similarity | Pillai's Trace | 0.017 | 1.406 | 4.000 | 642.000 | 0.230 | 0.009 |
| | Wilks' Lambda | 0.983 | 1.407[b] | 4.000 | 640.000 | 0.230 | 0.009 |
| | Hotelling's Trace | 0.018 | 1.408 | 4.000 | 638.000 | 0.230 | 0.009 |
| | Roy's Largest Root | 0.017 | 2.769 | 2.000 | 321.000 | 0.064 | 0.017 |
| Recovery Message Framing * Familarity * Gender Similarity | Pillai's Trace | 0.021 | 1.673 | 4.000 | 642.000 | 0.154 | 0.010 |
| | Wilks' Lambda | 0.979 | 1.675[b] | 4.000 | 640.000 | 0.154 | 0.010 |
| | Hotelling's Trace | 0.021 | 1.677 | 4.000 | 638.000 | 0.154 | 0.010 |
| | Roy's Largest Root | 0.020 | 3.214 | 2.000 | 321.000 | 0.041 | 0.020 |
| Gender * Familarity * Gender Similarity | Pillai's Trace | 0.006 | 1.019[b] | 2.000 | 320.000 | 0.362 | 0.006 |
| | Wilks' Lambda | 0.994 | 1.019[b] | 2.000 | 320.000 | 0.362 | 0.006 |
| | Hotelling's Trace | 0.006 | 1.019[b] | 2.000 | 320.000 | 0.362 | 0.006 |
| | Roy's Largest Root | 0.006 | 1.019[b] | 2.000 | 320.000 | 0.362 | 0.006 |
| Recovery Message Framing * Gender * Familarity * Gender Similarity | Pillai's Trace | 0.010 | 0.819 | 4.000 | 642.000 | 0.514 | 0.005 |
| | Wilks' Lambda | 0.990 | .818[b] | 4.000 | 640.000 | 0.514 | 0.005 |
| | Hotelling's Trace | 0.010 | 0.817 | 4.000 | 638.000 | 0.514 | 0.005 |
| | Roy's Largest Root | 0.010 | 1.605 | 2.000 | 321.000 | 0.203 | 0.010 |

b. Exact statistic
*p < 0.05, **p < 0.01, ***p < 0.001