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Title: *Celebrity Scandals and Brand Reactions: A Statistical and SCCT-Based Framework*

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Abstract

This study examines how brands respond when celebrity endorsers are involved in scandals and whether those responses align with Situational Crisis Communication Theory (SCCT). We assemble 56 well-documented cases where a brand's reaction is publicly available. Each case is assigned one of seven scandal subtypes, rated on a five-point brand reaction scale, and mapped to an SCCT cluster (Victim, Accidental, Preventable) with a corresponding SCCT severity score. A "typical-case" benchmark is maintained at the subtype or cluster level to contextualize what brands usually do. Assumption checks result in a pronounced ceiling mass in the outcome, and non-normal distributions across clusters, so non-parametric methods are used. Spearman and Kendall correlations indicate that higher SCCT severity is associated with stronger actual brand reaction (Spearman's rho: $\rho = .407$, $p = .0019$; Kendall's tau-b: $\tau\text{-}b = .385$, $p = .0023$) and that observed case ratings mirror the typical pattern of brand behavior for similar situations (Spearman's rho: $\rho = .447$, $p = .0005$; Kendall's tau-b: $\tau\text{-}b = .411$, $p = .0008$). Kruskal–Wallis test reveals differences in responses across SCCT clusters ($H = 13.066$, $p = .0015$); post-hoc Dunn tests show that Preventable cases elicit stronger action than Victim cases, with Accidental cases limited by a small n. A chi-square test suggests that scandal subtypes are not evenly distributed across clusters ($\chi^2 = 112.000$, $df = 8$, $p < .001$). While an exact binomial test illustrates that athletes are overrepresented in the scandal sample relative to the Forbes 100 list ($p \approx 7.9 \times 10^{-12}$), occupation has no clear impact on brand reaction intensity level. Taken together, the evidence indicates that brand behaviors during endorser scandals generally align with SCCT's responsibility logic.

Keywords

celebrity scandal, brand reaction, SCCT, statistical analysis, manual content analysis

1. Introduction

Celebrity endorsement is an essential and popular element in brand strategy (Knittel & Stango, 2014). A celebrity ambassador is deemed credible based on their attractiveness, expertise, and trustworthiness. If an endorser seems to be credible, the associated brand seems more credible too (Spry *et al.*, 2011). Prior studies show that consumers' buying intention is significantly influenced by celebrity endorsers (Chi *et al.*, 2011), and brands that employ celebrities to advertise their products can potentially anticipate significant financial gains (Elberse & Verleun, 2012) that can amount to billions of dollars (Social, 2022).

However, this chain effect can also backfire. When a celebrity is involved in a scandal, their credibility can quickly disappear, negatively impacting the associated brand's image. In effect, any negative event, no matter how serious or how indirectly related to the celebrity, can lower the public's perception (Thwaites *et al.*, 2012). As Knittel and Stango (2014) point out, scandals can lead to real financial damage; for example, Tiger Woods' infidelity scandal cost affiliated companies, especially Nike, Gatorade, and Electronic Arts, over 2% of their market value in just a couple of weeks. Similar reputational and financial hits are not rare, yet brands' responses vary substantially when their ambassadors fall from grace.

When Colin Kaepernick drew both praise as patriotic dissent and criticism as disrespectful for kneeling during the U.S. national anthem to protest police shootings of unarmed Black men, Nike not only maintained its partnership but launched an advertising campaign featuring the athlete (Reuters, 2018). Nike's ongoing commitment to support Kaepernick's social justice stance was further demonstrated in 2019. The company withdrew its commemorative "Betsy Ross" sneakers after Kaepernick expressed concerns about the American flag with 13 stars on the back of the footwear because this symbol is associated with the slavery era (Safdar & Beaton, 2019). In contrast, when Aaron Hernandez was charged with first-degree murder, Cytosport and Puma immediately terminated their partnerships (Lisa, 2019). Tiger Woods' case shows yet another pattern: while Gillette, Accenture, AT&T, and Gatorade cut ties with the golfer, Nike maintained collaboration with him (Rishe, 2019).

To understand how brands react when a celebrity they work with is caught in a scandal, Attribution Theory can be a useful starting point. This theory looks at how people figure out who is to blame when something goes wrong (Weiner, 1985). Coombs (2007) built on this idea with the Situational Crisis Communication Theory, or SCCT. It offers a way to group crises based on how responsible a person or company is perceived to be. While SCCT has been widely applied to organizational crises, it has not been used to explore brand responses to celebrity endorser scandals. Moreover, no empirical study has systematically examined what predicts brand reaction severity across different types of celebrity scandals.

This study aims to address these gaps by examining the question: How do brand reactions vary across different types of celebrity scandals, and to what extent do they align with SCCT predictions? Specifically, we analyze how brands respond to fifty-six well-known celebrity scandals and whether those responses match what SCCT would suggest. The following sections start with a brief literature review of relevant concepts. Next, the study's design and methodology are detailed, and the statistical analysis results are presented. Combining theory with a data-driven method offers both practical and theoretical insights for brand management in the face of celebrity scandals.

2. Brief Literature Review

2.1 Celebrity endorsement and celebrity scandals

A celebrity endorser is “any individual who enjoys public recognition and who uses this recognition on behalf of a consumer good by appearing with it in an advertisement” (McCracken, 1989, p. 310). Celebrity endorsement is a common marketing strategy (Fong & Wyer, 2012) and has a direct impact on brand recognition and sales (Min *et al.*, 2019). Attributes including attractiveness, credibility, and image fit are crucial determinants of the effectiveness of celebrity endorsements (Shimp & Andrews, 2013). Good-looking brand ambassadors draw immediate attention from consumers, and most people react positively when a celebrity is considered an expert in a field relevant to the endorsed goods (Dom *et al.*, 2016). Celebrities are perceived as reliable sources of reference for products or companies, particularly those related to fashion, perfumes, or cosmetics, as consumers tend to copy the lifestyle of the famous individuals that they admire (Raluca, 2012).

Rather than brand responses themselves, existing research has focused primarily on the consequences of celebrity scandals, but empirical findings are mixed. Brand image can be harmed (Addo, 2016), and consumer attitudes toward the brand may be dampened (Carrillat *et al.*, 2014) due to associated endorsers’ scandals. Contrary to Leetaru’s (2020) conclusion that companies are more likely to experience financial losses when a brand ambassador is disgraced, doping scandals appear to have no significant influence on stock returns (Danylchuk *et al.*, 2016), bad-boy brand ambassadors may even benefit brands (Bennett *et al.*, 2020), and transgressive athlete endorsers may still sustain sales despite depressing brand image (Lohneiss & Hill, 2014).

A smaller but growing body of research examines the impact of brands’ responses to celebrity scandals. In agreement with Claeys and Cauberghe (2012), who demonstrate that brand response framing affects sports fan reactions, Sato *et al.* (2019) emphasize that brands must respond appropriately to their athlete endorsers’ scandals. Research has also investigated how brand responses affect stock prices (Hock & Raithel, 2020). At the conceptual level, Nalick *et al.* (2019) propose a theoretical framework for types of reactions a brand can take when an endorser misbehaves. Recent work also reports an increasing interest in scandalized social media influencers and virtual influencers (Wei, 2024), but the present study focuses on traditional celebrity endorsers such as athletes and entertainment figures.

In terms of scandal type categorization, previous research was conducted on how the scandal’s severity and type affect consumers’ moral reasoning strategies (Wei, 2024). Scandals are often only categorized into two general types: competence-relevant and competence-irrelevant incidents (Sato *et al.*, 2019), or unethical behavior and incompetent behavior (Yoon and Shin, 2017, as cited in Wei, 2024). In reality, negative publicity is much more nuanced. This is evident in cases related to forbidden substance abuse, such as intentional doping (Nike and Anheuser-Busch/former professional cyclist Lance Armstrong in 2012), accidental doping (Porsche and Tag Heuer/tennis player Maria Sharapova in 2016), and recreational drug use (Burberry and Chanel/top model Kate Moss in 2005 or Kellogg/swimmer Michael Phelps in 2009), which vary in responsibility, competence, and ethical evaluations. There are also other scandals related to sexual misconduct accusations (Verizon/singer Akon in 2007), racial and offensive remarks (Adidas and Balenciaga/rapper Ye-Kanye West in 2022), controversial political/social activism (Nike/athlete Colin Kaepernick in 2018), and severe criminal charges or convictions (Cytosport and Puma/athlete Aaron Hernandez in 2013). Having solely two general categories reduces the full comprehension of brand responses.

Similarly, case-level codings of brand reactions are not usually reported. For instance, Hock and Raithel (2020) examine 128 firms' response choices to negative celebrity endorser publicity (e.g., reacting vs. not reacting, timing, suspension vs. maintenance). However, only the list of events and sponsoring firms is provided in the web appendix. To promote transparency and reusability, the present study develops and reports a systematic classification of scandal types and brand reactions with detailed public sources.

2.2 Attribution Theory and SCCT Framework

Situational Crisis Communication Theory (SCCT) is fundamentally rooted in Attribution Theory, which posits that people search for the causes of events, particularly negative and unexpected ones, and assign responsibility based on their causal explanations (Weiner, 1985). In turn, these attributions of responsibility evoke emotional reactions, notably anger when an entity is deemed responsible versus sympathy when it is not, which drive subsequent behaviors (Coombs, 2007). Behavioral responses are negative when an organization or individual is deemed responsible and anger is elicited, and are positive when the organization or individual is deemed not responsible and sympathy is elicited (Weiner, 2006). SCCT builds on this attributional foundation to predict the reputational threat a crisis poses and to recommend appropriate response strategies (Coombs, 2007). It assumes that a crisis, defined as an unfavorable event that can dampen an organization's reputation, will prompt stakeholders to assess how much the organization (or actor) is to blame, and that these attributions directly influence stakeholders' emotions and intentions.

Aside from its original application in academic performance research, Attribution Theory has been employed in various domains, including decision-making in parole cases, efforts to quit smoking, willingness to help others (Weiner, 1985), and workplace and organizational matters (Harvey *et al.*, 2014). In marketing research, Attribution Theory has been widely applied, especially in sales force management, consumer perceptions of product performance, and advertising effectiveness (Schmitt, 2014). In the context of celebrity scandals, consumers judge a celebrity's transgression seen as controllable more negatively and transfer that attitude to the brand, lowering purchase intention (Um, 2013); this dispositional penalty remains but is buffered among highly committed customers (Um, 2016); whereas uncontrollable/external causes elicit sympathy and more favorable reactions toward the celebrity and brand (Wei, 2024). While SCCT has been utilized to investigate how companies respond to crises (Coombs & Holladay, 2008; Ki & Nekmat, 2014), this theory has not yet been applied to examine how brands react to different types of scandals involving their famous ambassadors.

3. Methodology

In this study, a structured quantitative approach is used, relying mainly on secondary data from well-known celebrity scandals. These are cases where brand responses are already public and can be observed clearly. Within this research design, an exploratory step involves identifying and coding suitable scandal cases and refining the scandal subcategories and brand reaction ratings. The subsequent statistical analyses then test how well these empirically observed brand behaviors match typical brand responses and SCCT-based expectations. The overall workflow is presented in **Appendix 1**. Our hypotheses (**Appendix 2**) are:

- As SCCT posits that higher perceived responsibility entails greater reputational threat and necessitates stronger response (Coombs, 2007), it is expected that **H1**: SCCT severity scores correlate with observed brand responses;

- If brands tend to behave consistently amid similar scandal types, it is presumed that **H2**: Typical brand responses correlate with observed brand responses;
- Given that SCCT clusters differ in attributions of responsibility (Victim < Accidental < Preventable) (Coombs, 2007), it is surmised that **H3**: Brand response ratings differ across SCCT clusters;
- Because Wei's (2024) review shows that athletes constitute the single largest occupational group in celebrity endorser scandal studies (38 of 76 articles, 50%), we expect a similar pattern in our data and hypothesize that **H4**: Athletes are overrepresented in celebrity scandal datasets.

3.1 Scandal Collection and Selection

The current research collects news articles written in English from major U.S. and U.K. outlets, including CNN, Yahoo Finance, NBC, Reuters, The Guardian, ESPN, the New York Post, etc. A selected scandal must involve a relatively well-known public figure, and there has to be a clear reaction from a brand or brands endorsed by this celebrity. In the end, a dataset of 56 different cases (see **Appendix 3**) is established. In terms of occupation, there are sportsmen, actors, models, singers, etc. When it comes to scandal type, some are related to drug use, some are legal issues, and a few are political and social activism.

3.2 Scandal Coding and Mapping

Before examining individual cases, a Conceptual Brand Reaction Rating Scale (see **Appendix 4**) is created to offer a neutral way to evaluate how brands publicly respond to scandals. This five-point ordinal scale ranges from 1 to 5, with 1 being the most lenient and 5 being the most severe response. Using the conceptual scale, an Actual Brand Reaction Rating (also known as Observed Brand Reacting Rating) is assigned to each celebrity scandal. These ratings serve as the foundation for comparing real-world brand reactions across different types of celebrity scandals.

Brand reactions are evaluated holistically across multiple dimensions: 1) timing and speed of response (immediate vs. delayed vs. gradual), 2) permanence of action (permanent termination vs. temporary suspension vs. eventual reconciliation), 3) geographic scope (global vs. regional), 4) proportion of brands that terminate vs. maintain partnerships, and 5) nature of the action taken (full contract termination vs. campaign-specific removal). This multi-dimensional approach ensures that brand reaction severity reflects the combined weight of these indicators. An instance is Dior's withdrawal of Sharon Stone from the Chinese market following the backlash from her offensive remarks suggesting that the earthquake in southwest China was bad karma over Beijing's occupation of Tibet (McCurry, 2018). In Stone's case, Dior's immediate and permanent decision related to a regional market is rated as 4.

For cases involving multiple brands, the rating is based on both the proportion of brands terminating and the decisiveness of their actions. Rating 5 is assigned when brand responses are immediate, unambiguous, permanent, and involve all brands. Cytosport and Puma's immediate cessation of cooperation with Aaron Hernandez following his first-degree murder charges is coded as 5. Rating 4 is assigned when most terminations occur, yet one major brand maintains collaboration. The case of Tiger Woods is coded as 4 because Gillette, Accenture, AT&T, and Gatorade terminated partnerships while Nike continued collaboration. Rating 3 is assigned when reactions are mixed, ambiguous, or gradual, including cases where some

brands terminated while others stayed, where temporary actions precede eventual separation, or where visible distancing happens without immediate full termination. The combined brand reaction rating is 3 following Phelps' cannabis-smoking incident, as AT&T and Rosetta Stone did not renew deals, Kellogg's terminated sponsorship, yet Speedo, Omega, and Subway stood by the swimmer (Sage, 2009; Joseph, 2012).

Rating 2 is assigned when brands make temporary gestures that are subsequently reversed. An example is Bella Hadid, a pro-Palestine model, whose shoe ad campaign was pulled following Israel's allegations of antisemitism and criticism of Adidas' choice to select her as the face for the retro SL72 that was first released for the 1972 Olympics in Munich, where 11 Israeli athletes were massacred (Nanji, 2024; Baek, 2024). Adidas then apologized to affected partners, including Bella Hadid (Bramley, 2024). Rating 1 is assigned when brands maintain partnerships with no negative response or explicitly increased support. Nike's maintained association amid Colin Kaepernick's controversy is coded as 1.

Scandals are sorted into seven subcategories (see **Appendix 5**): Severe Criminal Charges or Convictions; Offensive or Discriminatory Remarks/Imagery; Sexual, Abusive, Dishonest, or Reckless Misconduct; Substance Use – Performance – Intentional; Substance Use – Performance – Unintentional; Substance Use – Recreational; and Political or Social Activism. These subcategories allow differentiation between levels of perceived responsibility and intention. It is worth noting that Sexual, Abusive, Dishonest, or Reckless Misconduct captures cases involving allegations or confirmed instances of interpersonal misconduct, including inappropriate sexual practices, abuse, dishonesty, or reckless actions. This category differs from Severe Criminal Charges or Convictions in that it covers interpersonal wrongdoings that may negatively impact others' trust or safety, but are not prosecuted as major criminal offenses.

Each of the scandal subtypes described above is matched with one of the three SCCT crisis clusters (see **Appendix 6**), namely Victim, Accidental, or Preventable. Based on that, an SCCT Severity Score from 1 to 3 is given to reflect how much responsibility is likely assigned to the celebrity involved in each scandal subcategory. In Victim scandals, the celebrity is deemed to have no or little responsibility as their actions are not intended to be harmful to others. In Accidental cases, the star makes a mistake that is believed to be unintentional. In Preventable incidents, the public figures are seen as doing bad things on purpose.

At the same time, another set of scores named Typical Brand Reaction Rating is added to the mapping table, based on how brands usually respond to each scandal type. These ratings help compare what the SCCT theory says should happen with what tends to happen in practice. **Appendix 7** summarizes the key concepts and operational terms used throughout this study to describe theoretical and empirical brand reaction constructs.

3.3 Statistical Tool and Assumption Checks

All analyses are carried out in Python via Google Colab using various libraries and packages such as pandas, NumPy, SciPy, matplotlib, seaborn, and scikit-posthocs. The separators ':: —' on the labels are utilized solely to improve readability of subtype names and have no effect on statistical calculations. The full notebook, which executes data cleaning, assumption checks, statistical tests, and visualization generation in a linear sequence, enables exact replication for future studies using the same methodology.

Distributional assumptions are examined before running any tests. The Shapiro-Wilk test for normality is best recommended for skewed distributions (Midway and White, 2025), while Levene's test is powerful for examining homogeneity of variances (Gastwirth *et al.*, 2010). The Shapiro-Wilk test confirms that the data are not normally distributed in two of the three SCCT clusters (Accidental Cluster: $W = 0.750$, $p < .001$; Preventable Cluster: $W = 0.508$, $p < .001$) and no evidence against normality is found in the Victim Cluster ($W = 0.863$, $p = 0.2725$), and Levene's test shows equal variances ($W = 0.083$, $p = 0.9203$). As not all assumptions are met for parametric tests, our study uses non-parametric equivalents, including Spearman's ρ for associations and Kruskal–Wallis for group differences (Namh, 2016; Campbell & Shantikumar, 2016) and Kendall's τ -b for additional correlations between two ordinal variables (Brideau, 2025). Following Di Leo & Sardanelli's (2020) recommendation, actual p-values are reported instead of thresholds.

4. Findings

The results correspond with SCCT's presumptions that the intensity of deemed responsibility dictates the severity of reputational threat and the strategic reaction required (Ndone, 2025). For H1, SCCT severity ratings are moderately associated with actual brand reactions (Spearman $\rho = 0.407$, $p = 0.0019$; Kendall τ -b = 0.385, $p = 0.0023$). For H2, typical brand responses are moderately associated with observed brand reactions (Spearman $\rho = 0.447$, $p = 0.0005$; Kendall τ -b = 0.411, $p = 0.0008$). Both correlations (see **Appendix 8**) are in the medium range according to Watson's (2021) cutoffs for Spearman rho (0.1: Small, 0.3: Medium, 0.5: Large). It appears that the more severe a celebrity scandal as per the SCCT framework, the more serious the expected typical response, and the harsher the actual brand reaction.

A Kruskal–Wallis test (see **Appendix 9**) validates H3 in that brand response ratings differ across SCCT clusters ($H = 13.066$, $p = 0.0015$). Being the most common effect size statistic for the Kruskal–Wallis test, an epsilon-squared effect size of $\epsilon^2 = 0.209$ signifies a medium difference based on Mangiafico's (2016) cutoffs (0.01 – < 0.08: Small, 0.08 – < 0.26: Medium, and ≥ 0.26 : Large). Dunn post-hoc tests with the most conservative Bonferroni adjustment and the less conservative Holm/Hochberg adjustments (Lee & Lee, 2018), all identify a gap between Preventable versus Victim ($p = 0.0009$), although comparisons with Accidental are not significant. Brands react more negatively toward severe criminal charges/convictions, intentional doping, and offensive/discriminatory remarks/images, and are most lenient toward political/social activism.

The pattern fits with SCCT's proposition that victim crises imply weaker responsibility attributions and milder remedies (Coombs, 2007), as well as Attribution Theory's presuppositions that controllable (i.e., preventable) incidents evoke tougher reactions, and uncontrollable (i.e., victim) events elicit more sympathetic responses. Colin Kaepernick's case falls under the Victim cluster, as the controversy stems from polarized audiences' sociopolitical viewpoints about his stance, not from proven personal misconduct. In accordance with SCCT logic, Nike made a supportive decision to continue collaboration and later launched the advertising campaign featuring Kaepernick. In contrast, Aaron Hernandez's first-degree murder conviction and Tiger Woods' infidelity saga belong to the Preventable cluster, which elicits harsher brand reactions.

Based on the formula from Gokken (2025), we quantified calibration using Mean Bias Error (MBE), defined as $\frac{1}{N} \sum (\text{Observed} - \text{Expected})$. We also report MAE, RMSE, and 95% confidence intervals for uncertainty, then visualize results with confusion matrices and

calibration curves (see **Appendices 10.1, 10.2, 10.3**). Overall, 80.4% of brand actions fall within SCCT's recommended ranges, with a tendency to react more harshly than the theory suggests. This outcome aligns with attribution biases (Schmitt, 2014), particularly the ego-protection motive that may lead brands to react more negatively when reputational threats emerge.

Regarding H4, athletes are shown to be overrepresented in our celebrity scandal dataset (see **Appendix 11**). Sportspeople comprise 67.9% (38/56) of the scandal sample versus 24.3% in the Forbes benchmark, and the one-tailed exact binomial test yields a p-value of $p = 7.94 \times 10^{-12}$. Cohen's $h = 0.904$ indicates a large effect size as per Wallis' (2024) thresholds (> 0.2 : small, 0.5 : medium, > 0.8 : large). In our dataset, 38 of 56 scandals (67.9%) involve athletes, while the remaining 18 cases (32.1%) concern entertainment and media figures. This pattern is consistent with previous work showing that endorsement-related scandals have historically centered on sports and entertainment celebrities (Wei, 2024). Nonetheless, occupation adds little explanatory power for brand reaction severity, as there is a heavy overlap in response ratings across professions (see **Appendix 12**).

5. Conclusion

This study shows that the SCCT framework is applicable in the context of celebrity scandals. As the theory predicts, the more severe the celebrity scandal, the harsher the associated brand's reaction. However, elements such as fan involvement/response framing effect (Claeys & Cauberghe, 2012), attribution biases (Schmitt, 2014), celebrities' apologetic/non-apologetic attitudes (Hock & Raithel, 2020), and fans' self-identification with celebrity (Arai *et al.*, 2023) create boundary conditions for the theory's application. When a celebrity scandal occurs, companies can follow a systematic step-by-step plan: 1) determine the type of crisis; 2) assess the level of fan involvement; 3) select a response based on the scandal type, the involved celebrity's attitude, and fan reactions; and 4) announce the decision quickly, as timing matters (Hock & Raithel, 2020). Firms also need to monitor social media discourse to counter early criticism or use supportive fans to echo their decision (Brown *et al.*, 2010). Due to sports stars' elevated transgression rate, endorsed brands can include a scandal-related clause in the contracts and pre-plan response strategies.

The limitations are small cluster sizes for Victim ($n = 4$) and Accidental ($n = 3$), which reduce statistical power, and athlete overrepresentation may limit generalizability. Future studies could study larger and more diverse samples of celebrity scandals to see if similar patterns emerge. Not to mention the possibility that the public may become more tolerant over time. In 2025, Kate Moss is the face of the Isabel Marant fashion brand, Michael Phelps is the spokesperson for Under Armour sportswear brand, Sharon Stone lends her image to Mugler, Tiger Woods has signed with TaylorMade. Forgiveness and forgetting are not for all brands and celebrities, at all times. But the potential marketing power of a brand/celebrity association can sometimes make people forget missteps, mistakes, and misconduct that have led to a scandal.

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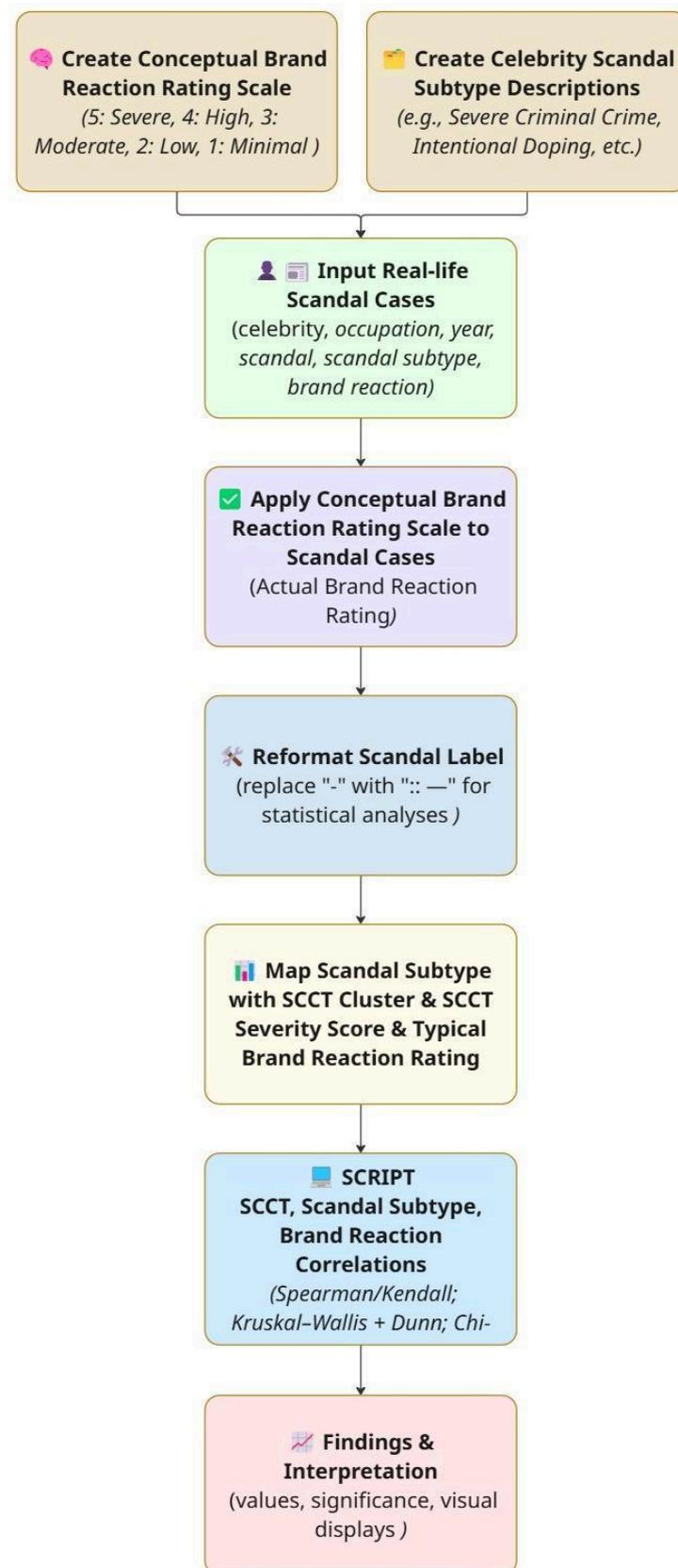
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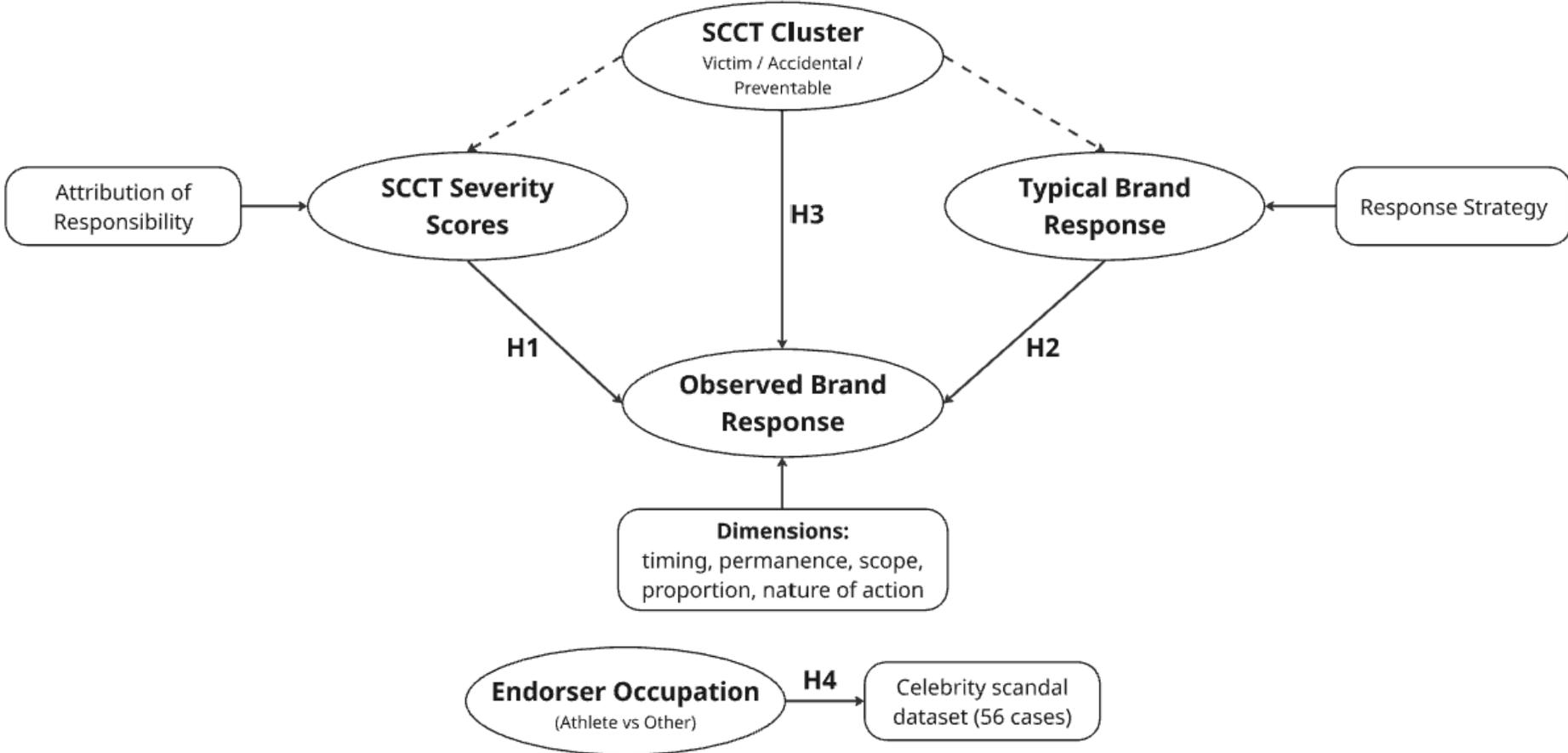
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Appendices

Appendix 1: Workflow for Integrating SCCT Theory with Brand Reaction Ratings



Appendix 2: SCCT-based conceptual framework and hypotheses for celebrity endorser scandals



Appendix 3: Examples of celebrity scandals chosen for the summary

Celebrity	Occupation	Year	Scandal	Scandal Type	Reformatted Scandal Type	Observed Brand Reaction (1–5)	Affected Brands	Brand Reaction	References	Detailed References
Marion Jones	Athlete	2006	Performance-enhancing drugs at the 2000 Sydney Olympics	Substance Use - Performance - Intentional	Substance Use :: — Performance :: — Intentional	5	Nike	Nike didn't renew its contract with Jones	<ul style="list-style-type: none"> • Lisa (2019) 	<p>Lisa, A. (2019, August 14). 24 athletes who lost their huge endorsement deals. Yahoo Finance. https://finance.yahoo.com/news/24-athletes-lost-huge-endorsement-090239873.html → Nike dropped Jones</p>
Michael Phelps	Athlete	2009	Cannabis smoking photo scandal	Substance Use - Recreational	Substance Use :: — Recreational :: —	3	AT&T, Rosetta Stone, Kellogg's, Speedo, Omega, Subway	AT&T and Rosetta Stone did not renew deals; Kellogg's terminated sponsorship; Speedo, Omega and Subway stood by him	<ul style="list-style-type: none"> • Sage (2009) • Joseph (2012) • Auerbach (2014) 	<p>Sage, A. (2009, February 6). Kellogg drops Olympian Phelps after photo brouhaha. Reuters. https://www.reuters.com/article/sports/kellogg-drops-olympian-phelps-after-photo-brouhaha-idUSTRE5150CY/ → Kellog's, Omega & Speedo</p> <p>Joseph, S. (2012, October 1). Celebrity endorsements gone bad. Marketing Week. https://www.marketingweek.com/celebrity-endorsements-gone-bad/ → AT&T, Rosetta Stone, Kellog's dropped Phelps and Subway stuck by him</p> <p>Auerbach, N. (2014, October 7). Michael Phelps suspended 6 months by USA Swimming. USA TODAY. https://eu.usatoday.com/story/sports/olympics/2014/10/06/michael-phelps-usa-swimming-suspension-dui/16820993/#:~:text=It's%20not%20the%20first%20time,his%20North%20Baltimore%20Aquatic%20Club → Phelps was suspended for 3 months</p>
Michael Vick	Athlete	2007	Dogfighting charges	Severe Criminal Charges or Convictions	Severe Criminal Charges or Convictions :: — :: —	5	Rawlings, Nike, Reebok, Upper Deck	Brands cut ties after his indictment; merchandise and products were pulled	<ul style="list-style-type: none"> • ABC News (2009) • Wetzel (2024) 	<p>ABC News. (2009, January 8). Vick's plea: admits to role in dog deaths, gambling. https://abcnews.go.com/US/story?id=3519620&page=1 → Vick pled guilty</p> <p>Wetzel, D. (2024, December 18). Michael Vick to Norfolk State: The next chapter of a redemption story. Yahoo Sports. https://sports.yahoo.com/michael-vick-to-norfolk-state-the-next-chapter-of-a-redemption-story-011821049.html → Vick was sentenced to 23 months in prison for his crimes / rebuilt his career</p>
Mike Tyson	Athlete	1988	Domestic Violence	Sexual, abusive, dishonest, or reckless misconduct	Sexual, abusive, dishonest, or reckless misconduct :: — :: —	5	Pepsi, Kodak, Nintendo	Brands terminated endorsement deals with Tyson	<ul style="list-style-type: none"> • Gustkey (1989) 	<p>Gustkey, E. (1989). Biggest Money Could Be Ahead for Tyson : Despite Lack of Endorsements, Boxer Could Make \$100 Million in HBO Deal. Los Angeles Times. https://www.latimes.com/archives/la-xpm-1989-07-20-sp-5054-story.html → Pepsi, Eastman Kodak and Nintendo endorsement deals were dead</p>
Naomi Osaka	Athlete	2021	French Open withdrawal over mental-health/press-obligation activism	Political or Social Activism	Political or Social Activism :: — :: —	1	Nike, Sweetgreen	Sponsors hail Naomi Osaka's 'courage' on mental health	<ul style="list-style-type: none"> • AP (2021) 	<p>Anderson, M., & D'Innocenzio, A. (2021, June 3). Sponsors hail Naomi Osaka's 'courage' on mental health. AP News. https://apnews.com/article/meghan-markle-naomi-osaka-osaka-french-open-tennis-ff9a4ed6166c3845efc14e3e6152804a → Backlash from some, but sponsors remained supportive</p>

Appendix 4: Conceptual Brand Reaction Rating Scale

Rating	Label	Conceptual Definition
5	Severe	Brand(s) publicly and permanently terminated partnerships or sponsorships in a decisive manner. Terminations were immediate (within days), unambiguous, and permanent with no indication of near-term reconciliation. When multiple brands were involved, all brands terminated. Terminations were typically global in scope and represented clear, final dissociation from the celebrity.
4	High	Major brand(s) publicly ended partnerships or sponsorships, but the response showed some restraint or limitation. While significant terminations occurred, at least one major brand maintained the relationship, OR terminations used softer language ("decided not to renew"), OR the response was delayed (months after scandal), OR the scope was limited (e.g., regional rather than global). The overall pattern indicated serious reputational concern but not complete industry rejection.
3	Moderate	Brand reactions were mixed, ambiguous, or gradual, with no clear dominant response pattern. This includes: (a) divided reactions where some brands terminated while others maintained support; (b) temporary actions (suspensions, campaign removals) without immediate full termination; (c) gradual or delayed separations using ambiguous language ("mutually decided not to renew"); (d) visible distancing actions that stopped short of full contract termination. The response indicated concern but not decisive, immediate action.
2	Low	A brand made a brief or symbolic public distancing gesture that was subsequently reversed, clarified, or apologized for. The initial reaction was visible but proved temporary and non-terminal. The brand walked back its action, issued an apology, or clarified that the relationship would continue. The ultimate outcome was maintenance or restoration of the relationship despite initial public pressure.
1	Minimal	No negative brand response occurred, or brands explicitly maintained or increased support despite public controversy. Brands either remained silent and continued partnerships unchanged (passive support), or actively defended the celebrity and launched supportive campaigns (active support). No public distancing gestures were made. In some cases, brands doubled down on their commitment despite backlash.

Appendix 5: Categorization of Scandal Subtypes

Category	Definition	Examples
<i>Severe Criminal Charges or Convictions</i>	Severe legal violations with criminal charges or imprisonment.	O.J. Simpson's murder charges
<i>Offensive or Discriminatory Remarks/Imagery</i>	Public statements/imagery that trigger backlash (racist, sexist, antisemitic).	Sharon Stone's bad karma remarks
<i>Sexual, abusive, dishonest, or reckless misconduct</i>	Alleged or confirmed acts involving sexual impropriety, abuse, lying or deception, or dangerously irresponsible behavior toward others.	Akon's simulated sexual act with a minor
<i>Substance Use - Performance - Intentional</i>	Deliberate use of banned substances to enhance performance.	Lance Armstrong's doping scandal
<i>Substance Use - Performance - Unintentional</i>	Inadvertent violations due to misunderstood regulations.	Maria Sharapova's doping allegations
<i>Substance Use - Recreational</i>	Use of recreational drugs in personal contexts.	Michael Phelps' cannabis incident
<i>Political or Social Activism</i>	Controversial or polarizing actions driven by social or political causes.	Colin Kaepernick's kneeling controversy

Appendix 6: SCCT and Brand Scandal Subtype Mapping

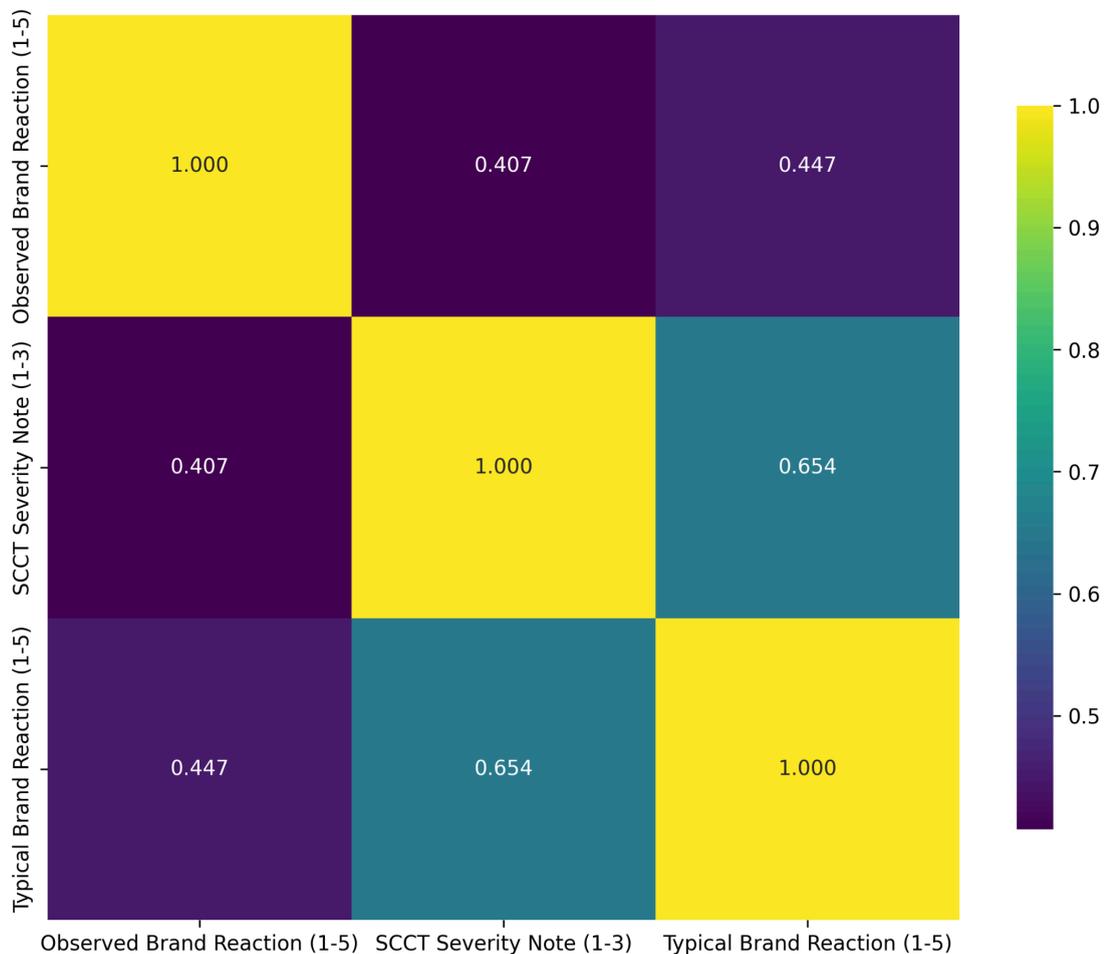
SCCT Cluster	SCCT Severity Score	SCCT Type	In the context of scandals	Celebrity Scandal Subtype	Example	Typical Brand Reaction
Victim Cluster	1	Rumor, Workplace Violence, Product Tampering, Natural Disaster	Scandals in which external factors or ambiguity dilute responsibility	Political or Social Activism	Colin Kaepernick's kneeling controversy	1
Accidental Cluster	2	Challenges, Technical-error accidents, Technical-error product harm	Scandals in which celebrities' actions were not malicious but had unintended consequences	Substance Use - Performance - Unintentional	Maria Sharapova's doping allegations	3
Preventable Cluster	3	Human-error accidents, Human-error product harm, Organizational misdeed	Scandals in which intentional or severely negligent actions lead to significant reputational damage.	Sexual, abusive, dishonest, or reckless misconduct	Akon's simulated sexual act with a minor	4
Preventable Cluster	3	Human-error accidents, Human-error product harm, Organizational misdeed	Scandals in which intentional or severely negligent actions lead to significant reputational damage.	Offensive or Discriminatory Remarks/Imagery	Sharon Stone's bad karma remarks	4
Preventable Cluster	3	Human-error accidents, Human-error product harm, Organizational misdeed	Scandals in which external factors or ambiguity dilute responsibility	Substance Use - Recreational	Michael Phelps' cannabis incident	4
Preventable Cluster	3	Human-error accidents, Human-error product harm, Organizational misdeed	Scandals in which intentional or severely negligent actions lead to significant reputational damage.	Substance Use - Performance - Intentional	Lance Armstrong's doping scandal	5
Preventable Cluster	3	Human-error accidents, Human-error product harm, Organizational misdeed	Scandals in which intentional or severely negligent actions lead to significant reputational damage.	Severe Criminal Charges or Convictions	O.J. Simpson's murder charges	5

Appendix 7: Key concepts and operational terms to describe theoretical and empirical brand reaction constructs

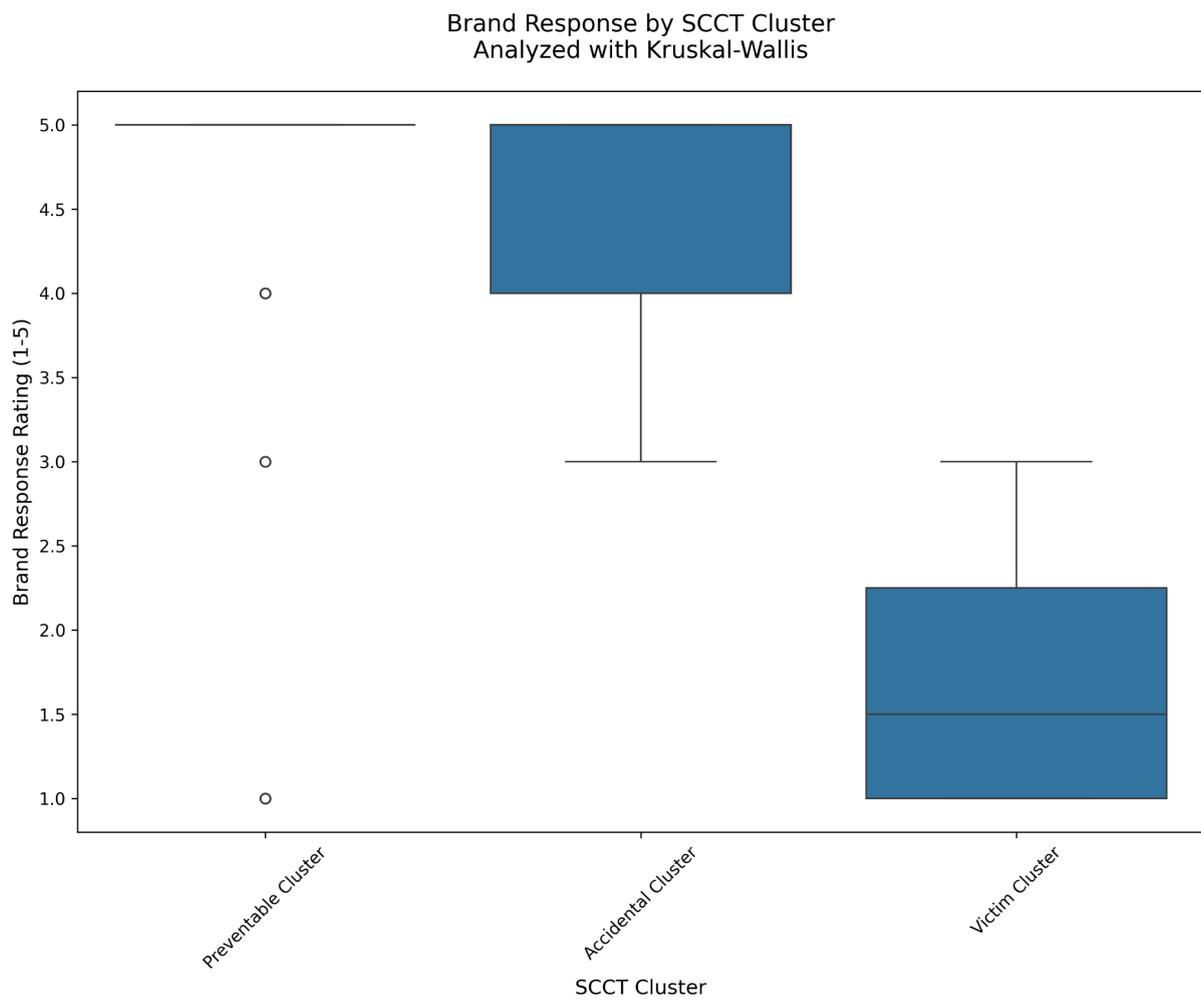
Term	Definition
SCCT Severity Score (Coombs, 2007)	The theoretical severity level is assigned according to Situational Crisis Communication Theory (SCCT), where 1 = Victim, 2 = Accidental, and 3 = Preventable.
Conceptual Brand Reaction Rating Scale	A five-point scale developed by the researcher to quantify the intensity of brand responses, independent of scandal type. The scale ranges from 1 (Minimal) to 5 (Severe).
Observed/Actual Brand Reaction Rating	The rating applied to each scandal case using the Conceptual Brand Reaction Rating Scale.
Expected/Typical Brand Reaction Rating	The typical brand reaction rating associated with each scandal type in the SCCT mapping table, inferred from prior examples. This does not reflect a theoretical value but an empirical generalization.

Appendix 8: Spearman Correlations

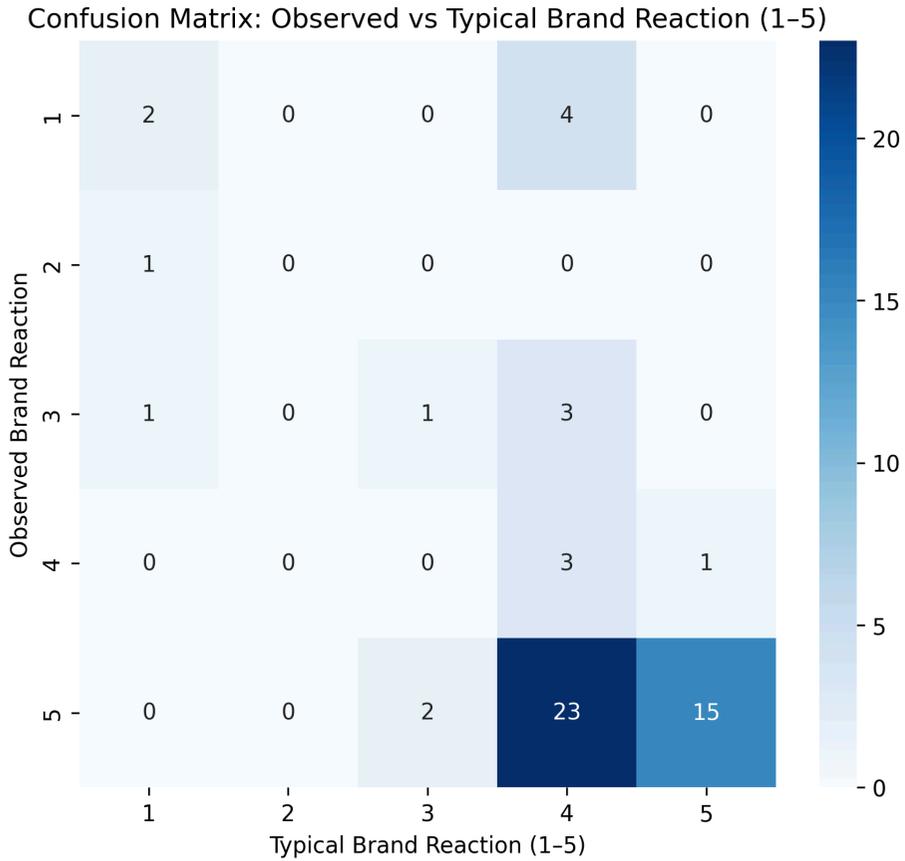
Spearman Correlations: SCCT Theory vs Observed Responses
(Primary analysis for ordinal data)



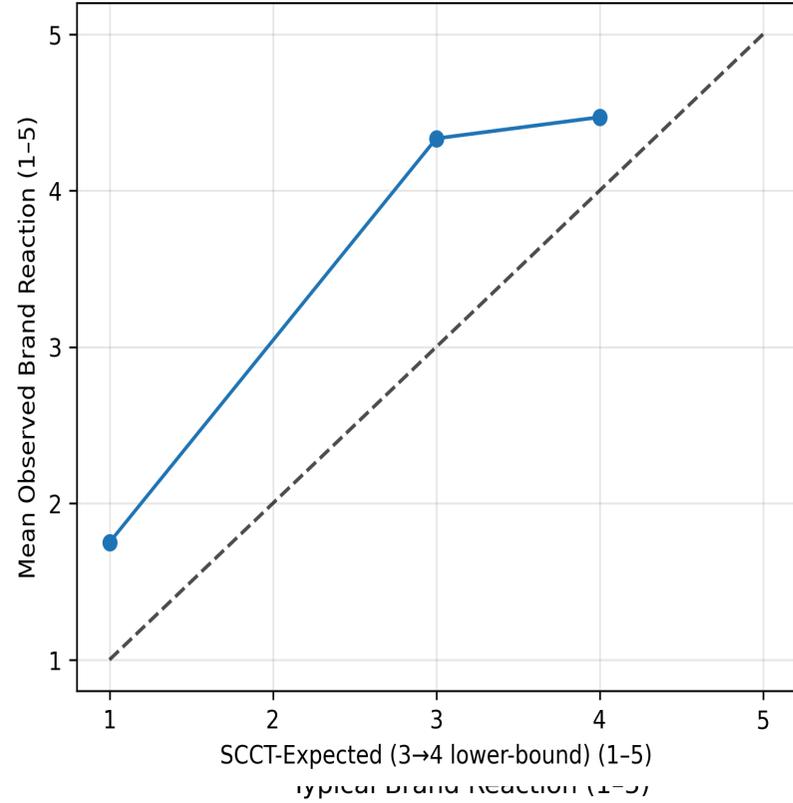
Appendix 9: SCCT Cluster Comparison



Appendix 10.1: Confusion heatmap and calibration curve - Typical Brand Reaction



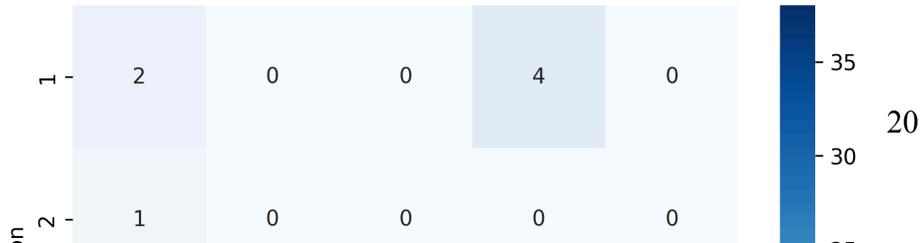
Calibration vs SCCT-Expected (3→4 lower-bound) (1-5) (category means)



Appendix 10.2: Confusion heatmap and calibration curve -

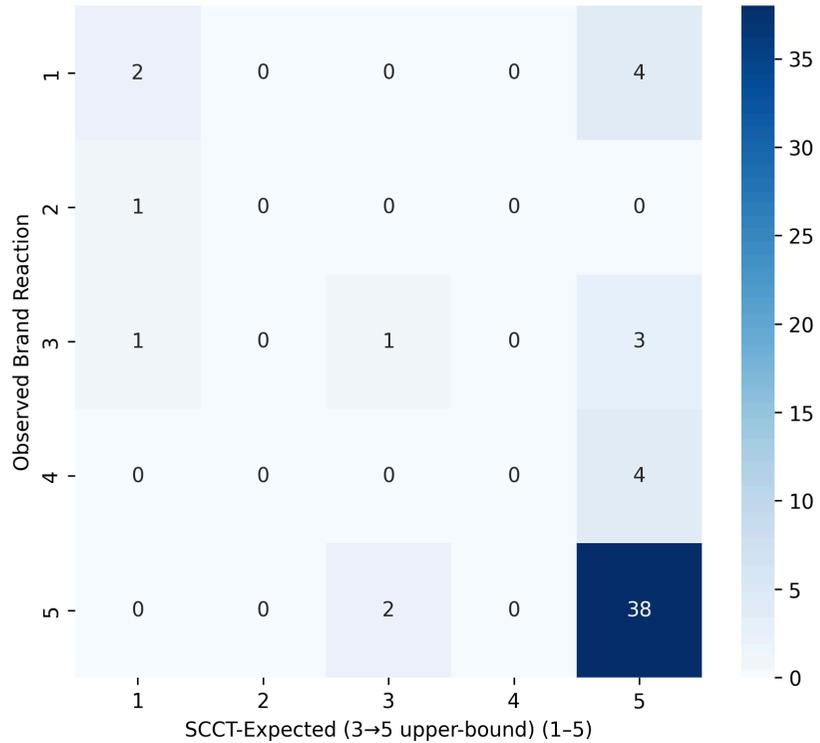
SCCT & Expected Rating (3→4 Lower-Bound)

Confusion Matrix: Observed vs SCCT-Expected (3→4 lower-bound) (1-5)

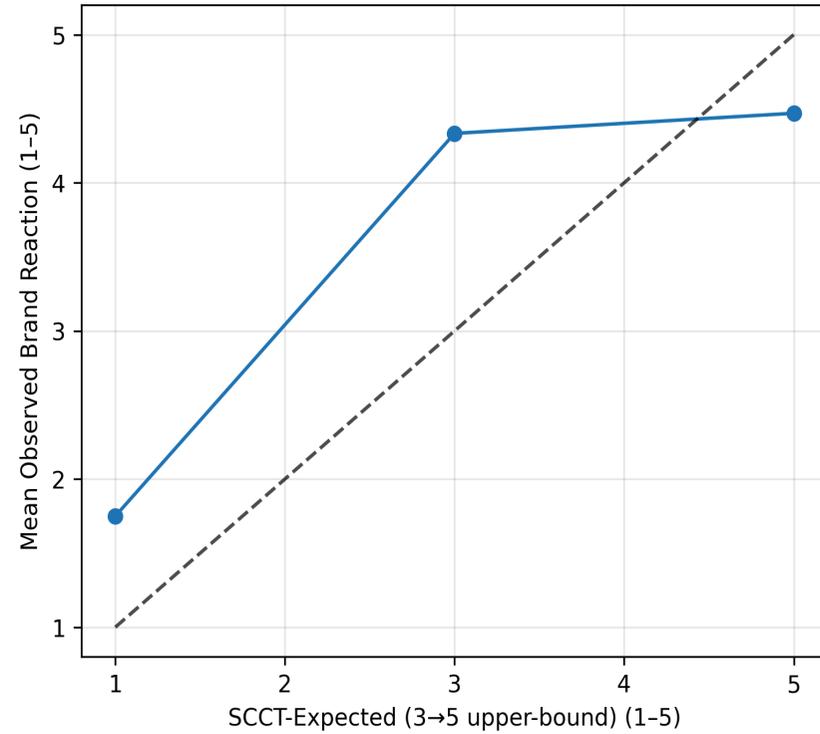


Appendix 10.3: Confusion heatmap and calibration curve - SCCT & Expected Rating (3→5 Upper-Bound)

Confusion Matrix: Observed vs SCCT-Expected (3→5 upper-bound) (1-5)



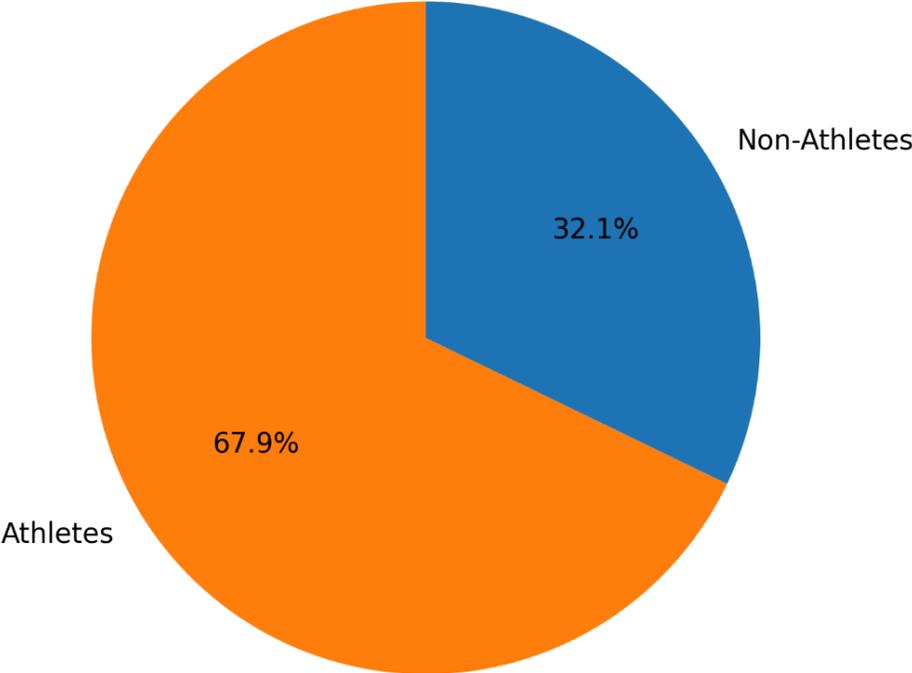
Calibration vs SCCT-Expected (3→5 upper-bound) (1-5) (category means)



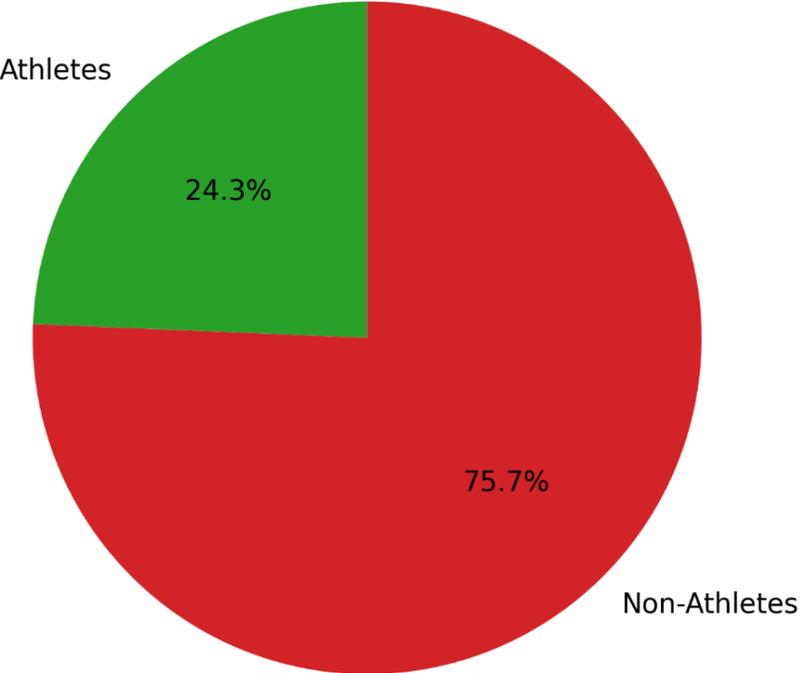
Appendix 11: Athlete Overrepresentation

Athlete Representation: Statistical Evidence of Overrepresentation

Observed
(Scandal Dataset)



Expected
(Forbes Dataset)



Appendix 12: Occupation Strip Plot

Brand Response Ratings by Celebrity Occupation
(Individual Cases with Jitter)

