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What If I Told You None of It Was Accidental: A Moderated Mediation Analysis of Easter Eggs' Impact on Fan Engagement in Taylor Swift's Marketing

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Section I. Introduction

…Are you ready for it? What if I told you she's a *mastermind*? In the era of social media marketing, few have mastered the art like pop star Taylor Swift. Fan or not, you most likely have heard her name on social media, news outlets, or just about anywhere else over the past two years. How does she do it? Through an excellent marketing strategy where she creates cryptic social media posts with deliberately placed content called Easter eggs.

During her Eras Tour, awarded the highest-grossing of all time, Taylor incorporated Easter eggs in her concerts, clothes, and on social media, and users flocked to TikTok, averaging 380 million views per day (Evers, 2024). Her fans, referred to as Swifties, are widely known to make this content go viral online, with constant theories and discussions about decoding these hidden messages. Swift's strategy led her to be named the 2023 *TIME's* Person of the Year, and referred to as a "Masterclass in Modern Marketing" and the "Queen of Anticipation and Surprise" by *The New York Times* and *Forbes* (Esade Business and Law School, 2024; Houston, 2024).

Within this marketing strategy, there is a newer trend called gamification. As social media is a way to directly connect and interact with consumers, many companies struggle with not knowing what content to make, when to create it, or how to keep up with the trends (White, 2023). Today, compelling and engaging social media content is essential for success, especially in the entertainment industry, as Narayan (2024) reveals that fans today constantly look for genuine, memorable ways to connect with artists. To combat this challenge and avoid one-sided, superficial interactions, marketers have started to prevalently use gamification and interactive content (Phillips, 2024).

In general, the gamification market, as a whole, is estimated to reach 61.30 billion USD by 2030, growing because of social media, mobile devices, and AI, and its ability to enhance customer experiences with more immersive, value-driven, playful moments, especially in marketing (Mordor Intelligence, 2019; Huotari and Hamari, 2017). Many scholars have discussed the numerous benefits for consumers; However, Yang, Asaad, and Dwivedi (2017) and Santos, Dias, and Bairrada (2024) note that further research needs to examine how the different gamified

elements work for marketing, and which designs are the most effective for consumer needs and enjoyment. This is where Easter eggs come in.

As a form of gamified marketing content, Easter eggs are widely used by artists in the music industry, as they are fun surprises used to increase fan interactions (Griffiths, Cunningham, and Weinel, 2014); However, despite growing in popularity, their is a lack of empirical marketing research for these hidden clues and their effectiveness in consumer-brand interactions. Prior studies have only identified their benefits in areas such as video games, education, and brand post-purchase experiences. As many companies begin to adopt this content, they are using Easter eggs solely based on popularity, trendiness, and their viral appeal rather than any researched, factual evidence. Because of this, addressing the gap in Easter egg content is crucial for brands and marketers looking to successfully implement them.

Taylor Swift's publicly praised success with these hidden messages provides a unique and compelling case study to examine how this strategy enhances fan engagement, as few brands have achieved this level of impact with gamification (Schempp, 2024; Evers 2024). There is no doubt Swift's fans are highly engaged individuals, but what part do Easter eggs actually play in influencing their behavior? This study is based primarily on gamification theory, but it also incorporates elements of participatory culture with interactive and experiential marketing to explore how Easter eggs can create more immersive fan-brand interactions. This thesis proposes and tests the following research question:

How does exposure to Easter eggs in Taylor Swift's marketing strategy influence fan engagement through excitement and brand attachment, and how is this process moderated by social media usage?

Through a case study approach, this study uses a quantitative experimental survey design collecting data from over 900+ Taylor Swift fans. Respondents will be randomly assigned to one of two conditions: One group will view an Instagram post containing Easter eggs, while the other will see the version without them. A supplementary analysis will also take place, analyzing the number of comments on Swift's Instagram from 2023-24, comparing posts that contain Easter

eggs versus those that do not. This additional step is to see if real-world data and fan behavior will coincide with the self-reported survey findings.

Overall, this thesis aims to advance literature by extending Easter egg research beyond video games, and into the marketing context by analyzing a culturally relevant artist who has successfully implemented them. While this research focuses on a pop star, marketers and brand managers, regardless of sector and industry, can learn and apply these findings to create engaging, interactive, and memorable campaigns for their brands on social media. This study also proposes a serial mediation, testing how excitement and brand attachment, together, impact fan engagement. It also introduces a new formative index for social media usage, analyzing the behavioral, emotional, and cognitive dimensions within the Easter egg context.

The next chapter expands the literature review and theory of this study. Chapter three will outline the methodology used, and chapter four presents the survey and supplementary analysis results. Then, chapter 5 will discuss the findings, their implications, and their contributions in detail. The sixth chapter concludes the study, followed by the bibliography and an appendix that provides further information and details of this research.

Section II. Literature Review

2.1 Gamification Marketing Overview

Gamification involves implementing attention-grabbing, game-like elements in contexts outside of games (Huotari and Hamari, 2017): Examples of this content include point and loyalty systems, challenges, badges, rewards, leaderboards, puzzles, clues, and more. Gamification is known to provide numerous benefits, like positively affecting consumer behavior and their attitudes toward brands, and it is becoming increasingly used in marketing today (Yang, Asaad, and Dwivedi, 2017). However, scholars report that negative outcomes can occur still due to weak design, technology, or implementation of the game element (Andrade, Mizoguchi, and Isotani, 2016; Santos, Dias, and Bairrada, 2024): These scholars urge for more personalized and adaptive gamification strategies that can be useful for various demographics and provide better experiences for all. This provides a research opportunity to test if Easter eggs, as a form of gamified content, are a possible, effective approach to implement .

2.2 Independent Variable: Easter Eggs in Marketing

Originating in the video game industry, the first one appeared in 1979 as a hidden message within a video game, designed for users to hunt and discover it for a reward (Fuchs, 2024). Since then, marketing has also adopted Easter eggs, but academic research on their effectiveness is still limited. In this study, “Exposure to Easter eggs” will describe the moment a user encounters a post on social media containing these hidden elements. As gamified content, Easter eggs are defined as the hidden and cryptic messages, features, images, and clues that are concealed within brand material, and are used to challenge and reward consumers who participate and decode them.

Although Easter eggs come from gamification, they also seem to align with aspects of interactive marketing and participatory culture: Easter eggs create two-way communication and active co-creational involvement between Swift and her fans, urging them to collaborate, theorize, and speculate about the content (Wang, 2021; Jenkins et al., 2006). Moreover, Huotari and Hamari (2017) explain that gamified elements can create valuable, hedonic gameful experiences for users. This directly connects to research by Schmitt and Zarantonello (2013) who state experiential marketing goes beyond just products and services, and provides value through

hedonic and memorable moments and experiences. When fans discover and participate with Easter egg content and discussions, they create unique, shared interactions with the brand, and this connects Easter eggs to all four frameworks.

Scholars have already identified benefits of using Easter eggs. For example, in educational settings and as post-purchase, peripheral brand elements, they increase engagement, positive feedback, activity, and influence perceptions of quality(Takbiri, Bastanfard, and Amnii, 2023; Fuchs, 2024). Online, many marketing websites claim that Easter eggs impact brand awareness, increase word of mouth, create exclusivity, are rewarding for consumers, and many more positives (Pawar, 2022); However, there is a lack of empirical research confirming these insights. Despite growing in popularity for marketing content, none have used Easter eggs as successfully, nor as centrally to their brand experience as Taylor Swift.

2.3 Taylor Swift as a Case Study

Due to her recent record-breaking success, there has been a growing body of academic literature regarding Swift's branding, fan parasocial relationships, and her Era's tour economic impact. Particularly, her gamification marketing and Easter eggs have received lots of attention due to their online virality and buzz (Schempp, 2024). Hu and Williams Bradford (2024) describe this strategy as "Brand-guided badging": Swift encodes clues and mysterious content in her work, and her fans tend to run with it, theorizing and making their own content about these Easter eggs. These interactions are simply informal ways for fans to distinguish and prove their fan commitment and insider knowledge (Hu and Williams Bradford, 2024). However, as her fans are already highly engaged to begin with, there remains a lack of empirical research into how much the Easter egg content, itself, influences their engagement.

2.4 Dependent Variable: Fan Engagement

This is a specific type of customer engagement that describes fans who devote their time and focus on interacting and co-creating with a brand and its marketing (Yoshida et al., 2014). In the music industry, there is a push-and-pull relationship where artists produce and release content, and fans react and engage in various ways, which often is influenced by fan culture and the brand's narrative (Bengtsson and Edlom, 2023). With immediate and long-term impacts,

engagement is reported to have behavioral, cognitive, and emotional aspects (Santos et al., 2019). Because decoding requires fans to have existing knowledge and familiarity, this study will only examine the behavioral and emotional dimensions of fan engagement. Also, given that Swift's Easter eggs are primarily distributed on social media, this study defines fan engagement as viewing, clicking, discussing, liking, commenting, or sharing a post. (Unnava and Arabindakshan, 2021).

Addressing a gap from Yang, Asaad, and Dwivedi (2017), they explained that further marketing research needs to explore the different types of game elements and their effects on engagement. Lakier and Vogel (2022), who studied Easter eggs' impact on user experiences and perceptions, similarly stated a future experiment should compare the inclusion versus exclusion of Easter eggs to measure their behavioral effects. To analyze these gaps, the first hypothesis is:

Hypothesis 1: Exposure to Easter eggs in Taylor Swift's marketing strategy directly influences fan engagement.

2.5 Mediators: Excitement & Brand Attachment

Excitement

Numerous scholars report that gamification has a positive influence on consumers' perceived enjoyment, brand attitudes, and experiences (Yang, Asaad, and Dwivedi, 2017); However, research on their emotional impacts is limited, especially for Easter eggs. For example, Lakier and Vogel (2022) ask future researchers to test if Easter eggs increase user perceptions of excitement and hedonic quality. Connecting to Swift, sources claim her Easter eggs frequently generate fan excitement and anticipation, but no research has directly measured this effect with self-reported data from fans (Esade Business and Law School, 2024).

Academically defined, emotions are mental states of readiness, with two dimensions: Arousal (Intensity and bodily response) and valence (Being positive or negative) (Schreiner, Fisher, and Reidel, 2021). Excitement is a high arousal, positively valenced emotion that is commonly understood by many: Wakefield and Wakefield (2016) tested excitement during a meaningful event, and found it to increase engagement and interactions. Building on this, Dolan et al. (2015) created an engagement spectrum and defined frequent online behaviors (liking, sharing, and

commenting) as “Positive contributions”. They placed this concept on the positive valence and high in activity quadrant, linking this study’s definition of fan engagement to excitement. Pawar (2022) also states that Easter eggs increase excitement, exclusivity, and buzz, but he provided no empirical evidence behind it. Together, these findings support excitement to be a strong mediator between Easter egg content and fan engagement.

Brand Attachment

The second mediator is brand attachment, the bond between oneself and a brand, which involves the thoughts, emotions, feelings, and attitudes toward that relationship (Park et al., 2010). This research focuses on the brand-self connection dimension, which is when an individual feels the brand is a part of their identity and who they are (Park et al., 2010). This is especially relevant to the music industry and fan culture, as Li, Dong, and Tang (2024) note that people who identify themselves within a fandom are more likely to engage in collective behaviors, following group norms and interests. Relating to brand-self connection, fans often compare their self-identity and expression to a celebrity’s: Fans who relate to them are then more likely to build relationships, follow, and connect with celebrities on social media (Kim and Kim, 2020).

Furthermore, Rabbanee, Roy, and Spence (2020) found that brand attachment mediates online engagement with increased likes, shares, and comments on Facebook; However, few studies have tested this using gamified content and multiple social media platforms, which this analysis will examine. Linking this to Easter eggs, studies identified that value co-creation activities positively impact the brand experience and brand attachment, and since this cryptic content fosters co-creation between Swift and her fans, they may also strengthen brand attachment (Hongsuchson et al., 2023). Because of prior works, it is hypothesized that brand attachment will be a strong, second mediator.

Serial Mediation

Current research has also found connections between the two mediators. Shimul (2022) reviewed common trends within brand attachment literature and noted that emotional connection and involvement are important to enhancing the concept and urge for future investigations. Advancing this, Arundathi and Babu (2024) examined emotional brand attachment and argued that positive feelings, such as excitement, can strengthen this connection and create more

positive associations towards the brand. Moreover, Rimé (2009) noted that sharing emotions with individuals can strengthen bonding, attachment, and social ties. Tested in store settings, Orth, Limon, and Rose (2010) also support these ideas, finding that brand attachment is repeatedly stronger in positive environments where there is high pleasure, arousal, and satisfaction. Because of this research, this study proposes that excitement may also increase brand attachment, and to test this serial mediation, the second hypothesis is:

H2. Exposure to Easter eggs triggers excitement, which strengthens brand attachment and ultimately leads to higher fan engagement.

2.6 Moderator: Social Media Usage

In the music industry, social media is an essential tool for artists to communicate and strengthen fan relationships (Bengtsson and Edlom, 2023). As Swift posts Easter eggs sporadically across these platforms, defining social media usage on a single metric, like frequency, is not enough. To capture the full fan experience, this thesis defines social media usage as a multidimensional formative index, with behavioral, emotional, and cognitive dimensions (Diamantopoulos and Winklhofer, 2001; Baboo, Nunkoo, and Kock, 2022): It is formative since each dimension plays an individual part in shaping how fans encounter, decode, and respond to Swift's Easter eggs.

Platform Exposure (Behavioral Dimension)

Platform exposure is defined as the number and variety of social media platforms a fan actively uses to stay informed on the topic. Fans are known to have a wide online presence on various networks to follow theories, discussions, and interact with celebrities (Kim and Kim, 2020). For brands, Unnava and Aravindakshan (2021) explained the importance of "Spillover effects": This is when fan-content interactions on one social media platform lead to broader engagement throughout various others. The rationale behind this dimension is that the wider the digital footprint a fan has, the more likely they are to encounter Easter egg content and theories.

Perceived Disconnection (Emotional Dimension)

Given Swift's surprise postings, perceived disconnection is defined as the emotional sense of urgency and pressure fans feel to log online to not miss anything (Geber, Nguyen, and Buchi, 2023; Falgoust et al., 2022). As social media is central to fan culture, it's the main place to access

content, connect, and create fan social identities (Salo, Lankinen, and Mantymaki, 2013; Ellison, Steinfield, and Lampe, 2007). Supporting this, Falgoust et al. (2022) found that users, who are aware of social media events and challenges, are more motivated to log online and participate. Studies link this to increased social media use, as users feel a strong need to belong and have a fear of exclusion and missing out (Alabri, 2022). Through the Uses and Gratifications Theory, Easter eggs tap into the fan's emotional dimension, addressing their need and goal to feel part of a community, and fans have to actively consume and decode them (Katz, Blumbler, and Gurevitch, 1973).

Fan Awareness (Cognitive Dimension)

Fan awareness is the cognitive ability to recognize, understand, and interpret Easter eggs. As not all users are aware of Swift's hidden content, prior awareness is the first step to decoding them and increases the chance of interacting (Bigum, 2024; Hu and Williams Bradford, 2024). This is supported by the Encoding and Decoding model by Hall (1980), who argues that an audience will have difficulty understanding a message with unfamiliar language: Familiarity is essential or the message will be lost and misinterpreted. Relating to gamification, Huotari and Hamari (2017) similarly note that a user's gameful experience is affected by their abilities, prior interactions, and knowledge. Fans with this skill set, actively solving Swift's complex Easter eggs, can be referred to as "People in the know" (Mercanti-Guérin, 2008). Without this awareness, Easter eggs may be completely missed, leading to effects on engagement and overall experience.

2.6.1 Moderating Emotional Response

Harvard Business Review found that customers from social media were 60% more emotionally connected to a brand, compared to 21% of all customers, which highlights how increased social media usage can increase emotional brand connections (Magids, Zorfas, and Leemon 2015). Supporting this, Dwivedi et al. (2018) studied emotional attachments to social media brands, but did not test how it was impacted by specific types of content: They suggested that social media usage may shape these emotional effects. Building this, Wakefield and Wakefield (2016) conducted an experiment and found that excitement has impacts on the levels of social media use, specifically when a user has a passion or during a meaningful event, which suggests excitement and social media usage may affect one another in the Easter egg context. Connecting

this to Swift, many sources state her content generates excitement online, but it has not been empirically tested if excitement levels vary by a fan's social media usage (Esade Business and Law School, 2024). To extend this research, the third hypothesis is as follows:

H3. Individuals with higher levels of social media usage report greater excitement after being exposed to Easter eggs.

2.6.2 Moderating the Full Engagement Model

On Facebook, Kuo and Chen (2023) examined a brand's interactive social media marketing activities and found that brand attachment partially mediates the relationship between perceived experience and continuous participation. As Easter eggs are a form of interactive content, this study adapts their model, but tests fan engagement across multiple social media platforms. Building on this, future research is encouraged to examine how various types of social media interactive content and features influence overall engagement (Dolan et al., 2019; Wang, 2021).

In the music industry, Saboo et al. (2016) analyzed the outcomes of social media activity, and urged for research into the antecedents: This refers to content or experiences that generate online activity and interactions, which this thesis hypothesizes Easter eggs can do. As social media is Swift's main form of distribution, the relationship between Easter eggs and fan engagement is expected to be stronger for fans who are on social media more often. To test how social media usage moderates the full model, hypothesis four is:

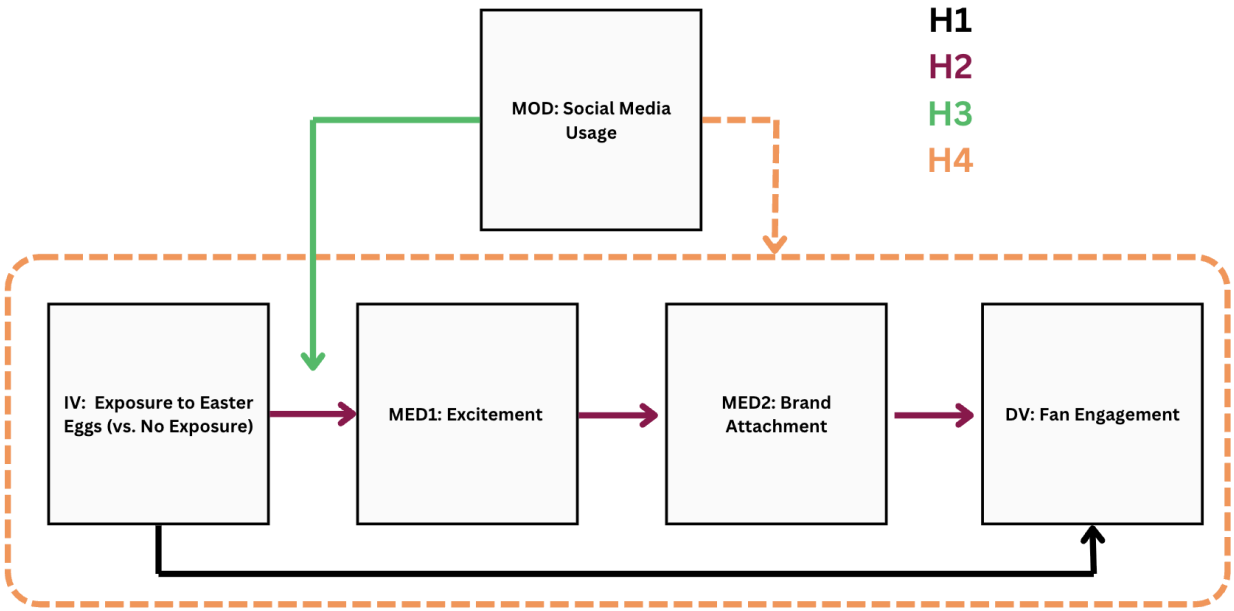
H4. The effect of Easter egg exposure on fan engagement, through excitement and brand attachment, is moderated by social media usage, with stronger effects for individuals with higher usage levels.

2.7 Conceptual Model, Research Question, and Hypotheses

Drawing from the discussed literature, this thesis argues that Easter egg content is a highly relevant, yet understudied strategy that has strong potential for marketing. The proposed conceptual model and hypotheses are on the next page below. Once again, this study's research question is: *How does exposure to Easter eggs in Taylor Swift's marketing strategy influence fan*

engagement through excitement and brand attachment, and how is this process moderated by social media usage?

Figure 1. Conceptual Model for Thesis



H1. Exposure to Easter eggs in Taylor Swift's marketing strategy directly influences fan engagement.

H2. Exposure to Easter eggs triggers excitement, which strengthens brand attachment and ultimately leads to higher fan engagement.

H3. Individuals with higher levels of social media usage report greater excitement after being exposed to Easter eggs.

H4. The effect of Easter egg exposure on fan engagement, through excitement and brand attachment, is moderated by social media usage, with stronger effects for individuals with higher usage levels.

Section III. Methodology

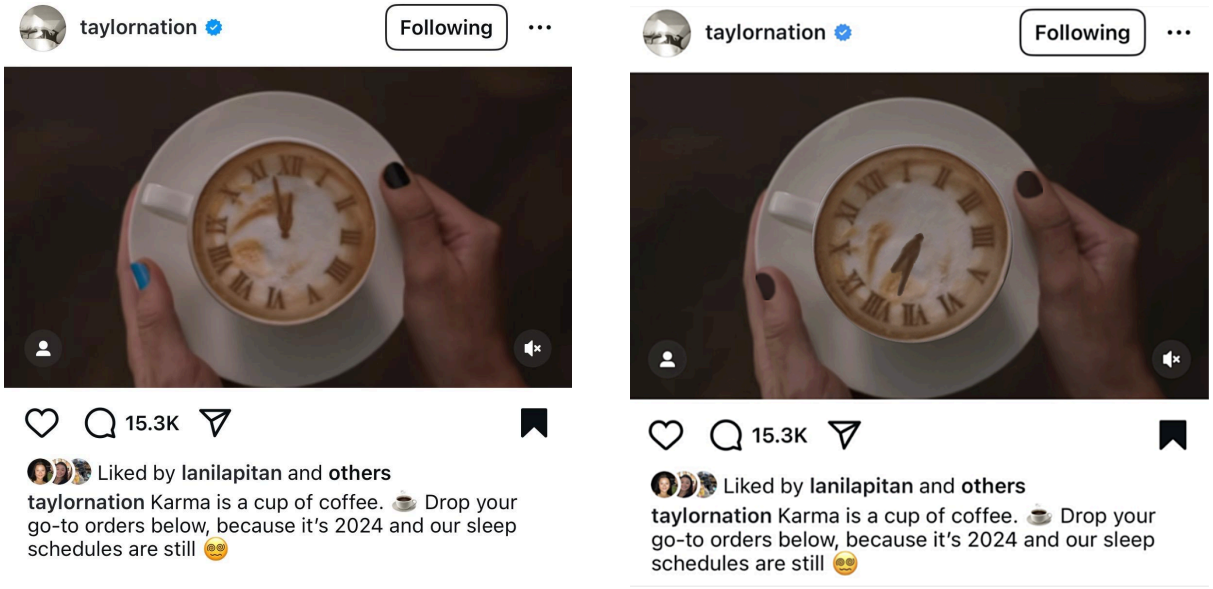
3.1 Overview

This thesis uses a case study approach focusing on Swift to analyze how Easter eggs in a social media post influence excitement, brand attachment, and fan engagement. A quantitative, experimental design was used to test this. Extending the literature of Fuchs (2024) and Lakier and Vogel (2022), this study created a manipulation using one of Swift's Instagram posts: one version was the original post with Easter eggs, while the other version had them removed. Respondents were split and randomly assigned to one of these two conditions. The survey was created and distributed with Qualtrics, and responses were statistically analyzed with SPSS to compare the two groups. This approach was chosen to understand fans' subjective experiences through self-reported data. Additionally, a supplementary analysis analyzed data from Swift's Instagram to see if objective engagement metrics, specifically comments, matched the survey results.

3.2 Experimental Design and Pre-Tests

The experimental manipulation is from a real Instagram post referencing Swift's "Karma" music video, as it is widely known by fans to contain numerous Easter eggs with over 71 million views. Because of their hidden nature, three pre-tests were conducted in order to identify *what exact elements* within the post were the collective perception of the Easter eggs. The responses (N1=42, N2=27, N3=37) consistently identified the three main elements: the nail polish colors, the clock hand positions, and the thumb placement on the clock face. This feedback helped design the final non-Easter egg condition, and Appendix A provides further details of the three pre-tests. After creating the final manipulation, an additional test with 20 new respondents confirmed there was a clear distinction in responses between the two conditions, and so, the final survey was launched. The official manipulation design, featuring the changes in the nail polish color, clock hands, and thumb placement, is below:

Figure 2. Manipulation Experiment



Easter egg Condition (Original Post) Non-Easter egg Condition (Removed)

3.3 Participants, Recruitment, and Data Preparation

Participant Recruitment

The target population was Taylor Swift fans who were familiar with Easter eggs. The pre-test responses were collected on Reddit where Swifties not only filled out the survey, but also recommended other platforms to help recruit participants; Twitter (X), Facebook, Discord, and Bluesky. The survey link was then posted to these networks with my personal introduction, a brief description of the research, and emphasized that it was voluntary and anonymous. The most successful platforms were Bluesky and Facebook. A key contributor was the Facebook group, "Taylor Swift's Vault" (with 505k members), where the survey post unexpectedly went viral gaining over 500 responses in under five hours, leading to a final total of almost 1,100 responses. Overall, the survey collected a very engaged sample of fans from all over the world in eight days, which highlights the power of fan communities online and their participatory culture.

Data Cleaning

After collection, the data was uploaded into SPSS and manually cleaned to ensure the data was of good quality. The cleaning consisted of filtering and removing participants who were unfamiliar with Easter eggs, left multiple questions unanswered, or never finished the survey.

Those who had inconsistent responses in the manipulation check were also removed, which will be further discussed below. Overall, the responses were carefully cleaned to make sure the final data aligned with my research question and hypotheses, and that the data only included fans who were attentive and knowledgeable of Easter eggs.

Participant Demographics

After cleaning the data, the official survey had a total of 944 respondents. 479 were exposed to the original Easter egg post, while 465 were exposed to the manipulated version with them removed. Almost half of the respondents (48%) were between 25-34 years old, and 94% identified as female. Moreover, 70% reported being fans for more than 10+ years, and 84% reported they actively looked for Easter eggs when viewing the post, which demonstrated their high level of awareness for this marketing content.

3.4 Survey Design and Variable Measurement

Introduction Questions

The survey began with demographic questions, including age range, gender, and how long they have been a Taylor Swift fan. To verify familiarity with the strategy, participants were asked: "*Are you aware of Taylor Swift's use of Easter Eggs in her content?*" with a provided definition of Easter eggs. Only fans who responded with "Yes" were included in the final analysis. Please see Appendix B for the full survey.

Independent Variable: *Exposure to Easter Eggs*

Participants were randomly assigned to one of two conditions: those exposed to the original post with Easter eggs (=1) or the manipulated, non-Easter egg version (=0). The study included a manipulation check to make sure participants paid attention and interpreted the manipulation correctly. Respondents were asked if they believed the post had hidden messages or clues (Yes/No). If answered "Yes", they then had to select which details stood out to them from multiple choices. Then, respondents were asked if they actively looked for Easter eggs when viewing the posts, and if they thought the post was cleverly designed (Hsu and Chen, 2018).

Dependent Variable: *Fan Engagement*

Fan engagement was measured using three items adapted from Yang, Asaad, and Dwivedi (2017), and Rabbaneee, Roy, and Spence (2020) with inspiration from Kim and Kim (2020). These analyzed immediate and future behavioral engagement and the emotional dimension. As stated in 2.4, the cognitive dimension of engagement was not included as decoding Easter eggs requires pre-existing knowledge. Questions were re-worded and adapted to discuss the manipulation. Due to the different response scales (5- and 7-point Likert) used, items were standardized using z-scores. As taught by LUISS and Hair et al. (2019, p. 208), this placed all responses on a same scale, with a mean of 0 and a standard deviation of 1. It is important to note that in the survey, Likert scales were separated: The five-point questions were shown first, and all 7-points were grouped after, to avoid response confusion.

Reliability was acceptable with Cronbach's alpha= .66. While scores above .70 are usually recommended, some scholars accept reliability scales between .60-.70 (Hair et al., 2019, p. 161). Due to combining questions from different sources, several tests were run to make sure they worked together and measured engagement well. KMO confirmed the sample was adequate (=.624) and Bartlett's Test of Sphericity was significant ($p<.001$), which showed the correlation between the three questions. The eigenvalue was also larger than 1, explaining 59.7% of the variance, and the principal component analysis had strong loadings (Between .702 and .834). These other tests helped strengthen and justify the measurement scale's validity and reliability.

Mediator: *Excitement*

Excitement was measured with a single item on a 5-point Likert scale, adapted from the Positive and Negative Affect Schedule (PANAS)(Watson, Clark, and Tellegen, 1988) with a definition from Merriam-Webster (2025) added for clarity. The item was reworded to reference the experiment, "*How excited are you after seeing this post? (Excited refers to heightened feelings of being energized, eager, or enthusiastic).*" A second question was initially used, but was later removed due to concerns of conceptual overlap with the dependent variable. Although both items loaded well on a single factor with PCA (= .802), had an eigenvalue above 1, and explained 64.3% of the variance, Cronbach's alpha was = .442. Due to the very low reliability score and conceptual overlap concern, I only included the PANAS item for the analysis.

Mediator: *Brand Attachment*

Brand Attachment was measured using three items adapted from Park et al. (2010) and Arundathi & Babu (2024), focusing on attachment via brand-self connection and identity. Questions were once again reworded to reference the manipulation. With different Likert scales used (5-point and 7-point) from separate sources, items were once again standardized with z-scores and tested. Together, they had acceptable reliability (Cronbach's alpha= .67). Sampling adequacy was good (KMO=.656), and Bartlett's Test was significant ($p < .001$). PCA also confirmed the items strongly loaded on one factor (Between .755 and .810), with an eigenvalue above 1 explaining 60.6% of the variance.

Moderator: *Social Media Usage*

The measurement for social media usage combines three different adapted items that relate to each dimension: Platform exposure (Behavioral), perceived disconnection (Emotional), and fan awareness (Cognitive). As it is a formative index, the dimensions are not expected to correlate, so Cronbach's alpha was not looked at, but VIF values (Range= 1.012–1.026) confirmed there were no multicollinearity issues (Diamantopoulos & Winklhofer, 2001). All items were standardized with z-scores due to different scales, and then were combined and averaged to a single, total score.

Platform Exposure was measured by asking participants which platforms (Instagram, Twitter/X, TikTok, Facebook, Reddit, Other) they usually use and see Easter egg content on, inspired by Unnava and Aravindakshan's research (2021). Each selected platform was equal to 1 (Unselected = 0), and the total was summed (Range: 0 to 6). Perceived Disconnection was measured with a 7-point Likert item adapted from Ellison, Steinfield, and Lampe (2007). Fan Awareness was measured using a 7-point Likert adapted from Mercanti-Guérin (2008), which was originally used for interpreting complex advertisements and was reworded to capture a fan's cognitive ability to decode Easter eggs.

3.5 Analytic Procedures

Using SPSS, the data was first cleaned, and the scales were checked for validity and reliability as discussed above. Then, the data was split between those who were exposed to Easter eggs (=1) versus those who were not (=0). To compare the two conditions and main variables, the

descriptive statistics, such as means and standard deviations, and the Pearson correlations were run.

Hypothesis 1 was then tested with an independent-samples t-test in order to compare the two group's responses to fan engagement. Levene's Test for Equality of Variances and Cohen's D were checked to see if H0 is rejected and to understand the effect between the responses (Bhandari, 2020). Then, Hypothesis 2 used PROCESS model 6 to test the serial mediation of excitement and brand attachment. The direct effect, total indirect effects, and each individual indirect path were looked at. With PROCESS model 1, Hypothesis 3 was tested to see if social media usage moderated the effect of Easter egg exposure on excitement. For this one, the direct, interaction, and conditional effects were examined. Lastly, PROCESS model 83 was used to test moderated mediation for hypothesis 4. The indirect pathway of social media usage's effect on the full model was examined, as well as the conditional effects.

Moving outside of SPSS, the supplementary analysis looked at posts from Swift's Instagram account which were manually selected. Posts that contained Easter eggs and normal posts excluding them were taken from the same one-week time frame and compared. Due to privacy settings from @taylornation, fan engagement metrics of likes, views, and shares were not publicly available. The only available metric were comment counts which were averaged for both types of posts. As Li, Teng, and Chen (2020) noted limitations with using only survey/ self-reported data to measure engagement, the main goal of this small, extra analysis was to address this gap and see if real-world behaviors supported the fans' survey responses. The full details of this analysis are explained in Appendix C. The next chapter will provide the results of these analytical procedures in detail.

Section IV. Results

4.1 Overview

This chapter presents the statistical results from the experimental survey on SPSS and supplementary Instagram data collection. All four hypotheses are supported and were tested to see if exposure to Easter eggs in Taylor Swift's marketing strategy increases fan engagement with excitement and brand attachment as mediators, and social media usage as a moderator.

4.2 Descriptive Statistics and Correlations

An analysis of the Easter egg versus non-Easter egg groups was run, comparing the means and standard deviations (SD) for each variable (See Table 1 below). Once again, fan engagement and brand attachment were standardized using z-scores, and social media's three dimensions were standardized and averaged into one index. Results showed that respondents in the Easter egg group reported higher, more positive results for every variable compared to the group exposed to the post with each Easter egg removed (Non-Easter Egg Group).

Table 1. Descriptive Statistics (Easter Egg vs. Non- Easter egg)

Variable	**Non-Easter Egg Group** (=0)(N=465)	**Easter Egg Group** (=1)(N=479)	**Notable Differences**
Excitement	Mean: 2.60 SD: 1.055	Mean: 3.46 SD: .936	Increased excitement when EEs are present.
Brand Attachment	Mean: −.2115 SD: .83	Mean: .2062 SD: .66	Stronger brand attachment when EEs are present.
Fan Engagement	Mean: −.2341 SD: .825	Mean: .2266 SD: .64	Increased fan engagement when EEs are present
Social Media Usage	Mean: −.0969 SD: .619	Mean: .0930 SD: .604	Higher social media usage when EEs are present.

The Pearson correlation was used to find the strength of relationships between the variables for respondents, and all were significant to the .01 level (2-tailed) (N=944) (See Table 2 on the next page). These findings support the hypotheses, showcasing positive correlations between the key

variables. For example, excitement and brand attachment were positively correlated (r=.471)(H2). Also, social media usage was positively correlated with both excitement (r=.243)(H3) and fan engagement (r=.446)(H4).

Table 2. Pearson Correlations Among Key Variables (N = 944)

Variable	Brand attachment	Fan engagement	Social media usage	Excitement
Brand Attachment	1	.682**	.431**	.471**
Fan Engagement	.682**	1	.466**	.490**
Social Media Usage	.431**	.466**	1	.243**
Excitement	.471**	.490**	.243**	1

4.3 Hypotheses Testing

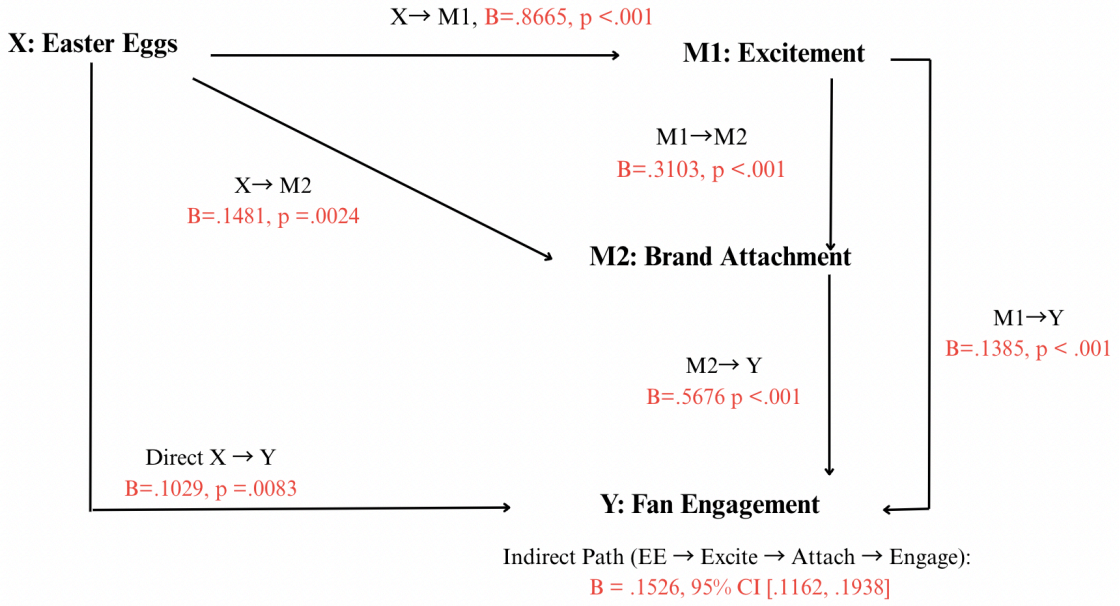
H1. Exposure to Easter eggs in Taylor Swift's marketing strategy directly influences fan engagement.

Hypothesis 1 was tested using an independent samples t-test comparing the fan engagement scores between participants exposed to the Easter Egg post (N=479) and those who viewed the non-Easter egg post (N=465). Levene's Test for Equality of Variances was significant with $F(1,942)= 18.576$, $p<.001$. As the p-value was smaller than .05, H0 was rejected and H1 is confirmed! The difference in fan engagement between the two groups was statistically significant $t(875.767)=9.548$, $p< .001$. Respondents exposed to Easter Eggs (M=.2266, SD: .642) reported significantly higher fan engagement than those exposed to the non-Easter egg post (M= –.2341, SD=.8257). The 95% confidence intervals were CI [.365, .555] and Cohen's d was .74 with a medium to large effect size. These results overall support H1.

H2. Exposure to Easter eggs triggers excitement, which strengthens brand attachment and ultimately leads to higher fan engagement.

Testing a double mediation, Hypothesis 2 was analyzed using PROCESS model 6. Excitement and brand attachment were tested as serial mediators between exposure to Easter eggs and fan engagement. All paths of the model were significant with $p < .01$ (See Figure 3). The direct effect of Easter eggs on fan engagement was significant again (B= .1029, p = .0083), supporting H1, as exposure to Easter eggs directly increased fan engagement without mediators. Furthermore, the total indirect effect of Easter egg exposure on fan engagement was also significant with B = 0.3567, 95% CI [0.2809, 0.4349]. Most importantly, the serial mediation indirect path from exposure to Easter eggs → excitement → brand attachment → fan engagement was significant with B=.1526, 95% CI[.1162, .1938], which shows that the mediators work well together in the model, increasing fan engagement. Overall, these results support H2, indicating *partial serial mediation*, as both the direct and indirect effects were significant.

Figure 3. H2 Paths: Double Mediation (PROCESS Model 6 Results)

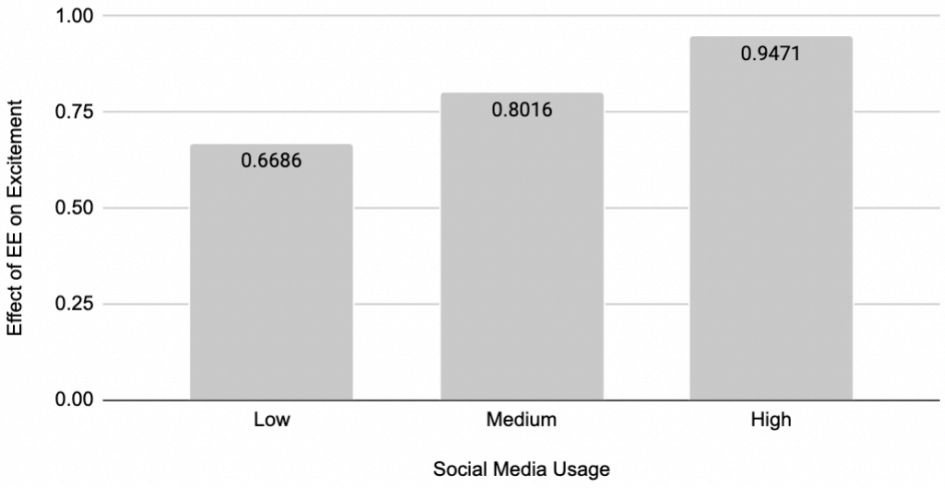


Note: All paths were statistically significant. X→ M1 had the largest effect size (B=.8665). M2 was the strongest predictor of fan engagement (B=.5675), and the indirect path (B=.1526) was also slightly bigger than the direct path (B=.1029).

H3. Individuals with higher levels of social media usage report greater excitement after being exposed to Easter eggs.

Hypothesis 3 was tested using a moderation analysis with PROCESS Model 1 to examine if social media usage moderates the relationship between exposure to Easter eggs and excitement. The overall model was statistically significant with $F(3,939)=76.89$, $p < .001$, and explained 19.72% of the variance in excitement. Exposure to Easter eggs had a significant, positive effect on excitement, with $B=.8046$, $t(939)= 12.52$, $p < .001$. Social media usage alone also significantly predicted excitement with $B = .2164$, $t(939)=2.96$, $p = .0031$. Most importantly, the interaction between Easter egg exposure and social media usage was significant, $B=.2246$, $t(939)=2.16$, $p= .0308$, highlighting moderation. The conditional effects of this interaction were also analyzed, looking at the 16th (low), 50th (medium) , and 84th (high) percentiles of social media usage. The effect of Easter egg exposure on excitement was significant at all levels ($p < .001$). Overall, these results support H3, as both direct and interaction effects confirmed a *partial moderation.*

Figure 4. Effect of Easter Egg Exposure on Excitement by SMU Level

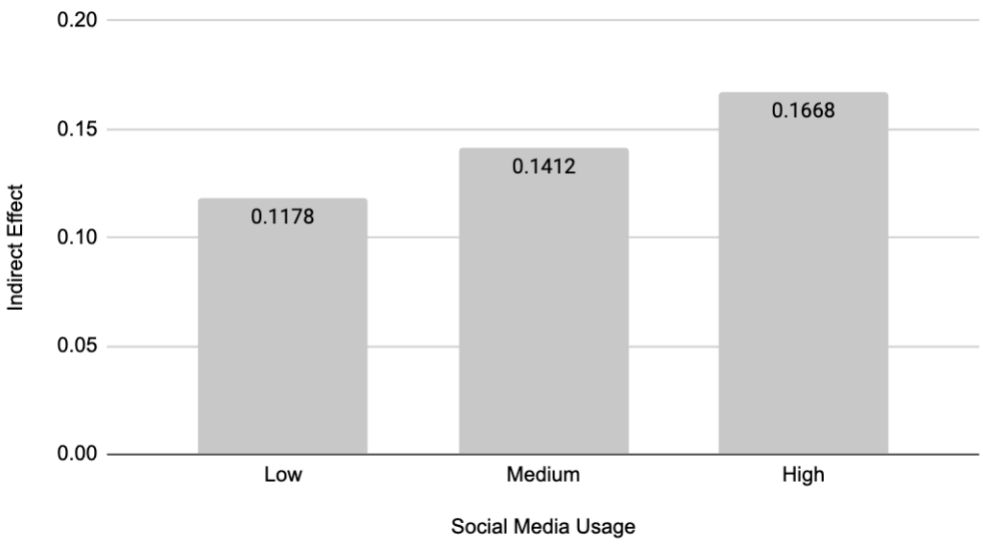


Note: This graph represents the condition effects at the 16th, 50th, and 84th % tiles of social media usage. The 95% Confidence intervals included: Low= .6686 [.4923, .8449], Medium = .8016 [.6755, .9278], High= .9471 [.7664, 1.1279]. All had $p<.001$.

H4. The effect of Easter egg exposure on fan engagement, through excitement and brand attachment, is moderated by social media usage, with stronger effects for individuals with higher usage levels.

Using PROCESS model 84, hypothesis 4 tested a moderated serial mediation, testing if the indirect effect of exposure to Easter eggs on fan engagement, via excitement and brand attachment, is moderated by social media usage. The overall model was statistically significant with $F(3,939)=319.25$, $p < .001$, and explained 50.49% of the variance in fan engagement. Most importantly, the moderated serial mediation was statistically significant throughout the full sequential path (EE→ excitement→ brand attachment→ fan engagement) with an index of .0396, 95% CI [.0052 and .0747]. Also, the conditional indirect effects of social media usage from low (16th), medium (50th), to high (84th) were significant $p<.001$. Figure 5 shows how the indirect effect on the full engagement model varies by social media usage levels. Overall, these results support H4.

Figure 5. Conditional Indirect Effects of SMU across Levels



Note. Indirect effect estimates: Low = .1178, 95% CI [.0796, .1615]; Medium = .1412, 95% CI [.1064, .1805]; High = .1668, 95% CI [.1243, .2130].

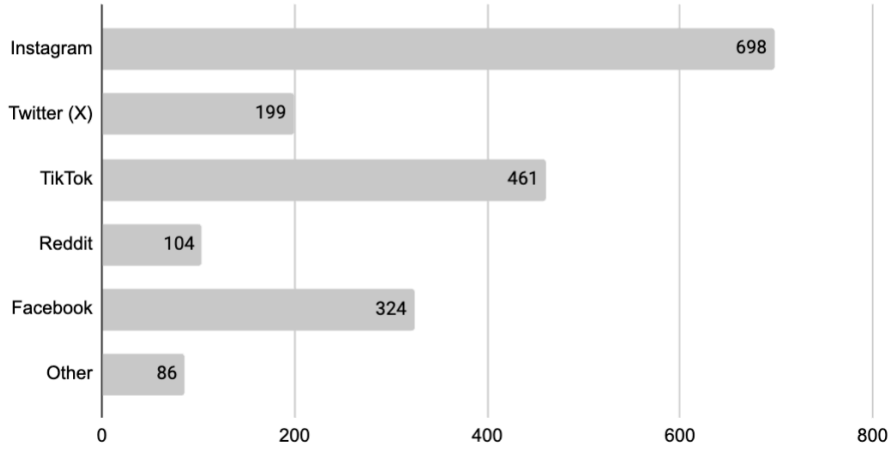
4.4 Summary Table

Hypothesis	Test Used	Supported?	Description
H1. Exposure to Easter eggs in Taylor Swift's marketing strategy directly influences fan engagement.	Independent-Samples T-Test	Supported	Those exposed to the Easter Egg condition reported significantly higher fan engagement than those exposed to the non-EE condition.
H2. Exposure to Easter eggs triggers excitement, which strengthens brand attachment and ultimately leads to higher fan engagement.	PROCESS Model 6 (Serial Mediation)	Supported (Partial Mediation)	The direct and indirect effects of Easter egg exposure on fan engagement are significant. Excitement and brand attachment are strong mediators that strengthen the relationship, individually, as well as together.
H3. Individuals with higher levels of social media usage report greater excitement after being exposed to Easter eggs.	PROCESS Model 1 (Simple Moderation)	Supported (Partial Moderation)	Exposure to Easter eggs has a direct effect on excitement, and social media usage enhances this relationship. As social media usage increases, the Easter eggs' effect on excitement increases.
H4.The effect of Easter egg exposure on fan engagement, through excitement and brand attachment, is moderated by social media usage, with stronger effects for individuals with higher usage levels.	PROCESS Model 83 (Moderated Serial Mediation)	Supported	As social media usage increases, the positive impact of Easter Egg exposure on fan engagement via excitement and brand attachment significantly increases. Social media usage is a strong moderator for the full indirect pathway.

4.5 Supplementary Analysis: Instagram Data

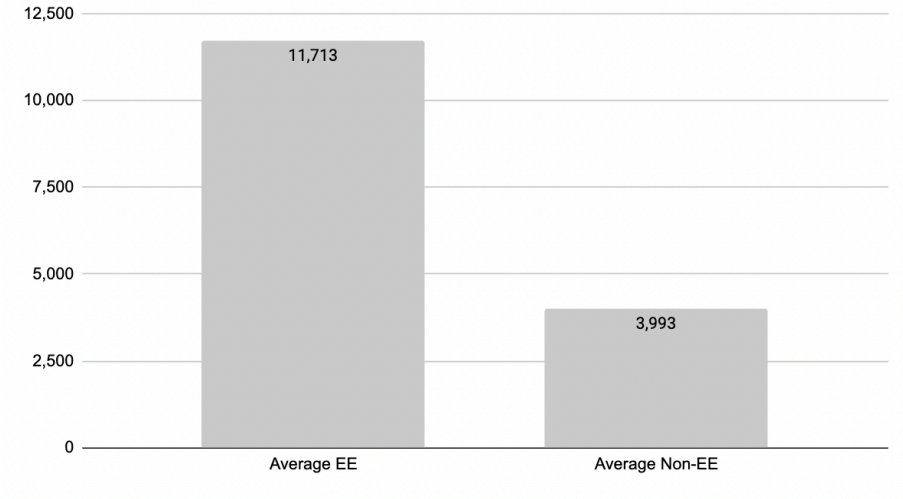
The supplementary analysis was conducted using behavioral fan engagement data (comments) from Instagram. Respondents reported Instagram as the primary platform where they see Easter eggs, with 74% choosing it out of the multiple choice options, further validating my manipulation design choice to use Instagram (See Figure 6). The supplementary results highlighted that posts with Easter eggs consistently received more comments than posts with no Easter eggs. For example, the post used in the survey manipulation from January 9, 2024, had 15,200 comments, while a normal post from the same week had only 2,500 comments. Figure 7 shows the total average comment counts for both posts types, and Appendix C provides the full table and further descriptions of comparisons.

Figure 6. The Social Media Apps That Respondents Use & See Easter Egg Content On



Note: Others included Bluesky (31), Tumblr (18),Youtube (7), and Discord (2), etc. (N=943)

Figure 7. Average Comment Count for EE vs. Non-EE Posts on Instagram



Section V. Discussion

5.1 Summary of Main Findings

The goal of the research was to analyze fan responses comparing the inclusion versus exclusion of Easter eggs in the marketing context, in hopes of understanding the content's advantages through the Taylor Swift case study. All four hypotheses were supported. Participants who were randomly exposed to the Easter egg condition had significantly higher fan engagement, excitement, brand attachment, and social media usage in comparison to the non-Easter egg group. The confirmed serial mediation also highlights the strategic advantage of implementing Easter eggs: This content creates an emotional response and enhances brand attachment, which together increase behavior. The following sections discuss the key empirical and theoretical contributions, practical insights, this study's limitations, and paths for future research.

5.2 Empirical Contributions

This analysis is among the first to empirically test Easter eggs in marketing, aiding the emerging academic studies of this content, expanding outside of games and academic settings (Takbiri, Bastanfard, and Aminii, 2023; Lakier and Vogel, 2022). The descriptive statistics revealed a major difference between the two groups' responses, which confirms that the Easter egg manipulation design was effective in creating separate reactions. The Pearson correlation showcased how every variable was positively correlated to one another, supporting the idea that interactive, gamified content is linked to increased emotional responses, brand attachment, fan engagement, and social media usage. More importantly, the large sample size of the survey (N=944) strengthened the statistical results and confidence in the findings.

Hypothesis 1 provided evidence that exposure to Easter egg content leads to increased fan engagement. With a Cohen's D of .74, Easter eggs have a practical relevance and real-world impact on behavior, as they had a medium to large effect between the two groups (Bhandari, 2020). While there is no doubt Swifties are a highly engaged fanbase, H1 shows that Easter eggs are powerful enough on their own to increase engagement among fans to even higher levels.

Hypothesis 2 showed a positive sequential pathway: Exposure to Easter eggs increases excitement, which strengthens brand attachment, and then increases fan engagement. Both

excitement and brand attachment, individually, positively increased fan engagement, highlighting their standalone importance in this model and context. The path from Easter eggs to excitement had the largest effect size (B = .8665) showcasing how this content is most effective when fans are excited. Exposure to Easter eggs also directly increased brand attachment.

Hypotheses 3 and 4 validated the new formative index created for social media usage. The results of H3 revealed that social media usage had a direct effect on increasing excitement. More importantly, the effect of Easter Egg exposure on excitement increased as social media usage increased, meaning participants with higher social media usage reported stronger excitement in response to posts with Easter eggs. Additionally, with the conditional effects, findings showed that fans with higher usage across platforms, stronger perceived disconnection, and greater awareness will have larger emotional responses to this type of content.

Hypothesis 4 showcased that usage strengthens the full model's indirect path from Easter egg exposure to fan engagement at each step, as moderated serial mediation was confirmed. The conditional effects highlighted that this path intensifies the more fans' social media usage increases; Therefore, those with the highest social media usage across the three dimensions have the strongest impacts from Easter eggs. This PROCESS Model 83 also re-validated H1-H3, confirming the validity of the full model.

The supplementary analysis results also supported the findings of the survey data. Posts containing Easter eggs had significantly larger comment numbers, showcasing real-world behavior changes and, specifically, reinforcing the results of H1. Easter eggs have a direct impact on increasing fan engagement for Swifties. This analysis also addressed the survey engagement limitation from Li, Teng, and Chen (2020), by collecting subjective and objective data.

5.3 Theoretical Contributions

The findings address several theoretical gaps and extend research on gamification marketing. While Santos, Dias, and Bairrada (2024) and Yang, Asaad, and Dwivedi, (2017) highlight the many benefits of gamified content, they identified a lack of personalized, and adaptive marketing approaches, and a lack of research into which gamified elements and designs are more beneficial. The survey results revealed that Easter eggs are a solution to these issues: The Swift case showed

that they are an effective gamified approach, especially in fan contexts, to increase engagement that can be adapted and personalized to every brand's narrative.

Extending Fuchs (2024), the findings reveal that Easter eggs aren't just limited to post-purchase aspects and peripheral brand elements. The survey results confirmed that Easter eggs can be placed throughout the consumer experience and can be strong central brand elements if executed well. The validated serial mediation also supports past research of Orth, Limon, and Rose, (2010) and Arundathi and Babu(2024): Brand attachment and excitement work well together, and further strengthen the impact of Easter eggs on fan engagement. These findings highlight that Easter eggs are not just simple additions, but instead are key to deepening emotional connections and long-term commitment and engagement to brands (Yang, Asaad, and Dwivedi, 2017).

Another unique theoretical contribution from this study is extending Easter eggs beyond gamification, and finding connections with interactive marketing, participatory culture, and experiential marketing. To my knowledge, this has not been addressed or mentioned in previous academic research, and while not testing this directly, the results suggest that Easter eggs do in fact have similar characteristics and are connected to each framework. This gamified content fosters co-creation, collaboration, and unique, memorable experiences between fans and Swift, encouraging participation with the content (Gamble and Gilmore, 2013; Huotari and Hamari, 2017; Wang, 2021). Also, the survey going viral, collecting over 500 responses in less than five hours, demonstrated participatory culture in action, as fans were actively involved, commenting, and sharing my survey link.

Another contribution is the development of the formative, multidimensional index for social media usage, created for the Easter egg context. Those who were exposed to them reported having a larger digital footprint, increased perceived disconnection, and higher awareness. The findings also extend those of Rabbanee, Roy, and Spence (2020) and Kuo and Chen (2023), who examined Facebook and brand attachment as a mediator: These findings support that interactive content, when mediated by brand attachment, leads to increased engagement such as likes, sharing, and commenting across multiple social media platforms, and this model is further strengthened when including excitement. This also supports "Platform spillover", as brands like Swift effectively increase fan engagement by posting interactive content across networks (Santos

et al., 2019; Unnava and Aravindakshan, 2021). Moreover, based on Saboo et al. (2016), this study confirms that Easter eggs act as an antecedent of social media behavior as they trigger fan activity and emotional responses online. Together, the results extend existing literature showcasing that Easter eggs are an innovative form of gamified, interactive content that can increase online fan engagement.

5.4 Practical and Marketing Implications

Marketers: Easter Egg Strategy and Execution

To leverage Easter eggs, marketers should first create the correct context to implement them. Users need the necessary skills to participate, as this content is only rewarding if fans know how to decode it (Huotari and Hamari, 2017). Without this familiarity, users may be frustrated and feel excluded, leading to negative outcomes from weak strategy design and implementation (Andrade, Mizoguchi, and Isotani, 2016; Santos, Dias, and Bairrada, 2024). To prevent this, marketers should drop intentional hints and awareness that hidden messages and meanings exist, and explain there are rewarding outcomes if they're found to encourage attention and engagement. This was shown in Swift's case, as 84% of respondents reported they still actively looked for Easter eggs without being prompted in the survey to do so.

As marketers today have a consumer engagement challenge, Easter eggs are a possible solution: They are an innovative way to overcome one-sided interactions and surface level content (Phillips, 2024). If executed well, Easter eggs can enhance emotional responses and sustain long-term engagement: They provide shared, interactive experiences which is what many consumers today look for (Houston, 2024). As participatory culture continues to grow, marketers should prioritize co-creative processes with consumers, which decoding hidden messages can help with (Gamble and Gilmore, 2013). Moreover, tapping into perceived disconnection can also help motivate consumers: For example, creating online events, challenges, and discussions may motivate consumers and make them feel obligated to join (Falgoust et al., 2022).

To increase reach, impact, and spillover effects, marketers should distribute Easter eggs and similar content across various social media platforms (Unnava and Aravindakshan, 2021). The survey revealed that Instagram and TikTok are the top platforms used and to find Easter eggs, making them strong starting points for marketers to find an interactive community and post

online. Marketers also should focus on highly active social media users, as they had the strongest reactions to Easter eggs in the survey, and they may also inspire others to participate and join the conversation, helping spread the content through emotional sharing (Rimé, 2009).

Brand Managers: Strategic Elements and Enhancing Experiences

Building off of Fuchs (2024), this research provides evidence to brand managers that Easter eggs are beneficial as peripheral and central brand elements, and have major advantages throughout the full brand experience. For example, the music industry centralizes these elements, as artists deliberately place them in pre-release teasers, campaigns, on vinyl, within audios as hidden tracks, and post-release content (Griffiths, Cunningham, and Weinel, 2014). Brand managers are encouraged to consider similar strategies and use Easter eggs, especially if they want to increase likes, shares, and customer discussions online. This study also showed that Easter eggs directly increase brand attachment, and that brand attachment was the strongest predictor of engagement.

The serial mediation (H2) also highlights that excitement is the strongest driver within the model. Targeting similar emotions that are high arousal and positively valenced can help create positive and meaningful brand experiences (Orth, Limon, and Rose, 2010). This is useful for brands trying to be emotionally resonant with consumers. Moreover, for fans who already have a strong connection to the brand, Easter eggs can further strengthen this brand attachment (Li, Dong, and Tang, 2024; Kim and Kim, 2020). Implementing Easter eggs is a clever way to enhance loyalty, commitment, and belonging, so consumers can feel part of an exclusive group that shares this knowledge and decoding skills (Pawar, 2022). This relationship is shown in the Swift case study, as 70% of respondents reported being fans for over a decade. Brand managers should view this serial mediation as a strategic opportunity to enhance the overall experience.

Broader Business Contributions: Cross-Industry Application

Today, consumers ignore passive content and instead engage with exciting, interactive, and gamified elements that create genuine interactions, and they seem to be highly intrigued by the unknown (Phillips, 2024; Katz, Blumler, and Gurevitch, 1973). The survey responses suggest that Easter eggs are a smart way to adapt to this. While this study focused on music, this hidden content is easily applicable across industries. Businesses can use Easter eggs to tease new products, hint at upcoming events, and encourage and reward user interactions. For example, a

fashion company might hide Easter eggs on clothing labels, or an ice cream company can hide clues in their social media posts for a giveaway of their latest flavor.

Many famous companies today already do this, showcasing their wide-spread applicability. The Walt Disney Company hides Mickey Mouse symbols in their parks and products for a prized scavenger hunt: Google's search engine also places surprise pop-ups within certain keywords or phrases that are searched (Pawar, 2022). These cross-industry examples highlight that Easter eggs are more than fun details, and are actually a strategic tool to engage consumers, increasing their curiosity and emotional responses. Overall, Easter eggs are a reminder that customers today want to be involved in a meaningful experience, not just sold a product, and businesses are encouraged to try this strategy.

Cultural and Societal Implications: Digital Trends and Behaviors

Social media today is where pop culture and what's culturally relevant is defined, shaping and evolving collective opinions with trends and challenges (Salo, Lankinen, and Mantymaki, 2013; Falgoust et al., 2022). It is no longer just fandoms who participate anymore, as the culture has shifted: Everyday users now seem to want to interact, collaborate, and co-create with online content. Platforms, like TikTok and Instagram, have enhanced this, as movements, slang, and shared ideology grow and spread there. These conversations have even continued offline. As users look for amusing, story-telling, and genuine, socially-relevant content, Easter eggs match this new trend and want (Houston, 2024).Their hidden nature transforms content into a challenge by creating shared, entertaining, and rewarding experiences through decoding.

The Swifties in the survey are a prime example of the power of social media. Besides making this study's survey link go unexpectedly viral, another example is when Swift's public image in 2016 negatively changed after an issue with Kanye West. She received major backlash with the internet collectively turning on her, leading to her disappearing from the spotlight (Lansky, 2023). Today, that narrative has completely switched. Her fandom has grown back tremendously as a powerhouse online, and being a Swiftie is back to being considered culturally relevant and "Trendy". This change highlights the power that online participation and collective opinions have on impacting someone's reputation. Easter eggs can tap into this online behavior by

offering fans a reason to pay attention, remain engaged, and shape how the brand is seen on and offline.

5.5 Limitations and Future Research

Limitations

While this study has benefits, there are several limitations. To begin, this research only examined the positive effects of Easter eggs, while not testing the potential negatives. Moreover, while brand-self connection aligns with fandoms, other dimensions of brand attachment, like brand prominence were not assessed, which can limit the in-depth analysis (Park et al., 2010). Additionally, these findings are not fully applicable or generalizable to every consumer: 94% of responses identified as female, and 70% consisted of long-term Taylor Swift fans (for 10+ years). Including only respondents familiar with Easter eggs in the data also created an awareness bias limit. Furthermore, this analysis originally focused on a wider distribution across social media platforms; However, due to the viral survey, roughly half of the responses were from Facebook, which may have led to a platform bias. Yet, respondents still voted Instagram as their most used platform, so this is uncertain, but I felt it was necessary to note.

There were also challenges with survey measurements and scales. Excitement had to be assessed with a single-item from PANAS due to the low Cronbach's alpha from the originally intended two questions. While factor loading and KMO were strong, fan engagement and brand attachment scales also had borderline reliability (= .66)(= .67), which some scholars like Hair et al. (2019) accept, but others are skeptical and prefer above .70. Moreover, the social media usage index used one item to measure each dimension, which may have limited capturing the complexity of each aspect. Additionally, standardizing the 5-point and 7-point Likert scales with z-scores was complex: Using the same Likert would have been a cleaner and easier analysis.

Future Research

Future investigations should replicate this study's model across different fandoms and industries. To fix generalizability, another experiment should survey regular consumers, analyze broader customer engagement, and use an everyday product in marketing, like toilet paper or toothbrushes to see if the results change. Awareness should be another area tested, as further

understanding of how to educate consumers on the decoding process is needed. One idea is to compare participants who are aware versus unaware of Easter eggs. Another opportunity for future research is to examine the negative aspects, like frustration, disappointment, or confusion (Andrade, Mizoguchi, and Isotani, 2016). Addressing both positives and negatives will provide a more balanced understanding of the risks and rewards of using Easter eggs in marketing, which can extend current literature as well as this paper.

Future scholars also need to re-examine the measurement tools and scales in this study. While PANAS is a widely used scale, excitement requires a more comprehensive, multi-item approach to capture the complexity of emotions. The brand attachment and fan engagement scales also need to be refined to improve reliability. Additionally, scholars should investigate other brand attachment dimensions. Future researchers also need to expand the social media usage index, increasing the number of items for each dimension and then testing it across more, various contexts. The types of content used in the study could also be expanded. For example, this manipulation was based on Instagram (photos). A possible next research idea is to test TikTok videos or X/Twitter text-based posts. Finally, future investigations could implement neuromarketing methods and tools, as this research only analyzed self-reported data and online behavior. For example, eye tracking could measure a fan's fixations and attention. Galvanic skin response and monitoring heart rate could also measure deeper subconscious reactions.

Overall, this study addressed literature gaps by experimentally testing Easter eggs through a survey, and all hypotheses were supported: Those exposed to Easter egg content had significantly higher excitement, brand attachment, social media usage, and fan engagement in comparison to those exposed to the post with none. The survey and supplementary analysis findings suggest that hidden, gamified, and interactive content can positively impact fan behavior on social media, as shown through this real-world and culturally relevant case study. This research also introduced a new formative index for social media usage, providing a new perspective and possible tool for gamification, Easter eggs, and fandom research. Overall, these results extended current literature, offered practical insights and strategies to marketers, brand managers, and businesses regardless of industry, and also provided possible avenues for future investigation!

Section VI. Conclusion

"How did it end?"- Taylor Swift

The main goal of this paper was to investigate how exposure to Easter eggs in Taylor Swift's marketing strategy influences fan engagement, through excitement and brand attachment, and how this process is moderated by social media usage. The experimental analysis provided useful, practical insights and takeaways: Easter egg content creates a sequential pathway engaging fans emotionally and cognitively, ultimately leading to increased fan engagement. Social media usage further enhances each step in this process and users with higher levels of this, have even larger responses. As Swifties are already highly loyal and active fans, the results confirmed that Easter eggs, alone, have significant power in pushing this engagement to even higher levels.

Expanding academic literature, this research aligned Easter eggs not only to gamification theory but connected it to interactive, experiential marketing, and participatory culture. It also showcased how Easter eggs tap into current societal and cultural trends online, as users today seem to actively search for interactive and emotional brand experiences. Despite being an experimental case study of a pop star, the findings are still valuable beyond fandoms and have real-world applicability. Businesses across any industry are encouraged to try implementing Easter egg strategies, as they can provide numerous benefits for customer engagement. Future scholars can also build on this paper, as a starting point for examining the strategic marketing potential and effectiveness of Easter eggs.

In conclusion, in the current era of marketing and social media, this study reveals that it may not just be all about the message, but more so about how the message is found. Even the smallest, most hidden of things can lead to the biggest impact! To quote my favorite Taylor Swift song, Easter eggs are more than just hidden messages. They act as an *invisible string* in marketing that brings fans and brands together. This study showcased how they spark excitement, strengthen brand attachment, and increase fan engagement. While they may be hidden, their impact is anything but that.

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★ The references are all cited in Harvard style using the guide from LUISS

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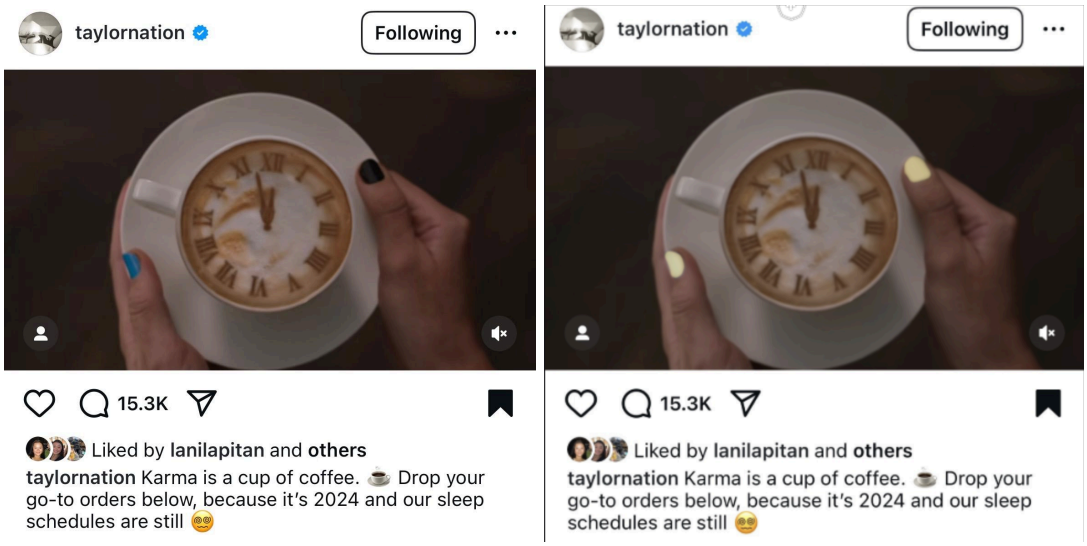
Section VIII. Appendices

Appendix A. Pre-Tests

Figure 8. Pre-Test 1 & 2: Nail Polish Manipulation



Original Manipulated

Pre-Test 1

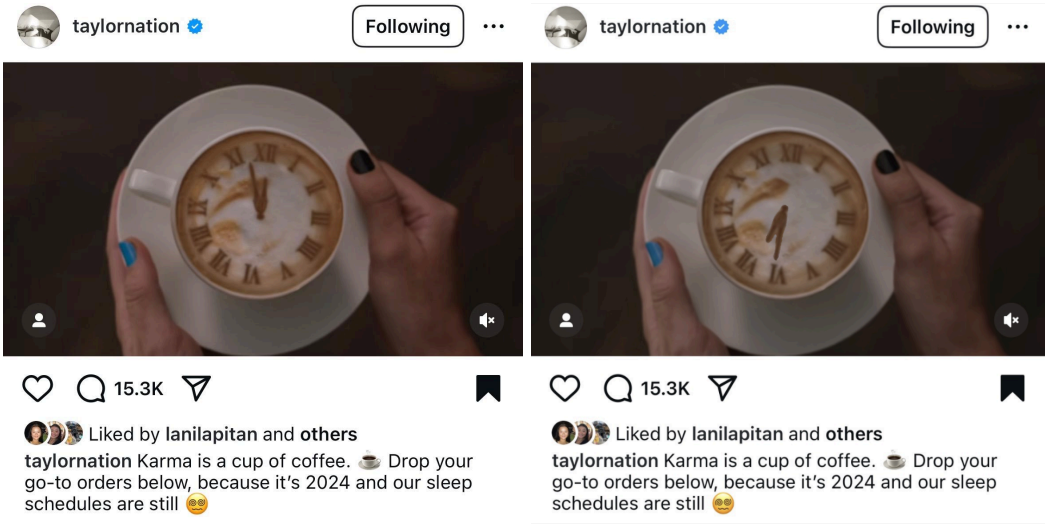
This post has created major fan speculation, revealing the months Taylor's re-recordings would be released, as she is known to associate colors for each album; blue for *1989* and black for *Reputation.* This theorized Easter egg was confirmed true when *1989* was re-released in August, the 8th month of the year (See the left blue thumb aligned to VIII). This is why I assumed the nail polish was the only Easter egg at first. The first version of the manipulation consisted of changing the nail color to a bright yellow; However, 42 respondents on Reddit stated that an Easter egg was still present, highlighting there was an issue with the clearness of my manipulation design.

Pre-Test 2

Due to this concern, an additional 27 responses were collected using the same manipulation. Now, for the respondents who believed the post contained an Easter egg, they had to answer an additional question, asking them what they thought it was. Respondents could choose multiple answers and the list included: The caption, the nail polish, the coffee clock's hand positioning, how the coffee cup was held (thumb alignment), or "other" with the option to fill in a response.

Then, respondents who chose the nail polish option had to specify the color they saw, to assess if they paid attention or were just familiar with the original post. The findings revealed that numerous respondents did not notice the nail polish change, and perhaps had prior knowledge of the original post. More importantly, the coffee clock hands and thumb placement were the two most identified Easter eggs from this pre-test. Additionally, for the excitement scales, the responses varied greatly. To fix this, I added a definition for excitement from the Merriam-Webster Dictionary (2025). This was to improve the reliability and clearness of that measure, so every respondent knew exactly what I meant when I asked them how "Excited" they were.

Figure 9. Pre-Test 3: Rotating the Clock Hands Manipulation



Pre-Test 3

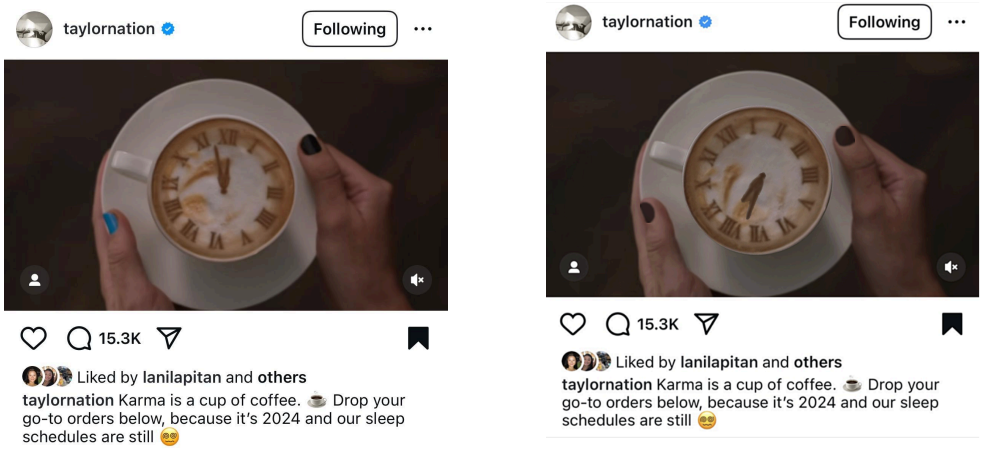
The final pre-test manipulated the clock hands in the coffee, as it had the largest number of responses declaring it as the Easter egg. This manipulation was completed by rotating the clock hands, as the nail polish and thumb alignment remained the same. Another sample of 37 Reddit users was collected, and they reported similar findings to pre-tests 1 and 2. Respondents continuously reported all three elements as Easter eggs; the nail polish color, clock hand positions, and the thumb placement. As a result, I decided to change all three elements for the final manipulation and collected 20 more responses from Reddit. This version provided a clear distinction between the two conditions. Thanks to this confirmation, the official survey was launched, and the experimental manipulation was declared to be the entire photo within the post. Appendix B below details the official survey and manipulation.

Appendix B. Official Survey

Demographics

1. How old are you? (Options: 18-24, 25-34, 35-50, 50+)
2. Gender: Male, Female, Non-binary/ third gender, Prefer not to say
3. How long have you been a fan of Taylor Swift? (Not a fan, Less than a year, 1-3 years, 3-5 years, 6-10 years, 10+ years)
4. Are you aware of Taylor Swift's use of Easter Eggs in her content? **Reference: Easter Eggs are the hidden message and clues hidden within Taylor's social media posts, music videos, concerts, etc.

Manipulation Section: Respondents were exposed to one of the two conditions: *Please carefully examine @taylornation's Instagram post and answer the following questions*.



5. Do you think this post contains a hidden message or clue (often called an Easter Egg)? (Yes/No)
    - <u>If answered yes:</u> What details stood out to you in the post? Please select all that apply: The caption, the nail polish, the clock hands, the thumb alignment, or other
6. Were you actively looking for hidden messages or clues when viewing this post? (Yes/No)
7. How excited are you after seeing this post? (Excited refers to heightened feelings of being energized, eager, or enthusiastic) (5-point Likert scale, 1=Calm, not at all to 5= Extremely excited) *(Watson, Clark and Tellegen, 1988; Merriam-Webster, 2025)* (Excitement measure)

8. How likely are you to engage with this post (Like, comment, or share it)? (5-point)(Part of fan engagement measure)
9. After seeing this post, Taylor Swift and her brand make me feel like I am part of something. (5-point) (Part of brand attachment measure)

Extra Question for **Manipulation Check** *(Hsu and Chen, 2018)*

10. I feel Taylor Swift's Easter Eggs are cleverly designed, like this post. (7-point)

Fan Engagement *(Kim and Kim, 2020; Yang, Asaad and Dwivedi, 2017; Rabbanee,Roy, and Spence, 2020)*

11. I intend to pay attention to and exchange ideas about Taylor's Easter Eggs and theories in the future after seeing this post. (7-point)
12. I am more likely to engage with Easter Egg posts and discussions on social media when I'm excited. (7-point)

Brand Attachment *(Arundathi and Babu, 2024; Park et al., 2010)*

13. Being a fan of Taylor Swift says something about who I am to others. (7-point).
14. Seeing Easter Eggs and fan theories on social media makes me feel more personally connected to Taylor's brand. (7-point).

Social Media Usage *(Ellison, Steinfield and Lampe, 2007; Mercanti-Guérin, 2008; Unnava and Aravindakshan, 2021).*

15. I feel out of touch if I haven't seen Taylor Swift's posts or theories on social media for a while. (7-point)
16. Taylor Swift's Easter Eggs are directed at people who already know to look for them. (7-point).
17. What social media apps do you primarily use and see Easter Egg content on? Please select all that apply (MCQ): Instagram, Twitter (X), TikTok, Reddit, Facebook, Other
    - **The platform options were chosen by where Taylor Swift has official accounts; Instagram, Tiktok, Twitter (X), and Facebook. Reddit was also used since the main Taylor Swift subreddit, run by fans, has over 3.7 million members, along with multiple other threads ranging from 5,000 to over 1 million members each.

Appendix C. Supplementary Instagram Analysis Data

Post Type (EE or Not)	Date	# Comments	Description of Post
EE	7/28/23	11,500	"The air is getting pretty salty..."
NO EE	8/2/23	1,151	Grammy Museum Tickets Ad
NO EE	9/13/23	2,096	One Month until Eras Film
EE	9/20/23	8,300	Game for Fans: Guess Vault Tracks
EE	11/13/23	5,000	"It's been a long time coming"
NO EE	11/13/23	3,500	New Christmas Ornaments Ad
EE	***1/9/2024***	***15,200***	***Manipulation Post used in Thesis***
EE	1/13/2024	18,700	First 13th of the Year
NO EE	1/19/2024	2,500	Manifesting More Grammys for the Cage
EE	1/23/24	15,100	"How many secretsss do we think are hiding..?"
NO EE	1/29/24	2,900	Grammy Advertising
NO EE	4/14/24	3,200	Promo for new album
EE	4/16/24	7,300	"Step out of Midnights room and enjoy a peak"
EE	7/27/24	12,500	Ready for It? (Taylor's Version) for the Olympics
NO EE	7/27/24	1,300	18 years of Music at Eras Tour Munich

This table contains Instagram fan engagement comment data from @taylornation, Swift's account run by her and her management to interact with fans and promote content. The posts containing Easter eggs (EE) are in dark blue, and the non-Easter egg posts are in yellow (No EE). Posts were selected from the same week for comparison throughout 2023/24. The weeks are separated by alternating white and gray. As a long-term fan myself, I manually selected the posts, as I was aware of which ones contained Easter eggs and were highly discussed on social media. I also read the comments, researched the post, and made sure Swift was cryptic in her captions and images used to double-check myself. Overall, the posts with Easter eggs consistently had higher engagement activity (via comments) compared to non-Easter egg posts. This supports the survey results that Easter eggs further increase fan engagement!