

Understanding Fan Reactions to NFC Albums in the Shift Toward Sustainable Music Technology

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ABSTRACT

In response to growing environmental concerns, the music industry has introduced Near Field Communication (NFC) albums as a sustainable alternative to traditional physical albums. While these innovations aim to reduce material waste, their adoption raises questions about how fans engage with and perceive such formats in the context of fan culture and emotional connection. This study explores the perceptions of K-pop fans toward NFC albums, focusing on the interplay between sustainability, technology, and emotional experience. Using a qualitative research approach, data were collected through in-depth interviews with selected fans who have interacted with NFC albums. The study employs thematic analysis to examine the narratives fans attach to this shift, introducing 'affective sustainability' as an emerging conceptual interpretation of emotional and ethical negotiation in fandom consumption.

Keywords: NFC albums, fan perception, digital communication, sustainable innovation, qualitative research

ABSTRAK

Dalam upaya menanggapi meningkatnya kepedulian terhadap lingkungan, industri musik telah memperkenalkan inovasi album yang disebut dengan Near Field Communication (NFC) sebagai alternatif berkelanjutan terhadap album fisik tradisional. Meskipun inovasi ini bertujuan untuk mengurangi limbah materi, penerapannya menimbulkan pertanyaan tentang bagaimana penggemar terlibat dan memahami format tersebut dalam konteks budaya penggemar dan hubungan emosional. Studi ini mengeksplorasi persepsi penggemar K-pop terhadap album NFC, dengan fokus pada interaksi antara keberlanjutan, teknologi, dan pengalaman emosional. Dengan menggunakan pendekatan penelitian kualitatif, data dikumpulkan melalui wawancara mendalam dengan penggemar terpilih yang pernah berinteraksi dengan album NFC. Studi ini menggunakan analisis tematik untuk mengkaji narasi format album ini, sekaligus mengenalkan konsep 'keberlanjutan afektif' (*affective sustainability*) sebagai bentuk negosiasi emosional dan etis dalam konsumsi budaya penggemar.

Kata kunci: Album NFC, persepsi penggemar, komunikasi digital, inovasi berkelanjutan, penelitian kualitatif

INTRODUCTION

In recent years, there has been noticeable changes in the K-pop industry, driven by the increasing number of people who are starting to be more aware of their surroundings and the rapid advancement of digital technologies. Among the known innovations is the introduction of music albums embedded in a simple QR code, Near Field Communication (NFC). This technology is promoted as a more eco-friendly

alternative to traditional compact discs, cassette tapes, and physical albums. NFC albums offer fans convenient digital access to music and exclusive content while significantly reducing physical waste. Alongside these benefits, the arrival of the NFC album has prompted an important question about how such formats can influence the emotional and symbolic aspects of the fan experience with K-Pop albums.

In the context of a global climate crisis, music industries have been urged to adopt a more sustainable production methods. With that, NFC albums have been positioned as a strategic response from the music industry to these environmental issues. However, in the emotionally charged and materially grounded culture of K-pop fandom, this transition introduces a new tension. Physical albums are more than music carriers, as they also function as a cherished symbols of identity, belonging, and emotional closeness to artists. With the collectible components such as photobooks and photocards are considered to be the ritual of album purchasing, their absence in NFC albums raises the question of whether technological convenience can truly replace the tangible intimacy and affective engagement offered by physical formats.

Prior research has examined the broader digital transformation of the music industry, including the shift from physical media to streaming platforms (Morris, 2015; Nowak, 2016). As demonstrated by Istrate et al. (2024) in their rigorous life cycle assessment, global digital content consumption encompassing web browsing, social media activity, and music streaming accounts for a striking portion of the per capita carbon budget and mineral resource capacities, largely driven by the energy intensive manufacturing and operation of user devices. This ecological reality underscores the structural necessity for physical digital hybrid alternatives that minimize tangible material waste, yet the actual consumer alignment with such green options remains complex and highly negotiated. Studies on fandom (Jenkins, 2006; Duffett, 2013) have illuminated how fans sustain engagement through collective, symbolic, and material practices, while more recent research underscores the role of physical albums in deepening emotional connection and participatory culture (Jenkins, 2006; Duffett, 2013).

Within the Digital Sustainable Consumption Framework (DSCF) proposed by Pinto et al. (2025), although eco identity and social accountability act as strong motivational drivers for green alternatives, consumer intentions are frequently disrupted by ethical dilemmas, data privacy anxieties, and corporate greenwashing skepticism. In the specific context of K-pop fandom, this creates a pronounced intention-behavior gap where fans encounter cognitive dissonance, struggling to reconcile their environmental consciousness with a deeply embedded cultural desire for physical accumulation and tactile collectability. This negotiation does not occur in a vacuum but is heavily mediated by the technological affordances of contemporary digital spaces. K-pop fan communities possess sophisticated digital literacy, actively constructing decentralized networks and autonomous cultures on social media networks. Nugraha and Komsiah (2023) observe that modern fandoms leverage platform mediated spaces like X (formerly Twitter) to coordinate collective projects, replicate content, and evaluate community norms along

communication, creative, and civil power dimensions. Consequently, the reception and ultimate adoption of sustainable alternatives like NFC formats are actively calculated through these shared online discourses and community consensus.

To successfully navigate this platform mediated environment, the strategic framing of green initiatives by industry stakeholders becomes paramount. Nabivi (2025) empirically illustrates that ecofriendly corporate communication on social media significantly enhances brand attitudes and purchase intentions, provided the content is perceived by the audience as highly informative, entertaining, and personally relevant. This implies that for sustainable music technology to gain traction, entertainment agencies must move beyond framing NFC formats as mere technical reductions of material objects, instead positioning them as interactive, informative digital assets that align with fans' ecoconscious selfcongruence. By synthesizing these fragmented dimensions, the present study effectively addresses a significant empirical gap. It moves beyond isolated evaluations of digital footprints, green marketing, or digital fandom to critically evaluate how contemporary media consumers actively resolve the tension between affective materiality and ethical sustainability through the specific interpretive lens of Cognitive Dissonance Theory.

In addition, Dinningrum and Satiti (2022) emphasize that fandom consumption in K-pop communities particularly within the fandom functions not merely as an act of purchasing but as a cultural expression that reflects identity, belonging, and emotional satisfaction. Their study found that consumption among K-pop fans is deeply intertwined with social meaning and symbolic value, where owning or collecting official merchandise serves as a way to communicate loyalty and strengthen one's position within the fan community. This illustrates how consumption in fandom operates beyond material utility, representing a form of emotional and social investment that shapes fan identity.

Grounded in Cognitive Dissonance Theory (CDT), this study examines how fans manage conflicting beliefs and emotions in their music consumption. According to Festinger (1957), cognitive dissonance occurs when individuals experience psychological discomfort resulting from inconsistencies between their beliefs, attitudes, or behaviors. To reduce this discomfort, individuals often modify their attitudes or reinterpret their actions in ways that restore internal harmony. Subsequent scholars have identified two common mechanisms of dissonance reduction, effort justification, in which the value of an object or action increases in proportion to the effort invested in it, and induced compliance, where individuals alter their attitudes to align with behaviors that contradict prior beliefs. In the context of K-pop fandom, fans who cherish physical albums for their emotional and symbolic value may experience dissonance when confronted with the environmental impact of mass album production. By applying CDT, this study explores how fans reconcile this tension, either by reaffirming emotional attachments, adopting sustainable practices, or forming hybrid interpretations that integrate both emotional and ethical motives.

This study seeks to fill that gap by applying Cognitive Dissonance Theory (Festinger, 1957) to explore how fans negotiate the contradiction between their support for sustainability values and their emotional investment in physical collecting. Specifically, it investigates whether, and in what ways, K-pop fans reconcile the cognitive dissonance that arises when confronted with a format that aligns with environmental ideals yet is perceived as emotionally insufficient.

Despite increasing research on digital transformation and eco-conscious fandom, empirical studies examining this emotional ethical contradiction remain limited. As (Creswell and Creswell 2018) argue, clear research questions are essential to guide qualitative exploration and ensure alignment between theory, method, and purpose. With that, this study is guided by two important questions. First, how do these K-Pop fans perceive NFC albums in relation to sustainability and emotional value. Furthermore, how do these fans settle the dissonance between environmental awareness as well as affective attachment?

The primary aim of this research is to examine the narratives and interpretations that fans construct around NFC albums in K-pop culture, offering insight into how sustainable technologies are adopted, adapted, or resisted within emotionally driven cultural contexts. Using a qualitative approach, the study employs in-depth interviews and thematic analysis to capture the nuanced meanings fans attach to this technological shift. In doing so, it contributes to a deeper understanding of the interplay between sustainability, technological innovation, and emotional engagement in contemporary popular music culture

METHOD

This study uses a qualitative phenomenological research approach to explore how K-pop fans' lived experiences and perceptions of Near Field Communication (NFC) albums relate to sustainability and emotional experience. Phenomenology was selected because it focuses on understanding how individuals interpret and give meaning to their experiences within particular social and cultural contexts. According to Creswell and Poth (2018), phenomenological research seeks to capture the essence of participants' experiences as they are consciously perceived and described. In this study, the phenomenological approach was considered appropriate for examining how fans emotionally and cognitively experience the transition from physical to NFC albums, particularly in negotiating the tension between environmental awareness and emotional attachment.

The study involved four K-pop fans Lenny, Pelangi, Devi, and Indira, each of whom had prior experience using or purchasing NFC albums. Participants were selected using purposive sampling, a non-probability sampling technique that intentionally recruits individuals who possess relevant knowledge and experience related to the research topic. As explained by Palinkas et al. (2015), purposive sampling allows researchers to obtain rich, meaningful, and contextually relevant data. The number of

participants was considered appropriate for phenomenological inquiry because the study prioritized depth of understanding rather than statistical representation. Data collection was concluded when thematic saturation was achieved, as no substantially new themes or interpretations emerged from the final interviews. This indicated that the data were sufficient to address the research questions and support meaningful thematic interpretation.

The inclusion criteria required participants to have direct experience interacting with NFC albums, either through ownership, using others' collections, or participating in album unboxing and collection activities. In addition, participants were required to be actively involved in fan communities, including online engagement through platforms such as X, Discord, or other fan forums, as well as offline participation in fan gatherings and concerts. These criteria ensured that participants were not only familiar with the technological aspects of NFC albums but also capable of articulating their emotional connections and symbolic interpretations within their fandom experiences.

While the study provides rich and in-depth insights into participants' experiences with NFC albums, several limitations should be acknowledged. The findings are based on four participants and are therefore not intended for statistical generalization. Although qualitative research prioritizes depth over breadth, the transferability of the findings may be limited by the relatively small participant pool and the diversity of fandom backgrounds represented. Participants came from specific K-pop fandom experiences and may not fully reflect variations across different fandom communities, artist generations, or levels of fan engagement. Future research may benefit from involving a broader range of participants to explore how responses to sustainable music technologies vary across fandom contexts.

Data were collected through semi-structured, in-depth interviews, which were conducted individually via Zoom and Google Meet. Each interview lasted approximately 45 to 60 minutes. Conducting interviews online provided flexibility for participants from diverse locations while maintaining the quality of interpersonal interaction necessary for qualitative depth.

The interview guide consisted of ten open-ended questions exploring participants' perceptions, emotional responses, and views on sustainability. Core question areas included: (1) experiences using NFC albums, (2) comparisons between digital and physical albums, (3) emotional significance of collecting, and (4) opinions on sustainability within fandom culture. Following the recommendations of (Kallio, Pietilä, Johnson, and Kangasniemi 2016), the interview guide was developed to ensure thematic consistency while allowing flexibility for emergent insights. This approach aligns with (Adams 2015), who emphasizes that semi-structured interviews balance comparability across participants with adaptability to individual narratives.

All interviews were audio-recorded with participants' consent and subsequently transcribed verbatim to preserve the authenticity of their narratives. In addition, field notes were taken throughout the sessions to capture contextual details, such as tone, pauses, and emotional cues, which enriched the interpretation process.

All collected data were analyzed using thematic analysis, following the six-phase framework developed by Braun and Clarke (2019). Thematic analysis was selected because it offers a systematic yet flexible process for identifying, analyzing, and interpreting patterns of meaning with the qualitative data gained. Thematic analysis is considered appropriate for this study as it allows for an in-depth exploration of participants' real life experiences and subjective perspectives on physical and NFC album consumption in relation to cognitive dissonance.

The first step to this data analysis is to be familiarised with the data. This is achieved through a repeated and immersive reading of the interview transcripts to gain a thorough understanding of the content. Each transcript was carefully transcribed and reviewed multiple times, involving the participants by forwarding their own transcript for them to review and give their approval, also with notes taken on initial impressions, emotional nuances, and recurring expressions that reflected the participants' experiences as K-pop fans.

During the second step, initial codes were generated to capture meaningful words, phrases, or statements relevant to the research focus. Labelling and giving codes to segments of the texts that seem to convey particular key words such as emotional attachment, practicality, or sustainability. Manual coding was chosen to allow a closer engagement with the material and to preserve contextual meaning throughout the process.

The third step included searching for themes by grouping similar codes under a broader category. For example, codes related to emotional connection, unboxing rituals, and fandom identity were clustered into the theme "emotional value of physical albums", where codes that highlight eco-friendliness and technological convenience were grouped under different naming like "rational adaptation to NFC albums." This step marked the transition of this research from a descriptive coding to a more interpretive thematic.

Therefore, those identified themes were to be re-evaluated to ensure both accuracy and connection. Each created theme was carefully examined against the original data to verify that it genuinely reflected participants' narratives. Themes that overlapped were either refined or combined, while those lacking sufficient supporting evidence were taken out. After this evaluation process, the finalized themes were all labeled clearly to capture each meaning and maintain a clear classification among categories. This process resulted in three primary themes used for the research. Those are emotional value and effort justification, rational adaptation and induced compliance, as well as hybrid consumption as a new form of dissonance resolution.

On the final step, all identified are finally brought together to form a clear analytical narrative that speaks for the overall interpretation of the research findings. Each theme was strengthened with translated citations from participants and are carefully analysed using Cognitive Dissonance Theory (Festinger, 1957). The results were then connected to existing studies on fan behavior, how their digital consumption is, and sustainability to obtain both theoretical and practical implications.

By using Braun and Clarke's (2019) flexible yet systematic framework, this study was able to maintain analytical thoroughness, research clarity, as well as consistency

throughout the analysis process. This approach also simplifies the identification of subtle patterns within participants' narratives, highlighting the more complex interplay between emotional attachment, technological adaptation, and sustainability awareness in K-pop fandom consumption practices.

To ensure the precision and reliability of the qualitative findings, this study followed the trustworthiness framework founded by Lincoln and Guba (1985), which involves credibility, transferability, dependability, and confirmability.

Credibility was gained through continuous engagement with the data itself and the use of member checking. Member checking was done after initial interpretations were formulated, then the summarized version of the findings were shared with participants for them to verify the accuracy of interpretations and get approval of their experiences if they were represented correctly (Birt et al., 2016). This repeated validation process strengthened internal validity by aligning analytical insights with participants' real intended meanings.

For dependability, it was ensured by maintaining a detailed and clear documentation of each steps of the research process. This includes things such as data collection, coding, theme development, and theoretical interpretation. This documentation provided transparency and allowed external evaluation of the study's methodological consistency (Korstjens & Moser, 2018). Confirmability was reinforced through reflexive journaling, which was used to record ongoing reflections regarding potential researcher bias, preconceptions, and interpretive decisions. This measure ensured that the findings were derived directly from the participants' narratives rather than subjective assumptions.

Transferability was achieved by delivering thick descriptions of the research context, participant characteristics, and cultural background of the K-pop fandom. These detailed contextual explanations will enable readers to assess the applicability of the findings to other social and cultural settings (Korstjens & Moser, 2018).

In terms of ethical considerations, consent was obtained from all participants before data collection was initiated. Participants were provided with a clear explanation of the study's objectives, research procedures, and the voluntary nature of their involvement, including the right to withdraw from the study at any stage without any impact. To ensure participant confidentiality, names such as "Lenny," "Pelangi," "Devi," and "Indira" were assigned to each participant and used consistently throughout the analysis and reporting. These used names do not reflect the participants' actual identities. Furthermore, all interview transcripts and data files were anonymized, with any information that could potentially reveal participants' identities removed prior to the analysis.

All research data were securely stored on password-protected files and were accessible only by the research team. This study followed strictly to the established ethical standards in qualitative research by upholding principles of respect, participant autonomy, confidentiality, and cultural sensitivity in accordance with recognized guidelines (Tobin & Begley, 2020). These ethical measures ensured the full protection of participants' rights and privacy throughout the research process.

While the involvement of four distinct participants is methodologically justified and appropriate for a qualitative phenomenological inquiry that prioritizes interpretative depth over statistical breadth, several inherent limitations must be reflexively acknowledged to maintain methodological transparency and academic rigor.

First, due to the small sample size, the findings of this study possess limited transferability and cannot be widely generalized to represent the entire global K-pop fandom landscape. Second, the study lacks broader participant diversity in terms of geographic distribution and socio-economic backgrounds, as the selected informants operate within specific urban professional and internship contexts. Lastly, this research does not fully capture the potential fandom variations across different demographic groups or generations, such as younger teenage fans or older multi-generational fan communities, whose purchasing power and ethical rationalizations regarding sustainable music technology might differ significantly. Rather than indicating a methodological flaw, these constraints serve as a reflexive clarification that contextualizes the scope of our analysis and highlights promising avenues for future empirical research.

RESULT AND DISCUSSION

Based on the research questions, which aims to explore how K-pop fans perceive and negotiate their consumption experiences through the shift from physical to NFC albums, this study examines the formation of consumption culture within K-pop album purchasing behavior. The research employs a phenomenological approach to understand fans' lived experiences and the meanings attached to both traditional and digital album formats. Data were collected through online in-depth interviews with four participants aged 22 to 27 who have purchased both physical and NFC albums. All participants possess an understanding of K-pop culture and recognize NFC albums as a technological innovation that transforms fan experience, perception, and emotional connection toward music ownership. The demographic details of the participants are presented in Table 1.

Table 1. Participant Demographic Profile

	<i>Participant 1</i>	<i>Participant 2</i>	<i>Participant 3</i>	<i>Participant 4</i>
Name	Indira	Lenny	Pelangi	Devi
Age	22	22	23	27
Gender	Female	Female	Female	Female
Occupation	Public Relation	CSR	Commercial Intern	Social Media Specialist
Fandom Involvement duration	5 years	3 years	7 years	10 years (Veteran Fan)

Purchasing Intensity	High (Purchases 3–5 versions of physical albums)	Moderate (Buys 1–2 physical albums; currently prefers NFC formats for practical convenience)	Very High (Avid photocard collector; frequently bulk-purchases traditional physical albums)	Low to Moderate (Actively downsizing physical purchases due to ecological concerns; early adopter of NFC)
Community Engagement	Highly active on social media platforms (X/Twitter) for streaming parties and digital voting.	Passive online community observer; active primarily in private fandom group chats .	Active in both online and offline spaces (regularly attends concerts, cupsleeve events, and local fan gatherings).	Fandom content creator and micro-influencer on visual platforms (TikTok and Instagram).

Source: Processed by the authors

The participant profiles reflect variation in fandom experience, purchasing intensity, and forms of community engagement. While all participants had prior experience with NFC albums, they differed in the extent of their collecting practices, environmental concerns, and involvement in fandom activities. This diversity enabled the study to capture a broader range of perspectives regarding how fans negotiate emotional attachment and sustainability considerations when interacting with different album formats.

This study explores how K-Pop fans experience cognitive dissonance when negotiating their attachment to physical albums and their growing awareness of sustainability through the introduction of NFC albums. Using (Festinger, 1957) Cognitive Dissonance Theory, three dominant patterns emerged from the four interviews. (1) the emotional value and effort justification of physical albums, (2) rational adaptation and induced compliance toward NFC albums, and (3) hybrid consumption as a new paradigm of dissonance resolution.

Based on the in-depth interviews conducted with K-pop fans, this study reveals that the consumption of physical albums and NFC albums is not positioned as a binary choice, but rather as a negotiated practice shaped by emotional attachment, technological convenience, and environmental awareness. All participants demonstrated a personal stance toward both album formats. This indicates the presence of internal psychological tension, or known as dissonance, that aligns with the concept of cognitive dissonance.

Physical albums continue to hold strong symbolic and emotional value for fans. They are not merely perceived as music storage media, but as tangible representations of

support, loyalty, and identity within fandom culture. The process of purchasing, unboxing, collecting photocards, and displaying albums in personal spaces contributes to a sense of emotional fulfillment and personal achievement. These experiences reinforce the meaning of physical albums as artifacts of fandom, deeply embedded in fans' emotional histories and collective practices.

However, alongside this attachment, interviewees also expressed growing awareness of environmental issues related to mass production and disposal of physical albums. Several informants acknowledged that album purchasing practices particularly buying multiple copies for chart performance or photocards generate excessive waste. This awareness introduces a conflicting belief: while fans emotionally value physical albums, they also recognize their environmental impact. This contradiction illustrates cognitive dissonance, as fans simultaneously hold positive attitudes toward physical albums and critical views regarding their sustainability.

To reduce this psychological discomfort, interviewees employed various rationalization strategies. One prominent strategy was reframing NFC albums as complementary rather than substitutive to physical albums. Instead of rejecting physical albums altogether, fans positioned NFC albums as an alternative for practical consumption, while preserving physical albums for emotionally significant moments or specific comebacks. This cognitive adjustment allows fans to maintain their identity as devoted supporters while aligning themselves with environmentally conscious values.

The findings also indicate elements of induced compliance in fans' acceptance of NFC albums. Some interviewees reported becoming more open to NFC albums due to external influences, such as agency policies, the increasing prevalence of digital products in the K-pop industry, and dominant sustainability discourses on social media. In this context, attitude change does not emerge purely from intrinsic preference, but from adaptation to industry norms and social expectations. Fans adjust their behavior to remain aligned with the evolving ecosystem of K-pop consumption, even when emotional attachment to physical albums persists.

Nevertheless, this compliance is rarely absolute. Instead of fully abandoning physical albums, fans tend to gradually modify their purchasing behavior becoming more selective, reducing quantity, or prioritizing albums with higher perceived value. This gradual shift suggests that cognitive dissonance is managed through incremental behavioral change rather than radical attitude reversal.

Another significant pattern identified in the interviews is effort justification. Fans who have invested substantial time, money, and emotional energy into acquiring physical albums tend to assign higher value to these products. Activities such as participating in group orders, waiting for pre-orders, engaging in unboxing rituals, and collecting rare photocards intensify the perceived worth of physical albums. Even when fans acknowledge that CDs are rarely played or that digital formats are more practical, the

effort invested legitimizes the continued preference for physical albums. The greater the sacrifice, the stronger the justification that the product is meaningful and irreplaceable.

This mechanism explains why NFC albums, despite their convenience and environmental advantages, are often perceived as lacking emotional depth. NFC albums minimize effort: they are easy to access, portable, and instantly functional. While these features align with contemporary digital lifestyles, they also reduce the symbolic labor traditionally associated with fandom consumption. As a result, some fans perceive NFC albums as less emotionally rewarding, reinforcing the value of physical albums through contrast.

Interestingly, the interviews also suggest the emergence of a new consumption paradigm that moves beyond the physical-versus-digital dichotomy. Rather than resolving dissonance by choosing one format over the other, some fans adopt a situational approach. Physical albums are reserved for comebacks that hold personal significance, while NFC albums are used for everyday listening or symbolic support. This flexible strategy enables fans to avoid prolonged internal conflict by contextualizing their choices, thereby maintaining both emotional satisfaction and ethical alignment.

Overall, the findings demonstrate that K-pop fans actively negotiate their consumption practices through continuous meaning-making processes. Cognitive dissonance does not necessarily result in rejection or full attitude change, but often leads to compromise, rationalization, and the formation of hybrid consumption patterns. NFC albums are accepted not solely because of technological innovation, but because they offer a middle ground that accommodates both sustainability concerns and emotional attachment.

These dynamics highlight that K-pop fans function as reflective consumers rather than passive recipients of industry products. Album formats serve as symbolic tools through which fans express values, identity, and moral positioning in an increasingly digital and sustainability-oriented cultural landscape.

1. Emotional Value and Effort

Across participants, physical albums carry deep emotional and symbolic meaning. Indira described them as “very important, especially if you are truly a fan of one group. It feels like a direct form of support,” and added that she often displays them in her room as part of her collection. Pelangi emphasized that a physical album is a real proof of her support for the idol, highlighting the link between physical ownership and fan identity. Similarly, Devi expressed strong emotional attachment, saying that she felt “emotional because I’ve been with them since their debut, it feels like we’ve grown together,” while Lenny shared the joy of unboxing ritual, explaining that there’s a special happiness when the album arrives, when she unbox it and see what photocard she gets.

These narratives illustrate effort justification (Festinger, 1957), where the perceived value of a product increases in proportion to the emotional and financial effort invested. The rituals of pre-ordering, waiting, and unboxing function as symbolic acts of loyalty and identity affirmation. Fans rationalize the effort and expense by attributing emotional meaning to physical ownership, reinforcing parasocial closeness to idols (Hartmann, 2020). This demonstrates that physical albums act as emotional artifacts, material expressions of fandom identity that justify the effort invested in collecting and supporting artists.

2. Rational Adaptation and Compliance

While emotional motives dominate, participants also recognize the practicality and environmental benefits of NFC albums. Indira acknowledged that “NFC albums are more eco-friendly, simpler, and produce less waste,” while Lenny noted that “using NFC is simpler and more practical... you can just scan and play the songs anywhere without having to carry a big CD.”. Pelangi, a high intensity buyer described NFC albums as “an interesting innovation because they’re practical and easy to carry but NFC albums cannot fully displace the ritualistic value of physical media”. and Devi, a veteran fan of 10 years, demonstrated a stronger tendency toward induced compliance driven by long term environmental awareness. Devi engaged in a more progressive behavioral adjustment by actively limiting her physical album purchases in favor of sustainable formats: “NFC produces less waste than physical albums, maybe it’s a solution...” This comparison underscores that the hybrid model of dissonance resolution is highly situational and deeply contingent upon a fan's duration and emotional investment within the community."

These reflections reveal induced compliance, where fans adjust their beliefs to align with social and technological values such as sustainability and efficiency. Although their emotional preference remains tied to physical albums, they gradually justify digital alternatives through rational and ethical reasoning. Devi admitted that “NFC produces less waste than physical albums, maybe it’s a solution, but emotionally, physical albums still feel stronger.” This tension shows how rational awareness and emotional attachment coexist. As (Harmon Jones, 2019) argues, dissonance is often reduced through attitude adjustment rather than behavioral rejection. In this context, the participants ease their psychological discomfort by reframing NFC albums as morally and practically superior while maintaining emotional loyalty to traditional formats.

3. Hybrid Consumption and New Paradigm

Participants display hybrid coping strategies with not choosing between emotional and rational motives. Rather, they are simply choosing both options or not leaning towards any at all. Pelangi stated that “NFC albums are a great innovation, but physical albums still have their own place for collection,” which brings coexistence more than replacement. Lenny expressed situational flexibility, “I don’t really lean to either side, it depends on the situation and on the agency.” Indira proposed integrating

emotional value into digital formats by suggesting that agencies “add more exclusive artist content so fans still feel they have something special even in digital form.” Similarly, Devi maintained emotional loyalty while accepting practicality, recommending that “photocards should remain part of the physical album, because that’s what makes it more interesting for fans.”

Despite sharing similar awareness of sustainability issues, participants demonstrated different pathways of negotiation. Devi, as a long-term fan who had already begun reducing physical album purchases, viewed NFC albums as a practical solution to environmental concerns. In contrast, Indira continued to prioritize physical albums for emotionally significant releases while selectively adopting NFC formats for convenience. Pelangi regarded NFC albums as complementary products that could coexist alongside physical collections rather than replace them, whereas Lenny adopted a more situational approach, emphasizing that her preferences depended on the artist, release strategy, and personal circumstances. These differences suggest that cognitive dissonance is not resolved uniformly; rather, fans develop individualized reconciliation strategies shaped by varying levels of emotional investment, fandom experience, and sustainability awareness.

This pattern represents a hybrid paradigm of cognitive dissonance resolution, where fans harmonize emotional gratification with ethical rationality. Instead of eliminating dissonance by rejecting one side, they construct a new meaning framework in which both formats coexist. This supports (Baym, 2018) concept of adaptive fandom, where fans actively negotiate technological changes while preserving authenticity and emotional connection. The participants’ ability to balance nostalgia with sustainability suggests a shift from binary thinking (physical vs. digital) to an integrated model of affective sustainability, in which emotional attachment and environmental consciousness are not opposites but complementary motives in fan consumption.

4. Conceptual Contribution: Affective Sustainability

In this framework, the transition to green technology (such as NFC albums) is not a simple behavioral shift, but an emotional reconciliation where consumers actively seek to preserve their affective bonds, identity performance, and ritualistic practices while simultaneously aligning with ecological values. This conceptualization closely aligns with and expands upon the Digital Sustainable Consumption Framework (DSCF) advanced by Pinto et al. (2025), which demonstrates that while digital settings can effectively stimulate a consumer's eco-identity and social accountability, they simultaneously present complex ethical dilemmas and structural barriers when green alternatives disrupt long-standing material habits. By explicitly addressing these digital frictions, affective sustainability functions not merely as a descriptive account of green behaviors, but as a novel interpretive lens to analyze how emotional attachment modulates ecological practices and actively bridges the digital intention-behavior gap. Furthermore, the utility of affective sustainability extends far beyond the specific boundaries of K-pop fandom. This conceptual lens can be applied to various contemporary consumer

landscapes where physical artifacts hold symbolic power but face pressure from digital and sustainable transitions. For instance, in the gaming industry, the shift from physical collector's editions to purely digital distribution forces passionate gamers to recalibrate their tangible sense of ownership against environmental footprint. Similarly, in the publishing world, bibliophiles constantly negotiate the tactile emotional fulfillment of collecting printed books with the sustainable practicality of e-readers. By applying affective sustainability to these diverse contexts, scholars can gain deeper insights into how modern, participatory consumer communities adopt green innovations without losing their emotional core.

Although developed within the context of K-pop fandom, affective sustainability may be applicable to other consumer domains where physical ownership carries strong symbolic and emotional value. Examples include collectors of vinyl records, printed books, gaming memorabilia, and limited-edition merchandise. In these contexts, consumers may similarly negotiate tensions between environmental responsibility and attachment to material artifacts, making affective sustainability a potentially useful lens for examining sustainable transitions across various cultural industries.

CONCLUSION

This study examined how K-pop fans negotiate cognitive dissonance between their emotional attachment to physical albums and their growing awareness of environmental sustainability through the emergence of NFC albums. Drawing on (Festinger, 1957) Cognitive Dissonance Theory, the findings reveal that fans do not simply eliminate this psychological conflict; instead, they reinterpret it through adaptive strategies that harmonize emotion and rationality. To strengthen clarity and scholarly positioning, the conclusions of this research are delineated into three distinct dimensions: contextual findings, theoretical contributions, and practical implications.

The empirical data highlights three dominant response patterns among K-pop fans facing technological shifts: (1) emotional value and effort justification, where physical albums serve as irreplaceable symbols of loyalty and identity; (2) rational adaptation and induced compliance, where fans adjust their attitudes to align with environmental and technological norms; and (3) hybrid consumption, which represents a balanced, situational approach to music ownership.

By examining K-pop fans' responses to NFC albums, this research underscores that contemporary fans operate as highly reflective consumers rather than passive recipients of industry products, actively negotiating their buying behaviors based on their psychological and ethical values.

The primary theoretical contribution of this study is the formalization of the concept of affective sustainability. This framework describes how emotional fulfillment and ecological awareness coexist and complement each other within contemporary consumer practices, proving that sustainable innovation does not inherently diminish fan engagement.

Rather than rendering old affective habits obsolete, sustainable music technology invites fans to reconstruct meanings through new modes of emotional participation that align with their ethical stances.

Furthermore, this insight extends Cognitive Dissonance Theory beyond individual psychology into the cultural and media communication domain, showing how moral and emotional logics intersect when consumers face eco-conscious digital transformations.

The insights generated from this study offer actionable recommendations for entertainment companies, music labels, and sustainable marketing communication practitioners. Recognizing that fans possess dual motivations emotional attachment and environmental responsibility agencies should eschew a binary "physical vs. digital" approach and instead design integrated hybrid product models.

Instead of entirely replacing physical artifacts, agencies can develop integrated formats that pair NFC technology with selective, high-value tangible components (such as exclusive photocards) or premium digital rewards.

This strategic compromise can mitigate emotional resistance to green technology, foster deeper brand loyalty, and sustainably reduce material waste while maintaining the industry's economic vitality.

REFERENCES

- Adams, W. C. (2015). Conducting semi-structured interviews. In *Handbook of practical program evaluation* (4th ed., pp. 492–505). Jossey-Bass.
- Baym, N. K. (2018). *Playing to the crowd: Musicians, audiences, and the intimate work of connection*. NYU Press.
- Birt, L., Scott, S., Cavers, D., Campbell, C., & Walter, F. (2016). Member checking: A tool to enhance trustworthiness or merely a nod to validation? *Qualitative Health Research, 26*(13), 1802–1811. <https://doi.org/10.1177/1049732316654870>
- Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health, 11*(4), 589–597. <https://doi.org/10.1080/2159676X.2019.1628806>.
- Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
- Duffett, M. (2013). *Understanding fandom: An introduction to the study of media fan culture*. Bloomsbury.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford University Press.
- Harmon-Jones, E., & Mills, J. (2019). *Cognitive dissonance: Reexamining a pivotal theory in psychology* (2nd ed.). American Psychological Association.

- Hartmann, T. (2020). Parasocial interaction and parasocial relationships. Oxford Research Encyclopedia of Communication. <https://doi.org/10.1093/acrefore/9780190228613.013.466>.
- Istrate, R., Tulus, V., Grass, R. N., Vanbever, L., Stark, W. J., & Guillén-Gosálbez, G. (2024). The environmental sustainability of digital content consumption. *Nature Communications*, 15, 3724. <https://doi.org/10.1038/s41467-024-47621-w>
- Jenkins, H. (2006). *Fans, bloggers, and gamers: Exploring participatory culture*. NYU Press.
- Kallio, H., Pietilä, A. M., Johnson, M., & Kangasniemi, M. (2016). Systematic methodological review: Developing a framework for a qualitative semi-structured interview guide. *Journal of Advanced Nursing*, 72(12), 2954–2965. <https://doi.org/10.1111/jan.13031>
- Kim, Y. (2020). K-pop fandom and the paradox of eco-conscious consumption. *International Journal of Cultural Studies*, 23(5), 727–743.
- Korstjens, I., & Moser, A. (2018). Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. *European Journal of General Practice*, 24(1), 120–124. <https://doi.org/10.1080/13814788.2017.1375092>
- Morris, J. W. (2015). *Selling digital music, formatting culture*. University of California Press.
- Nabivi, E. (2025). The role of social media in green marketing: How eco-friendly content influences brand attitude and consumer engagement. *Sustainability*, 17, 1965. <https://doi.org/10.3390/su1701965>
- Nowak, R. (2016). *Consuming music in the digital age*. Palgrave Macmillan.
- Nugraha, R. P., & Komsiah, S. (2023). Utilization of new media as digital fandom among Korean Pop (K-POP) fan groups on the social media platform Twitter. *International Journal of Progressive Sciences and Technologies (IJPSAT)*, 40(1), 200-207. <https://ijpsat.org/index.php/ijpsat/article/view/5584>
- Oh, C., & Park, J. (2022). Materiality and affect in K-pop fandom. *Cultural Studies*, 36(3), 491–509.
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42, 533–544. <https://doi.org/10.1007/s10488-013-0528-y>
- Pinto, O. R., Kumar, P., Dhanalakshmi, Asha, S., Banumathi, R., & Sumathi, C. (2025). Sustainable consumption in the digital age: Exploring consumer motivations, behaviors, and ethical dilemmas. *Advances in Consumer Research*, 2(5). <https://acr-journal.com/article/sustainable-consumption-in-the-digital-age-exploring-consumer-motivations-behaviors-and-ethical-dilemmas-1791/>
- Salmona, M., & Kaczynski, D. (2016). *Qualitative data analysis with NVivo*. SAGE Publications.
- Tobin, G. A., & Begley, C. M. (2020). Methodological rigour within a qualitative framework. *Journal of Advanced Nursing*, 70(7), 1225–1233. <https://doi.org/10.1111/jan.12162>