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How to Improve *Instagram Reels* Engagement?

An empirical investigation of content strategies

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Acknowledgment

"Ah, just take it like another course!" I said to myself before I clicked the "submit assignment" button in *Canvas*, handing in a thesis proposal in November 2021. Well, technically, that makes sense. But this thesis is also a process where I am forcefully reminded that I need to get ready to decide which path I would choose after the new gate I am going to.

But anyway, I am so glad, with full gratitude, for this accomplishment on finishing this thesis to complete my master's education. This phase is obtained with such huge support from many people, and I would like to thank all of you who have been very supportive in the last five months. The generosity of my thesis supervisor in sharing his knowledge is priceless. Thank you so much Henrik! My proof-readers, thank you for being so meticulous. You guys literally slapped me, and I need to take additional English course. My boyfriend who had been so patient listening to the *Instagram* posts I played over and over during the coding process. That must have been very annoying. My reliability test coders, sorry for the hustle. Who else? No. I don't forget about my mom, as I believe she prays for her daughters every day, thanks, Mom! Just that my mom doesn't understand *Instagram*. Soo… But I still love her. And if you ask about my dad, I literally don't know what he's doing right now, but I am sure he is proud of me and I believe he's happy "up there."

I came to Sweden to study, which I did, and I am still doing. My Master's thesis is one of the thousands of lessons I get during my Sweden exploration and expanding my perspective. It is not only about how to write an academic paper but also how to handle "the academical aspect of life" (whatever that means). I learned many things from classmates, teachers, the canteen ladies, internship supervisors, ICA cashiers, strangers who accidentally hit me in the campus alley but ended up became a good friend, and the list goes on. I am glad for all the lessons I have learned. I learned that we can't always get what we want in life, like when I had to deal with hard group works for example. Or the fact that my batch experienced almost whole program year online. It must have been different offline, maybe. But questioning "what if" would never solve our future, I guess. So, let's move on.

For some of us, master's might just an available option you can choose. For some of us including me, doing master's abroad is a luxury. Well, even basic education wasn't free for me in the place I came from. So it was a bit annoying when locals take it for granted, telling me story they neglected a program after couple of months for the reasons of "I don't like the teachers" or "I don't like the campus". But who am I to comment? Our life is our choice.

Finally (I promise this is the last paragraph), I would like to dedicate this paper to you, my readers, thank you for putting your time to read my masterpiece, and I am sorry if some numbers confuse you. Just read the abstract and conclusion, maybe enough too. But just so you know, I have spent five months to get to the conclusion part. Thank you for even reading this page. You are the best reader! Enjoy the thesis and let me know if you have a job for me. I am available full-time (this is the gate I mentioned before), and I am super good at some stuff. Oh, but maybe I got a job already when you read it. Who knows… Or you want to discuss stuff about this thesis, just reach me out. It's easy to find me.

Have a good day,
Atika Rusy Kuncoro – 06 June 2022

Abstract

How to Improve *Instagram Reels* Engagement?

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Introduced in August 2020, *Instagram Reels* have been used as a new alternative to elevate popularity by leveraging broader viewers while ignoring the audience's status as followers. This could have a massive contribution for creators in engaging the public by infusing messages through Reels content. However, the formulations on what aspects need more attention for designing Reels content are rarely concluded within previous literature. Taking the digital rhetoric perspective, this study attempts to contribute to extant knowledge of effective strategies (figurative language, framing, third-parties endorsement, interactivity appeal, audio-visual presence, nature imagery, caption length, and dimension format) for improving the engagement of *Instagram Reels*.

Acknowledging the post-positivism paradigm, the paper examines and explores possibilities of different plausible claims for a specific context of Indonesian non-profit environmental organizations. The quantitative analysis of 301 *Reels* contents reaffirmed the presence of audio-visual as the strongest determinant of engagement score among other predictors. Interestingly, like the majority of predictors, it correlates differently across different social media. Anchoring to the experiment results, a new framework regarding factors affecting Reels' engagement score is introduced.

Keywords: *Instagram Reels*, engagement, digital rhetoric, persuasive, social media, environmental organization

Word count: 16.853

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1. Introduction

As straightforward as it is, this research was initiated by the author's personal interest in how non-profit environmental organizations (NPEO) that operate in Indonesia communicate to the public through a particular feature of a specific digital channel, *Instagram Reels*. They have been posting different types of content, from being independently creative to following the trending content type and yet, they rarely gone viral. In other words, "environment" is rarely a sexy issue within Indonesia's *Instagram* sphere, and NPEO is rarely as popular as a bubble tea company, cellphone company or K-Pop band.

According to the Ministry of Environment and Forestry of the Republic of Indonesia (KLHK, 2020), environmental problems throughout the country have been growing multidimensionally, from water sustainability, air quality, waste problems, and deforestation to ecosystem degradation, which are real threats to the future, while people's awareness of environmental betterment does not seem to rise. Furthermore, the existence of NPEO, who are mainly aimed at concretely building movement for future environment betterment, start by awaking people's awareness about the environment (GreenLivingSupport, 2021; Kumara, 2020; WALHI, 2022). In accordance with that, NPEO have been developing their communication strategies to include different channels, such as social media.

Social media have the capability to provide an effective communication platform for any party with a minimum budget and extensive audience coverage. Indonesia is recorded as the country with the second-longest daily time spent on social media throughout the Asia-Pacific region (Statista, 2022a), with as many as 191.4 million active users (Statista, 2022d) and *Instagram* is the third most used platform (Dahono, 2021) after *YouTube* and *WhatsApp*. For the number of *Instagram* users, Indonesia is ranked fourth globally after India, USA, and Brazil (Statista, 2022b). Additionally, *Instagram* is in the fourth position of the most used social media after *Facebook*, *YouTube* and *WhatsApp* globally (Statista, 2022c). If

WhatsApp is excluded for its distinct characteristic as a messenger platform, *Instagram* would be the third.

Expanding its feature richness, *Instagram* introduced a new feature called *Reels* in August 2020 (Instagram, 2020). For influencers and creators, *Reels* has provided additional value as it can expose contents to an even broader viewership because of its unique algorithm that distributes content to audiences' newsfeeds, regardless of whether a user is a follower. This is a breakthrough, as previously creators can spend a lot of time collecting followers before their content can appear on people's newsfeeds. Although, in the media, *Instagram Reels* has been claimed to be a TikTok copycat (Chen & Lorenz, 2020; Ghaffary, 2020), *Instagram*'s popularity as a platform managed to overtake TikTok's both in Indonesia (Dahono, 2021) and globally (Statista, 2022c). From here, it is seen that *Instagram Reels* has great potential as a social media feature in helping NPEO to reach a wider range of audiences within an even shorter period.

1.1 Problem Background

As much as there is massive potential for *Reels* in specific, and social media in general to radiate messages to a wider audience, the engagement gaining of social media for a non-profit organization or non-government organizations (NGO) is globally low. Statistically speaking, NGO is not the most attractive sector to attract audience engagement, regardless of the noble goals it carries. For instance, it sits in position seven after the software sector, while the political sector holds the first position in terms of getting the most engagement on *Instagram* in 2020 (Statista, 2021). In Indonesia, none of the NGOs ranked within the top-10 most engaged and most popular accounts (Nurhayati-Wolff, 2019). To make another comparison, Pertamina, an Indonesian fossil-fuel energy company, got more engagement in the form of followers (888.000) compared to Borneo Orangutan Survival Foundation (76.000), WWF Indonesia (272.000), Greenpeace Indonesia (629.000) or Forest Watch Indonesia (9.222).

The relatively low attention of local users of Indonesian NPEO on *Instagram* is worth enhancing, given that engagement could potentially help elevate the organizations' popularity on social media with potentially a domino effect on

further action such as volunteerism, donation, or even environment movement. Users with particular interest tend to put full attention to their concern or interest, and despite the nuances of hate or support, chains of engagement have brought many accounts to prominence. Take *The North Face Climbs* (adventure wear) as an example (Heath, 2018) which successfully created a community derived from social media engagement. What an account normally tends to do while posting content on social media is to communicate something and expect people to respond with different forms of engagement. Looking at the given example, engagement is essential because the more people engage, the more a post will be widely distributed, and the more the account will become popular. Same with how one of the algorithms works on *Instagram,* it would disperse the content broader when the interaction with the audience is detected active (Hidayat, 2018).

Moreover, engagement with social media is indicated as a significant contributor of consumer awareness and loyalty (Cuevas-Molano et al., 2021; Menon et al., 2019). Accordingly, content creators have been actively designing different types of persuasion strategies within the content, such as using influencer testimony, humor, certain framing, particular music setting, animation, etc., to attract more engagement in the form of likes, shares, comments, or followers. Parallel to the creator's effort, many researchers have been trying to discover influencing factors that earn higher engagement rate on different types of social media platforms with different research subjects (Antonakopoulou & Veglis, 2021; Luarn et al., 2015; Shahbaznezhad et al., 2021; Tafesse, 2015).

1.2 Research Question and Aim

Much research has focused on factors affecting the engagement rate on various social media platforms, but the precedence for a specific feature of *Instagram Reels* has not been established yet. Previous research highlighted the effect of different persuasive strategy dimensions like content type, the use of pictures and videos, testimony, caption length, etc., on the engagement rate. However, the research subjects were mainly commercial brands or personal influencers and rarely explained how good those persuasive strategies were at boosting the engagement

for NPEO, especially in Indonesia. Derived from that, this research intends to answer the research question:

> ***RQ** : How do the persuasive strategy dimensions influence the engagement of Instagram Reels for Indonesian NPEO?*

As *Instagram Reels* is a content platform that is rich with media elements. Factors, such as text, audio or visual that represent elements in *Reels* are investigated. As a whole, this study is meant to reveal and develop an understanding of the factors that could affect engagement gain through *Reels* and will be a contribution to both academic and applied fields of strategic communication.

1.3 Contribution of the Study

Broadly speaking, this study aspires to contribute to the literature within the field of strategic communication, more specifically, within persuasive strategy dimensions and engagement in a digital channel. The paper reflects a notion that classic theory actively assimilates communication trends and could be in touch with the advancement of technology to grow paradigms to better fit the present trend.

Engagement, in general, is identified as one evidentiary element proving the success of communication strategies that use social media, where emerging diverse, persuasive forms have been exerted to engage an audience (Flower, 2008). Accordingly, this study contributes conceptually and theoretically to the development of appraisal frameworks by providing an examination of persuasive strategies as they are conditioned by *Instagram Reels*' affordances. In turn, this possesses implications for strategic communication field discourse as the study seeks to understand the relationship of persuasive strategies towards engagement. Concretely, the result of this study is the establishment of a new framework that contributes to the theories within strategic communication.

With this study, the author further hopes to support the attempts to improve environmental sustainability in Indonesia from a strategic communication discipline. This paper might not be capable of producing a formula to turn water into alternative fuel for car, nor result in an engineering method for producing advanced air pollution filtration. Nevertheless, the study result is expected to

provide alternative strategies that can help NPEO improve the chain effect from high engagement rate and in the end enhance the audience's awareness of environmental sustainability using *Instagram Reels*.

1.4 Delimitation

The author of this research intends to study the impact of different persuasive strategies within *Instagram Reels* content on the Indonesian NPEO's engagement score. The lack of research on strategic communication related to Indonesian NPEO on social media is the main cause for that specific delimitation in this research. Employing a quantitative content analysis research design, the *Instagram Reels* posts from different NPEO were investigated. In the process, the study framework relies on the content characteristics aspect intended as communication persuasion, which is rooted in the theory of rhetoric, specifically digital rhetoric, and relevant literatures, such as engagement and consumer engagement.

1.5 Disposition

This paper study is established in six chapters, with each chapter comprising a specific process of the thesis. Following the introduction chapter, relevant previous literature to the study context was outlined and synthesized in chapter 2, *Literature Review*. The chapter is meant to point out the research gap that this study tries to fill. Chapter 3, *Theoretical Framework,* presents the foundation theory and how the model of this research is developed as well as the establishment of the hypothesis. Further, the method and processing procedure used throughout the study are explained in detail in chapter 4, Methodology. Chapter 5, *Result and Analysis* contains the empirical findings of the data and shows the strength and statistical soundness of the result. Here, examination of the hypothesis is presented and analyzed. Chapter 6, *Conclusion and Discussion* includes a comprehensive discussion of the issue, conclusion of the overall study, limitations, and recommendations for future research.

2. Literature Review

This chapter provides an overview of previous research relevant to this study topic. The chapter is meant to be a way to contextualize the thesis motivation as well as attain a better understanding of the field and map out the role and position of the current research to the field. The chapter begins by exploring social media existence and NPEO's communication activities through it. Further, previous literature that explained the importance of user engagement in social media, specifically *Instagram* and how persuasive strategies have been used to attain a high score of engagement, were covered. Closing the chapter, the different fragments are synthesized and briefly discussed to progress the study.

2.1 NPEO Communication on Social Media

Social media is defined as "communication systems that allow their social actors to communicate along with dyadic ties" (Peters et al., 2013 p.286). With the emergence of many social media channels, different platform features and broader audiences, organizations are likely forced to adjust the way they communicate with their audiences. The way social media channels work is substantially different from traditional media, and nowadays organizations even employ social media metrics as one of their KPIs (Pauwels et al., 2009). Scholars agree that social media is contrary to traditional media, where, instead of being controlled by any organization, it is interactive, dynamic, egalitarian, and interconnected (Peters et al., 2013). As interaction on social media has proven to affect branding and sales (Liao & Huang, 2021), practitioners and scholars continuously develop frameworks and metrics based on factors that could improve interaction with their social media (Di Gangi & Wasko, 2016; Dolan et al., 2016; Dolan et al., 2019; Peters et al., 2013). Furthermore, this advanced digital interactivity could reach to a wider audience and benefit parties like NPEO in radiating their message to their audiences.

The technology of social media has been used largely to foster awareness and action in society related to the "pro-environment" movement and during environmental disruption (Ballew et al., 2015; Dwivedi et al., 2022; Waititu, 2021). Ever since the emergence of social media, alternatives to building relationships and alternatives to stakeholder engagement are advancing, and it has changed non-profit organization advocacy (Guo & Saxton, 2014). According to Guo and Saxton (2014), advocacy is essential for a non-profit organization in engaging external activity representatives, as well as facilitators and charitable activities. Research have revealed that social media concretely help the organization to engage potential and existing stakeholder by facilitating action to join in the almost-real moment (Golbeck et al., 2010; Greenberg & MacAulay, 2009).

As an early adopter of social media channels and other new technologies, non-profit organizations have been utilizing the internet's expansive role in enabling mobilization and digital advocacy since the 1990s (Cukier & Middleton, 2003). In aiming for a higher level of social media acknowledgment, non-profit organizations need to be strategic in managing their accounts (Miller, 2010), like considering the type of content they share and adding images or other multimedia types (Smith, 2015). The research by Smith (2015) found that most organizations were consistent in using platforms, with differences in the content types between organizations regarding topic, motivation, and category in searching for interaction which is referred as engagement.

2.2 Persuasions and Engagement on Social Media

Research toward engagement within social media has been widespread as has the emergence of various social media channels. The term "engagement" in the digital sphere has been developed and is used by both practitioners and scholars to indicate key factors of relationship maintenance between organization and consumers (Cuevas-Molano et al., 2021).

Engagement is what an organization means by communicating through social media and facilitating and encouraging the public to respond (Arman & Sidik, 2019), which in this study also refers to "likes" or "comments". The interactive tools within social media platforms have generally modified the way audience

interact with the brand, from passive observers to active participants within online conversation and interaction (Malthouse et al., 2013). Although audiences on social media channels include non-consumers, by means of people who consume the content but not the product/service user or believer, engagement is one of the triggers for action towards what the brand focuses on (van Doorn et al., 2010). According to Bijmolt (2010, as cited in Dolan et al., 2019). This shift of engagement may bring more recognition to the importance of customers' co-creation value through digital interaction. Opinion exchange and interaction, furthermore, are attained depending on the persuasiveness of the message or content published on the selected platform.

Diving deeper into the content element, scholars have examined the language and persuasion style by investigating the use of classical rhetorical aspects like *logos ethos* and *pathos* towards engagement. Du Plessis (2013) explored the use of logos communication techniques such as score information or statistics of the games in the 2011 Rugby World Cup (RWC) event in New Zealand, which generated quite a massive engagement chain on Twitter and claimed to digitally generate effective persuasion of a bigger audience. However, as logos does not work alone, the effectiveness of the message through digital media is often embedded in the credibility of the source (ethos), like where the statistics were taken from or who said what. Chmait et al., (2020) have proved this notion through their study of the level of professionalism of a tennis player and engagement on social media. Their research showed that testimony by professional tennis player appears to have a strong positive impact on generating activities in social media account where the testimony was posted. Even more, the effect on user engagement extends beyond the testimony giver's capacity.

The other classic rhetorical aspect that scholars have claimed affects engagement on social media is pathos, which could be explained as awaking the existing feeling of the audience (Meyer, 2017). The adjustment of nuance, by applying a particular framing setting or figurative language to the content with the aim of generating a certain emotional state of the audience like hopefulness, sadness, laughter, anger, etc., was argued by scholars to affect engagement (Bergkvist et al., 2012; Chen et al., 2021; Meeks, 2020)

As dynamic as can be seen online, creators have been innovating different strategies within their contents to persuade the audience to respond or react. With the notion that engagement has a potency to contribute to improving further organization-audience relations, scholars have been examining persuasive dimensions as factors that contribute to, or harm the engagement score within, different contexts and platforms using different perspectives from the technicality to the content style. Recent studies by Cuevas-Molano et al. (2021) uncovered tactics brands should consider in increasing engagement on *Instagram*. The factors referred to elements that embedded within a content, type of post in *Instagram* (*newsfeed, carousels, stories, etc.)* and type of content (educational, remuneration, etc.). They based their research on consumer engagement theory that is rooted in the domain of relationship marketing. From 680 sample posts, the quantitative content analysis implied that carousel post, the use of hashtag and video with sound generates more engagement in terms of likes. Meanwhile, interactive content such as polls, questions, and contests achieved higher engagement by means of comments. Their research's context was the contents from branded goods such as Repsol, Samsung, Vodafone, etc. On the other hand, different research has proven different outcomes about interactivity, where interactive posts influence the number of "likes" negatively when the content tends to be transactional, such as with promotion and competition (Wahid & Gunarto, 2021).

There are different content elements in different social media platforms that scholars specifically pay attention to regarding engagement (Menon et al., 2019). For instance, *Facebook* and *Instagram* give options for creators to place the message within the main window or caption window, adding music, picture, or video. For Twitter, creators are allowed to put any picture and video but with a limitation of 280 characters. Creators can also be creative with hashtags, which have been identified as a factor in raising brand awareness by helping reach a broader audience in twitter (Doktoralina et al., 2020). However, Celuch (2021), through his study, discovered that the number of hashtags used in a post does not necessarily help increase user engagement. Instead, the quality of posts matter, as well as users' behavioral characteristics. Furthermore, digital persuasive tools, which consist of text, photo, and video, that add to media richness (vividness) also affect the user engagement more than post quantity (Vadivu & Neelamalar, 2015).

The use of vividness, moreover, has been proven to affect social media engagement differently within different sectors. For digital media, the use of photo and video significantly influence *likes* and *comment* numbers (Moran et al., 2020). However, the use of video does not correlate with comment number for the travel agency sector (Sabate et al., 2014) and the fast-moving consumer goods sector (Cvijikj & Michahelles, 2013). Meanwhile, for the automotive sector, the use of images and videos does not correlate with the *likes* number (Tafesse, 2015). Scholars argued that considering visual elements is not enough when investigating influential content features for social media engagement (SME), whilst nature or characteristic of the conveyed message matter as well. In fact, content that conveys entertainment increase *likes* and *comments* (Cvijikj & Michahelles, 2013; Tafesse, 2015), while content with remuneration does not positively affect likes (Cvijikj & Michahelles, 2013), except for the wine industry where remuneration positively affects likes (Dolan et al., 2016).

2.3 Synthesis

From the abovementioned review, it is reflected that most of the previous research have only explored the engagement for commercial brands. There was very rare precedence for how persuasive strategies within content would arouse higher engagement for NPEO that operate in Indonesia, specifically in *Instagram Reels*. Whilst it is explained that managing engagement on social media for NPEO is beneficial for an organization's exposure. The capability of *Reels* to expose public to the organization's information needs to be supported by strategies within the process of producing engaging content on social media. In other words, conducting a study that covers effective strategies in *Reels* for Indonesian NPEO is needed because of its rareness.

Furthermore, the various factors affecting content engagement appeared to be different within different sectors, contexts, and platforms. Hence, it is highly arguable whether the proven factors affecting engagement for commercial brands on various platforms would work in the same mechanism toward NPEO on *Instagram Reels.* Departing from available literature, this research is designed to develop new precedence by addressing the literature gap and investigating what

knowledge we can transfer from commercial brand communication to NPEO communication. Hence, this thesis investigates the effect of different persuasive strategies used within NPEO content in evoking higher engagement score for *Instagram Reels.*

3. Theoretical Framework

This part of the thesis explains the theoretical framework that constitutes the foundation for this research. The chapter starts by presenting digital rhetoric as the theoretical framework to support the research foundation. In the later section, the definitions of different persuasive strategies as independent variables were explained along with the logic of the hypothesis's construction, which stemmed from the existing literature. The chapter is concluded by presentation of a model to better explain the framework of this study.

3.1 Digital Rhetoric

Essentially, the term "digital rhetoric" refers to applying the rhetorical theory as a methodology for the production or analytical process of digital presentation or material (Eyman, 2015). Kenneth Burke (1969) claimed, "where there is persuasion, there is rhetoric. And wherever there is meaning, there is persuasion" (p. 172). This study is anchored on the principle of classic rhetorical theory, which is defined as "available means of persuasion" (West & Turner, 2018, p. 309), and is within the scope of digital presentation, with digital content as the study focus.

At the heart of the rhetoric theory, effective persuasiveness is centered in the audience as key (West & Turner, 2018). The primary assumption of rhetoric, that underlies this study, is that "effective speakers must consider their audience" (West & Turner, 2018, p. 309). Hence, knowing how audience engagement is generated through application of the most effective rhetorical strategy, is the heart of this study.

Departing from the classical rhetoric of Aristotle, the relatedness between classical rhetoric and digital media is the application of traditional rhetorical analysis within roles of ethos, pathos, and logos to digital content, and that digital rhetoric encompasses all work addressing digital communication (Eyman, 2015).

The term “Digital Rhetoric” was first used during a lecture by Richard Lanham in October 1989. However, the first employment of classical rhetoric as the substructure for digital rhetoric was in “Electric Rhetoric” by Kathleen Welch (1999, as cited in Eyman, 2015), who adopted Isocrates as a role model to urge the development of rhetorical theory that is reliable to explain persuasive aptitude in electronic media by insemination of sophistic classical rhetoric. Eyman (2015) further explained that the sophistic rhetoric is suitable to address multimedia presentation-related issues as well as explore text circulation in the digital sphere within digital social networks.

Initially, Susan Jarrett (1991, as cited in Eyman, 2015) emphasized the importance of sophistic rhetoric’s ability in the digital context of “acknowledging an epistemological status for probability demands in discourse a flexible process of ordering or arranging, a feature of both nomos (a social construct involving ordering) and narrative” (p. 63). However, according to Eyman (2015), electric rhetoric from Welch provided more meritorious exceptional studies where sophisticated rhetoric is being applied to the digital contexts. There is also a study by Zappen (2005) on integrated theory for digital rhetoric that focused on the main issue of identity and community as employed by rhetorical theory while still addressing three rhetorical appeals (Zappen, 2005). He emphasized the disparate nature of the field nowadays and proposed an integrated theory within digital rhetoric that shifts the paradigm for rhetorical studies in science and technology.

In many ways, the distance between communicator and audience, user and creator, are corroded in digital rhetoric. What distinguishes digital rhetoric from Aristotle’s formulations is that arrangement occurs to be as important as invention. In classical rhetoric, arrangement emerges as less important than invention (Meyer, 2017). As the interface of digital multimedia is dynamic, arrangement of cohesive and logical argumentation also appears to be a productive art which involves digital media manipulation, comprised of audio and visual elements.

Moreover, style takes a new level of importance in digital rhetoric. Aristotle highlighted the importance of style is to use the appropriate style of language relevant to the subject (Meyer, 2017). For digital rhetoric, style refers to “design”, where the concern of digital rhetoric must involve analyzing all elements available

in the document design (Meyer, 2017). With the current advancement of digital media interfaces, the style can include layout dimension, multimedia design, motion, interactivity, sound, etc.

3.2 Hypothesis Development

3.2.1 Third-Party Endorsement (3PE)

The term "third-party endorsement" in this study refers to the evidence and/or statement that comes from other sources to support the creator's argumentation. The endorsement can refer to different forms, including quotes from other sources, references, statistical data, or testimonies. The use of endorsement to support argumentation is rooted in the concept of the question-view of logos (Meyer, 2017) that lies in the rhetoric theory. Meyer (2017) explained the logos act as the expression of "problematological difference", where logos is ambivalent in nature for having a central inexplicitly stated premise or evidence and reasoning-based conclusion. In Meyer's concept of the question-view of logos, people used logos to produce pleasant speech by providing reasons to answer questions raised by a particular statement. The answer, furthermore, can be in the form of logical argumentation, reasoning, and inferences in the content (Meyer, 2017). From here, it is seen that the way speaker poses question can underlie audience's understanding structure. Thus, the fact that the speaker provides a certain inference in any kind implies that the speaker might anticipate that it makes sense (for the audience) to ask it.

In supporting inference, the speaker uses citation as a reference, like data visualization, to enhance the reasoning (Shreiner, 2019). The massive use of infographics in social media posts (Cairo, 2019) has been associated with the evolution in gaining ostensive engagement (Ksiazek, 2016). This state encouraged scholars like Amit-Danhi and Shifman (2022) to further investigate the data characteristics used in a campaign. Moreover, it is seen in recent social media posts worldwide that creators add direct reference or testimony to enhance their reasoning. The inclusion of self-inscription or testimony from users connected to media witnessing is observed to evoke user engagement continuously (Henig &

Ebbrecht-Hartmann, 2022). Even more, the testimony of a result receiver is able to evoke an authentic experience during the exposure (Dukes et al., 2019). Thus, testimony is argued to be the highest level of 3PE after reference. Furthermore, this study would examine if the 3PE used in the posts has positive contribution to the engagement score.

H1. The higher level of third-party endorsement used in the content leads to a higher engagement score.

3.2.2 Figurative Language

Fogilen (1988, as cited in Kronrod & Danziger, 2013) described figurative language as the "use of words and expressions employing their indirect meaning, to convey an additional connotation beyond that of their lexical sense" (p. 726). The "species" within figurative "taxonomy" (which is also adopted in this study) is comprised of metaphor, hyperbole, idiomatic expression, imitating sounds, wordplay (Kronrod & Danziger, 2013), irony (Colston & O'Brien, 2000), satire, sarcasm (del Pilar Salas-Zárate et al., 2020) and humor (Reyes et al., 2012).

Ever since the definition of figurative language emerged, research has been conducted within the psychology, marketing, education, and advertising fields to investigate the figurative language affordance towards persuasive effect. Interestingly, researchers have consistently found and generally agree that figurative language stimulates positive effects and attitudes in a variety of contexts (Chang & Yen, 2013). Metaphor for example, not limited to a consumer behavior context, has also been identified as affecting long-term memory (Zhang et al., 2021). Through five different experiments on different students, Zhang et al.'s research concluded that the use of metaphor in advertorials significantly increased the long-term memory. If a person can remember an advertisement longer, it likely would benefit the brand. As common as the figurative language topic explored within academic research is, this concept is not new. The use of pictorial metaphor has initially figured to promote a stronger positive brand attitude (Bergkvist et al., 2012). Looking at the evidence on the forms of figurative language's capability of affecting attitudes across contexts, this thesis promotes the similar effect on engagement score of *Instagram Reels*.

H2. Higher level of figurative language usage in the content results in a higher engagement score.

3.2.3 Framing

Framing strategy within massages has been claimed as a promising strategy for affecting engagement, which requires adjustment of the word choice (Eberhardt et al., 2021). According to the prospect theory, framing is fundamentally classified into gain and loss frames (Tversky & Kahneman, 1981). The arrangement within the message to emphasize either the benefits or disadvantages supports persuasive appeal (Karpinsky, 2014). Moreover, the framing perspective is wider than just benefits or disadvantages. Framing strategies have been used in social media by, in particular, involving valences like positivity or negativity.

Within the cognitive psychology field, scholars have been investigating that people tend to be "risk-averse" and that the use of fear appeals in messaging plays a big role in influencing people's decision to take action toward it (Tversky & Kahneman, 1981). The Tversky & Kahneman's (1981) experiment explained how "risk-averse" people react when they are facing a fear appeal. The result implied that people tend to show a set attitude toward minimal damage by focusing on statements highlighting the loss or providing fear. They also argued that decision making is unstable as it can be easily influenced by the presented alternatives and that the way people observe a problem is significant.

Further, scholars have argued that fear has a strong potential of persuading attitude change, and the extended parallel process model by Witte (1992) has comprehensively emphasized mechanisms regarding fear appeal's ability to change attitudes. The study has introduced specific terms where fear appeals will be more arousing when the message provides other considerations contrary to the bad consequences (Witte, 1992). Supporting Witte's founding, Richard Perloff (2003) proved that to be able to work, messages cannot only arouse fear but should also include recommended responses to alleviate the threat (Perloff, 2003). A message with negative valence, such as fear appeal, must lure audiences to respect the problem and encourage audiences to recognize the danger they face and also provide a solution to confront (Perloff, 2003).

In social media, creators attempt to persuade the audience by using different framing. A study by Ballejo et al. (2021) on visual content that showed threatened species indicated that when content was framed negatively, it would likely get more comments, in general. Similarly, the study by Valenzuela et al. (2017) implied that the negative framing used in economic news, specifically emphasizing economic consequences, generated more engagement in the form of shares on Facebook. By looking at the abovementioned theories, and the abundant possibilities of consequences of environmental destruction, this research argues negative framing plays a role in increasing engagement.

H3. The negative framing valence in posts results in a higher engagement.

3.2.4 Interactivity Appeal

This study acknowledges interactivity as "the degree to which two or more communication parties can act on each other, on the communication medium and on the message and the degree to which such influences are synchronized" (Liu & Shrum, 2002, p.54). Rooted in the definition, this research measures the interactivity appeal in *Reels* by measuring the degree to which content utilizes words that are associated with audience involvement, invitation to participate or interact, and further proposes to affect the degree of engagement.

According to research on non-profit organizations by Cho et al. (2014), many organizations only use social media as a traditional media subsidy to diffuse information without utilizing the interactive nature of social media. They further found that when the organizations implement two-way symmetrical communication, the public demonstrate a higher level of engagement. Further research have been conducted to see the effect of interactivity on engagement and proved that the level of interactivity shows positive impact towards engagement (Menon et al., 2019; Peters et al., 2013).

However, the difference in context used within the research may affect the results as findings were varied. High frequency of interactivity used in content was also claimed to decline the engagement rate (Cuevas-Molano et al., 2021; Tafesse, 2015; Vadivu & Neelamalar, 2015). Tafesse (2015) further argued that the

interactivity levels should be maintained within bounds for the purpose of enhancing likeability. However, the distinct platform type would exhibit different characteristics and levels of interactivity. *Reels* has no function where users can insert a link to which audiences could instantly click, which limits the interactivity to only within the message. Hence, it is essential to look for the interactivity appeal within the message of the content in the *Reels* platform. With the variety of findings within previous research, this study assumes interactivity can influence the engagement in *Reels.*

H4. The level of interactivity appeal affects engagement score.

3.2.5 Audio-visual presence

This research defines audio-visual presence as the complexity of sound and visual instruments presented in a post, regardless of tone or valence. *Reels* contain audio and visual elements that allow users to design their strategies. By observing the *Reels* construction on audio-visual sphere, three instruments were categorized under audio-visual presence: vividness, animation, and backsound.

Social media channels are no different from traditional channels regarding vividness (Luarn et al., 2015). Vividness refers to element richness related to the message depth and breadth (Steuer, 1992). Menon (2019) explained, "breadth signifies the number of sensory dimensions being stimulated by the content such as sound, pictures, color etc." (p.2), while the depth exhibits the content quality and resolution. For social media, specifically *Instagram Reels,* vividness can include pictures, sound, animation, video, or text.

The development of platform interfaces allows more and more media richness to be embedded into content. From printed media with only black and white text and pictures, colored picture was then invented. Nowadays, social media with broader vividness complexity like video with sound and running text exists. In fact, different media richness brings different responses in terms of engagement. For instance, content that included an image had higher engagement than those posted only with text (Smith, 2015). As previous scholars have consistently seen the relation between the vividness choice and engagement (Cvijikj & Michahelles,

2013; Luarn et al., 2015; Menon et al., 2019; Shahbaznezhad et al., 2021), then the complexity, by means of the number of vividness elements used in a given content, is also proposed to relate positively to engagement.

The second instrument for audio-visual presence is animation. Commonly incorporated into visual communication tools, the animation technique is believed to enhance audiences' experience as well as audiences' willingness to watch the video in its entirety (Amini et al., 2018). This research employs the animation concept for the social media content sphere, which refers to the applied effect to different objects (such as text, graphics, images, videos or drawn pictures) where transitions are involved (Hu et al., 2020). With the emergence of digital technology, scholars such as Hu et al. (2020) tried to provide a new approach to the production of digital animation so as to be even more engaging. Although animation is rarely examined in relation to engagement in social media, some scholars came to the finding that animation in a presentation significantly improves audience engagement (Amini et al., 2018). *Instagram Reels* is a form of presentation. Thus, the degree to which animation complexity is used within content is assumed to result in a similar effect to audience engagement in social media.

Backsound is the third instrument for audio-visual presence. This research acknowledges backsound as the additional sound while a content is running. In *Instagram Reels* themselves, backsound varies in terms of genre, tempo, and dynamic. The backsound type can be instrumental music, a song with lyrics, or sound effects. Instrumental music, particularly, is known to positively impact patients within the medical sphere (Ganesh & Krishnanunni, 2020; Imani et al., 2021; Karatekin & Icagasioglu, 2021). Sound effects are also observed to play roles in interaction. When used within a program, they are perceived as more engaging and therefore they increase children's orientation (Calvert & Scott, 1989). Sound effects can be in the form of ambience (people chattering, construction, ambient street sounds, etc.) or can imitate sounds of many elements like a bomb or twirl sounds.

Music in general, however, regardless of the genre, has potency in increasing the feeling of social connectedness (Allen et al., 2009). It has the ability to evoke responses that impact mood and work productivity of individuals. Hence, many

researchers has been working to reveal the power of music in different sectors from education, medication, and engineering, to disabilities using different music measurements (Schwartz et al., 2017). High and low-intensity music, such as vocal stereotypes for example, contributes to immediate engagement (Lanovaz et al., 2014). During one study, the use of music on interactive book material was proven to increase student engagement for children with autism (Carnahan et al., 2009). Rock and jazz are genres that were observed to stimulate people to sit longer (Hill et al., 1989). The bottom line is that evidence has shown that music is an effective strategy for targeting engagement, and that the effect of the music would differ with variation of timbre, volume, tempo, genre, rhythm, and context (Schwartz et al., 2017). Despite the scarcity of research that covers backsound effects on social media engagement, the potency of music is well-known for affecting engagement.

Backsound, animation and vividness as the components of audio-visual presence have been claimed to indicate the factor affecting engagement within different research. This research further proposed that audio-visual presence positively contributes to the engagement score.

H5. Higher level of audio-visual presence results in a higher engagement score.

3.2.6 Nature Imagery

In the context of social media, pictures do not stand alone. They are used in the combination with other visual elements like sound or text either in the caption, embedded in the picture or the dubbed audio to strengthen the message (Romney & Johnson, 2020). This metacommunicative aspect serves to tell a story, explain the primary image, and generate more engagement (Romney & Johnson, 2020). In *Reels* format, imagery is presented in the form of static images or moving videos packed into a maximum 1-minute video format. Further, this study believes what imagery theme or what pictures are being displayed matter.

The work of environmental organizations encompasses effort in creating the betterment of the environment to sustain the future (Whalley & Zissimos, 2001), and therefore, “environment” would be the central topic within their message. The capacity of social media to present various visual elements makes it possible for

organizations to include visualization of nature elements like animals or plants or ocean, and so forth. Other non-profit organizations, like child protection organizations, commonly use pictures of children within social media posts and these are proven to earn better engagement in terms of likes or comments (Jordan et al., 2019). A recent study further explained that the use of young children's images in non-profit humanitarian *Instagram* accounts generated more engagement from their audience (Carrasco-Polaino et al., 2018). If the use of theme-related imagery works to increase non-profit humanitarian organizations' audience engagement on social media, the possibilities of nature element visualization to serve a better engagement is likely argued to exist.

H6: A higher level of nature imagery results in a higher engagement score.

3.2.7 Dimension Format

The precedence of studies that examined the dimension format effect on *Instagram* engagement scores is not well established. The dimension format in this study refers to the aspect ratio of the main window that the creators present. *Reels* designed the platform with a template vertical aspect ratio of 9:16. However, the platform allows users to post content with different aspect ratios. Nevertheless, the

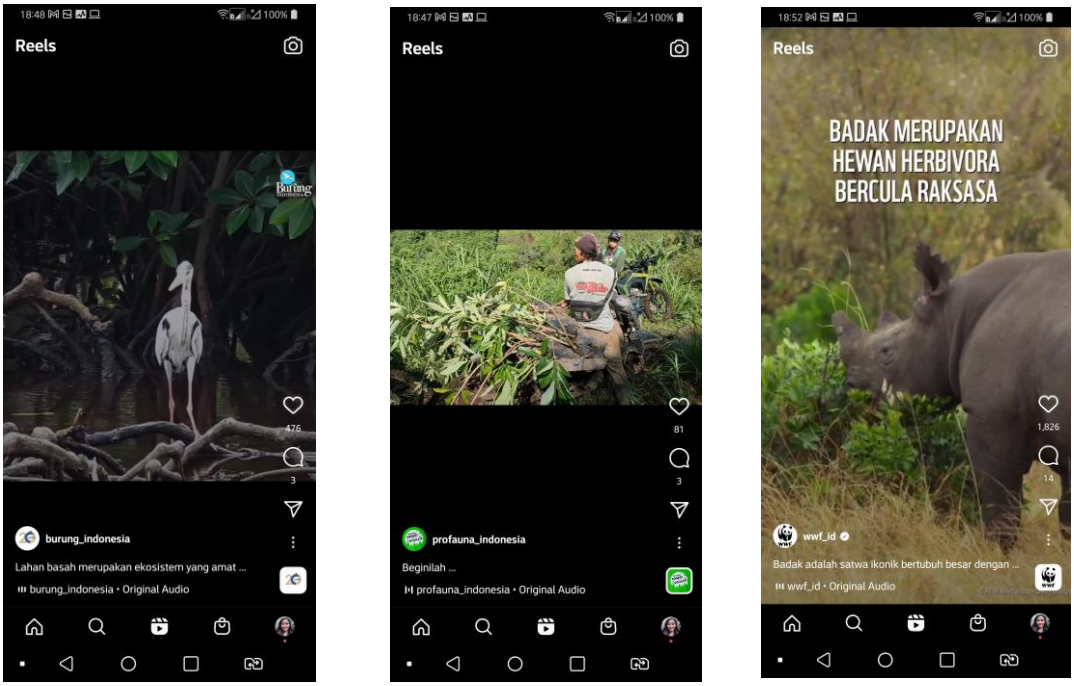

Figure 3.1 example of phone-print screen of posts with different aspect ratio resulting blank spot (left and middle), aspect ratio 9:16 (right)

final output of the posts will still be displayed in a 9:16 ratio, and the different aspect ratios used in the input will generate blank spots.

Digital media has been changing in format over the decades. The trend shifted from traditional TV with a horizontal 4:3 aspect ratio to the mobile device with a vertical 9:16. With the growth of mobile device users, content creators are required to be comprehensive with the shifting ecosystem (Abboud, 2021). Initially, original format of *Instagram* only provided a square aspect ratio (1:1), which still exists today for their "newsfeed" feature. *Instagram* has since developed more feature templates in the 9:16 ratio, such as *Instagram Story* or *Instagram TV*. Aspect ratio 9:16 has become dominant in digital media in the recent years, and it is claimed this format ratio gains the best digitally-oriented consumer experience (Abboud, 2021). In other words, the recommended *Reels* aspect ratio is meant to fulfill audiences' comfort. Further, the use of aspect ratio 9:16 for *Reels* content is assumed to result in a higher engagement.

H7. The use of the recommended aspect ratio for the content dimension's format results in a higher engagement score.

3.2.8 Caption Length

When this study is conducted, *Instagram Reels* has a 2.200-character limit for captions. Content creators have different preferences when it comes to selecting caption length. Some tend to put all information within the main window, but other creators focus on visualization performance in the main window and put complete information in the caption.

Unlike the newsfeed or carousel, *Reels'* caption is embedded in the main window body. Users decide whether they want to read a complete caption by clicking the caption function. When users click, the caption will expand and fill the main window while the main window would still be running on play in the background. This means the audiences' experience of enjoying the main window presentation will be disrupted if the users decide to click caption. If creators put text

in the main window, there will be overlapping with the caption text, and users would need to replay the main window for better grasp.

However, previous literature argued, longer available text offers more information in detail, which leads to an increased possibility that the audience will grasp more information, resulting in more interest and engagement (Cuevas-Molano et al., 2021). More studies examined empirical data and confirmed that length of text positively correlates to engagement (Cuevas-Molano et al., 2022; de Vries et al., 2012). With the fact that the main post window of a *Reels* can provide very little information and that the finding of previous literature confirms the importance of comprehensive captions, this research predicted that captions in *Reels* help the audience consume more information and lead to engagement.

H8. Longer caption length on Reels content results in a higher engagement score.

3.2.9 Time of Posting

This research investigates effective strategies in delivering messages through *Reels*, regardless of the type of content. However, people's behavior works differently at their own pace with social media, where time availability might be one of the factors. Researchers have figured out the possibility of user engagement that changes depending on when exactly in the day content is published (Antonakopoulou & Veglis, 2021; Cvijikj & Michahelles, 2013; Muntinga et al., 2011).

Furthermore, as the time of posting is a distinct element from other abovementioned predictors, it is used as a control variable for engagement in this research. The use of control data is important to improve upon weaknesses in the data collection process, where it operates as a means of "correcting" (Bernerth & Aguinis, 2016; Carlson & Wu, 2012). Experimental control implicates holding constant variables that may independently affect outcomes in order to prevent the introduction of irrelevant influences. (Carlson & Wu, 2012).

3.3 Research model

Eight independent variables act as predictors in examining their effect on engagement scores. One variable stands as a control variable to ensure constant outcomes. With consideration of both the main window, caption, and engagement score in the form of *likes* and *comments*, the overall proposed correlation is illustrated in the following model:

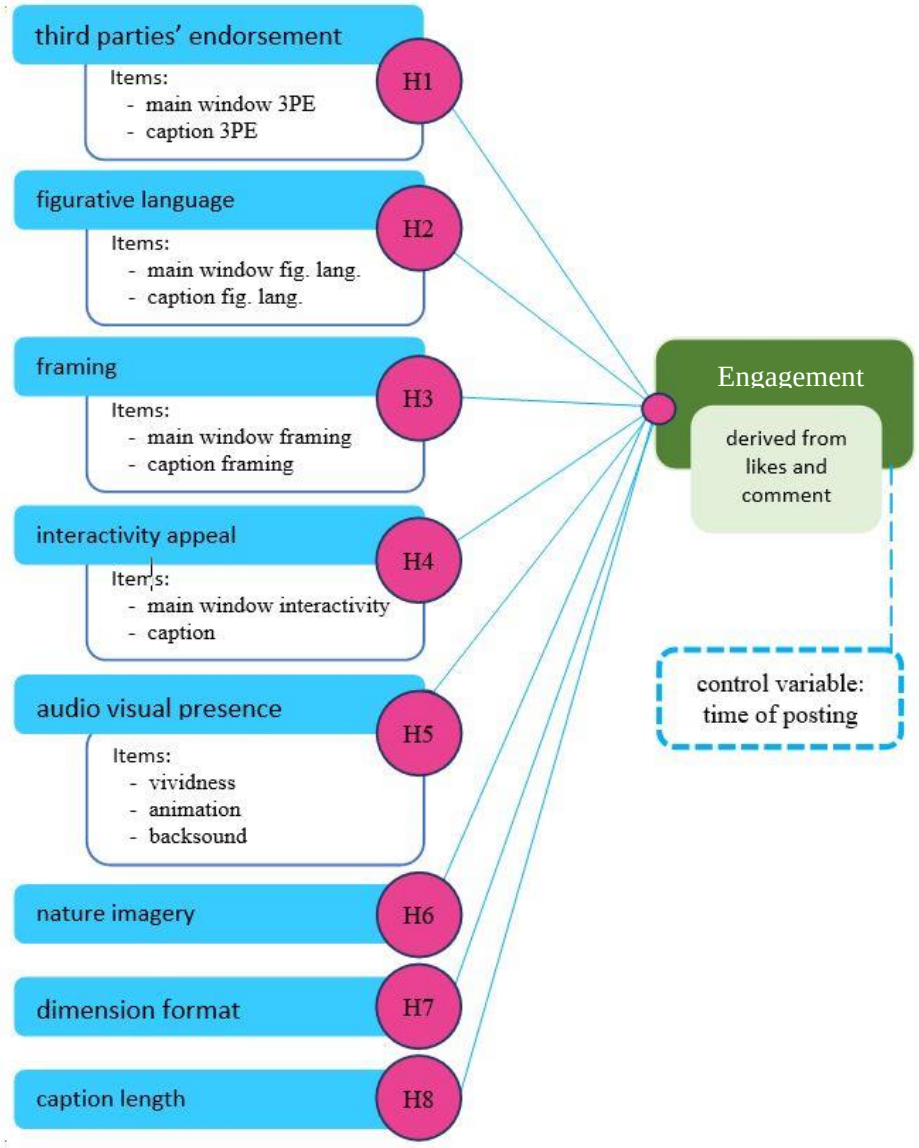

Figure 3.2- Research model

4. Methodology

This chapter explains the paradigm employed in the study, research design, sample and procedure for data gathering, data analysis method, as well as the consideration of bias and ethics within the research.

4.1 Research Paradigm

To the extent of a philosophy to understand and view reality scientifically, this study complied with the post-positivist research paradigm. Post-positivism logic was born from the positivist orientation's rigidity. Both positivist and post-positivist studies aim to predict, control, and generalize by conducting survey, experimental, or quasi-experimental research that hold onto objective reality (Merriam & Tisdell, 2016). Nevertheless, the assumption of positivism argues the reality that exists is observable, measurable, and stable, and that the knowledge attained from that scientific study involves established "law" (Merriam & Tisdell, 2016). Rather than recognize knowledge as absolute, post-positivism acknowledges that knowledge is relative and, where "possible, using empirical evidence, to distinguish between more and less plausible claims" (Patton, 2014, p. 106).

In this research, hypotheses were examined to look for different plausible claims related to the strategies used within *Instagram Reels* content in generating a higher engagement score. Urged to contribute to the strategic communication field within the digital sphere, the hypotheses were proposed to deductively construct new knowledge guided by existing literature to see how different persuasive strategies embedded in the contents' characteristics helped to gain audience engagement.

4.2 Research Design

In addressing the research purpose of finding influential aspects within the content that generate a better engagement score, this study occupied the quantitative content

analysis (QCA) method. QCA is commonly defined as a research method that analyzes communication's manifested contents in a systematic, objective way within quantitative manner (Lombard et al., 2002). It involves the process of analyzing qualitative content using a quantitative mechanism, where the qualitative variables are converted to quantitative data (Vaitkevicius & Kazokiene, 2013). QCA method was chosen specifically for this study because it was capable of enabling this study to extract logical sequences from the content based on certain categories and scales using a coding technique. Taking the content artefacts as the unit of analysis, samples were coded into scales based on each independent variable criteria and further analyzed statistically to see whether they are correlated to the dependent variable, which is already a quantitative value.

4.3 Sample

All *Instagram Reels* published by NPEO that operate in Indonesia were chosen as the population. In the sampling selection, this research employed a probability sampling procedure by applying a stratified random sampling approach. Stratified sampling enabled this study to see the natural events that occurred within the target population that were difficult to experimentally manipulate (Van de Ven, 2007). Additionally, stratification is believed to have improve accuracy (Aoyama, 1954).

In the initial step of the sampling process, the author clustered organizations by their activities' focus and identified four strata: 1) forest/nature conservation, 2) flora and fauna conservation, 3) sustainable lifestyle, 4) system, law and policy. The goal of that stratification was to ensure representation from each organization type. Further, samples were randomly drawn from each stratum.

A final total sample of 301 *Instagram Reels* from 27 Indonesian NPEO representing the four different strata were investigated in this study. Sample size should provide population diversity (Van de Ven, 2007), and scholars agree that larger sample sizes would bring higher stability in terms of correlations between variables and generate better outcomes (Worthington & Whittaker, 2006). Specifically for content analysis with data sets containing communalities, as many as 150 to 200 samples are considered sufficient (Worthington & Whittaker, 2006). Furthermore, the existing number of NPEO in Indonesia were not attempted to be

statistically represented in this research. Instead, using a good span of all non-profit environmental organizations that operate in Indonesia in terms of their focus of activities, seeks to generate the validity of a new precedent for engagement studies in *Instagram Reels*.

4.4 Data Gathering and Measurement

4.4.1 Measurement – Engagement Score

There were two types of engagement covered in this study, *likes* and *comments*. Previous studies on social media engagement have commonly used the phrase "engagement rate" to express their calculation on comparation of amount of engagement and existing followers or viewers (Arman & Sidik, 2019; Azmi & Budi, 2018; Cuevas-Molano et al., 2021). This study also looks at that concept of number. However, the author decided to use the term "score" instead of "rate". According to Merriam-Webster online dictionary (2022), rate is defined as "a quantity, amount, or degree of something measured per unit of something else". Oxford Learner Dictionaries (2022) defined term as "a measurement of the number of times something happens or exists during a particular period". Looking at both definition, "rate" would need two different units, such as speed rate: kilometer per hour, internet speed rate: megabyte per second, or interest rate: percent of bank interest per year. This study, however, does not look at the engagement per view nor engagement per follower, rather the percentage of engagement obtained within achieved numbers of viewers. Hence, the author argued that the term "score" would fit better to the formula in this study.

To find the engagement score for *Instagram Reels*, this study was inspired by two former equations for studies of engagement, specifically on *Instagram*. First, the calculation by Azmi and Budi (2018) for *Instagram* engagement, as explained below:

$$\frac{TL + 2TC}{3}$$

TL is total number of *likes* and TC refers to the total number of *comments*. This formula doubled the value for comments, as comments are the highest level of

engagement towards content on *Instagram* (Azmi & Budi, 2018), which this study agrees upon. However, the formula lacked comparative value, because there should be a comparative to the extent of the population to figure out the percentage of the engagement.

The second formula used as inspiration was the formula proposed formula by Arman and Sidik (2019), as explained below:

$$\frac{\sum_{i=1}^{n}(Li + 2Ci)}{3nPF} \times 100$$

The *i* refers to the code of a post, *L* is the like numbers from post *i*, C means the number of comments from post *i*, *P* refers to the probability for followers to see the post (which Arman and Sidik set at 0.1), and F means the total followers.

The Arman and Sidik formula proposed measurement that is more representative and is easier to understand when the number is presented in the form of a percentage. Nevertheless, it also measured engagement from all posts of an account. Instead, this study focuses on the number of engagements in each *Reels* posted. Moreover, *Instagram* users may see any *Reels* content regardless of their status as a follower or non-follower. This means, the number of viewers is more suitable than the number of followers, and probability number (0.1) is unnecessary in this study.

By adapting and adjusting both formulas within this study context, the engagement score was drawn from each post by comparing the total of number of *likes* and doubled the number *of comments*, with the number of *viewers* of the same post and converted into a percentage. With *L* as the number of *likes*, *C* as the number of *comments* and *V as the* number of *viewers*, the engagement formula used in this study was prescribed, as below:

$$\frac{L + 2C}{V} \times 100$$

Furthermore, the codification for the engagement score was determined into a five-point scale by an even distribution of the lowest to highest engagement score from the database where 1=very low; 2=low; 3=moderate; 4=high; and 5=very high. The highest engagement score observed throughout the sample was 14,59.

4.4.2 Measurement – Third-Party Endorsement

To extract the data, each of the eight independent variable aspects within the content were coded. To determine the code, a measurement for each variable was defined in different point scales as listed in table 4.1. For the first independent variable, there are three-point scales with testimony being perceived as the highest level (code 3). This measurement is adapted from the finding of testimony's ability to evoke online engagement by Henig and Ebbrecht-Hartmann (2022).

Unlike when citing information from another source, there are more layers to establish when a creator uses a testimony in the content, like getting the party's consent to use their testimony. Even the process of getting the testimony itself required extra effort. When the content does not add additional information from another source or uses its own argument or no other sources were mentioned in the content, code 1 (low) was given. Meanwhile, code 2 (moderate) means there are involvement of other sources in the content in the form of citation or *mention* other *Instagram* account. The measurement applied for both caption and main window.

4.4.3 Measurement – Figurative Language

To code figurative language in the main window and the caption, a measurement process was conducted by paying attention to the intensity level of the figurative language usage within wording and the imagery created within the visual element. As the previous literature witnessed the capability of figurative language to affect attitudes (Chang & Yen, 2013), this study assumed that the more intense the figurative language used, the more engagement would be generated. This study also tended to see the effects when the content creators use literal meaning of words towards engagement. Therefore, when a content does not contain any figurative language at all, code 1 (low) was given. Code 2 (moderate) was given when one figurative phrase was used (even if it was barely spotted as it was commonly generalized within day-to-day conversation), or some phrases were used moderately. Moderate here means there are words used that refer to another meaning but did not strongly dominate the narrative. When the figurative language is easy to spot and/or often used, the figurative language in the content is identified as high (3).

4.4.4 Measurement – Framing

Main window framing and caption framing were measured using a scaling system of positive=1, balance or neutral=2, and negative=3. This scaling is inspired from Tversky and Kahneman's (1981) results, which showed that fear framing encourages the audience to engage. The judgment for the framing in this thesis focused on the valence of the whole narrative style and not the actors. In this study, positive valence comprised wording arrangements that tended to present benefits, achievement, happiness, strength, compliment, success, compliance, rewards, and display of beauties or betterment possibilities. Negative valence covered loss, harmful consequences, threat, weakness, mocking, failure, accusation, sorrow, fear, sadness, destruction, or punishment. Furthermore, code 2 contained two criteria: first, the content provided a threat or negative scenario together with a positive scenario, such as achievement, and second, the content was not seen to choose a side of valence, but rather provided a description in neutral wording. For example, a content solely explained steps in the recycling process without telling why it is important to do so.

4.4.5 Measurement – Interactivity Appeals

Instagram disabled any interactivity tools like the *website link* or *vote button* both in *Reels* main window and caption. Hence, creators embed the interactivity appeals through narration which can be in the form of text or audio, and that is what this study measurement focused on. Inspired by the coding scheme from Cuevas-Molano et al. (2021) and Menon et al. (2019), questions were perceived to highly encourage action from audiences as their response can be instantly given (through comments for example). Therefore, content with questions directed at audiences were coded 4 (high) and the call to action (CTA) was coded 3 (medium). CTA was categorized under question as it can require further action outside of the platform. No interactivity appeal within the content would come to code 1 (none) and code 2 (low) were given when content included audiences by mentioning the second person pronoun (you) or collective pronoun (we) where audience is part of the sentence without any CTA and/or questions.

4.4.6 Measurement – Audio-Visual Presence

The measurement for this variable was only applied to one item, the main window. The caption section in *Instagram Reels* exclusively allows text; hence audio-visual measurement is irrelevant for captions. Three items were measured for this variable.

First, vividness. To code the level of vividness, the quantity of the media richness was counted. In this study, four types of media richness were identified: text, photos, videos, and sound. Regardless of the quantity, the text refers to any written text in the main window. Picture/image refers to any images or picture that were displayed, which could also be in the form of a drawing or painting. Video refers to the recording of a real moment that was captured into a moving visual artifact. When content consisted of several pictures combined into one video with some zoom-in or zoom-out effect, that was not counted as video. But, rather the organic material type as images, and images were counted as one media richness. When it comes to sound, any sound regardless of the source and type, was counted as one media richness. As long as a content provided sound, it was counted as one richness. The very low level (code 1) means there was only one type out of four types of media richness provided in the content, two were coded 2 (low), code 3 (high) for three applied, and the appearance of all four media richness was measured as very high (code 4).

The second item measured was animation. In this category, the advancement of animation presented in the content was observed to measure the level of animation complexity with a three-point scale (1= low, 2=moderate, and 3=high). This study considered motion graphics embedded in additional object elements (moving shapes or moving drawing/cartoon or moving illustration) as the most complex animation within the *Instagram Reels* context. The advancement of technology today allows creators to add motion into object elements. Hence, the use of motion graphics with additional object elements in content was coded into level 3. Additional effects or motion using organic elements (text, video, or image) like transition effect, zooming, etc. were coded into level 2. Meanwhile, basic transition between organic elements was measured as low animation complexity and coded 1.

The last item for the audio-visual presence variable was backsound. The measurement for backsound focused on the level of complexity within a content's backsound. The complexity in this research refers to the three layers of sound elements presented within a content. The first layer which coded 1 (low) was organic sound of the ambience if the content used video, as well as the voice of the speaker or dubber without any additional music or sound effects. When there was any additional sound effect, and/or additional instrumental music, it was coded 2 (moderate). Level 3 (high) was given when there was additional music that employed lyrics (the singer(s) articulating lyrics).

4.4.7 Measurement – Nature Imagery

In measuring the level of nature imagery within the samples, this research defined the judgment to the degree of how intense nature elements were presented as the focus in the main window. Moreover, the nature element here refers to objects that represent the original form of a natural ecosystem, or actors of natural habitat. For instance, ocean, mountain, waterfall, animals, plants, trees, desert, sky, or microorganisms. A picture of land or farm or river, even if it is full of garbage or on fire, is considered nature. While furniture, indoor ambience, skyscrapers, or a city neighborhood are not.

Humans are not classified as a natural element in this measurement system. Although humans are a part of an ecosystem, this research meant to center the measurement on the non-human aspects with environment as the focus of attention. Three-point scales were occupied to measure nature imagery level. Code 1 for low level, means there was no nature imagery used in the content. Code 2 (moderate) was given when there was nature imagery in the content but not during the whole duration. Code 3 (high) means nature imagery dominated throughout the duration.

4.4.8 Measurement – Dimension Format

There are three-point scales for this variable: 3 for when the content used an aspect ratio of 9:16 during the whole content. If the content used the different aspect ratios completely during the duration, code 1 was given. Code 2 was given when a content

used a mixed aspect ratio, which means there were parts that were set in a 9:16 aspect ratio and some parts that were set in another aspect ratio.

4.4.9 Measurement – Caption Length

*Instagram'*s caption limit of 2,200 characters was transform into a five-point scale: 1 (very low) for 0 to 440 characters, 2 (low) for 441 to 880 characters, 3 (moderate) for 881 to 1,320 characters, 4 (high) for 1,321 to 1,760 characters and 5 (very high) for 1,761 to 2,200 characters.

4.4.10 Measurement – Time of Posting

The time of day as the control variable was broken down into four scale groups of six-hour periods. Adapting the finding by Antonakopoulou and Veglis (2021) that morning is the time most users are likely to react towards content on social media, the time group of 06:00 – 11:59 was classified in the first group with code 4. Following was the afternoon time between 12:00 – 18:00 for code 3, evening to night between 18:01 – 00:00 for code 2, and midnight to early morning between 00:01 – 05:59 for code 1. Table 4.1 recap the coding scheme for all variables.

Table 4.1 - coding scheme

item	point scales code	definition
engagement score	1 = very low 2 = high 3 = moderate 4 = high 5 = very high	≤ 2,918 2,919 – 5,836 5,837 – 8,758 8,755 – 11,672 ≥ 11,673
main window 3PE caption 3PE	1 = low 2 = moderate 3 = high	no additional reference/citation any facts/data/quote from another source and/or mention testimony (verbal and/or textual)
main window figurative language caption figurative language	1 = low 2 = moderate 3 = high	words used as it is, no figurative language at all one or some phrases moderately used strongly or often used and very easy to spot
main window framing caption framing	1 = positive 2 = balance/ neutral 3 = negative	only positive nuance balance or neutral only negative nuance

main window interactivity appeals caption interactivity appeals	1 = no interactivity 2 = low 3 = high 4 = very high	no audience involvement in the narration mentioning pronouns: you/we use call to action (CTA) use question dedicated for audience
vividness	1 = very low 2 = low 3 = high 4 = very high	one type media richness appeared two media richness are used three media richness are used all four media richness are used
animation	1 = low 2 = moderate 3 = high	no animation/ basic transition motion effect applied to organic existing objects using motion graphic with additional object element
Backsound	1 = low 2 = moderate 3 = high	organic sound from ambient or voice over using instrumental music and/or sound effect using music with singers who articulate lyrics
nature imagery	1 = low 2 = moderate 3 = high	no nature imagery there is nature imagery but not during the whole duration dominating the whole visualization
dimension format	0 = other 1 = 9:16	using other different than recommended aspect ratio/ mix using 9:16 aspect ratio in whole
caption length	1 = very short 2 = short 3 = moderate 4 = long 5 = very long	0 – 440 characters 441 – 880 characters 881 – 1.320 characters 1.321 – 1.760 characters 1.761 – 2.200 characters
time of posting	1 = early morning 2 = evening to night 3 = afternoon 4 = morning	00:01 - 05:59 18:01 – 00:00 12:00 – 18:00 06:00 – 11:59

4.5 Data Analysis Procedure

After the coding process was conducted, the data was stored into statistical software SPSS series 27 as a set of a main database file. Screening databases were conducted to make sure all data were eligible and to avoid error in the analysis process. The databased was then processed in four phases.

First, confirming the model's internal consistency by performing factor analysis to see if items from each variable were eligible to be stored under a variable. Then, running a reliability test to confirm the compatibilities of items under each variable. Second phase in the data processing was observing descriptive statistics, analyzing the normality within data distribution, and explaining the phenomenon that was implied.

The third phase was assessing the data by conducting a hierarchical multiple regression for the model and analyzing how "sound" the processed data was through three key instruments: first, statistical significancy; second, the degree to which the model fit the data; and third, how adequate the model was and how far the model went to meet the analysis assumption.

The last phase of the data analysis procedure was further investigating the hypothesis testing using the same result of the hierarchical multiple regression. Multiple regression was chosen as a testing method for its appropriateness to explain correlations between independent and dependent variables (Pallant, 2016).

4.5.1 The Initial Model

Using the same data analysis procedure as mentioned above, the examination was repeated twice with alternations on the model components and coding scheme. Initially, the hypothesized model did not include *caption length* and *dimension format*. Rather, only examined variables that were previously investigated in other research. There were 8 predictors tested toward the engagement score: *third-party endorsement, figurative language, message framing, interactivity appeal, nature imagery*, with the *vividness complexity*, *animation and backsound* acted as separated predictors instead of items for one category, and the control variable was the *time of posting*.

With that established, the regression result did not obtain a decent result, instead indicating that the model did not seem to fit the data. P-p plot was abstractly constructed with only one statistically significant relation that appeared among 8 variables, and the model obtained a very low *r*-square. For this result, different analysis techniques available in SPSS: bootstraps, ordinal regression and hierarchical regression were then used with varying combinations of modelling, yet no improvement was observed in the data "soundness". Nevertheless, the factor analysis results suggested that some predictors (*vividness, animation* and *backsound*) were better categorized under one underlying category, and subsequently were compounded into *audio-visual presence*. Heavy evaluations were conducted on the overall research design, the data, and the results. From the evaluation, the author concluded that factors like too much skewed data; the small

number of samples (N=172); the possibility of coding inconsistency; and model construction after factor analysis might be the cause for result that was not seem to obtain the “soundness”.

4.5.2 The Final Model

After the adjustment based on the factor analysis, the model was more compact. Three predictors were indexed into one, and left the model with only six variables. Field (2016) explained that adding additional variables that cover more aspects of the subject might help to normalize the residual distribution. Re-evaluation of the previous literature was also attempted, and two specific variables for *Reels* context that are argued to have an effect on engagement score were introduced into the model: *caption length* and *dimension format*.

Subsequently, a new set of the code scheme was established using more point scales and more easy-to-measure scales to increase the coding objectivity and consistency, as well as to reduce skewedness. Re-sampling was then conducted to collect a bigger sample size (N=301), the coding process was repeated with a whole new sample set, and the intercoder reliability test was redone.

All code schemes, data, results, and analyses reported in this paper were taken from the final examination of the final model. Regardless of how far hypotheses were supported, the priority for the author in conducting this study was making sure the research results were bona fide. By optimizing the available time for study establishment, quantitative alternatives within the research process were employed for the tendency to alleviate unqualified results and the model’s unfitness towards data and vice versa.

4.6 Validity and Reliability

4.6.1 Validity

This research attempted to produce a trusted result by continuously ensuring both validity and reliability, especially concerning the measurement and scale of the data gathering and data analysis processes. Several types of validity were established

within this research. First, construct validity refers to whether the measurement tools really concern the nature of the underlying construct or variable (Pallant, 2016). To achieve that, the author carefully evaluated the characteristic items of *Instagram Reels* to be observed and measured, then ensured that the items used highly correspond to *Reels'* characteristics.

Further, the author evaluated if the items for variables covered and represented all relevant behavior and characteristics of the study subject to make sure the content validity was achieved. When creating measurement, this study paid attention to the scale scores for the measurable criterion to ensure criterion validity was established. The scales for measurement in this study was designed by adopting or adjusting scales from the existing research within the same research object of engagement in social media. This way, the measurement was expected to correspond with the real behavior of *Instagram Reels*. Criterion validity is essential as it reflects the degree the test is able to predict concrete outcomes (Pallant, 2016).

4.6.2 Reliability

Two indicators for ensuring reliability were used: intercoder reliability test and internal consistency. After the coding scheme was defined, it was then pretested on small amounts of the sample and checked for the degree of agreement between four human coders. Through this intercoder reliability test, experimental affordances that were already identified were clarified, as well the possibilities for additional sets of experiential affordances were identified (Tafesse, 2016). From this process, the reliable coding scheme were fixed. This is especially important for measurement that requires coding by humans as they are considered prone to coder subjectivity.

As much as 10% of the total sample was independently coded by four master's students who are native Indonesian (including the author) as human coders using the code scheme. The coding results among coders were compared to see the agreement level. The final percent of general agreement was 84.13%, with agreement percentages from each variable tested considered acceptable. Main window figurative language and main window framing earned the lowest percentage (71.88%), but the figure still lies within an acceptable range. The test

did not include variables that were suitable for machine coding (*Ms. Excel*), such as *engagement score*; *caption length*; *and time of posting*.

Agreement scores of 80% are highly acceptable in general, whereas 70% is often used for explanatory research (Lombard et al., 2002). Meanwhile, Blick et al. (2018) argued that 50%-75% is considered moderately reliable. The intercoder agreement is essential for QCA, because it "represents the extent to which the different judges tend to assign exactly the same rating to each object" (Tinsley & Weiss, 2000, p.98). Moreover, it is commonly used to evaluate the characteristic of artifact or message, where independent coders attain the same conclusion (Lombard et al., 2002). For more recap on intercoder reliability test, see appendix 2.

The second process in ensuring reliability: internal consistency, is further explained in section 5.2.

4.7 Considering bias

Reels contents act as the subject of this study, and human participants through the survey were not included. Thus, respondent bias in terms of social desirability was considered solely present. However, the use of a single coder for this research would be prone to bias possibility, specifically when quantifying the qualitative data. With a single coder, interpretation of contents would be dependent on the consistency of the author. The author was aware that this risk of inconsistency in data interpretation is commonly entailed to content analysis and hence built a system to minimize the potency. The coding process was conducted using the same fixed coding scheme for guidance, which previously passed the intercoder reliability test (see section 4.6.2). The appropriate results of the intercoder reliability test aimed to generate objectivity further in the process by the author.

Moreover, the coding process for the independent variable was not finished within one time. The author organized the frequencies for the process to avoid exhaustion and maintain consistency for objectivity. The coding process was held over a total of seven days, with maximum of 45 samples a day, and each day was broken down into five sections of maximum 9 samples per section, with at least one

hour break between each section. This technique was meant to ensure the coder's superior interpretation stamina.

4.8 Ethical Consideration

Considering ethicality within research is essential to avoid further conflict of interest and authority-dependency relationship abuse (Van de Ven, 2007). This study understands it is paramount to establish a study ethically and convey the ethical consideration throughout the process. The process of data mining from *Instagram Reels* was conducted carefully with the normal procedure without using any illegal methods. Both *likes* and *comments* numbers are available to the public, and there are no specific requirements for extracting that information. Other forms of engagement within *Instagram Reels*: *share* and *save*, were not considered in this study. Both data points are not visible to the public as *Instagram* has closed public access to its API (Instagram, 2022). API is needed to extract the *share* and *save* numbers. Another way to scrape those data units without API access would then be considered "*back-door*" methods. The *Instagram Reels* that were included in the database were also sourced from public accounts, where the creator allows the public to access and see the content.

5. Result and Analysis

This chapter starts with highlights from the descriptive statistics, then presents results from the hierarchical multiple regression in the following sub-chapters based on the data analysis procedure, which was previously explained in section 4.5. The second sub-chapter, section 5.2, describes the internal consistency held before conducting the regression. The third sub-chapter 5.3 explains the statistical significance of the regression result, how well the model fits the data, how adequate the model is and how close the model meets the analysis assumption. The result from the hypothesis testing is explained in section 5.4, and an explanation on the difficulties during the data processing and solution are provided in section 5.5.

5.1 Descriptive Statistic

From a total of 301 *Instagram Reels* posts, frequencies and histograms from the total 16 items were observed to make sure there were no outliers, as outliers can disrupt the regression (Pallant, 2016). From the data, no outliers were detected from any item. Table 5.1 recaps the general descriptive statistic for each item and indexed items.

Table 5.1 - mean median std. deviation and skewness recap

Item	Mean	Median	Standard Deviation	Skewness
Engagement score	2.54	2	1.05	.498
Main window 3PE	1.49	1	.724	1,117
Caption 3PE	1.40	1	.548	.959
index 3PE	2.89	3	1,02	1.15
main window figurative language	1.59	1	.675	.711
caption figurative language	1.62	2	.635	.520
index figurative language	3.21	3	1.07	.606
main window framing	1.79	2	.792	.628
caption framing	1.71	2	.735	.522
index framing	3.49	3	1.39	.536
main window interactivity appeal	2.44	3	1.21	-.046
caption interactivity appeal	2.73	3	1.17	.724

index interactivity appeal	5.17	5	1.99	-.205
vividness	3.09	3	.724	-.302
animation	2.04	2	.761	-.067
backsound	2.06	2	.648	.419
index audio-visual presence	7.19	8	1.61	-.754
nature imagery	2.2	2	.816	-.423
caption length	1.59	1	.736	1.46
dimension format	2.57	3	.783	-1.394
Time of posting	2.89	3	.767	.183

The histograms for items *engagement score*, *time of posting*, *vividness*, *animation*, and backsound were seen to be normally distributed. As much as 75.4% of samples followed the *Instagram Reels'* settings by using a 9:16 *dimension format*, which resulted in the data skewed to the left. Meanwhile, a histogram for *nature imagery* indicated normal distribution. Normality in the distribution, which can be seen by a bell-shaped histogram, is beneficial for data analysis as that type of data is relatively easier to handle (Pallant, 2016).

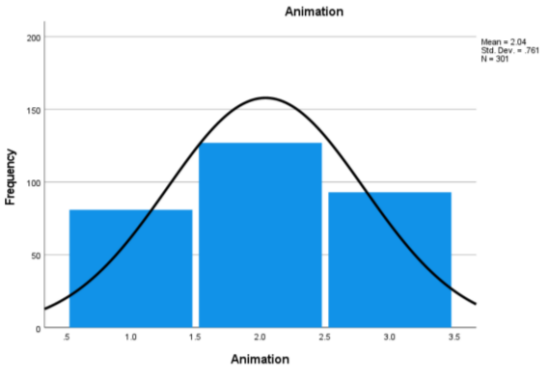

Figure 5.1 bell-shaped histogram of animation item

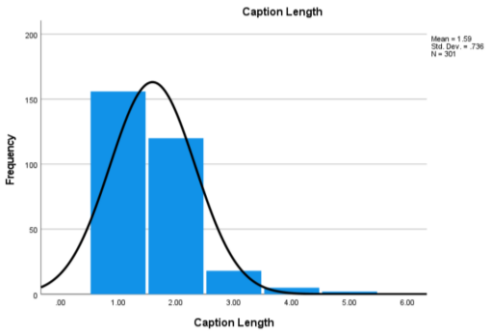

Figure 5.2 histogram of caption length item, skewed to the right

However, the tendency for data of an item to be skewed to one side indicates the nature or trend of creator tendencies in designing content, which is also part of the phenomenon. For instance, the data reflects that testimony is not commonly used to intensify the third parties' engagement as most content only uses their own argument both in the main window (64,5%) and caption (63,1%). The skewed histogram of *caption length* also explains a high possibility that the majority of Indonesian NPEO focus more on the main window appearance for *Reels* posts, given that 51% of the sample used very short captions. Additionally, Indonesian NPEO framed their messages positively both in the main window (45,8%) and the caption (44,2%) more than neutrally and negatively.

The data dynamics were also observed within the four strata of samples: forest/nature conservation, flora & fauna conservation, sustainable lifestyle, and system, law & policy towards indexed variables. From indexed *framing*, the majority of organizations (54.2% of posts) framed the content positively, both in the main window and caption, and only 22.3% of posts were framed negatively. S*ystem, law, and policy,* however, stood out compared to other strata, with 50% of posts framed negatively. Organizations that focus on law and policy often use the fear frame by describing ongoing environmental destruction or disaster and the latent threat.

Contrary to the framing statistic, the strata *system, law, and policy* was recorded as a category that used relatively low nature imagery. Only 25% display nature in the content excessively and 37.5% moderately. It shows that organizations do not tend to utilize nature imagery to attract the audience, instead emphasizing the narrative. Meanwhile, 85.2% posts in the *flora & fauna* conservation cluster have a high level of *nature imagery*. In line with their focus on flora and fauna preservation, the organizations like Borneo Orangutan Survival Foundation and ProFauna Indonesia exposed nature (in the forms of flora and fauna) intensively both within positive and negative framing.

Regarding the technicality, as much as 75.4% of samples used the aspect ratio recommended by *Instagram Reels* (9:16). The fact that *Reels* provides relatively comprehensive editing tools that can be optimally applied using the recommended aspect ratio could be one of the causalities for most of creators using a 9:16 aspect ratio. Additionally, the majority of creators agree that early morning is not a beneficial time to post as no single post was published within 00:01 to 05:59 WIB. A high percentage of the sample (40.2%) used the afternoon time (12:00 – 12:00) to publish their content, which may be subject to traditional office hours. For complete descriptive statistic results, see appendix 1.

5.2 Internal Consistency

Internal consistency is ensured by conducting reliability tests for all items under a particular category (or variable). In this study, there were five variables that consisted of more than one item, included in the reliability tests. The other three

variables, which only consist of one item (*nature imagery*, *dimension format*, *caption length*), were not included in the reliability test. From the reliability test results, a minimum of 0.7 for Cronbach's alpha values was needed to reach a decent value. However, a small number of point scales (below 10) can produce a relatively small Cronbach's alpha (Pallant, 2016). In fact, none of the scales for items in this research exceed 10. Hence, when 0.7 for Cronbach's Alpha was not achieved, observing the number of mean inter-item correlations for the items would be acceptable in this case. The optimum range values for mean inter-item correlations recommended by Briggs and Cheek (1986, as cited in Pallant, 2016) is between 0.2 to 0.4. Table 5.1 shows that items assigned for each category were acceptable to be indexed into variables to be further tested in the next procedure, regression.

Table 5.2 - Reliability test recap

Items tested	Category	Cronbach Alpha	Mean inter-item correlation
main window 3PE caption 3PE	third-party endorsement	.421	.277
main win. figurative language caption figurative language	figurative language	.513	.346
main window framing caption framing	framing	.789	.654
main window interactivity caption interactivity	interactivity appeal	.562	.391
vividness complexity animation backsound intensity	audio-visual presence	.617	.350

Additionally, the factor analysis test was performed before checking the internal consistency to double-check that the items under each of those five variables measure the same underlying concept. Data from factor analysis explains why there were not many correlations above 0.3 (from correlation matrix table, see appendix 3), and there were no communalities (under communalities table) below 0.4. Both results indicated that the items were suitable for factor analysis (Pallant, 2016).

From the rotated component matrix, five factors appeared where items were loaded in the same way they were assigned. *Vividness*, *animation* and *backsound* were loaded in the first factor, main window *interactivity appeal* and caption *interactivity appeal* were loaded in factor 2, main window *framing* and caption *framing* in factor 3, main window 3PE and caption 3PE in the fourth factor, while

there were main window *figurative language* and caption *figurative language* in factor 5.

Those items that were proven to be loaded together under certain underlying concepts, were then grouped into the assigned variable by making five summative indexes: *index third-party endorsement; index figurative language; index framing; index interactivity appeal* and *index audio-visual presence*. Together with *nature element imagery*, *dimension format,* and *caption length*, they acted as independent variables, which were then processed into hierarchical multiple regression toward engagement score as the dependent variable.

5.3 Hierarchical Multiple Regression

In presenting the analysis, especially by employing the multiple regression method, it is essential to emphasize what type of regression was performed (Pallant, 2016). This study conducted hierarchical multiple regression to see correlations between dependent and independent variables, and to see if the presence of a control variable still allowed the model to explain the correlations among the variables. There were two levels for the hierarchical multiple regression in the process; block 1 was comprised of regression on dependent and independent variables without a control variable; and for block 2, *time of posting* as control variable was added to the independent variables side.

Following the third phase for data analysis procedure (see section 4.5), after checking the internal consistency, three key instruments from hierarchical multiple regression were observed and reported. First, how statistically significant the relationship between the response and the term was by analyzing the probability value or *p-value* (also labeled as "*sig*" in SPSS output). The *third parties' endorsement, figurative language* and *interactivity* had *p-values* above 0.05 both in the block one and two of the regression. This means both variables were not statistically significant to the correlations towards engagement score.

The other five independent variables (as shown in tables 5.2 and 5.3) stayed relatively significant even after the control variable (time of posting) was added in block 2. Although the universal threshold is still argued, many researchers use the

threshold ascribed by Ronald A. Fisher (Field, 2016), where a *p-value* less than 5% (or 0.05 probability) shows that the variable obtains a "significant unique contribution" to the model prediction (Pallant, 2016).

Table 5.3 – p value, hierarchical regression Block 1

Independent Variable	*p-value (sig.)*
Third-Party Endorsement	.429
Figurative Language	.060
Framing	.026
Interactivity appeal	.149
Audio-visual Presence	<.001
Nature imagery	.001
Dimension Format	<.001
Caption Length	.009

Table 5.4 – p value, hierarchical regression Block 2

Independent Variable	*p-value (sig.)*
Third-Party Endorsement	.445
Figurative Language	.063
Framing	.026
Interactivity appeal	.145
Audio-visual Presence	<.001
Nature imagery	.001
Dimension Format	<.001
Caption Length	.009
Time of Posting	.701

After statistical significance, the next important instrument in interpreting regression results was investigating the regression model to determine how well the model fit the data. To measure that, three metrics derived from *model summary* result in SPSS: R-square (R^2) and adjusted R-square were commonly used.

The model obtained *R square* 0.294, and which meant the independent variables in the model could explain 29.4% of variance in the dependent variable (Field, 2016, p.514). Pallant (2016), argued that one way to assess whether the R^2 is respectable enough is by comparing to similar research. The previous studies on engagement in social media showed quite varied R^2 from 0.123 (Dolan et al., 2019) to 0.621 (Cuevas-Molano et al., 2021). However, low figures on R^2 are observed as common for the similar studies. Field (2016) argued that (for example) R^2 0.187 (18.7%), is considered enough, although it means 81.3% unexplained variance worth considering.

Table 5.5 - model variance proportion

Block	*R Square*	*Adjusted R Square*
1	.294	.275
2	.294	.273

Additionally, sample values were seen to generalize across the other samples as the different number between R^2 and the adjusted R^2 was as low as 0.019 or 1.9% (Field, 2016). This means, if a new same experiment is conducted using a different set of samples, the outcome would have approximately 1.9% variances less. The overall model reached statistical significance, given the F-test in the ANOVA table appeared to be significant ($F=15.20$ $p<0.001$).

The third determining instrument to analyze in the regression was how well the model met the analysis assumption by looking at the residual normality using *Normal P-P Plot,* and looking at the linearity and homoscedasticity of the residual using the *Scatterplot (Pallant, 2016).* What Pallant (2016) explained as instruments that better be obtained are normally distributed residual, linearity, and homoscedasticity.

The model's *Normal P-P Plot* appears to produce a fairly diagonally straight line, as shown in figure 5.3, which indicated there was no significant deviation from normality (Pallant, 2016). Hence, the assumption for normally distributed residual was verified. In the scatterplot, homoscedasticity that referred to residuals containing non-constant variance (Field, 2016), was not strongly observed, neither was any curve detected, which meant non-linearity was not indicated (Field, 2016). Non-linearity is not ideal because correlation analysis only suits the linear relationship (Pallant, 2016). Additionally, the scatterplot showed somewhat random spots with the rectangular shadow that could be slightly observed, which reflects the possibility of correlations.

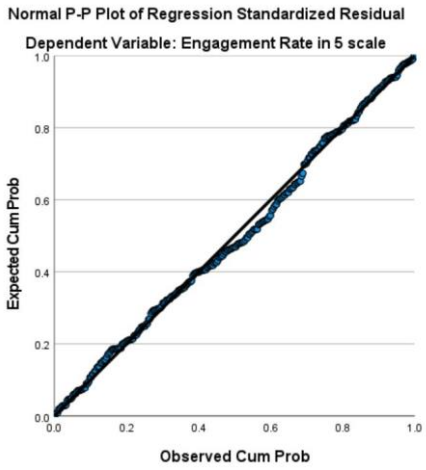

Figure 5.3

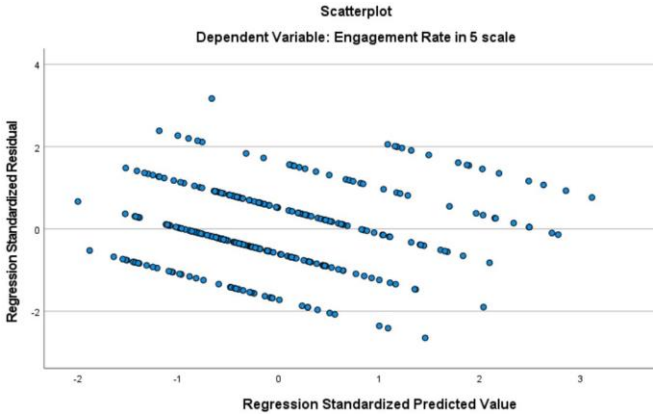

Figure 5.4

Additionally, outliers with a significant effect on the results were not seen, and there were no multicollinearities among independent variables. Multicollinearity refers to a case where independent variables have high correlations to each other, which is defined by *Pearson Correlation (r)* number above 0.7 (Pallant, 2016). Correlations among all independent variables were observed below 0.7 with the highest being 0.229. See appendix 4 for the model summary table, ANOVA, correlations, coefficient, *normal p-p plot*, scatterplot and complete table from the regression results.

5.4 Hypotheses Proofing

The hypotheses of this research model have been tested using hierarchical multiple regression. It was previously observed that the relationship between independent variables *third-party endorsement*, *figurative language*, and *interactivity appeal* toward engagement score as the dependent variable was not statistically significant. Hence, further observation for correlation was not relevant, and an assumption could be made that those three predictors had no effect on the engagement score. Hence, H1, H2 and H4 are not supported.

The correlations between the other five predictors on the dependent variable were significant and were seen to vary. This research used categories from Pallant (2016) to identify correlation strength by looking at the *r* value: between .5 to 1 is strong; between *r* .30 to .49 is medium; and between .10 - .29 is categorized as weak correlation. Further, negative or positive correlation also appeared to vary from some of the initial hypotheses.

Table 5.6 – Model correlation overview

	Engagement Score				
	P value (sig.)		*β*		*r*
	Block 1	*Block 2*	*Block 1*	*Block 2*	
Third-Party Endorsement	.429	.445	-.041	-.039	.040
Figurative Language	.060	.063	.096	.095	.022
Framing	.026	.026	-.111	-.111	-.111
Interactivity Appeal	.149	.145	-.080	-.081	-.264
Audio-visual Presence	<.001	<.001	-.227	-.226	-.347
Nature Imagery	.001	.001	116	.168	.231
Dimension Format	<.001	<.001	-.325	-.323	-.375
Caption Length	.009	.009	.134	.135	.160
Time of Posting	-	.701	-	-.019	-.023

Framing has a slight effect on the engagement score, shown by a low *r* (-.111). But contrary to H3 that assumed negative framing would bring more engagement, the correlation figure was spotted negative (*r*=-.111). This means the more content is framed positively, the greater the possibility that the audience will engage.

The test for *audio-visual presence* comprised of *vividness, animation* and *backsound* showed statistically significant result, but contrary to H5 with moderate negative correlation (*r*=-.347). A high level of audio-visual does not evoke a higher engagement score, instead it affects engagement score negatively. Although each item (*vividness, animation,* and *backsound)* from audio-visual presence were proven to increase engagement score in previous research, the combination of the three items turned out to have a negative influence on *Reels* engagement for Indonesian NPEO. This suggests people tend to engage when the content is not too complex in terms of audio-visual presence. If too much media richness within a *Reels*, like video, text and image edited with viable motion effects were used at the same time, combined with a song where the singer articulates lyrics in the backsound, the clarity of the message could be clouded. Instead, it could create richness that is rather "too dynamic" for the audience.

Creators have only 90 seconds before the users scroll up for the next content. For the context of NPEO, this research argues that too much media richness used within that short duration would make it hard for users to focus on the content essence, enjoy it, or just try to understand it. It can also cause confusion when, for example, users try to read the text in the main window while a video continues to play in the background and songs with lyrics (which probably contain another narrative) is played as the backsound. Moreover, this variable is assumed to have the highest predictive ability in the model with *β-.227*. The standardized coefficient (labelled as *β)* is able to show the relationship strength between predictor and the outcome within (Field, 2016). Also, *β* in both blocks was observed to lie in a relatively similar range.

As much as *r*=.231 in *nature imagery* showed a positive correlation towards engagement score, the correlation was weak. Despite of weak, correlation still exists and thus H6 is supported. The more imagery of natural elements is presented within a *Reels* post; the more engagement score would likely increase for

Indonesian NPEO. This finding is aligned with the previous study for different digital media platforms, which explains how child imagery could increase the engagement for children's humanitarian organizations (Calvert & Scott, 1989).

Specifically, for the *dimension format* variable, it was transformed into a categorical variable before regression was conducted with values 1=the content using a 9:16 aspect ratio and 0=the content using other aspect ratios. In other words, the variable was recoded into a dummy variable from a three-code nominal variable into a two-point scale variable to better fit it into the regression process. Interestingly, the dimension format appeared to record new findings, given it turned out to negatively affect the engagement score. *Dimension format* had the strongest effect on engagement with moderate a correlation of r=-.375 compared to other predictors. Adapted from previous literature, H7 argued that the recommended aspect ratio 9:16 would comfort the audience and assumed to lead them to engage. With the negative correlation shown in the regression result, this led to the outcome that H7 is not supported.

The longer *caption length* was confirmed to have a positive effect on the engagement score (r=.160). In other words, a longer caption would likely have a slight effect, encouraging the audience to engage. Hence, H8 is supported. The longer caption has the capability of providing more comprehensive information, which is proven to lead to higher engagement. As the previous findings confirmed, there is, in general, a benefit for engagement on *Facebook* and *Instagram* to having longer captions (Cuevas-Molano et al., 2022). This implies the mechanism of captions works similarly across digital platforms within various contexts. Furthermore, table 5.7 below recaps the hypotheses testing.

Table 5.7 - Hypothesis result recap

Predictors	Hypothesis	Result
Third-Parties Endorsement	H1	not supported
Figurative Language	H2	not supported
Framing	H3	not supported
Interactivity appeal	H4	not supported
Audio-visual Presence	H5	not supported
Nature imagery	H6	supported
Dimension Format	H7	not supported
Caption Length	H8	supported

On the other hand, time of posting as a control variable in the model did not disrupt the correlation among variables within the model. The results comparison between block 1 without control variable and block 2 where the time of posting was added, are principally similar. There was very little difference in the numbers, but the gap value could not tell anything differently. See appendix 4 for the complete regression results.

6. Conclusion and Discussion

This chapter presents discussion towards the conclusion of the hypotheses testing results. Practical as well as academic implications are also addressed based on the newly concluded knowledge, and recommendations for further research are provided. Finally, the author's awareness of the research limitations is expressed.

6.1 Conclusion and Discussion

This study aimed to address the research question of how different persuasive strategies within *Instagram Reels'* contents influence the engagement score for Indonesian NPEO. Through building up a model that involved various constructions of hypotheses which were rooted in existing research, this study succeeded in understanding that the mechanisms of persuasive strategies across social media platforms are not entirely the same. Some strategies help Indonesian NPEO in gaining a higher engagement score in *Reels*, the same way as across other platforms, such as *caption length* and *nature imagery*. Nevertheless, the effect of other strategies like audio-visual presence, framing, figurative language, and third-party endorsement on Indonesian NPEO *Reels* engagement score contradict the existing studies.

There is a possibility that the distinct algorithm of *Reels* itself caused some persuasive strategies to function differently toward the engagement. With the distribution arrangement to the wider range of audiences, regardless of the follower status, it creates a proportion of *Reels* viewers who are not followers. Hence, they are less likely to respond to content with such persuasive strategies compared to users who voluntarily became followers prior to watching the content, or who actively signed up to be part of a virtual community.

As a relatively new platform feature, *Reels* requires a different formula to produce engaging content to attract user engagement than has been used on existing

platforms such as *Facebook*, *Twitter*, or *Instagram Newsfeed*. The unique characteristics of both *Reels* as a platform and NPEO as public figures are no more fully relevant to adapting the predecessors' strategies. While the use of social media is increasingly central to Indonesian users' daily routines, it is highly beneficial for NPEO to strategize the content design to get a bigger engagement score that would lead to improved awareness of the environment.

The whole observation and analysis process in this study has investigated how well different strategies within *Reels* affect the engagement score for Indonesian NPEO. The evidence boldly says that NPEO should consider specific approaches in designing content for *Reels* to earn higher engagement. First, manage the audio-visual presence of content to be less complex and rather moderate. Although this result implies contradiction with the previous findings, specifically about vividness (Cuevas-Molano et al., 2021; Menon et al., 2019), it is shown that *Reels* audience appear to be more attracted by content with a less complex audio-visual presence. Too much media richness combines with complex backsound and complex animation would not lead to engagement score-improvement.

Second, showcase nature imagery while framing the content with a more positive nuance, while combining sufficient caption with a mixed aspect ratio variation in the main window. Content with shorter captions is less likely to gain a high engagement score in *Reels*. This suggests that the captions should be better designed to provide sufficient information, especially when the main window focuses more on audio-visual presence, so that audiences have enough material to grasp the impression of the post. Meanwhile, the medium correlation of variety dimension format to engagement score implies it is worth varying aspect ratio in *Reels,* although the majority of creators believe an aspect ratio of 9:16 is better in designing *Reels* as it is the aspect ratio recommended by the platform.

The variety of this study’s results compared to previous literature highlights he unique characteristics of *Instagram Reels.* Five out of eight proposed predictors significantly affected engagement score, with only one showing positive correlation, while the rest were negatively correlated. Compared to other social media platforms, people act differently towards some predictors when it comes to the content of *Reels*.

For *Facebook, Instagram Newsfeed, and Twitter,* the audience is likely to engage when the content is interactive, framed in negative nuance with more complex audio-visual presence (Cuevas-Molano et al., 2021; Tafesse, 2015, 2016). Nevertheless, interactivity does not encourage users to engage in *Reels*, and NPEO *Reels* audiences tend to not engage when there is too much media richness combined. The negative framing (Perloff, 2003), which is argued to generate higher responses was irrelevant, as *Reels'* audiences were proven to prefer happiness and other positive nuance in the content

Additionally, the fact that aspect ratio 9:16 generated less engagement is quite an intriguing finding. The aspect ratio 9:16 seems to be very fit to the *Reels'* design, yet users have other attitude when it comes to engagement. The possibilities for users to read the caption better and more comfortable maybe the case. When the creators used other aspect ratio, it left some black zone on the main window and the caption would be clearer displayed. That way, it is easier to read the caption without the video being covered by the caption. This might help users to understand the content and feel more engaged and in turn, do engagement. Moreover, this research argues that *dimension format* could be considered as a precedence of affecting persuasive strategy that evokes higher engagement in *Reels.* Previous experiments that tested this exact same variable towards engagement in *Reels* have not yet been found, and the correlation strength in this study is identified as not weak. This indicates that the dimension format plays an important role in gaining engagement.

Given the findings, this study proposes a new model to explain factors affecting engagement on *Instagram Reels* for Indonesian NPEO: positive framing, interactivity appeal, moderate audio-visual presence, nature imagery, varied dimension format, and long caption length affect engagement.

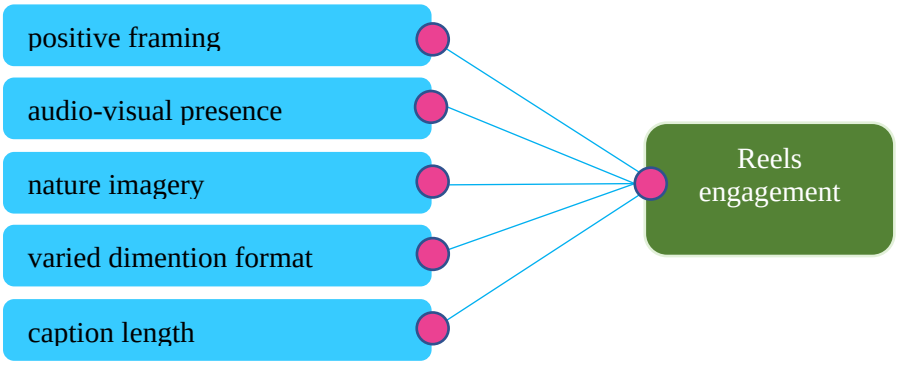

Figure 6.1 - new strategy for getting higher Reels engagement

6.2 Implication

Each strategy observed as a predictor in this study was drawn from the persuasive notion within digital media. Hence, the output of this experiment contributes to the overall discourse about the development of the persuasion process in digital media and reaffirms one of the digital rhetoric perspectives, which, contrary to classical rhetoric, highly considers the importance of invention in the message arrangement (Meyer, 2017). The persuasive effect of a digital product is likely imbued by the cohesiveness of the design to the logical argument within relevant elements in the media.

Additionally, these findings provide a wider understanding of the rhetorical-discursive qualities of *Instagram Reels* as a social media platform and could help agencies adjust their communication strategies within the digital content design to reach a more diverse audience while deploying a relevant range of persuasive approaches.

6.3 Limitations and Recommendations

Given the restrained time and funding, the author acknowledges limitations in this study. Although 301 is a qualified sample number for a content analysis study, the number still hovered within the minimum range. Nevertheless, a larger sample would produce a smaller margin of error and better accuracy in the output result (Stockwell & Peterson, 2002). Additionally, with a bigger sample size being observed, there is less probability for the conclusion to change and greater probability for better theories to be constructed from the model (Van de Ven, 2007). Moreover, the incapability of multiple coder affordance strained the author to only employ a single coder. To build reliability in a more advanced manner, utilizing a bigger sample size and multiple coders are highly recommended when conducting similar research in the future.

There was no significant deviation from normality, and residuals were observed to be normally distributed. This indicates the model examined fits the data. However, the portion of variances in the dependent variable that could be explained in the examination was relatively low. Nonetheless, the observation of

previous literature within a similar sphere of social media engagement showed that a relatively low R square is common (Dolan et al., 2019; Menon et al., 2019; Tafesse, 2016). This is highly argued because of the nature of social media itself, where people engage with the engagement given by other people. In other words, there are unknown portions and the possibility that engagement itself is a result of predecessor engagement. A day-old post would likely have a different engagement number than when it turned into a month-old post. Some people could be triggered to reply to a comment on a post, not because of the content message itself, but rather were provoked (for example) by another comment. This comes back to the reality that we cannot plan communication entirely as there is a chain that would be naturally established during the communication. Hence, it will be interesting to do further data analysis that goes in deeper detail into this aspect, engagement number with respect to the particular period of time. Additionally, the study context could be another aspect to further explore, such as examining how the predictors work in countries with a relatively more established regulation related to the environment, like Scandinavian countries. Nevertheless, research on social media would always need to be updated, given that the development of digital media is still growing, in somewhat unstoppable fashion.

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Appendixes

Appendix 1 – Descriptive Statistic

Frequencies tables

Time of Posting

	N	%
evening to night 18:01 - 00:00	106	35.2 %
afternoon 12:00 - 18:00	121	40.2 %
morning 06:00 - 11:59	74	24.6 %

Engagement Score in 5 scale

	N	%
Very Low	45	15.0%
Low	115	38.2%
Moderate	90	29.9%
High	35	11.6%
Very High	16	5.3%

Main Window 3PE

	N	%
Low	194	64.5%
Moderate	66	21.9%
High	41	13.6%

Caption 3PE

	N	%
Low	190	63.1%
Moderate	102	33.9%
High	9	3.0%

Main Window FL

	N	%
Low	155	51.5%
Moderate	114	37.9%
High	32	10.6%

Caption FL

	N	%
Low	139	46.2%
Moderate	137	45.5%
High	25	8.3%

MW Framing

	N	%
Positive	133	44.2%
Neutral	99	32.9%
Negative	69	22.9%

Cap Framing

	N	%
Positive	138	45.8%
Neutral	113	37.5%
Negative	50	16.6%

MW Interactivity appeal

	N	%
No interactivity	109	36.2%
Pronounce	26	8.6%
CTA	92	30.6%
Question	74	24.6%

Cap Interactivity appeal

	N	%
No interactivity	78	25.9%
Pronounce	23	7.6%
CTA	101	33.6%
Question	99	32.9%

Vividness

	N	%
one media richness	3	1.0%
2 media richness	57	18.9%
3 media richness	150	49.8%
4 media richness	91	30.2%

Animation

	N	%
Low	81	26.9%
Moderate	127	42.2%
High	93	30.9%

Backsound

	N	%
Low	54	17.9%
Moderate	174	57.8%
High	73	24.3%

Nature Imagery

	N	%
Low	74	24.6%
Moderate	87	28.9%
High	140	46.5%

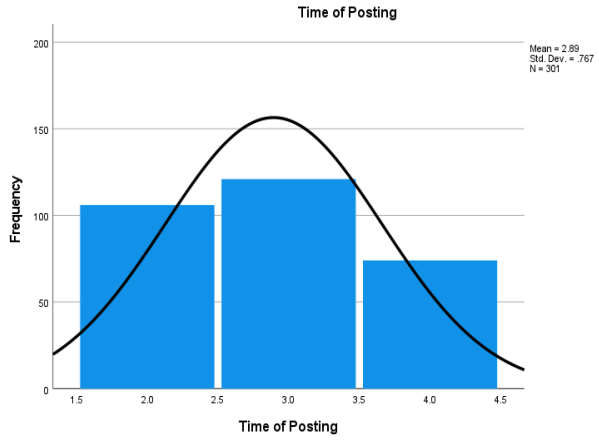
Caption Length

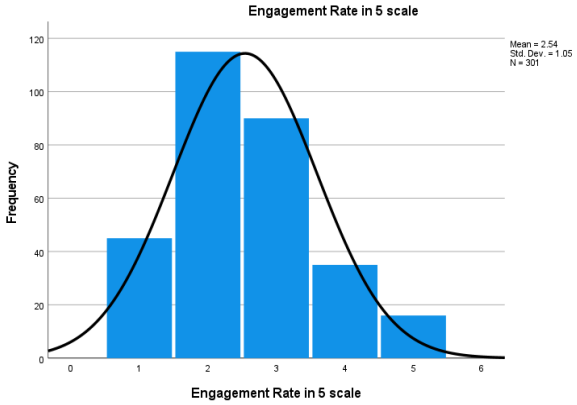
	N	%
Very Short	156	51.8%
Short	120	39.9%
Moderate	18	6.0%
Long	5	1.7%
Very Long	2	0.7%

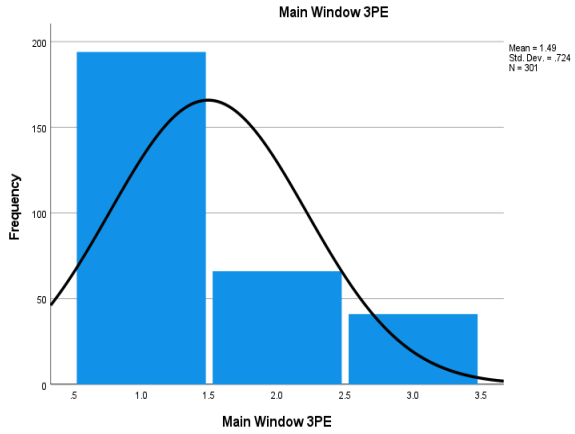
Dimension Format

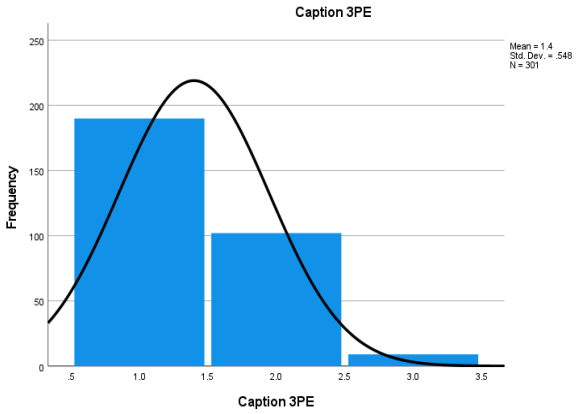
	N	%
other aspect ratio	74	24.6%
aspect ration 9:16	227	75.4%

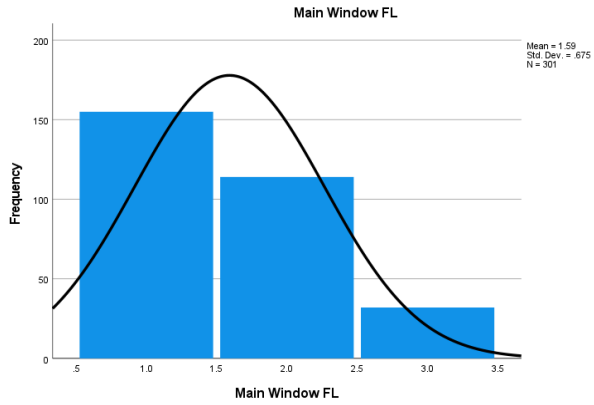
Histogram from descriptive data

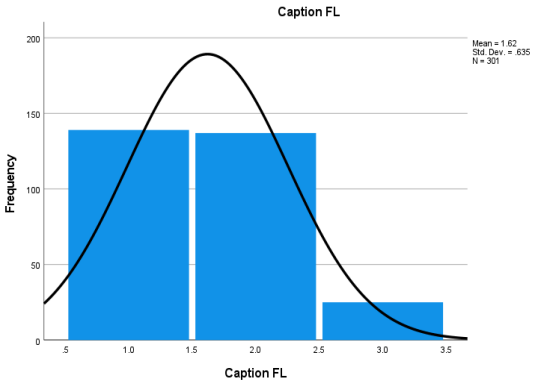


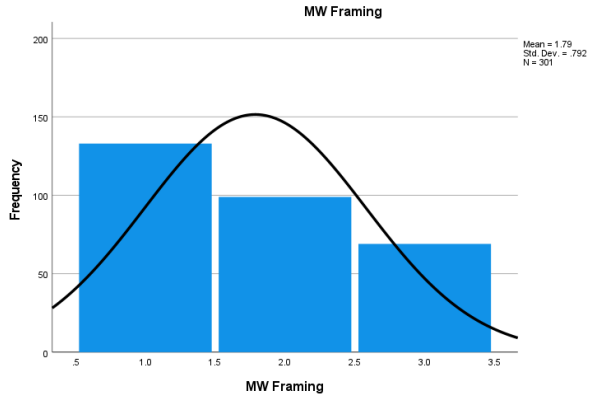


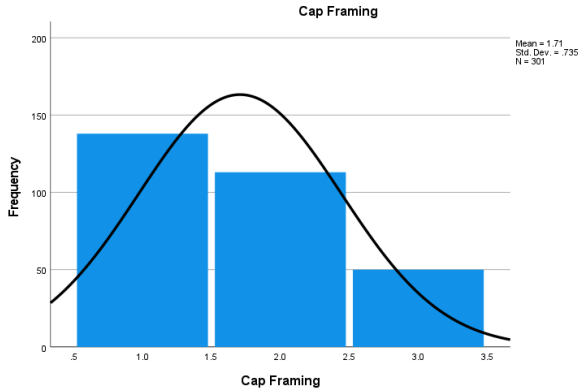


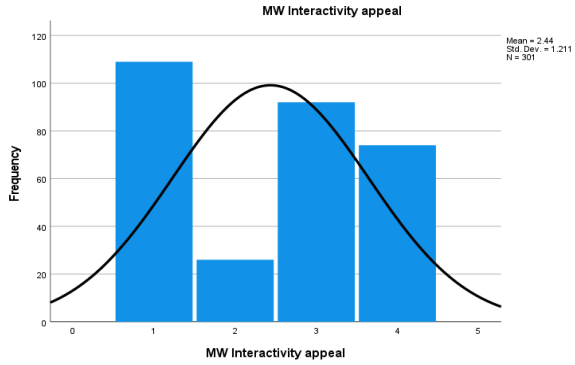


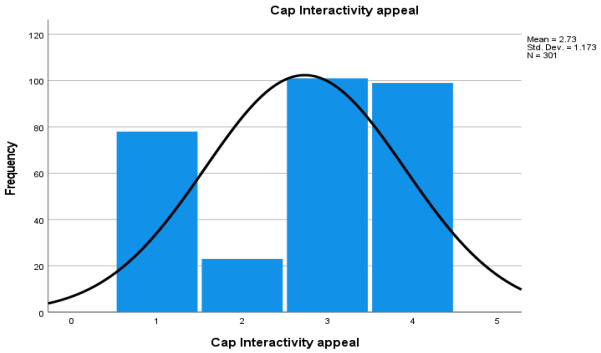


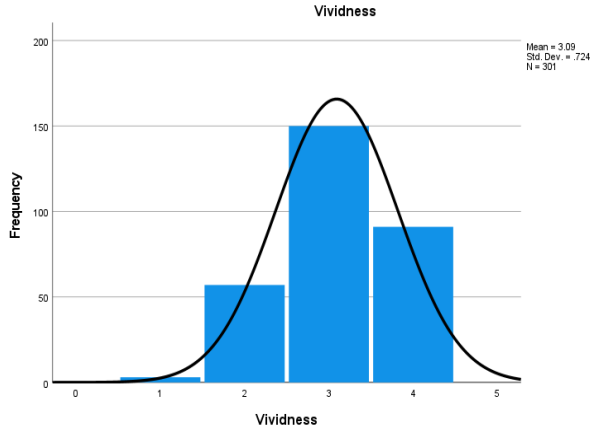


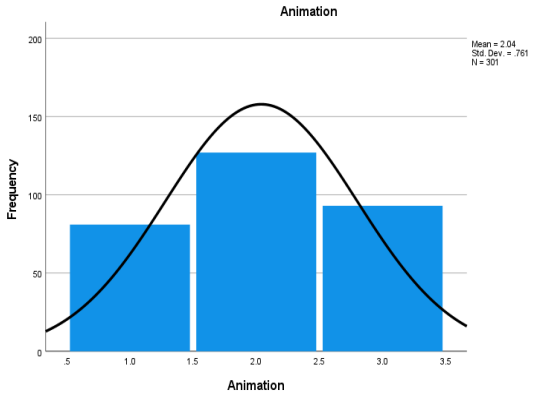

MW Framing
Mean = 1.79
Std. Dev. = .792
N = 301
Frequency
MW Framing

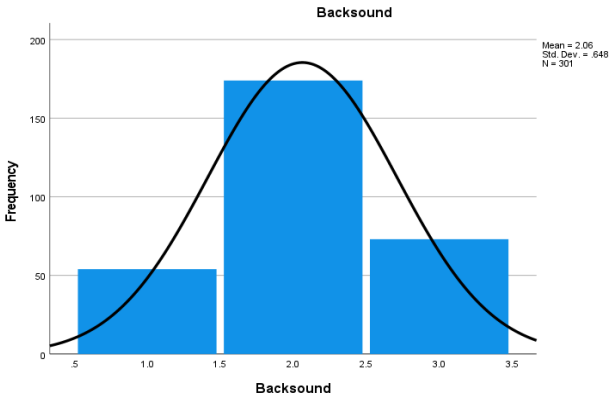

Cap Framing
Mean = 1.71
Std. Dev. = .735
N = 301
Frequency
Cap Framing

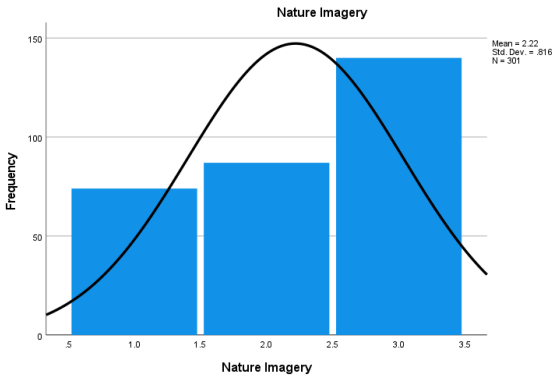

MW Interactivity appeal
Mean = 2.44
Std. Dev. = 1.211
N = 301
Frequency
MW Interactivity appeal

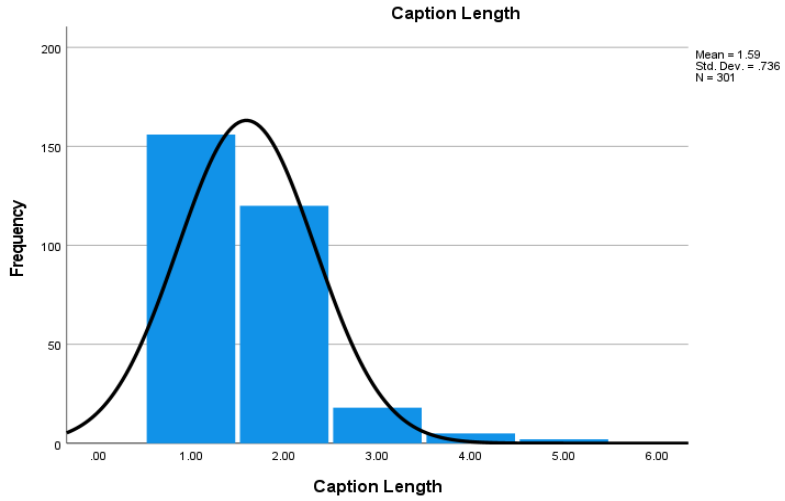

Cap Interactivity appeal
Mean = 2.73
Std. Dev. = 1.173
N = 301
Frequency
Cap Interactivity appeal


Vividness
Mean = 3.09
Std. Dev. = .724
N = 301
Frequency
Vividness


Animation
Mean = 2.04
Std. Dev. = .761
N = 301
Frequency
Animation







Frequencies table based on clusters towards variable (indexed items)

Cluster * Index 3PE Crosstabulation

			Index 3PE					
			2.00	3.00	4.00	5.00	6.00	Total
Cluster	Flora/Fauna Conservation	Count	32	12	5	4	1	54
		% within Cluster	59.3%	22.2%	9.3%	7.4%	1.9%	100.0%
		% within Index 3PE	23.9%	12.1%	11.6%	23.5%	12.5%	17.9%
		% of Total	10.6%	4.0%	1.7%	1.3%	0.3%	17.9%
	Law and policy	Count	19	12	10	5	2	48
		% within Cluster	39.6%	25.0%	20.8%	10.4%	4.2%	100.0%
		% within Index 3PE	14.2%	12.1%	23.3%	29.4%	25.0%	15.9%
		% of Total	6.3%	4.0%	3.3%	1.7%	0.7%	15.9%
	Nature/ecosystem conservation	Count	51	50	14	5	2	122
		% within Cluster	41.8%	41.0%	11.5%	4.1%	1.6%	100.0%
		% within Index 3PE	38.1%	50.5%	32.6%	29.4%	25.0%	40.5%
		% of Total	16.9%	16.6%	4.7%	1.7%	0.7%	40.5%
	Sustainable Lifestyle	Count	32	25	14	3	3	77
		% within Cluster	41.6%	32.5%	18.2%	3.9%	3.9%	100.0%
		% within Index 3PE	23.9%	25.3%	32.6%	17.6%	37.5%	25.6%
		% of Total	10.6%	8.3%	4.7%	1.0%	1.0%	25.6%
Total		Count	134	99	43	17	8	301
		% within Cluster	44.5%	32.9%	14.3%	5.6%	2.7%	100.0%
		% within Index 3PE	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	44.5%	32.9%	14.3%	5.6%	2.7%	100.0%

Cluster * Index 3PE Crosstabulation

			Index 3PE					
			2.00	3.00	4.00	5.00	6.00	Total
Cluster	Flora/Fauna Conservation	Count	32	12	5	4	1	54
		% within Cluster	59.3%	22.2%	9.3%	7.4%	1.9%	100.0%
		% within Index 3PE	23.9%	12.1%	11.6%	23.5%	12.5%	17.9%
		% of Total	10.6%	4.0%	1.7%	1.3%	0.3%	17.9%
	Law and policy	Count	19	12	10	5	2	48
		% within Cluster	39.6%	25.0%	20.8%	10.4%	4.2%	100.0%
		% within Index 3PE	14.2%	12.1%	23.3%	29.4%	25.0%	15.9%
		% of Total	6.3%	4.0%	3.3%	1.7%	0.7%	15.9%
	Nature/ecosystem conservation	Count	51	50	14	5	2	122
		% within Cluster	41.8%	41.0%	11.5%	4.1%	1.6%	100.0%
		% within Index 3PE	38.1%	50.5%	32.6%	29.4%	25.0%	40.5%
		% of Total	16.9%	16.6%	4.7%	1.7%	0.7%	40.5%
	Sustainable Lifestyle	Count	32	25	14	3	3	77
		% within Cluster	41.6%	32.5%	18.2%	3.9%	3.9%	100.0%
		% within Index 3PE	23.9%	25.3%	32.6%	17.6%	37.5%	25.6%
		% of Total	10.6%	8.3%	4.7%	1.0%	1.0%	25.6%
Total		Count	134	99	43	17	8	301
		% within Cluster	44.5%	32.9%	14.3%	5.6%	2.7%	100.0%
		% within Index 3PE	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	44.5%	32.9%	14.3%	5.6%	2.7%	100.0%

Cluster * Index 3PE Crosstabulation

			Index 3PE					
			2.00	3.00	4.00	5.00	6.00	Total
Cluster	Flora/Fauna Conservation	Count	32	12	5	4	1	54
		% within Cluster	59.3%	22.2%	9.3%	7.4%	1.9%	100.0%
		% within Index 3PE	23.9%	12.1%	11.6%	23.5%	12.5%	17.9%
		% of Total	10.6%	4.0%	1.7%	1.3%	0.3%	17.9%
	Law and policy	Count	19	12	10	5	2	48
		% within Cluster	39.6%	25.0%	20.8%	10.4%	4.2%	100.0%
		% within Index 3PE	14.2%	12.1%	23.3%	29.4%	25.0%	15.9%
		% of Total	6.3%	4.0%	3.3%	1.7%	0.7%	15.9%
	Nature/ecosystem conservation	Count	51	50	14	5	2	122
		% within Cluster	41.8%	41.0%	11.5%	4.1%	1.6%	100.0%
		% within Index 3PE	38.1%	50.5%	32.6%	29.4%	25.0%	40.5%
		% of Total	16.9%	16.6%	4.7%	1.7%	0.7%	40.5%
	Sustainable Lifestyle	Count	32	25	14	3	3	77
		% within Cluster	41.6%	32.5%	18.2%	3.9%	3.9%	100.0%
		% within Index 3PE	23.9%	25.3%	32.6%	17.6%	37.5%	25.6%
		% of Total	10.6%	8.3%	4.7%	1.0%	1.0%	25.6%
Total		Count	134	99	43	17	8	301
		% within Cluster	44.5%	32.9%	14.3%	5.6%	2.7%	100.0%
		% within Index 3PE	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	44.5%	32.9%	14.3%	5.6%	2.7%	100.0%

Cluster * Index 3PE Crosstabulation

			Index 3PE					
			2.00	3.00	4.00	5.00	6.00	Total
Cluster	Flora/Fauna Conservation	Count	32	12	5	4	1	54
		% within Cluster	59.3%	22.2%	9.3%	7.4%	1.9%	100.0%
		% within Index 3PE	23.9%	12.1%	11.6%	23.5%	12.5%	17.9%
		% of Total	10.6%	4.0%	1.7%	1.3%	0.3%	17.9%
	Law and policy	Count	19	12	10	5	2	48
		% within Cluster	39.6%	25.0%	20.8%	10.4%	4.2%	100.0%
		% within Index 3PE	14.2%	12.1%	23.3%	29.4%	25.0%	15.9%
		% of Total	6.3%	4.0%	3.3%	1.7%	0.7%	15.9%
	Nature/ecosystem conservation	Count	51	50	14	5	2	122
		% within Cluster	41.8%	41.0%	11.5%	4.1%	1.6%	100.0%
		% within Index 3PE	38.1%	50.5%	32.6%	29.4%	25.0%	40.5%
		% of Total	16.9%	16.6%	4.7%	1.7%	0.7%	40.5%
	Sustainable Lifestyle	Count	32	25	14	3	3	77
		% within Cluster	41.6%	32.5%	18.2%	3.9%	3.9%	100.0%
		% within Index 3PE	23.9%	25.3%	32.6%	17.6%	37.5%	25.6%
		% of Total	10.6%	8.3%	4.7%	1.0%	1.0%	25.6%
Total		Count	134	99	43	17	8	301
		% within Cluster	44.5%	32.9%	14.3%	5.6%	2.7%	100.0%

% within Index 3PE	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
% of Total	44.5%	32.9%	14.3%	5.6%	2.7%	100.0%

Cluster * Index Audio-visual Presence Crosstabulation

			Index Audio-visual Presence								
			3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	Total
Cluster	Flora/Fauna Conservation	Count	1	22	7	1	12	8	3	0	54
		% within Cluster	1.9%	40.7%	13.0%	1.9%	22.2%	14.8%	5.6%	0.0%	100.0%
		% within Index Audio-visual Presence	50.0%	71.0%	31.8%	4.5%	19.7%	7.5%	6.1%	0.0%	17.9%
		% of Total	0.3%	7.3%	2.3%	0.3%	4.0%	2.7%	1.0%	0.0%	17.9%
	Law and policy	Count	0	5	0	3	8	15	17	0	48
		% within Cluster	0.0%	10.4%	0.0%	6.3%	16.7%	31.3%	35.4%	0.0%	100.0%
		% within Index Audio-visual Presence	0.0%	16.1%	0.0%	13.6%	13.1%	14.0%	34.7%	0.0%	15.9%
		% of Total	0.0%	1.7%	0.0%	1.0%	2.7%	5.0%	5.6%	0.0%	15.9%
	Nature/ecosystem conservation	Count	1	2	10	12	24	57	11	5	122
		% within Cluster	0.8%	1.6%	8.2%	9.8%	19.7%	46.7%	9.0%	4.1%	100.0%
		% within Index Audio-visual Presence	50.0%	6.5%	45.5%	54.5%	39.3%	53.3%	22.4%	71.4%	40.5%
		% of Total	0.3%	0.7%	3.3%	4.0%	8.0%	18.9%	3.7%	1.7%	40.5%
	Sustainable Lifestyle	Count	0	2	5	6	17	27	18	2	77
		% within Cluster	0.0%	2.6%	6.5%	7.8%	22.1%	35.1%	23.4%	2.6%	100.0%
		% within Index Audio-visual Presence	0.0%	6.5%	22.7%	27.3%	27.9%	25.2%	36.7%	28.6%	25.6%
		% of Total	0.0%	0.7%	1.7%	2.0%	5.6%	9.0%	6.0%	0.7%	25.6%
Total		Count	2	31	22	22	61	107	49	7	301
		% within Cluster	0.7%	10.3%	7.3%	7.3%	20.3%	35.5%	16.3%	2.3%	100.0%
		% within Index Audio-visual Presence	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	0.7%	10.3%	7.3%	7.3%	20.3%	35.5%	16.3%	2.3%	100.0%

Cluster * Index Audio-visual Presence Crosstabulation

			Index Audio-visual Presence								
			3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	Total
Cluster	Flora/Fauna Conservation	Count	1	22	7	1	12	8	3	0	54
		% within Cluster	1.9%	40.7%	13.0%	1.9%	22.2%	14.8%	5.6%	0.0%	100.0%
		% within Index Audio-visual Presence	50.0%	71.0%	31.8%	4.5%	19.7%	7.5%	6.1%	0.0%	17.9%
		% of Total	0.3%	7.3%	2.3%	0.3%	4.0%	2.7%	1.0%	0.0%	17.9%
	Law and policy	Count	0	5	0	3	8	15	17	0	48
		% within Cluster	0.0%	10.4%	0.0%	6.3%	16.7%	31.3%	35.4%	0.0%	100.0%
		% within Index Audio-visual Presence	0.0%	16.1%	0.0%	13.6%	13.1%	14.0%	34.7%	0.0%	15.9%
		% of Total	0.0%	1.7%	0.0%	1.0%	2.7%	5.0%	5.6%	0.0%	15.9%
	Nature/ecosystem conservation	Count	1	2	10	12	24	57	11	5	122
		% within Cluster	0.8%	1.6%	8.2%	9.8%	19.7%	46.7%	9.0%	4.1%	100.0%
		% within Index Audio-visual Presence	50.0%	6.5%	45.5%	54.5%	39.3%	53.3%	22.4%	71.4%	40.5%
		% of Total	0.3%	0.7%	3.3%	4.0%	8.0%	18.9%	3.7%	1.7%	40.5%
	Sustainable Lifestyle	Count	0	2	5	6	17	27	18	2	77
		% within Cluster	0.0%	2.6%	6.5%	7.8%	22.1%	35.1%	23.4%	2.6%	100.0%
		% within Index Audio-visual Presence	0.0%	6.5%	22.7%	27.3%	27.9%	25.2%	36.7%	28.6%	25.6%
		% of Total	0.0%	0.7%	1.7%	2.0%	5.6%	9.0%	6.0%	0.7%	25.6%
Total		Count	2	31	22	22	61	107	49	7	301
		% within Cluster	0.7%	10.3%	7.3%	7.3%	20.3%	35.5%	16.3%	2.3%	100.0%
		% within Index Audio-visual Presence	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	0.7%	10.3%	7.3%	7.3%	20.3%	35.5%	16.3%	2.3%	100.0%

Cluster * Index Audio-visual Presence Crosstabulation

			Index Audio-visual Presence								
			3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	Total
Cluster	Flora/Fauna Conservation	Count	1	22	7	1	12	8	3	0	54
		% within Cluster	1.9%	40.7%	13.0%	1.9%	22.2%	14.8%	5.6%	0.0%	100.0%
		% within Index Audio-visual Presence	50.0%	71.0%	31.8%	4.5%	19.7%	7.5%	6.1%	0.0%	17.9%
		% of Total	0.3%	7.3%	2.3%	0.3%	4.0%	2.7%	1.0%	0.0%	17.9%
	Law and policy	Count	0	5	0	3	8	15	17	0	48
		% within Cluster	0.0%	10.4%	0.0%	6.3%	16.7%	31.3%	35.4%	0.0%	100.0%
		% within Index Audio-visual Presence	0.0%	16.1%	0.0%	13.6%	13.1%	14.0%	34.7%	0.0%	15.9%
		% of Total	0.0%	1.7%	0.0%	1.0%	2.7%	5.0%	5.6%	0.0%	15.9%
	Nature/ecosystem conservation	Count	1	2	10	12	24	57	11	5	122
		% within Cluster	0.8%	1.6%	8.2%	9.8%	19.7%	46.7%	9.0%	4.1%	100.0%
		% within Index Audio-visual Presence	50.0%	6.5%	45.5%	54.5%	39.3%	53.3%	22.4%	71.4%	40.5%
		% of Total	0.3%	0.7%	3.3%	4.0%	8.0%	18.9%	3.7%	1.7%	40.5%
	Sustainable Lifestyle	Count	0	2	5	6	17	27	18	2	77
		% within Cluster	0.0%	2.6%	6.5%	7.8%	22.1%	35.1%	23.4%	2.6%	100.0%
		% within Index Audio-visual Presence	0.0%	6.5%	22.7%	27.3%	27.9%	25.2%	36.7%	28.6%	25.6%
		% of Total	0.0%	0.7%	1.7%	2.0%	5.6%	9.0%	6.0%	0.7%	25.6%
Total		Count	2	31	22	22	61	107	49	7	301
		% within Cluster	0.7%	10.3%	7.3%	7.3%	20.3%	35.5%	16.3%	2.3%	100.0%
		% within Index Audio-visual Presence	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	0.7%	10.3%	7.3%	7.3%	20.3%	35.5%	16.3%	2.3%	100.0%

Cluster * Nature Imagery Crosstabulation

			Nature Imagery			
			Low	Moderate	High	Total
Cluster	Flora/Fauna Conservation	Count	2	6	46	54
		% within Cluster	3.7%	11.1%	85.2%	100.0%
		% within Nature Imagery	2.7%	6.9%	32.9%	17.9%
		% of Total	0.7%	2.0%	15.3%	17.9%
	Law and policy	Count	18	18	12	48
		% within Cluster	37.5%	37.5%	25.0%	100.0%
		% within Nature Imagery	24.3%	20.7%	8.6%	15.9%
		% of Total	6.0%	6.0%	4.0%	15.9%
	Nature/ecosystem conservation	Count	33	42	47	122
		% within Cluster	27.0%	34.4%	38.5%	100.0%
		% within Nature Imagery	44.6%	48.3%	33.6%	40.5%
		% of Total	11.0%	14.0%	15.6%	40.5%
	Sustainable Lifestyle	Count	21	21	35	77
		% within Cluster	27.3%	27.3%	45.5%	100.0%
		% within Nature Imagery	28.4%	24.1%	25.0%	25.6%
		% of Total	7.0%	7.0%	11.6%	25.6%
Total		Count	74	87	140	301
		% within Cluster	24.6%	28.9%	46.5%	100.0%
		% within Nature Imagery	100.0%	100.0%	100.0%	100.0%
		% of Total	24.6%	28.9%	46.5%	100.0%

Cluster * Time of Posting Crosstabulation

			Time of Posting			
			evening to night 18:01 - 00:00	afternoon 12:00 - 18:00	morning 06:00 - 11:59	Total
Cluster	Flora/Fauna Conservation	Count	18	27	9	54
		% within Cluster	33.3%	50.0%	16.7%	100.0%
		% within Time of Posting	17.0%	22.3%	12.2%	17.9%
		% of Total	6.0%	9.0%	3.0%	17.9%
	Law and policy	Count	15	21	12	48
		% within Cluster	31.3%	43.8%	25.0%	100.0%
		% within Time of Posting	14.2%	17.4%	16.2%	15.9%
		% of Total	5.0%	7.0%	4.0%	15.9%
	Nature/ecosystem conservation	Count	43	50	29	122
		% within Cluster	35.2%	41.0%	23.8%	100.0%
		% within Time of Posting	40.6%	41.3%	39.2%	40.5%
		% of Total	14.3%	16.6%	9.6%	40.5%
	Sustainable Lifestyle	Count	30	23	24	77
		% within Cluster	39.0%	29.9%	31.2%	100.0%
		% within Time of Posting	28.3%	19.0%	32.4%	25.6%
		% of Total	10.0%	7.6%	8.0%	25.6%
Total		Count	106	121	74	301
		% within Cluster	35.2%	40.2%	24.6%	100.0%
		% within Time of Posting	100.0%	100.0%	100.0%	100.0%
		% of Total	35.2%	40.2%	24.6%	100.0%

Appendix 2 - Reliability Tests

Third-Party Endorsement

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.421	.434	2

Item Statistics

	Mean	Std. Deviation	N
Main Window 3PE	1.49	.724	301
Caption 3PE	1.40	.548	301

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	.277	.277	.277	.000	1.000	.000	2

Figurative language

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.513	.514	2

Item Statistics

	Mean	Std. Deviation	N
Main Window FL	1.59	.675	301
Caption FL	1.62	.635	301

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	.346	.346	.346	.000	1.000	.000	2

Framing

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.789	.791	2

Item Statistics

	Mean	Std. Deviation	N
MW Framing	1.79	.792	301
Cap Framing	1.71	.735	301

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	.654	.654	.654	.000	1.000	.000	2

Interactivity Appeal

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.562	.563	2

Item Statistics

	Mean	Std. Deviation	N
MW Interactivity appeal	2.44	1.211	301
Cap Interactivity appeal	2.73	1.173	301

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	.391	.391	.391	.000	1.000	.000	2

Audio-visual Presence

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.617	.618	3

Inter-Item Correlation Matrix

	Vividness	Animation	Backsound
Vividness	1.000	.393	.407
Animation	.393	1.000	.252
Backsound	.407	.252	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	.350	.252	.407	.155	1.614	.006	3

Intercoder Reliability Test Recap

Code Scheme Tested	% Agreement
main window 3PE	81,25
caption 3PE	87,50
main window figurative language	71,88
caption figurative language	75,00
main window framing	78,13
caption framing	78,13
main window interactivity appeals	90,63
caption interactivity appeals	93,75
vividness	90,63
animation	87,50
backsound	93,75
nature imagery	78,13
dimension format	93,75

Appendix 3 - Factor Analysis

Communalities

	Initial	Extraction
Main Window 3PE	1.000	.719
Caption 3PE	1.000	.651
Main Window FL	1.000	.626
Caption FL	1.000	.738
MW Framing	1.000	.828
Cap Framing	1.000	.819
MW Interactivity appeal	1.000	.679
Cap Interactivity appeal	1.000	.637
Vividness	1.000	.692
Animation	1.000	.568
Backsound	1.000	.714

Extraction Method: Principal Component Analysis.

Component Correlation Matrix

Component	1	2	3	4	5
1	1.000	.061	.086	.013	.217
2	.061	1.000	.034	-.061	.030
3	.086	.034	1.000	-.028	-.010
4	.013	-.061	-.028	1.000	-.043
5	.217	.030	-.010	-.043	1.000

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

Component Matrix[a]

	Component				
	1	2	3	4	5
Main Window 3PE		-.134	.495	.673	
Caption 3PE	-.242	-.219	.395	.501	.369
Main Window FL	.420	.266	.448	-.334	.257
Caption FL	.128	.196	.682	-.409	.224
MW Framing		.879		.209	
Cap Framing	.219	.810	-.172	.275	.100
MW Interactivity appeal	.687			.143	-.428
Cap Interactivity appeal	.521	-.109	.371		-.456
Vividness	.624	-.246	-.245	.216	.368
Animation	.699	-.158	-.116	.192	
Backsound	.544	-.187	-.280	-.213	.509

Extraction Method: Principal Component Analysis.
a. 5 components extracted.

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
Main Window 3PE		.211			.819
Caption 3PE	-.112	-.248			.759
Main Window FL	.148	.142	.175	.743	
Caption FL			-.109	.849	
MW Framing	.896		-.122		
Cap Framing	.901				
MW Interactivity appeal	.102	.796	.184		
Cap Interactivity appeal	-.131	.741		.260	
Vividness		.189	.798		.121
Animation		.547	.509		
Backsound			.801	.165	-.198

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

Correlation Matrix

		Main Window 3PE	Caption 3PE	Main Window FL	Caption FL	MW Framing	Cap Framing	MW Interactivity	Caption Interactivity	Aud-vis presence
Correlation	Main Window 3PE	1.000	.277	.017	.051	-.015	-.030	.074	.056	.078
	Caption 3PE	.277	1.000	-.072	.014	-.103	-.082	-.122	-.042	-.027
	Main Window FL	.017	-.072	1.000	.346	.136	.101	.190	.136	.071
	Caption FL	.051	.014	.346	1.000	.058	.012	-.045	.191	-.068
	MW Framing	-.015	-.103	.136	.058	1.000	.654	.048	-.039	-.070
	Cap Framing	-.030	-.082	.101	.012	.654	1.000	.091	-.032	.045
	MW Interactivity	.074	-.122	.190	-.045	.048	.091	1.000	.391	.258
	Caption Interactivity	.056	-.042	.136	.191	-.039	-.032	.391	1.000	.112
	Audio-visual presence	.078	-.027	.071	-.068	-.070	.045	.258	.112	1.000
	Animation	.104	-.134	.129	-.038	-.052	.081	.376	.225	.393
	Backsound	-.152	-.071	.151	.010	-.097	.032	.156	.110	.407

Appendix 4 - Hierarchical multiple regression

Descriptive Statistics

	Mean	Std. Deviation	N
Engagement Score in 5 scale	2.54	1.050	301
Index 3PE	2.8904	1.02206	301
Index Figurative Language	3.2126	1.07454	301
Index Framing	3.4950	1.38954	301
Index Interactivity appeal	5.1694	1.98860	301
Index Audio-visual Presence	7.1960	1.60773	301
Nature Imagery	2.22	.816	301
Caption Length	1.5947	.73610	301
Dimention Format	.7542	.43131	301
Time of Posting	2.89	.767	301

Correlations

		Engagement Rate in 5 scale	Index 3PE	Index Figurative Language	Index Framing	Index Interactivity appeal	Index Audio-visual Presence	Nature Imagery	Caption Length	Dimention Format	Time of Posting
Pearson Correlation	Engagement Score in 5 scale	1.000	.040	.022	-.111	-.264	-.347	.231	.160	-.375	-.023
	Index 3PE	.040	1.000	.009	-.072	.003	-.040	-.103	.229	-.152	.040
	Index Figurative Language	.022	.009	1.000	.106	.173	.070	.030	.067	.142	-.021
	Index Framing	-.111	-.072	.106	1.000	.023	-.017	.004	-.093	.009	-.010
	Index Interactivity appeal	-.264	.003	.173	.023	1.000	.336	-.150	.011	.305	-.032
	Index Audio-visual Presence	-.347	-.040	.070	-.017	.336	1.000	-.226	-.096	.166	.014
	Nature Imagery	.231	-.103	.030	.004	-.150	-.226	1.000	-.079	-.017	.112
	Caption Length	.160	.229	.067	-.093	.011	-.096	-.079	1.000	-.031	.024
	Dimention Format	-.375	-.152	.142	.009	.305	.166	-.017	-.031	1.000	.072
	Time of Posting	-.023	.040	-.021	-.010	-.032	.014	.112	.024	.072	1.000
Sig. (1-tailed)	Engagement Score in 5 scale	.	.245	.354	.027	<,001	<,001	<,001	.003	<,001	.343
	Index 3PE	.245	.	.437	.107	.482	.247	.037	.000	.004	.243
	Index Figurative Language	.354	.437	.	.034	.001	.112	.300	.123	.007	.358
	Index Framing	.027	.107	.034	.	.348	.386	.473	.053	.438	.432
	Index Interactivity appeal	.000	.482	.001	.348	.	.000	.004	.427	.000	.291
	Index Audio-visual Presence	.000	.247	.112	.386	.000	.	.000	.048	.002	.403
	Nature Imagery	.000	.037	.300	.473	.004	.000	.	.085	.386	.026
	Caption Length	.003	.000	.123	.053	.427	.048	.085	.	.294	.341
	Dimention Format	.000	.004	.007	.438	.000	.002	.386	.294	.	.107
	Time of Posting	.343	.243	.358	.432	.291	.403	.026	.341	.107	.
N	Engagement Score in 5 scale	301	301	301	301	301	301	301	301	301	301
	Index 3PE	301	301	301	301	301	301	301	301	301	301
	Index Figurative Language	301	301	301	301	301	301	301	301	301	301
	Index Framing	301	301	301	301	301	301	301	301	301	301
	Index Interactivity appeal	301	301	301	301	301	301	301	301	301	301
	Index Audio-visual Presence	301	301	301	301	301	301	301	301	301	301
	Nature Imagery	301	301	301	301	301	301	301	301	301	301
	Caption Length	301	301	301	301	301	301	301	301	301	301
	Dimention Format	301	301	301	301	301	301	301	301	301	301
	Time of Posting	301	301	301	301	301	301	301	301	301	301

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.542[a]	.294	.275	.894
2	.543[b]	.294	.273	.895

a. Predictors: (Constant), Dimention Format, Index Framing, Nature Imagery, Caption Length, Index Figurative Language, Index 3PE, Index Audio-visual Presence, Index Interactivity appeal

b. Predictors: (Constant), Dimention Format, Index Framing, Nature Imagery, Caption Length, Index Figurative Language, Index 3PE, Index Audio-visual Presence, Index Interactivity appeal, Time of Posting
c. Dependent Variable: Engagement Score in 5 scale

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	97.274	8	12.159	15.208	<,001[b]
	Residual	233.457	292	.800		
	Total	330.731	300			
2	Regression	97.393	9	10.821	13.496	<,001[c]
	Residual	233.338	291	.802		
	Total	330.731	300			

a. Dependent Variable: Engagement Score in 5 scale
b. Predictors: (Constant), Dimention Format, Index Framing, Nature Imagery, Caption Length, Index Figurative Language, Index 3PE, Index Audio-visual Presence, Index Interactivity appeal
c. Predictors: (Constant), Dimention Format, Index Framing, Nature Imagery, Caption Length, Index Figurative Language, Index 3PE, Index Audio-visual Presence, Index Interactivity appeal, Time of Posting

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.755	.426		8.818	<,001
	Index 3PE	-.042	.053	-.041	-.792	.429
	Index Figurative Language	.093	.050	.096	1.885	.060
	Index Framing	-.084	.038	-.111	-2.237	.026
	Index Interactivity appeal	-.042	.029	-.080	-1.448	.149
	Index Audio-visual Presence	-.148	.035	-.227	-4.213	<,001
	Nature Imagery	.214	.066	.166	3.237	.001
	Caption Length	.192	.073	.134	2.621	.009
	Dimention Format	-.790	.128	-.325	-6.163	<,001
2	(Constant)	3.816	.455		8.391	<,001
	Index 3PE	-.041	.053	-.039	-.765	.445
	Index Figurative Language	.093	.050	.095	1.868	.063
	Index Framing	-.084	.038	-.111	-2.232	.026
	Index Interactivity appeal	-.043	.029	-.081	-1.463	.145
	Index Audio-visual Presence	-.147	.035	-.226	-4.183	<,001
	Nature Imagery	.217	.067	.168	3.255	.001
	Caption Length	.193	.073	.135	2.628	.009
	Dimention Format	-.786	.129	-.323	-6.092	<,001
	Time of Posting	-.026	.068	-.019	-.385	.701

a. Dependent Variable: Engagement Score in 5 scale