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Impact of Neuromarketing-Driven Storytelling on Digital Marketing Effectiveness Among Youth Consumers

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Abstract

This research checks neuromarketing driven storytelling impact on the effectiveness of digital marketing among youth. Young audiences today are constantly bombarded with short-form, highly competitive content in digital form. Consequently, attracting their attention or persuading them is becoming increasingly difficult for brands. Storytelling has gained massive importance in digital marketing due to its ability to develop emotional connection, enhance brand perception and affect consumer behaviour.

The study was designed to analyse the effect of storytelling on engagement, brand recall, purchase intention, and finding the influential storytelling elements most among youth consumers, based on the context. The research design employed cross-sectional quantitative study. To collect primary data, an online survey was conducted using a structured questionnaire based on a five-point Likert scale. A convenience sampling technique was applied to gather 241 valid responses from digitally active youth consumers. The researchers employed various statistical methods to assess the overall effectiveness and impact of four factors. Descriptive statistics and percentage analysis were used to determine differences between groups, while chi-square test and regression analysis were used to assess relationships between variables.

The results have shown that storytelling driven by neuromarketing has an overall moderate effect on digital marketing. The average scores for engagement, brand recall and purchase intention were close to the neutral point but purchase intention was the strongest of these three outcomes. Categorised analysis showed that purchase intention had the highest percentage of respondents in the high category. Thus, it ensures that storytelling works better for consideration for buying instead of being memorable or engaging for long. Additionally, the chi-square test yielded no significant association between major demographic or usage variables and the outcome categories, which signifies that storytelling effects are not significantly different across youth segments.

The factors chosen revealed through regression only a small amount of variance in the outcome variables storytelling elements. Visual strength was the only significant positive predictor of purchase intention, thus a very influential element in student storytelling as per this study. The research suggests that storytelling through neuromarketing is a useful but moderately effective strategy for digital marketing for the youth with the strongest effect on purchase consideration. According to the study's results, marketers should embrace a visual-first approach to storytelling, reinforced by clear, relatable and emotionally-engaging text.

Keywords: Neuromarketing, Storytelling, Digital Marketing, Youth Consumers, Brand Recall, Engagement, Purchase Intention

CHAPTER 1: INTRODUCTION

Storytelling is a key component in brand marketing via advertising. In an era where visual short-form content is regularly consumed, brands must advertise to capture engagement as advertisements are often scrolled or skipped. This tactic is particularly effective with millennial and generation Z (Gen Z) consumers. Neuromarketing data is called upon to quantify side cognitive and emotional responses to advertising (Guixeres et al., 2017; Boksem et al., 2025) since traditional survey methodologies fail to adequately capture those responses as they are largely unconscious.

Advertising neuroscience metrics are predictive of watch or click behavior and recall of ads, as evidenced by Guixeres et al. 2017 work in advertising click data. Wang et al. 2016 work provides evidence that successful advertising narrative constructs the desired relationship of the audience with the advertised product and aids in the reinforcement of the brand, which is also an effect of a strong narrative advertising structure.

Simultaneously, neuromarketing techniques are being refined to provide options that are more adaptable and more closely aligned with real-world applications. An example of this includes the marketing research applications of mobile fNIRS as the mobile neuroimaging marketing research example that attempts to assess consumer reactions in more real-world contexts compared to the traditional consumer research context (Krampe et al., 2018). All this considered, the developments provide a backdrop for the research study investigating the impact of story-driven digital marketing on engagement, memory, and persuasion, using the frameworks and the evidence of neuromarketing and narrative processing as a foundation (Guixeres et al., 2017; Boksem et al., 2025).

Storytelling has emerged as one of the most popular techniques employed by marketers in the digital marketplace. They try to come up with compelling and creative stories to get the attention of younger audiences quickly and establish an emotional bond with the brand. Stories also help with the recall of the brand, particularly in the case of younger consumers as they are inundated with a barrage of short content and make quick disengagement decisions. Due to the mostly automated and nonconscious nature of these processes, the traditional methods of data collection such as surveys and interviews are insufficient. As a result, neuromarketing, which originates from consumer neuroscience and is able to record attention and emotion through practical measures, has become a more prominent data collection method. (Guixeres et al., 2017; Scholz et al., 2025).

There has been an increasing number of studies, primarily for the purpose of establishing an empirical foundation regarding the relationship between neuroscience and practical outcomes of advertisement. In the context of online

digital marketing, Guixeres et al. (2017) have identified the importance of measuring advertising effectiveness through neuroscience and practical outcomes (Guixeres et al., 2017).

Due to the structure of a narrative, audience engagement can be directed in terms of what information is most relevant to them, as well as what is the best use of their time. With video commercials, the narrative structure of a video has been observed to increase audience preference for both the video and the product being advertised. This highlights the importance of how and where brands are integrated within storyline and the construction of the story as a whole (Wang et al., 2016).

Meanwhile, there has been a noted trend in neuromarketing research that is creating a bridge to research that is more applicable to real-world scenarios. This includes the use of mobile fNIRS (Functional Near-Infrared Spectroscopy)—a type of mobile neuroimaging technology—to assess neural responses to brands outside of a lab, as well as the general trend to assess consumer responses in a situation that more closely resembles real-world use of digital (Krampe et al., 2018).

Finally, more recent evidence collected on a bigger scale strengthens the case for the use of neural (brain) data in understanding persuasion as a phenomenon that occurs on a large scale. A mega-analysis of multiple fMRI studies (Scholz et al., 2025) has reported systematic relationships between brain activity and the effectiveness of the respective stimulus in multiple domains, including those related to marketing, which confirms the value of neuromarketing in answering the question of why some messages are more effective than others.

CHAPTER 2: REVIEW OF LITERATURE

According to Gupta et al. (2025), neuromarketing strengthens marketing research by integrating non-conscious signals involving attention, emotion, and decision making. These signals are useful in digital environments where consumers make snap judgments and self-reports fail to explain true drivers of engagement. This supports strategic use of neuromarketing in explaining engagement with digital storytelling.

Bhardwaj et al. (2023) state that neuromarketing research has grown, but in order to understand the relationship between biological measures and marketing impacts, the field needs to be more conceptually clear. While they note several studies succeed in measuring attention and arousal, they note the measures rarely translate to marketing outcomes, including preference, memory, and intention to purchase. This is particularly important in digital storytelling where stories attempt to prompt emotional involvement and action.

Thomas and Grigsby (2024) describe how storytelling works within persuasive marketing techniques by lessening audience resistance and increasing receptiveness to brand messages. Presenting claims indirectly, narrative structures give audience members the opportunity to "enter" the story and emotionally relate to characters or situations, and, as a result, subconsciously take away the intended message. Story oriented marketing in particular has a high return in investment, because targeted consumers typically skip advertisements, but will consume story oriented marketing as they scroll through platforms.

Jääskeläinen et al. (2020) clarify how narrative processing should be viewed as active. Audiences, instead of passively absorbing the story, mentally simulate the story, create their own predictions about the outcome, and interpret whatever meaning the story presents. Depending on the emotional significance, a story with a high level of coherence will lead to stronger memories of the story. Storytelling in marketing should create a narrative that audiences will remember in association with a brand long after engaging with branded content. In comparison to informational marketing content, audiences mentally simulate a far richer and more engaging story when they consume story content in marketing.

Cohen and Parra (2016) suggest that well developed narratives not only entertain viewers individually, but rather they coordinate the way a mass audience process the same information at the same time. This theory is significant for marketers as the mass audience processing information, respectively mass audience engagement, typically increases shareability, discussion, and the overall reach of a piece of content.

Cohen et al. (2017) build on the concept of shared engagement by demonstrating that the use of synchrony-like measures can capture the extent to which a narrative is effective at maintaining a group's attention. A well constructed story captures the focus of its audience at the same time, and elicits a similar emotional and cognitive response to the story. This supports the application of neuromarketing to identify story elements that produce optimal audience engagement, which can help marketers fine-tune the emotional and narrative arcs of a story.

Ohad and Yeshurun (2023) highlight the importance of cognitive and emotional aspects of narrative engagement and suggest that engagement increases when a narrative aids the viewer in the mental organization of the information being presented. They propose that the engagement with a story increases when the narrative helps the viewer understand the clarity and significance of the narrative structure and interrelation of the events. The emotional and cognitive aspects of a narrative suggest that in a digital marketing situation, emotional engagement (e.g., excitement, empathy) and cognitive engagement (e.g., solid and clear design, logical, and relatable) are crucial elements of storytelling in digital marketing.

Guixeres et al. (2017) show advertising effectiveness can, and has been, predicted using neuroscientific and physiological methods, among effectiveness outcomes, recall and liking, which are critical for digital campaigns. The findings demonstrate that, contrary to the belief that self-reported measures are the most accurate, implicit measures can be more predictive, especially when consumers are unable to verbalize the reason for liking or remembering the advertisement. Digital storytelling shares this characteristic because stories can influence the viewer at a nonconscious level through mood, and emotional attention.

Golnar-Nik et al. (2019) show the value of EEG-based features linked to consumer neural stimulus and decision making processes. EEG features show consumer engagement moments during ad exposure. Golnar-Nik et al. engagement is not static. It can increase or decrease during the narrative, emotional or intrusive moments, or during the introduction or removal of the brand. When developing digital stories, it is more relevant to investigate varying engagement responses during narrative arcs compared to obtaining a single high/low engagement rating.

As Wang et al. (2016) narratively structured video commercials and brand placements influenced advertising and product preferences. It is not the content of the story that matters most, but the engagement spanning factors of timing, plot, and brand placements. In digital storytelling, viewers want to avoid engagement detractors like interrupted narrative flow through poor brand placements, whereas seamlessly integrated brand placements can provide the needed engagement spurring paradox.

Cohen and Parra (2016) state that not all moments of a story have equal power to persuade because factors such as a story's turning point that hold a listener's attention. For marketers, this suggests that the initial moments of a story (the hook) and the story's major emotional peaks, could be highly important for grabbing a listener's attention and forming a lasting memory. This indicates that digital storytelling should be designed carefully, especially at the opening and climax, in accordance to the pattern of attention when people are consuming stories.

Jääskeläinen et al. (2020) point out that, for example, when a story gives the listener a mental picture and evokes an emotion, the listener withstands the story better, and this makes recalling the story later easier. This indicates that when a story focuses on the youth's identity, problems, humor, or goals, the story would be easier to recall. In digital marketing, memory recall is very important because of high competition for the consumer's attention.

Thomas and Grigsby (2024) state that storytelling is more effective when the audience empathizes or relates to the characters or situations, as this leads to greater trust and diminished counter-arguments audience members might have. Young consumers are likely to identify and give in to the persuasive power of a narrative designed to reflect their social reality, lifestyle, or values.

Krampe, Gier, and Kenning (2018) demonstrate the use of mobile functional near-infrared spectroscopy (fNIRS) as a more practical and "real-world" neuroimaging technique for neuromarketing research. They employ a validity approach to attempt to replicate a well-recognized neural phenomenon seen through fMRI, the "first-choice-brand" effect, and determine that mobile fNIRS could be useful in consumer-neuroscience research, providing marketing researchers with methodological suggestions. This facilitates digital storytelling research because it helps justify the need to measure primarily subconscious cognitive and affective processes.

Gupta et al., Boksem, M. A. S., (2025) , Considering the meaning of rapidly occurring judgement within the context of the statement, the authors explain that the use of emotion, intuition, and impulse based systems are primary contributors to the decision making. When the Digital Storytelling is used within Short Video Feeds, the target audience of the Digital Storytelling is more or less forced to exercise judgement within that context. This means that the audience must quickly decide to either continue to view the video or to scroll and see other content. Given this, the storytellers must identify and use the most effective neuromarketing strategies to create emotion and impulse based engagement that will hold the attention of the audience during the video.

Bhardwaj et al. (2023) make the observation that numerous neuromarketing studies identify a lack of comparative realignment between the construct and engagement, which is the real world measure of behavioral engagement, defined as viewed completion, click throughs, and sharing of a post. The measurement construct of engagement for digital storytelling is not merely the emotional perception, but is defined by numerous behavioral actions, including, but not limited to, the rewatching of content, the posting of comments, and the active engagement through the recommending of the content to other individuals. This behavior has demonstrated the existence of a substantial void in the research and the effective framework needed to address the focused neuromarketing impact behavioral outcomes, especially amongst the more active social media users in the context of Digital Storytelling within the Short Video Formats.

Guixeres et al. (2017) argue that emotional resonance is the best predictor of success for any advertisement. How people feel about something strongly influences if they pay attention to it or if they remember it. Most of the time people use digital storytelling to evoke emotion whether it be surprise, joy, empathy, or inspiration. They want the audience to remember the brand. This also means that emotional intensity and attention stability are potential metrics for neuromarketing to evaluate and compare emotional storytelling strategies to determine which stories will be the best recalled by an audience.

Golnar-Nik et al. (2019) argue that brain metrics help identify the differences between ads that self-report surveys suggest are the same. Two stories may be rated the same for being "good" but one may be rated higher for attention consistency, engagement, or emotional intensity. These differences may be the most important to digital marketers since they will determine whether the story will keep audience engagement or if it will be forgotten after being seen.

Wang et al. (2016) suggest that the placement of the brand and the flow of the narrative are equally important to achieve the desired persuasion of the audience. If branding is too out of place or makes sense, it will affect the story negatively, and audience will lose their positive feelings about it. It is also important for younger audience since they feel like they are being manipulated by the marketers and will lose interest if the story is not genuine.

Yeshurun and Ohad (2023) assert that the stability of a story's engagement can be enhanced by its narrative meaning and an emotional payoff. This is similar to the way attention can be captured throughout the story. For digital storytellers, this means that even with short stories, they should plan their story in the form of a story arc, and an emotional resolution, while also keeping the audience's curiosity. This provides evidence to support the need to examine story elements such as pacing, clarity, relatability, and emotional triggers, to explore their impacts on engagement, recall and subsequent purchase intentions of young consumers.

Bhardwaj et al. (2023) state that future research in neuromarketing should aim to develop more coherent frameworks that combine storytelling elements, neuromarketing metrics and marketing results. This directly supports the purpose of this study as it seeks to uncover the impact of digital storytelling on youth engagement and consumer behavior through neuromarketing mechanisms. A targeted scope of literature supports the investigation of storytelling as more than just creative content, but as an evidence-based persuasive mechanism with known effects.

Research Gap

- Neuromarketing-driven storytelling provides us with some evidence regarding youth engagement, recall, and purchase intention, yet it remains a weak connection for all three outcomes.
- There is a lack of research which isolates the elements of storytelling that are most likely to shape the behavior of young consumers in the context of digital marketing.
- Absence of youth-specific Gen Z/young consumer data employing actual digital formats where advertisements are rapidly bypassed

Objectives

1. **To analyse the impact of neuromarketing-driven storytelling on digital marketing effectiveness among youth consumers** *(engagement, brand recall, purchase intention).*
2. **To identify the storytelling elements** *(emotion, visuals, relatability, message clarity)* **that influence youth consumers most in digital marketing.**

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction.

This chapter outlines the research design, data collection, sampling strategy, and statistical methods used to assess the effects of neuromarketing-based storytelling on perception of digital marketing among youth consumers. The methodology is designed to achieve the study objectives by measuring (i) effectiveness outcomes of digital marketing–engagement, brand recall and purchase intention; and (ii) key story telling elements–emotion, visual, relatable and message clarity.

3.2 Research design

A cross-sectional survey design was used. This research is descriptive and explanatory: it describes youth consumers' responses to story-driven digital advertising, and statistically tests relationships between storytelling factors and marketing effectiveness outcomes. In a form that can be subjected for percentage analysis, Chi-square to find association and regression modelling, structured questionnaire with Likert scale statements was used for collection of data.

3.3 Data Collection Methodology.

An online survey was conducted to collect the primary data. The instrument contained two parts: (a) demographic information including age group, gender, education level, average daily social media usage, and most commonly used platform and (b) opinion statements rated on a five-point Likert scale (Strongly Disagree to Strongly Agree).

The statements in the questionnaire were framed on four different constructs, namely engagement with story-based digital advertisement (for example, attention, watching fully, sharing, willingness to learn more), brand recall (for example, remembering the brand and message), purchase intention (for example, noting the consideration of buying), and use of storytelling in advertisement (emotion, visuals, relatable, clear message, and combined effect). Responses automatically recorded in a sheet that is easily exported as a CSV file.

3.4 Sampling Technique.

As the target audience of study includes youth who are digitally active, an easily accessible non-probability sampling technique was used to reach them online. Participants were recruited online and answered the questionnaire voluntarily. 241 valid responses were collected in total.

The sample represents youth consumer groups in many ages. The highest age segments among the responses collected were 22-25 years (n=81) and 26-29 years (n=80). This was followed by responses that fell within the age group 18-

21 years (n=42) and 30 and above (n=38). The totality of subjects consisted of male (n=134) and female (n=107) subjects. Education levels included undergraduates (n=125), higher secondary (n=60), and postgraduates (n=56).

3.5 Data Analysis Plan

Before data analysis, we cleaned and coded them. The responses on the Likert scale were converted into numerical codes. The layout of the analysis plan is similar to the structure of Chapter 4. Frequencies and central tendency summaries for demographic variables and opinions statements.

- **Percentage analysis:** percentage breaks down each Likert item to interpret agreement/disagreement patterns.
- **chi-square test** was used to determine if there were any association between selected demographic variables (age group, gender and education) and key effectiveness measures (Engagement, recall and purchase intention), using categorized response.
- **Regression analysis** involved testing the predictive influence of elements of storytelling like emotion, visuals, relatability, message clarity, and combination of emotion and visuals on effectiveness of digital marketing. Depending on the adopted approach to modelling, the dependent variable is either composite effectiveness score or purchase intention.

Wherever multi-item composites (e.g., engagement scale or overall effectiveness scale) are created, internal consistency reliability will be assessed using Cronbach's alpha which should be acceptable before any inferential testing.

3.6 Ethical Consideration

The study was conducted ethically throughout the study. The survey was voluntary in nature, and the respondents were informed about its academic purpose. No specific information considered personally identifiable was collected. Responses will only be used for research purposes. The responses will be secured to protect privacy and comprehensive results will be reported. The participants had the right to remove themselves from the survey any time by stopping it.

3.7 Summary

Section	Title	Summary (What it covers)
3.1	Introduction	Explains the overall methodology used to study the impact of **neuromarketing-driven storytelling** on **digital marketing effectiveness** among youth. Defines what is being measured: outcomes (**engagement, brand recall, purchase intention**) and storytelling elements (**emotion, visuals, relatability, message clarity**).
3.2	Research Design	Uses a **quantitative, cross-sectional** design (descriptive + explanatory). Data is collected via a structured **Likert-scale questionnaire** to statistically test relationships using **percentage analysis, Chi-square, and regression**.
3.3	Data Collection Methodology	Primary data collected through an **online survey (Google Form)**. Questionnaire has two parts: **demographics** and **Likert-scale opinion statements**. Items are organized around engagement, recall, purchase intention, and storytelling factors; responses exported to **CSV** for analysis.
3.4	Sampling Technique	Applies **non-probability convenience sampling** targeting digitally active youth. Total **241 valid responses**. Sample breakdown included age groups (largest: **22–25** and **26–29**), gender (**male/female**), and education (undergraduate, higher secondary, postgraduate).
3.5	Data Analysis Plan	Data cleaning + coding (Likert: **1 to 5**). Analysis follows: **descriptive stats**, **percentage breakdown**, **Chi-square** for associations between demographics and outcomes, and **regression** to test how storytelling elements predict effectiveness. Notes optional use of **Cronbach's alpha** if composite scales are created.
3.6	Ethical Consideration	Ensures **voluntary participation**, academic purpose disclosure, **no personal identifiers**, secure storage, and reporting in **aggregate form**. Participants could withdraw anytime by stopping the survey.
3.7	Summary of Research Methodology	Recaps: quantitative survey, convenience sample (**n=241**), Likert measures for storytelling + effectiveness outcomes, and analysis using **descriptive + percentage + Chi-square + regression** to meet study objectives.

CHAPTER 4: DATA ANALYSIS

4.1 Introduction

A growing body of research has examined the empirical link between neuroscience and advertising outcomes. Research in digital marketing shows that utilizing neuroscience-based measures of effectiveness along with practical measures are very important. The engagement of the audience can be effectively controlled by the structure of the narrative in directing the audience to substantial views. According to video commercial research, narrative structure increases audiences' liking for the video and the product being advertised in the video. This stresses the importance of brands embedded into the narrative and the overall construction of the narrative.

Simultaneously, neuromarketing studies are shifting to techniques that lend themselves better to real-life situations. This encompasses mobile neuroimaging tools as well as other methods that measure consumer reactions in environments that better resemble actual digital consumption than labs do. Recent large-scale data further bolsters the importance of neural data for our understanding of persuasion. A number of studies have reported systematic relationships between brain activity and effectiveness of persuasive messages across multiple domains, such as marketing. Explains why neuromarketing is useful in providing an explanation for some messages being better than others.

4.2 Descriptive Analysis

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
AverageDailySocialMedia UsageMultiple	241	4	1	5	2.71	1.278
MostFrequentlyUsedDigitalPlatform	241	4	1	5	2.69	1.341
Age	241	3	1	4	2.47	.958
Education	241	2	1	3	2.27	.835
Genderr	241	1	1	2	1.56	.498
Valid N (listwise)	241					

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18–21	42	17.4	17.4	17.4
	22–25	81	33.6	33.6	51.0
	26–29	80	33.2	33.2	84.2
	30 and above	38	15.8	15.8	100.0
	Total	241	100.0	100.0	

Genderr

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	107	44.4	44.4	44.4
	Male	134	55.6	55.6	100.0
	Total	241	100.0	100.0	

Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Higher Secondary	60	24.9	24.9	24.9
	Postgraduate	56	23.2	23.2	48.1
	Undergraduate	125	51.9	51.9	100.0
	Total	241	100.0	100.0	

Interpretation

Demographics sample profile.

- Individuals aged between 22 and 25 years made the largest group at 81 (33.6%).
- Gender: 134 (55.6%) Male and 107 (44.4%) Female.
- Among surveyed individuals, a majority had demonstrated high educational attainment.

The youth population which is above 70 percent of the total and the 22–29 range being dominant fall in your study. The gender representation is fairly balanced and the education profile is mainly of undergraduate, which is typical for youth survey.

Descriptive statistics:

Mean scores of related Likert items, on a scale of 1-5.

- Engagement (ENG_SCORE): Mean 2.93, SD 0.63.
- Brand Recall (REC_SCORE): Mean 2.96, SD 0.71.
- Purchase Intention (PI_SCORE): Mean 3.00, SD 0.91.
- Story Elements preference (ELEMENTS_SCORE: Emotion/Visuals/Relatability/Clarity): Mean 3.00, SD 0.65.

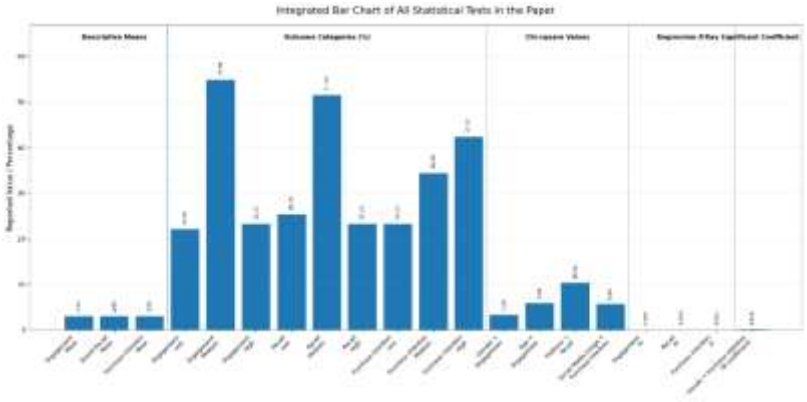


Figure 1 integrated statistical test

The overall averages do tend toward 3 (Neutral) which gives the impression that on the whole, youth respondents appear to be aware of neuromarketing storytelling and its utility. However, they do not seem to be hugely satisfied with its entire set of dimensions. The intention to purchase is slightly more than engagement and recall. This indicates that storytelling might be able to induce consideration or interest. However, that does not mean it translates to strong attention or memory for all people.

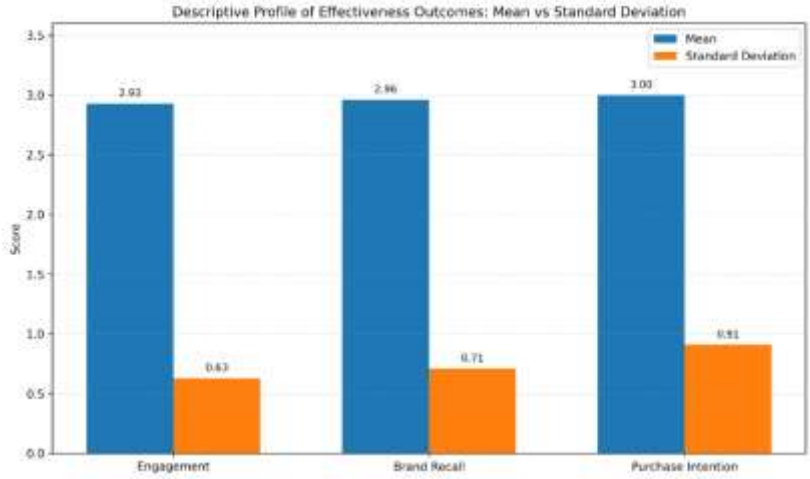


Figure 2 mean vs standard deviation

4.3 Percentage Analysis

Storybaseddigitaladvertisementsattractmyattentionmore

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	61	25.3	25.3	25.3
	Disagree	57	23.7	23.7	49.0
	Neutral	65	27.0	27.0	75.9
	Strongly Agree	26	10.8	10.8	86.7
	Strongly Disagree	32	13.3	13.3	100.0
	Total	241	100.0	100.0	

ammorelikelytowatchadigitaladvertisementfullywheni

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	48	19.9	19.9	19.9
	Disagree	53	22.0	22.0	41.9
	Neutral	64	26.6	26.6	68.5
	Strongly Agree	34	14.1	14.1	82.6
	Strongly Disagree	42	17.4	17.4	100.0
	Total	241	100.0	100.0	

ENG_SCORE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5.00	1	.4	.4	.4
	6.00	10	4.1	4.1	4.6
	7.00	15	6.2	6.2	10.8
	8.00	23	9.5	9.5	20.3
	9.00	33	13.7	13.7	34.0
	10.00	37	15.4	15.4	49.4
	11.00	32	13.3	13.3	62.7
	12.00	30	12.4	12.4	75.1
	13.00	24	10.0	10.0	85.1
	14.00	16	6.6	6.6	91.7
	15.00	12	5.0	5.0	96.7
	16.00	6	2.5	2.5	99.2
	17.00	2	.8	.8	100.0
	Total	241	100.0	100.0	

REC_SCORE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	4	1.7	1.7	1.7
	4.00	8	3.3	3.3	5.0
	5.00	27	11.2	11.2	16.2
	6.00	37	15.4	15.4	31.5
	7.00	30	12.4	12.4	44.0
	8.00	37	15.4	15.4	59.3
	9.00	33	13.7	13.7	73.0
	10.00	35	14.5	14.5	87.6
	11.00	20	8.3	8.3	95.9
	12.00	7	2.9	2.9	98.8
	13.00	3	1.2	1.2	100.0
	Total	241	100.0	100.0	

PI_SCORE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.00	15	6.2	6.2	6.2
	3.00	27	11.2	11.2	17.4
	4.00	53	22.0	22.0	39.4
	5.00	28	11.6	11.6	51.0
	6.00	43	17.8	17.8	68.9
	7.00	40	16.6	16.6	85.5
	8.00	17	7.1	7.1	92.5
	9.00	11	4.6	4.6	97.1
	10.00	7	2.9	2.9	100.0
	Total	241	100.0	100.0	

Interpretation

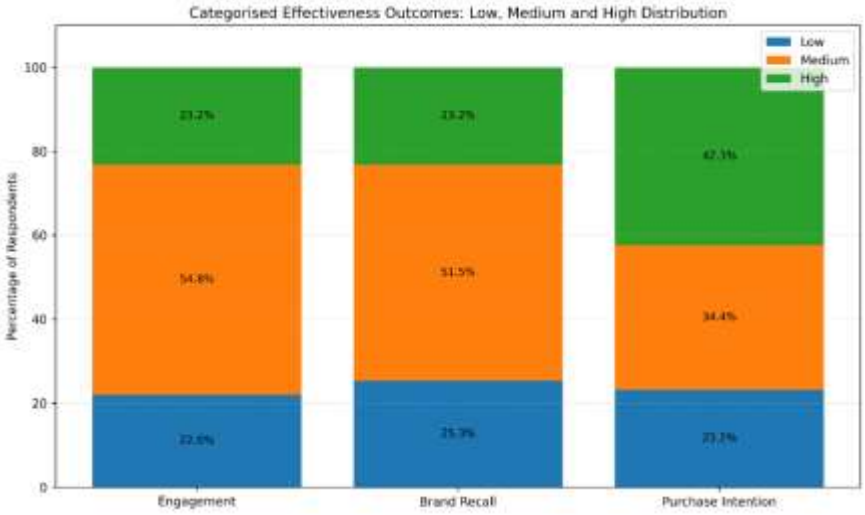


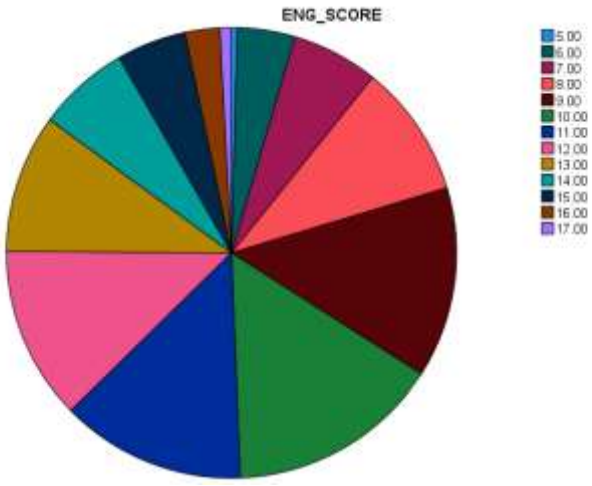
Figure 3 categorized effectiveness outcomes

Likert responses were condensed into to clarify interpretation.

- Disagree (1–2)
- Neutral (3)
- Agree (4–5)

High-level response patterns

- For most of the statements, responses at else Agree cluster around ~30% up to a ~40%, Neutral ~20% up to a ~30%, and Disagree ~30% up to a ~45%.



The strongest levels of agreement were 38 to 40%.

- **Purchase intention statement** (consider buying with powerful storytelling)

- **Message clarity** (clarity affects understanding and remembering)
- **Relatability connection** (feeling connected to brands using relatable stories)
- **Emotional appeal importance** (emotion as important element)

The percentage pattern suggests that storytelling can't necessarily be seen as persuasive, as many youth respondents disagree or are neutral. Most consistent positive leaning transpires around message clarity, emotional resonance, and relatability which corresponds most closely to your Objective 2 (key storytelling elements).

4.4 Chi-Square Test

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	15.752[a]	12	.203
Likelihood Ratio	16.541	12	.168
Linear-by-Linear Association	1.360	1	.244
N of Valid Cases	241		

a. 7 cells (26.9%) have expected count less than 5. The minimum expected count is .44.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.256	.203
	Cramer's V	.256	.203
N of Valid Cases		241	

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	28.300[a]	40	.917
Likelihood Ratio	32.880	40	.780
Linear-by-Linear Association	1.670	1	.196
N of Valid Cases	241		

a. 33 cells (60.0%) have expected count less than 5. The minimum expected count is .29.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.343	.917
	Cramer's V	.171	.917
N of Valid Cases		241	

Interpretation

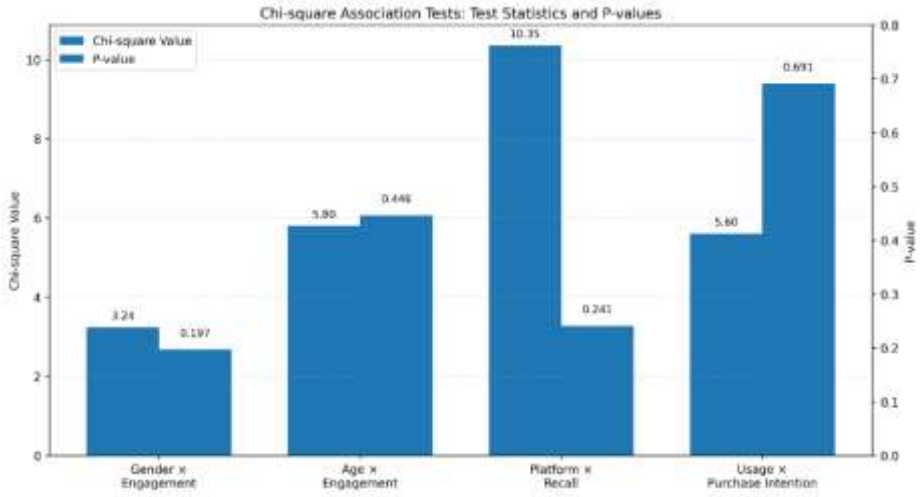


Figure 4 chi square association test

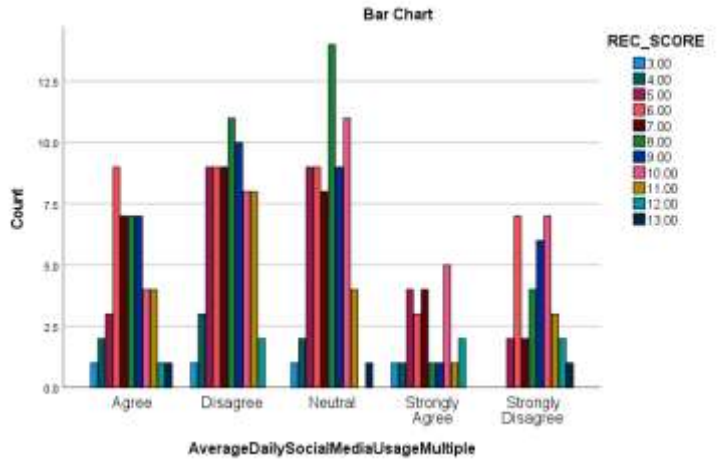
Chi-square requires categories, so composite outcomes were grouped into:

- Low (1.00–2.49), Medium (2.50–3.49), High (3.50–5.00)

Outcome category distributions:

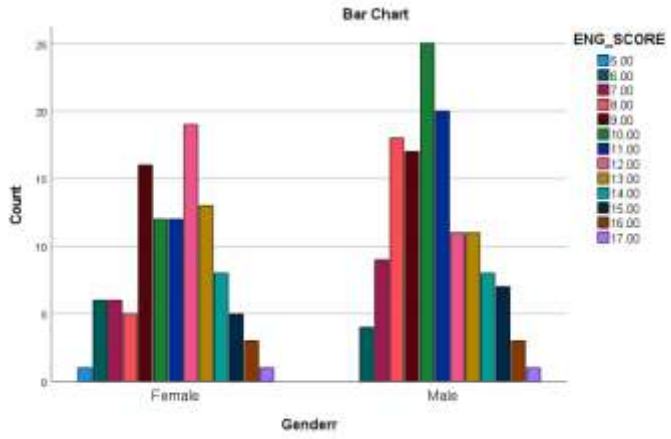
- Engagement category: Low 22.0%, Medium 54.8%, High 23.2%
- Recall category: Low 25.3%, Medium 51.5%, High 23.2%
- Purchase intention category: Low 23.2%, Medium 34.4%, High 42.3%

Interpretation: Engagement and recall are mostly medium, while purchase intention shows a higher share of high responses—meaning storytelling may more strongly influence willingness/consideration than it influences attention or memory.



Association tests

- Gender × Engagement category → Not significant ($p > 0.05$)
- Age group × Engagement category → Not significant ($p > 0.05$)
- Platform × Recall category → Not significant ($p > 0.05$)
- Social media usage × Purchase intention category → Not significant ($p > 0.05$)
- Education × Recall category → Not significant ($p > 0.05$)



Interpretation: There is no statistically significant association between the tested demographic/platform variables and the categorized outcomes. Practically, this suggests storytelling effects in this dataset are broadly similar across youth segments (age bands, gender, education, usage, platform). This supports the idea that storytelling impact may be more dependent on story design quality than on basic demographic differences.

4.5 Regression Analysis

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	345.291	4	86.323	16.709	<.001[b]
	Residual	1219.198	236	5.166		
	Total	1564.490	240			

a. Dependent Variable: ENG_SCORE

b. Predictors: (Constant), ammorelikelytoconsiderbuyingaproductwhenitsadverti, lengagemorewithadvertisementsthatcombineemotions, Emotionalstorytellinginadvertisementsincreasesmyinteres, Storydrivenadvertisementsincreasemywillingnesstolearn

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	8.455	.629		13.431	<.001		
	Emotionalstorytellinginadvertisementsincreasesmyinteres	.041	.121	.020	.342	.733	.978	1.022
	lengagemorewithadvertisementsthatcombineemotions	.896	.114	.462	7.858	<.001	.955	1.047
	Storydrivenadvertisementsincreasemywillingnesstolearn	.009	.117	.004	.076	.939	.949	1.054
	ammorelikelytoconsiderbuyingaproductwhenitsadverti	-.100	.108	-.054	-.919	.359	.962	1.039

a. Dependent Variable: ENG_SCORE

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	8.9297	13.0096	10.7012	1.19946	241
Residual	-5.11807	5.96044	.00000	2.25388	241
Std. Predicted Value	-1.477	1.924	.000	1.000	241
Std. Residual	-2.252	2.622	.000	.992	241

a. Dependent Variable: ENG_SCORE

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.410	4	3.852	.777	.541[b]
	Residual	1169.603	236	4.956		
	Total	1185.012	240			

a. Dependent Variable: REC_SCORE

b. Predictors: (Constant), ammorelikelytoconsiderbuyingaproductwhenitsadverti, lengagemorewithadvertisementsthatcombineemotions, Emotionalstorytellinginadvertisementsincreasesmyinteres, Storydrivenadvertisementsincreasemywillingnesstolearn

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	8.442	.617		13.692	<.001		
	Emotionalstorytellinginadvertisementsincreasesmyinteres	-.109	.119	-.060	-.916	.361	.978	1.022
	lengagemorewithadvertisementsthatcombineemotions	-.062	.112	-.037	-.560	.576	.955	1.047
	Storydrivenadvertisementsincreasemywillingnesstolearn	-.146	.115	-.084	-1.268	.206	.949	1.054
	ammorelikelytoconsiderbuyingaproductwhenitsadverti	.103	.106	.064	.966	.335	.962	1.039

a. Dependent Variable: REC_SCORE

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	7.1865	8.4503	7.8714	.25339	241
Residual	-4.89405	5.55591	.00000	2.20757	241
Std. Predicted Value	-2.703	2.285	.000	1.000	241
Std. Residual	-2.198	2.496	.000	.992	241

a. Dependent Variable: REC_SCORE

Interpretation

Regression tested whether storytelling elements predict effectiveness outcomes.

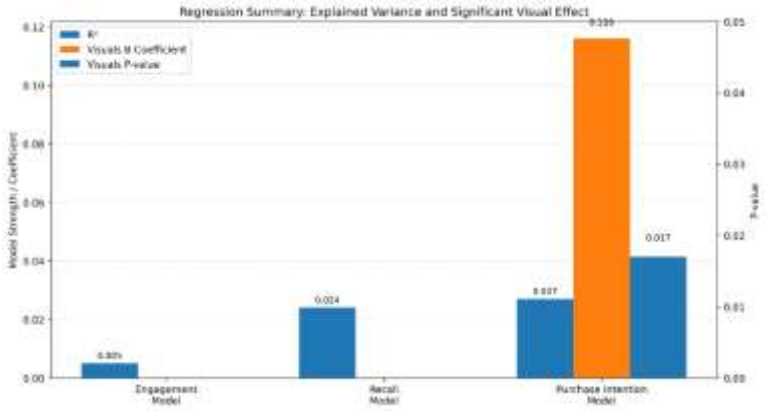


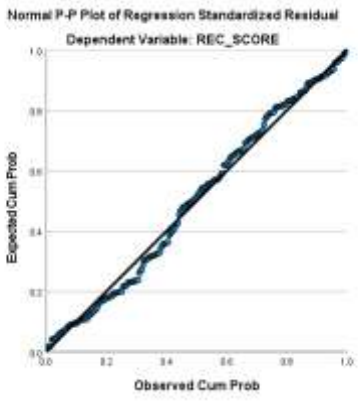
Figure 5 regression summary

Predictors (IVs):

- Emotional appeal importance
- Visual strength importance
- Relatability preference
- Message clarity importance

Dependent variables (DVs):

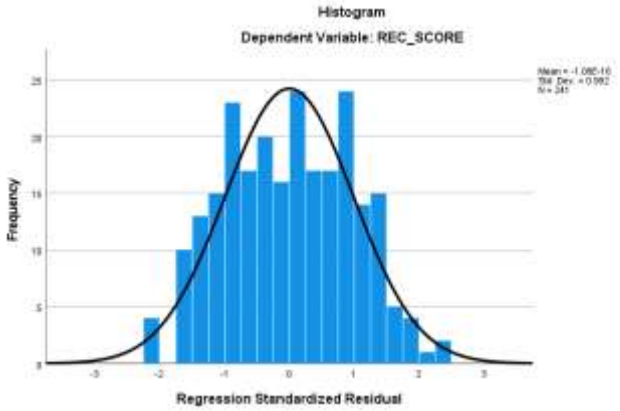
- ENG_SCORE (Engagement)
- REC_SCORE (Brand Recall)
- PI_SCORE (Purchase Intention)



Main findings

- **Engagement model:** Very low explained variance ($R^2 \approx 0.005$), model **not significant ($p > 0.05$)**
- **Recall model:** Low explained variance ($R^2 \approx 0.024$), model **not significant ($p > 0.05$)**

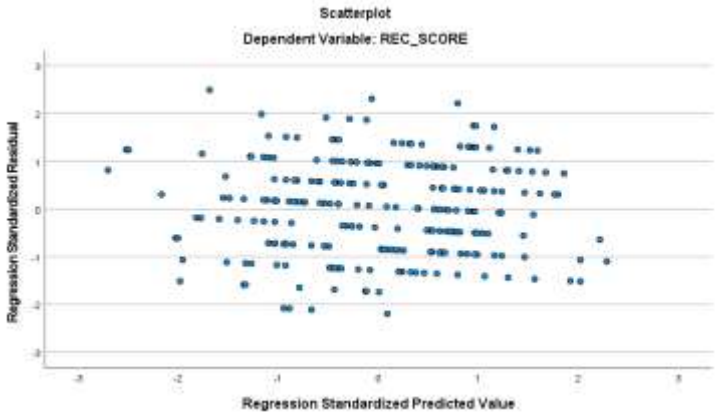
- **Purchase intention model:** Low explained variance ($R^2 \approx 0.027$), model **not significant overall ($p > 0.05$)**
    - But **Visuals showed a statistically significant positive coefficient** ($p \approx 0.017$)



Interpretation:

- The four storytelling elements (emotion, visuals, relatability, clarity) **do not strongly predict** engagement/recall/purchase intention in a combined model for this dataset.
- However, **visual strength stands out** as the **most influential individual predictor**, especially for **purchase intention**—meaning visually strong storytelling is more likely to move youth toward considering purchase.

This implies that while storytelling matters, **element-preferences alone** may not explain effectiveness well; other factors (story arc, pacing, platform context, ad length, authenticity, influencer presence, prior brand familiarity) likely drive much of the variance.



4.6 Objective – Wise Discussion

4.6.1 Objective 1: To analyse the impact of neuromarketing-driven storytelling on digital marketing effectiveness among youth consumers

The study's first objective was to analyse the effect of storytelling-induced by neuromarketing on effectiveness of digital marketing among youth consumer with respect to engagement, brand recall and purchase intention. According to the descriptive results, the mean score for engagement was 2.93, the brand recall was 2.96 and the purchase intention was 3.00. The data is near the neutral midpoint, revealing that storytelling has a moderate impact on youth consumers over very high impact. According to respondents, story-based digital advertisements get noticed and are quite effective, but do not cause a strong influence on all youth consumers universally.

The percentage analysis bolsters this pattern further. A large number of respondents have either taken a neutral stand or disagreed with several statements which indicates that storytelling does not always translate into persuasive communication. Nevertheless, regarding effectiveness outcomes, the item pertaining to purchase intention yielded the strongest positive rating, indicating that respondents were more likely to agree that powerful storytelling can make them consider purchasing a product. This suggests storytelling may be more effective at moving young consumers to interest and consideration than for driving strong attention or memory.

The chi-square analysis further enhances the interpretation's significance. Engagement, recall, and purchase intention were organized on low, medium and high scales. The study results indicate that engagement and recall were largely distributed across the medium category, while purchase intention had the largest proportion in the high category at 42.3 percent. These findings clearly indicate that storytelling is compelling for prompting consideration and potential purchasing action but does not guarantee sustained engagement or long-term brand recall. Within the youth consumer context, this finding is meaningful because young audiences consume an incredibly high volume of fast-moving content in the digital world and often make instant judgments. Consequently, narrating an anecdote may generate immediate interest, but that does not mean it will be easily retained.

The chi-square findings also indicated no statistically significant association between any of the demographic or usage variables and the key effectiveness outcomes. Gender showed no significant correlation with engagement, age group demonstrated no significant correlation with engagement, platform presented no significant correlation with recall, and social media usage exhibited no significant correlation with purchase intention. The messaging of storytelling appears to have a broadly similar influence across the youth sample and does not vary strongly by a basic background characteristic. This result practically means that storytelling as a form of digital marketing could have a more general relevance among youth segments, and is more about the quality of execution rather than just the segment being targeted.

The regression outcomes further clarifies the analysis. When we examined the engagement, recall, and purchase intention, the models had a very low explanatory power, which means that the storytelling elements tested do not

fully account for the effectiveness of digital marketing. This indicates that while narrative matters, there is no simple or isolated effect. Young consumers respond to more than just the emotion/narrative. They equally react to the pacing of the content, authenticity, presence of influencer, platform format, previous exposure to the brand as well as the way the brand is integrated into the story. As such, the first research question is proved by showing neuromarketing-driven storytelling has a real, but not very strong impact on the effectiveness of digital marketing, and that its major contribution appears to purchase intention rather than engagement or recall.

To conclude, the neuromarketing-driven storytelling affects digital marketing effectiveness of youth consumers in a selective manner. The effect is not equally strong across all dimensions of effectiveness. It seems most effective in nudging young consumers towards consideration and purchase interest. Involvement and memory are relatively less influenced. This means that brands should not use storytelling as just a creative plaything but a tactic of persuasion that is especially effective at the point of getting attention and moving a consumer to act.

4.6.2 Objective 2: To identify the storytelling elements that influence youth consumers most in digital marketing

The second objective of the study was to find out which storytelling elements influence the youth consumers the most in digital marketing. To this end, the four main elements were emotion, visuals, relatability and message clarity. The percent analysis indicates message clarity, relatability, emotional and purchase appeal statements have the highest level of agreement. This means that the youth respondents find these storytelling elements important and positively associated with effective advertising experiences. In particular, increasing clarity of message and relatability is said to add value to the advertisement as it makes it easier to understand and more personally relevant. The importance of emotions in storytelling is explored further by Mitzscherlich in his book on empathy.

However, the regression analysis provides a more precise answer as to which element in reality has the most effect. While the overall regression models were quite weak or not very predictive, one variable stood out clearly. The visual strength had a positive and significant effect on purchase intention. Thus, of all the storytelling elements tested, visuals were found to be the most reliable individual driver to get youth consumers to consider purchasing. In today's context of media consumption, the role of visuals is very important. Young consumers consume content in visual and quick turnaround environments. A video's first few seconds determine whether attention is retained or lost. In such scenes, powerful images serve as the initial hook and can immediately affect perception and curiosity.

Nonetheless, these findings aren't suggesting that emotion, relatability, and clarity are unimportant in this context. Instead, they seem to operate as additional or complementary element. While the percentage analysis indicates that respondents view these elements positively, the regression analysis indicates that they do not predict the outcomes as strongly as the visuals do in this dataset. It means that emotional storytelling, relatable characters or situations, and clear communication are still valuable elements of digital storytelling but their impact may depend on them being combined with good visual execution and right platform presentation. To put it differently, these components could

increase the convincingness of a digital story but are not in and of themselves sufficient for stronger effectiveness outcomes.

The analytical significance of the regression models is that it has low explained variance. According to it, four elements must not distract you from the relationship between the content and the youth audience. The effectiveness of a story in a digital world is likely influenced by a wider range of factors such as timing of the hook, narrative structure, authenticity, relevance, brand familiarity, influencer presence and platform-native design. As such, the second objective is met by establishing visuals as the factor with the greatest influence in this study, as well as showing that emotion, relatability, and clarity are still positively perceived supporting elements that contribute to the quality of overall communication.

To sum it up, the research finds the most influential storytelling element on youth consumers is visual intensity and quality. While being clear, relatable and emotionally appealing certainly helps, the predictive power is more supportive. Digital campaigns targeting youth must increasingly be designed with visuals first, and then supported by clear, relatable, and emotionally meaningful narratives. A mix like that is likely to create effective storytelling outcome in competitive digital spaces.

4.7 Implications of the Study

Practical Implications

The implications of the study's findings are significant for marketers and advertisers targeting youth consumers. As purchase intention is the variable that was most positively influenced, brands should ensure that stories are used strategically to move consumers along the funnel towards interest, trial and purchase consideration; not necessarily for strong recall or ongoing engagement. This finding means that digital campaigns used for youth should be adopting visuals-first campaigns. Visuals are the strongest significant predictor. This involves using strong opening frames, great imagery, platform-native video designs, and visually attractive storytelling hooks to stop the scroll. Incorporating audible sound effects alongside visual elements makes the story not only attention-grabbing, but it will also seem relevant, meaningful and comprehensible to youth.

Demographic differences had little or no meaningful impact on most tested associations. According to this, marketers don't need to extensively rely on broad segmentation by gender, age or platform while designing storytelling campaigns addressing the youth. We should not ignore story ideas but rather focus more on execution, narrative, visual, and relevance to youth life. This means in practice, better creative design may be more effective than simple demographic targeting.

Theoretical Implications

It also contributes theoretically to the study of neuromarketing-driven storytelling in digital marketing. The research supports that storytelling relates to measurable dimensions of marketing effectiveness, especially purchase intention,

but disconnect is also evident, meaning this connection is not strong in all situations. Significantly, this shows that storytelling should not be thought to be a uniformly powerful persuasive tool across outcomes. Its effects vary according to which dimension one measures. As a result, this research contributes to the body of literature by demonstrating that persuasive storytelling is probably better suited for persuasion and consideration than for attention or memory.

The findings show that storytelling elements in isolation do not account for digital marketing effectiveness. The low R square values indicate that the outcomes of storytelling emerge out of a wider interplay of narrative, emotional, visual and contextual variables. This validates the theoretical standpoint of the multilevel character of digital persuasion and makes a case for a framework that incorporates storytelling structure, neuromarketing signals and actual behaviour in a singular model.

Implications for Future Research

The research outlined many avenues for future studies. The subsequent study should include variables related to story pacing, authenticity, narrative structure, influencer endorsement, product relevance, prior brand familiarity, etc. as the explanatory power of the regression models was low. The effectiveness of digital storytelling on youth consumers is possible to measure with these variables. In future studies, it is also suggested to move away from self-reported survey responses and use more robust measures based on a person's behaviour or neuromarketing, such as attention, watch time, CTR, sharing, drop-off, eye tracking, EEG or biometric measure. By using these measures, we will get a more accessible and deeper insight into the stories.

Future studies may further investigate different forms of digital audiovisuals like short-form videos, influencer reels, sponsored narrative posts, or long-form campaign videos to analyse if the elements perform differently. It would also strengthen generalisability to carry out comparative studies across regions, cultures, and age brackets within youth populations. As a result, while the current study offers important groundwork, it also indicates that neuromarketing and storytelling and digital effectiveness involves a variety of aspects and requires deeper empirical study.

4.8 Result and Discussion

Results of the study show that the neuromarketing-based storytelling has a moderate overall influence on the effectiveness of digital marketing with overall mean scores close to the neutral midpoint. The composite mean for Engagement was 2.93 (SD = 0.63) and for Brand Recall was 2.96 (SD = 0.71). This means that many respondents were neutral or slightly positive about story-based ads consistently grabbing attention, sustaining watch time and improving memorability. On the other hand, the Purchase Intention was 3.00 (SD = 0.91), indicating that while storytelling does not necessarily guarantee engagement or recall by everyone, it still heightens the willingness to learn more and possibly purchase in the case where the storytelling is impactful.

When responses were categorised into Low/Medium/High effectiveness, engagement and recall became dominated by the Medium range (Engagement: 54.8% Medium; Recall: 51.5% Medium), whereas the purchase intention showed

the strongest positivity in which 42.3% of respondents were in High. Such patterns suggest that story-based communication works well for moving youth to a consideration stage, which is not necessarily true for attention or memory. This is especially important in the current digital environment where youth exposure is fast, fragmented, and highly competitive. Results from Chi-square tests revealed no significant relationship between major demographic, usage or platform variables and outcome categories as shown by Gender × Engagement: χ^2=3.24, p=0.197; Age × Engagement: χ^2=5.80, p=0.446; Platform × Recall: χ^2=10.35, p=0.241; Social Media Usage × Purchase Intention: χ^2=5.60, p=0.691. In practical terms, this means that in this sample, the storytelling effect is quite consistent across youth segments, meaning that differences in outcomes are less to do with who the respondent is (gender/age/usage) and more to do with how strong the ad execution is. A regression analysis was conducted to test if these four key elements of storytelling (emotion, strength of visuals, relatability, and clarity of message) predict better engagement, recall, and intention to purchase. Overall, the models explained very little variance in the outcomes (Engagement R^2 = 0.005; Recall R^2 = 0.024; Purchase Intention R^2 = 0.027) and engagement and recall models were not significant. In the purchase intention model, "strong visuals capture my attention more effectively" was found to be a strong positive predictor (B = 0.116, p = 0.017). We can say that among all elements tested, visual strength is the most dependable driver of youth movement towards purchase consideration. Alternatively, the low R-squared values indicate that there must be other factors that impact effectiveness that are not entirely captured by the above four drivers. These could include pacing of the story, timing of the hook, fit to platform format (short-form versus long-form), authenticity of the content, influencer presence, product relevance, and prior brand familiarity. The overall findings support your objectives demonstrating that storytelling relates most strongly to purchase consideration while the most impactful single element for youth in this dataset is visual intensity/quality. The importance therefore lies in designing story-based ads with strong visual hooks and native platform execution.

RECOMMENDATION

1. **Prioritize visual-first storytelling for youth**

- Because visuals were the only element showing a significant link with purchase intention, ads should use strong visual hooks, fast clarity, and platform-native aesthetics (short-form friendly).

2. **Increase message clarity within the first seconds**

- Your respondents show strong agreement that clarity affects remembering. Use simple, memorable taglines and avoid cluttered messaging.

3. **Use relatable micro-stories (identity + situations)**

- Since relatability connection scored high in agreement, ads should reflect youth lifestyle, goals, humor, and social reality rather than generic brand narratives.

4. **Design emotional peaks + "hook" early**

- Emotional resonance appears important, but engagement is only medium overall—suggesting many stories aren't hooking fast enough.

5. **Add neuromarketing-style testing at creative stage**

- Since self-reported element importance alone doesn't strongly predict outcomes, combine surveys with behavior-based indicators (watch-through rate, drop-off time, shares, saves) or neuromarketing proxies (attention/engagement tracking) to refine creatives before launch.

CONCLUSION

The impact of neuromarketing-driven storytelling on digital marketing effectiveness amongst youth consumers was studied in this research paper. Moreover, the study analysed storytelling on the three key parameters which include engagement, brand recall and purchase intention. Further, the study also evaluated storytelling elements which include emotion, visuals, relatability and clarity of the message. Findings obtained on the basis of 241 survey responses show that youth consumers have a moderate overall response to story-based digital ads. The descriptive results show that average scores for engagement and recall remain close to the neutral point, which suggests that story telling may not guarantee lasting attention or strong memory for all youth audiences.

Nevertheless, purchase intention had a slightly greater score and from categorized analysis, purchase intention category has the largest number of respondents in the "high" category. Consequently, it indicates that in most cases, storytelling is better at nudging youth consumers to the consideration stage (interest, willingness to explore, willingness to buy), not at consistently driving strong engagement or recall.

The subsequent chi-square tests presented further evidence of the insignificance of effectiveness outcomes across essential demographic and usage variables, such as age group, gender, educational qualification, platform, and daily time spent on social media. This means that the impact of storytelling in this sample is quite evenly spread across youth segments, and this indicates that segment effectiveness may be mores the function of content design and quality of execution than demographics. From a managerial perspective this is important because it suggests that storytelling strategies are applicable to all youth but they must focus on optimising their creatives instead of segmentations.

A regression analysis was conducted to see whether the major storytelling elements (emotion, visuals, relatability, clarity) predict engagement, recall, and purchase intention. The total models accounted for a small amount of variance which suggests that these factors on their own are not adequate to fully account for consumer effectiveness outcome in a convoluted online environment. However, a significant finding emerged: effective visuals have a significant positive effect on purchase intention. We have come to appreciate the necessity of visual-first storytelling for youth. Young audiences rapidly scroll through social media spaces nowadays. Consequently, the visual cue becomes the default pull, and in many cases, first click. It may be useful for research to see how effective story pacing, realistic

portrayal, conforming to the format of the platform being utilized, influencer endorsement, high relevance of the brand, and celebrity familiarity also are overall responses.

In general, Colombian young people can respond to a digital marketing communicative strategy based on storytelling driven by neuromarketing. Implementation should be based on an ethical experience. Brands need to focus on developing high-quality visuals, clear communication and emotional narratives that resonate with youth lifestyles. The study links storytelling based digital marketing with measurable effectiveness dimensions from an academic perspective. However, it also shows that future studies should incorporate stronger behavioural and neuromarketing-based measures (for example, attention tracking, viewing time, click through behaviour or biometric indicators) to better capture unconscious reactions and thus strengthen prediction of real world outcomes.

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