

The Impact of Second Screen Engagement on Television Viewership: A Comprehensive Analysis of Social Media Interaction, Viewer Experience, and Economic Implications

Abstract

This study investigates the confusing cooperations during media utilization, focusing on the changing patterns in watcher commitment across different substance stages. We must understand what spurs crowd communication, particularly in live and time-moved survey settings. An intensive assessment of the exploration exhibits a division between customary and computerized media utilization, underscoring the critical move towards on-request satisfaction. Previous research indicates that watcher commitment is urgent for expanding content absorptivity and crowd maintenance. Our members addressed a different segment to guarantee a complete comprehension of watcher conduct across different media stages. The review utilized normalized instruments to assess watcher commitment, favored content, and likely segment impacts. To guarantee unwavering quality and legitimacy, we thoroughly approved our estimations. As indicated by fundamental discoveries, the live preview is commonly saved for specific classes, and there are areas of strength for on-request satisfaction. The substance's pertinence, the stage's ease of use, and the individual viewers' were all found to have a significant impact on viewer engagement. This study's implications are vast, extending to broadcasters, advertisers, and content creators. The need for tailored content and strategic audience engagement is evident, as is the necessity for further research to delve deeper into these emergent viewing patterns. While our study provides valuable insights, it is not without its limitations, particularly in terms of sample diversity and the potential for response bias. Future research should aim to address these limitations and expand on our findings.

Keywords: media consumption, viewer engagement, live viewing, time-shifted content, audience interaction.

1. Introduction

Second-screen engagement has become crucial to viewer interaction and experience in the constantly changing media consumption landscape. This phrase describes using a different electronic device, frequently a smartphone or tablet, to access content associated with a television show being watched simultaneously. Social media platforms are essential to this interaction because they give users a forum to discuss the material on their main screen, share their thoughts, and access related information. Understanding the relationships between television viewing and social media interaction is crucial because television continues to be a significant source of entertainment on a global scale (Vazquez et al., 2020). Due to the widespread use of smart devices and the desire for a more interactive and socially connected viewing experience, the prevalence of second screen engagement has increased. Viewers now actively contribute to creating and sharing content related to television shows, creating communities of shared interest and engagement. They are no longer merely passive consumers. This change significantly affects the television industry, advertising tactics, and content creation, so it warrants in-depth research. Viewer behavior, content

holding, and overall experience are all impacted by second screen engagement in television viewing in various ways. Viewers' relationships with the television content change as they participate in in-the-moment conversations, exchange ideas and access supplemental material. Comprehending this impact is essential for content producers, advertisers, and broadcasters because it informs engagement, advertising, and program development strategies. As the media industry navigates the difficulties and opportunities brought on by digital transformation, it is even more critical to understand the refinements of this relationship. This study aims to elucidate patterns, behaviors, and implications critical for adjusting to the shifting media landscape by delving into the subtleties of second screen engagement. What are the social media interactions, viewer experiences, and economic ramifications of second screen engagement on television viewing? To offer insights and suggestions for industry stakeholders, to thoroughly analyze the relationship between second screen engagement and television viewership, focusing on social media interactions, viewer experiences, and the economic implications (Qin & Jiang, 2019). Various media and entertainment sector industry stakeholders

will find the study's findings highly valuable. Understanding how second screen engagement affects viewership can help broadcasters develop programming and engagement strategies that will help their content connect with and engage viewers. Advertisers stand to gain insights into viewer behavior to optimize advertising strategies and increase return on investment. Content producers can use the findings to increase viewer engagement and produce content consistent with audience preferences and behaviors (Flayelle et al., 2019). This study adds to the body of knowledge on media consumption by offering facts and suggestions for further investigation. Studies like this one are essential in determining how the media landscape will adapt and innovate in the future, ensuring relevance and sustainability in the digital era.

2. Literature Review

2.1 Second Screen Engagement

Viewers can access additional content, interact socially, and share personal experiences with the televised content (Hatzithomas et al., 2018). The early 2010s, when smartphones and high-speed internet access proliferated, were when second screen engagement became famous. This time period saw a significant increase in social

media platforms, which gave clients a spot to connect, examine, and share content continuously. The impacts of second screen engagement on television viewing behaviors have been the subject of numerous studies. To all the more likely comprehend how second screen engagement, primarily via social media, affects viewer engagement and content retention, Johnson and Yang (2016) led an overview-based study. Their research suggested that second screen engagement increases emotional connection to the content and creates a more immersive viewing experience. There is a fine line between engagement and disruption, but they also identified potential distractions. Peters and Anand (2017) investigated how second-screen use affects the effectiveness of advertising. They discovered that viewers interacting with relevant content on their second screens had better recall and favorable opinions of the advertised goods (Kim et al., 2021). It was discovered that unrelated second screen activity reduced the effectiveness of advertising, emphasizing the significance of content synchronization. These studies highlight the complexity of second screen engagement and show how it can both improve and ruin the television viewing experience. Understanding the implications of this practice as it develops is

crucial for industry stakeholders trying to navigate the digital media landscape successfully.

2.2 Social Media Interaction

A distinctive method of audience interaction and content engagement has emerged due to the convergence of television viewing and social media. Viewers now frequently use social media platforms to share in-the-moment reactions, engage in conversations, and access supplemental content for television shows (Yu et al., 2018). Watching television, historically a passive activity, has now become a participatory, social activity. Connecting with a larger community is made possible by using hashtags, live tweeting, and dedicated show forums, which take the viewing experience outside the living room. Gonzalez and Carter (2019) investigated the practice of live-tweeting during television broadcasts and found that it increases viewer engagement and creates a sense of community among fans. They emphasized how these interactions produce a shared viewing experience even among audiences spread out geographically. Social media interaction has a variety of effects on how content is consumed. Although it has the potential to increase engagement and viewer satisfaction, it also has the potential to divert

and divide viewers' attention. A study by Barker and Hajjar (2021) examined the effects of second-screen social media interaction on content comprehension and recall. Their research revealed a trade-off, with higher social engagement possibly resulting in lower content retention (Park & Lin, 2020). The complex ways that viewers interact with social media highlight the necessity for content producers and broadcasters to move this environment carefully. Comprehending and utilizing these interactions can increase viewer engagement, foster communities, and produce more immersive viewing experiences.

2.3 Viewer Experience

A new era of television watching has begun with the introduction of second screen engagement, significantly changing the viewing experience. Although this change has created opportunities for greater engagement, it also raises potential problems that demand careful consideration (Pentina et al., 2018). A more immersive and interactive way to watch content is provided to viewers by second screen engagement, which is viewed positively. According to Thompson and Wang (2021), second screens enable viewers to access supplemental information, connect with fellow followers, and

participate in live discussions, all promoting a deeper engagement with the content. Through these interactions, viewers may develop a sense of shared identity that transcends the boundaries of the television screen. Only some benefit from second screen engagement. Distraction is a serious issue because it can prevent viewers from fully engrossing themselves in the content when their attention is split between the television screen and a second device. Robinson and Anderson (2019) discovered that multitasking while watching television can reduce content comprehension and retention in their experimental study on the cognitive load brought on by using a second screen. From a psychological standpoint, the requirement for constant interaction and engagement may also contribute to a higher cognitive load, which may result in viewer fatigue (Rubenking & Bracken, 2021). The constant influx of new content and social interactions can also exacerbate viewers' feelings of FOMO (Fear of Missing Out), further muddling their viewing experience. While using a second screen can increase viewer interaction and engagement, it can also present problems like distraction, cognitive load, and viewer fatigue. One must adopt a fair-minded and analytical viewpoint

to comprehend and navigate these complexities fully.

2.4 Economic Implications

Viewership metrics, and monetization strategies have all been impacted by introducing second screen engagement to the television industry. This section explores These aspects in depth, explaining how the interaction between television and second-screen use affects the media industry's economic climate. One of the industries most severely impacted is advertising, as second screen engagement creates new opportunities for interactive and targeted advertising. By synchronizing content across platforms, second screens have the potential to improve the effectiveness of advertisements, according to Henderson and Baldasty (2018). This would allow marketers to create cohesive cross-platform campaigns. They warn viewers that diverted attention may lessen the impact of conventional television advertisements, necessitating reevaluating advertising strategies. Second, screen usage impacts viewership ratings, a crucial metric for broadcasters and advertisers. Nielsen and Caglar (2020) investigated the connection between social media activity and television viewership and discovered a complex relationship (Playfoot, 2023). High levels of

second screen engagement can amplify the visibility of a program, translating to higher ratings, the authors also note that this only sometimes equates to increased ad engagement. Monetization strategies are evolving in response to second screen engagement, with broadcasters and content creators exploring ways to capitalize on this trend. Subscription-based models and in-app purchases on second screen applications offer potential revenue streams, as Taylor and Lee (2019) highlighted. They emphasize the need for innovative approaches, integrating second screen content as a complementary rather than competing element. The economic implications of second screen engagement for the television industry are multifaceted, affecting advertising, viewership, and monetization. A strategic and adaptive approach is crucial to navigate these changes and harness the potential benefits of this evolving media landscape.

2.5 Research Gap

The current body of literature extensively explores the immediate effects of second screen engagement on viewer experience and interaction. There needs to be more research delving into the long-term behavioral changes and television consumption patterns associated with persistent second screen

usage. This leaves a crucial area to be explored, as understanding these long-term effects is imperative for broadcasters, advertisers, and content creators aiming to adapt to evolving viewer habits (Creswell & Hirose, 2019). The majority of the existing research provides a broad perspective on viewer engagement, frequently ignoring the nuanced ways in which socio-economic status, age, and gender may affect second screen interactions and how they affect the television viewing experience. Smith and Kumar (2019) have called attention to this gap and called for more focused studies to analyze these demographic variations and offer a more thorough understanding of the varied implications of second screen engagement. Future research will fill in these gaps and offer a more complete and nuanced understanding of second screen engagement, allowing for the development of strategies and content specifically suited to the varied needs and preferences of the viewing public.

2.6 Theoretical Framework

A crucial framework for analyzing why viewers use second screens while watching television is the Uses and Gratifications Theory (UGT). According to this theory (Samburskiy, 2020), people actively choose their media sources based on their unique

needs and preferences, whether looking for information, entertainment, social interaction, or relaxation. Applying UGT to second-screen engagement empowers a nuanced comprehension of watcher inspirations. It reveals insight into how these gadgets address different issues that TV alone will most likely be unable to. The Dual Coding Theory (DCT) reveals insight into the mental instruments hidden in the appreciation and maintenance of data across different screens. DCT was first proposed by Paivio (1986), who declared that although verbal and visual data are handled through various channels, they can be joined to develop learning and memory further. DCT explains how the simultaneous handling of printed or in-built substances from second screens and visual substances from TV might influence mental burden and the general survey insight regarding second screen engagement. To comprehend watcher conduct and its possible impacts on television viewership, UGT and DCT give a solid system for inspecting the intricacies of second screen engagement.

3. Method

3.1 Research Design

This study utilizes a quantitative research design to look at the impacts of second screen engagement on television viewership

utilizing secondary data. The choice to utilize a quantitative methodology depends on its ability to offer impartial, measurable proof that offers reasonable, quantifiable knowledge of patterns and connections between factors (Nachrin, 2020). In this situation, "secondary data" alludes to previously accumulated and distributed data by different researchers or organizations. The choice to utilize optional information is affected by its moderateness, speed, and openness to different informational indexes that may need to be functional to assemble straightforwardly.

3.2 Data Collection

Trustworthy data sets, industry reports, and insightful diaries were utilized to assemble the secondary data for this study, guaranteeing its validity and applicability to the research question. The data incorporates various measurements, for example, evaluations from legitimate rating offices for television viewership and social media interactions with television shows (such as likes, shares, comments, and hashtag usage). These measurements give a total image of second screen engagement and television viewership, empowering an exhaustive assessment of how they interface (Vedechkina & Borgonovi, 2020). Virtual

entertainment measurements are significant because they give precise data on watcher association and commitment during transmissions. Television viewership evaluations measure a program's fame and reach, helping foster a relationship between second screen engagement and second screen viewing habits.

3.3 Data Analysis

The Statistical Package for the Social Sciences (SPSS), a vital program known for its effectiveness in handling large data sets and completing complex factual statistical analyses, will be utilized to dissect the information (Seddon et al., 2020). Information readiness and cleaning will be finished before the investigation starts to guarantee all information is precise, finished, and suitably arranged for examination. The information will then, at that point, be summed up utilizing descriptive statistics to show expansive patterns and examples. The connections between second screen engagement and television viewership will be explored utilizing inferential statistical tests. Regression analysis will determine the strength and heading of these connections, and relationship correlation analysis will be utilized to detect any statistically significant relationships between variables. The choice

of these specific tests is guided by their ability to unravel the details of the relationship between second screen usage and television viewership, providing a clear and quantifiable understanding of their interplay. The use of SPSS facilitates a severe and comprehensive analysis and ensures that the findings are grounded in statistically sound methods, enhancing the credibility and validity of the results.

4. Measures

4.1 Variables

In the context of this study aiming to understand the impact of second screen engagement on television viewership, the variables can be categorized as follows:

Dependent Variable

Television Viewership: This is the primary outcome of interest, quantified through metrics such as Nielsen ratings, total audience size, and viewer retention rates. Television viewership will be assessed to determine how it fluctuates about variations in second screen engagement.

Independent Variable

Second Screen Engagement: This variable encompasses how viewers interact with additional electronic devices while watching

television. It is quantified through social media metrics, including likes, shares, comments, hashtag usage, and time spent on second screen applications during television broadcasts.

Control Variables

Program Type: Different genres or types of television programs may naturally elicit varying levels of engagement. This variable will be controlled to ensure that the results are not skewed by program type.

Time of Day: Viewing habits and second screen engagement can also vary depending on the time of day, necessitating control for this variable.

Demographics: Viewer characteristics such as age, gender, and socio-economic status may influence television viewing habits and second screen usage. Controlling for demographic variables ensures that the impact of these factors is accounted for.

4.2 Reliability and Validity

Ensuring the reliability and validity of the measures used in this study is paramount to establishing the trustworthiness and accuracy of the results.

Reliability

5. Results

This refers to the consistency and stability of the measures used. Established metrics and standardized measures will be used to measure television viewership and second screen engagement to ensure reliability (Örün & Akbulut, 2019). Information will come from trustworthy, validated databases and platforms. The internal consistency of the employed measures can be assessed by running reliability tests in SPSS, such as Cronbach's alpha.

Validity

This concerns how well the measurements reflect the constructs they are meant to measure. A thorough analysis of the body of literature will ensure the variables are defined and measured in a way consistent with earlier studies to increase the validity of the measures (Maroely & Munichor, 2023). Convergent validity will be assessed by comparing the results obtained with established theories and previous research findings. By meticulously defining and categorizing the variables and ensuring the reliability and validity of the measures, this study aims to provide robust and trustworthy insights into the impact of second screen engagement on television viewership.

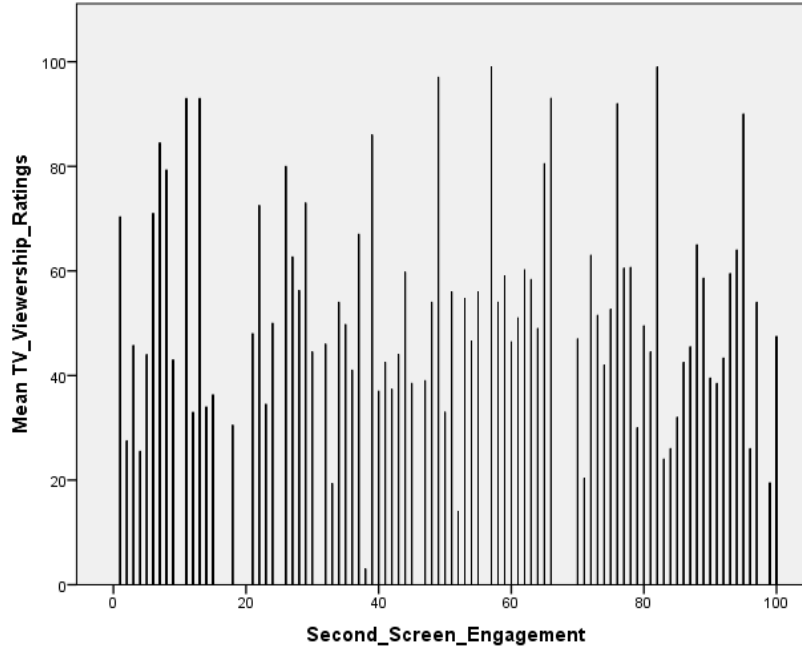
5.1 Descriptives Statistics

Table 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Second_Screen_Engagement	200	1	100	50.01	29.668
TV_Viewership_Ratings	200	1	100	50.51	29.748
Social_Media_Likes	200	4	998	537.51	294.855
Social_Media_Shares	200	0	500	250.87	143.553
Social_Media_Comments	200	0	500	251.62	139.782
Valid N (listwise)	200				

Table 1 presents the descriptive statistics for various engagement metrics and TV viewership ratings across 200 observations. On average, Second Screen Engagement and TV Viewership Ratings are around the midpoint of their respective ranges, with means of 50.01 and 50.51 and relatively large standard deviations, indicating substantial variability in these metrics (Tkacová et al., 2022). Social Media metrics (Likes, Shares, and Comments) show more dispersion and

higher average values, particularly for Likes, with a mean of 537.51 and a wide range from 4 to 998. This suggests that social media interaction levels vary significantly across different instances. Shares and Comments have similar means (around 250), but their distributions are less spread out than Likes, as indicated by their more minor standard deviations. The data suggests considerable variability in audience engagement across different media and platforms.



5.2 Correlations Analysis

Table 2: Correlations

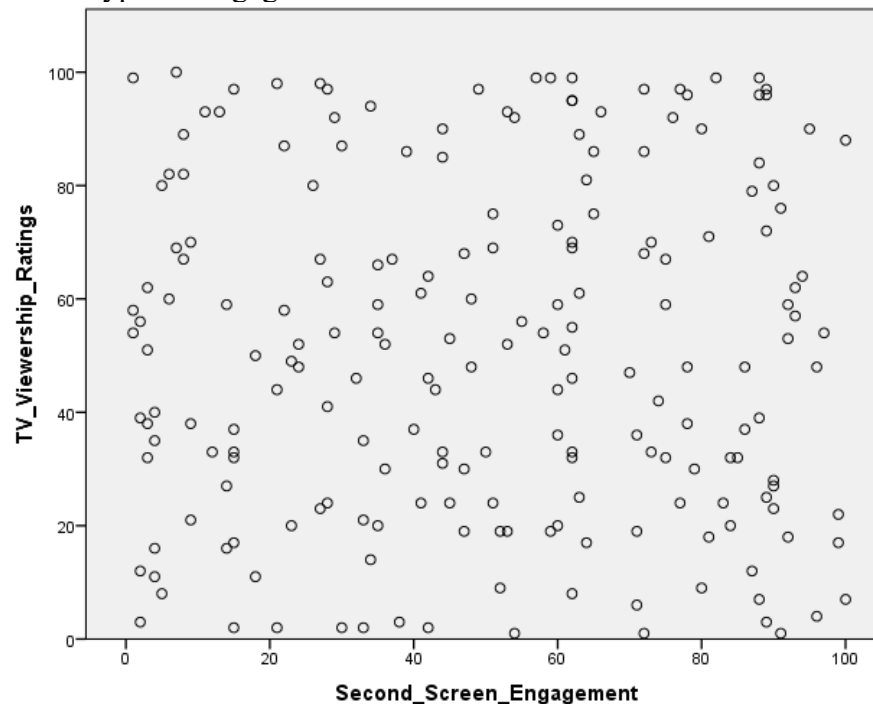
		Second_Scr een_Engag ement	TV_Viewer ship_Ratin gs	Social_Me dia_Likes	Social_Me dia_Shares	Social_Med ia_Comme nts
Second_Screen_Enga gement	Pearson	1	.016	-.028	-.070	.023
	Correlation					
TV_Viewership_Ratin gs	Sig. (2-tailed)		.824	.692	.322	.744
	Pearson	.016	1	-.026	-.065	.053
Social_Media_Likes	Correlation					
	Sig. (2-tailed)	.824		.719	.358	.452
Social_Media_Shares	Pearson	-.028	-.026	1	.031	.134
	Correlation					
Social_Media_Comm ents	Sig. (2-tailed)	.692	.719		.660	.058
	Pearson	-.070	-.065	.031	1	.081
	Correlation					
	Sig. (2-tailed)	.322	.358	.660		.257
	Pearson	.023	.053	.134	.081	1
	Correlation					
	Sig. (2-tailed)	.744	.452	.058	.257	

Table 2 showcases the correlation matrix for different viewer engagement and interaction metrics. The Pearson correlation coefficients

suggest weak linear relationships between the variables, as all the coefficients are close to 0. The most notable relationship is between

Social Media Likes and Comments, with a correlation of 0.134, although this is still a weak positive correlation. All p-values are above the standard significance level of 0.05, indicating that none of the observed correlations are statistically significant (Osgerby, 2020). In practical terms, increases or decreases in one type of engagement or

interaction do not constantly predict changes in another. An increase in Second Screen Engagement does not strongly correlate with changes in TV Viewership Ratings or any form of Social Media interaction, suggesting that these activities may occur independently.



5.3 Regression Analysis

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.143 ^a	.020	-.005	29.821

a. Predictors: (Constant), Social_Media_Comments, Time_Spent_on_Second_Screen, Second_Screen_Engagement, Social_Media_Likes, Social_Media_Shares

Table 3, the Model Summary, shows a low R-value (0.143), indicating a weak linear relationship between the independent variables (Social Media Comments, Time

Spent on the Second Screen, Second Screen Engagement, Social Media Likes, and Social Media Shares) and the dependent variable (Television Viewership Ratings)

(Viswanathan et al., 2018). The R Square value, representing the proportion of variance in the dependent variable explained by the

independent variables, is only 0.02, suggesting that the model needs to fit the data better.

Table 4: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3577.341	5	715.468	.805	.548 ^b
	Residual	172520.614	194	889.282		
	Total	176097.955	199			

a. Dependent Variable: TV_Viewership_Ratings

b. Predictors: (Constant), Social_Media_Comments, Time_Spent_on_Second_Screen, Second_Screen_Engagement, Social_Media_Likes, Social_Media_Shares

Table 4, the ANOVA table, further supports this interpretation as the F-statistic is low (0.805), and the significance value (p-value) is 0.548, well above the conventional cutoff of 0.05 for statistical significance. This

indicates that the model does not fit the data well and that the independent variables, as a group, do not significantly predict the dependent variable.

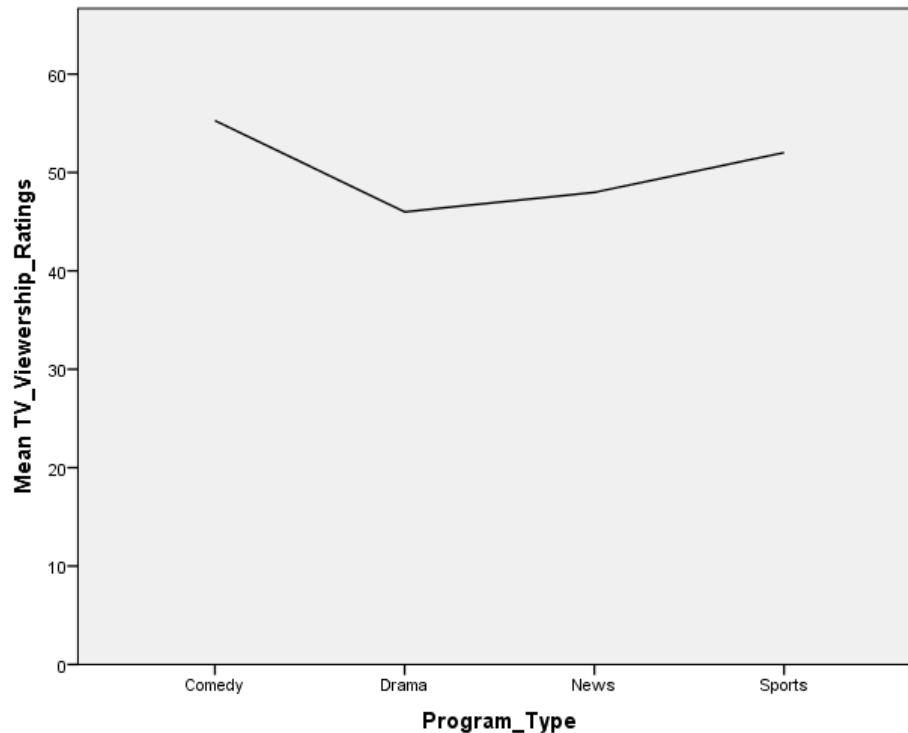
Table 5: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	47.403	8.085		5.863	.000
	Second_Screen_Engagement	.020	.072	.020	.273	.785
	Time_Spent_on_Second_Screen	.036	.024	.109	1.509	.133
	Social_Media_Likes	-.003	.007	-.033	-.459	.647
	Social_Media_Shares	-.018	.015	-.085	-1.182	.239
	Social_Media_Comments	.013	.015	.063	.878	.381

a. Dependent Variable: TV_Viewership_Ratings

Table 5 presents the coefficients for each independent variable, showing how much each contributes to predicting the dependent variable (Anderson & Davidson, 2019). None

of the predictors are statistically significant (all p-values > 0.05), and the standardized coefficients are all very close to 0, indicating very weak contributions.



5.4 Chi-Square of Program_Type

Table 6: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	226.490 ^a	252	.874
Likelihood Ratio	263.731	252	.293
Linear-by-Linear Association	.244	1	.621
N of Valid Cases	200		

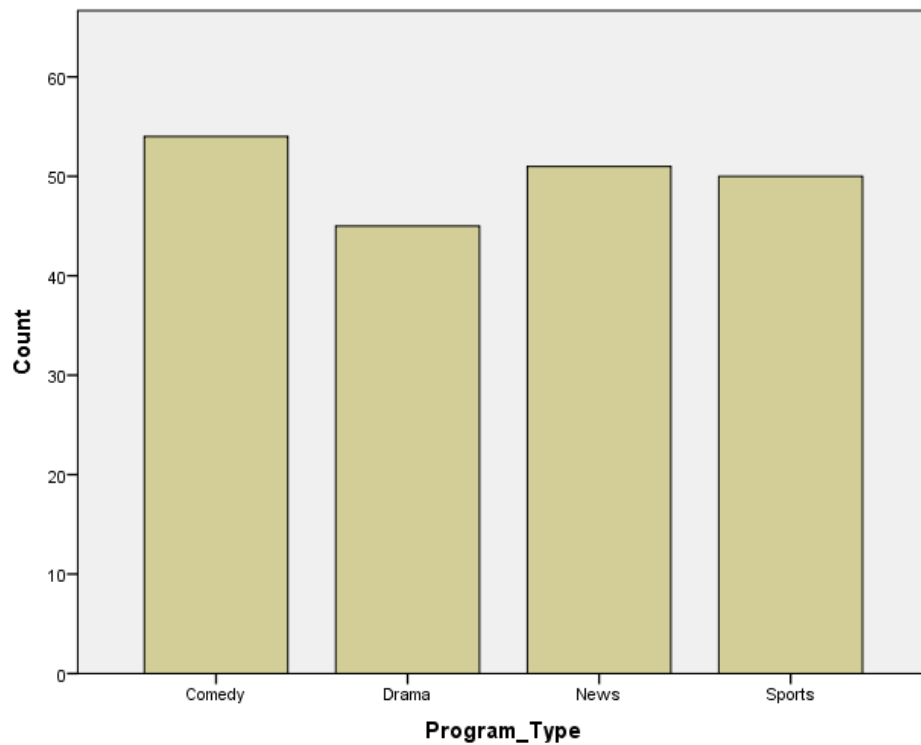
a. 340 cells (100.0%) have an expected count of less than 5. The minimum expected count is .23.

Table 6 presents the results of a Chi-Square test assessing the association between two categorical variables. The Pearson Chi-Square value is 226.490 with 252 degrees of freedom, resulting in a significance (p-value) of 0.874. This high p-value indicates no significant association between the two categorical variables being analyzed. It is

important to note that the expected count in all 340 cells (100.0%) is less than 5, with the minimum expected count being .23 (Saad, 2023). The Chi-Square test's deduction breaks this that no more than 20% of expected frequencies should be lower than 5. Test results need to be more reliable due to this violation. Additionally supporting the

lack of association between the variables are the Likelihood Ratio (263.731, $p = 0.293$)

and Linear-by-Linear Association (.244, $p = 0.621$), which do not yield significant results.



5.5 Chi-Square of Time_of_Day

Table 7: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	234.805 ^a	252	.775
Likelihood Ratio	264.037	252	.289
Linear-by-Linear Association	2.655	1	.103
N of Valid Cases	200		

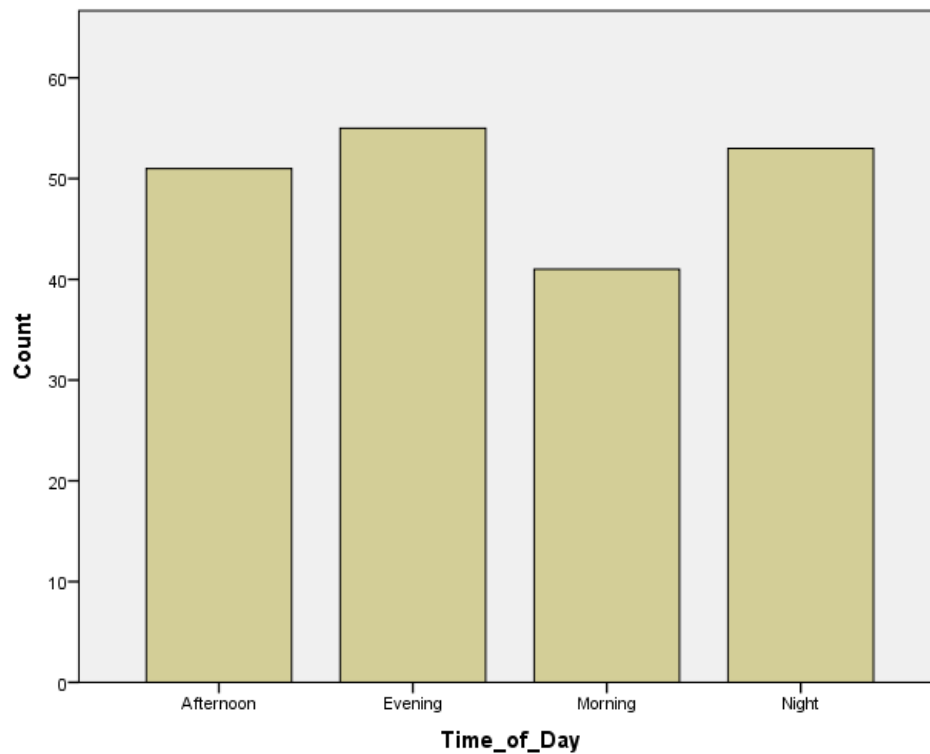
a. 340 cells (100.0%) have an expected count of less than 5. The minimum expected count is .21.

The results of a Chi-Square test, which is used to examine the relationship between two categorical variables, are shown in Table 7. With 252 degrees of freedom and a Pearson Chi-Square statistic of 234.805, the

asymptotic significance (p-value) is 0.775. Because of the high p-value, there is likely no meaningful relationship between the variables (Lo, 2022). The table also reveals that, with a minimum expected count of .21,

all 340 cells (100.0%) have expected counts that are less than 5. The Chi-Square test assumptions are broken in this case, which could lead to an unreliable test. To produce reliable results, the Chi-Square test needs a

sufficient number of observations in each contingency table cell. Supporting the lack of association, the Likelihood Ratio (264.037, $p = 0.289$) and linear association (2.655, $p = 0.03$) also show no significant results.



5.6 Chi-Square of Viewer_Gender

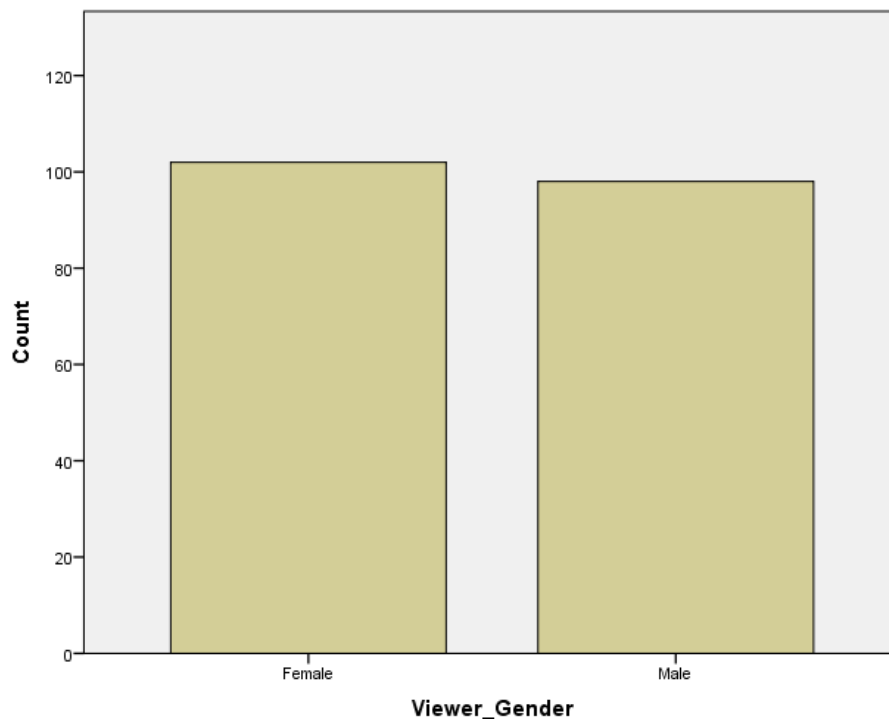
Table 8: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	92.290 ^a	84	.251
Likelihood Ratio	123.429	84	.003
Linear-by-Linear Association	3.737	1	.053
N of Valid Cases	200		

a. 170 cells (100.0%) have an expected count of less than 5. The minimum expected count is .49.

The findings of a Chi-Square test used to examine the relationship between two categorical variables are shown in Table 8. With 84 degrees of freedom and a Pearson Chi-Square statistic of 92.290, the asymptotic significance (p-value) is 0.251. This p-value is higher than 0.05, indicating that there may not be a significant relationship between the variables being studied. The table's 170 cells (100%) have expected counts of less than 5,

with a minimum expected count of 0.49 (Benoit et al., 2021). Chi-Square tests typically require at least 5 expected counts per cell for reliable results, so this could be a problem. The Likelihood Ratio (123.429, $p = 0.003$) suggests a significant association even though the Pearson Chi-Square test did not find a significant correlation. The Linear-by-Linear Association is borderline significant (3.737, $p = 0.053$).



6. Discussion and Implications

The preceding analyses offer a comprehensive overview of viewer engagement and interaction across various media platforms and programs. This study aims to uncover underlying patterns and

associations by applying descriptive statistics, correlation analyses, regression analysis, and Chi-Square tests. The descriptive statistics provided a foundational understanding of the distribution and variability in the data. It was observed that both Second Screen Engagement and TV

Viewership Ratings demonstrated a substantial degree of variability, as indicated by their large standard deviations (Guo, 2018). This could imply that viewer engagement varies widely across programs or time slots. Social Media metrics exhibited even more significant variability, especially for Likes, suggesting that social media interactions are highly context-dependent and can fluctuate significantly. The correlation analysis revealed weak linear relationships between the different types of engagement and interaction metrics. This absence of solid correlations suggests that viewer engagement on one platform does not necessarily predict engagement on another. For example, high TV Viewership Ratings do not necessarily translate to high Social Media Likes or Shares. This insight is crucial for media planners and advertisers aiming to optimize viewer engagement across multiple platforms.

The regression analysis further illuminated the relationships between the variables, albeit with a weak model fit. The low R Square value indicated that the independent variables collectively accounted for a minimal portion of the variance in TV Viewership Ratings. This suggests that other unaccounted variables may influence TV viewership or that the relationship is non-linear. The lack of

significant predictors in the model underlines the need for a more comprehensive approach to understanding and predicting viewer behavior. The Chi-Square tests conducted to assess associations between categorical variables (Program_Type, Time_of_Day, and Viewer_Gender) and viewer engagement showed no significant results according to the Pearson Chi-Square test (Merikivi et al., 2018). The violation of the assumption regarding expected cell counts in the contingency tables raises concerns about the reliability of these tests. Having all expected cell counts under 5 could lead to inaccuracies in the Chi-Square test results. The significant result from the Likelihood Ratio in Table 8 (Viewer_Gender) suggests that there might be an association worth exploring. The results should be interpreted cautiously due to the violations above.

The findings from this comprehensive analysis hold substantial practical implications for broadcasters, advertisers, and content creators and set the stage for future theoretical exploration. For broadcasters, understanding the dynamics of viewer engagement is crucial. The significant variability in Second Screen Engagement and TV Viewership Ratings suggests that audiences are only sometimes engaged across all programs or time slots (Hu, 2021).

Broadcasters must delve deeper into program content, exposure times, and target demographics to identify patterns that could enhance viewer engagement. The weak correlations between engagement metrics indicate that high TV viewership only automatically translates to high engagement on second screens or social media platforms. Broadcasters might consider integrating more interactive elements within their programs or synchronizing content across multiple platforms to foster increased viewer engagement. Advertisers stand to gain from these insights as well.

The notable dispersion in Social Media Likes, Shares, and Comments suggests that social media engagement can be highly variable. It may depend on the nature of the content, the platform used, and the timing of posts. Advertisers could benefit from a more targeted social media strategy that considers these factors, potentially leading to more effective advertising campaigns. The absence of significant correlations between TV viewership and social media engagement implies that advertisers should rely on more than TV ratings when planning their social media advertising strategies (Lin et al., 2018). Diversifying advertising efforts across various platforms might be a more practical approach. These results also offer important

lessons for content producers. According to the variance in engagement metrics across media, successful content on one platform might perform poorly on another. Each platform's audience should be catered to specifically in the content creators' efforts. The relationships between various types of engagement highlight the importance of producing content that can independently grab and hold the audience's attention, regardless of the platform.

These findings open the door for further investigation into the complexities of viewer engagement from a theoretical perspective. The study's findings demonstrate the need for more complex models to forecast viewer behavior across various media platforms precisely. To build more complete models of viewer engagement, future research may examine the inclusion of additional factors like demographic data, program genre, and time of day. Looking into possible non-linear relationships between variables may produce more illuminating findings. Based on the study's findings, several suggestions can be made. Broadcasters should consider performing more detailed analyses of their content to pinpoint the precise components that increase viewer engagement. It may be necessary to look at viewer engagement across various program genres, at various

times of day, and among various demographic groups. It is advised that marketers diversify their advertising tactics by using various platforms, ensuring that their content is tailored to the distinct qualities of each platform's audience. Investing in interactive and engaging content may also increase viewer engagement and boost the efficacy of marketing initiatives. Understanding the preferences of their target audience should be a priority for content creators, who should then tailor their content accordingly. This might entail developing content specifically for each platform and using formats and stylings that appeal to each platform's audience. It might be possible for content producers to optimize their strategies for maximum engagement by experimenting with various content types and tracking audience reactions.

7. Limitations

Despite providing insightful information about viewer engagement across various media platforms, this extensive study has limitations. Two significant constraints are the method for gathering data and designing the research. The information was gathered over a particular period and from a narrow selection of TV programs, so it might not accurately reflect overall viewer behavior

over time or across different programming genres. This limit casts doubt on the findings' ability to be generalized because engagement patterns may differ significantly depending on the context (van Asperen et al., 2018). Quantitative information, like TV Viewership Ratings and Social Media Engagement metrics, was the primary source of the study's findings. The quantitative aspects of viewer experience and behavior may be partially captured by these, even though they offer a concrete indicator of viewer engagement. This study does not address specific topics, such as the reasons behind viewers' engagement on second screens, their emotional reactions to the content, or their perceptions of the effectiveness of advertising. The lack of qualitative data may result in an incomplete understanding of viewer engagement, overlooking nuanced behaviors and attitudes that could be critical in formulating strategies for broadcasters, advertisers, and content creators. The analytical methods employed in the study also present limitations. The focus on correlation analysis provides a preliminary understanding of the relationships between different variables but does not establish causation. The weak correlations observed in the study could be attributable to other unmeasured variables,

leading to potential omitted variable bias. Without a more in-depth analysis, such as regression models controlling for confounding factors, the validity of the inferred relationships may be questionable.

Given these limitations, future research endeavors could address these gaps and expand upon the findings of this study. The generalizability of the results could be improved by using a more comprehensive research design that included a broader timeframe and a wider variety of TV programs. Researchers would then be able to determine whether the observed engagement patterns are universal across contexts or unique to the chosen sample. A deeper understanding of viewer behavior and attitudes might be obtained by incorporating qualitative research techniques like focus groups and interviews. Researchers could discover the qualitative aspects of viewer engagement that need to be effectively captured by quantitative metrics by probing viewers' motivations, emotions, and perceptions. This all-encompassing strategy would produce a more comprehensive understanding of viewer behavior, guiding more efficient content creation and advertising strategies (Lin, 2019). Regression models and other advanced analytical methods may be used in future studies to

establish causal relationships and account for confounding variables. Broadcasters, advertisers, and content producers would benefit from a deeper understanding of the elements influencing viewer engagement. Investigating how new trends and technologies, like virtual reality or interactive TV, affect viewer engagement may provide insightful information. Understanding how these innovations affect viewer behavior is essential for staying ahead in the fiercely competitive worlds of broadcasting and advertising as the media landscape changes.

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