

**Analyzing the Impact of Social Media Usage on Number of Houses Sold**

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## Abstract

Social media has transformed how brands have conducted their marketing towards consumers, with increased usage and platforms spearheading the shift (Backlinko, 2024). While real estate organizations began to incorporate social media into their marketing on platforms like X, Facebook, and Instagram, a gap of knowledge existed on what the top strategy for the industry was to increase suburban Atlanta house sales (ElectroIQ, 2025; Khan, Swar, & Lee, 2014; Cripps et al., 2020). This study aimed to use a correlational analysis to investigate the impact of social media usage on the number of houses sold in suburban Atlanta, looking into Instagram and Facebook posts from 2024 and houses sold in 2024 priced between \$750,000 and \$1,250,000. Using data from 25 different realtors for each platform, the number of work-related posts were counted from each platform and inputted into Google Sheets, while the respective number of houses sold were collected through the GMLS database and inputted into the same spreadsheet. This was analyzed using the CORREL function to obtain Pearson's correlation coefficient. The results showed a positive R-value not large enough for a positive correlation to be considered between number of Instagram posts and number of houses sold, as well as an even lower positive R-value for the correlation between number of Facebook posts and houses sold. These findings, somewhat consistent with examined literature, reveal somewhat of a relationship exists between an increase in posts for each platform and the increase in number of houses sold, yet Instagram has larger potential than Facebook for suburban Atlanta realtors to use as their primary marketing strategy (Muhit, 2022). This data-driven research contributes to real estate marketing as suburban Atlanta realtors will use this to grow their presence on Instagram and scale back from mail-related marketing strategies to connect with their target market.

*Keywords:* CORREL function, GMLS, Pearson's correlation coefficient, positive correlation

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## **Analyzing the Impact of Social Media Usage on Number of Houses Sold**

Real estate is a vast and complicated industry within the economy. The high financial commitments and unpredictable nature challenges realtors to navigate the landscape through their ability to market and powerfully connect to their target audience. The cycle is infinite as they must continually show off their new listings and properties to potential buyers year-round. Social media has quickly developed into an integral news outlet, with its general usage seen to grow by 4.44% even in the last year (from 2023 to 2024) (Backlinko, 2024). It has the ability to quickly spread any form of news to the right group of people, making it highly coveted for profit. Maintaining an online presence allows realtors to more efficiently target younger generations who are entering the real estate market, thus bridging the divide without using traditional forms of marketing (Kolotouchkina et al., 2023).

## **Importance of Social Media and its Evolving Usage in Marketing**

Social media has continually played into becoming a more prominent and more resourceful marketing tool. Early on, marketers used the variety of platforms they could access in the same way that they did with billboards: announcing their simple message to followers with the hope of having them check out their website (Buffer, 2025). Most of the time today, however, users would likely ignore such a message and simply move on through the rest of their online content. This brings the straightforward question: what is expected in current times to catch a consumer's attention on social media? Creating innovative and personalized content allows for customer loyalty to be created, which can lead to a branch of sales gained by the marketer (Hafez, 2021). With regards to real estate, loyalty is integral and key to opening the door for more potential buyers, as the connections that are forged allow a realtor to have a competitive

advantage over others. In fact, it is found in relation to brands that for every 1% increase in owned social media activities, there is a 0.137% increase in social media engagement across the targeted consumers (Lipsman et al., 2022). To add to this, 78% of marketers related an increase in web traffic to their marketing efforts on social media (Review42, 2024). Using content in social media allows for engagement with a broader range of people at a quicker rate, thus accelerating the marketing and business of a brand.

### **Social Media Marketing Platform Options**

Each social media platform has unique marketing features and audience, thus giving brands unique opportunities and places to advertise their product or service. Nearly 70% of users on Instagram have bought an item they found on the platform (ElectroIQ, 2025). The content found on Instagram is meant to be relatable to the user individually, thus helping advance a brand's marketing efficiently. Additionally, Facebook communities are built to serve as communication hubs between local residents for a variety of things, including new opportunities offered by marketers (Khan, Swar, & Lee, 2014). Twitter (now known as X) provides users with engagement metrics on their posts, such as seeing the likes, retweets (their unique sharing feature), and replies towards the post (Cripps et al., 2020). With such a plethora of options for modern marketing, one must understand which can be most effective for real estate.

## **Rationale**

As a sophomore in high school, I was looking for the opportunity to volunteer over the summer in the form of tutoring AP Calculus to other peers. The challenge that arose immediately was getting the news across to my peers so that they could begin to learn content from me. This prompted me to think of innovative techniques to expand and increase the number of students attending my class. I decided to use social media with the knowledge that it spreads news to many groups of people in the fastest time. These posts required content that was likable, attractive, and relatable to the target audience. After seeing attendance begin to increase in my class, I continued to use and tailor social media to promote what I was offering, and the desired result of reaching maximum capacity by the end of the summer was reached.

A few years later, I decided to interview as an intern at my local real estate firm, Harry Norman Realtors. As I first talked to my mentor, Ms. Sandra Daniels, I was realizing just how important it was to have excellent marketing skills as a listing real estate agent in this business. We were quickly connecting on the hardships of being able to market to various target audiences and the potential need to bring forth a more modern approach towards this facet. Her conventional approach ranged from sending out postcards to residents in the Atlanta suburbs to creating monthly newsletters about things to do in the area. These methods were intended to form a bond between her and the consumers she intended to target. She recognized that her competing realtors in the suburban Atlanta area were beginning to incorporate social media into their marketing strategy heavily, and she wanted to see through a study just how successful this was turning out for them before making an educated decision on how she would adjust. The focus of my research at internship was to analyze the impact of realtors' social media usage with

respect to the number of houses sold. Looking at different demographics/regions and/or platforms allowed for a unique correlational study to help grow Ms. Daniels' and Harry Norman's sales in the years to come. The opportunity to incorporate data collection and analysis made this very interesting.

### **Relevance in Current Housing Market**

In the USA, younger generations are not as likely to be owning their own homes as compared to older generations around the same age (Paz-Pardo, 2021, Figure 1). They are also found to have become largely resistant to traditional forms of marketing, instead being more receptive to social media and online methods (Duffett, 2017). Meanwhile, house prices in the USA continue to go on the rise, with a 3.8% rise being shown in November 2024 as compared to the previous year (Barron's, 2025). This makes the marketing strategies used by realtors more crucial than ever before, and the real estate sector has the potential to benefit from newer strategies to combat these developing trends and secure sales from the newer generations.

Ms. Daniels had also noticed these developing trends in the last year, prompting her to want to change her marketing approach to connect with the younger generation of real estate buyers. Through my study, she was able to find out whether increased social media usage helps realtors increase the number of houses they sell. Going deeper into this by having my data single in on a platform and demographic(s) helped her tremendously in zeroing in on a strategy for future use (this year and beyond). Social media has the potential to revamp the way that the real estate industry approaches its marketing and its effectiveness.

## Research Map

### Analyzing the Impact of Social Media Usage on Number of Houses Sold

(IV; DV)

How do real estate organizations determine which marketing techniques are the most reliable and successful?

Connecting with the right audience through a proper marketing technique is critical to finding success in real estate (Housing Market Group, n.d.). This can be done through surveying the landscape to scout the competition and determine peculiar market share opportunities that have yet to be covered (Audience Town, 2024). The best real estate organizations go on to factor in their geographical location as well as the amenities that are offered in the area when determining how they plan to market (Mediaboom, 2021). This forms a more personable connection to the area and the people within it, making it easier to pick what marketing technique will be effective to use. Understanding how the most successful marketing techniques are determined allows for clarity on why posts were designed the way they were, thus giving Harry Norman Realtors the ability to replicate that success for their own benefit.

How can the relationship between social media marketing and successful selling of houses by a real estate agent be measured?

How social media's impact on sales has been studied in the past can be best viewed through the study of Mahiuddin Muhit (2022), who performed a correlational analysis with the use of software to realize any potential relationship between the two. Before determining what correlation method should be used, it is important to identify variables and how they are measured (Hassan, 2024). The correlation method is subsequently chosen through the data type before using statistical tools to compute the correlation coefficient and reach a conclusion (Hassan, 2024). Taking advantage of evolving technology and data analytics to measure data and identify correlations gives real estate organizations (such as Harry Norman Realtors) the chance to gain a larger advantage over competitors (Robertson, 2024).

Is there a positive correlation between the number of Instagram posts and the total number of houses sold by realtors in suburban Atlanta?

There is a positive correlation between number of IG posts and total number of houses sold by realtors in suburban Atlanta ( $r \geq 0.5$ ).

The number of Instagram posts that realtors in suburban Atlanta posted in the last full year (2024) will be collected by manually going through accounts and counting the total number of work-related posts. The number of houses (in the price range of \$750,000-\$1,250,000) sold by realtors in suburban Atlanta in the last full year (2024) will be collected by going onto provided MLS databases and manually tacking on the valid sets of houses sold by realtors to the count for them. The data will be analyzed using a graph to plot the points and subsequently use Pearson's Correlation Coefficient to get an  $r$  value. If  $r$  is  $\geq 0.5$ , the hypothesis is accepted, indicating a positive correlation between the number of Instagram posts and the total number of houses sold by realtors in suburban Atlanta.

Is there a positive correlation between the number of Facebook posts and the total number of houses sold by realtors in suburban Atlanta?

There is a positive correlation between number of Facebook posts and total number of houses sold by realtors in suburban Atlanta ( $r \geq 0.5$ ).

The number of Facebook posts that realtors in suburban Atlanta posted in the last full year (2024) will be collected by manually going through accounts and counting the total number of work-related posts. The number of houses (in the price range of \$750,000-\$1,250,000) sold by realtors in suburban Atlanta in the last full year (2024) will be collected by going onto provided MLS databases and manually tacking on the valid sets of houses sold by realtors to the count for them. The data will be analyzed using a graph to plot the points and subsequently use Pearson's Correlation Coefficient to get an  $r$  value. If  $r$  is  $\geq 0.5$ , the hypothesis is accepted, indicating a positive correlation between the number of Facebook posts and the total number of houses sold by realtors in suburban Atlanta.

## Scope of Study

### Delimitations

- This study consists of data only from the year 2024 (January 1, 2024 - December 31, 2024), not taking into account any data points from previous or future years.
- This study only examines the data of realtors whose work centers around selling houses in suburban Atlanta, not the entire world.
- This study looks into just two mainstream social media platforms used by realtors for posting work content, as requested by Ms. Daniels: Instagram and Facebook.
- This study counts only houses that are sold in the price range of \$750,000 - \$1,250,000 when collecting data, which is the price range that Ms. Daniels' listings typically fall under.
- This study does not consider the number of followers that each realtor being examined has.

### Limitations

- The GMLS database does not display off-market house sales made by real estate agents, so the data collected does not include this type of house sale.
- The study does not consider the impact that economic events unique to 2024 may have had on the number of sales taking place in the housing market.

### Assumptions

- This study assumed that all data given from the GMLS database is accurate and up to date.
- This study assumed that no posts made by a realtor in 2024 were archived.

- This study assumed that the correlational analysis that is drawn from data taken in 2024 can be used to represent general trends, thus being effective in the formulation of future marketing strategies.
- The study assumed that the social media platform in which a selected realtor was having their posts counted is the main social media platform they use for marketing.
- The study assumed that the following count of a realtor on the social media platform that their posts are being counted does not alter the impact of social media usage on the number of houses sold.

### Definition of Terms

Key Term	Definition
Georgia Multiple Listing Service (GMLS)	This is a real estate database for realtors based in Georgia, providing them information about house sales that can be further specified by region of choice, time of sale, and parties involved (Justin Landis Group, 2023).
Work-Related Instagram Posts	This is any content of one's profession in the form of photos, carousel posts, or videos, that is visible on an account's profile grid (RedSocial, 2024).
Work-Related Facebook Posts	This is any content of one's profession in the form of text, images, videos, and links that is

	visible on an account's timeline (GB Times, 2024).
Positive Correlation	This is when the relationship between 2 variables moves in the same direction (as number of posts increases, the number of houses sold also increases, or as number of posts decreases, the number of houses sold also decreases), denoted by the r-value of a Pearson Correlation Coefficient being greater than 0 (Investopedia, 2024).
CORREL Function	This is a function on Google Sheets that is used for calculating the Pearson Correlation Coefficient between the selected 2 variables (number of posts and number of houses sold) present in separate columns in the spreadsheet (Lanoué, 2025).
Pearson Correlation Coefficient	Denoted as $r$ , this is a widely used statistical metric for assessing the relationship between 2 variables (number of posts and number of houses sold), and its yielded value ranges from -1 to 1 to indicate the correlation's

	magnitude and direction (GeeksforGeeks, 2024).
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### **Statement of Focus & Sub Problems**

Ms. Daniels and Harry Norman were looking to solidify an online modern marketing strategy that can connect to the incoming house-buying generation and help accelerate their sales in the real estate industry for the future (Duffett, 2017). This study aimed to gain a deeper understanding through analysis of public data of whether or not social media could be that reliable modern marketing technique to use for the sale of houses. The findings that were obtained by looking into specific social media platforms helped in addressing the gap in knowledge to narrow the precise marketing strategy for Ms. Daniels. Based on the goal of maximizing the number of houses sold with newer online marketing techniques, the following focus statement was created:

- Analyzing the Impact of Social Media Marketing Usage on Number of Houses Sold

To comprehensively analyze the components of the research project, the following basic sub-problems will be addressed:

Basic Sub Problem: How can the relationship between social media marketing and successful selling of houses by a real estate agent be measured?

Basic Sub Problem: How do real estate organizations determine which marketing techniques are the most reliable and successful?

The following applied sub-problems were created in relation with the basic sub-problems to address the focus statement:

Applied Sub Problem: Is there a positive correlation between the number of Instagram posts and the total number of houses sold by realtors in suburban Atlanta?

Hypothesis: There is a positive correlation between number of Instagram posts and total number of houses sold by realtors in suburban Atlanta ( $r \geq 0.5$ ).

Applied Sub Problem: Is there a positive correlation between the number of Facebook posts and the total number of houses sold by realtors in suburban Atlanta?

Hypothesis: There is a positive correlation between number of Facebook posts and total number of houses sold by realtors in suburban Atlanta ( $r \geq 0.5$ ).

## Literature Review

### Introduction

Traditional marketing methods are beginning to fall short more often in today's dynamic, fast-paced housing market (US Real Estate Insider, n.d.). Although many studies had explored the integration of digital tools into real estate marketing, there was still use for a firm analysis of social media tactics and their effectiveness on the house sales generated by real estate agents in suburban Atlanta. To find this out, this literature review was used to inform what methods others have used to measure any potential relationship between the two. Additionally, the ways in which real estate organizations and realtors in the past have studied and determined the most effective and reliable marketing strategies was examined. This allowed for complete and detailed answers to provide strong insight and background for how to conduct the upcoming analysis.

### Measuring Effects of Social Media Marketing on Number of Houses Sold

It is important for realtors to make informed decisions in today's dynamic real estate market (Robertson, 2024). Doing so will allow for increased success and a consistent consumer base to build off of. Taking advantage of evolving technology and data analytics to leverage data and predict trends gives organizations the chance to gain a larger advantage over competitors (Robertson, 2024). However, their uses vary based on the objective of what is trying to be found. Harry Norman gives its realtors access to the First Multiple Listing Service (FMLS) and Georgia Multiple Listing Service (GMLS) databases, providing them information about house sales specified by region of choice, time of sale, and parties involved (Justin Landis Group, 2023). The ability to investigate and collect information from such databases helps build strong data for houses successfully sold. Being able to evaluate the impact of a social media platform that drove

these sales, such as how Instagram gives access to reach, growth, and follower demographics, opens up the ability to create a correlational study that gives an accurate measurement (HubSpot, n.d.).

How social media's impact on sales has been studied in the past was best viewed through the study of Mahiuddin Muhit (2022), who performed a correlational analysis with the use of software to realize any potential relationship between the two. A moderately strong, positive correlation was found through looking at customer engagement, communication, and relationships (Muhit, 2022). The subject of the study does not directly relate to real estate and houses sold, yet the concept and intent remains the same. The importance of using technology and software is underscored with regards to determining the best trends or correlations to maintain consistent success with sales (Digicast Technologies, 2023).

It was important to correctly perform the steps for a correlational analysis between social media and the number of houses sold so that accurate results with no discrepancies were obtained. Before determining what correlation method should be used, it is important to identify variables and how they are measured (Hassan, 2024). The correlation method is subsequently chosen through the data type before using statistical tools to compute the correlation coefficient and reach a conclusion (Hassan, 2024). This conclusion is integral to evaluating the relationship between the two variables, and since that is what was analyzed going forward, using a correlational study was most efficient and effective.

### **Determining the Most Reliable Marketing Technique**

Various marketing techniques are put to use by businesses and entrepreneurs to maximize their sales and profit. Connecting with the right audience through a proper marketing technique

is critical to finding success in real estate (Housing Market Group, n.d.). Additionally, for these real estate organizations, it is important to understand how to identify the marketing technique that best works for them and their targeted consumers. Having marketing resources be misplaced towards the wrong audience simply leads to a waste of time and resources (Housing Market Group, n.d.). Profit maximization is done best with a reduction in losses, underscoring the significance of choosing the proper marketing technique. This can be done through surveying the landscape to scout the competition and determine peculiar market share opportunities that have yet to be covered (Audience Town, 2024). Being able to cover ground that hasn't been touched by competitors offers any real estate organization the potential to make bonds with a small part of the market that feels left out, thus establishing an advantageous connection to help increase sales. This will dictate the way in which they market to help appeal to a strong base.

Adding to this, successful organizations spend time surveying the wide range of demographics and buying behaviors of the area's general market through available databases (Dojo Business, n.d.). Determining the shopping behaviors of the target market, whether it is through online platforms or in-person sale events, is a huge benefit to any organization. The ability to understand this aspect of the intended consumer allows for the marketing techniques from an entire organizational perspective to be aimed at targeting these behaviors. The best real estate organizations go on to factor in their geographical location as well as the amenities that are offered in the area when determining how they plan to market (Mediaboom, 2021). Doing so allows for a more personable connection to the area and the people within it, thus driving a clearer thought process behind what marketing technique will be deemed effective to use. It is

important to take all these factors and strategies into account when developing a plan on how to uniquely cater to a specific market in the real estate industry.

### **Summary & Implications**

The literature that was reviewed spotlighted how measuring the relationship between social media marketing and successful selling of houses by a real estate agent can be successfully carried out, as well as the steps for how realtors and real estate organizations have identified their most reliable marketing techniques. Using online databases of house sales along with the business analytics provided by social media platforms was what was best for collecting the proper data, before turning to the use of a correlational study to measure potential relationship. Understanding the best avenues to explore and use for data in addition to knowing how to measure a relationship led to an analysis that was all the more likely to be properly conducted and planned effectively. Additionally, being able to conclude which marketing technique is the best fit, whether it be through targeting consumers who were previously left out, or surveying the consumers' demographics and geographical amenities, allows for a consistently higher rate of success in house sales. This knowledge provided a deeper understanding of the process behind determining the framework of social media posts and the marketing of realtors.

As information regarding the benefits of online marketing existed in a variety of literature, there was limited information regarding real estate marketing in the suburban Atlanta area specifically through social media posts on platforms. The majority of the literature was focused on social media marketing's benefit on sales as a whole, in addition to not choosing a specific region or area to analyze. Being able to analyze a potential relationship in the study

helped to solidify the best real estate marketing strategy and generate a higher volume of consistent sales.

## **Methodology**

The focus of this study was to analyze the impact of social media usage on the number of houses sold by a realtor. The two sub-problems determined whether there was a positive correlation between the number of posts on a specific social media platform (Instagram for ASP #1 and Facebook for ASP #2) and the total number of houses sold by realtors in suburban Atlanta. Analyzing the data collected for each applied sub-problem was essential to helping Ms. Daniels firmly select a primary marketing strategy for future use (this year and beyond). Once the data was collected, quantitative assessment was appropriate and was used for each applied sub-problem's methodology because it analyzed the results (using an r-value) to find out the correlation between the number of posts on a specific social media platform and the total number of houses sold by realtors in suburban Atlanta (Hassan, 2024).

### **Data Collection**

All collected data - from house sales, to social media posts, to the name of the realtor - was public information and in accordance with research ethics (Justin Landis Group, 2023). For correlational studies to be acceptable, a sample size of close to 30 or more participants is needed (Akman, 2023). The data collected for each applied sub-problem comprised of 25 realtors to fulfill this requirement and be able to obtain a proper correlation coefficient (r-value). They were randomly selected with the assistance of Ms. Daniels from the GMLS database by choosing every other name that came up in the search results for realtors operating in the suburban Atlanta area.

***ASP #1: Correlation between number of Instagram posts and the number of houses sold***

Instagram is a leading social media platform that allows users to post content, view other posts, organize content, and personalize their feed (Eldridge, 2024). The data for the number of Instagram posts (serves as the independent variable for the applied sub-problem) was collected by initially visiting the profiles of the 25 randomly selected realtors whose work is centered around suburban Atlanta homes (selection will be verified with assistance from my mentor as mentioned previously). Following this, the number of work-related posts that they posted onto their page in the year of 2024 were manually counted. Then, a Google Sheets spreadsheet for later analysis was created, as it is conveniently used by many to organize and access large sets of data (Lanoue, 2025). In this, the names of the 25 realtors who were used in this data collection were inputted into one column, and the corresponding number of work-related posts they posted onto their Instagram page in the year of 2024 were subsequently entered into the next column. The GMLS (Georgia Multiple Listing Services) database gives information about house sales specified by region of choice, time of sale, and parties involved (Justin Landis Group, 2023). The data for the count of number of houses sold (serves as the dependent variable for the applied sub-problem) was obtained from the GMLS database, in which access was given through Ms. Daniels' login. For each of the 25 realtors, their names were searched on the database to look at their history of houses sold. Furthermore, the results were narrowed by specifying the year (2024) and price range that Ms. Daniels' listings typically fall under according to her (\$750,000-\$1,250,000) in the search bar to eliminate potential confounding variables. Finally, the number of houses that were then shown in the results were manually counted. The counted value

was put into a new column in the spreadsheet, with the row of its placement corresponding to the correct realtor. The spreadsheet's data table will appear as such:

<b>Realtor</b>	<b>Number of Instagram Posts (X)</b>	<b>Number of Houses Sold (Y)</b>
Last Name, First Name	--	--

***ASP #2: Correlation between number of Facebook posts and the number of houses sold***

The data collection process for this applied sub-problem mirrored that of the previous sub-problem, aside from Facebook now being the social media platform examined instead of Instagram. Facebook is another leading social media platform that allows users to post content, view other posts, and join groups (Britannica, 2025).

**Data Analysis**

***ASP #1: Correlation between number of Instagram posts and the number of houses sold***

To find out if there was a positive correlation between the number of Instagram posts and the total number of houses sold by realtors in suburban Atlanta, Pearson's correlation coefficient was calculated to obtain an r-value. This was done by applying the CORREL function onto the two columns in the Google Sheets spreadsheet that were used to store the numeric data collected for each variable (independent and dependent) (Lanoue, 2025). If the r-value was  $\geq 0.5$ , the hypothesis was accepted based on the cutoff obtained from literature and mentor assistance, and there is a positive correlation between the number of Instagram posts and the total number of houses sold by realtors in suburban Atlanta (Statology, n.d.). This indicated that the usage of Instagram posts would be an effective marketing strategy for use in the upcoming year and

beyond by Ms. Daniels and Harry Norman. A scatter chart of the data from the spreadsheet was also produced to give a visually precise representation.

***ASP #2: Correlation between number of Facebook posts and the number of houses sold***

The data analysis process for this applied sub-problem mirrored that of the previous sub-problem, aside from Facebook now being the social media platform examined instead of Instagram.

**Validity and Reliability**

The usage of data collection tools that were standardized in their respective industries (social media and real estate), such as Facebook, Instagram, and GMLS, provided for accurate data and ensured validity within each methodology (Britannica, 2025; Eldridge, 2024; Justin Landis Group, 2023). Setting the sample size for each applied sub-problem to be 25 realtors (based on literature and previous studies stating that around 30 or more are needed for a proper correlational study) was another way in which validity was displayed in each methodology to obtain the most accurate results (Akman, 2023; Muhit, 2022). By eliminating potential confounding variables in each methodology, as mentioned through the narrowing of the search bar's year and price range in the GMLS database, an increase in validity occurred with the pure focus of the number of houses sold as the dependent variable. Obtaining mentor approval for this methodology from a successful realtor solidified its validity. The methodology's layout was reliable by the numerous recounts of data collection at each new juncture, thus ensuring lower chances of human error in data collection. The usage of a structured statistical analysis via the correlation function on Google Sheets allowed for higher consistency with the processing and analysis of data, meaning that it could be replicated and added to the methodology's reliability.

## Results

The results presented in this section for the study's analysis were obtained by following the methodology previously described, and they were used to directly answer the two applied sub-problems:

- Applied Sub Problem 1: Is there a positive correlation between the number of Instagram posts and the total number of houses sold by realtors in suburban Atlanta?
- Applied Sub Problem 2: Is there a positive correlation between the number of Facebook posts and the total number of houses sold by realtors in suburban Atlanta?

### **ASP #1: Correlation between number of Instagram posts and number of houses sold**

To have an effective visual that properly displayed the correlation between the number of posts on Instagram and the number of houses that were sold, a scatter graph was created, as supported by previous correlational studies discussed in literature (Hassan, 2024). Determining the r-value to quantify the relationship between the two variables was of most importance, and that was done through the CORREL function on Google Sheets. Data for the number of posts on Instagram by a realtor in the year of 2024 was collected manually from each respective realtor's profile. Data for the number of suburban Atlanta houses sold by a realtor in 2024 was also manually counted by going onto the GMLS database and specifying the constraints in place. Table 1 shows a summary table of the first applied sub-problem's results. Each of the realtors from which data was collected from were alphabetically listed down the first column of the raw data table, before putting the total number of realtors in the summary table's first column. In the following column of the raw data table, their respective number of Instagram posts were inputted, and the average of the values in this column was listed into the second column of the

summary data table. The final column of the raw data table showed the number of houses that they sold based on what was counted, and the average of these values was listed into the final column of the summary data table. The raw data table was used for the creation of the scatter graph shown below in Figure 1.

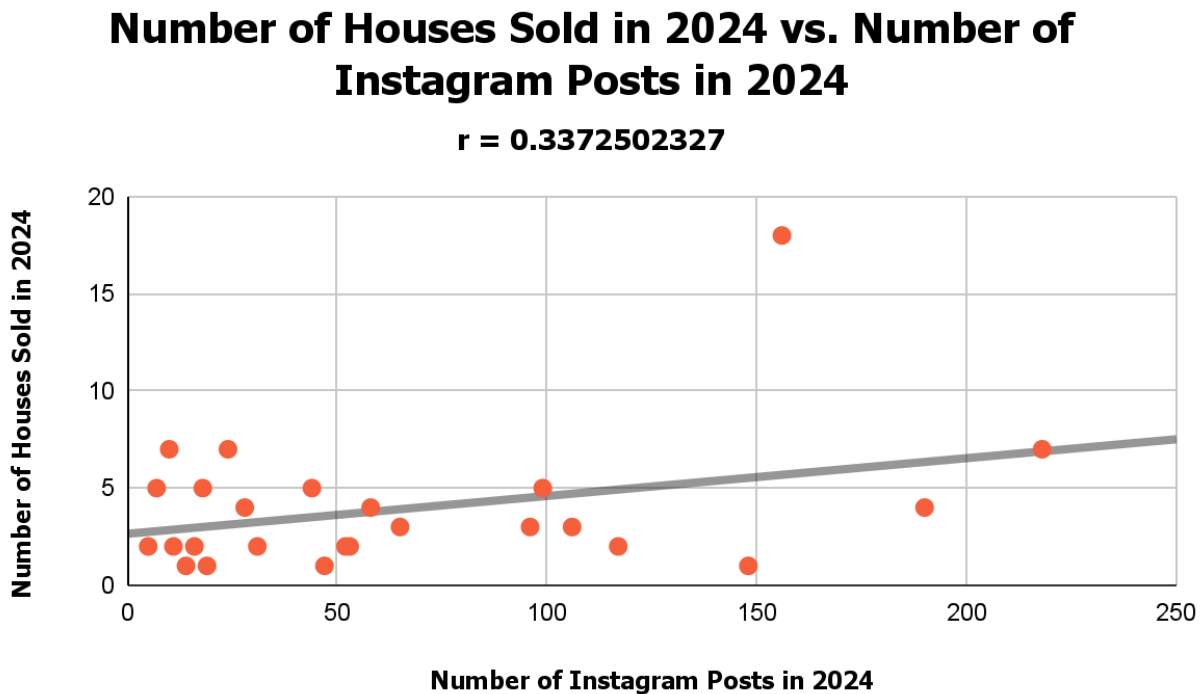
**Table 1**

*Summary Table of Data for Realtors' Instagram Posts and Houses Sold*

<b>Total Number of Realtors</b>	<b>Average Number of Instagram Posts in 2024 (X)</b>	<b>Average Number of Houses Sold in 2024 (Y)</b>
25	65.28	3.92

Figure 1

*Number of Houses Sold in 2024 vs. Number of Instagram Posts in 2024*



The data visualized onto the above scatter graph made it unclear at first glance as to whether the correlation between number of Instagram posts and number of houses sold was positive (as defined by the r-value cutoff established from literature) (Statology, n.d.). Each orange dot represented a realtor's data point, and while the trend line displayed is near most data points, their variances did vary. The points present with greater than 125 posts had more weight on the slope of the trendline as the majority of realtors posted fewer than 125 times, with an overall average of 65.28 posts. A clear outlier was present, further complicating the ability to determine the correlation. Because of this, the CORREL function was used to help reach an answer statistically. The value calculated from this was the correlation coefficient, or r-value, of

the data collected, and it was shown above the visualized data for the scatter graph of Figure 1. While the r-value of 0.3372502327 is a positive value, it fell below the established threshold of at least 0.5 for a positive correlation to be determined (Statology, n.d.). This was somewhat consistent with the literature previously examined as the r-value obtained for the relationship between social media usage and frequency of general sales was also positive, yet stronger due to sales in general being measured (Muhit, 2022). The r-value from Figure 1 thus led to the rejection of the first applied sub-problem's hypothesis.

### **ASP #2: Correlation between number of Facebook posts and number of houses sold**

Another scatter graph was created for this applied sub-problem to have an effective visual that properly displayed the correlation between the number of posts on Facebook and the number of houses that were sold. This type of graph was supported by previous correlational studies discussed in literature (Hassan, 2024). As was the case in the first applied sub-problem, obtaining the r-value was of most importance to quantify the relationship between the two variables, and that was done through the CORREL function on Google Sheets. Data for the number of posts on Facebook by a realtor in the year of 2024 was collected manually from each respective realtor's profile post stream. This applied sub-problem's data for the number of suburban Atlanta houses sold by a realtor in 2024 was also manually counted by going onto the GMLS database and specifying the constraints in place. Table 2 shows a summary table of the second applied sub-problem's results. In the same format as the first applied sub-problem, each of the realtors from which data was collected from were alphabetically listed down the first column of the raw data table, before putting the total number of realtors in the summary table's first column. In the following column of the raw data table, their respective number of Facebook

posts were inputted, and the average of the values in this column was listed into the second column of the summary data table. The final column of the raw data table showed the number of houses that they sold based on what was counted, and the average of these values was listed into the final column of the summary data table. The raw data table was used for the creation of the second applied sub-problem's scatter graph shown below in Figure 2.

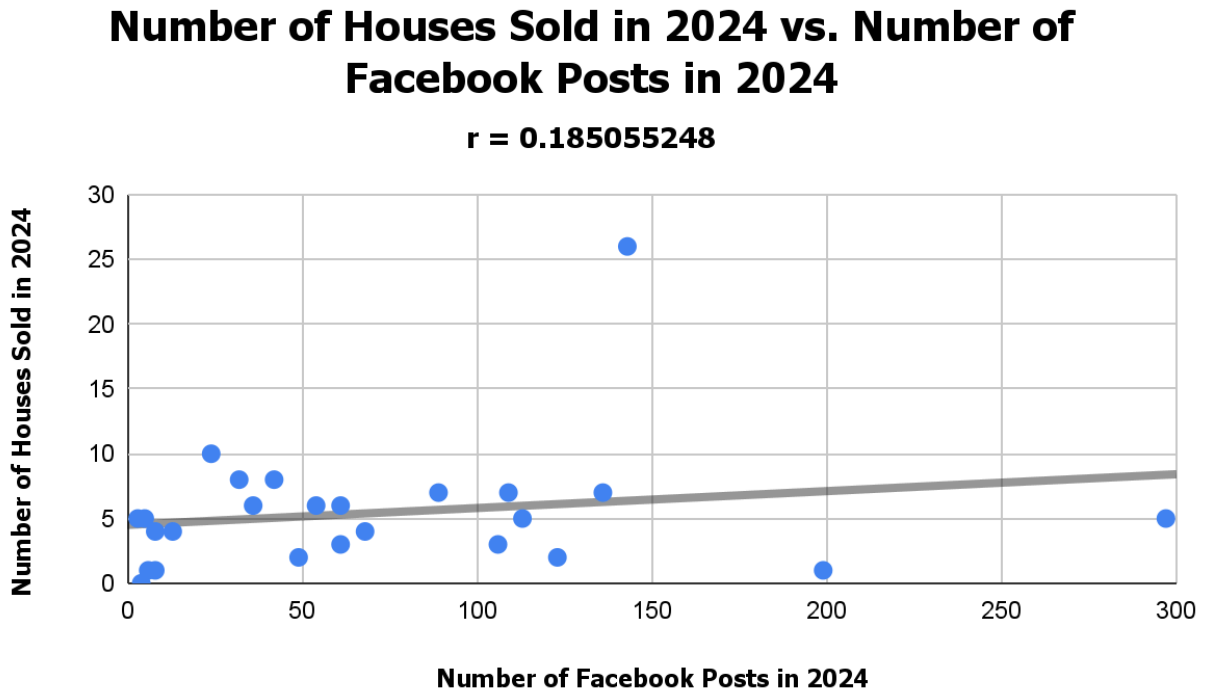
**Table 2**

*Summary Table of Data for Realtors' Facebook Posts and Houses Sold*

<b>Total Number of Realtors</b>	<b>Average Number of Facebook Posts in 2024 (X)</b>	<b>Average Number of Houses Sold in 2024 (Y)</b>
25	71.56	5.44

Figure 2

*Number of Houses Sold in 2024 vs. Number of Facebook Posts in 2024*



Similar to the first applied sub-problem, the data visualized onto the above scatter graph for the second applied sub-problem made it unclear at first glance as to whether the correlation between number of Facebook posts and number of houses sold was positive (as defined by the r-value cutoff established from literature) (Statology, n.d.). Each blue dot represented a realtor's data point, and while the trend line displayed is near most data points, their variances did vary. The points present with greater than 150 posts had more weight on the slope of the trendline as the majority of realtors posted fewer than 150 times, with an overall average of 71.56 posts. An outlier was present in this graph as well, further complicating the ability to determine the correlation. This resulted in the CORREL function being used to determine an answer

statistically. The value calculated from this was the correlation coefficient, or r-value, of the data collected, and it was shown above the visualized data for the scatter graph of Figure 2. As was the case in the first applied sub-problem, the r-value fell below the established threshold of at least 0.5 for a positive correlation to be determined, even though the value 0.185055248 is a positive value (Statology, n.d.). This was somewhat consistent with the literature previously examined as the r-value obtained for the relationship between social media usage and frequency of sales was also positive, yet stronger due to sales in general being measured (Muhit, 2022). The r-value found in Figure 2 led to the rejection of the second applied sub-problem's hypothesis as well.

## Conclusions

The purpose of this study was to analyze the impact of social media usage on the number of houses sold by a realtor to have a better understanding of a potentially effective primary marketing strategy for future use in the real estate industry. Through examining various literature that looked into how realtors identified the most reliable marketing techniques as well as how to successfully measure any relationship between social media marketing and the successful selling of houses, a correlational analysis was used to answer each of the study's two applied sub-problems. The first question sought to determine if there was a positive correlation between the number of Instagram posts and the total number of houses sold by realtors in suburban Atlanta, and the second question sought to determine if there was a positive correlation between the number of Facebook posts and the total number of houses sold by realtors in suburban Atlanta.

There are many ways in which the relationship between two variables can be analyzed. This study chose to perform a correlational analysis to do so based on literature of previous studies that investigated social media's impact on general sales (Muhit, 2022). Additionally, looking into the suburban Atlanta region specifically, as well as Instagram and Facebook, is attributed to the top realtors such as Ms. Daniels ensuring they survey their local landscape when planning how to analyze which technique is going to be best for their use in the future (Mediaboom, 2021). Conducting a correlational analysis in an accurate manner, however, is best done through the use of statistical tools to compute a correlation coefficient that can lead to effective results and conclusions (Hassan, 2024). Thus, using Google Sheets' CORREL function allowed for this to be done efficiently (Lanoue, 2025).

Somewhat consistent with the results of literature previously examined, the correlation coefficient calculated in applied sub-problem one, 0.3372502327, was also found to be a positive value, yet it was lower than the established threshold of at least 0.5 to deem a positive correlation (Muhit, 2022). This led to the rejection of the hypothesis that there is a positive correlation between the number of Instagram posts and total number of houses sold by realtors in suburban Atlanta. The yielded value still signified that there was somewhat of an increase in houses sold in relation to an increase of Instagram posts produced, but not enough to be called a positive correlation. As social media usage continues to grow each year, the results coincided with the greater potential for an increase in sales through the use of Instagram in the future (Lipsman et al., 2022).

The correlation coefficient calculated in applied sub-problem two, 0.185055248, was a much smaller positive value that was lower than the established threshold of at least 0.5 to deem a positive correlation, similar to a certain degree to the results of literature previously examined (Muhit, 2022). This meant that the hypothesis that there is a positive correlation between the number of Facebook posts and total number of houses sold by realtors in suburban Atlanta was also rejected. The yielded value translated to a marginal relationship for an increase in houses sold with respect to an increase of Facebook posts produced, and Ms. Daniels and her colleagues can use this information to reduce their presence on the platform in the next year and spend time allocating resources elsewhere.

The overall results showed Instagram having far greater potential than Facebook for suburban Atlanta realtors to use as their primary marketing strategy in the future. Posting on Instagram to a suburban Atlanta-based target market was shown to have a stronger relationship

of having more houses sold when posting at a higher frequency, with the correlation coefficient being nearly twice as large. This information can be of great benefit to Ms. Daniels and her colleagues as it means they can build off of this to grow their online presence onto the platform in the next year.

### **Limitations**

One of the study's limitations was that the only sold houses counted for data collection fell between the price range of \$750,000 to \$1,250,000. The study's results were therefore not as relevant to agents who specialize in selling houses outside of that specific price range. Additionally, data was only collected from realtors who operate in the suburban Atlanta area. This made the results of this study potentially inaccurate for realtors based in other areas to use for their future marketing strategy due to the variety in target market across geographical locations (Mediaboom, 2021). Furthermore, all data collected was from the year 2024. Any economic events or actions that were unique to 2024 potentially had an impact on the data used for the study's results and conclusions that was not considered. Finally, only Instagram and Facebook were the social media platforms analyzed in the study. With an abundance of platforms available to use for marketing, analyzing these two platforms hinders realtors who use other social media platforms from relying on the accuracy of these findings to determine if those other platforms should be part of their marketing strategy.

### **Implications**

The implications of these findings are valuable to the real estate industry. Real estate companies and realtors in suburban Atlanta who specialize in selling houses priced between \$750,000 and \$1,250,000 can apply these findings into their future marketing strategies to grow

their sales. Ms. Daniels and her colleagues at Harry Norman will use this study to grow their digital presence on Instagram as they look to scale back from mail-related marketing strategies and forge more personal connections with their target market. In exchange, local residents will see more real estate posts on their social media feed, thus increasing the awareness for the listed houses and their respective events. Additionally, this study will help Ms. Daniels save money from the cost of mail-related marketing strategies, which allows her to effectively use more assets for her face-to-face events to gain an advantage over other realtors.

### **Future Studies**

The findings determined from this study were valuable, yet further research could help present more information regarding the impact of social media usage on the number of houses sold by realtors. A possibility is for further research to be conducted with regards to other social media platforms used by realtors, such as X. This would help provide insights into entirely different demographics of target market audiences, allowing realtors to strategize their marketing accordingly. In addition, realtors from all over the USA, not just suburban Atlanta, can be looked into for data collection in further research. This will help provide analysis on what can be a possible primary marketing strategy for future use to a broader range of realtors based in different locations. Expanding on this research will lead to a larger portion of the real estate industry benefiting and being able to tailor their marketing, not just suburban Atlanta real estate agents like Ms. Daniels.

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