William Douglas Property Management

Alvis Chung | Arpita Deb | Siqi Li | Jyoti Ranjan Mohapatra

Professor: Angela Xia Liu

DSBA 6276 – Consumer Analytics

University of North Carolina at Charlotte

Spring 2021

Table of Contents

Executive Summary

Objectives and Research Problems

The objectives of this project are to address William Douglas Management

Group's existing or current issues by analyzing customer's comments and to provide

strategic recommendations to help the business. In order to achieve these goals. We

will focus on below research questions:

- How is WDM perceived by its customers?
- Do they meet with the average HOA review score?
- Does the central message WDM are trying to convey match the needs of the customer?
- Does WDM answer the pain points of their customers in the past/recently?
- How are the competitors of WDM being perceived by their customers?

Overview of the Methodology

We began with topic modeling based on customer reviews from Google, Yelp

and Testimonial to address some of the existing issues in order to better understand

the areas of interest about the customers. After identifying these topics, we focused

on exploring into these topics in depth. Then, we use sentiment analysis to identify

the positive and negative scores in those thematic relationships about what

information is the most superior and what is the most concerning. After that, we

further analyzed the competitors to further highlight the advantages and

disadvantages of WDM competitors.

- WDM Facebook page has more potential to increase the number of visitors compared to other social media sites like yelp, YouTube or LinkedIn.
- The most frequent organic search keywords direct to the landing page which is the WDM home page. Hence, there is scope of more users getting converted to leads from this page.
- Customer segmentation analysis shows that Myrtle Beach gets the highest number of leads through Organic and APM sources and Charlotte through the WDM website.
- Sentiment analysis for google reviews shows that there is overall positive sentiment. It also displays the top 20 negative words in the reviews and WDM needs to research to find out the reason behind their occurrence.
- Competitor analysis (Customer Perception) displays that Kuester has better Turnaround time and Cedar has the competitive advantage of having a very good knowledge of the Property Management Industry.

Introduction

Company Background

William Douglas Management Group provides property management and financial services to different homeowners in the community. The company provides a variety of services, such as financial management services, including record keeping, contract maintenance, and emergency services. They are result oriented association management companies. Since its inception, their main goal has been to provide excellent management services, and its ultimate goal is to increase the overall property value for customers. Their excellent customer service has always been one of the keys to our success and the way that they stand out from other management companies such as Cedar Management Group and Kuester

Management Group. High quality customer service begins with our commitment to communicate with customers.

In addition, active and timely communication with the board of directors and individual homeowners is essential for the smooth operation of the association. Timely communication with the board of directors and individual homeowners is essential for the smooth operation of the association. Active management can provide expert guidance and training for customer committees. Seminars, newsletters, videos and other content to solve common problems, questions and problems. Their superior management processes are enhanced by advanced technologies and systems, including the most advanced property management software suite, which will allow the board remote access to view real-time data. WDM customers include homeowners' associations, apartment owners' associations, urban homeowners' associations, cooperatives and commercial apartment owners' associations. WDM works with collaborators such as contractors, builders and independent third-party CPAs.

Customers

Customers of WDM are a group of homeowners who self-organize to form a homeowner association that pays fees to maintain the entire property for condos or the common areas for townhomes or single-family homes. WDM gets business through management fees by managing different HOAs.

Collaborators

The builders, developers and Contractors are the people that WDM and the other HOA management firms collaborates with to perform their business. WDM can also collaborate with online real estate property sites like Zillow and realtor.com to be up to date with the property developments that are happening across different markets that WDM operates in.

Competitors

There are multiple property management groups competing in the same market as William Douglas Property Management. Out of these we have concentrated three major players in North Carolina and South Carolina.

Henderson Properties

Henderson properties is one of the largest competitors of WDM. It was Founded

in 1990 and is a family-based business. The Key product and service offerings include association management, rental property management, home renovations, home sales.

Henderson properties cover the markets in Charlotte, Huntersville, Indian Trail, Fort Mill, Rock Hill, Concord, Gastonia, Davidson and aggressively look forward to expanding its area of operation. The primary promotion method for Henderson property management is Social media such as Facebook, YouTube and LinkedIn. Henderson Properties also relies on word of mouth for its promotion. Approximately 50 to 200 employees work for Henderson Properties.

Cedar Management Group

Cedar Management Group is a privately owned company and one of the latest competitors of WDM. It was founded in 2005 with its headquarters at Charlotte, NC. Cedar manages 700 associations out of which 65% client base is Single Family Homes and 35% client base is a mix of Condominiums, Townhomes, etc. The Key product and service offerings have much bigger horizon in comparison to WDM. They include Condominium Communities, Mixed-Use Developments, Townhome or PUD Communities, Master Planned Communities Containing Sub-Associations, Adult Active Communities, Commercial Association, Luxury High-Rise Communities,

Golf & Club Communities, Single Family Communities.

Cedar Management Group covers the markets in Charlotte, Asheville, Winston-Salem, Columbia, Mooresville, Charlston, Myrtle Beach, Knoxville, Rock Hill, Hickory, Raleigh-Durham, Greenville, Greensboro, Hilton Head, Wilmington, Gatlinburg. The primary promotion method for Cedar Management Group is Social media such as Facebook, YouTube and LinkedIn. Cedar Management also relies on word of mouth for its promotion. More than 200 employees work for Cedar Management Group.

Kuester Management Group

Kuester Management Group is a privately owned family based company and one of the oldest competitors of WDM. It was founded in 1975 with its headquarters at Fort Mill, South Carolina. The Key product and service offerings have much wider horizon than WDM. Which include Self-Managed, HOA, COA, TOA, Commercial, Age Restricted Communities, New Communities under development

Kuester Management Group covers the markets in Fort Mill, Davidson, Wilmington, Charlotte. The promotion method for Kuester Management Group is Social media such as Facebook, YouTube and LinkedIn and word of mouth. The company size is somewhat small employing 50 to 200 employees.

Target Market

The Target market of William Douglas Property management includes Charlotte, Cabarrus county, Gaston County, Greensboro, Hendersonville, Lake Norman, Mooresville, Raleigh, and Union county in North Carolina. Some of the places in South Carolina such as Columbia, Charleston, Fort Mill, Greenville and Myrtle Beach. WDM has recently faced stiff competition in Charlotte, North Carolina even though the business is good in Raleigh. The recent boom in the real estate industry in Charlotte indicates that WDM has high probability to grow its business and give a reasonable challenge to its competitors such as Kuester, Cedar and Henderson.

The Marketing 4 P's

Products

Some of the products offered by William Douglas Management Group are financial services, which include providing information, budgeting, financial reporting and payment information. Another product is board resources, which includes Bi weekly or monthly meetings with individual homeowners to discuss upcoming projects within the community. Another product is maintenance which will include maintaining, replacing or repairing public areas in the community. Finally, work order and building control board requirements are also one of the main responsibilities within their scope.

Price

The pricing strategy varies depending on type of property, locality, amenities to maintain and quality of service required. However, the following facts remain standard for the most part.

Homeowners' association (HOA) fees are the monthly dues homeowners' associations collect. Generally, HOA fees are used to pay for amenities, property maintenance, and repairs. HOA fees are standard for most purchased condominiums, apartments, and planned communities, though some neighborhoods that consist of single-family homes also have HOA fees. HOA fees vary drastically, but some estimates claim these fees are between $100 and $700 per month, with roughly $200 as an average. However, fees vary based on what the HOA provides. Generally, the more services and amenities, the higher the fees. WDM collects its payments from HOAs for the services they provide.

Place

WDM are providing property management services primarily in North Carolina, South Carolina, and some in Georgia, Tennessee and Texas, including cities like Charlotte, Columbia, Cabarrus County, Charleston, Fort Mill, Gaston County,

Greensboro, Greenville, Hendersonville, Lake Norman, Mooresville, Myrtle Beach and Raleigh.

Promotion

The property management companies usually use a plethora of mediums to promote their company and service offerings. In case of WDM, they use their own website, Search engine optimization (SEO), Video marketing on YouTube, Social platforms like Facebook. WDM also reaches out to management of new property developers to promote their service offerings. However, it is noticed that the primary source of promotion is word of mouth which resulted in the most output in case of WDM. In the following analysis we will explore further options for promotion at a granular level.

Current growth of WDM's business mainly relies on "word of mouth". Even though there is an ample presence in social media such as YouTube and Facebook, there is no presence in LinkedIn or Twitter as some of their competitors do. It is also noticed that WDM has very low following and YouTube video views.

WDM's social media posts should showcase their Property management industry knowledge, this will appeal to your clients' interests, and reveal your brand's identity.

Publishing online content and establishing a social media presence serves as a way to communicate, meet consumer needs, and build trust before you establish a direct relationship. Additionally, you can connect with HOA on a personal level. In turn the positive feedback and reviews would help WDM get would further fetch more clients.

SWOT Analysis

Strengths

WDM communicates with boards and individual homeowners on a regular basis. They have a very proactive management. WDM uses Advanced technology like the Property management software suite to help its customers fulfil their requests. WDM is a leader in management technology and it offers real time remote access to association records for Board members. The most important strength is their Online Media Presence and resourceful online content across online space through company website, YouTube, LinkedIn, Facebook, Yelp.

Weakness

The low conversion rate of WDM is one of their weaknesses compared to its competitors. Some of the issues or problems of the homeowners are not addressed on time which leads to gaps in relationships. There also exists communication gap between WDM representatives and their clients as most of the clients have complained that it is difficult to reach HOA manager over phone. Clients also believe

that WDM increase fees for the same services compared to its competitors.

Opportunities

Due to the decrease of mortgage rate during Covid 19 pandemic, more people are buying properties. Hence there is scope for WDM to take advantage of this opportunity and look for the areas where more people are buying properties. There is also less supply of properties during pandemic and high demand from consumers which is again an opportunity for the HOA management firms.

Threats

There is Intense competition from competitors like Cedar, Henderson, Kuester, etc. and it poses threat to WDM's market share. Customers also believe the competitors are offering more value in terms of price and service and this perception of the people poses a big threat to WDM.

PESTLE Analysis

Political

These factors are all about how and to what degree a government intervenes in the economy or a certain industry. The current government in North Carolina and South Carolina seems to have a very positive attitude towards small business and

medium business. Their policies should favor WDM's growth without any political issues.

Economic

Economic factors are determinants of a certain economy's performance. Factors include economic growth, exchange rates, inflation rates, interest rates, disposable income of consumers and unemployment rates. Given that the current real estate market is booming and the interest rates are low to favor customers buying a new home there is a high probability that the Economic situation is suitable for William Douglas Management Group to get new customers quickly.

Social

This dimension of the general environment represents the demographic characteristics, norms, customs and values of the population within which the organization operates. This includes population trends such as the population growth rate, age distribution, income distribution, career attitudes, safety emphasis, health consciousness, lifestyle attitudes and cultural barriers. With the support from the fact that North Carolina is a booming place and its population is growing constantly, people from other states are migrating from other states to get a piece of job in the tech

industry: we can safely assume that this will result in new homes and neighborhoods being constructed continuously. So overall the social situation is in favor of WDM to get new HOAs to manage. For example; local food banks, school supply drives, humane society, etc.

Technological

These factors pertain to innovations in technology that may affect the operations of the industry and the market favorably or unfavorably. This refers to technology incentives, the level of innovation, automation, research and development (R&D) activity, technological change and the amount of technological awareness that a market possesses. In case of WDM we have noticed that the company is moderately taking advantage of new technologies, such as their new website, Search engine optimization, Social media such as YouTube, Facebook etc. The company is also using Live chat through their website. WDM has to keep a constant tap on these technologies to keep growing.

Legal

Although these factors may have some overlap with the political factors, they include more specific laws such as discrimination laws, antitrust laws, employment

laws, consumer protection laws, copyright and patent laws, and health and safety laws. Given the fact that North Carolina has pretty solid laws around HOA (https://www.hopb.co/north-carolina) and property management; the overall legal situation looks favorable to property management groups. The healthy legal environment in the southern states equip the property management companies with appropriate laws to handle any disputes.

Environmental:

Environmental factors have come to the forefront only relatively recently. They have become important due to the increasing scarcity of raw materials, pollution targets and carbon footprint targets set by governments. Considering the fact that Charlotte has a very good rating in air quality and other environmental factors it is a suitable place for single family owners to buy new homes. As WDM's primary customer base is single family homes we can safely assume that the environmental factors are in favor of HOAs and property management companies to take advantage of.

Data Descriptions:

To better understand our objectives, we bring in the following datasets which were extracted from Google, Yelp and William Douglas Management main website. Additionally, we also bring in customer account data, Charlotte real estate data,

Google analytics data and Facebook analytics data. Below is an overall summary of

the datasets and how it was used:

Google Reviews Data (Competitors)	Dataset Volume	Userful Attribute
cedar.csv	(15 columns, 887 rows)	reviews
henderson.csv	(15 columns, 289 rows)	reviews
kuester.csv	(15 columns, 335 rows)	reviews
Yelp, WDM website, Google Reviews (WDM)		
Yelp_Data_WDM.csv	(7 columns, 13 rows)	reviews
Google_Reviews_Data_WDM.csv	(15 columns, 215 rows)	reviews
Testimonial_Data_WDM.csv	(3 columns, 28 rows)	comments
Account Data		
WDMC_Leads.csv	(17 columns, 113 rows)	
Real Estate Data		
Meck_RE.csv (*Combined all the csv's*)	(29 columns, 124246 rows)	
Google Analytics for WDM	Real-time import	
Facebook Analytics for WDM	Real-time import	

Figure 1 - Dataset Descriptions

- Google Reviews → (*Topic Modeling / Sentiment Analysis / Competitor's Analysis*)
- Yelp Reviews → *(Topic Modeling)*
- Testimonial Reviews → *(Topic Modeling)*
- Account Data → *(Exploratory Data Analysis)*
- Real Estate Data → *(Exploratory Data Analysis)*
- Google Analytics and Facebook Analytics Data → *(Exploratory Data Analysis)*

Google reviews dataset includes William Douglas Management Group and

its competitors, such as Cedar management group, Kuester management group and

Henderson management group. For building our topic modeling and sentiment

analysis, we've only taken out the "reviews" attribute from Google reviews and Yelp

reviews, the "comments" attribute from Testimonial for William Douglas Management

Group and combined into one dataset. Then the rest are for competitor's analysis.

Furthermore, the account dataset gives a brief overview about the customers types.

Real estate dataset also was used to identify potential subdivisions within the

geographic locations. Lastly, Google Analytics and Facebook analytics are used to

determine the popularity of the social media platforms people use.

Data Cleaning

To better understand our topic analysis and sentiment analysis, the first step we

completed was to convert all comments to lowercase. Then, we applied stemming to

remove stop words, punctuation and custom stop words (such as "I", "can", "you",

"community", "one", "work", "HOA", "company", "attribute") to avoid non-English texts

and words that have no significant impact into our analysis as shown on Figure #1.

After that, we use the term document matrix to identify the most commonly used

words, and match the comments with the positive and negative thesaurus, and find

the most commonly used positive and negative words in the comments.
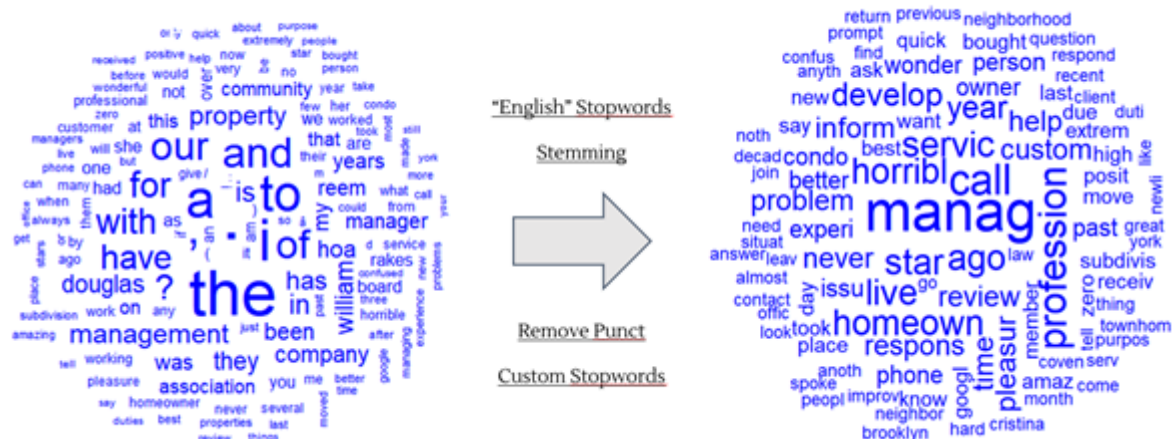
Figure 2 – Word Clouds before vs after cleaning

Additionally, to visualize the WDM lead account data, the null values were replaced with mode for categorical data. Unrelated information like 'ID', 'Date', 'First Name', 'Last Name', 'Phone', 'Email', 'Address', 'City', 'State', 'Type', 'Size-Original', 'Notes' were also removed. The size information was cleaned by removing the unit and the number was averaged to compare. For example, 2-49 is replaced by 25. And the null value in the size column was filled with the mean of size.

To analyze Charlotte Real Estate sale data, we cleaned the data through removing unrelated variables such as 'Parcel #', 'County', 'Fin SF', 'Derived SqFt Flag', 'Owner', 'Site Address', 'Site City',   'Tran Type', 'Tran Desc', 'Seller', 'Purchaser', 'Loan Amt',   'Sale Date',   'Derived Price Flag', 'Lender',   'Title Company', 'Document Number' , and kept variables including 'Zoning Code', 'Lot SF', 'Fin SF (Assessor-Based)', 'Land Use (Housing Type)',   'Site Zip', 'Sale Price', 'Yr Built',   'Stories', 'Bedrooms', 'Bathrooms', 'Submarket', 'Housing_Type' for analysis.

We splitted 'Land Use (Housing Type)' value to extract family type information as a

new column. Values like unknown, other and *Unknown were replaced with NaN

and then dropped as null values. The variable names were renamed to

'Zoning_Code', 'Lot_SF', 'Fin_SF', 'Site_Zip', 'Sale_Date',   'Sale_Price', 'Loan_Amt',

'Yr_Built', 'Stories', 'Bedrooms', 'Bathrooms', 'Submarket', 'Housing_Type',

'Housing_Age' for better computing.

Firstly, the Google reviews scrapped for sentiment analysis were mostly clean

on all 15 fields. This resulted in a firm ground to start the analysis on. However, we

ended up doing two cleanings for the Google reviews. Firstly, we had to ignore the

reviews where no comment was given to analyses the data.
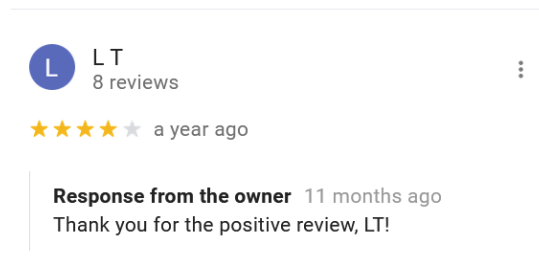
Figure 3 – Google review with no text(comment) for Cedar Properties

The number of reviews with no text in its comments are 40 reviews for Henderson, 65

reviews for Cedar and 68 reviews for Kuester.

Secondly, Post removal of these reviews we encountered some non-relevant

English words. For example, multiple entries of employee names made the output

skewed towards those employee names. We had to add these employee names to

stop words to get ignored by the analyzing algorithm.

```
get_top_n_words_tfidf(wdm.review_text,n=20)

[('willing work', 1.0, 'Positive'),
 ('great far', 1.0, 'Positive'),
 ('phone terrible', 0.5903998353539722, 'Negative'),
 ('answers phone terrible', 0.5903998353539722, 'Negati'
 ('like sweet', 0.5773502691896257, 'Positive'),
 ('sweet renting', 0.5773502691896257, 'Positive'),
 ('like sweet renting', 0.5773502691896257, 'Positive')
 ('just walked', 0.5773502691896257, 'Negative'),
 ('walked good', 0.5773502691896257, 'Positive'),
 ('just walked good', 0.5773502691896257, 'Positive'),
 ('marquita stacey', 0.5773502691896257, 'Negative'),
 ('stacey awesome', 0.5773502691896257, 'Positive'),
 ('marquita stacey awesome', 0.5773502691896257, 'Posit'
```

Figure 4 – Appearance of employee name with high magnitude before data cleaning

```
text.ENGLISH_STOP_WORDS.union(["kellie","stacey","rebecca","rice","management","henderson","marquita
```

Figure 5 – Removal of employee names and other irrelevant words from the analysis for better sentiment analysis

Exploratory Data Analysis

WDM Statistics and background data

<u>Business model</u>

WDM acquires customers through word-of-mouth advertising, acquisitions and
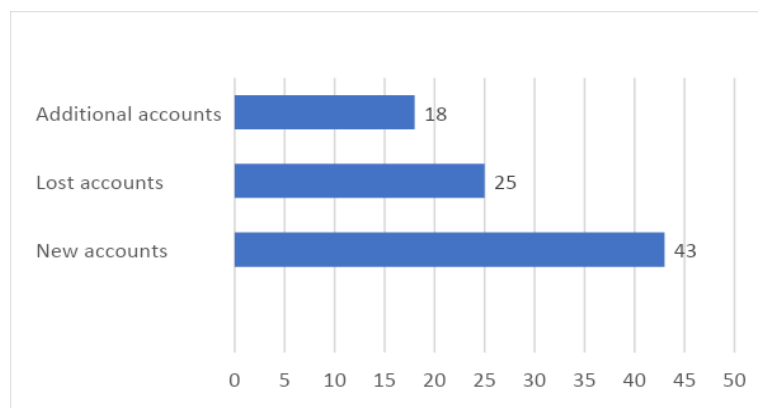
internet searches of the web site.

<u>Geographical data</u>

WDM in primarily in NC and SC, some business in TN and TX

<u>Industry trends</u>
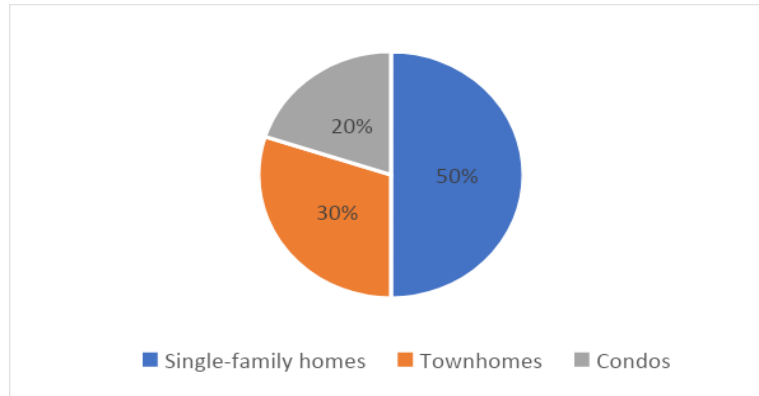
Pricing in trending toward a la cart.
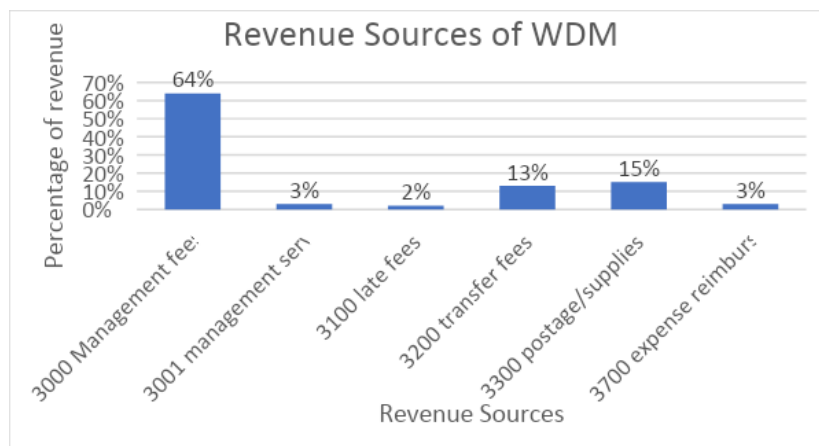
2020 Trending data for accounts

Figure 6 - This is the snapshot of the accounts data where new accounts stand at 43 and lost accounts at 25

Customer data (CINC System Property Management or other customer lists/databases)

Figure 7 – WDM deals more with single-family homes which is 50% followed by townhomes (30%)

Revenue Percentages of WDM from different sources

Figure 8 - This is the snapshot of the revenue sources and WDM acquires 64% of the revenue from management fees.

Google Analytics Interpretations for WDM

Audience overview of 2021 compared to 2020
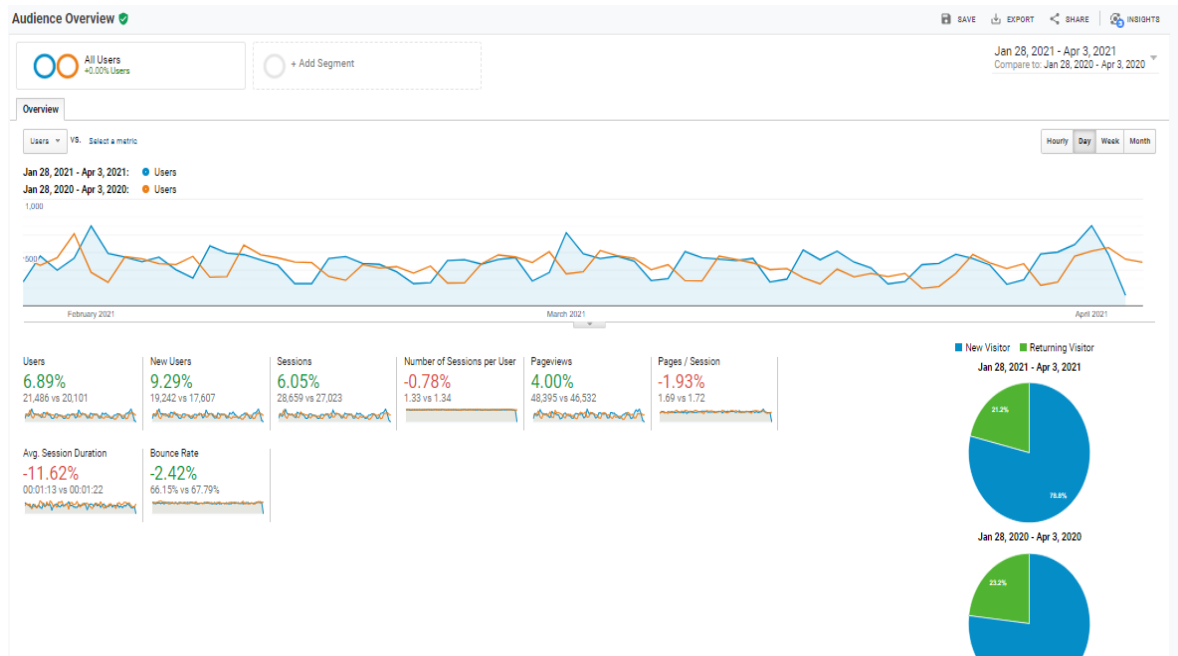
Figure 9 -

2021 Jan - April overview numbers compared to same period last year shows that

the number of users increased +7% and new users 9.29%. While the number of

overall sessions has increased to 6%, the number of sessions per user has gone

down -0.78%. This indicates that users can find the information they are looking for

in the home page of the site and don't need to navigate further to the other pages

which is a good sign.

The pages per session number have gone down (-1.9%) and the average

session duration has gone down (-11.6%). This shows that users are able to quickly

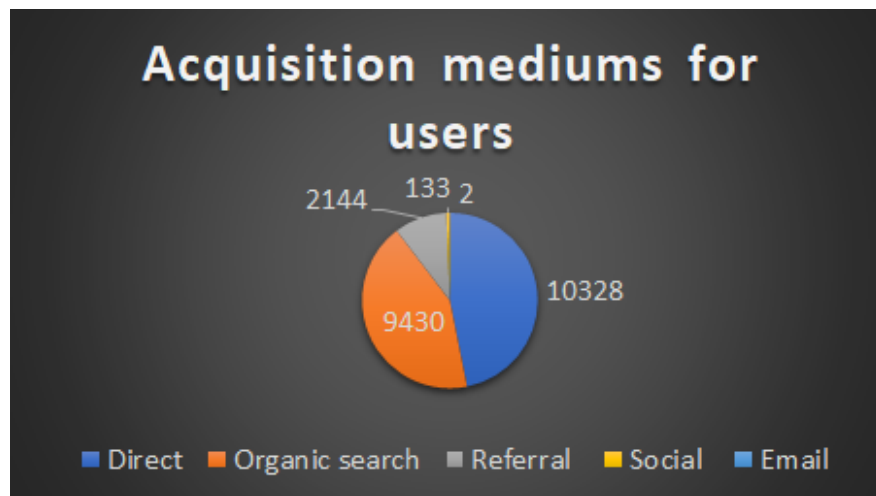find what they want and shows the effectiveness of the site has increased.

Figure 10 -

WDM acquires more users through direct channels followed by organic search

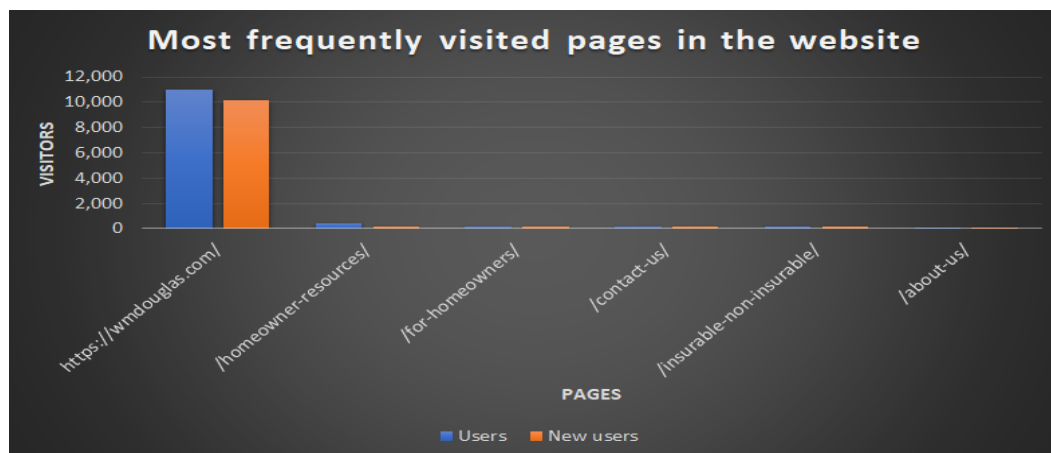followed by referral and other mediums.

Direct channels

Figure 11 -

The above graph shows the most frequently visited pages in the WDM website,

hence there is scope of including more content in these pages to satisfy the

customers and make them find what they are looking for easily.

Figure 12 -

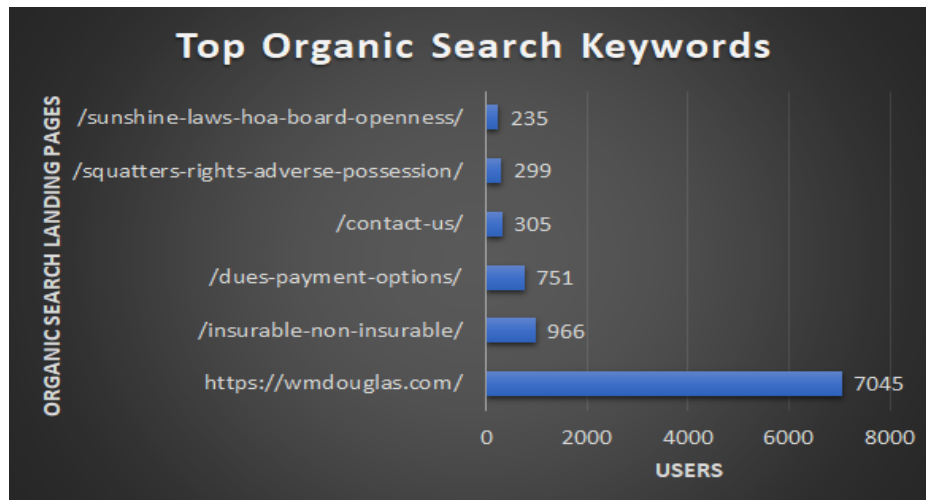The above graph shows the top 6 landing pages where the organic search

keywords by users leads to. The top one is https://wmdouglas.com/ followed by other

pages in the website. These pages are being landed upon by the users more
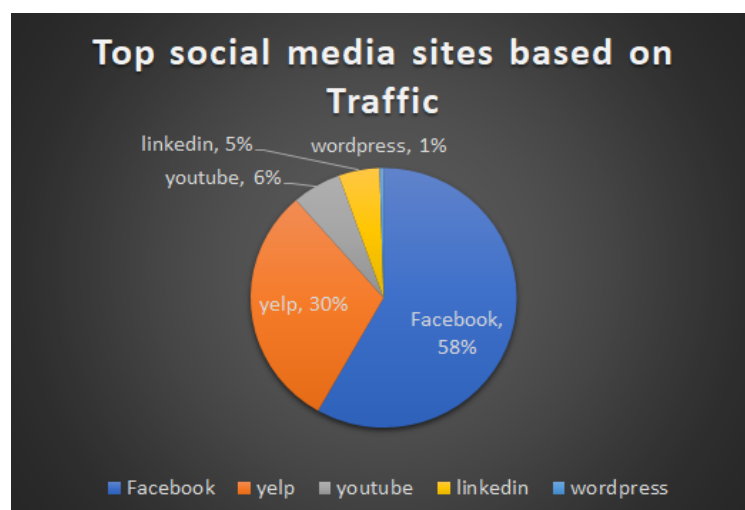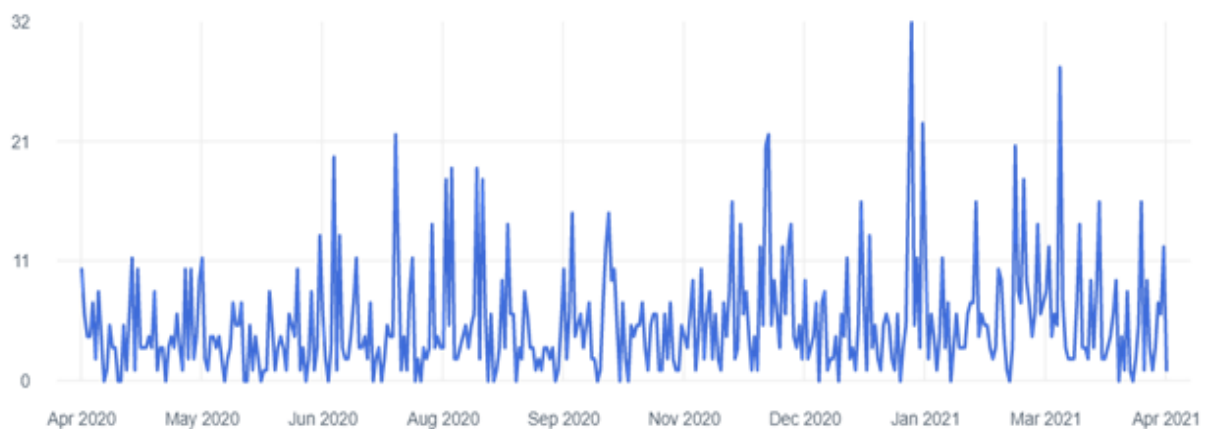
frequently.

Social media

Figure 13 -

This pie-chart shows the top social media sites associated with WDM on the basis of traffic. Facebook leads the market with 58% traffic followed by yelp which stands at 30%.

Facebook Analytics and Insights

Figure 14 -

The above graph shows the spikes in the WDM Facebook page reach during the course of time and although the reach to users increased during certain times, the overall reach is not satisfied. Hence. WDM should try to increase the user base in Facebook so that a greater number of users are aware of WDM products and services and become associated with WDM.

Caption	Post time	Reach	Likes and	Comment	Shares
COVID restrictions can prevent the HOA from holding the an	2/5/2021	158	2	1	0
Having security at an annual meeting may sound surprising,	2/12/2021	153	1	0	0
Eight great tips for the annual HOA meeting are presented b	2/26/2021	150	3	2	0
What are the three parts of being a "member in good standi	2/1/2021	126	1	0	0

Figure 15 - Campaigns reach and response

The above tabular chart displays the most recent campaigns that we posted by WDM on the Facebook page. The campaigns reached maximum 158 people and there is ultimate scope of increasing this number. Also, there are very few people who liked and commented on the posts and no one that shared them to a broader audience.
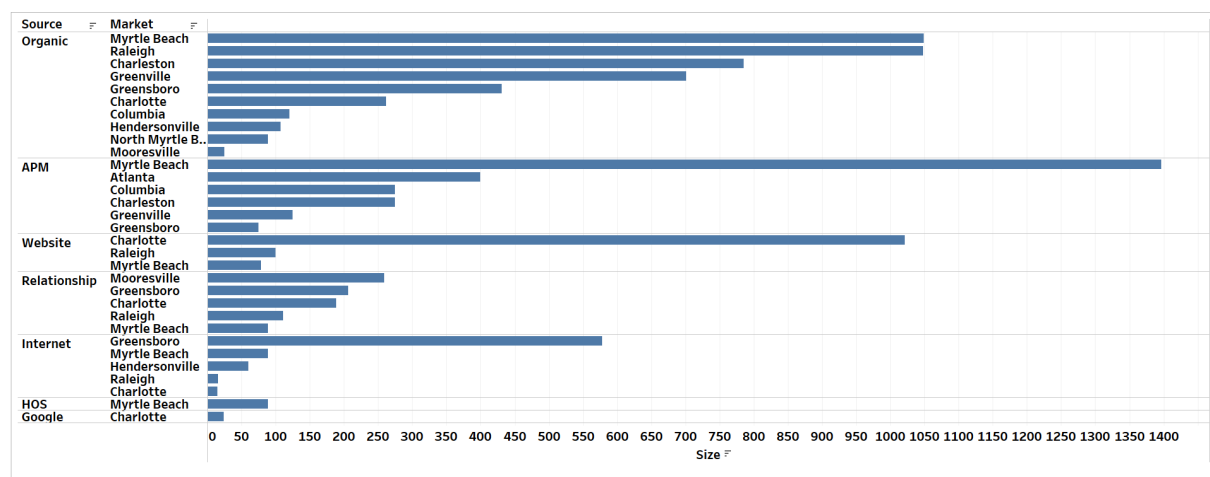
Figure 16 -

We'd like to know what WDM has done well and what areas it can improve. Source and market were plotted against size using Tableau Public. Figure x shows the lead segmentation analysis by source. Organic search is the major source of lead, followed by APM, website relationship, internet, HOS and google. From market

perspective, Organic and APM worked greatly for Myrtle beach, Website for

Charlotte, and internet for Greensboro, suggesting current focus on google search

engine and online media like YouTube, Facebook, and company website works

greatly for recruiting more leads. As we can see from previous Facebook data

analysis, there was still a lot of room for improvement. For example, YouTube is the

No.1 searched website in 2021. If WDM video or information can be fed to google

SEO, it will greatly increase the visibility of WDM, potentially recruiting more leads.
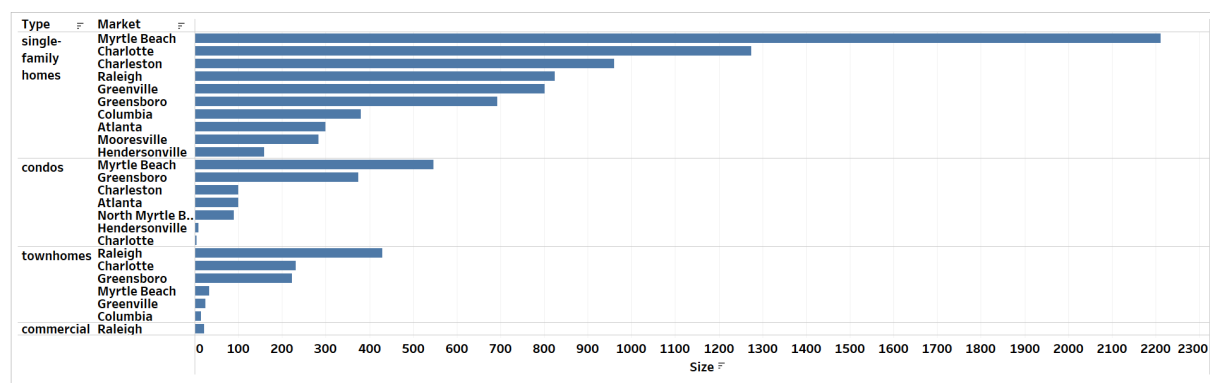
Real Estate Data Insights

Figure 10 -

Figure 10 shows the segmentation analysis by housing type. The x-axis is the

size of units. The majority of lead housing type is single family home, followed by

condos, townhomes and commercial. Myrtle beach and Charleston are among the

top 3 markets of single-family home lead. Possible reason maybe they offer

vocational rental. This can be promoted on Facebook market places, where WDM

can encourage homeowners to post their yard sale or rental information.
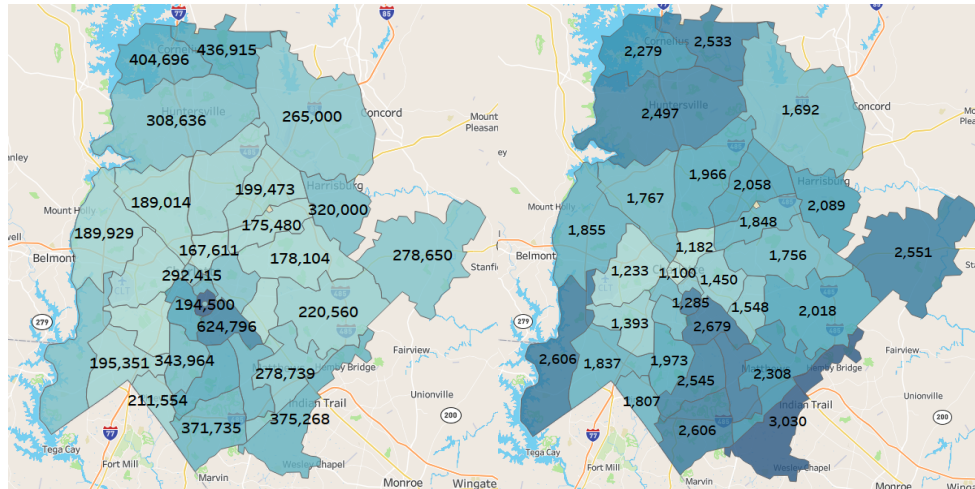
Figure 11 – a. Average house price by Zip Code; b. Housing Square Feet distribution by Zip Code

Figure 11a shows the data analysis of Charlotte real estate sale data from 2015 to 2020. We can further focus on the average housing price by zip code. The darker the color, the higher price. Huntersville, Marvin and Harrisburg are all in the range between $300,000 and $400,000 that WDM usually manages. WDM may want to focus its marketing resources on these areas. Figure 11b shows the average house size ranging from 1000 to 3000 square feet for WDM to manage. WDM can focus its marketing efforts based on its target house size too.

Data Analysis Methodology

Topic Modeling

Top 10 frequent words
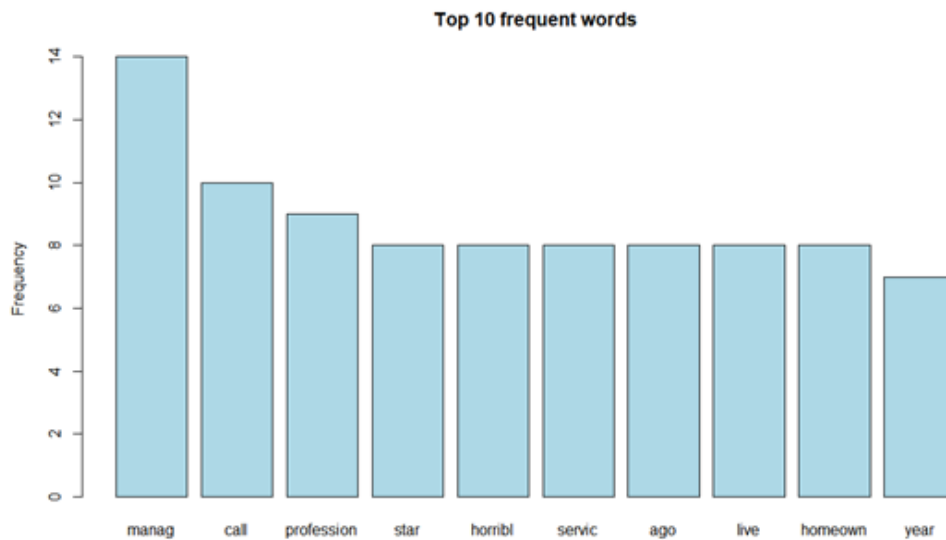
Figure 12 - Top 10 Most Frequent Words after cleaning

After cleaning up the combined data set, we extracted the top 10 most commonly used words from the word cloud. We want to better understand what our customers are concerned about. For this chart, manage, calling and specialty are the most important factors WDM should continue to focus on. It can also be said that customers either complain or appreciate their WDM management style, but we will further analyze the topic modeling and sentiment analysis methods.
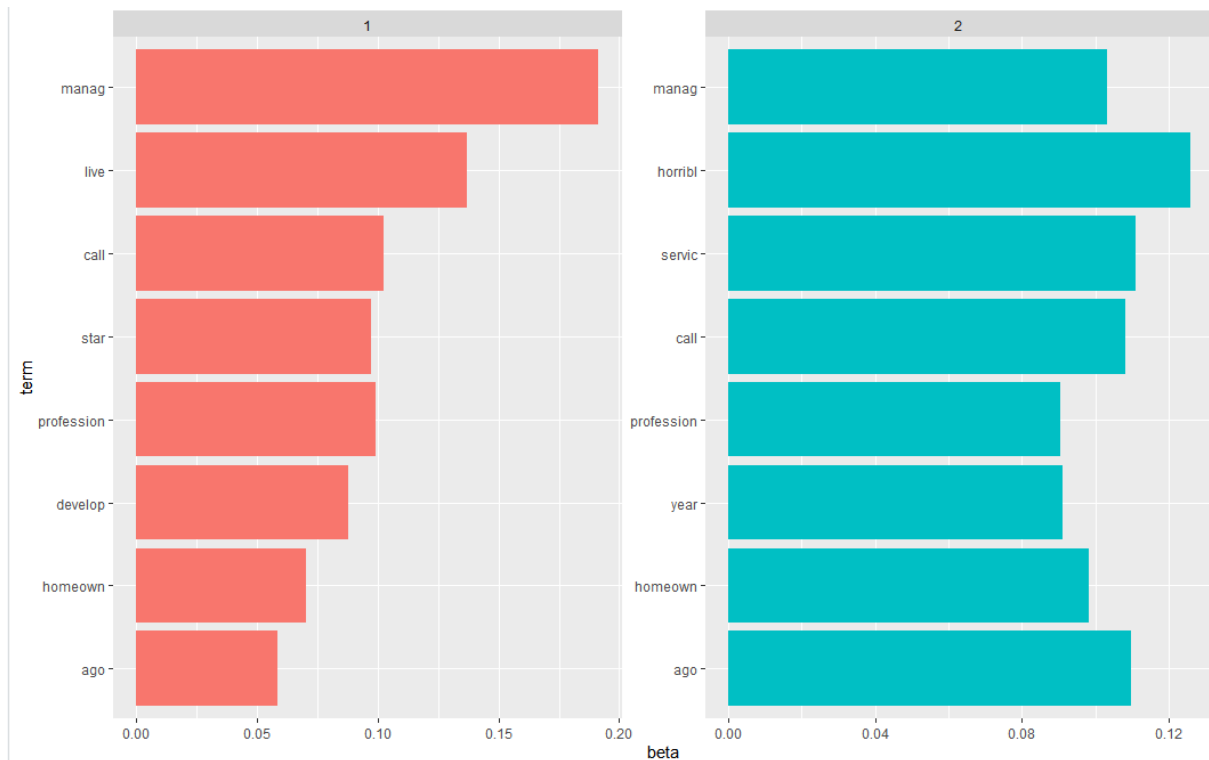
Figure 13 – Topic modeling results based on customer's reviews

We performed topic modeling and broke into two main topics based on the most commonly used words. The most common words in Topic I includes "manag", "live", "profession" which tells us that it could be more customers focus in regards to the management style, living environment and WDM's professionalism. On the other hand, we can observe that Topic II tells us more about negative factors, including "horribl", "servic", "call" suggesting customers could have bad experiences with WDM's service, management style, calls and service between homeowners.

```
> as.list(text_similarity,n=15)
$horribl
      servic        manag         live      homeown         year         star      develop
 0.372720781  0.115740028 -0.008470927 -0.008470927 -0.097855452 -0.119402985 -0.125579479
         ago   profession         call
-0.135534830 -0.145158930 -0.154533482
```

Figure 14 – Text similarity with the word "horribl"

We were curious about the word terror in topic 2, and we further studied its

relevance. As we can see here, the word service means the highest positive

correlation. This tells us that most of the customers who mention the word "horrible"

will also mention the word "service" and then the word "management". Service is one

of the key problems that WDM can solve. On the contrary, when the word "horrible"

increases, the word "call" has a negative correlation. This tells us that WDM does not

have a lot of problems in handling calls.

Sentiment Analysis

The goal is to analyze the sentiments or attitude of the customers from the 229

Google reviews of WDM. We have Identified the most frequently used positive and

negative words in the reviews along with finding the Ratio of positive to negative

words to analyze which type of reviews occur the most.
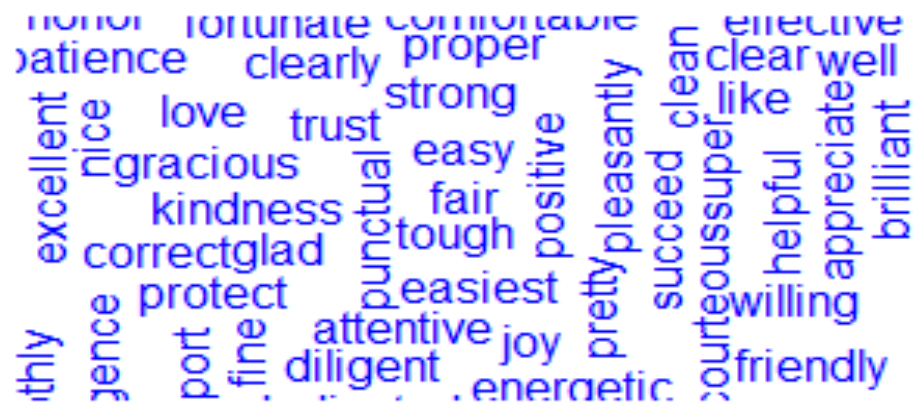
Opinion Lexicon: Positive

Figure 14 - Word Cloud of frequently occurring positive words in the reviews
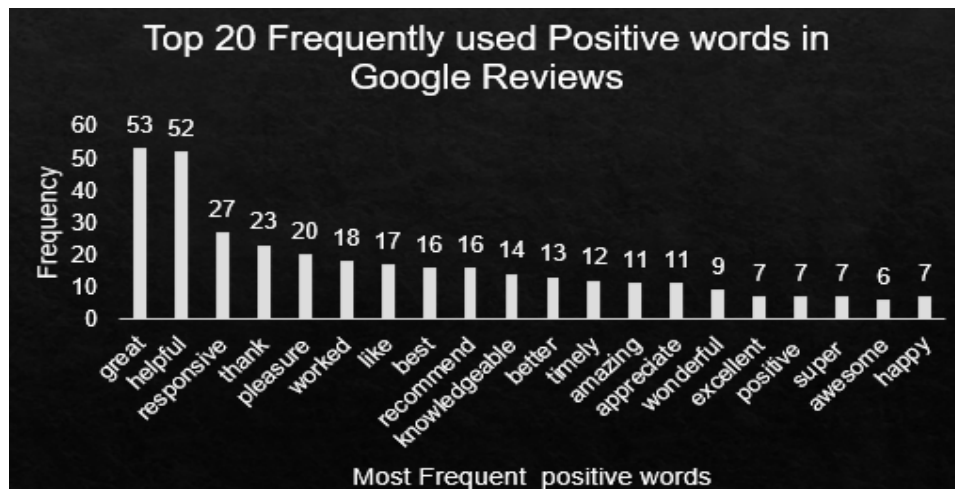

Figure 15 - Bar Plot of top most frequently occurring positive words in the reviews
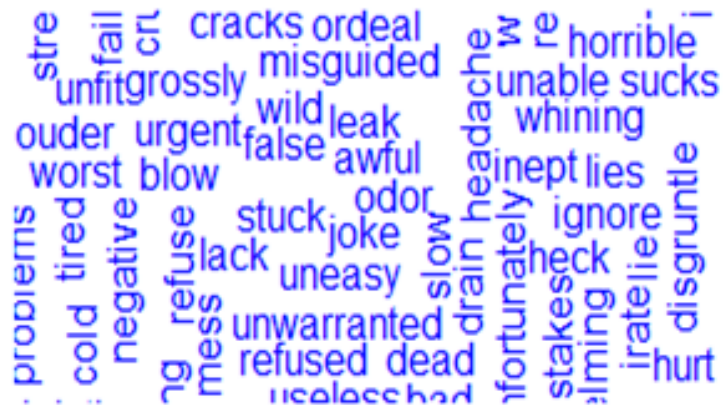
Opinion Lexicon: Negative

Figure 16 - Word Cloud of frequently occurring negative words in the reviews
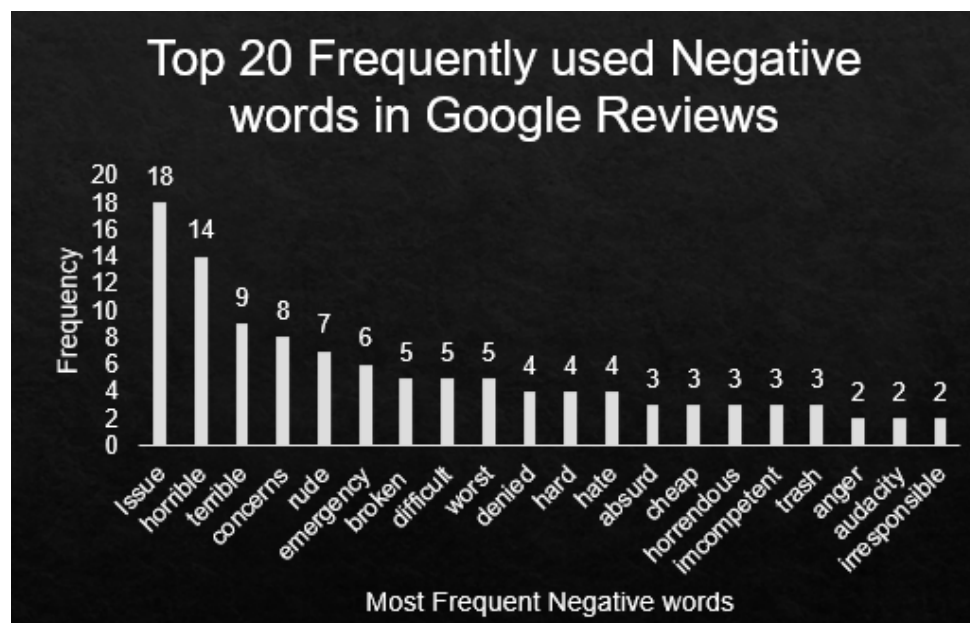

Figure 17 - Bar Plot of top most frequently occurring negative words in the reviews

Positive to Negative Words Comparison	Ratios
Ratio of positive words in the 229 reviews	0.349862
Ratio of negative words in the 229 reviews	0.167493
Ratio of positive to negative words in the dataset containing 229 reviews	2.088816

Figure 18 - Positive and Negative Sentiments Comparison

As a result of the analysis, there are More positive opinions than negative ones. WDM should take a note of the top 20 most frequently used negative words in the reviews and analyze the reason behind their occurrence and see if there is scope of improvement in these areas. Also, WDM should post response to these reviews so that customers can be assured that their voices are heard and actions are taken for addressing the issues.

Competitor's Analysis

Phrase	Magnitude	Polarity
great attitude	1	Positive
helpful professional	1	Positive
waste money	1	Negative
absolutely worst	1	Negative
horrible power	1	Negative
extraordinarily kind helpful	0.61451886	Positive
zero stars option	0.60275241	Negative
terrible service recommend	0.59118203	Negative
good hoa company	0.57735027	Positive
helpful nice	0.57735027	Positive

Figure 19 – Top 10 high magnitude phrases from WDM's Google review

TF-IDF vectorizer used to find top 10 important phrases in the google reviews

for WDM.

Figure 20 – Graphical representation of top 10 high magnitude phrases from WDM Google review

The TF-IDF analysis on the WDM's Google reviews gave us pretty good insight into customers ' perception regarding the WDM's service. The overall rating for WDM in Google stands at 3.73 which is just above the average. Do WDM meet with the average HOA review score? No, the average review rating for all reviews analyzed in this part is 3.99. As per the customers in the following areas WDM is doing very good: professionalism and attitude and being responsive. On the other hand, WDM seems to improve on the following areas. First of all, the customer's perception of WDM's knowledge in the property management field is very poor. Also, communication regarding expenses and money utilization needs to be an area where WDM needs to improve.

All the google review data collected for the three primary competitors and analyzed to find their respective competitive advantage over WDM. TF-IDF sentiment analysis done on the competitors' data to find similarities and differences between the customer reviews with WDM.

Cedar Management Group

Phrase	Magnitude	Polarity
customer service	1	Negative
worse company	1	Negative
knowledgeable helpful	1	Positive
pleasure work	1	Negative
huge help	1	Positive
does great	1	Positive
wonderful work	1	Positive
amazing amazing	1	Positive
impressed knowledge	1	Positive
helpful hoa	1	Positive

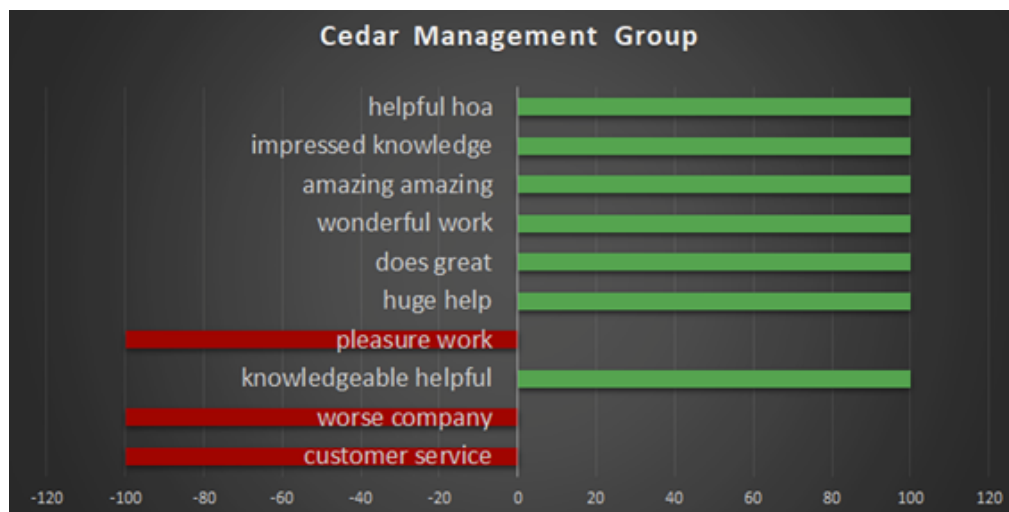*Figure 21 – Top 10 high magnitude phrases from Cedar's Google review*

Figure 22 – Graphical representation of top 10 high magnitude phrases from Cedar's Google review

Cedar Management Group has an overall rating of 4.0 in Google reviews. The reviews mostly consist of positive reviews and contain phrases with positive sentiment. Cedar Group seems to be lagging in customer service and customers are not completely satisfied with the services of the company. But one thing came to light that the customers have a perception that the Cedar Group has very good

knowledge on the property management industry.   Later in this report we will

discuss how this perception is relevant in the case of WDM.

Henderson Properties

Phrase	Magnitude	Polarity
willing work	1	Positive
great far	1	Positive
walked good	1	Positive
answers phone terrible	0.59039984	Negative
quick knowledgeable question	0.59039984	Positive
like sweet renting	0.57735027	Positive
quick knowledgeable	0.5503236	Positive
answers phone	0.5503236	Negative
hoa poor customer	0.51001887	Negative
negative experience	0.45319686	Negative

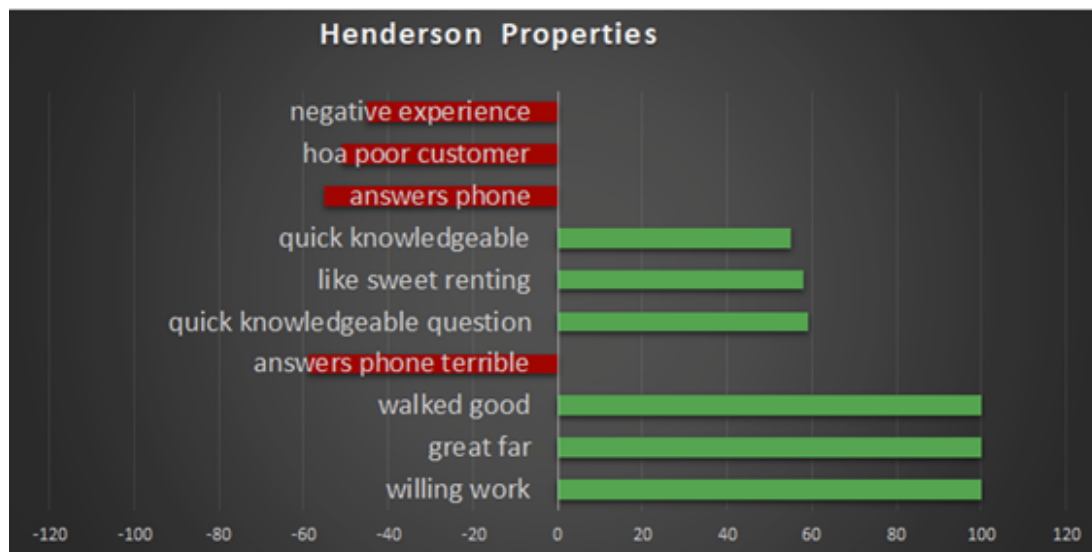*Figure 23 – Top 10 high magnitude phrases from Henderson's Google review*

Figure 24 – Graphical representation of top 10 high magnitude phrases from Henderson's Google review

Henderson Properties has an overall rating of 3.35 in Google reviews which is

lowest in comparison to all others analyses in this report. The reviews mostly consist

of mixed reviews and contain phrases with both positive and negative sentiment.

Henderson Properties seems to be lagging in communication and people are not

happy with the responsiveness of the company over phone.   But similar to Cedar

Group one thing came to light that the customers have a perception that the

Henderson Properties has very good knowledge on the property management

industry.   Later in this report we will discuss how this perception is relevant in the

case of WDM.

Kuester Management Group

Phrase	Magnitude	Polarity
joy work	1	Positive
helpful friendly	1	Positive
professional helpful	1	Positive
answered minutes	1	Negative
far happy	1	Positive
poor service	1	Negative
great customer service	0.64723934	Positive
professional efficient	0.61632715	Positive
great company help	0.61161814	Positive
wonderful work helpful	0.61161814	Positive
fast turnaround	0.57735027	Positive

Figure 25 – Top 10 high magnitude phrases from Kuester's Google review

Figure 26 – Graphical representation of top 10 high magnitude phrases from Kuester's Google review

Kuester has the highest review rating in Google reviews and has a very positive sentiment associated with the reviews. With an overall rating of 4.65 Kuester outshines all other property management companies in Google reviews. The phrase "Fast Turnaround" appeared for Kuester with high magnitude. The significance is this phrase doesn't appear in any other competitor or WDM. Fast turnaround time seems to be the competitive advantage of Kuester over others. Other things which came to light are that they have a very professional attitude just like WDM and there may be little bit dissatisfaction around the customer service they provide.

Results

- Customer's confidence is low in the knowledge WDM have in the field. We have noticed that WDM have made multiple videos on the property management and HOA functions. These videos have also been posted in YouTube and in the Facebook accounts of WDM. However, further effort is needed to promote the videos to increase customer's confidence in WDM's knowledge on the industry.

- "Waste Money" phrase suggests that some customers feel that they are not getting what they have paid for. So WDM needs to increase their communication with HOA's regarding the expenditures with appropriate justification.

- If feasible WDM need to increase the turnaround time for their services. This is one of the areas where only Kuester have excelled and probably that is the reason Kuester has highest rating in Google reviews.

- Keep responsiveness and communication as it is now with customers as others are catching up in this area. This is a competitive advantage of WDM.

Marketing Strategy and Recommendations

WDM should Focus on the most frequently visited pages on the website as suggested in our visualizations.

- Develop strategies for the customers to find all the information in the frequently visited set of pages.
- Develop effective advertising strategies and campaigns to increase Facebook reach and response.

WDM should Explore new opportunities and increase business and their market share.

- Some of the insights are that WDM can tap into Huntersville, Harrisburg and Marvin markets where the average price of properties is in the range of 300-400k.
- WDM should also continue to focus on Myrtle Beach and Charleston markets to keep getting more profit as these are the markets where WDM gets more business.
- WDM should focus its marketing actions on Cluster 3 where the average price of properties is in the range of 300-400k too.

WDM can bring more values to customers through Technology Improvement, Service and Training.

- WDM can develop mobile apps for customers to quickly reach WDM representatives.
- WDM should convince customers that their money is being spent appropriately. There is no treason for customers to think that their money is wasted.
- WDM should consider decreasing the turnaround time for the services and the repairs to compete with Kuester.
- WDM should monitor the customer reviews and respond promptly to make the customers understand that it values the opinions and views of its customers.

References

I. William Douglas Google Reviews

    https://www.google.com/search?q=google+reviews+william+douglas+management&rlz=1C1CHBF_enUS932US932&ei=T5WNYPPyNpOStAbTnrzoAQ&oq=google+reviews+willaim+douglas+&gs_lcp=Cgdnd3Mtd2l6EAMYADIKCCEQFhAKEB0QHjoHCAAQRxCwAzoCCAA6CAguEMcBEK8BOgsILhDHARCvARCTAjoGCAAQFhAeOgUIIRCgAToNCC4QxwEQrwEQDRCTAjoICAAQCBANEB46BwghEAoQoAE6CAghEBYQHRAeOgQIIRAKULktWJlIYL1OaAFwAngAgAG1AYgB9AuSAQQxNy4xmAEAoAEBqgEHZ3dzLXdpzsgBCMABAQ&sclient=gws-wiz#lrd=0x88569e569803dee7:0x5128947692f84cc0,1

II. https://www.yelp.com/biz/william-douglas-property-management-charlotte-5

III. https://www.hendersonproperties.com/

IV. https://cedarmanagementgroup.com/

V.   https://kuester.com/

VI. Kuester Google review:

    https://www.google.com/maps/place/Kuester+Management+Group/@35.0440366,-81.12784,11z/data=!4m11!1m2!2m1!1skuester+management+group!3m7!1s0x88568ff7fa28f591:0x3c5825c1305a933b!8m2!3d35.0440628!4d-80.9877991!9m1!1b1!15sChhrdWVzdGVyIG1hbmFnZW1lbnQgZ3JvdXAiA4gBAZIBG3Byb3BlcnR5X21hbmFnZW1lbnRfY29tcGFueQ

VII. Henderson Google Review:

    https://www.google.com/maps/place/Henderson+Properties+Inc./@35.1992017,-80.8705707,12z/data=!4m11!1m2!2m1!1shenderson+properties!3m7!1s0x8854203ca358a837:0xddeda6d2b2ede570!8m2!3d35.199073!4d-80.8005007!9m1!1b1!15sChRoZW5kZXJzb24gcHJvcGVydGllcyIDiAEBkgEbcHJvcGVydHlfbWFuYWdlbWVudF9jb21wYW55

VIII. Cedar Google reviews:

    https://www.google.com/maps/place/Cedar+Management+Group/@35.353328,-80.8425039,17z/data=!4m7!3m6!1s0x8856a775e8f0d505:0xa3432a72da873d77!8m2!3d35.3533236!4d-80.8403152!9m1!1b1

IX. https://direct.mit.edu/coli/article/37/2/267/2105/Lexicon-Based-Methods-for-Sentiment-Analysis

X.   https://www.business-to-you.com/scanning-the-environment-pestel-analysis/

XI. https://www.iqair.com/us/usa/north-carolina/charlotte

XII. https://wmdouglas.com/testimonials/

XIII. https://www.tidytextmining.com/topicmodeling.html