

# William Douglas Property Management Analysis

Team Two:
Rachael Dewey
William (Billy) Edwards
Zac Morris
Tristan Richard

### **Problem Definition**

Our goal is to better understand what attributes and features of social media and search engine results are most important to customers to help WDM make informed decisions on where to best focus their time and resources to grow their business organically. In doing so, we plan to assist WDM increase the volume of potential clients searching, following, and interacting with their business online.

We will focus on the following objectives:

- · Assess customer sentiment towards WDM and through Google and Yelp reviews
- · Compare the sentiment findings to local competitors such as Cedar, Henderson, and Kuester Management Groups
- $\cdot$  Analyze and rank customer interaction through Facebook posts to see which topic generates the most activity

# SWOT Analysis

Strengths	Weaknesses				
<ul> <li>State of the art web based specialized software designed for HOA management companies</li> <li>Timely communication from each account manager only tasked with up to 12 accounts at a time</li> <li>Offer educational promotions through YouTube videos and newsletters</li> </ul>	<ul> <li>Low customer engagement and follows on Facebook page</li> <li>Lack of html tags on geopages</li> <li>Online chat on their website has a slow response time</li> <li>Have 2 LinkedIn pages which creates disorganization for the customer</li> <li>Small amount of google reviews when compared to competitors</li> <li>Marketing budget only allows for \$10-15k spend per month</li> </ul>				

# SWOT Analysis Pt. 2

1	Opportunities	Threats				
	<ul> <li>Can utilize new forms of social media to attract younger customers</li> <li>Increase the rate at which data on their website is updated</li> <li>Can optimize their website to be voice searched via alexa and siri</li> <li>Already have established offices around growing real estate markets in NC &amp; SC (Asheville, Charlotte, Columbia, Fayetteville, Raleigh, Wilmington, Winston-Salem)</li> <li>Affordable housing market in the Carolinas and low interest rates</li> <li>Reach top quality clients by having consistent account managers</li> <li>Acquire new HOA clients by providing advice and education on the industry</li> </ul>	<ul> <li>Increased interest rates</li> <li>Rising sea levels could shrink coastal markets where current offices are located</li> <li>HOA fees could be impacted by COVID infections</li> <li>HOA board members are wary of constantly changing HOA managers</li> <li>New technology and social media not being utilized before competitors</li> <li>Incorrect or late charge of customer fees</li> </ul>				

# Data Description

William Douglas

Cedar Management Group

Henderson Properties

Kuester Management Group

Row Labels	Count of Source
Google	200
Yelp	31
<b>Grand Total</b>	231

Row Labels	Count of Source
Google	781
Yelp	38
Grand Total	819

Row Labels	~	Count of Source
Google		270
Yelp		100
<b>Grand Total</b>		370

Row Labels	~	Count of Source
Google		27
Yelp		3
<b>Grand Total</b>		30

# Social Media Competition Social Media Followers 6000 5000 4000 3000 Delta Facebook Followers LinkedIn Followers LinkedIn Followers

# Text Pre-processing

Original Text	Great experience. Becky Miller was the person who helped me. Very knowledgeable, kind and just awesome. I highly recommend them!
Convert Text to Lowercase Form and Remove Punctuation	great experience becky miller was the person who helped me very knowledgeable kind and just awesome i highly recommend them
Tokenization	[great, experience, becky, miller, was, the, person, who, helped, me, very, knowledgeable, kind, and, just, awesome, i, highly, recommend, them]
Removal of Stop Words	[great, experience, becky, miller, person, helped, very, knowledgeable, kind, just, awesome, highly, recommend, them]
Stemming	[great, experience, becky, miller, person, help, very, knowledge, kind, just, awesome, high, recommend, them]

# Total Number of Reviews per Company

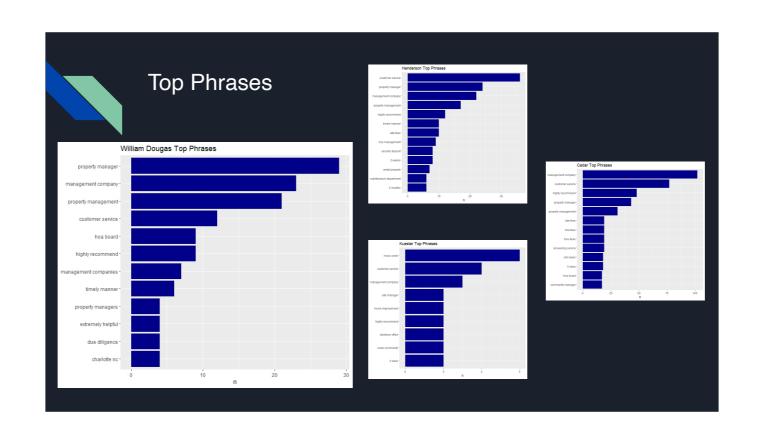


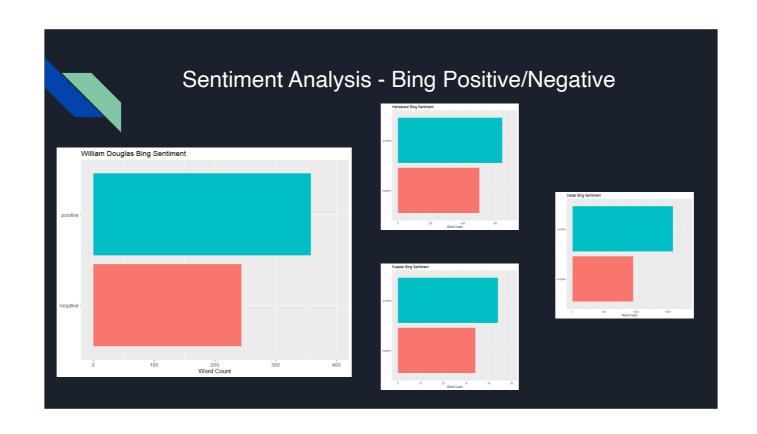
# Top Features

		1										
> t	opfeatures	(wddfm, 30)										
	reem	management	helpful	great	work		professiona				always	service
	54	49	46	43	41	39			5 35	34	33	30
	questions	board	get	call	phone				s cristina		give	zero
	29	29	24	23	22			L 2	0 20	20	19	18
	just	time	response	ever	say	pleasure						
	18	18	18	17	17	17						
> t		(cmdfm, 30)										
	community				work	get	board	help	helpful	property know		time
	214				156	154	150	136	132	124	116	114
	us			professi			manager	kaci	customer	thank	one	call
	112				95	94	92	92	91	88	88	86
	recommend					yment	job	years	account			
	81	. 80	79		79	75	75	71	71			
	opfeatures	(hndfm, 30)										
	work	service	management	always	us	time	community	great	t issues	home	get	one
	94	78	71	61	60	59	58	5!	5 53	53	48	47
	just	never	even e	experience	maintenance	customer	manager	professiona	l helpful	help	like	years
	47	46	43	43	43	42	42	4:	2 41	40	36	36
	working	good	back	every	house	rent						
	36	34	34	32	31	31						
	opfeatures(	krdfm 30)										
		mmunity managem	ment great	manager	work	service	group help	ful hom	e time	moss cr	eek lia	terrible
	11	10	10 9	g and	9	8	7		6 6	6	6 6	6
	vears		ked thanks	customer	can	several		ues gabriell				recommend
	5	5	4 4	4	4	4	4		4 3	3	3 3	3

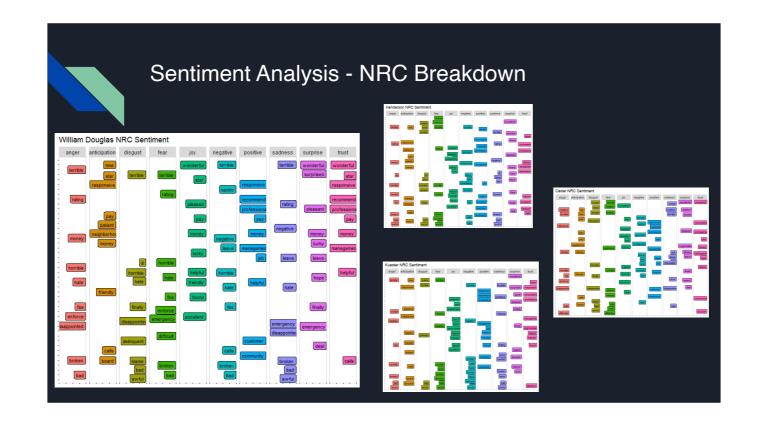
# William Douglas Word Cloud

```
review days amazing concerns recommend now professional days an action of the professional days an action of the professional days are response ever time response days anything service answer who horrible anything service helpful one email savannah anything service helpful one email savannah days anything service helpful one email savannah days anything service helpful one email savannah days service helpful one email savannah days service helpful one email savannah days still help pay can reem years spoke carerobert even management give highly thank wish days days days days days days and several ever work get always kind days anything service helpful one email savannah help pay can reeman years spoke carerobert thank wish days days and several ever work get always kind well experience extremely questions cristinask money customer house called managers knowledgeable issues answered things
```







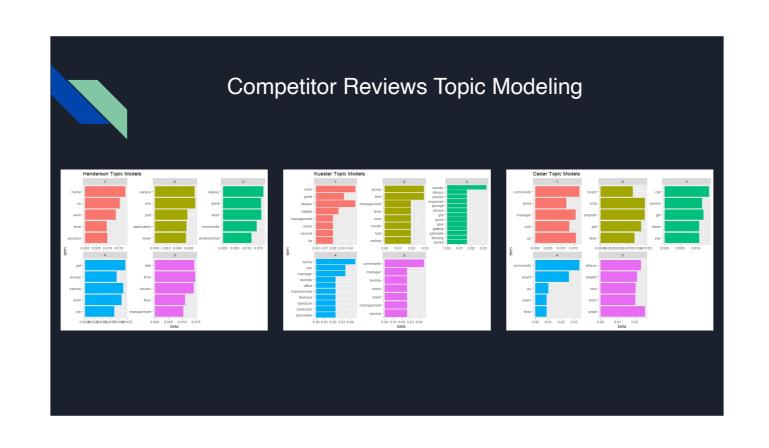


# William Douglas Reviews Topic Modeling



### <u>Topics</u>

- 1. General management
- 1. Specific employee
- 1. Responsiveness/timeliness
- 1. Helpfulness/professionalism
- 1. Specific employee



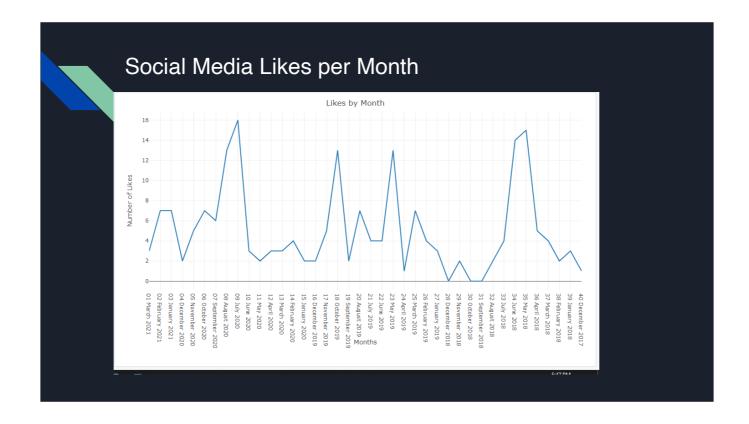
# Review Results Summary

- Less reviews than competitors
  - o Google, Yelp
- Trust is the most important sentiment to customers
- Reviewers are highly concerns about:
  - Specific managers
  - Communication
  - Professionalism
  - Timeliness
- Top phrases used in reviews
  - Customer service, timeliness, professionalism, diligence, management, helpfulness, consistency
- William Douglas has a good positive to negative sentiment ratio

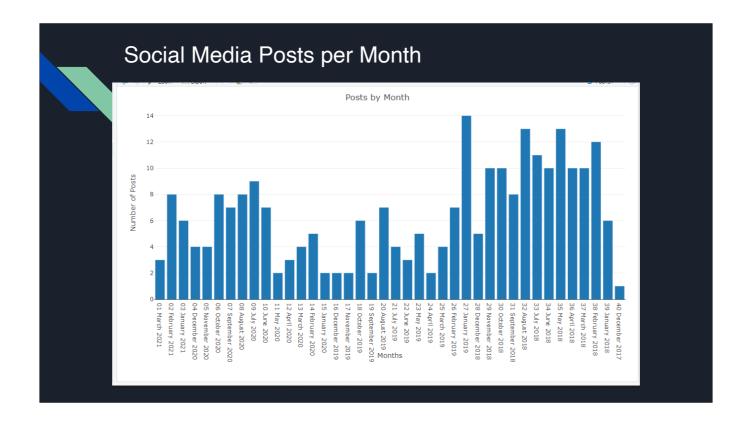
### Social Media Word Clouds

```
recommend month product produc
```

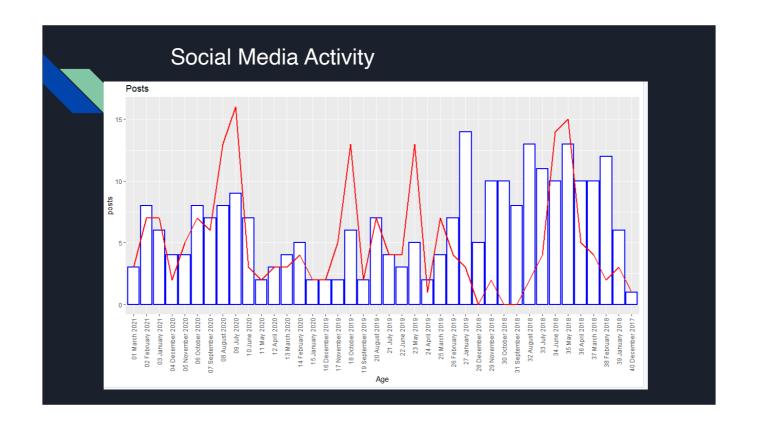
#homeownerassoci
#communityassoci
#condoassoci#boardgovern
#condominium
#hoaresourc #hoamanag
#condolaw #associ
#annualmeet#hoaboard
#boardmembip
#condomanag
#condoliv #condo #hoa
#board #hoalaw
#associationmanag
#homeownersassoci
#communityassociationmanag



Shows the number of likes per month over 4 years



Shows the number of posts per month over 4 years



Shows the number of posts per month and the number of likes per month. There is a decrease in the frequency of posts but the number of likes stays generally the same with seasonality. Most of their likes come from summer and spring months.

# Social Media Results Summary

- Post Frequency has decreased since end of 2018
  - Started posting more recently but nowhere near earlier years
- Likes remain at a similar level throughout even though post frequency has decreased
- Spring and Summer have large spikes in likes for posts
  - Summer has more activity on social media than other seasons

# Post Analysis Analysis

	Word	Frequen	су Т	able	
		frequency			aroun
1	annual	57	1	44	all
	help	49	2	47	a11
2	discuss	47	3	41	a11
4	video	42	4	42	a11
5	homeown	40	5	38	a11
6	youtub	39	6	21	a11
7	channe1	38	7	30	a11
8	elect	34	8	18	a11
9	share	33	9	33	a11
10	expert	32	10	32	a11
11	board	32	10	30	a11
12	latest	32	10	32	a11
13	grow	31	13	31	a11
14	cĺick	31	13	31	all
15	comment	31	13	31	all
16	thank	31	13	31	all
17	support	31	13	31	all
18	communiti	31	13	30	all
19	ballot	31	13	16	all
20	subscrib	30	20	30	all
21	visit	30	20	30	all
22	blog	29	22	29	all
23	check	25	23	25	all
24	vote	23	24	12	a11
25	member	22	25	18	all
26	websit	21	26	20	a11
27	tip	19	27	19	a11
28	listen	16	28	16	a11
29	associ	16	28	16	a11
30	inform	16	28	16	all

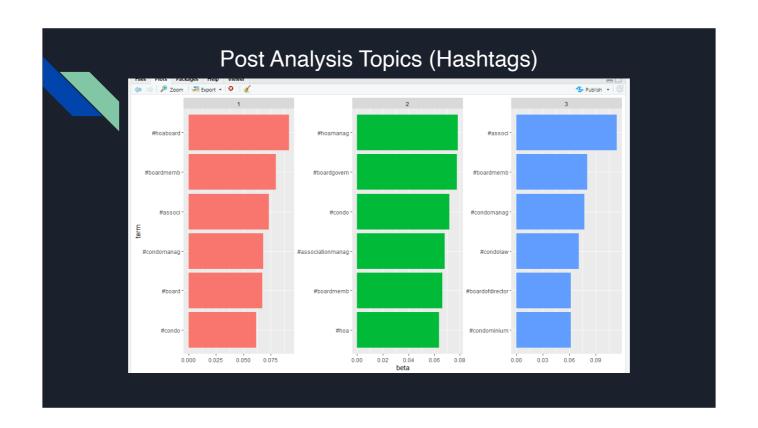
### Word Frequency Table (Hashtags)

	feature	frequency	rank	docfreq	group
1	#boardmemb	26	1	16	all
2	#hoaboard	24	2	24	all
3	#condomanag	24	2	14	all
4	#associ	24	2	14	all
5	#condo	22	5	14	all
6	#hoamanag	19	6	17	all
7	#board	18	7	9	all
8	#hoa	16	8	16	all
9	#condominium	16	8	9	all
10	#associationmanag	16	8	16	a11
11	#hoalaw	14	11	14	all
12	#boardofdirector	14	11	14	all
13	#boardgovern	14	11	14	all
14	#condolaw	13	14	12	all
15	#homeownersassoci	13	14	13	all
16	#hoaresourc	13	14	13	all
17	#annualmeet	12	17	11	all
18	#communityassoci	11	18	10	all
	#communityassociationmanag	10	19	10	all
20	#homeownerassoci	10	19	10	all
21	#condoassoci	10	19	10	all
22	#condoliv	6	22	6	all

These are the words that pop up most frequently in your posts after we removed some of the more common words.

Frequency= number of times the word shows up total

Docfrequency is the number of documents the word is used in



After running some analysis on the post data we came up with these topics for the hashtags you use



After some text analysis we generated these topics for your posts, and we labeled these topics as the following:

# Post Analysis Summary

- We combined the likes, comments, and shares into one variable and ran a regression model on the text data to see which topic generates the most activity
- Topic 1: HOA Voting and Board Meetings has the greatest weight in the regression model
  - This means that posts on this topic generates the most amount of activity on social media

Order of Topics that generate the most activity on social media

• Topic 1, Topic 4, Topic 2, Topic 3, Topic 5

### Recommendations

- Solicit more Google Reviews from customers
- Focus on what's important to customers

- Incorporate keywords into website
- Share website link and generate traffic
- Take advantage of growing markets
   Asheville, Charlotte, Columbia, Fayetteville, Raleigh, Wilmington, Winston-Salem

# Limitations & Improvements

- Limitations
  - o Small scope
  - o Limited data
  - Multicollinearity across variables
  - Outliers in regression data
- Improvements
  - o Generate national data instead of regional data
  - o More in-depth data for competitive companies' social media

# Sources