Exploring Engagement Trends
for Nonprofit Organizations on Social Media

Abstract

Of all the marketing channels in existence today, social media might be the most unique and unexpected channel to come to light. While at its beginning it might have been considered no more than a means of connecting with friends and family, social media is now a tool utilized by nonprofit organizations every day to market their causes while simultaneously dealing with limited resources. To provide nonprofits with actionable insights for improving their social media strategies, this study aims to explore the relationship between social media engagement and different types of image content through the use of predictive analytics techniques and a survey of potential social media users. The results of this study reveal significant correlations between engagement and visual content, as well as demographic preferences for different types of images. Based on these results, opportunities for nonprofits to use image content to drive social media success are explored.

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Chapter 1: Introduction

Social media is taking the world by storm. People use social media platforms every day to share and connect with others all over the world. As of 2019, 72% of the American public uses at least one form of social media ("Demographics of Social Media Users," 2019). This level of reach has not escaped the notice of organizations, and now companies are becoming more and more aware of the impact a social media presence can have. With three out of four Facebook users and six out of ten Instagram users visiting these sites at least once a day ("Demographics of Social Media Users," 2019), every form of organization in existence has found a way to utilize social media to increase brand awareness, generate leads, and drive conversions, and marketers feel that it is a significant marketing tool. In 2019, 89.3% of marketers reported feeling that social media is an important part of their overall marketing strategy ("State of Social," 2019).

In recent years, more organizations have started realizing another incredible benefit of having a social media presence. With the advent of the Internet of Things (IoT) and the growth of Web 2.0 technologies, an inconceivable amount of data is being generated through online services such as social media. Organizations are becoming increasingly aware of the potential value of capturing and analyzing data created from social media interactions, and how they can generate business intelligence through social media analytics. According to Oracle, the usefulness of data is only just beginning ("What Is Big Data?" n.d.).

Among the companies that utilize social media, nonprofit organizations use these platforms every day to connect with followers and donors, rally support, and raise awareness for their causes. However, limited resources are often a barrier to nonprofits when trying to achieve success on social media. A study by IBM found that 74% of nonprofits face barriers related to budget ("Leap Before You Lag," 2017). These and other limitations can hinder an organization's

ability to consistently create social media content that is effective in helping them achieve the

reach they strive for. When marketing a cause, the key is to develop a strategy that is both

efficient and effective, so as not to waste resources on a social media marketing campaign that

yields no results.

This is the purpose of social media analytics. Analytics presents nonprofits with the

opportunity to expand their causes more than ever before by generating proprietary information

that they can use to craft the most optimal social media marketing strategy for their targets and

goals. If certain social media content can be identified as being more effective in achieving

engagement, then nonprofits can utilize this information to develop strategies that are more likely

to maximize their online engagement without allocating too much of their limited resources.

Furthermore, if preferences for certain types of image content can be identified in different

demographic segments, nonprofits can create content that is more suited to their target audiences.

Statement of the Problem and Research Questions

It is imperative to explore how effective social media marketing strategies can be

developed on behalf of nonprofit organizations. Social media platforms are becoming

increasingly visual. In fact, platforms like Instagram are completely image based; consequently,

many nonprofits frequently use social media to share images from the field. Identifying the

images that are most effective in encouraging interactions on these platforms can help nonprofits

direct their engagements toward their conversion goals. If any possible trends in observable

viewer engagement ("likes" and "comments") can be identified, then these organizations could

utilize this information to their advantage. However, while there is an abundance of research in

regard to social media analytics applications within a general business setting, the body of

research dedicated to nonprofits and social media analytics is much smaller and is generally

limited to written messages rather than visual messages. Therefore, this study aims to contribute to the ongoing discussion and research regarding how viewers engage with nonprofit organizations on social media in terms of images specifically. Using data generated by nonprofits and their viewers on Instagram, a prevalent image-based social media platform, this study aims to use analytical techniques to uncover trends in engagement and to further identify image preferences of different user segments that represent common target markets. The questions this study aims to answer are as follows:

1. How do viewers respond to different types of image content from nonprofit organizations on social media?

2. What statistically significant relationships are present between image content and engagement with nonprofits?

3. How do image content preferences differ across demographic segments and social media habits?

Purpose and Significance of the Study

The purpose of this study is to investigate the relationships between different types of image content and engagement, and to also explore how image content can be applied to the different social media marketing strategies of nonprofits based on their target markets. Exploring significant trends between image content and engagement, as well as the image preferences of common target segments, would be beneficial to nonprofit organizations as they attempt to develop effective strategies with limited resources. Because of the growing prevalence of social media and its business and analytics applications, it is imperative to understand how image content can influence the success of nonprofit organizations on social media.

Definition of Terms

      The following terms and phrases are frequently used throughout this study and are defined for clarification purposes.

      Image content refers to the subject matters depicted or contained in an image.

      Users refers to individuals, organizations, and other parties who have an established social media account.

      Viewers is a term used in this research to refer to social media users who interact with the nonprofit organizations included in this study.

      Engagements/interactions are terms used interchangeably in this study that refer to the actions that users perform on social media, including likes and comments; these are also defined as measures or metrics used to assess social media performance.

Chapter 2: Literature Review

Introduction

The purpose behind this study is to utilize a solid analytical framework in order to understand what visual factors contribute to social media engagement. As such, a thorough review of previous research regarding nonprofit organizations and social media alongside the use of predictive analytical techniques in a business setting is necessary in order to select the most appropriate method for analysis. This literature review examines nonprofit use of social media and viewer engagement with nonprofits. This review also discusses the various predictive modeling techniques that have been applied to marketing and nonprofit use of social media in the past in order to justify the selected technique for this study based on previous research.

Nonprofit Organizations and Social Media Use

Because of the increased use of social media and social media analytics as business tools, there is a large body of research dedicated to the subject. Several studies have attempted to identify how nonprofits use social media platforms for various purposes. Richard D. Waters and others have described how nonprofit organizations use Facebook to "cultivate relationships with their publics" (Waters, Burnett, Lamm, & Lucas, 2009). Kristen Lovejoy and Gregory D. Saxon have explored the purposes behind Twitter posts by nonprofit organizations in terms of Information, Community, and Action (2012). There is some research that exists regarding how viewers respond to nonprofit organizations on social media. One study by Moonhee Cho and others analyzed whether message strategies based on the four models of public relations have an impact on the different levels of public engagement on Facebook in terms of likes, shares, and comments (Cho, Schweickart, & Hasse, 2014). However, these studies are much less prominent and tend to focus on how viewers respond to written messages from the organizations rather than

visual messages. While there is an abundance of research concerning social media analytics applications within a general business setting, the research dedicated to nonprofit applications of social media analytics is mostly limited to written messages rather than visual messages. The research dedicated to more visual-based social media platforms, such as Instagram, is sparse. As image-based social media grows, it is important to fill this gap in order to provide the most complete insight into how organizations can design effective marketing strategies.

Business and Nonprofit Applications of Predictive Modeling Techniques

To begin a discussion on the analytical techniques present in this study, it is important to understand previously-used techniques in a similar application as this research. It is also necessary to discuss the framework of the predictive modeling technique utilized in this study in comparison to other available methods. As such, this study warranted a review of the techniques utilized previously in order to determine the most appropriate technique for this research.

Various studies have explored the applications of statistical modeling techniques for business purposes. Specifically, regression analysis is a common predictive modeling technique utilized to estimate the extent of relationship between a response (dependent) variable and one or more explanatory (independent) variables, also known as predictors. While there are many regression analysis techniques that can and have been utilized in business analytics, several studies have made use of both forward and backward stepwise regression methods in order to maximize the predictor power with a minimum number of predictor variables and create a simpler model containing only the strongest predictors.

A study by Zorn, Grant, and Henderson utilized forward stepwise regression to investigate social media usage by nonprofit organizations based on the resource mobilization predictors of annual budget, staff size, quality of Internet connection, and information and

communication technologies (ICTs) experience. The study found that nonprofit organizations struggle to implement social media strategies due to lack of resources (2012).

Dr. Gehan Dhameeth analyzed generational behaviors towards brands based on the development of a predictive model using backward stepwise multiple logistic regression to determine how various predictors influenced brand equity (2019). The study found that the resulting model was able to predict 63% of respondents to be associated with brand equity using the 13 total predictors (relate, purchases, brand knowledge, trials, associations, recommendations, salience, imagery, performance, feelings, judgement, brand resonance, and awareness) that were identified using the backward stepwise method.

In accordance with these studies, two methods of regression analysis were considered as possible predictive modeling techniques for this study. Both techniques are variations of stepwise regression. The first possible method was forward stepwise regression, also known as the forward selection regression method. IBM defines forward selection as "a stepwise variable selection procedure in which variables are sequentially entered into the model" ("Linear Regression," n.d.). The first variable considered for entry into the model is the one with the largest positive or negative correlation with the response variable, or that has the most perceived significance in the purpose of the model; variables are then added one at a time according to their correlation with the dependent variable until there are no variables left, and a regression is performed each time a variable is added ("Linear Regression," n.d.). This method might be viewed as the most practical regression technique for business applications. As an organization collects new data and identifies new potential predictors, new variables can be added onto the existing model. But, in cases where a new variable is identified as a more significant predictor

than the variables already present in the model, a complete new model must be developed in order to add the most significant variable first.

The second possible method was backward stepwise regression, also known as the backward elimination method. IBM defines this method as "a variable selection procedure in which all variables are entered into the equation and then sequentially removed" ("Linear Regression," n.d.). After running the regression, statistically insignificant variables are considered for removal. If any variables are removed, the regression is run again. The procedure is repeated until only the most significant variables remain in the model ("Linear Regression," n.d.). This model was more aligned with the researcher's intention, which was essentially to act as a consultant, performing this research on behalf of nonprofits. As this model does not dictate the order of the predictors, it was determined that this study would follow the methods of predictive modeling for marketing applications outlined by Dr. Gehan Dhameeth. As such, this study utilized backward stepwise regression in order to allow for the future identification of potential predictor variables to be easily integrated into the model resulting from this study.

Summary

This literature review provides an analysis of previous research concerning social media usage by nonprofit organizations, as well as various business and nonprofit applications of predictive modeling techniques. Prior utilization of two regression analysis techniques were discussed as they related to the selection of the method chosen for this study. It was also established that, in accordance with previous marketing research, this study would follow the backward stepwise regression analysis method outlined by Dr. Gehan Dhameeth in order to allow for the future addition of potential predictor variables into this study's resulting model.

Chapter 3: Methodology

Introduction

The purpose of this study was to explore potential relationships between image content and engagement, and to also use these trends to identify the different image content preferences of different social media segments. To achieve this purpose, this study utilized a two-part methodology. Part A consisted of a period of social media monitoring, data collection, and a regression analysis of the collected data to identify possible image content variables and their relationship with engagement, while Part B consisted of a survey application of the analysis results to explore image preferences based on demographic segments and social media habits.

Part A: Social Media Monitoring, Data Collection, and Regression Analysis

For the first part of this study, the organizations to be monitored were selected and data from these organizations were collected over a set period of time in order to provide a data set for a backward stepwise regression analysis. The purpose of this portion of the study was to estimate a possible relationship between the engagement these organizations received over the monitoring period and various image content factors present in the images posted on Instagram within the monitoring period.

Sample Method and Description

To allow for manageable manual collection of the data, a sample size of 40 organizations was chosen. The 40 organizations were to come from The Nonprofit Times Top 100 list of the United States' largest nonprofits (Hrywna, 2018), assuming that insights gained through analyzing the largest, most successful nonprofits in terms of revenue, donations, and monetary support would provide the most insight for all nonprofits. In other words, all other nonprofit organizations would most likely gain the most benefit from knowing what encourages social

media users to engage with larger organizations in a way that possibly contributes to their
increased levels of success.

Each organization on the Top 100 list was cross-referenced for an Instagram account, and
it was established that 91 out of 100 organizations were active on Instagram. In order to provide
insight for all types of nonprofit organizations, it was important to monitor and collect data from
a sample of organizations representative of all nonprofits. The National Taxonomy of Exempt
Entities (NTEE) identifies 10 categories used to classify nonprofits. Eight of these categories
represent the vast majority of nonprofits: Arts, Culture, and Humanities; Education; Environment
and Animals; Health; Human Services; International and Foreign Affairs; Public/Societal
benefit; and Religion Related ("National Taxonomy of Exempt Entities," n.d.). The two
remaining categories, Mutual/Membership Benefit and Unknown/Unclassified were not included
in this study, as they represent only 0.2% of all established nonprofit organizations ("National
Taxonomy of Exempt Entities," n.d.). Using these categories, each of the Top 100 organizations
was classified into one of the categories according to its NTEE code (see Table 1). It is important
to note that the total number of organizations in the table is 99 because one of the Top 100
nonprofits was unclassified according to the NTEE code.

Table 1

Classification of Top 100 Nonprofit Organizations

Category	Number of Top 100 Organizations
Arts, Culture, and Humanities	11
Education	5
Environment and Animals	9
Health	21
Human Services	27
International, Foreign Affairs	15
Public, Societal Benefit	7

These figures represent the number of organizations within each category for the Top 100 organizations, but are not necessarily representative of all established nonprofits in existence. Therefore, a representative number of organizations from each category had to be established. The National Council of Nonprofits has identified the percentage of all established nonprofits represented by each category (*"What is a "Nonprofit"?"* n.d.). These percentages (see Figure 1) were used to determine the representative number of organizations from the Top 100 list from each category to be included in the sample. Decimals were rounded to the nearest whole number.

Figure 1

Proportions of Nonprofit Categories. Source: "What is a "Nonprofit"?" (n.d.).

Once all organizations were categorized, they were ordered by the number of followers from most to least. The top organizations from each category were added to the sample until the representative number from each category was reached. The representative values for each type of organization, as well as the number of organizations included in the sample, are listed in Table 2. The representative proportions for all categories except Education were met. This was due to

only five of the Top 100 organizations being classified in this category, and only four out of those five having an Instagram account. As such, only four organizations in this category were monitored despite a requirement of seven. This resulted in an actual sample size of 37.

Table 2

Social Media Monitoring Sample Composition

Category	Percentage of All Nonprofits	Proportion Out of 40	Organizations to be Monitored
Arts, Culture, and Humanities	9.9%	3.96 rounded to 4	The Museum of Modern Art The Metropolitan Museum of Art National Public Radio (NPR) The Obama Foundation
Education	17.1%	6.84 rounded to 7	Art Institute of Chicago The New York Public Library Teach for America Step Up For Students
Environment and Animals	4.5%	1.8 rounded to 2	World Wildlife Ducks Unlimited
Health	13.0%	5.2 rounded to 5	Planned Parenthood Make-A-Wish America St. Jude Children's Research Hospital American Heart Association Alzheimer's Association
Human Services	35.5%	14.2 rounded to 14	Team USA Doctors Without Borders Young Life The Clinton Foundation American Red Cross Special Olympics Girl Scouts of the USA American Cancer Society Habitat for Humanity Feeding America Boy Scouts of America The Salvation Army USA Boys & Girls Clubs of America ChildFund

International, Foreign Affairs	2.1%	0.84 rounded to 1	UNICEF USA
Public, Societal Benefit	11.6%	4.64 rounded to 5	Wounded Warrior Project United Way Consumer Reports Pew Environment Group UJA-Federation of New York
Religion Related	6.1%	2.44 rounded to 2	Samaritan's Purse The Christian Broadcasting Network

Instrumentation and Data Collection

Over the course of 30 days (February 25, 2019 to March 26, 2019), the Instagram accounts of the 37 organizations were monitored by the researcher. Data was collected starting at 6 p.m. Central Standard Time every 7 days for the first 28 days (4 weeks). The fifth week consisted of the two remaining days of the 30-day period. Each image posted within the monitoring period along with its associated engagement data (likes and comments) were collected at the end of each week and compiled in a spreadsheet organized by week and organization type. At the end of the monitoring period, over 800 images had been collected.

Regression Analysis

To analyze image content of the collected images, it was necessary to manually codify the image content present in each image for the purposes of regression analysis. Before the monitoring period, it was unknown how many images would be posted by nonprofits within the time frame. Thus, 15% of the total images posted within the monitoring period by each organization within each category were randomly selected to assemble a manageable data set (see Table 3). All decimals were rounded to the next highest integer. The result was a total of 145 images and their associated engagement data to be included in the regression analysis. These

images were compiled into an Excel spreadsheet in order to utilize Microsoft Excel's Regression function as part of the Analysis ToolPak.

Table 3

Number of Images Analyzed from Each Category of Nonprofit

Category of Nonprofit	Number of Images Included in Regression
Arts, Culture, and Humanities	21
Education	19
Environment and Animals	7
Health	12
Human Services	54
International, Foreign Affairs	8
Public, Societal Benefit	13
Religion Related	11

Variables and Hypotheses

The basis of regression analysis is estimating the relationship between a dependent variable and at least one independent variable. As the goal of this study is to uncover possible relationships between engagement and image content variables, the dependent variable in this study is Total Engagements, which is defined as the sum of likes and comments received on any given image. One quantitative variable was identified to be included in this study as a potential predictor of engagement. This independent variable is the number of followers possessed by the organization, referred to in the analysis as Followers. Followers was included in order to establish an initial relationship between Total Engagements and a common factor thought to affect the engagement an organization receives on social media. As the only quantitative

independent variable, both Total Engagements and Followers were graphed in order to determine

the potential fit of the model (see Figure 2). Based on these results, it was established that the

relation between Total Engagements and Followers was nonlinear. Per nonlinear procedure, a

new quantitative variable, Followers^2, was created by squaring the data values for Followers in

order to make the relation nonlinear and result in a better-fitting model.

Figure 2

Scatter Plot of Total Engagements and Followers
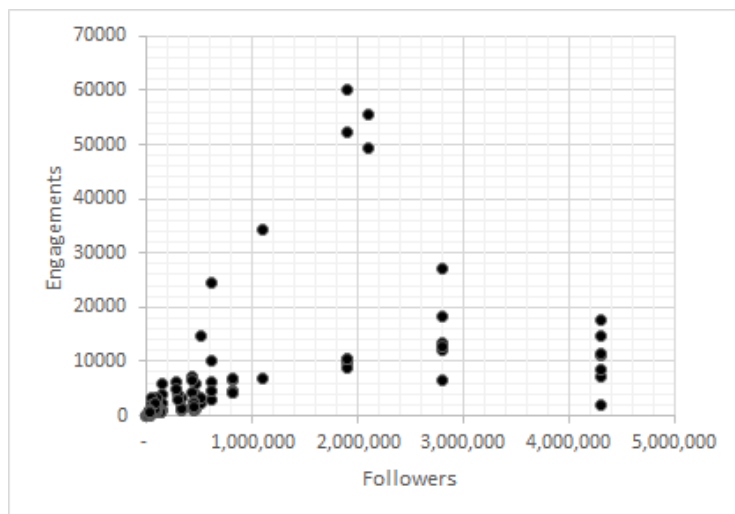
A categorical variable unrelated to image content that was also included in the model was

the presence of hashtags in a given image's caption, defined as the variable Hashstags. Hashtags

are commonly used on social media sites to identify messages that relate to a specific topic or

subject, and are another common factor in social media marketing thought to affect engagement.

All variables unrelated to image content were included in the study in order to account for the

maximum amount of variability in engagement possible, given the scope of this study.

The individual independent variables related to image content could not be identified

until images were collected during the monitoring period. As a result, all independent variables

related to image content were defined after data was compiled. Due to the nature of this study,

image content variables had to be observed and determined by the researcher based on obvious

subject matters that appeared within the images of the data set. The five identified independent

image content variables to be analyzed, as well as a description, are listed in Table 4. As

categorical variables were established, it was necessary to codify each image according to

whether or not the variable was present in the image (for the image content variables) or present

in the post (for the variable Hashtags). The six categorical variables were converted to binary

variables (also known as dummy variables) using 0-1 values; images that did contain a given

variable were coded as 1 to represent the presence of that variable, and images that did not

contain the variable were coded as 0.

Table 4

Description of Image Content Variables

Image Content Variable	Description
Multiple Persons	The image obviously depicts more than one person
Animals	The image obviously depicts one or more animal(s)
Text Graphic	The image is a photo or digital illustration depicting text
One Person	The image obviously depicts only one person
Volunteers	The image obviously depicts obvious volunteer involvement or activity by individuals not in direct association or employment by the organization

Based on these quantitative and categorical variables, the hypotheses (H_a) of this analysis

were as follows.

There is a significant prediction of Total Engagements by:

1. Followers

2. Followers^2

3. Multiple Persons

4. Animals

5. Text Graphic

6. One Person

7. Volunteers

The null hypotheses (H_0) of this analysis were as follows.

There is not a significant prediction of Total Engagements by:

1. Followers

2. Followers^2

3. Multiple Persons

4. Animals

5. Text Graphic

6. One Person

7. Volunteers

Model Development

In accordance with backward stepwise regression procedure, a regression analysis was performed on the dependent variable and all independent variables simultaneously. Statistically insignificant variables were sequentially removed and another regression was performed until only statistically significant variables remained in the model. Once only the most significant

variables remained in the model, the resulting regression equation was established as the final

predictive model for Total Engagements. A confidence interval of 95% (α=0.05) was used in this

analysis. A variable with a p-value < 0.05 indicates statistical significance, in which case the null

hypothesis would be rejected, and evidence would support the presence of a relationship between

the dependent variable and the given independent variable. A p-value > 0.05 indicates that a

variable is not statistically significant, and that no relationship exists between the dependent

variable and the given predictor.

Part B: Follow-Up Survey

Based on data collected from the monitoring period, a follow-up survey was implemented

to apply the findings of the regression analysis to different demographics and groups with

different social media habits. While the regression model determines the statistical significance

of the relationship between image content variables of interest and Total Engagements, other

beneficial insights could be gained through an understanding of how image preferences differ

between groups. Demographic factors and social media habits may have an effect on

engagement, but cannot be observed through third-party monitoring and analysis of social media

data. Thus, a follow-up survey was included in this study to explore these factors.

Target Population and Recruitment

The target population of the survey was individuals representing social media

demographics. Participants included students, faculty, and staff at a regional university in

Oklahoma, as well as external participants. The survey was implemented electronically, and all

participants received the survey through a third-party platform to ensure anonymity. Multiple

professors at the university were involved in the disbursement of the survey via email to

university participants. These professors received an email from the researcher with a brief

summary of the survey to be copied in the recruitment email, along with a link to the survey. External participants were able to participate in the study via a public Facebook link. The link led participants to the survey on the Checkbox Survey platform. All respondents were required to agree to a consent statement prior to participating and were informed of survey anonymity. Participants were not required to answer any questions if they chose not to do so, and could proceed with the remainder of the survey without answering previous questions. Participants were required to be at least 18 years of age and were required to verify their age before answering any of the survey questions.

Survey Design and Instrumentation

The survey was designed to explore other possible factors that could be related to engagement that could not be observed in the raw social media data, or consequently through the regression analysis. Such factors included demographics. To explore these factors in relation to image content preferences, the survey included four demographics questions. Social media habits, such as how much time an individual spends on social media, also could not be observed through the monitoring of the nonprofits' social media accounts, and were therefore tested in the survey. The survey asked three questions designed to gauge respondents' social media usage. To relate these factors to the regression results, six pairs of images for each of five different image content variables identified in Part A were included in the survey. The five variables represented both statistically significant and insignificant variables. It was ensured that each set contained both an image containing the image content variable and an image not containing the variable by randomly selecting images from 0-1 image pools. The image portion of the survey was designed to mimic normal social media interactions by simply asking participants which image appealed to them the most, therefore gauging the participant's preferences for certain image content. After

choosing an image, participants were then presented with a set of reasons as to why they chose the image. Participants were asked to choose the aspect of their chosen image that impacted their selection the most. Participants had the option to respond "Other" or "None of the Above" if none of the reasons listed influenced their choice of image.

The survey included different question formats. Radio button questions were utilized so that participants could only select one option per question. Select questions utilized checkboxes to allow respondents to select multiple answer options from a list. Questions regarding participants' reason for image choice allowed "Other" answers, in which the respondent could submit a written answer. The survey was reviewed and validated by instructors and doctoral-level professors. The full list of survey questions is listed in Appendix A.

Data Collection, Cleaning, and Analysis

The survey portion of this study was implemented electronically. There was no limit for the number of participants that could respond within the deadline of December 31, 2019, after which the researcher exported the data from the Checkbox Survey platform to be analyzed.

Before analysis, the data was cleaned to ensure correct and consistent results. Since the study allowed for manual response entry by participants, any spelling or grammatical errors were corrected manually by the researcher. As mentioned previously, participants were not required to answer any questions. As a result, there were instances of blank responses within the image sets and questions regarding the reason for their image choice. In some instances, a participant would choose a reason for selecting an image, but leave a blank response on the coordinating image. These errors were identified as accidents, since the participant chose a reason but no image. All blanks and associated responses were interpolated with "Prefer Not To Answer" and are

represented in the data as such. Finally, the survey responses were analyzed using descriptive statistics to uncover any significant findings.

Summary

This study was divided into two parts in order to uncover statistically significant image content variables through regression analysis and implement the regression results in a follow-up survey to further uncover potential relationships between various segmentation factors and image content preferences. In total, one quantitative variable, one categorical variable unrelated to image content, and five image content variables were identified and analyzed as potential predictors of Total Engagements. Select image content variables, both statistically significant and insignificant, were applied to a survey to uncover significant insights for various segments.

Chapter 4: Results

Introduction

This study was designed to yield results that could be easily implemented and adapted to the social media strategies of nonprofits. To maximum insight, this study was divided into two parts, both (A) a statistical analysis of social media data generated by viewer interactions with nonprofit organizations on Instagram and (B) a follow-up survey in which the results from Part A were implemented and analyzed alongside demographic factors and social media habits. The following chapter details the results from this two-part study.

Part A: Regression Analysis Results

A total of 145 images and their associated engagement data were used to develop a regression model to estimate the relationships between the dependent variable of Total Engagements and the independent variables. To comprise the data set on which to run the analysis, 15% of the total images posted within the monitoring period were randomly selected to be included in the regression.

Following backward elimination regression procedure, all identified independent variables, including one quantitative variable, one categorical variable unrelated to image content, and five categorical image content variables, were used to perform a simultaneous regression analysis. The results showed that two image content variables, One Person and Volunteers, were extremely insignificant ($p=0.75$ and $p=0.61$, respectively). After the elimination of these variables, the results of the first backward step showed that Hashtags and Text Graphic were not statistically significant ($p=0.16$ and $p=0.06$, respectively). After the elimination of these variables, the results of the second backward step showed that all remaining variables were statistically significant ($p<0.05$). The final model accounted for 53.58% of the

variability in engagement. In other words, the model was able to explain approximately 54% of the variation in the dependent variable that is explained by the independent variables. The variables within the final model are jointly significant, as shown by a statistically significant F-statistic ($p < 0.05$). The final model and p-values of significant variables are summarized in Table 5. The final regression equation, which represents all patterns present in the data, is as follows:

Total Engagements = -2,709.99 + 0.02x_1 + -0.0000000037x_2 + 2,653.45x_3 + 7,548.80x_4

Where:

X_1 = Followers

X_2 = (Followers)^2

X_3 = Multiple Persons

X_4 = Animals

Table 5

Predictive Model Summary

Regression Statistics	
Multiple R	0.73197
R Square	0.53578
Adjusted R Square	0.52252
Standard Error	6819.14333
Observations	145.00000

ANOVA

	df	SS	MS	F	Significance F
Regression	4	7513647902	1878411976	40.39533472	1.80369E-22
Residual	140	6510100198	46500715.7		
Total	144	14023748100			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-2709.987578	977.9555895	-2.771074277	0.006346716	-4643.458314	-776.516842	-4643.458314	-776.516842
Followers	0.019080263	0.001858138	10.26848534	8.71292E-19	0.015406624	0.022753901	0.015406624	0.022753901
Followers^2	-3.73585E-09	4.68261E-10	-7.97813426	4.79859E-13	-4.66163E-09	-2.81007E-09	-4.66163E-09	-2.81007E-09
Multiple Persons	2653.445744	1286.255147	2.062923325	0.040967821	110.4502221	5196.441267	110.4502221	5196.441267
Animals	7548.802328	2053.107597	3.676768981	0.000335774	3489.698316	11607.90634	3489.698316	11607.90634

Part B: Survey Results

   A total of 104 respondents participated in the survey. These participants answered

questions regarding demographics, social media habits, and image content preferences. Participants were asked about their age, gender, ethnicity, and educational background. The age breakdown (see Table 6) consisted of 67 participants between the ages of 18 and 24 (64.42%), six between the ages of 25 and 29 (5.77%), six between the ages of 30 and 39 (5.77%), 13 between the ages of 40 and 49 (12.5%), and 12 ages 50 or older (11.54%).

Of the 104 participants, 78 (75%) were female, 25 (24.04%) were male, and one (0.96%) responded as Other (see Table 7).

There were 81 (77.88%) participants who identified as White, 17 (16.35%) who identified as American Indian or Alaska Native, two (1.92%) who identified as Hispanic or Latino, 2 (1.92%) who identified as Asian, and one (0.96%) who identified as Native Hawaiian or Pacific Islander, and 1 who preferred not to answer (see Table 8).

Regarding education, 58 (55.77%) of participants had some college but no degree; 17 (16.35%) had a bachelor's degree, 15 (14.42%) had an associate's degree, eight (7.69%) had a high school degree or equivalent, three (2.88%) who had a graduate degree, and three (2.88%) who had a doctoral degree (see Table 9).

Table 6

Which category includes your age?

Age	Number of Participants	Percent of Total
18-24	67	64.42%
25-29	6	5.77%
30-39	6	5.77%
40-49	13	12.50%
50+	12	11.54%

Table 7

What is your gender?

Gender	Number of Participants	Percent of Total
Male	25	24.04%
Female	78	75%
Other	1	0.96%

Table 8

What is your ethnicity?

Ethnicity	Number of Participants	Percent of Total
White	81	77.88%
American Indian or Alaska Native	17	16.35%
Hispanic or Latino	2	1.92%
Asian	2	1.92%
Native Hawaiian or Other Pacific Islander	1	0.96%
Prefer Not To Answer	1	0.96%

Table 9

What is the highest level of school you have completed?

Highest Education Level Completed	Number of Participants	Percent of Total
High School Degree or Equivalent	8	7.65%
Some College but No Degree	58	55.77%
Associate's Degree	15	14.42%

Bachelor's Degree	17	16.35%
Graduate Degree	3	2.88%
Doctorate	3	2.88%

There were three questions that asked participants about their relationship with social media and their social media habits. Participants were asked how much time, on average, they spend on social media each day. Participants could choose only one response. Out of 104 participants, 15 (14.42%) reported spending less than 1 hour on social media per day, 81 (77.88%) reported spending between 1 and 5 hours per day, and the remaining eight (7.69%) reported spending 5 to 10 hours each day (see Table 10).

Participants were also asked about the different social media platform(s) they use. Participants were able to choose more than one platform, and were also able to list other platforms besides the most common platforms, which were listed as the choices. The results showed that 95 participants reported having a Facebook account, 84 had an Instagram account, 80 had a Snapchat account, 68 had a Pinterest Account, 57 had a Twitter Account, and 30 had a LinkedIn account. Less than 9% of participants had a Tumblr account. Only five participants reported having other social media accounts besides these, and only one participant out of 104 responded that they did not have any social media accounts at all (see Table 11).

While many participants may have had multiple accounts, it is possible to not use them all with equal frequency. The last social media habits question asked participants which social media platform(s) they used regularly. Participants were able to choose more than one platform, and were also able to list other social media platforms than those listed. Facebook was used regularly by 81 participants; Snapchat was used regularly by 65; Instagram was used often by 60 participants; 35 reported using Twitter regularly; 34 reported using Pinterest regularly. Only

seven participants reported using LinkedIn regularly, and only two checked LinkedIn. Only one

participant responded that they regularly used a different platform than those listed, and only one

reported using none (see Table 12).

Table 10

How much time, on average, do you spend on social media each day?

Time Spent on Social Media Per Day	Count	Percent of Total
Less than 1 hour	15	14.42%
1 - 5 hours	81	77.88%
5 - 10 hours	8	7.69%

Table 11

What social media account(s) do you have?

Platform	Count	Percent of Total
Facebook	95	91.35%
Instagram	84	80.77%
Twitter	57	54.81%
LinkedIn	30	28.85%
Snapchat	80	76.92%
Tumblr	9	8.65%
Pinterest	68	65.38%
Other	5	4.81%
None Of The Above	1	0.96%

Table 12

What social media platform(s) do you use regularly?

Platform	Count	Percent of Total
Facebook	81	77.88%
Instagram	60	57.69%
Twitter	35	33.65%
LinkedIn	7	6.73%
Snapchat	65	62.5%
Tumblr	2	1.92%
Pinterest	34	32.69%
Other	1	0.96%
None Of The Above	1	0.96%

The final portion of the survey consisted of 30 sets of images and 30 corresponding follow-up questions to gauge participants' reasons for choosing one image over the other in a given set. In total, five variables were tested within these image sets, with six different image sets per variable. As such, the response results are aggregated so that the responses from the six different sets jointly represent their respective variable. A summary of significant results is shown in Table 13, with "Yes" representing the presence of the variable, and "No" representing the absence of the variable. Percentages for each segment within each variable may not total 100%, as the Prefer Not To Answer responses are not included. All percentages express the percent of total responses. For example, the table shows that for the variable Multiple Persons, 58.33% of the responses that came from participants identifying as Hispanic or Latino were for images depicting multiple persons. Two of the variables represented in the survey were found to be statistically significant predictors of engagement based on the regression analysis: Multiple Persons and Animals. The three other variables, One Person, Text Graphic, and Volunteers, were found to have no relationship with engagement. The following results detail significant findings

regarding the relationship between demographics, social media habits, and the five image content variables tested.

Image sets 1-6 represented the variable Multiple Persons. Overall, the survey results were consistent with the regression analysis, as 65.87% of respondents chose the image depicting multiple persons. The only segment of respondents that went against the regression results was participants between the ages of 30-39. While all other segments chose the image with multiple persons by a significant margin, the majority of this age cohort chose the image without multiple persons (44.44%), while only 38.89% chose the image with multiple people. A further analysis of this age cohort's reasons for image choice reveals that this group was actually equally drawn to images with color or visual interest as images with people (30.56% for both reasons in this age group). In comparison, across all segments, most respondents (48.88%) reported that they chose the image because it contained people.

Image sets 7-12 represented the variable Animals. Across all demographic segments, the survey results were consistent with the regression analysis, with 62.34% of respondents choosing images depicting animals and only 34.29% choosing images not containing animals; Approximately 3.37% preferred not to answer. Regarding their reasons, 69.83% of respondents reported that either animals or nature was the reason for their image choice.

Image sets 13-18 represented the variable Text Graphic. The survey results for this variable across all segments went against the regression results, with slightly more respondents choosing an image depicting a text graphic (48.88%) over an image that was not a text graphic (48.24%). A breakdown of the results shows that participants who identified as White chose text graphic images over the opposite (51.44% versus 47.33%). All other ethnicities followed regression results, choosing images without text graphics over text graphics. Another significant

finding was that 18-24 was the only age cohort that followed regression results, with 57.71% choosing images that were not text graphics and 40.30% choosing images that were text graphics. Finally, participants who reported spending less than 1 hour a day on social media preferred text graphic images (53.33%) over images that were not text graphics. Despite these differences in image choice, the top reason for image choices across all segments was strong text, with 43.27% listing this as their reason for their image choice.

Image sets 19-24 represented the variable One Person. Overall, the survey results for this variable did not follow regression results across all segments; 49.68% of participants chose images with only one person and 46.79% chose images not depicting only one person. A further analysis shows that individuals who generally spend less time on social media prefer images with only one person, but individuals who spend the most amount of time on social media per day actually follow regression results, with 54.17% choosing images not depicting only one person over images that show only one person. Despite these differences, 59.13% of all participants said their reasons for their image choices were due to the presence of a person.

Finally, image sets 25-30 represented the variable Volunteers. Across all participants, the responses generally went against the regression results, with 51.6% of respondents choosing images depicting volunteers and 45.03% choosing images not showing volunteer activity. A further analysis shows that the 30-39 age cohort actually preferred images without volunteers over images with volunteers. In addition, 51.96% of participants who identified as American Indian or Alaska Native, 58.33% of participants who identified as Hispanic or Latino, and 66.67% of participants who identified as Native Hawaiian or Other Pacific Islander chose images without volunteers over images with volunteers. Despite these differences, 57.05% of responses listed the presence of people or a person as their reason behind their image choice.

Table 13

Summary of Survey Results for Image Preferences

Segment	Variable									
	Multiple Persons		**Animal(s)**		**Text Graphic**		**One Person**		**Volunteers**	
%	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**
Overall	65.87	30.13	62.34	34.29	48.88	48.24	49.68	46.79	51.6	45.03
Age										
18-24	64.93	32.84	62.94	36.07	40.3	57.71	53.98	43.53	52.49	45.77
25-29	58.33	41.67	72.22	27.78	55.56	44.44	44.44	47.22	47.22	47.22
30-39	38.89	44.44	47.22	36.11	55.56	27.78	52.78	30.56	38.89	44.44
40-49	71.79	20.51	69.23	28.21	71.79	26.92	34.62	65.38	53.85	46.15
50+	81.94	12.5	54.17	33.33	65.28	30.56	43.06	52.78	52.78	38.89
Gender										
Male	57.33	40.67	62.67	37.33	26	73.33	55.33	42	50.67	49.33
Female	68.8	26.5	61.97	33.55	55.98	40.38	47.65	48.5	51.92	43.59
Other	50	50	83.33	16.67	66.67	33.33	66.67	33.33	50	50
Ethnicity										
White	68.72	29.01	62.55	35.19	51.44	47.33	52.67	46.09	54.73	43.42
American Indian or Alaska Native	50.98	36.27	61.76	28.43	42.16	46.08	38.24	50	36.27	51.96
Hispanic or Latino	58.33	41.67	58.33	41.67	25	75	41.67	58.33	41.67	58.33
Asian	83.33	16.67	58.33	41.67	16.67	83.33	41.67	58.33	66.67	33.33
Native Hawaiian or Other Pacific Islander	50	33.33	83.33	16.67	50	50	33.33	66.67	33.33	66.67
Prefer Not To Answer	88.33	16.67	50	50	66.67	33.33	50	50	66.67	33.33
Education										
High School Degree or Equivalent	68.75	18.75	60.42	31.25	56.25	29.17	39.58	41.67	50	33.33

Some College but No Degree	63.51	34.2	63.22	36.49	42.82	56.9	53.74	45.11	52.59	47.41
Associate's Degree	63.33	28.89	66.67	25.56	47.78	45.56	42.22	51.11	50	43.33
Bachelor's Degree	74.51	25.49	61.76	38.24	67.65	32.35	47.06	52.94	52.94	46.08
Graduate Degree	72.22	16.67	55.56	33.33	38.89	38.89	33.33	50	44.44	22.22
Doctorate	61.11	27.78	38.89	22.22	55.56	44.44	66.67	33.33	44.44	55.56
Time Spent on Social Media Per Day										
Less than 1 hour	64.44	33.33	66.67	32.22	53.33	46.67	54.44	45.56	51.11	48.89
1 - 5 hours	65.02	30.25	61.93	34.16	46.91	49.38	49.79	46.3	52.06	44.03
5 - 10 hours	77.08	22.92	58.33	39.58	60.42	39.58	39.58	54.17	47.92	47.92

Chapter 5: Discussion

Introduction

The purpose of this study was to ultimately provide nonprofit organizations with an analysis that contributed the maximum amount of actionable insight within a limited scope, so that any results could be easily adapted to an organization's goals. To achieve this purpose, it is necessary to discuss the significance, implications, and limitations of the study from a practical perspective, so that any insights can be easily integrated into social media marketing strategies.

Discussion of Regression Analysis Results

The purpose of Part A of this study was to develop a predictive model through regression analysis that uncovered statistically significant relationships between engagement with nonprofits and image content. Eight potential predictors were included in this analysis. Select independent variables, while not the basis of this study, were included in order to determine as much variability in engagement as possible, so as to develop a fitting and useful model. As such, it is important to interpret the outcomes of each variable included in the analysis.

It is worth mentioning that regression analysis is a subjective and investigative procedure. Before regression analysis was performed on the data, the relationship between Total Engagements and Followers was explored. It is commonly assumed that in general, as the number of followers increases, so does engagement. While the results of the regression analysis revealed that there is a statistically significant relationship between Total Engagements and Followers ($p=0.02$), a scatterplot of both variables reveals a nonlinear pattern (see Figure 2 below), hence the introduction of the variable Followers^2 to establish a nonlinear relation. The relationship between Engagement and Followers revealed that as the number of followers reaches a certain point, the amount of engagement actually starts to decline. The graph shows

that several organizations with over 4,000,000 followers receive the same amount of engagement

as organizations with less than 1,000,000 followers.

Figure 2

Scatter Plot of Total Engagements and Followers
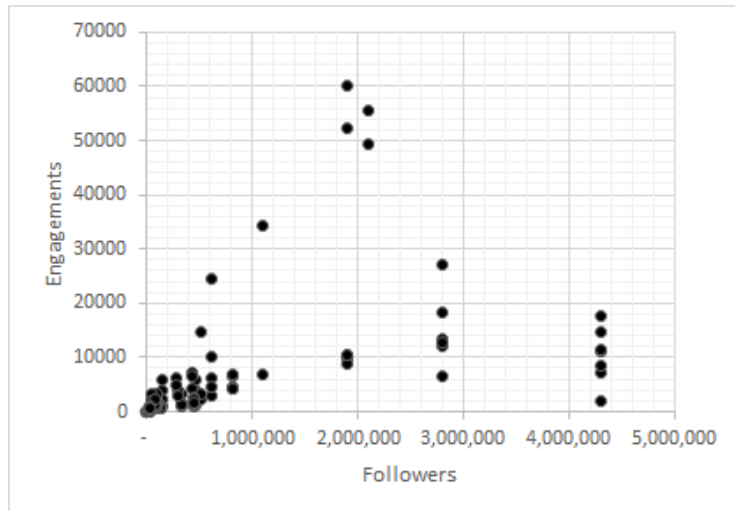
The regression results also revealed another interesting finding. Hashtags are generally

seen as a way to increase engagement, since they have the potential to make an organization

more discoverable on social media. However, the study results revealed that for nonprofit

organizations, hashtags were not a statistically significant predictor of Total Engagements

(p=0.16), indicating that there was no relationship between using hashtags and receiving higher

levels of engagement for nonprofits. A look at some of the hashtags utilized on the images

posted within the monitoring period revealed that the reason may be that some organizations

frequently utilize less common, more obscure hashtags. This observation is discussed in depth in

Chapter 5. There were several interesting findings in regard to the image content variables. One

significant insight is that the results showed that Multiple Persons was statistically significant

(p=0.04), while One Person was incredibly insignificant (p=0.75). This indicates that images

containing more than one person are more effective in eliciting engagement from viewers than images showing only one individual. The coefficient for Multiple Persons from the final model shows that for the presence of this variable, Total Engagements increased by 2,653.45. The results showed that the only other statistically significant image content variable was Animals (p=0.00034). This is an interesting trend, since only two organizations represented in this study were in the Environment and Animals category. However, many organizations utilized images of pets, such as dogs, and other animals. The average engagement rate for the entire data set was 1.41%, while the average engagement rate for images containing animals was 2.09%. In contrast, the average engagement rate for images not containing animals was 1.35%. The coefficient for Animals shows that for the presence of this variable, Total Engagements was increased by 7,548.80.

Overall, the results show that there are types of image content that are significantly related to engagement. While only 54% of the variability in engagement was attributed to the variables identified in this study, the results from the regression analysis still indicate that some types of image content do affect engagement with nonprofits on social media. While the model developed from the analysis could be used to predict engagement based on an organization's current number of followers and the presence of the statistically significant variables, it is worth noting that this model ultimately serves as evidence that there are multiple relationships between certain types of image content and the engagement that nonprofits receive. From a practical standpoint, it is unlikely that an organization would be able to create social media content that contains every single variable in existence that contributes to engagement. But, the final model does serve as evidence that certain types of image content contribute to how well the model is able to attribute these factors to Total Engagements.

Discussion of Survey Results

The purpose of Part B was to apply the results from the regression analysis to further uncover trends in image preferences among different segments by surveying factors that could not be observed in the raw social media data or included in the regression analysis. These factors include demographics and social media habits.

The survey results showed that social media is widely used across multiple segments. Out of multiple age groups, genders, ethnicities, and educational backgrounds, there was only one participant out of 104 who reported not using any type of social media. In addition, nearly 78% of participants reported that they spend anywhere between 1 and 5 hours on social media each day, and 91.35% of participants had at least one social media account. These results also show the popularity of visual-based platforms; nearly 78% of participants use Facebook regularly, and Instagram was the second-most frequently used, with 57.69% of participants using the platform regularly. These results show how accessible different target markets are through social media.

The survey results revealed multiple insights regarding relationships between different demographics and social media usage habits. The results showed a significant preference for images depicting multiple people over other types of image content. But, people between the ages of 30 and 39 preferred images that did not depict multiple people. In addition, this age cohort was generally more attracted to color or visual interest than other cohorts.

The results showed that all segments were able to agree regarding their significant preference for images depicting animals. Across all demographic segments, participants' choices were consistent with the regression analysis, and when asked why they chose these images, the most popular reason was in fact the presence of an animal.

There were significant insights regarding the variables included in the survey that were not statistically significant in the regression analysis. The fact that these variables were not statistically significant was already an indication that preferences varied across different segments of social media users, and the survey results confirmed higher variability across segments than the statistically significant variables. The survey results showed that there is a slight preference for text graphics over other types of content. Interestingly, participants identifying as ethnicities other than White, as well as the youngest age group (18-24) follow the results of the regression by having a preference for images that are not text graphics. Finally, participants who reported spending the least amount of time on social media actually had a preference for text graphics over images that were not text graphics.

The results showed that people who spend less time on social media (less than 5 hours) go against the regression results and prefer images depicting only one person. In contrast, people who spend the most time on social media do not prefer images with one person. Finally, the results showed that slightly more participants preferred images showing volunteers or volunteer activity, while the 30-39 age group goes against the majority of participants but follows regression results, as more respondents preferred images not depicting volunteers.

Practical Implications of Study Results for Nonprofits

The final results of this study reveal several insights. Through a regression analysis of image content variables and their effect on engagement, it was found that certain types of image content did contribute to engagement, while several image content variables were not related to engagement. A survey application of these results revealed the image preferences of different segments. While the insights gained from this study are numerous, there are several notable implications of the overall findings. These implications are detailed in the following section.

The relationship between Engagement and Followers implies that engagement actually starts to decline once an organization reaches approximately 2,000,000 followers. The implications of this might be that as the number of followers grows, individuals feel less obligated to interact with nonprofits, perhaps perceiving that their interactions hold less value compared to the abundance of other followers. From a practical standpoint, this suggests that the purpose of increasing engagement for an organization should not necessarily be to grow their number of followers. Many organizations make this a primary goal, and thus want to increase engagement in order to encourage viewers to follow them on social media. But, after a certain number of followers is reached, perhaps the organization's goal should adapt to be increasing engagement for the purpose of increasing website traffic, or to raise awareness for upcoming events, for example. Ultimately, the implication of this finding is that as goals are reached, a nonprofit should adapt their strategy to try to achieve engagement for other purposes, or else their strategies to increase engagement might be ineffective.

The results showed that there was not a significant relationship between hashtags and engagement, possibly because some organizations frequently utilize obscure hashtags. For example, The Museum of Modern Art frequently utilized hashtags of artists' names, such as #LincolnKirstein, which has approximately 500 total posts on the entire Instagram platform. In contrast, #MOMA (the organization's acronym) has 2,000,000 posts, and #museumofmodernart has 225,000 posts. This implies that organizations if organizations are using hashtags to achieve reach, they should use more discoverable hashtags.

This study revealed that there are two image content variables that do contribute to engagement. While these results do not mean organizations should avoid the image content variables that were not statistically significant, it is recommended that nonprofits utilize these

variables, since the results show that images showing multiple people or animals contribute to engagement, no matter the type of nonprofit. It is also worth noting that multiple images analyzed in this study contained both of the statistically significant image content variables. So, while it is not necessarily practical to attempt to include every image content variable identified in the future that contributes to engagement, it is possible to include more than one variable.

Every organization has different goals. The implication of the regression analysis is *not* that organizations should avoid image content with the statistically insignificant variables, because Part B of this study revealed some insights that can be implemented based on the goals of the organization. While some organizations may choose to utilize the statistically significant variables uncovered in Part A, some organizations may have specific segments that they want to target with specific content. The insights uncovered in this study would be highly useful for segmenting and targeting. For example, while the regression results showed that Multiple Persons was statistically significant and the survey results showed a strong preference for images depicting multiple persons, an organization wanting to target individuals between the ages of 30 and 39 might choose to regularly post images with just one person, as this age cohort prefers these images over images showing multiple people. Organizations wanting to post the content that is most effective in encouraging engagement from users who are on social media the least might decide to regularly post images with just one person, as people who spend less than 1 hour on social media prefer these images.

Limitations

There are notable limitations in this research. The final model leaves approximately 46.42% of the variability in engagement unexplained. However, due to the nature of the study, other factors that had the potential to affect engagement could not be observed by a third party

without access to the analytics reports of all nonprofits included in the study. These potential

factors include time of day posted, sharing of posts, and whether or not the post was a paid

advertisement. Another limitation is that any responses to viewer comments would contribute to

the number of engagements on a given image. Finally, since the survey respondents were not

chosen beforehand, not all social media demographics may be represented in the survey.

Suggestions for Further Research

This research opens up multiple avenues for future exploration. In the future, it would be

in the best interest of these organizations to attempt to further identify other image content that

might contribute to engagement. For example, the data shows that National Public Radio (NPR)

had a high level of variation in their posts. Upon closer examination, one post received only

8,853 engagements, while two posts depicting children received over 50,000 engagements each.

This suggests that possible variables to investigate in the future might be the presence of children

specifically, rather than people in general. Another potential variable is image quality.

This study also revealed instances of decreased engagement as followers increased. As

this holds implications in regard to an organization's goals over time, it might be beneficial to

explore the relationship between certain image content and organizational goals. If an

organization is trying to grow a following, what content is better at increasing engagement for

the purpose of growing followers? If their goal is to raise awareness for events, what image

content is better at increasing engagement for this purpose?

Finally, further insights might be gained from disaggregating the different types of

nonprofit organizations and determining how image content affects engagement within each

category. While some image content variables identified in this study were insignificant across

all categories of nonprofits, they could possibly be significant for a specific type of organization.

Furthermore, future study is needed to actually implement the findings of this research within the marketing strategies of nonprofit organizations, and attempt to attribute these factors to any success in their conversion goals.

Conclusion

As social media marketing progresses, so should nonprofit organizations' ability to develop effective strategies to market their causes. While the number of analytical resources continues to grow, nonprofits are still facing barriers due to limited resources. This research serves as evidence that university students and other academic professionals have the ability to uncover significant insights on behalf of these organizations, and give back to these charities that are constantly giving to others. The goal of this study was to provide nonprofits with actionable information that they can use to better allocate their digital marketing resources, maximize their social media marketing efforts, and develop more effective marketing strategies overall, and found that there are multiple opportunities for nonprofits to use image content to drive social media success. If nonprofit organizations are able to implement the findings of this study, they will be able to promote their causes more effectively, and make even more of a difference.

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Appendix

Survey for Exploring Engagement Trends for Nonprofit Organizations on Social Media

The survey instrument utilized in this study is shown below. The full list of questions regarding demographics and social media usage are listed. There were 30 questions that involved image selection, and 30 coordinating questions that surveyed participants' reason for choosing a particular image. Only one sample image set and its coordinating follow-up question are shown; however, all 30 image sets and their coordinating questions were phrased identically.

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Dear Participant:

I am conducting a research study concerning nonprofit organizations on social media. The purpose of this study is to explore possible trends in viewer engagement with nonprofit organizations on Instagram. Your responses to an online survey may help in providing information that nonprofit organizations can use to promote their causes. You are being asked to participate in this study because you potentially use social media and therefore represent a social media demographic.

Participation in this study includes the completion of an electronic survey. Your completion and submission of the survey imply your consent to participate in this research study and your participation in this research is then finished. Participation in this study is completely

voluntary and there are no repercussions should you decide not to participate. Should you choose to participate in this study, your responses are anonymous, meaning your responses will not be associated with your identity in any way. If you wish to withdraw from the study at any point, simply close the browser window. The risks of participating in this study are minimal, not beyond the risk of normal social media use. You will be asked a series of demographic questions and then presented with several sets of images. All responses are short answer or multiple choice, so the survey should only take about 10-15 minutes to complete. There is no compensation for participating in this study, other than knowing your participation could help nonprofit organizations promote their causes more effectively and could help them make a difference on a larger scale. Once you submit the survey, your responses will be automatically recorded and will be kept on a password-protected computer for one year. You must be at least 18 years of age to participate. Please complete and submit the survey by December 31, 2019.

For questions or additional information regarding this research, you may contact me or my faculty advisor. You can email me at burkss@nsuok.edu. You can contact my faculty advisor, Dana Boren, at borenboe@nsuok.edu.

If you have questions about your rights as a participant in this study or if you wish to talk to someone not directly involved in this study, you may contact the Institutional Review Board (IRB) at Northeastern State University at 918-444-3719. You may also visit their website at https://offices.nsuok.edu/irb/.

Your completion and submission of this survey imply your consent to participate in this research study. Click the "Next" button to continue.

1. I am at least 18 years of age.

2. Which category below includes your age?

3. What is your gender?

4. What is your ethnicity?

5. What is the highest level of school you have completed?

6. How much time, on average, do you spend on social media each day?

7. What social media account(s) do you have?

8. What social media platform(s) do you use regularly?

The remainder of this survey consists of multiple sets of images. You will be presented with two images. For each pair, please select the image that you find the most engaging. In other words, select the image that you like the most, appeals to you the most, or that you would be most likely to engage with (like/comment) if you were to come across it on social media. After each pair, you will be asked a coordinating question.

Click "Next" to continue.