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Examining the Association Between Facebook Marketing and Applications Received in Graduate Programs at One University

Heather Danielle Campbell
University of Arkansas, Fayetteville

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Examining the Association Between Facebook Marketing and Applications Received in
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Heather Campbell
Bellarmine University
Bachelor of Arts in Communication, 2015
Bellarmine University
Master of the Art of Communication, 2016

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_____
Kenda Grover, Ed. D.
Dissertation Director

_____
Kit Kacirek, Ed.D.
Committee Member

_____
Kevin Roessger, Ph.D.
Committee Member

Abstract

As the technological world continues to grow and expand, the use of social media marketing continues to increase. Graduate programs looking to increase the number of applications received can turn to Facebook to market their programs. This study looks at the use of self-presentation, from a graduate program level of Facebook use, to create content that reaches their target audience. Self-presentation allows graduate programs to control the types of marketing, posts, and content displayed regarding their program in an effort to be seen in a certain light. This study explores six types of Facebook content perceived as favorable in the literature. Favorable content creates connectedness, community and networks, high-quality relationship perceptions, shared entertaining and interactive content, includes student-written blogs, and posts with a high content agility. There are seven research questions guiding this study that address the favorable content listed above after controlling for the effect of the reputation of faculty, faculty to student ratio, the historical impact of the Facebook account, and the number of years of the program's existence. This pre-registered study offers the framework for this study to be carried out at the University of Arkansas. There are 151 graduate degree programs to consider. The participants of the study are graduate programs at the University of Arkansas with active Facebook pages during the Fall 2021, Spring 2022, and Summer 2022 semesters. A coding system has been developed to identify what content is considered favorable. Findings from this study will contribute to the body of research focused on addressing the use of Facebook content as a marketing tool to increase application rates in higher education.

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Chapter 1: Overview

This chapter introduces a proposed study examining the relationship between favorable Facebook content posted and the number of applications received by graduate programs at the University of Arkansas for those programs who have a program level Facebook account. Favorable content refers to content perceived positively and potentially influential in the application decision process of adult learners. Such favorable content may include student-run blog posts, interactive posts, etc. This chapter discusses how social media, specifically Facebook, historically has been implemented as a tool for academic programs to improve outreach with measurable effects (Rockinson-Szapkiw et al. , 2014; Larsen & Spackman, 2017; Romero-Hall, 2017; Clark et al., 2017; Melchiorre & Johnson, 2015; Sandlin & Pena, 2014; Chaunhan, 2013). Readers will learn about the background of the study, the need and purpose of the study, important definitions, and the scope and limitations regarding the research problem and the seven research questions guiding this study. The major concepts related to the degree of favorable content on program Facebook accounts, student applications, and the variables being controlled for in this study are defined. This chapter provides readers with the information needed to understand the nature of the study, the need for the study, and the major tenets guiding the study.

Background of the Study

Recent college enrollment statistics show that fewer students are pursuing higher education due to reasons such as financial issues or the need to earn a living quickly, etc. Associate degrees enrollment has seen a 10.9 % drop. Bachelor's degree enrollment has dropped 2.2%. However, both master's and doctoral degree enrollment increased by 3% or more (Bouchrika, 2022). As the number of adult learners in higher education decreases, new recruitment strategies using social media are needed to recruit adult learners in an effort to

increase application rates (Melchiorre & Johnson, 2017). The *2017 Social Admissions Report* found that two in five students use social media to decide where to attend college. Potential students use social media to learn more about things such as universities, academic programs, and student opportunities, Graduate education programs are capitalizing on this idea and implementing social media accounts in their programs (Turner, 2017).

There are six types of social media: blogs and microblogs, social networking sites, virtual worlds, collaborative projects, content communities, and virtual gaming (Mullen et al., 2014). Social networking sites are the type of social media being implemented by academic programs (Turner, 2017). In 2007, the National Association for College Admission Counseling (NACAC) reported that 61 percent of college admissions offices are using social media to recruit new students. The four most popular social media platforms used by colleges in the last decade are Facebook, Twitter, Instagram, and Snapchat, and each one serves different functions. Facebook connects colleges with students and their parents through university and program level accounts. Twitter primarily connects academic programs to other academic programs. Instagram and Snapchat are exclusively student-focused (Turner, 2017).

For the purposes of this study, Facebook is the social media of focus in graduate degree programs at the University of Arkansas. The University of Arkansas has 151 graduate degree programs. Many of these graduate programs have Facebook pages for their program used as outreach to current and potential students, staff, etc. These Facebook accounts are used as outreach to connect with adult learners. For the purposes of this study, the term adult learners refers to graduate students who are generally 24 years of age or older and are seeking a master's or doctoral degree. This study will allow the University of Arkansas' graduate programs to see the effects of Facebook marketing employing favorable content on application rates within their

program while learning new content types to utilize. The graduate programs use these Facebook

pages as a way to represent and market their programs.

Social Media Marketing

Marketing on social media allows the content to appear as a conversation where

participants can discuss and present content instead of simply a corporate monologue view of

marketing. Individuals can present their own websites, products, and services, and showcase

them to a wide community. Marketing on social media also allows for word of mouth to factor

into the sharing process of information being presented. Social media paves the way for outreach

to expand past local to international levels (Galan et al., 2015).

Social media should reflect the school's branding and marketing focus. The two major

goals of college social media accounts are to entice students to visit campus and to give students

who cannot visit a good sense of the campus (Turner, 2017). Social media engagement impacts

the relationship quality between universities and students (Clark et al., 2017). Social media

marketing ties into relationship quality by building trust and communicating customer benefit.

Students following a university on social media perceive a high-quality relationship as they can

use it to be informed, feel a part of the community, and direct access to the information and

benefits of the institution (Clark et al., 2017). Programs focusing on relationship quality between

the university and their students see better enrollment outcomes.

Favorable Facebook Content Types

Within the last 10 years, some researchers have examined how Facebook content type

affects students' perspectives of graduate programs. Some have found that favorable content in

the eyes of students is content that creates connectedness (Rockinson-Szapkiw et al., 2014;

Larsen & Spackman, 2017), creates a community and networks (Romero-Hall, 2017), is building

high quality relationship perceptions (Clark et al., 2017), is entertaining and interactive (Spackman & Larsen, 2017; Melchiorre & Johnson, 2015), has student written-blogs (Sandlin & Pena, 2014), and has a high content agility (Chaunhan, 2013). Researchers have found a connection between the use of favorable Facebook content on graduate program's Facebook accounts and the number of student applications received (Fagerstrom & Ghinea, 2013; Spackman & Larsen, 2017; Constantinides & Stagno, 2012). These findings will be discussed further in the literature review to understand how these types of favorable content were identified. This study will expand upon these findings in a new way through the use of a list of favorable Facebook content, as identified in the literature, as compared to the number of applications received by graduate programs at the University of Arkansas. The numerous types of favorable content evaluated along with the change in context will extend these findings in a new way.

In addition to understanding other researchers' findings regarding Facebook content, there are a number of concepts and theories related to the creation of favorable content on Facebook. It is important to understand the effects of faculty to student ratio, faculty reputation, the historical presence of a Facebook account, and the number of years a program has existed. These concepts influence students' decision on graduate programs and are important to be considered.

Graduate programs must consider the factors that affect students' decision making at a program level. It is more than Facebook that affects their decision. These other concepts can be expressed on the graduate program's Facebook to speak more directly to their wants and needs in looking for a program. Faculty to student ratio is considered by students as it affects the class and program experience. Smaller class sizes often lead to a more personal experience by the student. The reputation of the program's faculty members is considered as well. There are websites that

give students insight and reviews of program faculty. From a historical standpoint, the length of time a program has existed in addition to the length of time their program's Facebook page has existed is on the minds of the potential students. The historical presence of the program shows how well-known the program is and how established the program is likely to be. If a program is established and well-known, it will likely draw reputable staff and tend to the class needs of each student (Joseph et al., 2014; Kallio, 1995). These considerations can be spoken to through the use of a program's Facebook page, especially if the page is established and has been around to share program information for a lengthy amount of time. The length of time a Facebook account has been active affects the reputation, number of followers, and the amount of content posted. All of these concepts work together to amplify social media marketing on Facebook at a program level.

From a theoretical standpoint, Goffman's Self-Presentation Theory addresses the impression management aspect of living behind the screen on social media. It "refers to the process by which individuals, more or less intentionally, construct a public self that is likely to elicit certain types of attributions from others, attributions that would facilitate the achievement of some goal" (Metts & Grohskopf, 2003, p. 360). Academic programs control the content presented on their program social media. They can control the impression students receive about their program or campus based on the program's choice of marketing strategy on social media. Self-presentation theory informs this study of the motivations behind creating favorable content on Facebook. Academic programs can implement self-presentation into their social media program marketing to reach new and current students and improve program outcomes, such as student applications. Knowing favorable content to post and implementing this type of content on their Facebook accounts can help graduate degree programs market their programs.   `

Need and Purpose

This study addresses a growing need cited in the literature for additional empirical support for the impact of academic programs using social media on student applications (Rockinson-Szapkiw et al., 2014; Larsen & Spackman, 2017; Romero-Hall, 2017; Clark et al., 2017; Spackman & Larsen, 2017; Melchiorre &Johnson, 2015; Sandlin & Pena, 2014; Chaunhan, 2013). The degree of favorable content as related to application rates will be the focus in this study. The independent variable, the degree of favorable content, is defined as the amount of content that creates connectedness (Rockinson-Szapkiw et al., 2014; Larsen & Spackman, 2017), creates a community and networks (Romero-Hall, 2017), builds high quality relationship perceptions (Clark et al., 2017), is entertaining and interactive (Spackman & Larsen, 2017; Melchiorre & Johnson, 2015), has student written-blogs (Sandlin & Pena, 2014), and has a high content agility (Chaunhan, 2013). The dependent variable, the number of student applications, is defined as applications submitted by students to a university during a single academic year (Ukumkoro, 2017).

The information in this study may be useful for stakeholders within higher education looking to implement a program Facebook account into their program marketing plan. Marketing techniques, specifically the posting of favorable content, play a role in the use of social media by graduate degree programs. The role of these techniques in the measuring of program outcomes is unclear in many cases. Some studies have been done to identify what content is favorable to be posted (Rockinson-Szapkiw et al., 2014; Larsen & Spackman, 2017; Romero-Hall, 2017; Clark et al. , 2017; Spackman & Larsen, 2017; Melchiorre & Johnson, 2015; Sandlin & Pena, 2014; Chaunhan, 2013), but few have looked at the relationship between favorable Facebook content and the number of student applications specifically. Fagerstrom and Ghinea (2013) looked at the

social media recruitment campaign at a Norwegian University and found that applicants utilizing Facebook groups showed a major raise in conversion numbers of applicants. Spackman and Larsen (2017) saw an increase in enrollment rates when utilizing interactive, entertaining forms of social media marketing on Facebook. Constantinides and Zinck Stagno (2012) carried out a study in the Netherlands to test the role and importance of social media as influencers of future students' university choice for application. There is a need to expand on this idea and see what aspects of Facebook affect application rates. In the last decade, colleges have seen a decrease in enrollment rates (Fain, 2019). This decrease has forced colleges to expand their marketing plans in an effort to increase enrollment (Turner, 2017). In 2019, higher education marked the 8th consecutive year-to-year enrollment decline, causing a destructive ripple effect on the nation's smaller campuses. From the prior spring, colleges collectively lost 1.7% of enrollees (Tomar, 2019). There is room for growth in research to expand the knowledge and understanding of Facebook as a tool for graduate degree programs (Fagerstrom & Ghinea, 2013; Spackman & Larsen, 2017; Constantinides & Stagno 2012). The specific effect on student applications in graduate degree programs using social media accounts continues to be questioned. This study will contribute by generating empirical evidence to address these uncertainties.

Another purpose for this study is to promote a new way of evaluating the effects of Facebook. This new form of evaluating Facebook's effects involves bringing each favorable type of content identified in the literature into a collective list to measure the collective effect of the content types. I have taken the findings of multiple studies to create a list of what Facebook content is considered favorable by students. This list will be used to show how not just one, but all of these individual favorable aspects work together to hopefully increase the number of applications received. There have been studies done to identify individual types of content that is

seen as favorable by applicants (Rockinson-Szapkiw et al., 2014; Larsen & Spackman, 2017; Romero-Hall, 2017; Clark et al., 2017; Spackman & Larsen, 2017; Melchiorre & Johnson, 2015; Sandlin & Pena, 2014; Chaunhan, 2013). There are no other studies found utilizing a list of favorable content to assess a graduate program's Facebook content's effect on student application numbers. This could create a new tool or model for researchers to use as a collective list of favorable aspects. This study could provide a new strategy for examining the relationship between favorable Facebook content and student applications.

The findings of this study may provide graduate programs with a model for structuring or crafting their Facebook feeds to best attract potential students. This model will help graduate programs use Facebook marketing to increase enrollment, reach new students, and construct desirable program images. Crafting their Facebook feed with content that is deemed favorable by students will increase their program attraction from a student perspective.

Definitions

For this study, the important concepts are social media marketing, favorable Facebook content, student applications, faculty to student ratio, faculty reputation, the historical impact of the Facebook account, and the number of years of the program's existence.

Social media marketing is conceptualized as "a type of online advertising which targets consumers based on cultural context of social communities through virtual worlds, social networks, social news sites, and social opinion-sharing sites, in order to meet branding and communication objectives" (Galan et al., 2015, p. 22).

Favorable Facebook content is the independent variable of the research problem guiding this study. Favorable Facebook content is conceptualized using a number of sources identifying content with positive correlation with student expectations. The literature indicates the following

list of favorable content when conceptualizing this idea. Favorable Facebook content is content that creates connectedness (Rockinson-Szapkiw et al., 2014; Spackman & Larsen, 2017), creates a community and networks (Romero-Hall, 2017), builds high quality relationship perceptions (Clark et al., 2017), is entertaining and interactive (Spackman & Larsen, 2017; Melchiorre & Johnson, 2015), includes student written-blogs (Sandlin & Pena, 2014), and has a high content agility (Chaunhan, 2013).

The number of student applications is the dependent variable of the research problem guiding this study. The number of applications is defined by the number of students who "submit an application" within a program (Ukumkoro, 2017).

Faculty to student ratio is a control variable in this study. Conceptually, this variable is defined as the number of full-time and part-time faculty members and the number of full-time and part-time predominantly instructional faculty members in a program as compared to the number of full-time and part-time students (Georgia College, 2015).

Faculty reputation is another concept that can affect student applications. There are numerous faculty rating sites giving insight to faculty reputation. The reputation of the faculty is a control variable that measures the faculty reputation's effect on student interests. At a conceptual level, the reputation of faculty is defined as the research performance of faculty members in a department (Lazaridis, 2010).

The historical impact of the Facebook account is important from an analysis standpoint. From a logical standpoint, this variable is included in this study as it will show measurable effects on the data set. Conceptually, this variable is defined as the historical presence of a graduate program exemplified in years.

The number of years of the program's existence is a concept in this study because it has an effect on how well-known the program is. Conceptually, this variable is defined as the historical presence of a graduate program exemplified in years.

Statement of the Research Problem

There are seven research questions guiding this study:

1. Does the degree to which a program posts favorable content on its Facebook account affect the number of student applications received, after controlling for the effect of the reputation of faculty, faculty to student ratio, the historical impact of the Facebook account, and the number of years of the program's existence?

2. Does the degree to which a program posts content focused on connectedness on its Facebook account affect student applications received, after controlling for the effect of the reputation of faculty, faculty to student ratio, the historical impact of the Facebook account, and the number of years of the program's existence?

3. Does the degree to which a program posts content that creates a community and/or network on its Facebook account affect student applications received, after controlling for the effect of the reputation of faculty, faculty to student ratio, the historical impact of the Facebook account, and the number of years of the program's existence?

4. Does the degree to which a program posts content creating high-quality relationship perceptions on its Facebook account affect student applications received, after controlling for the effect of the reputation of faculty, faculty to student ratio, the historical impact of the Facebook account, and the number of years of the program's existence?

5. Does the degree to which a program posts entertaining and interactive content on its Facebook account affect student applications received, after controlling for the effect of

the reputation of faculty, faculty to student ratio, the historical impact of the Facebook

account, and the number of years of the program's existence?

6. Does the degree to which a program posts student written blogs on its Facebook account

   affect student applications received, after controlling for the effect of the reputation of

   faculty, faculty to student ratio, the historical impact of the Facebook account, and the

   number of years of the program's existence?

7. Does a program that posts with high content agility on its Facebook account affect

   student applications received, after controlling for the effect of the reputation of faculty,

   faculty to student ratio, the historical impact of the Facebook account, and the number of

   years of the program's existence?

These research problems seek to understand the relationship between favorable Facebook

content posted on graduate degree program's Facebook account and student applications after

controlling for salient variables. The control variables are the effect of the reputation of faculty,

faculty to student ratio, the historical impact of the Facebook account, and the number of years of

the program's existence. Each of the control variables are important to consider because they can

have an effect at a program level on student applications.

Scope and Limitations

This study focuses on Facebook accounts of the University of Arkansas' 151 graduate

degree programs. Each degree program's Facebook account will be coded based on the list of

favorable content as defined in the literature. Each Facebook post fitting the criteria for being

favorable will be counted to determine the degree of favorable content. This is a continuous

variable that will be counted for each degree program's Facebook account. A count of the

number of applications received for each graduate degree program for the Fall 2021 through the

Summer 2022 academic year will be gathered. This variable is also a continuous variable. The effects of each individual favorable content type will be measured as well. The study seeks to understand and expand upon the relationship between favorable content on graduate program Facebook accounts and the number of student applications.

Limitations of the study are participant availability, lack of reliable data, and lack of prior research studies. Not all programs may have Facebook as an implemented marketing tool during this time period. This would make their participation in the study limited with no data besides simply "no use" to show. They will be left out of the study altogether, which could affect the accuracy of this study regarding the graduate degree programs as a whole at the University of Arkansas. The data may lack reliability because the number of applications received are affected by more than just social media use by a program. There are many effects that are being controlled for, and there are likely others out there. There are aspects such as locality, scholarship funds, and athletics that affect the reasons people apply to the university. Social media is only one of the factors that benefit enrollment rates. With social media being a newer marketing implementation, there are limited completed studies regarding how social media specifically affects application rates.

Summary

This chapter outlines the importance of this study and how it will add empirical evidence regarding how graduate degree programs using social media accounts, such as Facebook, affects student application rates. This study focuses specifically on Facebook as a marketing tool for graduate degree programs at the University of Arkansas. Historically, measurable outcomes have been found as a result of the implementation of this type of social media marketing in graduate

degree programs. As with any study, there are limitations to consider. The limitations of this

study are participant availability, lack of reliable data, and lack of prior research.

Chapter 2

Chapter Overview

This chapter will describe the literature surrounding the major aspects of the research

problem and the seven research questions guiding this study. First, each concept will be defined

based on a review of the historical and empirical literature. The relationship between the

concepts will be drawn from the literature, which will guide conclusions made about the effects

of favorable Facebook content on the number of applications received by graduate programs.

Once each concept is clearly defined and the relationship between variables is established, the

theoretical framework will be presented. Based on this framework, hypotheses are presented

regarding the relationship between favorable Facebook content and the number of applications

received. Finally, a summary will describe the literature review, theoretical framework, and

hypotheses derived from historical and empirical research in the field.

Literature Review Process

A search for relevant literature was performed using Google Scholar, EBSCOHost, and

Education Resources Information Center (ERIC). Keywords included combinations of social

media, Facebook, Facebook marketing, social media marketing, graduate application, and Self-

Presentation Theory. In addition, the reference lists of select resources were used to locate

additional sources.

Review of the Literature

Higher education is seeing a growing number of nontraditional students in addition to

traditional (Melchiorre & Johnson, 2017). Nontraditional students can be defined in many ways.

They are 24 years or older and are more motivated due to specific reasons for attending college.

These reasons may be job requirements, financial support of family, etc. They may be facing

time or money restraints. They are usually self-motivated (Jinkens, 2009). The number of adult learners is increasing, a trend which requires new recruitment strategies such as social media for marketing to reach this growing demographic (Melchiorre & Johnson, 2017). Smith-Barrow (2018) says NCES indicates a 35 percent increase in college students aged 25-34 between 2001 and 2015. This percentage is expected to increase another 11 percent between 2015 and 2026. The *2017 Social Admissions Report* found that two in five students use social media to decide where to attend college (Turner, 2017). Graduate education programs are capitalizing on this trend and implementing social media accounts in their programs (Fagerstrom & Ghinea, 2013; Spackman & Larsen, 2017). These social media accounts present content describing aspects like what the program is doing, student outcomes based on the program, and campus culture experiences (Constantinides & Stagno, 2012; Joseph et al., 2014).

Graduate programs around the globe implement social media sites for their programs to present content to potential students, other graduate programs, and the interested public (such as local business, etc.). Although there is research on Facebook as a promotional marketing tool (Galan et al., 2015; Treadaway & Smith, 2012; Field et al., 2012), the implementation of this type of marketing in higher education, namely graduate programs, is a growing area of study. Some researchers have focused on identifying what type of Facebook content is considered favorable by potential applicants (Constantinides & Stagno, 2012; Romero-Hall, 2017; Lohse, 2013). Spackman and Larsen (2017) found that content that was entertaining, interactive, and widely shared by followers increased viewers' perceived value of that program. Increased perceived value is not only seen at a program level, but also an institutional level. Chauhan and Pillai (2013) described the importance of content type and content agility in impacting likes and comments on brand engagement. Sandlin and Pena (2014) found the importance of student run

blogs in the success of program social media. These social media marketing implementations can collectively influence the perceptions of content viewers.

Conceptualizing Favorable Facebook Marketing

The technological revolution in the early 2000s brought a major change to traditional marketing approaches. Web 2.0 brought about the operation of social media websites, which changed marketing strategies. According to Rohilla (2017) "The Web 2.0 is the term used to describe a variety of web sites and applications that allow anyone to create and share online information or material they have created" (p. 631). With this freedom to create and share online, a shift toward online marketing strategies occurred. Marketing on social media allows the content to appear as a conversation where participants can discuss and present content instead of simply a corporate monologue view of marketing. Individuals can present their own websites, products, and reach a wide audience. Marketing on social media also allows for word-of-mouth to factor into the sharing of information. The "share" button on social media is the online version of word-of-mouth advertising. Social media paves the way for outreach to expand past local to international levels (Galan et al., 2015).

In the literature, research regarding social media marketing, namely Facebook marketing, in graduate education is a growing area of study. There is no agreed upon definition of favorable Facebook marketing in the literature. However, social media marketing is conceptualized in literature and can apply to the type of marketing seen on Facebook. Galan et al. (2015) conceptualize social media marketing as a type of online advertising targeting consumers based on the cultural context of social communities through virtual worlds, social networks, social news sites, and social opinion-sharing sites, to meet branding and communication objectives.

Facebook marketing utilizes a social operating system to access social plug-ins, reach a wide audience, and allows for interaction and targeted audiences while controlling the information that is presented by individuals (Treadaway & Smith, 2012). In defining favorable Facebook marketing, the literature focuses on the aspects of Facebook that create the marketing efforts. Field et al. (2012) describe Facebook marketing as the tools offered on Facebook. Facebook marketing is driven by web page banners, profile pages with text, and pictures to drive suitable users to their page. These marketing tools allow Facebook users to be specific in their content and presentation choices and target certain demographics through their pages.

Facebook

Social media is defined as "forms of electronic communication (as Web sites for social networking and microblogging) through which users create online communities to share information, ideas, personal messages, and other content (as videos)" (Miller, 2015, p. 1). Some of the most popular social media that can be seen today include Facebook, Twitter, Instagram, YouTube, etc. (Miller, 2015).

Facebook is defined as "a social networking website that was originally designed for college students but is now open to anyone 13 years of age or older. Facebook users can create and customize their own profiles with photos, videos, and information about themselves" (Facebook, 2008, p. 1). Facebook was launched in February 2004 by Mark Zuckerberg and was originally designed for college students. It was an instant hit, visited by 400 million people in a month (Carlson, 2010). Albanesius (2014) says, "Facebook debuted at Zuckerburg's alma mater, Harvard University. It later expanded to Stanford, Columbia and Yale, and was available on 800 college networks a little over a year after its debut" (p. 1). Zuckerberg created Facebook as a way to connect people at different colleges.

At the time, there was not an easy way to find and connect with people on the internet. Facebook was created to serve that need. Facebook quickly turned into a successful business (Clifford, 2018). Facebook is the most popular social network worldwide. It has a total of 2.91 billion monthly active users. In 2021, 117.92 billion U.S. dollars was generated by Facebook (*Facebook – Statistics & Facts, 2022)*. Wall Street expects Facebook to grow its earnings an average of 22 percent by 2023 (Sun, 2018). The two main things that contributed to Facebook's success in the social networking arena are valuable supporting applications and encouragement of developers to write applications for Facebook (Treadaway & Smith, 2012).

The Internet, especially social media sites, are often the first place people go each day. In June of 2011, Facebook users were online 15+ hours per month. Businesses slowly began to direct their clientele to their Facebook pages, diverting attention away from their business websites. In many cases, these businesses had invested a lot of time and money into their website. Facebook offered a cost-friendly, promising avenue to reach large audiences of consumers who spend hours each day online, which brought about the age of Facebook marketing (Treadaway & Smith, 2012). Facebook marketing requires developing a sustainable media strategy involving establishing goals and objectives, identifying target audiences, performing channel analyses, developing content strategy, activity planning, identifying roles, planning for budget and resources, and analyzing the social media performance (Chen & DiVall, 2018).

Student Use of Facebook

Higher education programs, specifically graduate programs, are increasingly implementing Facebook pages. Applicants are turning to Facebook to learn about graduate programs (Turner, 2017). Students' use of Facebook encourages this use of graduate program

Facebook pages, which encourages graduate programs to understand student's use of Facebook. Mansouri and Mrabet (2013) state, "Social media has become integral to millions of people's lives and mainly students' lives" (p. 47).

Facebook can play a major role in the process of students choosing which college to go to. The *2017 Social Admissions Report* found that two in five students use social media to decide where to attend college. Students turn to social media to get a sense of what the campus and students are like (Turner, 2017). Students following a university on social media perceive a high-quality relationship quality, meaning students feel a stronger connection building with the university resulting from social media engagement between them (Clark et al., 2017). Not every student may have a Facebook, but those that do can engage in learning more through program pages.

Meyer and Jones (2012) carried out a survey study at Texas Tech University and the University of Memphis. They found that 7.7% of the students surveyed perceived Facebook and Twitter as a "Must Have". The study found that 30.8% of the students saw Facebook as something that was "Nice to Have", 33.3% of the students were "Delighted to Have (But Not Necessary)" Facebook, and 28.2% were indifferent to having Facebook as a service at Texas Tech University and the University of Memphis.

Faculty members do not perceive social networking sites to be as valuable as they are in the eyes of the students. Roblyer et al. (2010) carried out a study at a mid-sized southern university surveying182 participants (62 faculty and 120 students). Roblyer et al. (2010) found that students are much more open to the use of social networking assignments for higher education communication than faculty members. Faculty members are more likely to use traditional technologies, such as email. The use of Facebook opens the way to desired

communication with students not only for program information, but for class instruction as well (Roblyer et al., 2010).

Facebook is a desired educational tool for students. Students use Facebook to look at program pages (Turner 2017), communicate with faculty and peers, and in some cases as instructional tools. They utilize social networks for communication and collaboration (Roblyer et al., 2010). Researchers in higher education are increasingly looking to identify what Facebook marketing is favorable (Rockinson-Szapkiw et al. , 2014; Spackman & Larsen, 2017; Romero-Hall, 2017; Clark et al., 2017; Melchiorre & Johnson, 2015; Sandlin & Pena, 2014; Chaunhan, 2013).

Empirical Research Examining Favorable Facebook Marketing Content

Facebook marketing is successful when the target audience is identified and understood. To reach that target audience, Facebook users must manage their content according to what viewers consider to be favorable content. This study focuses on the idea that graduate education programs seek to increase the number of applications they receive through content that appeals to students. Research indicates that some of the common favorable Facebook marketing content in graduate programs is connectedness (Rockinson-Szapkiw et al., 2014; Spackman & Larsen, 2017), community and networking (Romero-Hall, 2017), high-quality relationship-perception building (Clark et al., 2017) entertaining and interactive content (Spackman & Larsen, 2017; Melchiorre & Johnson, 2015), student written-blogs (Sandlin & Pena, 2014), and content agility (Chaunhan, 2013).

Rockinson-Szapkiw et al. (2014) examined doctoral students' interactions through peer initiated and university-initiated technology and their sense of connectedness. Participants were132 doctoral candidates enrolled in an online Doctor of Education program in the U.S.

Researchers administered the Doctoral Student Connected Scale, which is comprised of 18 self-report items to measure the effect social media has on the feeling of connectedness. The study found no significant relationship between student interaction on the university sponsored Facebook page and a sense of connectedness between peers and faculty. It was interaction outside the Facebook group that created a higher sense of connectedness. Therefore, the Facebook page brings students together in a networking manner to create a sense of connectivity with other users. This sense of connectivity does not have to occur on the university's page, but the university's page paves the way for students to connect with other students outside the university sponsored page, allowing for connectivity to occur (Rockinson-Szapkiw et al., 2014).

Romero-Hall's study (2012) focused more on the concept of community and networking on graduate program Facebook pages. The study explored the use of social media content by graduate students. The Instructional Design and Technology (ID&T) program shared content on the program's social media page on a regular basis about their program and relevant findings in the field of instructional design and technology. Researchers wanted to see how the content shared on their program's social media accounts impacted their student's participation on the social media spaces. Results indicated that graduate students use social media for personal use but do not always follow or become members of the ID&T program pages or groups. Those who did follow the program's social media benefitted from feelings of belonging to a community of professionals, career networking, and cross-country communication (Romero-Hall, 2012).

Clark et al. (2017) studied student engagement with a graduate program's social media and the effect on the relationship quality through a survey designed study. To participate in this survey, students or faculty members had to be followers of the university's social media. Social media engagement was examined with a specific graduate program to measure the effectiveness

of reaching students. Students following a university on social media perceived a high-quality relationship. Students felt they could learn more about the university and saw it as more personable and engaging when interacting on their social media websites (Clark et al., 2017).

Spackman and Larsen (2017) focused on how Facebook marketing strategies affect enrollment. This study explored the impact of Facebook marketing strategies on increasing enrollments in online continuing higher education courses. The results of a survey showed that when Facebook marketing was entertaining, interactive, and widely shared by followers, the program's perceived value increased. The institution also gained a more positive perception in Facebook users' eyes with this type of Facebook marketing. When Facebook marketing was not entertaining, the program's perceived value, reputation, and relationship quality decreased (Spackman & Larsen, 2017).

Similarly, Melchiorre and Johnson's (2015) study on the importance of entertaining content on program Facebook pages revealed that community and connection is created. A group of psychology students and alumni developed a department-coordinated Facebook group. The group had over 900 members and averaged 2.5 postings per day. The most common postings were about research findings, application of psychology principles, study participation invitations, discipline-relevant work or volunteering information, and entertaining information regarding the discipline. Thirty-two members anonymously evaluated the page content and found that the information on the site perceived as valuable and entertaining created a connection among the members and with the university. The findings of this study showed that department coordinated Facebook pages can help students and graduates feel part of a community (Melchiorre & Johnson, 2015).

Sandlin and Pena (2014) found that viewers desire student reported Facebook content. Student reported refers to content that is created by students sharing a student's perspective. This qualitative study reviewed in-depth interviews, journal entries, and a focus group interview with college bound students, and found that authenticity affects potential students greatly. Perceived authenticity of materials targeting prospective students posted on social media created a connection with the prospective student and caused them to look more into the institution. Sandlin and Pena (2014) found that this authenticity is created through student-run blogs. This type of social media content gave potential students a way to connect with other college students. Potential students found the student's self-disclosure on the blog to create authenticity. It is encouraged that colleges put links to their social media and marketing strategies on their admissions page. When social media is student run, prospective students feel they get an honest look at campus life.

Chauhan (2013) carried out a longitudinal case study focused on the role of content strategy and branding on higher education institutions' social media. There were 10 higher education institutes in India offering management education programs identified. The social media websites were being used to initiate and enhance institutional engagement. The content strategy variables included: content type, posting agility, posting day and content context on number of likes and number of comments. There were 10 brand communities tracked for a year on a longitudinal basis. The analysis took into consideration 1,440 brand posts made during a year's time. The content type and content agility impacted the number of likes and comments. This study represents the importance of having a content plan that influences customer brand engagement (Chaunhan, 2013).

As the literature shows, program Facebook marketing should capitalize on engaging content. Favorable Facebook content includes content that is interactive, entertaining, pertains to the given field, provides opportunities for community and network building, represents high quality relationship building, and creates a sense of connectedness through content and how often it is posted (content agility). When the content is favorable, students see the graduate program and the university in a positive light. The content management that goes into Facebook allows for graduate programs to tailor their content to meet the needs and expectations of the target audience, including potential, current, and graduated students. Program Facebook accounts allow for interaction that creates a community within that program. By presenting the favorable content described in the literature, the program reaches its target audience as desired, which is a major goal behind having a Facebook account for graduate programs. The favorable content could affect program outcomes, such as the number of applications received.

Conceptualizing Application Received

College enrollment has seen a consistent decline in enrollment since 2010. From spring 2011 to spring 2022, colleges lost around 3.3 million students. About 1.3 million of those students were lost following the pandemic (Welding, 2022). College campuses are working to utilize any tool possible to increase enrollment. Turner (2017) says, "Social media is omnipresent on the campuses. It would surprise me if you found a campus that was not heavily invested in their social media. Enrollments are generally down, and competition is fierce. Ignoring social media is simply no longer an option" (p. 4). The digital age has brought the use of social media into the recruitment and application process.

The competition to acquire students continues to become a growing focus at all levels of higher education with higher education now seen as a market. Universities use social media

related branding and interaction as a student recruitment tool to obtain larger numbers of likes and followers on Facebook and Twitter to attract more applicants (Rutter et al., 2016). Applicants can turn into enrolled students. Enrolled students are the ultimate goal behind program's marketing campaigns. The number of applications received are just the beginning of the admission process.

The number of applications received is defined by the number of students who "submit an application" within a program (Ukumkoro, 2017). Application rates affect enrollment rates. In 2017, only 34 percent of colleges met new student enrollment targets by May 1 (Jaschik, 2017). Jaschik (2017) states,

> For colleges, public and private, failing to hit that target can be anything from an annoyance to an existential crisis. All but a few elite private colleges are dependent on tuition, and most public colleges are as well (both through tuition and state funds that tend to be distributed based on enrollment (p.1)

Colleges function based upon hitting their target student number. Application rates are dependent upon recruitment tactics to increase application rates in order to meet their enrollment goals.

This decline in the number of submitted applications can be attributed to a number of factors, such as technological advancement. Vedder (2018) says, "A large part of the reason relates to the fact that college degrees are becoming less effective as screening devices, information helping employees separate the likely most productive, bright and disciplined prospective workers from others" (p. 1).

Empirical Research Examining Student Considerations Influencing Application Choice

Application rates are influenced by a number of different considerations potential students must acknowledge (Kallio, 1995; Joseph et al., 2014; Constantinides & Stagno, 2012).

Kallio (1995) says, "...selecting a graduate school to attend is a multistage decision process affected by a variety of factors involving the student's characteristics, information gathering, college actions, and college/program characteristics" (p. 110). Based on a survey of 2,834 admitted students in 1986, Kallio (1995) found that the following lists influence graduate students' decision on where to apply: residency status, quality and academic characteristics, work-related concerns, spouse considerations, financial aid, and the campus social environment. These influences affect which graduate school potential students choose to go to and in turn the college's application rates (Kallio, 1995).

Joseph et al. (2014) researched factors affecting enrollment applications at a public university in Germany. They surveyed new students on the following list of factors affecting one's choice of where to apply: availability of financial aid, small class sizes, faculty/student ratio, public university, low cost of education, athletic programs, facilities, location, reputation of university, scholarships, size of university, students services, academic programs, friendly environment, name recognition, community involvement, quality education, latest technology, accredited university, reputation of faculty, and acceptance rate. Joseph et al. (2014) state, "This study reveals that while branding initiatives may build awareness and shape the image of a university, personal interaction during campus visits, word-of-mouth from friends/family, and advertising continue to play an important role in disseminating information about colleges/universities to prospective students" (p. 13). School reputation proved to be a more important factor taken into consideration by applicants than the social factors for graduate students.

Constantinides and Stagno (2012) carried out a study in the Netherlands regarding the importance of social media as influencers of future students' university choice for applications.

Their data set was collected by means of a national survey among future university students. A target sample of 400 through stratified sampling from over 120,000 members was used. They found that social media can foster improved communications, customer engagement, and increase brand loyalty when used in a successful marketing manner. The study showed a positive correlation between social media and marketing and recruitment and college choice.

Lohse (2013) studied how Facebook was used to recruit low-income women to an online nutrition program. An ad appeared on the Facebook page of low-income women between 18- and 45-years old living in the state of Pennsylvania. Low-income was defined as a household bringing in less than $30,000 per year. This ad invited these women to an online nutrition program. With the ad came an invitation to fill out a survey on food-related behaviors. There were 62 women who met the criteria to be included in the study as a result of clicking on the ad. It was concluded that Facebook appeared to be an effective tool in recruiting low-income women to the nutritional education projects/program (Lohse, 2013).

The empirical evidence illustrates that the number of graduate school applications received are affected by student considerations such as geography, personal life aspects, campus aspects, social aspects, etc. Graduate programs that post content on their Facebook and social media that will help to shed light on these student considerations will potentially increase the number of applications received for their programs.

Empirical Research Examining the Relationship between Favorable Facebook Marketing Content and Applications Received in Graduate Programs

Fagerstrom and Ghinea (2013) examined a social network recruitment campaign at a Norwegian University. Applicants interested in the information technology program were invited to join a Facebook group related to the subject. Each group had a contact person, who facilitated

introduction activities and answered applicant's questions. The use of these Facebook groups increased the number of applicants converted into students. The Facebook group atmosphere led to the Norwegian University to use Facebook as a marketing tool to boost enrollment.

As previously mentioned, Spackman and Larsen (2017) saw an increase in enrollment rates when utilizing interactive, entertaining forms of social media marketing on Facebook. When Facebook marketing is highly entertaining, interactive, and widely shared by followers, the program's perceived value, the university's reputation, and the closeness of the relationship between the Facebook users and the university improved along with those enrollment rates (Spackman & Larsen, 2017). Graduate programs have the opportunity to change perceptions and program outcomes based on the program's Facebook content potential student 's see.

Constantinides and Stagno (2012) saw the Internet as a universally recognized commercial platform. They studied a national survey to explore the use of social media for marketing and found that improved communications, customer engagement, and increased brand loyalty.

Based on these findings, researchers have shown a relationship between Facebook marketing and the number of applications received. Specific content on graduate programs' Facebook account help form an applicant's view of that program and the university as a whole. As these studies show, interactive and entertaining content that creates a sense of community and connectivity increases application rates. As students are more often turning to social media such as Facebook in their search for higher education institutions, programs work to present favorable content that will bring about desired program outcomes (Fagerstrom & Chinea, 2013; Spackman & Larsen, 2017; Constantinides & Stagno, 2012).

Self-Presentation Theory

As graduate programs learn what content is considered favorable by potential students, they will begin to tailor their content to meet these preferences. Facebook provides a platform for the graduate programs directors to decide and control what content is presented on the Facebook program page in an effort to meet their program enrollment goals. Erving Goffman's Self-Presentation Theory explains the need to present things in a certain way to achieve a given goal. Self-presentation is a type of impression construction. It concerns the means through which a person creates the desired impressions through his or her choice of various self-presentation strategies. Metts and Grohskopf (2003) say self-presentation "refers to the process by which individuals, more or less intentionally, construct a public self that is likely to elicit certain types of attributions from others, attributions that would facilitate the achievement of some goal, usually to acquire social rewards or advantages" (p. 360). There is a theatrical element to impression management according to Goffman's view. Impression management is fueled by goals (Metts & Grohskopf, 2003). Metts and Grohskopf (2003) state, "Goals serve an important function in activating a set of behaviors and possible contingencies that are believed to be efficacious in obtaining a goal" (p. 365). Once goals are chosen, the following actions will be thoughtfully decided to obtain those goals. Graduate programs will choose their Facebook content in a way that helps them meet their program goals, which in this case of this study would be increasing enrollment rates.

The ideas of self-presentation began with Goffman's 1959 framework. Some of the major aspects of this framework apply to how social media is used. There is a sense of impression management that plays a role in how a program is presented in the social media setting. Goffman (1959) says, "I [use] the term 'performance' to refer to all the activity of an individual which

occurs during a period marked by his [sic] continuous presence before a particular set of observers and which has some influence on the observers" (p. 123). The performer can shape his performance to influence others. There are specific goals to be achieved and a certain way a person wants to appear when interacting with others. This can be achieved through the "backstage" preparation mentioned, the cooperation of others, and through interaction strategies, such controlled facial expressions and self-disclosure. Goffman (1959) states, "When the individual employs these strategies and tactics to protect his own projections, we may refer to them as "defensive practices"; when a participant employs them to save definition of the situation projected by another, we speak of "protective practices" or "tact". Together, defensive and protective practices comprise the techniques employed to safe-guard the impression fostered by an individual during his presence before others" (Goffman, 1959, p. 122). When a person is acting, presenting themselves in a way to protect their personal image or project a certain version of their self, they are employing "defensive practices". They are protecting their personal image through their performance. When a person employs strategies to redefine a situation or communication interaction this is considered "protective practices" or "tact" (Goffman, 1959).

Erving Goffman's Self-Presentation Theory focuses on impression management in everyday life. People are constantly placed in communication episodes, or performances. The term performance refers to "all the activity of an individual which occurs during a period marked by his continuous presences before a particular set of observers and which has some influence on the observers" (Calhoun, 2012, p. 49). When an individual enters these communication episodes, they seek to acquire information about those with whom they communicate. This information allows for the communicator to define the situation. This enables the communicator to know

what is expected of them. When informed in this way, the communicator can know the best way to act to bring a desired response (Calhoun, 2012).

When individuals play a part in everyday life, they expect the observers to take seriously the impression being fostered by that individual. They are expected to believe the individual possesses the attributes he appears to possess. The appearance presented is perceived as reality. The performance is for the benefit of others. In some cases, the performer begins to think that their performance is how things really are. This brings into question the realness of the performance. Those who choose to put on their performance in a cynical way are not always doing so for their own self-interest or private gain. They sometimes put on a performance in consideration of the audiences' sake (Calhoun, 2012).

Goffman considers there to be two extremes. On one end, the performer may be taken in by his own act. On the other end, the performer may be cynical about his performance (Calhoun, 2012). Calhoun (2012) says, "In a sense, and in so far as this mask represents the conception we have formed of ourselves - the role we are striving to live up to - this mask is our truer self, the self we would like to be" (p. 48). The conception of the role becomes second nature. The performer adapts to their frame of reference. They must consider their surroundings, who they are performing for, where they are, and act accordingly. They choose how they present themselves based on this frame of reference.

Self-presentation can be used by graduate programs to help shape their social media posts in a way that will reach students. They can control what content is posted, how it is posted, when it is posted, and what "self" the program is showing on social media, which is why self-presentation theory is the theoretical framework guiding this study.

Self-Presentation on Facebook

The presentation of the self on social media is a creation in itself. In the online setting, people can choose how they present themselves. On Facebook, users choose the picture that appears, their biographies, the posts on their wall, and everything that people see about them. Social networking sites such as Facebook are particularly interesting to communication researchers because they are dedicated to forming and managing impressions as well as engaging in relational maintenance and relationship-seeking behaviors (Rosenberg & Egbert, 2001). This impression management applies to graduate program Facebook accounts. These accounts are controlled by the designated Facebook user in their department. The program Facebook user controls what information about the program is presented and how it is presented. The program will tailor this information to meet the desired, favorable content needs of potential applicants and current students.

Behind every Facebook profile are unspoken goals that users are trying to achieve. Goals can be defined as "future states of affairs which an individual is committed to achieving or maintaining" (Rosenberg & Egbert, 2011, p. 3). There are two main types of goals that Rosenberg and Egbert discuss that shape goal-directed behavior: primary and secondary goals. Primary goals, or impression goals, refer to the desire to cause change in the behavior of other people in interpersonal influence attempts (Rosenberg & Egbert, 2011). A primary goal for graduate programs is to encourage viewers to apply to the program based on the positive, interactive image created on the program Facebook account. Secondary goals are continuous considerations that individuals attend to during persuasive situations and may be seen as constraints that shape how the influence attempt is approached and enacted. A secondary goal for

graduate programs is having a program page that is comparable or better than other program's pages.

The primary goal as a Facebook user is to have one's self seen in a certain way that is likable and accepted by others. Schwämmlein and Wodzicki (2012) agree with this idea and expand on this when considering the type of community Facebook is. Assuming that Facebook falls under the categorization of a common-bond community, it is made evident users are set up to make connections with others. Schwämmlein and Wodzicki (2012) say, "In common-bond communities, members want to be accepted by specific others in order to get in interaction on a personal level" (p. 389). The more Facebook friends a person (or program) has, the more socially attractive a person (or program) is. The more similarities a user can create with others, the more accepted, connected and part of the group that user will feel. Graduate programs want to have Facebook pages that applicants feel connected to and can see themselves being a part of. In order to achieve this primary goal users must consider their secondary goals. These secondary goals include things such as creating desirable statuses that will be liked by others or posting pictures that are attractive in the eye of other Facebook users. The amount of likes on a picture or status work toward the primary goal of acceptance (Rosenberg & Egbert, 2011).

These goals seem relatively basic, but it is the personal tactics that go into achieving these goals which illustrate the difficult measures of being a successful social media user. Rosenberg and Egbert (2011) say, "Self-presentation tactics are defined as 'behaviors used to manage impressions to achieve foreseeable short-term interpersonal objectives or goals'" (p. 2). Facebook users base their tactics around the fact that publicity and likelihood of future interactions are likely to occur. In Rosenberg and Egbert's (2011) study, it was found that the type of interaction that a Facebook user creating content seeks will directly affect the tactics that

they use. Someone who desires to be liked by others and is an affinity-seeker would likely use role-modeling tactics to be seen in a positive light and increase others' infinity toward them (Rosenberg & Egbert, 2011). Someone who is manipulative and looks to exploit others for their personal benefit has little concern for serving as a role model or being seen in a positive light, but rather in whatever way they desire (Rosenberg & Egbert, 2011, p.12). The tactics that Facebook users implement to interact on Facebook directly affect the achievement of their goals. In order to be the likeable, popular Facebook user, people manage their identity often through manipulation and self-monitoring to fulfill the need to be desirable. Van Der Heide et al. (2011) agree with this idea of the potential of manipulation being implemented into self-presentation. Nearly all Facebook users engage in achieving these primary and secondary goals through specific self-presentation tactics whether they realize it or not.

These strategies all apply to Facebook pages controlled by graduate programs. Programs want to post information and images that are appealing to students and meet the student's idea of favorable content. The two major goals of college social media accounts are to entice students to visit campus and to give students who cannot visit a good sense of the campus (Turner, 2017). Programs want students to want to learn more about their program and encourage their decision to apply to their program. The tactics they use to achieve these goals are outlined in the discussion of what is favorable to students viewing graduate program's Facebook account. Impression management is based on these expectations for favorable content, which is a direct example of self-presentation in Facebook marketing by graduate education programs.

Social media pages can create a sense of belonging for a community of professionals, create interactions, and foster networking (Romero-Hall, 2017). Social media allows for potential students to learn more about a university and see it as personable and engaging. (Clark et al.,

2017). Students are looking for programs with favorable content such as student blogs, campus events, student spotlights, interactive and personable content. Self-presentation theory accounts for the program's ability to control what kind of impression the program chooses to make for potential applicants. Graduate programs control the content posted and the program image being displayed. From this theoretical framework, it can be assumed that graduate programs can display favorable content that meets the expectations of profile viewers.

Research Questions and Hypotheses

There are seven research questions guiding this study:

Question 1: Does the degree to which a program posts favorable content on its Facebook account affect the student applications received, after controlling for the effect of the reputation of faculty, faculty to student ratio, the historical impact of the Facebook account, and the number of years of the program's existence?

> *Hypothesis 1:* As favorable Facebook content increases so does the number of student applications received.

Question 2: Does the degree to which a program posts content focused on connectedness on its Facebook account affect student applications received, after controlling for the effect of the reputation of faculty, faculty to student ratio, the historical impact of the Facebook account, and the number of years of the program's existence?

> *Hypothesis 2:* As content focused on connectedness increases so does the number of student applications received.

Question 3: Does the degree to which a program posts content that creates a community and/or network on its Facebook account affect student applications received, after controlling for the

effect of the reputation of faculty, faculty to student ratio, the historical impact of the Facebook account, and the number of years of the program's existence?

> *Hypothesis 3:* As content that creates community and/or networks
>
> increases so does the number of student applications received.

Question 4: Does the degree to which a program posts content creating high-quality relationship perceptions on its Facebook account affect student applications received, after controlling for the effect of the reputation of faculty, faculty to student ratio, the historical impact of the Facebook account, and the number of years of the program's existence?

> *Hypothesis 4:* As content creating high-quality relationship perceptions increase so does
>
> the number of student applications received.

Question 5: Does the degree to which a program posts entertaining and interactive content on its Facebook account affect student applications received, after controlling for the effect of the reputation of faculty, faculty to student ratio, the historical impact of the Facebook account, and the number of years of the program's existence?

> *Hypothesis 5:* As the entertaining and interactive content increases so does the number of
>
> student applications received.

Question 6: Does the degree to which a program posts student written blogs on its Facebook account affect student applications received, after controlling for the effect of the reputation of faculty, faculty to student ratio, the historical impact of the Facebook account, and the number of years of the program's existence?

> *Hypothesis 6:* As student written blogs increase so does the number of student
>
> applications received.

Question 7: Does a program that posts with high content agility on its Facebook account affect student applications received, after controlling for the effect of the reputation of faculty, faculty to student ratio, the historical impact of the Facebook account, and the number of years of the program's existence?

> *Hypothesis:* As content agility increases so does the number of student applications received.

Self-presentation theory describes the ability of social media users to manage impressions. This impression management helps Facebook users to create a virtual "self" that meets the expectations of the viewers. Users control what content is presented, how it is presented, and when it is presented. Therefore, graduate programs using a Facebook account for marketing purposes can post favorable content on their accounts that will gratify student users. As the empirical research shows, favorable content includes content that creates connectedness (Rockinson-Szapkiw et al., 2014; Larsen & Spackman, 2017), creates a community and networks (Romero-Hall, 2017), builds high quality relationship perceptions (Clark et al., 2017), is entertaining and interactive (Spackman & Larsen, 2017; Melchiorre & Johnson, 2015), includes student written-blogs (Sandlin & Pena, 2014), and has a high content agility (Chaunhan, 2013). Due to the ability to create one's "self" on social media and control the impression being made about the graduate program, the content presented can capitalize on content considered favorable by students. As a result, programs that are managing their impression in this favorable way will likely see an increase in application rates. Fagerstrom and Chinea (2013), Spackman and Larsen (2017), and Constantinides and Stagno (2012) found in their studies that certain aspects of their Facebook account did influence student application rates. Therefore, it can be hypothesized that

graduate programs posting favorable content on their program Facebook accounts will see an increase in application rates for that program.

Summary

Social media, specifically Facebook, continues to grow and expand its reach and uses. What once was created to be a media to connect college friends has turned into a major marketing platform. With the pressure to meet needed enrollment and application rate levels, graduate education programs have capitalized on the use of Facebook as a marketing tool. Students are increasingly turning to Facebook to learn about graduate programs. They turn to these programs to learn about the program and the university. These Facebook pages are influencing student's program choice. They give insight and create expectations about the graduate program and the university.

Graduate programs can control what content is present on their Facebook program page based on the nature of Facebook. From a theoretical perspective, self-presentation theory indicates that impression management comes into play. These graduate programs seek to understand what Facebook content students desire. Programs create their Facebook "self" based on these desires. The importance of favorable Facebook content drives the success of a graduate program's Facebook page.

According to the literature, favorable content in the eyes of students is content that creates connectedness (Rockinson-Szapkiw et al., 2014; Larsen & Spackman, 2017), creates community and networks (Romero-Hall, 2017), builds high quality relationship perceptions (Clark et al., 2017), is entertaining and interactive (Spackman & Larsen, 2017; Melchiorre & Johnson, 2015), includes student written-blogs (Sandlin & Pena, 2014), and has a high content agility (Chaunhan, 2013). Due to the freedom to implement self-presentation on Facebook,

graduate programs are posting favorable content to attract students. This type of content has been

proven to create a connected, community atmosphere. Using this favorable content, students will

perceive the graduate program in a more positive way. This also can increase application rates

(Fagerstrom & Chinea, 2013; Spackman & Larsen, 2017; and Constantinides & Stagno, 2012).

Therefore, it can be hypothesized from a self-presentation theoretical framework that graduate

programs posting favorable content on their program Facebook accounts will see an increase in

application rates for their program.

Chapter 3

Chapter Overview

This chapter addresses the methodology of the study. First, the seven research questions and their corresponding hypotheses derived from the literature are presented. Then the methodology, including the study design, study setting, participants and placement, materials, measures, data collection, data analysis, and internal and external validity are discussed.

Research Questions and Hypotheses

There are seven research questions guiding this study. Each seeks to better understand the relationship between favorable Facebook content posted by graduate programs and the program's number of applications received. Each question is accompanied by a hypothesis. The literature identified numerous types of Facebook content deemed favorable by student users. Some types include student blogs, interactive and entertaining posts, and program related opportunities as indicated in the literature (Fagerstrom & Chinea, 2013; Spackman & Larsen, 2017; Constantinides & Stagno, 2012).

Research Question 1:

Does the degree to which a program posts favorable content on its Facebook account affect the number of student applications received, after controlling for the effect of the reputation of faculty, faculty to student ratio, the historical impact of the Facebook account, and the number of years of the program's existence?

Hypothesis:

As favorable Facebook content increases so does the number of student applications received. $\mathbf{H_{o:}}\ B_{\text{fi}} = 0$

$\mathbf{H_a:}\ B_{fi} > 0$

Where B_{fi} = the regression coefficient for favorable Facebook content that measures the change in applications received for every one unit change in favorable Facebook content.

Research Question 2:

Does the degree to which a program posts content focused on connectedness on its Facebook account affect the number of student applications received, after controlling for the effect of the reputation of faculty, faculty to student ratio, the historical impact of the Facebook account, and the number of years of the program's existence?

Hypothesis:

The greater the number of program favorable posts focused on connectedness on a program's Facebook account leads to a greater increase in the number of student applications received.

H$_o$: B $_{fii}$ = 0

H$_a$: B $_{fii}$ > 0

Where B_{fii} = the regression coefficient for posts focused on connectedness that measures the change in applications received for every one unit change in favorable posts focused on connectedness.

Research Question 3:

Does the degree to which a program posts content that creates community and/or networks on its Facebook account affect the number of student applications received after controlling for the effect of the reputation of faculty, faculty to student ratio, the historical impact of the Facebook account, and the number of years of the program's existence?

Hypothesis:

The greater the degree the number of Facebook posts that create a community and/or networks on the program account leads to a greater increase in the number of applications received.

H$_o$: B $_{fiii}$= 0

H$_a$: B $_{fiii}$ > 0

Where B_{fiii} = the regression coefficient for Facebook posts that create a community and/or networks that measures the change in applications received for every one unit change in Facebook posts that create a community and/or networks.

Research Question 4:

Does the degree to which a program posts content creating high-quality relationship perceptions on its Facebook account affect the number of student applications received after controlling for the effect of the reputation of faculty, faculty to student ratio, the historical impact of the Facebook account, and the number of years of the program's existence?

Hypothesis:

The greater the number of Facebook posts that create high-quality relationship perceptions on the program account leads to the greater increase in the number of applications received.

H$_o$: B $_{fiv}$= 0

H$_a$: B $_{fiv}$ > 0

Where B_{fiv} = the regression coefficient for Facebook posts that create high-quality relationship perceptions that measures the change in applications received for

every one unit change in Facebook posts that create high-quality relationship perceptions.

Research Question 5:

Does the degree to which a program posts entertaining and interactive content on its Facebook account affect the number of student applications received after controlling for the effect of the reputation of faculty, faculty to student ratio, the historical impact of the Facebook account, and the number of years of the program's existence?

Hypothesis:

The greater the number of posts that are entertaining and interactive on the program Facebook account leads to a greater increase in the number of student applications received.

H_o: $B_{fx} = 0$

H_a: $B_{fx} > 0$

Where B_{fx} = the regression coefficient for posts that are entertaining and interactive that measures the change in applications received for every one unit change in posts that are entertaining and interactive.

Research Question 6:

Does the degree to which a program posts student written blogs on its Facebook account affect the number of student applications received after controlling for the effect of the reputation of faculty, faculty to student ratio, the historical impact of the Facebook account, and the number of years of the program's existence?

Hypothesis 6:

The greater the number of posts that are student written blogs on a program

Facebook account leads to a greater increase in the number of student applications

received.

H$_o$: B $_{fxi}$= 0

H$_a$: B $_{fxi}$ > 0

Where B_{fxi} = the regression coefficient for student written blog posts that measures

the change in applications received for every one unit change in student written

blog posts.

Research Question 7:

Does a program that posts with high content agility on its Facebook account affect the

number of student applications received after controlling for the effect of the reputation

of faculty, faculty to student ratio, the historical impact of the Facebook account, and the

number of years of the program's existence?

Hypothesis 7:

The greater the degree to which a program posts with high content agility on its

Facebook account increases the number of student applications received.

H$_o$: B $_{fxii}$= 0

H$_a$: B $_{fxii}$ > 0

Where B_{fxii} = the regression coefficient for posts with high content agility that

measures the change in applications received for every one unit change in posts

with high content agility.

Methods

Study Design

This study is a cross-sectional study. The independent variables are the degree of favorable Facebook content, content focused on connectedness, posts that create a community and/or networks, content creating high-quality relationship perceptions, entertaining and interactive content, student written blogs, and posts with high content agility. The dependent variable is the number of student applications. The control variables are reputation of faculty, faculty to student ratio, the historical impact of the Facebook account, and the number of years of the program's existence. Variables are not manipulated. The study's sample is all graduate programs at the University of Arkansas with Facebook accounts. This study will review postings on these program's Facebook pages from Fall 2021 to the completion of the Summer 2022 semester. The number of applications received from Fall 2021 to Summer 2022 will be measured after completion of the Summer 2022 academic semester.

Study Setting

The participants are the University of Arkansas graduate programs that have used a program Facebook account during the Fall 2021 to Summer 2022 academic year. The University of Arkansas was founded in 1872. It currently serves as the major provider of graduate-level instruction in the state of Arkansas. The University of Arkansas's graduate school currently has 4,415 graduate students enrolled as of November 2022 (The UofA, 2022). There are 151 graduate degree programs at the University of Arkansas. This does not include graduate certificate programs, only master's, doctoral, and specialist programs (Graduate School and International Education, 2022). Programs without authorized Facebook accounts will not be included.

Participants and Placement

The participants examined are the University of Arkansas's 151 graduate degree programs utilizing an authorized program Facebook account during the Fall 2021 through Summer 2022 school year as previously described. A power analysis was conducted to identify the needed sample size of graduate programs with Facebook accounts. To obtain the sample size a G-Power test was run. The study's statistical test is a linear multiple regression F- test with a fixed model, R^2 deviation from 0. The effect size was .15, a medium effect size. The literature did not indicate a precedent in terms of effect size. The power used was .8 (as power is always .8). The number of predictors for the multiple regression F-Test was seven. The predictors are the degree of favorable Facebook content seven independent variables, student applications (dependent variable), the effect of the reputation of faculty (control variable), faculty to student ratio (control variable), the historical impact of the Facebook account (control variable), the number of years of the program's existence (control variable), and the interaction between the independent and dependent variables. This power analysis was run through a program called GPower based on the parameters described above, which justifies the use of 103 graduate programs with program Facebook accounts.

Materials

A questionnaire is needed to gain program level data from each graduate degree program at the University of Arkansas. The survey (see Appendix A) will be sent by email to the director of each graduate program and includes questions about the number of students in the program, for a list of program professors, and for the founding year of the program. It also asks directors for the historical presence of the program Facebook account and the number of years of the program's existence. These variables affect the relationship between the favorable Facebook

content and student applications. The number of years the program has been in existence is important in understanding the historical presence of the program which affects how well-known and established the program is. The historical presence of the Facebook account affects how followed and influential the Facebook account is. The longer the Facebook account has existed can affect how many followers the program page has or how attuned to providing the students with favorable content the program account is.

The second material needed to conduct this study is a coding system for favorable content on program Facebook accounts. There is not currently a scale or model measuring the degree of favorable content on a graduate program's Facebook account. Appendix B is a list of codes containing definitions derived from the literature allowing the researcher to know what Facebook content should be coded as favorable content. The validity of this material is suggested as important to consider by the studies indicating what Facebook content is favorable in the eyes of students. This list of favorable Facebook content is grounded in the literature (Rockinson-Szapkiw et al., 2014; Larsen & Spackman, 2017; Romero-Hall, 2017; Clark et al., 2017; Spackman & Larsen, 2017; Melchiorre & Johnson, 2015; Sandlin & Pena, 2014; Chaunhan, 2013). If this study is able to show the effects of this favorable content, this list will be a tool available to researchers for future studies. The reliability of this assessment tool is created through defining each favorable content label consistently with the findings and definitions presented in the literature guiding this study. Although this assessment tool has been created by the researcher, it is grounded in the literature on this subject in the field of education. Its' definitions and labels are consistent with studies that have been carried out, ensuring there is a historical background to the assessment tool.

To determine the reliability of this assessment tool, a measure of inter-rater reliability will be used. "Inter-rater reliability refers to statistical measurements that determine how similar the data collected by different raters are" (Inter-Rater Reliability, 2018, p. 1). The researcher and another rater will score or measure a performance, behavior, or skill. The raters will collect data and compare their data collections and outcomes. For the purposes of this study, two raters will code the University of Arkansas' graduate degree programs' Facebook accounts' content for the Fall 2021 through Summer 2022 semester. Each rater's data set will be tested using multiple linear regression. If the outcome of the tests for each data set are similar the assessment will be validated as a tool for this study and future studies. Cohen's kappa coefficient will be used to measure the inter-rater reliability by assessing the agreement between the two raters.

The final material needed for this project is the Statistical Package for the Social Sciences (SPSS) version 26 computer program to carry out the statistical analysis of the collected data. With these instruments and materials, the researcher can collect the needed data and statistically analyze it.

Measures

Conceptually, the degree of favorable Facebook content refers to content that creates connectedness (Rockinson-Szapkiw et al., 2014; Larsen & Spackman, 2017), creates a community and networks (Romero-Hall, 2017), builds high quality relationship perceptions (Clark et al., 2017), is entertaining and interactive (Spackman & Larsen, 2017; Melchiorre & Johnson, 2015), includes student written-blogs (Sadlin & Pena, 2014), and has a high content agility (Chaunhan, 2013). The operational definition of this variable is the number of favorable content in these areas posted by the graduate program on its program Facebook account as measured by the assessment tool in Appendix B. Operationally the degree of favorable Facebook

content could be high or low. A degree would be four to five favorable posts per week. A low degree would be one to three favorable posts per week.

The dependent variable is student applications. Student applications is conceptually defined as applications submitted by students to a university (Ukumkoro, 2017). Operationally, this variable is defined as the number of students who "submit an application" within a program (Ukumkoro, 2017). Applications submitted between Fall 2018 through Summer 2019 will be numerically accounted for as reported by the head of each graduate degree program to the University of Arkansas.

The reputation of the faculty is a control variable that measures the faculty members' reputation effect on student interests. Conceptually, the reputation of faculty is defined as the research performance of faculty members in a department (Lazaridis, 2010). Operationally, this variable is defined as the ranking of the research performance of faculty in each department at the graduate level. The ranking is measured using the Hirsch (h) index of each set of graduate program faculty calculated using the web of science and the mean value will be used to rank them (Lazaridis, 2010).

Faculty to student ratio is a control variable as students often look for programs that have a more personal learning environment that offers each student needed attention (Joseph et al., 2014). Conceptually, this variable is defined as the number of full-time and part-time faculty members as compared to the number of full-time and part-time predominantly instructional faculty members in a program (Student-to-Faculty-Ratio—Calculating the., 2018). Operationally, this variable is defined as the ratio of full-time and part-time students, full-time and part-time faculty counts, and the percentage of faculty predominantly instructional as

calculated by the Common Data Set (CDS) Initiative (Student-to-Faculty-Ratio—Calculating the., 2018).

The historical presence of the program Facebook account is a control variable focusing on the length of time a graduate program Facebook account has been active. Conceptually, this variable is defined as the impact of a program Facebook account from the origin of the account. Operationally, this variable is defined as the program page's number of years in existence. The historical presence will be measured through obtaining the number of years the Facebook page has existed in the questionnaire sent to the head of each graduate degree program. This can also be measured by visiting the program Facebook pages and identifying their first post.

The number of years of the program's existence is the final control variable. Conceptually, this variable is defined as the historical presence of a graduate program exemplified in years. Operationally, this variable is defined as the program's lifetime as measured from its origin to present day. This variable will be expressed as a number of years of existence.

Each variable has been conceptually and operationally defined reflecting the findings in relative literature. Through these definitions, the measures of each variable can be understood for this study. These definitions influence the data collection process for each variable.

Data Collection

Once each program containing a program Facebook account is identified, each of their posts during the Fall 2021 through the Summer 2022 (August 2021 to August 2022) school year will be coded as favorable or unfavorable as defined in the literature. Two raters will code the content (the researcher and a colleague). Their coding will be done separately so as to not influence the coding decisions of each other. The coders will work through each program's

Facebook account from Fall 2021 through Summer 2022. The coders will identify the number of favorable content posts for each program page during the allotted time period and indicate their final count for each program to run the statistical analysis.

The dependent variable, student applications, calls for the number of applications received by each program during that academic year to be counted. The University of Arkansas' graduate program contains this desired information. The researcher will contact the University of Arkansas' Graduate Admissions Office, acquire the needed paperwork for approval to obtain this information, and obtain the information accordingly through the Graduate Admissions Office's shared records (Appendix D). Therefore, the number of applications received for the Fall 20221, Spring 2022, and Summer 2022 semesters for each graduate degree program will be needed. The number of applications for these three semesters will then be added together for each individual graduate degree program.

The effect of the faculty reputation will be measured using an h-index. A faculty member's h-index measures the impact and relevance of their scientific output. The h-index takes into consideration an author-level metric that is dependent on the faculty members' papers and citation number. A faculty member's h-index is not the only indicator of their success or impact but is helpful in defining their reputation in the world of academia. To obtain this information, each graduate degree program's faculty members will have their collective h-index calculated on google scholar to obtain their h-index score and measure their reputation. Faculty to student ratio for each program can be obtained through gathering the information on how many students are in each program and how many faculty members are in each program included in the study. A short assessment will be sent to the head of each program asking for a list of faculty members and the number of students in their program. Once these program facts are acquired, the researcher will

then calculate the faculty to student ratio. The faculty to student ratio will be calculated using the Common Data Set (CDS) Initiative. This formula considers full-time and part-student counts, full-time and part-time faculty counts, and the percentage of faculty who have predominantly instructional responsibilities. The following formula will be used to calculate this ratio:

Student-to-Faculty Ratio = [SF + SP/3] / [FFI + (FFN + FPI)/3]

"where SF = the number of full-time enrolled students, SP = the number of part-time enrolled students, FFI = the number of full-time instructional faculty, FFN = the number of full-time non-instructional faculty who teach part-time, and FPI = the number of part-time instructional faculty.1" (Student-to-Faculty-Ratio—Calculating the., 2018, p. 1).

The number of years of the program's existence will also be included on the short assessment sent to the head of each department. The program head will answer the question, "What year was this graduate degree program founded?". The data will be measured as simply listing the number of years of existence. This data will be recorded for each program and used as a control variable when the study is carried out.

Finally, the last control variable that requires data to be collected is the historical presence of each program's Facebook account. On each program's Facebook page there will be a date shown that exemplifies what year the Facebook account for that program was created. The year obtained from the program Facebook page will allow the researcher to calculate how many years the program Facebook account has been active from its first year through 2019.

The data collection for each variable requires different actions. Once all the data for each different variable regarding each program is collected, the study can be carried out. This data will then be tested and analyzed to test the study's hypotheses and identify what the findings of this study are and their significance in the field. The data will be collected by the researcher

carrying out this dissertation study. She will code and collect data for each variable based on the data collection processes mentioned. This data will be collected after the completion of the Summer 2019 academic semester.

Data Analysis

The data collection will be statistically analyzed using multiple linear regression. The data collection will be summarized to provide information about the sample data. Summary statistics will be provided to show the interquartile range, skewness, and kurtosis of the data set. The mean of the data set will be reported. A scatterplot will be included to give a visual representation of the data collection.

Multiple linear regression estimates the relationship between a quantitative dependent variable and two or more independent variables. Linear regression is a model based upon a straight line. This method is fitting to the data set for several reasons. There are multiple independent variables included. The dependent variable is the student applications, which is a quantitative variable. Both the independent and dependent variables are being measured as continuous variables as the number of favorable Facebook content and student applications will be counted for each graduate degree program. There are control variables involved that look at the effects between the independent and depends variables. Based on these variables (independent, dependent, and control), multiple linear regression best fits the study. This study seeks to understand the interaction between the dependent variable as compared to multiple independent variables. Multiple linear regression allows for all these variables to be compared for linearity and the relationship between the multiple variables involved (Field, 2013). SPSS version 26 will be used to run these statistical tests.

This type of statistical method requires certain assumptions to be assessed. The assumptions that must be met include linearity, homoscedasticity, and normality. For linearity to be met the outcome variables should be linearly related to the predictors. In this study, there are multiple predictors, which means the combined effect will be best described by adding their effects together. If the assumption of linearity is not met in the outcome model, then the model is invalid. To assess linearity, SPSS will create a line graph of the data run. This graph will plot each of the data and if it meets linearity, the data outcome will be in a linear shape on the graph (Field, 2013).

For the assumption of homoscedasticity to be met each level of the predictor variables must have a constant residual term. This means the residuals at each level of the predictor(s) must have the same variance. If this assumption is not met, the confidence intervals and significance tests are invalidated. Scatterplots of residuals versus predicted values will be used to evaluate homoscedasticity. Multiple scatterplots will be used to compare each independent variable to the dependent variable. If there is not a clear pattern in the residuals in these scatterplots, then homoscedasticity has been met. If there is a cone-shaped pattern, the data is heteroscedastic (Field, 2013).

Finally, the assumption of normality must be met. This assumption assumes the residuals in the model are random and normally distributed variables with a mean of 0. "This assumption simply means that the differences between the model and the observed data are most frequently zero or very close to zero, and that differences much greater than zero happen only occasionally" (Field, 2013, p. 311). When all of these assumptions are met when testing variables with a multiple linear regression statistical method, it can be assumed the model is valid and the model is fitting to the data set. Normality will be tested using either a histogram or a Q-Q-Plot. SPSS

will allow for these assumptions to be met and will present the data outcomes for the study

interpretation and reporting.

Internal and External Validity

Internal validity refers to the confidence placed in the cause and effect relationship in a

scientific study. Threats to internal validity challenge the findings of a study. It accounts for

alternative explanations for a study's findings. Some threats to internal validity that must be

considered in this study include confounding and mortality.

Confounding refers to variables that are positively associated with independent and

dependent variables and may have a causal factor relating to the relationship between the two

variables. If these confounding variables are not accounted for, the validity of the study is

brought into question. It is likely that there are causal influences not being considered between

the relationship of favorable Facebook content on program accounts and student applications. If

confounding variables come about I will add them into my discussion and consider them to be a

limitation of this study. The control variables account for the effect of the reputation of faculty,

faculty to student ratio, the historical impact of the Facebook account, and the number of years of

the program's existence. There are likely other causal aspects that influence the relationship

between favorable Facebook content and student applications. For example, program photos

could be a type of favorable content implementation that has not been considered by researchers

or program Facebook account members that affect student applications at the program level. If

these confounding variables are not identified and considered in this study, the internal validity

of the study could be threatened. To account for confounding variables, a number of control

variables are being considered and will continue to be added as the literature reveals variables

affecting the relationship between favorable content on Facebook and student applications. This limits the threat of confounding the internal validity of this study.

Mortality generally refers to differential loss of participants across groups. There are no groups being specifically created for this study, but each program is a group that makes up the study's population. If a program decides to delete their Facebook account halfway through the Fall 2021 through Summer 2022 academic year, this would be a mortal effect that affects the results of the data set. At least 103 of the 151 graduate degree programs at the University of Arkansas must be available in order for the study design to remain constant. If there are not enough programs utilizing Facebook program accounts or a program begins to delete their Facebook account, this could be a threat to the design of the study. The study would have to expand past the University of Arkansas to regional or state level. Therefore, the Facebook accounts pose a threat to mortality that could affect the study, making mortality a threat to internal validity. This threat to internal validity is accounted for because only programs that have a Facebook account at the completion of the Summer 2022 semester will be considered. If a program chooses to be inactive on Facebook after that time, it will not affect the study regarding the previous academic year. This limits the threat of mortality.

External validity refers to the validity of applying the conclusions of the study outside the context of that study. Threats to this type of validity challenge the ability for the study's findings to be used in making generalizations. Threats to external validity that need to be considered in this study design are situation and Hawthorne effect.

The context of the study could be a threat to the external validity. This study is carried out at the University of Arkansas. The situation surrounding the University of Arkansas may be different than other universities around the nation. There are local and regional influences such

as locality, the growing economic status in the area, or the number of state universities in the state of Arkansas that could be affecting the findings of this study. Students considering the University of Arkansas may be attracted to the area or have different expectations for the Facebook accounts than students in other regions or states looking to apply to graduate programs. Therefore, the findings may be difficult to generalize across all graduate programs if the situation sets the graduate programs at the University of Arkansas significantly apart from other graduate programs. The situation is accounted for by the inclusion of the control variables. The control variables in this study seek to account for faculty specific factors within each program and program variables that make each program unique. This helps to keep the programs studied from a more general point of view that is applicable to graduate programs at large.

Another potential threat to external validity is the Hawthorne effect. This assumes that participants act differently when they know they are being studied. The graduate programs included may begin to add more favorable content to their Facebook accounts if they are aware of the fact their program is being studied for its content. This would cause them to post more often and post content that is considered favorable to applicants, such as student blogs or interactive content. To account for this threat to external validity, the programs will not be notified of this study until after the completion of the Fall 2021 through Summer 2022 academic year. At this point, their Facebook content and student application numbers will be finalized for that time period.

Summary

This study focuses on the research problem: Does the degree to which a program posts favorable content on its Facebook account affect student applications after controlling for the effect of the reputation of faculty, faculty to student ratio, the historical impact of the Facebook

account, and the number of years of the program's existence? To carry out this study and test the

hypothesis regarding the relationship between the variables, a methodology involving the study's

design, setting, participants and placements, materials, measures, data collection, data analysis,

and internal and external validity is described. This study is designed as a cross-sectional study

carried out at the University of Arkansas. The raters (researcher and another rater) will code the

content on the University of Arkansas graduate degree program's Facebook accounts based on a

list of favorable content created from the findings in the literature. The student applications for

the Fall 2018 through Summer 2019 academic year will be acquired through the university to

measure the correlation between these two variables. The data needed to inform the control

variables for each program will be provided through the questionnaire described in the material

section. The data for each variable will be collected by a few different processes including h-

index, questionnaire, coding, and Common Data Set (CDS) Initiative. Once this data is collected,

a multiple linear regression statistical test will be run. The models will be held to the

assumptions of linearity, homoscedasticity, and normality. The threats to internal and external

validity will be accounted for during the process of this study to ensure the validity of the

content. At the completion of this study, the relationship regarding the degree to which a

program posts favorable content on its Facebook account affects student applications after

controlling for the effect of the reputation of faculty, faculty to student ratio, the historical impact

of the Facebook account, and the number of years of the program's existence should be visible in

the outcome of the study.

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Appendix A

Program Fact Questionnaire

1. What is the name of this graduate degree program?

2. How many students were enrolled in your program during the Fall 2018 through Spring 2019 academic year?

3. What year was this graduate degree program founded?

4. Please provide a list of the full-time and part-time faculty members during the Fall 2018 through Spring 2019 academic.

Appendix B

Favorable Program Facebook Content Coding List

This list provides the definitions for each type of content labeled favorable program Facebook content as described in the literature. When coding a program's Facebook content, the coder can list the number linked to the favorable Facebook content list shown below to describe what category of favorable content the post is associated with.

1.　Connectedness (Rockinson-Szapkiw, Heuvelan-Hutchinson, Spaulding, 2014; Larsen & Spackman, 2017): posts that connect students to other students or faculty in the program, involve communication among program members, or that inspire conversation on the program page.

2.　Creates a community and networks (Romero-Hall, 2017): posts regarding job postings, internships, opportunities in the field, networking, or involves conversation or activity among program members.

3.　Creates high-quality relationship perceptions (Clark, Fine, & Scheuer, 2017): posts creating high-quality relationship perceptions involve posts involving student-teacher relationships, program activities, or mentorship.

4.　Entertaining and interactive content (Spackman & Larsen, 2017; Melchiorre & Johnson, 2015): posts that require action by the followers of the page.

5.　Student written-blogs (Sadlin & Pena, 2014): blogs, posts, or resources presented by program students on the program page.

6.　High content agility (Chaunhan, 2013): The frequency of how often a program posts to its Facebook page refers to its agility. High content agility involves posting 2-3 times per week.

Appendix C

Email to University of Arkansas Graduate Degree Program Heads

Subject: Invitation to Participate in a Study regarding Favorable Facebook Content and

Application Rates

Graduate programs at the University of Arkansas actively using a Facebook account for their

program during the Fall 2021, Spring 2022, and Summer 2022 semesters will be studied. A

survey to each graduate program will be sent to obtain each program's facts necessary to the

study.

The purpose of the study is to examine the connection between the use of identified favorable

Facebook content and the number of applications received by a program. A content coding list

has been created using favorable content found in the literature. The hope is that with a better

understanding of what Facebook content students deem favorable, an increase in application

rates occur for programs employing these types of content posts. In addition to the questionnaire

coming to each program, the public graduate degree program's Facebook posts on the program

Facebook page will be coded based on which posts present favorable content as identified on the

content coding list.

Any questions related to this study or the questionnaire to come should be sent to

hdcampbe@uark.edu.

Best,

Heather Campbell

Appendix D

Email to University of Arkansas' Graduate Admissions Office

Subject: Data Collection for Graduate Program Related Study

A study is being conducted to understand how graduate programs at the University of Arkansas posting favorable content (as identified in the literature) on their program Facebook pages affect the number of applications received during a given period of time. This study can help the University of Arkansas and its' graduate programs to understand how Facebook marketing and the types of content deemed favorable by students influences student's college choice and ultimately application rates.

For the purposes of this study, the research needs to know how many applications were submitted for each individual graduate degree program for the Fall 2021, Spring 2022, and Summer 2022 seasons. This data will be compared to the data collected regarding each graduate program's number of posts exemplifying favorable Facebook content during this time. The hope is that with a better understanding of what Facebook content students deem favorable, an increase in application rates occur for programs employing these types of content posts.

Please share the needed information for this study for each graduate degree program. Any questions related to this study or the questionnaire to come should be sent to hdcampbe@uark.edu.

Best,

Heather Campbell