

Introduction

In 2022, the National Science Board noted that many Americans cite social media as a primary source of information with the Pew Research Center estimating about one in five American adults and about 50% of adults ages 18–29 use social media to access news (Mitchell et al., 2020). Such statistics are problematic as the number of untrustworthy information sources continues to rise. As more Americans log on to social media every day for information and news, social media have become an outlet for communicating about agriculture in ways that engage all types of audiences. Within the agricultural industry, the need for more effective communication has become apparent as America is moving away from rural communities and into urban communities (Kurtzo et al., 2016; Irani & Doerfert, 2013). As consumers become farther removed from food and fiber production and more Americans use social media in new ways, agricultural communicators face challenges in effectively sharing evidence-based information with target audience groups (Fortner et al., 2022).

One example of this challenge in the agricultural industry is communicating with consumers about the cotton commodity. To explore this challenge, our study sought to analyze @discovercotton's Instagram page to understand its marketing efforts. @discovercotton is an influential cotton commodity promotional social media campaign (i.e., Instagram) managed by Cotton Incorporated, a global cotton industry supporter and a non-profit organization funded by US cotton growers and cotton and cotton textile product importers. The organization supports research on the cotton supply chain and promotes cotton and cotton products globally (Cotton Incorporated, 2023a).

Cotton

Cotton has been a vital part of global agriculture for centuries. Accounting for almost 35% of total fiber demands and a yearly global production of an estimated 102.5 million bales (USDA, 2016), cotton is the most important global textile fiber (Huang et al., 2021). India, China, and the US are the three top-producing countries in the world (USDA, 2016), and the US is a key exporter and producer with an estimated economic value of more than \$100 billion (National Cotton Council of America, 2013). In total, according to the 2017 United States Census of Agriculture, 16,149 farms and 11,401,965 acres of farmland were used for cotton production (United States Department of Agriculture, 2019). As the most significant natural fiber in the world (Hsieh, 2006), cotton is found in many apparel and household items (e.g., towels, bedding; National Cotton Council of America, n.d.). Although those items make up a majority (93%) of cotton uses, many industrial products also contain cotton (e.g., medical supplies). Often overlooked, US cotton production includes a large amount of cottonseed that can be used for products ranging from livestock feeds to cooking oil (National Cotton Council of America, n.d.).

Although cotton is an important global commodity, the industry faces several unique challenges. For example, after the introduction of synthetic fibers into the clothing and textile industry, cotton has fought for its place in the market share (Cotton Incorporated, n.d.-b). Currently, polyester accounts for approximately 54% of the global fiber market share with cotton holding approximately 24% (Textile Exchange, 2022). Additionally, with a projected 9.7 billion in global population by 2050 and global croplands decreasing, cotton growers seek ways to optimize their operations to increase yields while minimizing environmental impacts (United Nations, n.d.; Food and Agriculture Organization, 2020; Cotton Incorporated, n.d.-c).

Marketing in the Cotton Industry

The cotton industry also faces challenges with product marketing. The cotton industry, like other industries, uses generic advertising. Generic advertising has three primary activities: “injecting information into the marketing system, coordinating and funding information programs among producers with common goals, and addressing product attributes common to the commodity group” (Forker & Ward, 1993, p. 2). Cotton uniquely satisfies important human needs. Just as food satisfies the human need of nutrition, cotton can satisfy the human need of warmth, security, appeal, and protection (Forker & Ward, 1993). The cotton industry uses several generic marketing strategies, including television, sponsorship, print, digital, guerrilla, and social media, to deliver information to consumers (Cotton Incorporated, n.d. -b). Kotler et al. (2015) describe marketing as “managing profitable customer relationships” (p. 4) and has two goals that hinge on customer relationships: attracting new customers and maintaining current customers (Kotler et al., 2015). Furthermore, using generic advertising as a form of agricultural communication presents a great opportunity to educate consumers about the science behind a commodity while promoting the product to consumers.

Cotton Incorporated

Cotton Incorporated, administered by The Cotton Board, began in 1970 as the first commodity organization to market directly to consumers because of an uptick in consumers’ use of synthetic textile fibers. Cotton Incorporated (n.d.-a) aimed to make the preferred fiber choice for clothing and textile manufacturers and consumers and make cotton more profitable for growers. In 1973, Cotton Incorporated introduced the Seal of Cotton, which has been used as an indicator of products that contain cotton or products related to cotton (e.g., clothing, home goods, beauty products, and laundry detergent) since the trademark’s inception (Figure 2; Cotton Incorporated, n.d.-b). The trademark “has become a globally recognized symbol associated with fashion, durability, quality, and sustainability” (Cotton Incorporated, n.d.-b, para. 3).

Social Media

Social media and the internet have transformed the way that consumers search, assess, select, and purchase goods and services (Albors et al., 2008). An estimated 4.89 billion people will use social media worldwide in 2023 (Sprout Social, 2023), and 70% of Facebook users and 60% of Instagram users say they visit the platforms at least once a day (Pew Research Center, 2021). Effective marketing is crucial for establishing and maintaining customer relationships, and traditionally, marketers have relied on a marketing mix consisting of product, price, place, and promotion (McCarthy, 1964). In the context of agricultural communications and marketing, these principles are essential for effectively reaching target audiences and promoting engagement (Kurtzo et al., 2016). Marketing on social media, however, has shifted away from focusing on customer transactions and toward focusing on customer interactions as many companies emphasize creating positive customer relationships in their marketing (Pansari & Kumar, 2017).

Instagram

Instagram is one of the largest and most successful social media platforms globally; 71% of Americans, ages 18–29, use the application (Pew Research Center, 2021). It is a visual

communication platform that allows users to share photos and videos with their followers (Delfino & Antonelli, 2022). Kevin Systrom and Mike Krieger developed Instagram in 2010 as a “location-based check-in app,” and in 2012, Facebook purchased Instagram for \$1 billion (Rusli, 2012). In 2022, Instagram reached more than two billion users, and it continues to grow with a prediction that it will experience the most growth of any social media platform in 2023 (Barinka, 2022; Iskiev, 2022). Although Instagram was not the first platform with capabilities of sharing photos or applying photo filters, it did integrate these features best when compared to its competitors (Leaver et al., 2020). In 2016, Instagram started displaying content according to an algorithm that incorporates three key categories when determining what content to display: interest, recency, and relationship (Leaver et al., 2020).

Consumers are shopping and discovering new products every day on social media platforms such as Instagram (Iskiev, 2022). Instagram has revolutionized the way consumers, especially women, use social media as a retail platform. It offers consumers a positive in-app shopping experience and business owners a high ROI when selling directly through the app (Sprout Social, 2023). Women dominate the retail space, and in the US alone, women manage, buy, or influence 80% of the domestic expenditures. Thus, women are often considered to be the greatest potential customer base (Ramprabha, 2017).

User engagement and interaction is an important feature of Instagram as it consistently has a high interaction rate and has one of the highest rates of engagement among social media platforms (Emplifi, 2018; Casaló et al., 2017). As a result, content analyses are often conducted on Instagram, or like social media platforms, to assess user engagement and interaction. For example, Steede et al. (2018) used a content analysis to analyze opinions on Twitter about the use of antibiotics in livestock, and Rogers-Randolph et al. (2018) analyzed social media content during the 2016 National FFA Convention. Additionally, scholars have used content analyses to understand agricultural messages and content. For example, King et al (2006) examined newspapers, McLeod et al. (2018) and Morris et al. (2019) examined websites, and Dietrich et al. (2015) examined television content.

As social media becomes increasingly central to information dissemination, especially among urbanizing populations, effective agricultural communication becomes paramount. Within the agricultural sector, where urbanization and digital trends pose unique challenges, the need for targeted communication strategies is particularly evident. Cotton, a cornerstone of global agriculture, faces multifaceted challenges, including market competition and evolving consumer demands. To address these challenges, the industry relies on strategic marketing approaches, leveraging platforms such as Instagram to connect with consumers and promote the unique attributes of cotton products. Instagram’s visual-centric nature and high user engagement present valuable opportunities for the cotton industry to communicate its message effectively. By analyzing @discovercotton’s Instagram presence, our study aims to shed light on the intersection of agricultural communication, marketing strategies, and social media engagement.

Conceptual Framework

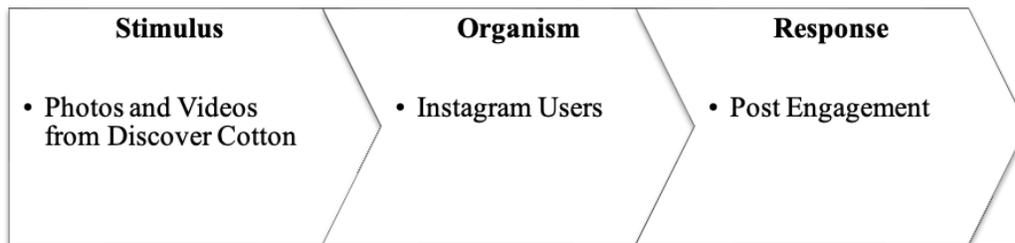
Our study employed Mehrabian and Russell’s (1974) stimulus (S), organism (O), and response (R) paradigm to describe the roles, relationships, and impact between behavior and environment (Jacoby, 2002) in the context of @discovercotton’s use of Instagram for marketing and communication. This framework offers a lens through which to understand how stimuli within the digital environment influence consumer behavior and organizational responses.

Building upon this framework, it is imperative to explore how agricultural commodities leverage social media platforms to convey their messages effectively. By understanding the strategies and techniques employed by these organizations, researchers can gain insights into the evolving landscape of communication and marketing within the agricultural sector.

Mehrabian and Russel (1974) proposed that organisms are directly impacted by stimuli, which elicit some type of behavioral response (see Figure 1). Craik (1968) defined stimulus as “units of the everyday physical environment” (p. 30) that can influence internal state and perception (Mazursky & Jacoby, 1986; Mollen & Wilson, 2010). Stimuli are received through the five senses (i.e., sight, sound, smell, taste touch). Response refers to an organism’s approach or avoidance of the stimuli (Mehrabian & Russell, 1974). Any positive behavior directed toward the environment is categorized as an approach response (Spangenberg et al., 1996). Any other behavior directed towards the environment is categorized as an avoidance response. For example, when thinking about shopping in a store, an approach response would be to continue browsing and an avoidance response would be to leave the store (Spangenberg et al., 1996). Mehrabian and Russell’s (1974) paradigm has been used in business and marketing to study customer engagement and interior design’s impact on customer service (Reinares & Garcia, 2012) and in social media and digital marketing to study impulse purchasing on Instagram (Djafarova & Bowes, 2021), impact of brand communities (Kamboj et al., 2018), and online hotel booking websites and customer experience (Emir et al., 2016).

Figure 1

Mehrabian and Russell’s (1974) Stimulus-Organism-Response Framework



Purpose and Research Questions

The purpose of our study was to analyze the @discovercotton Instagram page using the stimulus-organism-response paradigm. In our study, we explored content on @discovercotton’s Instagram profile using four research questions: a) What categories of products are promoted most often as stimuli by @discovercotton?; b) How often is cotton, a cotton plant, or the Seal of Cotton presented on @discovercotton as stimuli?; c) What themes does @discovercotton promote through post captions (stimuli) ?; and d) What are the most frequently mentioned word stimuli, hashtag stimuli, and retail partner stimuli posted on @discovercotton?

Method

The study described herein is based on a master’s thesis project conducted as a part of a larger grant project. Because the grant project focused on cotton, the context of our study focused on social media within the cotton industry.

Research Design

We examined Discover Cotton's Instagram account (@discovercotton) using a content analysis. Holsti (1969) described content analysis as "any technique for making inferences by objectively and systematically identifying specified characteristics of messages" (p. 14) and Krippendorff (2004) described it as a technique to make valid inferences from "texts, symbols and images" (p. 18). Content analyses help describe the focus of groups, institutions, or individuals and describe trends or patterns in information (Weber, 1990; Stemler, 2001).

Although rooted in quantitative methodology as a method used to count frequencies in consumer research (Kolbe et al., 1991), content analyses have become more qualitative over time (Kleinheksel et al., 2020) with the two types often used in tandem to analyze data. Weber (1990) argued that the use of qualitative and quantitative methodologies provided the best content analysis research studies. They are unobtrusive and the contents being analyzed are uninfluenced or dissuaded by the researcher's presence and are typically more simplistic in terms of organization, time, and resources (Fraenkel et al., 2012). Yet, because of the qualitative nature of content analysis, it is often difficult to generalize the results beyond the study sample (Lincoln & Guba, 1985). Although we used both quantitative and qualitative methods, our study was rooted in qualitative content analysis inquiry.

Furthermore, we used Mehrabian and Russell's (1974) stimulus-organism-response paradigm to provide a theoretical framework for analyzing the @discovercotton Instagram page. We examined how stimuli presented on social media platforms influence user behavior and engagement. Specifically, Mehrabian and Russell's paradigm allowed us to conceptualize the content posted by @discovercotton as *stimuli*, Instagram users as *organisms*, and user engagement as *responses*. We used a bottom-up approach, employing an inductive method to explore the content presented on @discovercotton's Instagram profile. It is important to note that while our analysis was guided by Mehrabian and Russell's framework, we primarily present our findings through emergent themes, allowing for exploration of the content's influence on user behavior and response. By grounding our study within this theoretical framework, we aimed to provide valuable insights into the strategies employed by agricultural organizations in leveraging social media for marketing and communication purposes.

Sample

We chose to examine stimuli on the @discovercotton Instagram, managed by Cotton Incorporated, because of its position as an influential cotton commodity social media account. Cotton Incorporated is active across social media platforms. As of June 1, 2023, Cotton Incorporated had 13,714 followers on Facebook, 6,916 followers on Twitter, and 23,608 followers on LinkedIn. Through social media posting, the organization disseminates news and information about cotton and textile production and its initiatives. Cotton Incorporated's consumer-facing brands, Discover Cotton and The Fabric of Our Lives®, are also active on social media platforms. As of March 2, 2023, the @discovercotton Instagram profile had 22,527 followers (organism) and 1,798 posts (stimuli). The account began in November 2011. Discover Cotton and the Fabric of Our Lives® are also active on Facebook, Twitter, Pinterest, YouTube, and TikTok. As of March 2, 2023, Discover Cotton and the Fabric of Our Lives® (together) had 917,691 followers on Facebook; 15,874 followers on Twitter; 6,593 followers; ~62,000 monthly views on Pinterest; ~10,500 subscribers on YouTube, and 682 followers with 9,448 content likes

on TikTok. The social media content includes a variety of photos and videos (stimuli) promoting cotton and cotton products and spotlighting campaigns and special collaborations with retail partners.

For the current study, we analyzed 434 Instagram posts (stimuli) from March 2, 2021, to March 2, 2023. Of those stimuli, 244 were single photos, 142 were carousel posts, and 48 were videos. Total likes (responses) for all 434 stimuli were 110,143, and the average number of likes per stimuli was 286.83 ($SD = 1058.28$). The total comments (responses) for all 434 stimuli were 5,799; the average number of comments was 13.36 ($SD = 41.40$). Total engagement (responses = likes + comments) for all 434 stimuli was 115,942; the average engagement was 267.15 ($SD = 1026.47$).

We selected the two-year data collection frame to provide a recent, comprehensive, and thorough overview of @discovercotton's stimuli because there were several special campaigns or stimuli during that time. The sample contained stimuli unveiled for two new campaigns: The Fabric of Our Lives® campaign featuring Carnie Wilson (@carnie68; 161,531 followers, lead singer of Wilson Phillips) and a general campaign featuring skateboarder and rollerblader influencers.

During data collection, there were many collaborative stimuli posted with social media influencers, including Amanda Stanton Fogel (@amanda_stanton; 1,114,684 followers), Bridget Helene Bahl (@bridget; 1,058,415 followers), Katie Morton (@katieemo; 401,333 followers), Maria Vizuet (@miamimine; 1,134,926 followers), Jess Bailey (@jessthrowiton_; 150,911 followers), Christina Haisfield (@jetsetchristina; 101,043 followers), Lauren Crowe (@laurencrowe88; 186,300 followers), Caelynn Miller-Keyes (@caelynnmillerkeyes; 1,352,415 followers), and Kaitlyn Davis (@kait.davis; 197,202 followers). Some stimuli were posted through @discovercotton, and others were posted using Instagram Collab, a new feature allowing one post to appear on two users' feeds (Sides, 2022).

Additionally, there were several partnerships and collaborative efforts with brands during the data collection period. Cotton Incorporated hosted two collaborations with retailer Something Navy (@somethingnavy; 321,445 followers), an in-store shopping experience and an influencer brand trip to Montauk to promote The Cotton Cabana. In addition, the Cotton x Revolve Gallery at New York Fashion Week was unveiled, and in 2021, influencer and former Bachelorette Tayshia Adams (@tayshia; 1,585,745 followers) created social media content in collaboration with the event. In 2022, the Cotton x Revolve Gallery returned to New York Fashion Week with Linds Lane Watts (@lindsilanestyle; 240,476 followers) serving as the Official Cotton Ambassador for the Revolve Gallery and creating social media content in collaboration with the event. In addition to the interactive exhibit at New York Fashion Week, Revolve (@revolve; 5,740,514 followers) promoted a special collection of clothing made from cotton, which was also promoted on Revolve Man (@revolveman; 12,117 followers) and FWRD (@fwr; 816,763 followers).

Furthermore, Vera Bradley (@verabradley; 576,874 followers) unveiled a new accessories line made with recycled cotton and retailer Intermix (@intermixonline; 526,990 followers) promoted an exclusive cotton resort wear collection while retail partners Aéropostale (@aerpostale; 4,385,798 followers) and Good American (@goodamerican; 2,407,770 followers) both unveiled new cotton collections. The Aéropostale collection was promoted through influencer efforts at the Firefly Music Festival in Dover, Delaware. There were also several Collab posts with Editorialist Magazine (@editorialistmagazine; 123,029 followers).

Data Collection

On April 13, 2023, the primary author captured the 434 stimuli that had been posted on the @discovercotton Instagram profile between March 2, 2021, and March 2, 2023, using screenshots. Using Instagram for Desktop, the primary author recorded all data per post (i.e., type of stimulus (single photo post, single video post, or carousel post (more than one photo or video) and type of response (number of likes, number of comments). Users can view a carousel post by swiping through each image on the mobile app or clicking through on the desktop (Zote, 2022). A video post can be an Instagram Reel or an in-feed video post. In our study, we captured in-feed video posts and not Instagram Reels because Reels are only temporary stimuli and change daily. To prepare for data analysis, the leading faculty member on the master's thesis committee (second author) trained the primary author in content analysis research methodology. Then, the primary author labeled each post in an Excel spreadsheet according to the date of post and the number of visuals on the post. For example, a stimulus post from March 2, 2021, was labeled as 1. If a post contained more than one type of stimulus, a letter was added to the code to distinguish multiple stimuli. For example, the fourth post that was posted on March 8, 2021, and that contained four stimuli in one post would be labeled as 4A, 4B, 4C, and 4D.

Data Analysis

Data analysis and coding methods are described according to each research question. The primary author (see Reflexive Statement) coded data initially, and the leading faculty member (of the student's thesis) confirmed data analyses and coding throughout the project. As needed, they adjusted emergent codes and reconciled discrepancies using Lincoln and Guba's (1985) four criteria of trustworthiness.

RQ1: What Categories of Products were Promoted Most Often as Stimuli by @discovercotton?

To answer research question one, we conducted a content analysis and sorted stimuli into categories based on @discovercotton's defined categories of products (Table 1). @discovercotton's defined categories are presented on Discover Cotton's website as the categories in which the organization describes its products. We added miscellaneous as a category because some stimuli did not fall into the four pre-defined categories. For our study, stimuli could be counted in more than one category if the stimuli contained more than one category. For example, if a stimulus had both women's products and men's products, the stimulus was included in both categories. A miscellaneous category included any stimuli that did not fall into one of four defined categories. We used descriptive statistics, including frequencies, to determine what product categories were promoted most often on @discovercotton.

Table 1

Coding Manual for Discover Cotton's Categories of Products

Image Category	Definition
Women	Clothing items for women, including blouses, t-shirts, knitwear, dresses, denim, and undergarments
Men	Clothing items for men, including shirts, knitwear, denim, and accessories
Home	Items used in the home, such as sheets and towels

Children	Clothing items for children, including tops, denim, diapers, and knitwear
Miscellaneous	Any post that did not fall into the above-mentioned categories

RQ2: How Often was Cotton Presented on @discovercotton as Stimuli?

For research question two, we sorted stimuli based on if the stimuli contained a depiction of a cotton plant, a cotton boll, the Seal of Cotton, or the word *cotton*. If the stimuli contained a depiction of a cotton plant or cotton boll, we noted it with a C for *cotton* or a N for *no cotton*. We used descriptive statistics (i.e., frequencies, rank order) to determine the number of stimuli that depicted cotton. We calculated the total engagement (response) for each stimulus by summing the number of likes and comments per stimulus. We ranked the stimuli from highest to lowest total engagement to identify total response and determined what categories were shown in the stimuli that had the highest engagement. We determined if any of the highest total engagement stimuli had depictions of cotton plants, bolls, the Seal of Cotton, or included the word *cotton*. We excluded 49 posted stimuli from our analysis because the likes were not publicly available. Recently, Instagram has given users the ability to hide their like count from posts (Hirose, 2022).

RQ3: What Themes Does @discovercotton Promote Through Post Captions (Stimuli)?

To answer research question three, we conducted a thematic analysis on Instagram stimuli captions. After reading the caption, we used open and axial coding for analysis to determine relationships, themes, and connections between units (Fraenkel et al., 2012). We used the constant-comparative method, meaning that the first unit became a category and all other units in the analysis were either added to the first category or grouped to form new categories (American Psychological Association, n.d.).

RQ4: What were the Most Frequently Mentioned Word Stimuli, Hashtag Stimuli, and Retail Partner Stimuli on @discovercotton?

We used MAXQDA2022 software to identify the words, hashtags, and brands most frequently used in @discovercotton Instagram caption stimuli. After importing all Instagram captions into the software, we conducted a Word Cloud analysis and applied the stop word list to remove all filler words from our analysis (e.g., the, for, to, and). We included most of the hashtags in our analysis if they were in the photo’s caption stimuli and not in the caption’s comment. We used descriptive statistics (i.e., frequencies) to determine the most frequently used word stimuli, hashtag stimuli, and retail partner stimuli in @discovercotton Instagram captions.

Reflexive Statement

In qualitative inquiry, it is important to recognize one’s reflexivity and to explain “biases, dispositions, and assumptions regarding the research” (Merriam & Tisdell, 2016, p. 249). The primary author grew up on a row crop farm in south Texas, and her family has grown cotton for four generations. Her grandfather was a cotton classifier for the USDA—he grew cotton and participated in many cotton and agriculture organizations. Her father and brother actively grow cotton in Victoria County, Texas.

While a graduate research assistant at Texas A&M University, she worked on a USDA-NIFA-funded grant project that aimed to develop a decision-support tool for cotton producers. She attended several cotton industry meetings, including the Beltwide Cotton Conference, the Mid-South Farm & Gin Show, the Georgia Cotton Commission Annual Meeting, and numerous online webinars, and was selected to attend the Women in Agriculture Tour with Cotton Inc. During her undergraduate and graduate studies, she completed courses in social media and communications, specifically related to the use of social media in agriculture, sports, and live events. In her professional career, she has worked in social media for more than five years and has experience creating content, managing social media platforms, developing digital advertising campaigns, moderating user content, and analyzing social media metrics for multiple agriculture-related businesses, organizations, and events. She is a strong proponent of agriculture and volunteers for multiple agriculture organizations and events.

Trustworthiness

Lincoln and Guba (1985) developed four criteria of trustworthiness in qualitative inquiry: credibility, transferability, dependability, and confirmability. We established trustworthiness in our study through methodological triangulation, prolonged engagement with the material, statement of the primary author's position as a researcher, peer debriefing sessions, and reflexive journaling. Methodological triangulation is "the use of more than one method of collecting or analyzing data" (Stahl & King, 2020, p. 26). In the study described herein, we used well-established methods to analyze our data, including word count frequency, textual analysis, image analysis, and sentiment analysis, and spent a considerable amount of time collecting and analyzing the data (Merriam & Tisdell, 2016). Through self-reflection, we recognized any "assumptions, worldview, biases, theoretical orientation, and relationship to the study that may affect the investigation" (Merriam & Tisdell, 2016, p. 259), which the primary author discloses in the reflexive statement.

To achieve dependability and confirmability, we used peer debriefing because it is often used as a sounding board to discuss ideas and findings (Shenton, 2004). Through peer debriefing, peers provide support, ask questions, and challenge researcher's assumptions (Creswell & Miller, 2000). Additionally, we kept a reflexive journal to record notes and information about the study (Lincoln & Guba, 1985). The primary author of study engaged in peer debriefing with a graduate student peer (doctoral candidate), and the peer provided feedback on the research questions prior to establishing data collection procedures, on data collection procedures prior to collecting the data, and on data analysis techniques and procedures while analyzing the data and at instrumental steps in the process.

Furthermore, researchers cannot generalize findings to a larger population because qualitative data offers an intimate view of the phenomena (Lincoln & Guba, 1985). Yet, despite the aim for replicability, transferability remains important (Stahl & King, 2020). We discussed the boundaries of the current study and used rich, thick description (Shenton, 2004; Merriam & Tisdell, 2016) to "enable someone interested in making a transfer to reach a conclusion about whether transfer can be contemplated as a possibility" (Lincoln & Guba, 1985, p. 316).

Limitations

The current study had five limitations. First, Instagram is a dynamic social media platform, and responses (e.g., likes, comments) can be added or deleted at any time. Therefore, data could differ based on time of data collection. Second, the ability to see number of likes (response) on stimuli has been removed, which impacted total engagement calculations, and Instagram or the brand can filter or remove comments because of inappropriate content. Third, we analyzed two years of Instagram stimuli, but the account was created more than 10 years ago. Fourth, it was not a comprehensive examination of @discovercotton’s Instagram profile because we examined only the posted stimuli (i.e., content, captions) with limited exploration of response (post engagement) and did not examine the Instagram users (organism) or Instagram Stories. Stories are photos or videos that can be viewed for up to 24 hours after posting, and after 24 hours, stories disappear unless they are saved as a highlight on the profile (Instagram, n.d.). Fifth, we cannot generalize the qualitative findings.

Findings

RQ1: What Categories of Products were Promoted Most Often as Stimuli by @discovercotton?

The @discovercotton Instagram profile had 790 stimuli (posts of images and videos) between March 2, 2021, to March 2, 2023. Those 790 stimuli were divided across four categories of *women*, *men*, *children*, and *home* with *other* for stimuli that did not fit into one of four distinct categories. The *women* category had the most stimuli ($f = 563$, 77.02%) while the *children* category had the least stimuli ($f = 26$, 3.56%; Table 2).

Table 2

Stimuli Categories Presented on the @discovercotton Instagram Account

Stimuli Category	<i>n</i>	%
Women	563	77.02
Other	100	13.54
Men	64	8.76
Home	55	7.52
Children	26	3.56

Note: Eighteen stimuli posts fell into more than one category.

Stimuli with the most response (engagement: likes + comments) were *women* presented as carousel posts, which are posts containing more than one photo or video. No stimuli with the most response featured depictions of cotton, a cotton plant, or the Seal of Cotton (Table 3).

Table 3

Posts with Highest Total Response on @discovercotton’s Instagram Account

Date	Stimuli Type	Likes	Comments	Total Response	Category
May 12, 2022	Carousel	9,330	108	9,438	Women
Sept. 16, 2022	Carousel	8,759	541	9,300	Women
June 23, 2022	Carousel	7,870	31	7,901	Women
April 4, 2022	Carousel	6,956	230	7,186	Women
Dec. 21, 2022	Carousel	5,168	126	5,294	Women
June 7, 2022	Carousel	5,189	38	5,227	Women

Dec. 23, 2022	Carousel	4,874	54	4,928	Women
Aug. 2, 2022	Carousel	4,618	283	4,901	Women
April 4, 2022	Carousel	3,432	175	3,607	Women
Sept. 6, 2022	Carousel	3,507	50	3,557	Women

RQ2: How Often is Cotton Presented as Stimuli on @discovercotton?

In two years of data collection, the @discovercotton Instagram profile presented 67 (8.48%) stimuli depicting cotton, a cotton plant, or the Seal of Cotton. Of those 67, stimuli with the most response (engagement: likes + comments) were six video stimuli, three single photo stimuli, and one carousel stimulus (Table 4).

Table 4

Stimuli Depicting Cotton, a Cotton Plant, of the Seal of Cotton that had the Highest Response

Date	Stimuli Type	Likes	Comments	Total Response	Category
April 9, 2022	Video	3,164	49	3,213	Women
Nov. 12, 2022	Video	919	21	940	Other
					Women;
July 20, 2022	Carousel	491	8	499	Other
Sept. 22, 2022	Video	447	1	448	Women
Dec. 27, 2022	Video	332	0	332	Other
					Women;
Sept. 19, 2022	Video	272	2	274	Men
Aug. 22, 2022	Video	245	7	252	Women
April 12, 2021	Single Photo	164	30	194	Women
April 22, 2021	Single Photo	114	3	117	Other
June 4, 2021	Single Photo	106	3	109	Other

RQ3: What Themes Does @discovercotton Promote Through Post Captions (Stimuli)?

We identified six major themes or messages in the caption stimuli for @discovercotton’s posts: *qualities of cotton, style, sustainability, check the label, women, and cotton production* (Table 5). Three caption stimuli were not included because they did not align with the themes.

Table 5

Themes and Sub-themes Promoted in @discovercotton Instagram Posts (N = 431)

Themes/Sub-themes	<i>n</i>
Qualities of Cotton	217
Comfort	66
Breathable	52
Timeless	25
Natural	22
Versatile	19
Active	15
Luxurious	5
Strong	5

Essential	4
Cotton for Beauty	4
Style	132
Sustainability	57
Check the Label	11
Women	10
Cotton Production	4

Qualities of Cotton

Half of the caption stimuli ($f = 217$, 50%) described cotton qualities: comfort, breathable, timelessness, natural, versatile, active, luxurious, strong, essential, and skincare use.

Comfort. *Comfort* ($n = 66$) was a common sub-theme of *qualities of cotton*. Comfort stimuli often described warm feelings in colder months (e.g., “Another day, another fall look with stylish cozy fabrics 🍂 #thefabricofourlives #cotton #fashion”), the comfort found in home products (e.g., “Can confirm that wrapping yourself in a soft cotton towel after a long shower sure feels as good as it looks.”), and sleep (e.g., “We may be losing an hour, but wearing cotton pj’s can give you a better night’s sleep so...balance? We think so. #FabricOfOurDreams”). Comfort stimuli had words such as *wrapping*, *comfy*, and *cozy* and phrases such as *feels like a dream*, *the feel-good fabric*, and *dressed to chill*.

Breathable. *Breathable* ($n = 57$) was often associated with warmer weather and described cotton’s breathability during warmer months (e.g., “The 🔥 in this image is enough to make us forget it’s actually hot outside. Good thing cotton is cool and comfortable cause uh 😊. #cotton #thefabricofourlives #comfort #heat #summerstyle #ootd”). Several stimuli also described the breathability of household objects, like sheets and towels (e.g., “Feel free to swing by if you like sunny pool days. Oh, and bring a fresh cotton towel too! #cotton #thefabricofourlives #summer #sunny #poolside #cottontowel”). Stimuli used words and phrases such as *keeps us cool at night*, *cool and comfortable*, and *fresh and dry*.

Timeless. *Timeless* ($n = 25$) described cotton as *vintage*, *era*, *classics*, *iconic*, and *cotton is forever*. Many stimuli alluded to family relationships (e.g., mother-daughter): “Double tap if you treat your mom’s closet like it’s your own. ❤️ #CottonClassic #cotton #thefabricofourlives #comfort.” Yet, others alluded to certain pieces of clothing as being timeless (e.g., CLASSIC DENIM • nothing beats the look of timeless cotton blues that prioritize comfort + long-lasting we-r - use our link in bio to shop @discovercotton #ShopCotton).

Natural. *Natural* ($n = 22$) described cotton as a natural material (e.g., “We’re getting ready for #EarthDay with the best things in life that come from nature...like cotton. 🌱🌿”) and typically alluded to some connection with nature “Double-tap if you’re ready to trail on this summer with #TheFabricOfOurLives 🏞️ #cotton #comfort #hiking #nature.”

Versatile. *Versatile* ($n = 19$) described cotton’s versatility across seasons and as an essential or statement piece. An example of versatility in seasons is “The month of April has many moods, so versatility is a must. Though you may not always be able to count on the forecast, you can always count on cotton. #TheFabricOfOurLives” with versatility in occasion as “Going out or staying in? Feel festive for every occasion with new holiday looks from The Cotton Shop @REVOLVE! Tap the #linkinbio to #ShopCotton.”

Active. *Active* ($n = 15$) described cotton as a fabric or material suitable for activities: “@leticiaufoni moves like a natural on a skateboard. If you do too, put on your cotton and post

your moves with #CottonNaturals. 🛹.” Words such as *sporty* or *athleisure* were used to describe cotton: “Score this stylish yet sporty comfy cotton look from The Cotton Shop at @somethingnavy. #ShopCotton #cotton #thefabricofourlives #somethingnavy #spring #fashioninspo #comfy #fashion #nyc #smallshop.” Two campaigns were actively focused: Cotton Naturals and Day of Skate. Cotton Naturals featured female skateboarders (e.g., @sydneyolson1 runs, jumps, and flips like a natural. If you do too, put on your cotton and post your moves with #CottonNaturals). Day of Skate featured a mural and in-person roller skating event (e.g., Roller skaters and Venice Beach... it’s a natural combination. #CottonNaturals).

Luxury. *Luxury* ($n = 5$) described cotton as luxurious. Some stimuli were generalized (e.g., “Life is more luxurious in cotton.”) and some descriptive (e.g., “High fashion + cotton = luxury styles to wear with ease. Tap the #linkinbio to enter The Cotton Shop @FWRD. #ShopCotton”).

Strong. *Strong* ($n = 5$) was used to describe cotton with words and phrases *boss*, *comic book hero* *powerful*, and *durability*. Some stimuli described the strength of cotton products, like denim (e.g., “Step up in cotton pants that offer unrivaled durability without sacrificing everyday style - use our link in bio to shop! @discovercotton #ShopCotton”) while others described one as feeling strong when wearing cotton products (e.g., “A blazer works hard to make you look good, but a cotton blazer makes you feel like a boss too. #TheFabricofOurLives”).

Essential. *Essential* ($n = 4$) described cotton products as being essential to a wardrobe with words and phrases such as *building blocks* and *essentials*. One example for essential was “BRB, swapping out our cotton summer essentials for fall cotton essentials 🍂. #cotton #fall #ootd #fallstyle #wardrobe #fashion #style.”

Cotton for Beauty. *Cotton for Beauty* ($n = 4$) described the benefits of using cottonseed oil in skin care products. An example of a *cotton for beauty* is:

The antioxidants found in cottonseed oil can help protect our skin from environmental damage. You see, our skin takes a beating every day from environmental factors like pollution, UV exposure, and dry or humid air. But cottonseed oil can actually help block out those factors and protect our skin naturally. So, whether you live in an urban area or the rural countryside, cottonseed oil has the essential ingredients you need to protect your skin. #thefabricofourlives #cotton #skincare #skincaretips #beautysecrets #beauty #photography #naturalingredients.

Style

Style ($n = 132$) was also a commonly found theme within the @discovercotton content. Words such as *trending*, *fresh*, and *confidence-boosting* and phrases such as *looks good*, *find your next OOTD*, *iconic look*, and *main character energy* described *style*. Some stimuli centered on fashion (women and men) while others were in collaboration with stores or retailers (e.g., “Thinking of upgrading your cotton fits in time for spring? Check out The Cotton Collection at @goodamerican. P.S. Only a few days left to shop ❤️”) with stimuli describing *style* often featuring influencers.

Stores or retailers mentioned here included Good American, Something Navy, Revolve, Intermix, Editorialist Magazine, and Aeropostale, among others. Some stimuli were about clothing and not about a specific store or brand (e.g., Summer girl fits brought to you by cotton 🌴 #cotton #thefabricofourlives #comfort #summer #summerstyle #ootd #summerfits). An example of a *style* caption stimulus was “The styles you didn’t know you needed—until now.

Introducing, The Cotton Shop @fwr. Explore cotton pieces made for the sophisticates, jet setters, and modern romantics all with the planet in mind. #ShopCotton at fwr.com/shop/cotton”

Sustainability

Sustainability ($n = 57$) was a common theme. Some stimuli discussed the Blue Jeans Go Green™ initiative: “The thing about cotton is that it keeps giving. And since denim is made from cotton, it’s recyclable so you can feel and do good giving back to the planet. Check out our @bluejeansgogreen program to learn more.” Other stimuli discussed microplastics and their impact on oceans: “Cotton by the sea is just as serene as it looks. And we can all feel extra comforted knowing that it doesn’t shed dangerous fibers into our oceans. Happy #WorldOceansDay! 🌊 #cotton #thefabricofourlives #comfort #style #beach.” Yet, other posts discussed the sustainability benefits of wearing cotton. Furthermore, several posts promoted the Vera Bradley accessories line made of recycled cotton: “Hello, Happiness! 🌸 @verabradley’s new collection is made with 50% recycled cotton! And it’s available in bright solid colors and new patterns! #ShopCotton #verabradley #cotton #thefabricofourlives #recycledcotton #sustainablefashion.” Stimuli discussed *sustainability* using words and phrases such as *transforming*, *well-worn*, *new life*, and *show the earth some love*.

Check the Label

Check the Label ($n = 11$) reminded consumers or followers to check product labels for the inclusion of cotton. “If the label on your bed sheets is longer than your book, you may not be getting the best sleep possible. Keep it brief: 100% cotton. #cotton #comfort #sleep #sleeptips #comfy.” The theme included comparisons of cotton to polyester (e.g., “Cotton comes from the ground. Polyester comes from a lab. If your goal this year is to shop naturally, check the label for cotton before you buy. #ShopCotton”). Several *check the label* stimuli used humor or teasing to parlay the message (e.g., “Sup? Heard you haven’t been checking the label. 😡😡😡😡 It’s cool, it’s fine, but you should know what’s in your clothing. ❤️ #thefabricofourlives #ootd #checkthelabel #cotton #cottonclothes #comfort #style”).

Women

Women ($n = 10$) were mentioned in stimuli about women’s holidays, including Mother’s Day and International Women’s Day (e.g., “More than 36% of U.S. farmers are female. Tomorrow on #InternationalWomensDay we’re celebrating the strong women in our lives by spotlighting the ones responsible for growing #TheFabricOfOurLives”). Some stimuli described cotton as being strong and resilient like women, and cotton was also described as feminine. @discovercotton promoted female-owned businesses as well (e.g., “FOR EVERYBODY 🍌 We’re celebrating #InternationalWomensDay with @goodamerican, a fully inclusive fashion brand made by women, dedicated to empowering all women. We collaborated with them to create The Cotton Collection so you can feel your most powerful self in the softest fabric”).

Cotton Production

A few posts ($n = 4$) described production practices or mentioned farmers with two stimuli about #NationalFarmerDay and *Sustainability* (e.g., “One of the great things about cotton is that it uses renewable sources like land and water to grow. So, shop for cotton clothes because they’ll keep you and your conscience comfortable. #TheFabricOfOurLives”).

RQ4: What are the Most Frequently Mentioned Word Stimuli, Hashtag Stimuli, and Retail Partner Stimuli on @discovercotton?

The most mentioned word in caption stimuli on the @discovercotton Instagram profile was *cotton* ($f = 594$; 38.42%), the most mentioned hashtag stimuli was #shopcotton ($f = 189$; 12.22%), and the most mentioned retail partner stimuli was *Revolve* ($f = 76$; 4.91%) (Table 6).

Table 6
Top 10 Most Mentioned Word Stimuli, Hashtag Stimuli, and Retail Partner Stimuli in @discovercotton Instagram Posts (N = 1,546)

Word	<i>f</i>	%
Cotton	594	38.42
Shop	189	12.22
#shopcotton	189	12.22
#thefabricofourlives	105	6.79
Denim	103	6.66
#discovercotton	85	5.49
Revolve	76	4.91
Bio	69	4.46
Fashion	68	4.39
Style	68	4.39

Conclusions

We analyzed 434 @discovercotton Instagram stimuli posts from March 2, 2021, to March 2, 2023, using a content analysis. The most promoted product category was *women*, which aligns with the target audience for @discovercotton’s social media strategy (Cotton Incorporated, n.d.-b). According to Cotton Incorporated, the age of women who consume @discovercotton falls between 18–34 (Cotton Incorporated, n.d.-b). As a powerful purchasing group and dominate force in the retail space (Ramprabha, 2017), women were discussed and promoted often through stimuli on @discovercotton. The goal of a commodity research and promotion board is to promote the specific commodity and its attributes (Ward, 2006) as reaching a target audience can be beneficial in fostering positive relationships and increasing sales and brand awareness.

Cotton as a fabric was promoted extensively through image and caption stimuli. However, few stimuli promoted cotton in general, cotton as a plant, cotton production, and the process of cotton boll to clothing. There has been a shift in public opinion and perception about agriculture, and the need for effective communication about agriculture has become more apparent (Kurtzo et al., 2016; Irani & Doerfert, 2013). Increased social media use as a source of information increases the need for effective communication (National Science Board, 2022; Iskiev, 2022). Therefore, @discovercotton could leverage their access to a large and receptive

audience to share evidence-based information about cotton and cotton production and to help bridge the gap between agriculture and consumers.

When analyzing caption stimuli on @discovercotton's Instagram profile, current stimuli highlighted benefits of *cotton as a fabric*, including *style, comfort, breathability*, and *sustainability*. Highlighting the benefits of cotton and cotton products could help to increase brand awareness and the likelihood of followers purchasing cotton products, which could be considered an approach response (Spangenberg et al., 1996). Our study revealed that marketing or purchasing is a prominent theme or goal of @discovercotton's profile as the profile promoted many avenues for purchasing cotton products (i.e., link in bio, curated collections, influencers) and the product messaging and promotion appealed to consumers. Additionally, our study identified a need to integrate more stimuli related to cotton production into @discovercotton's Instagram. Doing so has the potential to engage followers into cotton production.

@discovercotton also promoted fashion. Caption stimuli subthemes, such as *stylish, comfort, breathable, timeless, versatile, natural, active, luxury, strong*, and *essential*, highlighted the importance of cotton as a fabric and highlighted its ability to stand out in anyone's closet. As a commodity research and promotion board, the overall goal is to increase profitability for all producers (Beach et al., 2002), which @discovercotton has attempted to do with its current stimuli. Promoting cotton as a staple in fashion and home goods could persuade consumers to purchase clothing and home goods made with cotton over clothing and home goods made with synthetic fibers.

The current study serves as a doorway to further examine how various commodity research and promotion boards use social media to promote their commodities. Future research is needed on how to communicate with non-expert audiences across social media platforms. Therefore, we recommend that researchers replicate the study described herein across Discover Cotton's social media platforms (e.g., Facebook, Twitter, Pinterest, TikTok, and YouTube) as well as the social media use of research and promotion boards across agricultural commodities. Different social media platforms are used by consumers for different purposes, including convenience, information, entertainment, and social purposes (Pelletier et al., 2020). Discover Cotton's social media platforms might have different purposes, and consumers might interact differently across platforms. Social media practitioners recommend not using cross-posting—sharing the same content across multiple platforms (Cyca, 2018)—so it would be valuable to explore Discover Cotton's stimuli posting across platforms.

Instagram has transformed the way that consumers shop on social media, and more consumers are using social media to discover new products (Iskier, 2022). Future research could be conducted to evaluate the effectiveness and impact of Discover Cotton's collaborative efforts with brand and retail partners (e.g., Revolve) and the effectiveness and impact of experiential marketing events and activations (e.g., New York Fashion Week) promoted on social media. For example, do partnerships with brands increase sales and change consumers' purchasing behaviors? Similarly, research could be conducted on the social media accounts of other commodity research and promotion boards to examine the effectiveness of their promotional efforts. Many other commodity boards use social media as a promotional and marketing tool within the agricultural industry. Examining their use of social media platforms and advertising strategies could benefit those who work in social media management and marketing.

Furthermore, agricultural brands or companies should use existing opportunities or create new opportunities to share agricultural information with their Instagram followers. Thus, agricultural-based organizations (i.e., Cotton, Inc.) could use social media in their strategic

campaigns to elicit any of the five personal responses. Such campaigns highlight research studies or production practices depending on the personal response they hope to elicit. Within those posts, they could use an array of stimuli (e.g., static images, videos) to reach followers. Although the current study revealed stimuli with the most response were static stimuli in carousel posts, other studies found video stimuli produce the most user response on Instagram (Chan & Allman-Farinelli, 2022; Habibi & Salim, 2021; Iskiev, 2022). We recommend social media professionals conduct analysis and evaluations of their brand's social media accounts to determine if their current social media strategies meet their brand's goals, metrics, and performance indicators. Social media are dynamic communication platforms that must be accompanied by a well-designed and executed social media strategy.

References

- Albors, J., Ramos, J. C., & Hervás, J. L. (2008). New learning network paradigm: Communities of objectives, crowdsourcing wikis and open source. *International Journal of Information Management*, 28, 194–202. <https://doi.org/10.1016/j.ijinfomgt.2007.09.006>
- American Psychological Association. (n.d.). *APA dictionary of psychology: Constant comparative analysis*. <https://dictionary.apa.org/constant-comparative-analysis>
- Barinka, A. (2022, October 26). *Meta's Instagram users reach 2 billion, closing in on Facebook*. Bloomberg. <https://www.bloomberg.com/news/articles/2022-10-26/meta-s-instagram-users-reach-2-billion-closing-in-on-facebook#xj4y7vzkg>
- Beach, R. H., Murray, B. C., Piggott, N. E., & Wohlgenant, M. K. (2002, July 28-31). *Interaction effects of promotion, research, and price support programs for U.S. cotton* [Paper presentation]. American Agricultural Economics Association Annual Meetings, Long Beach, CA, United States.
- Casaló, L. V., Flavián, C., & Ibáñez-Sánchez, S. (2017). Understanding consumer interaction on Instagram: The role of satisfaction, hedonism, and content characteristics. *Cyberpsychology, Behavior, and Social Networking*, 20(6), 369–375. <https://doi.org/10.1089/cyber.2016.0360>
- Chan, V., & Allman-Farinelli, M. (2022). Young Australian adults prefer video posts for dissemination of nutritional information over the social media platform Instagram: A pilot cross-sectional survey. *Nutrients*, 14(20), 1–12. <https://doi.org/10.3390/nu14204382>
- Cotton Incorporated. (n.d.-a). *About*. <https://www.cottoninc.com/about-cotton/>
- Cotton Incorporated. (n.d.-b). *Company timeline*. <https://www.cottoninc.com/about-cotton/history/company-timeline/>
- Cotton Incorporated. (n.d.-c). *Cotton sustainability goals*. <https://www.cottoninc.com/about-cotton/sustainability/cotton-sustainability/>
- Craik, K. H. (1968). The comprehension of the everyday physical environment. *Journal of the American Institute of Planners*, 34(1), 29–37.
- Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into Practice*, 39(3), 124–130. https://doi.org/10.1207/s15430421tip3903_2
- Cyca, M. (2018). *Stop posting the same message on social media and do this instead*. Hootsuite. <https://blog.hootsuite.com/cross-promote-social-media/>
- Delfino, D., & Antonelli, W. (2022, October 4). *A beginner's guide to Instagram, the wildly popular photo-sharing app with over a billion users*. Business Insider. <https://www.businessinsider.com/guides/tech/what-is-instagram-how-to-use-guide>

- Djafarova, E., & Bowes, T. (2021). 'Instagram made me buy it': Generation Z impulse purchases in fashion industry. *Journal of Retailing and Consumer Services*, 59. 1–9.
<https://doi.org/10.1016/j.jretconser.2020.102345>
- Dietrich, C., Buck, E., & Specht, A. (2015). Exploring the relationship between pre-school-aged animated television and agriculture: A content analysis of Disney Junior's Mickey Mouse Clubhouse. *Journal of Applied Communications*, 99(4). 1–13.
<https://doi.org/10.4148/1051-0834.1065>
- Emir, A. Halim, H., Hedre, A., Abdullah, D., Azmi, A., & Kamal, S. B. M. (2016). Factors influencing online hotel booking intention: A conceptual framework from stimulus-organism-response perspective. *International Academic Research Journal of Business and Technology*, 2(2). 129–134.
- Emplifi. (2018, July 17). *Instagram engagement: Everything you need to know*.
<https://emplifi.io/resources/blog/instagram-engagement>
- Food and Agriculture Organization. (2020, May 7). *Land use in agriculture by the numbers*.
<https://www.fao.org/sustainability/news/detail/en/c/1274219/>
- Forker, O. D., & Ward, R. W. (1993). *Commodity advertising: The economics and measurement of generic programs*. Lexington Books.
- Fortner, A. R., Lamm, A. J., Borron, A., Holt, J., & Moore, A. J. (2022). Exploring source credibility when communicating about agricultural science on Twitter. *Journal of Applied Communications*, 106(3). 1–16. <https://doi.org/10.4148/1051-0834.2436>
- Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to design and evaluate research in education* (8th ed.). McGraw-Hill.
- Habibi, S. A., & Salim, L. (2021). Static vs. dynamic methods of delivery for science communication: A critical analysis of user engagement with science on social media. *PLoS ONE*, 16(3). 1–15. <https://doi.org/10.1371/journal.pone.0248507>
- Hsieh, Y. L. (2006). Introduction. In S. Gordon & Y. L. Hsieh (Eds.), *Cotton: Science and technology*. (pp. xv-xx). Woodhead Publishing.
- Hirose, A. (2022, February 8). *How to hide likes on Instagram (and why it's even an option)*. Hootsuite. <https://blog.hootsuite.com/how-to-hide-likes-on-instagram/>
- Holsti, O. R. (1969). *Content analysis for the social sciences and humanities*. Longman Higher Education.
- Huang, G., Huang, J., Chen, X., & Zhu, Y. (2021). Recent advances and future perspectives in cotton research. *Annual Review of Plant Biology*, 72, 437–462.
<https://doi.org/10.1146/annurev-arplant-080720-113241>
- Irani, T., & Doerfert, D. L. (2013). Preparing for the next 150 years of agricultural communications. *Journal of Applied Communications*, 97(2). 6–13.
<https://doi.org/10.4148/1051-0834.1109>
- Iskief, M. (2022, February 16). *Hubspot's 2023 social media marketing report [Data from 1000+ global marketers]*. HubSpot. <https://blog.hubspot.com/marketing/hubspot-blog-social-media-marketing-report>
- Jacoby, J. (2002). Stimulus-organism-response reconsidered: An evolutionary step in modeling (consumer) behavior. *Journal of Consumer Psychology*, 12(1). 51–57.
https://doi.org/10.1207/S15327663JCP1201_05
- Kamboj, S., Sarmah, B., Gupta, S., & Dwivedi, Y. (2018). Examining branding co-creation in brand communities on social media: Applying the paradigm of stimulus-organism-

- response. *International Journal of Information Management*, 39. 169–185.
<https://doi.org/10.1016/j.ijinfomgt.2017.12.001>
- King, J. M., Cartmell II, D. D., & Sitton, S. (2006). Newspaper coverage of the bovine spongiform encephalopathy outbreak in the United States: A content analysis. *Journal of Applied Communications*, 90(3). 33–47. <https://newprairiepress.org/jac/vol90/iss3/6>
- Kleinheksel, A. J., Rockich-Winston, N., Tawfik, H., & Wyatt, T. R. (2020). Demystifying content analysis. *American Journal of Pharmaceutical Education*, 84(1). 127–137.
<https://www.doi.org/10.5688/ajpe7113>
- Kolbe, R. H., & Burnett, M. S. (1991). Content-analysis research: An examination of applications with directives for improving research reliability and objectivity. *Journal of Consumer Research*, 18(2). 243–250. <https://doi.org/10.1086/209256>
- Kotler, P., Burton, S., Deans, K., Brown, L., & Armstrong G. (2015). *Marketing* (9th ed.). Pearson Higher Education AU.
- Krippendorff, K. (2004). *Content analysis: Introduction to methodology*. SAGE Publications.
- Kurtzo, F., Hansen, M. J., Rucker, K. J., & Edgar, L. D. (2016). Agricultural communications: Perspective from the experts. *Journal of Applied Communications*, 100(1). 17–28.
<https://doi.org/10.4148/1051-0834.1019>
- Leaver, T., Highfield, T., & Abidin, C. (2020). *Instagram: Visual social media cultures*. Polity Press.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.
- Mazursky, D., & Jacob, J. (1986). Exploring the development of store images. *Journal of Retailing*, 62(2). 145–165.
- McCarthy, E. J. (1964). *Basic marketing*. Irwin.
- McLeod, A. N., McKee, V., Woodall, S., McKee, B., & Rumble, J. (2018). Why websites work: An examination of interdisciplinary agricultural center websites. *Journal of Applied Communications*, 102(4). 1–14. <https://doi.org/10.4148/1051-0834.2220>
- Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. MIT Press.
- Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). Jossey-Bass.
- Mitchell, A., Jurkowitz, M., Oliphant, J. B., & Shearer, E. (2020, July 30). *Americans who mainly get their news on social media are less engaged, less knowledgeable*. Pew Research Center. <https://www.pewresearch.org/journalism/2020/07/30/americans-who-mainly-get-their-news-on-social-media-are-less-engaged-less-knowledgeable/>
- Mollen, A., & Wilson, H. (2010). Engagement, telepresence and interactivity in online consumer experience: Reconciling scholastic and managerial perspectives. *Journal of Business Research*, 63(9 – 10). 919–925.
- Morris, O., Miller, J. D., & Whitehead, I. (2019). A website content analysis of corporate animal welfare messaging. *Journal of Applied Communications*, 103(4). 1–18
<https://doi.org/10.4148/1051-0834.2268>
- National Cotton Council of America. (n.d.). *The story of cotton: The importance of cotton*.
<https://www.cotton.org/pubs/cottoncounts/story/importance.cfm>
- National Cotton Council of America. (2013). *Frequently asked questions*.
<https://www.cotton.org/edu/faq/>
- National Science Board. (2022, May 4). *Science and technology: Public perceptions, awareness and information sources* [NSB-2022-7].
<https://nces.nsf.gov/pubs/nsb20227/information-sources-and-involvement>

- Pansari, A., & Kumar, V. (2017). Customer engagement: The construct, antecedents, and consequences. *Journal of the Academy of Marketing Science*, 45(3), 294–311. <https://doi.org/10.1007/s11747-016-0485-6>
- Pelletier, M. J., Krallman, A., Adams, F. G., & Hancock, T. (2020). One size doesn't fit all: A uses and gratifications analysis of social media platforms. *Journal of Research in Interactive Marketing*, 14(2), 269–284. <https://doi.org/10.1108/JRIM-10-2019-0159>
- Pew Research Center. (2021, April 7). *Social media fact sheet*. <https://www.pewresearch.org/internet/fact-sheet/social-media/#panel-c14683cb-c4f4-41d0-a635-52c4eeae0245>
- Ramprabha, K. (2017). Consumer shopping behavior and the role of women in shopping – a literature review. *Research Journal of Social Science & Management*, 7(8), 50–63.
- Reinares, P., & Garcia, L. (2012). Methods of improving the physical spaces of banking establishments. *International Journal of Bank Marketing*, 30(5), 376–389. <https://doi.org/10.1108/02652321211247426>
- Rogers-Randolph, T. M., Lundy, L. K., Harsh, J. L., & Rabon, R. (2018). #transformFFA: An analysis of social media content during the 2016 National FFA Convention. *Journal of Applied Communication*, 102(1), 1–11. <https://doi.org/10.4148/1051-0834.1773>
- Rusli, E. M. (2012, April 9). *Facebook buys Instagram for \$1 billion*. New York Times. <https://archive.nytimes.com/dealbook.nytimes.com/2012/04/09/facebook-buys-instagram-for-1-billion/>
- Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22, 63–75.
- Sides, G. (2022, May 4). *How to use Instagram Collab post to increase reach*. Hootsuite. <https://blog.hootsuite.com/instagram-collab-post/>
- Spangenberg, E. R., Crowley, A. E., & Henderson, P. W. (1996). Improving the store environment: Do olfactory cues affect evaluations and behaviors. *The Journal of Marketing*, 60(2), 67–80. <https://doi.org/10.2307/1251931>
- Sprout Social. (2023, March 23). *50+ of the most important social media marketing statistics for 2023*. <https://sproutsocial.com/insights/social-media-statistics/>
- Stahl, N. A., & King, J. R. (2020). Expanding approaches for research: Understanding and using trustworthiness in qualitative research. *Journal of Developmental Education*, 44(1), 26–28. <https://www.jstor.org/stable/45381095>
- Steede, G. M., Meyers, C., Li, N., Irlbeck, E., & Gearhart, S. (2016). A sentiment and content analysis of Twitter content regarding the use of antibiotics in livestock. *Journal of Applied Communications*, 102(4), 1–16. <https://doi.org/10.4148/1051-0834.2225>
- Stemler, S. (2001). An overview of content analysis. *Practical Assessment, Research, and Evaluation*, 7, 1–6. <https://doi.org/10.7275/z6fm-2e34>
- Textile Exchange. (2022, October 1). *Preferred fiber and materials market report*. <https://textileexchange.org/knowledge-center/reports/preferred-fiber-and-materials/>
- The Fabric of Our Lives. (n.d.). *Cotton fabrics*. <https://thefabricofourlives.com/cotton-fabrics#alpha>
- United Nations. (n.d.). *Global issues: Population*. <https://www.un.org/en/global-issues/population#:~:text=The%20world's%20population%20is%20expected,billion%20in%20the%20mid%2D2080s>

- United States Department of Agriculture [USDA]. (2016). *Global cotton production projected to rebound from 13-year low*. <https://www.ers.usda.gov/data-products/chart-gallery/gallery/chart-detail/?chartId=80037>
- United States Department of Agriculture. (2019). *2017 Census of Agriculture United States Summary and State Data*. https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1,_Chapter_1_US/usv1.pdf
- Ward, R. W. (2006). Commodity checkoff programs and generic advertising. *Choices*, 21(2). 55-60. <https://www.jstor.org/stable/10.2307/choices.21.2.0055>
- Weber, R. P. (1990). *Basic content analysis*. SAGE.
- Zote, J. (2022, April 14). *How to make a seamless Instagram carousel post*. Sprout Social. <https://sproutsocial.com/insights/instagram-carousel/>