



Journal of Applied Communications

Volume 104 | Issue 2

Article 2

Is it for generation me? A qualitative study exploring marketing and selling plants online to millennial-aged consumers

Lauri M. Baker
University of Florida

Kelsey M. Tully
Kansas State University

Deanna R. Sumners
Kansas State University

See next page for additional authors

Follow this and additional works at: <https://newprairiepress.org/jac>

 Part of the [Communication Technology and New Media Commons](#)



This work is licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 4.0 License](#).

Recommended Citation

Baker, Lauri M.; Tully, Kelsey M.; Sumners, Deanna R.; Jones, Ernest Francis; León-Reyes, Andrés E.; Boyer, Cheryl; and Peterson, Hikaru H. (2020) "Is it for generation me? A qualitative study exploring marketing and selling plants online to millennial-aged consumers," *Journal of Applied Communications*: Vol. 104: Iss. 2. <https://doi.org/10.4148/1051-0834.2289>

This Research is brought to you for free and open access by New Prairie Press. It has been accepted for inclusion in *Journal of Applied Communications* by an authorized administrator of New Prairie Press. For more information, please contact cads@k-state.edu.

Is it for generation me? A qualitative study exploring marketing and selling plants online to millennial-aged consumers

Abstract

As online selling of products like living plants increases, it is increasingly important to understand how millennial-aged consumers perceive the purchasing experience. New-media technologies like social media, e-newsletters, and other forms of digital communication are easily adopted by millennial-aged consumers. One of these tools, 360-degree video, offers novel ways to preview products offered online and look inside local brick-and-mortar stores, which can be visited in person. Sales of horticultural goods online have been slow to be developed by industry veterans, creating ample opportunities available to new ventures. This qualitative study used a series of three focus groups to answer the research questions of RQ1: What challenges exist for garden centers attracting millennials? RQ2: What are millennials preferences for purchasing live plants online? RQ3: What aspects of digital online marketing influence millennials to make decisions? RQ4: What are millennials preferences for 360-degree video? Results of this study indicate 360-degree video is not the preferred avenue for marketing plants online to millennials, however, high-quality photos and video with educational content and the use of social media could be effective.

Keywords

online selling, marketing, plants, 360-degree video, elaboration likelihood model

Cover Page Footnote/Acknowledgements

1) This research was funded by the Center for Rural Enterprise Engagement, a transdisciplinary, multi-institutional center focused on new-media marketing 2) Thank you to the following undergraduate researchers in helping with study design, data collection, and recruitment: Danielle Comstock, Amber Kelly, Carlee Meeks, and Valerie Nguyen.

Authors

Lauri M. Baker, Kelsey M. Tully, Deanna R. Sumners, Ernest Francis Jones, Andrés E. León-Reyes, Cheryl Boyer, and Hikaru H. Peterson

Is it for generation me? A qualitative study exploring marketing and selling plants online to millennial-aged consumers

Introduction

Horticultural businesses or the consumer preferred “plant industry” (Wilson, Barnes, & Irani, 2013), comprise a multibillion-dollar industry in the United States (Hall, Hodges, & Haydu, 2006; USDA, 2017). The plant industry includes businesses such as nurseries, greenhouse-grown plant producers, sod farms, garden centers (retail and wholesale), large box retailers with lawn and garden departments, landscape contractors, and maintenance firms (Hall et al., 2006). In the 2014 U.S. Census of Agriculture annual sales for the plant industry were valued at \$13.8 billion, representing an increase of approximately \$2 billion dollars since the previous census in 2009. Additionally, the number of farms increased by 8 percent during the previous five years to 23,221 (USDA, 2014). Hodges, Hall, Palma, and Khachatryan (2015) cite the total output for the plant industry, encompassing all sectors, was estimated at \$54 billion dollars and accounted for an estimated 1,105,526 jobs in 2013. Further, the ornamental plant industry is a very large employer and has a presence in nearly all communities across the U.S. However, very few plant industry businesses are selling live plants online (Baker, Boyer, Peterson, & King, 2018) though many other industries are moving toward e-commerce for consumer goods. This niche market within the agricultural industry has many specific and unique challenges facing it, such as a less informed consumer (Hicks, Page, Behe, & Fernand, 2005) and potentially dissatisfying past experiences that impact future purchasing decisions (Niemiera, Innis-Smith, & Leda, 1993). The purpose of the present study was to understand millennials engagement with purchasing plants online through the use of new-media technologies, like 360-degree video.

E-commerce is the buying and selling of goods online in a cashless, faceless system (Baker et al., 2018). Consumers view product profiles on websites with online shopping cart systems, make purchase decisions, and wait for the product to be delivered (generally via U.S. Post Office or a parcel service). Purchasing this way has become common in the U.S., with consumers expecting high quality goods delivered quickly and, preferably, at no extra cost. Shipping live plants is a unique challenge for e-commerce initiatives in the plant industry due to the fragile nature of the product and the lack of delicate delivery systems—systems which have been designed primarily for efficiency of delivery resulting in packages that frequently tumble in the transport process. Plants delivered via these traditional means can suffer from structural damage or separation of components (potting media, pot, and plant), rendering unmet consumer expectations upon box opening. Managing consumer expectations then becomes an important facet of educating customers in an online retail environment (Baker et al., 2018).

Consumers of live plant goods prefer to buy items that are healthy and from retailers with a large selection of plants (Behe & Barton, 2000). Additionally, Wilson et al. (2013) asserts consumers are more likely to purchase high quality, disease-free plants that contribute to a sense of well-being. However, prior to concluding a purchase, consumers are likely to consult plant care guides and the cost, implying plant retailers should ensure these elements are clearly visible to potential consumers (Behe & Barton, 2000). This aligns with the tenants of the Elaboration Likelihood Model, which indicates people are more likely to centrally process messages when they consider them deeply and scrutinize the messages (Petty & Cacioppo, 1984). This type of processing indicates people care more about the subject and are more likely to take action, unlike

peripherally processed messages where people see little relevance or personal connection to their lives or past experiences (Kruglanski & Van Lange, 2012).

To connect with millennials, many businesses use new-media marketing to promote products, anticipating increased revenue (Yao, Peterson, Boyer, & Baker, 2018). Twenge (2014) and Moore (2012) define millennials as those born between 1982 and 1999 and as a generation that possesses an unprecedented understanding of technology when compared with prior generations, such as: Generation X born roughly between 1961 and 1981 and the baby boomer generation born between 1943 and 1960. Other authors, according to Twenge (2014), refer to the millennials as being “civically oriented young people who want to save the planet.” The U.S. Census Bureau (2015) estimates there are 83.1 million youth born between 1982 and 2000, representing 25 percent of the nation’s population, implying the number of millennials now exceeds that of baby boomers.

Market research with millennials (NPD, 2018) revealed that while millennials shop more frequently at brick-and-mortar stores, they spend more money when shopping online. This supports data from the U.S. Census Bureau (2017) which showed that e-commerce sales have been continually rising, acquiring a high percentage of total retail sales (including brick-and-mortar retail sales). In the first quarter of 2017, retail e-commerce sales accounted for 8.5% of an estimated \$1.2 billion total retail sales (U.S. Census Bureau, 2017). As the number of millennials entering adulthood increases, their preference for e-commerce sales and their increased time spent online suggests that e-commerce in the plant industry may be a suitable market to target.

Theoretical Framework

The Elaboration Likelihood Model offers a conceptual framework to understand how millennials engage with the plant industry and make online purchasing decisions related to new media and plants. The Elaboration Likelihood Model has been used in marketing studies looking at how millennials respond to and engage with messages from environmental advertising (Moscato, 2018) to faith-based advertising (Dotson & Hyatt, 2000). Millennials excel in adopting new and emerging technologies (Botterill, Bredin, & Dun, 2015) and Elaboration Likelihood may offer an explanation for how people understand and use new technology (Bhattacharjee & Sanford, 2006). The Elaboration Likelihood Model offers two ways messages can be processed: centrally or peripherally. Central processing occurs when a person analyzes a message and all associated elements (Petty & Cacioppo, 1984). This type of processing requires the motivation to think about the information (Kruglanski & Van Lange, 2012) and a personal relevance (Petty & Cacioppo, 1984) or past context or experience with the information (King & Baker, 2018). Conversely, when a message is peripherally processed, a person makes a fast decision with little processing of the information and is less likely to act on or engage with this information (Kruglanski & Van Lange, 2012; Petty & Cacioppo, 1984).

360-degree Video

Eighty-one percent of 1,500 millennials surveyed in the U.S. reported using YouTube to stream video (Beaver & Boland, 2015). In March of 2015, YouTube introduced the use of 360-degree video to the platform (Hollister, 2015). Later in 2015, Facebook followed suit and introduced the use of 360-degree video, and in 2018 Facebook expanded 360-degree video use to Facebook Messenger (Hill, 2018). Three-hundred-and-sixty-degree video is video that encompasses a full 360 degrees of horizontal rotation, and 180 degrees of vertical rotation.

To determine the perception of viewers of 360-degree video, Google and Columbia Sportswear developed an advertising campaign focused on two U.S. Olympic skiers taking delight in a memorable skiing session in Chile. The aim of the video was to ascertain if 360-degree video advertising improved engagement over standard video advertising (Habig, 2016). The results of the study indicated the 360-degree advertisement had a lower retention rate than regular video; however, the 360-degree video had a higher click-through rate, which indicated viewers were more interested in the 360-degree video. Additionally, the interaction rate was higher for the 360-degree advertisement, and there was 41% more engagement with Columbia Sportswear's YouTube channel (Habig, 2016). This increased engagement with 360-degree video provides a potential connection with the Elaboration Likelihood Model's central processing tenant, which may mean viewers are more likely to connect with a message in this format and take action on messages that use 360-degree video as a medium.

Purpose and Research Questions

The purpose of this study was to explore millennials' processing and engagement related to the purchasing of plants in an online environment including the use of 360-degree video by garden centers. The end goal of this work is to assist the plant industry to better communicate with the millennial generation. Specific research questions that guided this study were:

RQ1: What challenges exist for garden centers attracting millennials?

RQ2: What are millennials preferences for purchasing live plants online?

RQ3: What aspects of digital online marketing influence millennials to make decisions?

RQ4: What are millennials preferences for 360-degree video?

Methods and Procedures

In order to address the research questions in this study, a qualitative research methodology was implemented. Specifically, three focus groups were conducted in May 2017, comprised of 18 participants divided as follows: five in one group, six in another, and seven in the third group. Participants were pursuing dissimilar majors across [The University] and each group was comprised of both male and female participants. Focus groups are ideal when exploring behavior and emotions related to a complex topic (Morgan, 1998) like online sales with new technologies. Additionally, focus groups offer a way to understand how people interact with a product or topic in a group situation, which, in turn, allows for a greater understanding of how people engage in real life (Morgan, 1998). A moderator's guide was developed encompassing the principles established by Krueger (1998). The guide consisted of thirteen open-ended questions related to participants' experience with 360-degree video, experience gardening, purchasing of plants, and their perceptions regarding 360-degree videos developed for this study. Questions were reviewed by a panel of experts comprised of an associate professor in agricultural communications and millennials majoring in agricultural communication, horticulture, and agricultural education. These reviewers were selected because they were considered experts in focus group methodology or because they had similar characteristics of focus group participants, as recommended by (Krueger, 1998). The study received approval from the Institutional Review Board prior to recruitment of participants. Focus groups were all moderated by the same, experienced individual who was assisted by multiple undergraduate researchers serving as assistant moderators. All focus groups were recorded, and assistant moderators took detailed notes to ensure an audit trail was maintained. The recorded audio was transcribed verbatim and the names and identifying information were removed to maintain participant confidentiality. Despite the findings of this

study not being generalizable to a larger audience, the findings may be transferable to other millennial populations and other similar small agricultural businesses.

Videos Developed for The Study

It was important to the researchers that 360-degree video be explored in a way that was feasible for small garden centers to implement. Thus, the 360-degree video was recorded using a lower-end personal use 360-degree video camera. The cost of the camera was just under \$300, which would allow for a small business owner to purchase a similar camera. Moreover, the personal-use camera was user friendly without a lot of complicated adjustments. Researchers shot the video in two different garden centers from multiple angles both inside and outside the garden centers. For the purpose of showing participants the videos in an appropriate context, a Facebook page was created and the 360-degree videos were uploaded onto the Facebook page. Sixteen 360-degree videos were uploaded along with a cover page and a profile image related to plants. Focus group participants were asked to use their smartphones to view the Facebook page and 360-degree videos in an effort to replicate the individual experience of viewing 360-degree videos. Follow-up questions and group discussion were used to mimic the social nature of Facebook and allow participants to discuss what they noticed, liked, and disliked about the videos and viewing experience. At the conclusion of each focus group the moderator recapped the discussion. Participants were requested to confirm if the moderator's perceptions of the discussion were correct or if the comments required amending. This served as a member check to help in establishing credibility of the data.

Data Analysis

Analysis was conducted using NVivo 11.4.2 with one lead coder and one secondary coder to review themes. This aligned with Glaser's constant comparative method to establish initial nodes and parent categories (Glaser, 1965). Deductive coding was used to allow themes to emerge from the data that reflected participants experiences with plants and online media. Additional analysis was conducted to explore consistent themes across groups and to note differences within groups. Internal consistency was assured through the comparison of the assistant moderators' notes and participants' recorded and transcribed responses.

Results

RQ1: What challenges exist for garden centers attracting millennials?

To probe responses to the final research question, focus group participants were asked questions regarding challenges that were posed when it came to attracting millennials using 360-degree videos. Themes prevalent to this question were: quality of 360-degree video and use of other social media platforms better suited for engaging millennials.

Quality of 360-degree video

Millennials are visual consumers and video quality is an important aspect to consider. Participants were all very vocal about the low quality of the 360-degree videos. It was apparent that if garden centers were to implement 360-degree videos they would need to spend more money to acquire a higher quality camera. One student mentioned, "Things just come together in a mass of color and if you were someone who actually knows what plants are supposed to look like and they are looking for something specific, you may not be able to tell if that plant is healthy or not." Another interviewer explains, "I think it depends on what type of lens you're using. Some of the ones I've

seen... get a little strange on the edges, fisheye-like at certain points which is just a technical limitation to a degree, but it can get a little weird if you try to focus on something and you can't because of the lens." When it came to viewing the selection of plants the garden center offered one student stated, "It was hard to tell what each individual plant looked like." Overall, quality was a major concern of the participants of all focus groups.

Use of other social media platforms better suited for engaging millennials

When asked about use of 360-degree video to market plants online, participants expressed a preference of interacting with other platforms or tools in social media. Many participants suggested the use of Facebook Live for videos, "Facebook Live could help. Have someone there from the store to answer questions while it's running." Another participant mentioned, "If you are wanting to go with a similar style, you could do a livestream of the greenhouse because you could take this video early in the growing season where it is a fully stocked place and you could come back a month later where there is nothing left." Participants also mentioned using Pinterest and Instagram as a source of marketing with photos. Participants wanted to see images of plants in arrangements and decorations for inspiration. Participants stated, "Pinterest [is a] good place to advertise," and "Instagram [is] popular."

RQ2: What are millennials preferences for purchasing live plants online?

In the quest for answers to this question, focus group participants were asked about their preferences for purchasing live plants online. Themes related to this question were: desire for small plants with vibrant colors, easy maintenance and the hesitancy to purchase live plants online.

Desire small plants with vibrant colors and easy maintenance

There was an overwhelming response from focus group participants of wanting smaller, easily maintained, and vibrantly colorful plants to choose from. One participant commented on the size of the plants pertaining to their living situation, "Students want indoor small plants." Another participant said the selection and color of plants plays a big role in their likelihood to purchase plants, "Seeing a variety of all the blooming plants in different colors would be attractive." One of the challenges participants encountered was envisioning how to use plants in a different setting, "It's hard to see a plant and visualize how it would look outside of the [garden] center."

Hesitant to purchase live plants

There was a significant negative response from focus group participants related to the purchase of live plants online. Many students were extremely hesitant about purchasing a live product via the internet and receiving it alive. One participant exclaimed, "[there is no] sure way to advertise a plant wouldn't die." Participants alluded to the fact that purchasing plants online would eliminate the emotional and tangible connection with the garden center experience. "[I don't] think everyone will... shop online for their horticulture needs, [I] want... to see them in person, [things are] always changing. You lose the interaction and instruction when you shop online. [It is] Not practical to shop online." Another participant expressed her/his concern in losing the personal relationship, which permits an individual to ask questions concerning gardening and plant education, "I feel like you have to be there in person because we are just looking at a video, if you really want to interact with someone you need to be there in person."

RQ3: What aspects of digital online marketing influence millennials to make decisions?

In pursuing responses to this query, focus group participants were asked about their purchasing decisions and what persuaded them to buy products. Themes related to this question were: purchasing decisions based on discounted items, purchasing decisions based on marketing, purchasing decisions based on new technology engagement, and needed education to enhance marketing and purchasing.

Purchasing decisions based on discounted items

All focus group participants were college students and they were asked to describe what influenced their decision(s) to purchase online. When it came to the decision to buy something online, the major attraction for this group of individuals were items on sale, coupons, and free add-ons. One student stated, “Signs of things on sale, advertisements placed in the video.” While many students mentioned that saving money via sales and freebies was a determining factor in purchasing goods, another student mentioned the safety of ... websites as another factor, “Secure sites to put credit card information.” The students, overall, were hesitant toward online shopping, especially in purchasing live plants online. A student claimed “[I] Don’t ... think everyone will always shop online for their horticulture needs, [I] want ... to see them (plants) in person, always changing. You lose the interaction and instruction when you shop online. Not practical to shop online.”

Purchasing decisions based on marketing

When it came to purchasing items online through use of 360-degree videos there was an overwhelming response to include more advertisements, personal statements, and meaningful plant education to increase the engagement of plant purchasing online. One student stated, “Personal recommendations, I see a lot of posts of social media of someone reviewing something and then people chiming in and saying it was also great. The backing of customers is better than the business promoting something.” Many students alluded to the idea of adding a more educational component to the videos to draw attention to the garden-center stores. A student elaborated, “Mostly educational experience. Going into sales, so [I] see ... the value using it as a marketing tactic.” There was also a lot of discussion around the use of 360-degree video as a means to survey the stock of plants a store has as well as advertise for certain events or plants on sale. However, this may not be enough to convince participants to acquire a plant(s) online, as one participant voiced, “Videos are good way to advertise and market but not a way to sell plants.”

Purchasing decisions based on new technology engagement

Many of the students in the focus groups found use of 360-degree videos to be “cool” and a new way of viewing things online. One student stated, “I feel it engages me more than just sitting there watching a video of someone just filming something.” Millennials liked that the videos added a sense of engagement and freedom, allowing them the option to pick and choose what they wanted to see. One student said, “[360-degree videos are] more interesting than normal video because you get to choose what you look at rather than what they want you to see.” There was a concern that the new technology could potentially create a roadblock for older generations, but the technology is representative of a new opportunity for younger generations to learn about and to interact with. A participant stated, “It holds a certain novelty appeal, it’s a new technology, and [I] don’t think a lot of people are utilizing it a lot or to its full potential. So, I think the business could talk about how they have this new way of letting people see what they have.”

Needed education to enhance marketing and purchasing

In all three focus groups, participants strongly agreed the videos lacked detailed descriptions that would help them be better educated to purchase plants. A student explained, “One way – teaching, great for horticulture setting, everyone wants to know how to take care of plants, have people talking about what is going on.” The students elaborated extensively on how incorporating education as part of the videos would be extremely beneficial in many aspects, “Have someone talking and explaining what is going on or what kind of plants are available.” millennials really liked the idea of easy access to information through new technologies. The concept of thinking smarter not harder really aligned well with this age group. One millennial mentioned, “More informational, quick way to learn a lot.”

RQ4: What are millennials’ preferences for 360-degree video?

In order to evaluate this research question, participants were shown 360-degree videos and asked questions pertaining to their preferences, decision making, and other social-media platforms related to the use of 360-degree videos. Discussion yielded the themes of: a desire for user-friendly access and the use of photos on social-media platforms improved decision making.

Desire for user-friendly access

Participants from all three focus groups mentioned positive as well as negative aspects to using 360-degree video for the marketing of garden centers. One student mentioned, “I like being able to interact and look around at the different plants, so I think it can be useful.” Another student stated, “I really appreciate how inclusive 360-degree videos are. So, when you are shooting a regular video you just have one shot and you are trying to hide what is in the background or you’re trying to focus on one thing, but with 360 [degree] video you have the choice to look around to see what is going on...” Conversely, another student brought up the issue of user ease through the lens of compatibility, “If it doesn’t work, then you can’t watch the video at all, and I have that issue. You can’t watch the video in general without the 360 capability.”

Use of photos on social media improved decision making.

Students’ opinions pertaining to the use of 360-degree video were disjointed; however, all three focus groups agreed that the use of engaging pictures was beneficial and preferential in their decision making. One student specified, “[I’d be] more inspired to buy plants when I can see a picture of an arrangement, like what people do with plants personally versus the whole garden center.” Another individual conveyed the thought of using Instagram, “Instagram is a good place for advertising...and it's convenient.” One student mentioned their inspiration and desire for a gardening project came from Pinterest, “Pinterest is good in relation to home and gardening décor, looking at a project and [I] would turn to Pinterest for inspiration.”

The overall discussion related to the use of photos on social media was positive in nature, with students commenting on the necessity of photos for decision making. In many cases, students indicated a preference for photos above all other content. Also, participants commented on the instantaneous nature of photos and how these could positively impact decision making related to online purchases.

Conclusions and Discussions

Millennials who participated in this study were interested in 360-degree video and thought it could be one piece of the marketing mix for selling plants in an online environment. Similar to what Habig (2016) found related to use of 360-degree video in advertising, participants in this study

indicated it might encourage initial engagement because of its novelty. This finding may mean millennials will be more likely to process the content centrally (Kruglanski & Van Lange, 2012; Petty & Cacioppo, 1984), which might make them more likely to act on the content by purchasing or going to visit a garden center. While not all participants had extensive viewing experience with 360-degree video, they liked the idea of businesses allowing them to interact and see more than one angle. Participants explained that 360-degree video offered more transparency from businesses, which they viewed as positive.

Participants expressed a desire for user-friendly access to photo and video content. This could potentially create a problem for small agricultural businesses in that 360-degree video cannot play on all devices, specifically it does not currently work on the web browser Safari. Additionally, if the video doesn't play right away or won't work at all, millennials may turn away from the business website or Facebook page with negative feelings, which may result in peripheral processing and lower their intent to purchase (Kruglanski & Van Lange, 2012; Petty & Cacioppo, 1984). However, participants in this study suggested the use of 360-degree video in conjunction with quality photos and other social media such as Instagram and Pinterest.

Specifically, millennials in this study wanted photo and video with brightly colored plants that were easy to maintain and sized appropriately for a small-scale apartment or living space. These aspects and availability of the products that cater specifically to millennials needs could enhance their connection to plants and to a specific business or brand, allowing a small business to build a relationship with a customer and be their "go to" for future plant purchases and education on all aspects of the plant industry.

Participants indicated they would engage with video, 360-degree and other formats, which confirms work by Adler et al. (2003) that found subjects viewing videos had a greater degree of emotion than subjects viewing text and still images. This indicates millennials want to engage with and centrally process video and other multi-media related to the plant industry. However, use of video on Instagram or Facebook Live was preferred by participants for marketing plants online. It should be noted that the use of these platforms was discussed by participants as developing posts that included the features of high-quality video and strong, clear photography. Millennials were not asking for advertisements on these platforms. Boosted posts may be an option to attract new followers, however, advertisements were not the focus of this study and were not a direct recommendation from this research. Advertisements were mentioned by participants as a way to use promotional content within posts and videos. Mentioning these formats presumably related to the accurate depiction of plants, and would allow them to explore content more deeply, again connecting with an opportunity for central processing according to the elaboration likelihood model (Kruglanski & Van Lange, 2012; Petty & Cacioppo, 1984).

Concerning video and photos, participants expressed the desire for more educational information, which supports Hicks et al.'s (2005) assertion that an emphasis of garden center marketing should be placed on education, as this was a struggle specific to the sector. While the majority of participants had positive feelings toward plants, they indicated they did not know how to care for plants properly and would need detailed instructions and ideas on how to care for, arrange, and use plants in their lives. This finding again confirms that participants in this study had a desire to centrally process information related to plants and gardening. Furthermore, participants also cited use of photos on social media contributed to improved decision making. Focus group participants mentioned they were more inclined to visit and or make a purchase from a business that had high resolution pictures or video of products currently in stock. If photos or video seem to be old, grainy or unclear, participants were less likely to remain interested in the product and

vendor. Participants shared that educational videos would positively influence purchasing decisions, which aligns with Mangold and Smith's (2012) finding that if a business has a large number of good reviews from customers, it is more likely people will purchase its products

Participants in this study were turned off by the low quality of 360-degree video available through the low-priced camera used in this study. This presents a problem for small garden centers and other small businesses who likely cannot afford high-end equipment that is complicated to use. This finding could mean millennials would only peripherally process information from low-quality video. As a result, information delivered from low-quality media might force millennials to make an immediate peripherally-processed decision that this business does not align with their lifestyle and expectations, and they may not purchase or visit a store.

While millennials are part of a generation that is comfortable with technology, participants in this study were hesitant to purchase plants online. It is possible this can be attributed to their lack of knowledge about plants or a dissatisfying past experience with the life duration of the purchase (Niemiera et al., 1993). If more education was available prior to purchasing a plant, it is possible millennials would be willing and interested in purchasing plants in an online environment, as they indicated in this study their interest in receiving and engaging with educational information related to the plant industry.

Recommendations

Based on this study, it is recommended that garden centers and other similar businesses focus on video and photo shared through social media. These photos and videos should include plants with bright colors that are sold in small containers. Videos and photos should contain detailed care instructions and educational messages. While 360-degree video may offer initial engagement, if a business selling plants cannot afford high quality video, it should focus on other types of video and images. Specifically, Facebook Live and Instagram were platforms recommended for greater engagement. Pinterest can be used to share ideas on how plants can be used and maintained in small spaces. Specifically, videos and photos should include plant names, growing instructions, and business information on social media.

Future research should explore the use of Facebook Live and Instagram to market plants to millennials. Specifically, more research should be conducted on what influences millennials' purchasing decisions related to plants in an online environment including following up using a larger sample to clearly ascertain millennials central and peripheral processing with this type of marketing content. Additionally, scenarios using Facebook Live or Instagram should be constructed to test millennials' purchasing decisions and/or decisions to engage in subscription services or giveaway activities through the lens of social influence theory, focusing on compliance. Social influence theory is the change in one's attitudes, behavior, or beliefs due to external pressure that is real or imagined (Cialdini, 2003), and within that, compliance focuses particularly on behavior change due to a direct appeal (Guadagno & Cialdini, 2009).

It is a limitation of this study that participants were all from the Midwest where perceptions related to plants and gardening may be different than other areas. Future research should explore if these findings hold true in other areas of the country. Additionally, the sample size was small, although appropriate for qualitative work, thus more work should be done to confirm if the findings of this study mirror other populations and could be generalized to millennials outside this specific study.

References

- Baker, L. M., Boyer, C. R., Peterson, H. H., & King, A. E. H. (2018). Online opportunities: A quantitative content analysis benchmark study of online retail plant sales. *HortTechnology* 28, 516-523. DOI: [10.21273/HORTTECH03901-17](https://doi.org/10.21273/HORTTECH03901-17)
- Behe, B. & Barton, S. (2000). Consumer perceptions of product and service quality attributes in six U.S. states. *Journal of Environmental Horticulture*, 18(2), 71-78. hrijournal.org/doi/abs/10.24266/0738-2898-18.2.71
- Bhattacharjee, A. & Sanford, C. (2006). Influence processes for information technology acceptance: An elaboration likelihood model, *MIS Quarterly*, 30(4), 805-825. DOI: [10.2307/25148755](https://doi.org/10.2307/25148755)
- Botterill, J., Bredin, M., & Dun, T. (2015). Millennials' media use: It is a matter of time. *Canadian Journal of Communication*, 40(3), 537-551. DOI: [10.22230/cjc.2015v40n3a2884](https://doi.org/10.22230/cjc.2015v40n3a2884)
- Cialdini, R. B. (2003) *Influence: Science and Practice* (4th edition). New York, New York: Harper Collins.
- Dotson, M. & Hyatt, E. (2000). Religious symbols as peripheral cues in advertising: A replication of the elaboration likelihood model. *Journal of Business Research*. 48(1), 63-68. DOI: [10.1016/S0148-2963\(98\)00076-9](https://doi.org/10.1016/S0148-2963(98)00076-9)
- Glaser, B. (1965). The constant comparative method of qualitative analysis. *Social Problems*, 12(4), 436-445. DOI: [10.2307/798843](https://doi.org/10.2307/798843)
- Guadagno, R. E., & Cialdini, R. B. (2009). *Online Persuasion and Compliance: Social Influence on the Internet and beyond* (Chapter 4). New York, New York: Oxford University Press.
- Habig, J. (2016). Is 360 video worth it? *Think with Google*. Retrieved from www.thinkwithgoogle.com/advertising-channels/video/360-video-advertising/
- Hall, C. R., Hodges, A. W., & Haydu, J. J. (2006). The economic impact of the green industry in the United States. *HortTechnology*, 16(2), 345-353. DOI: [10.21273/HORTTECH.16.2.0345](https://doi.org/10.21273/HORTTECH.16.2.0345)
- Hicks, J., Page, T., Behe, B., Dennis, J. & Fernandez, T. (2005). Delighted consumers buy again. *Journal of Consumer Satisfaction Dissatisfaction and Complaining Behavior*, 18(94), 94-104. jcsdcb.com/index.php/JCSDCB/article/view/57
- Hill, P. (2018). Facebook introduces 360-degree photos and HD video to messenger. *Neowin.net*. Retrieved from www.neowin.net/news/facebook-introduces-360-degree-photos-and-hd-video-to-messenger/

- Hodges, A. W., Hall, C. R., Palma, M. A., & Khachatryan, H. (2015). Economic contributions of the green industry in the United States in 2013. *HortTechnology*, 25 (6), 805-814. DOI: [10.21273/HORTTECH.25.6.805](https://doi.org/10.21273/HORTTECH.25.6.805)
- Hollister, S. (2015). YouTube's ready to blow your mind with 360-degree videos. *Gizmodo.com*. Retrieved from gizmodo.com/youtubes-ready-to-blow-your-mind-with-360-degree-videos-1690989402
- King, A. E. H. & Baker, L. M. (2018). A perplexing process: Understanding how agricultural producers process best management practice information, *Journal of Applied Communications*, 102(3). DOI: [10.4148/1051-0834.2190](https://doi.org/10.4148/1051-0834.2190)
- Krueger, R. A. (1998). *Developing questions for focus groups*. Thousand Oaks, California: SAGE Publications, Inc.
- Kruglanski, A. W. & Van Lange, P. A. M. (2012). *Handbook of theories of social psychology*. London, England: Sage. p. 224–245.
- Mangold, W. G. & Smith, K. T. (2012). Selling to millennials with online reviews. *Business Horizons* (55)2, 141-153. DOI: [10.1016/j.bushor.2011.11.001](https://doi.org/10.1016/j.bushor.2011.11.001)
- Moore, M. (2012). Interactive media usage among millennial consumers. *The Journal of Consumer Marketing*, 29(6), 436-444. doi.org/10.1108/07363761211259241
- Morgan, D. L. (1998). *The focus group guidebook*. Thousand Oaks, California: SAGE Publications, Inc.
- Moscato, D. (2018). Clearcut persuasion? Audience cognition of mediated environmental advertising through the lens of the elaboration likelihood model, *Journal of Public Interest Communications*, 2(1), 64-84. DOI: [10.32473/jpic.v2.i1.p64](https://doi.org/10.32473/jpic.v2.i1.p64)
- Niemiera, A. X., Innis-Smith, J., & Leda, C. E. (1993). Survey of garden center customer informational and marketing needs. *Journal of Environmental Horticulture*, 11(1), 25-27. hrijournal.org/doi/abs/10.24266/0738-2898-11.1.25
- NPD. (2018). What makes a millennial spend big? *The NPD Group, Inc.* Retrieved from www.npd.com/wps/portal/npd/us/news/thought-leadership/2017/what-makes-a-millennial-spend-big/
- Petty, R. E. & Cacioppo, J. T. (1984). Source factors and the elaboration likelihood model of persuasion. *Advances in Consumer Research* volume 11, eds. Thomas C. Kinnear, Provo, UT: Association for Consumer Research, Pages: 668–672. Retrieved from www.acrwebsite.org/volumes/6328/volumes/v11/NA-11
- Twenge, J. M. (2014). *Generation me: Why today's young American's are more confident, assertive, entitled—and more miserable than ever before*. Simon & Shuster, New York, New York.

- United States Census Bureau. (2015). *Millennials outnumber Baby Boomers and are far more diverse*, *Census Bureau Reports*. Retrieved from www.census.gov/newsroom/press-releases/2015/cb15-113.html
- United States Census Bureau. (2017). *Quarterly retail e-commerce sales 1st quarter 2017*. Retrieved from www2.census.gov/retail/releases/historical/ecom/17q1.pdf
- United States Department of Agriculture [USDA]. (2014). *2014 Census of Horticulture Specialties*. Retrieved from www.nass.usda.gov/Publications/AgCensus/2012/Online_Resources/Census_of_Horticulture_Specialties/
- United States Department of Agriculture. (2017). *United States Agricultural Census 2017: Market value of agricultural products sold including landlord's share, food marketing practices, and value-added products: 2017 and 2012*. www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1,_Chapter_1_US/st99_1_0002_0002.pdf
- Wilson, K., Barnes, C., & Irani, T. (2013). An exploration of consumer perceptions of plants and plant characteristics: A qualitative study of Florida plant and garden consumers. *Journal of Applied Communications*, 97(3). DOI: [10.4148/1051-0834.1113](https://doi.org/10.4148/1051-0834.1113)
- Yao, B., Shanoyan, A., Peterson, H. H., Boyer, C. R., & Baker, L. M. (2018). The use of new-media marketing in the green industry: Analysis of social media use and impact on sales. *Agribusiness*. DOI: doi.org/10.1002/agr.21581