

Courting the consumer: Consumer preferences and engagement with social-media marketing and
horticultural businesses

by

Deanna Rose Reid

B.S., Ferrum College, 2013

B.S., Ferrum College, 2013

B.A., Ferrum College, 2013

A THESIS

submitted in partial fulfillment of the requirements for the degree

MASTER OF SCIENCE

Department of Communications and Agricultural Education
College of Agriculture

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2020

Approved by:

Major Professor
Dr. Lauri M. Baker

Copyright

© Deanna Rose Reid 2020

Abstract

In recent years, horticultural industry changes, local food movements, fluctuating consumer perceptions and motivations to buy fresh produce and plants, and new online marketing opportunities have impacted small and rural horticultural businesses. As horticultural product shopping habits have changed and advances in social media technology have been made, horticultural businesses need to update marketing practices. The purpose of this study was achieved through research objectives and a research question which defined relevant and effective social-media post components in regard to consumer likelihood of online social-media engagement, willingness to travel, and willingness to purchase horticultural goods. . Previous research confirmed social media, specifically Facebook, allows horticultural businesses to connect with potential clients; however, research shows that business owners are uncertain about how to transition from using traditional-media marketing to social-media marketing. Additionally, business owners have different opinions than their consumers about the most effective use of Facebook marketing. Being aware of preferences and audience's desires allows horticultural businesses to create effective social-media marketing content that will increase sales and profit. This empirical research was conducted to determine the effects of Facebook posts and images on horticultural consumer engagement and purchasing behaviors While attracting attention to a featured product and making advertising campaigns attractive to consumers is relevant, this study sought to operationalize consumer central processing through the framework of social-media engagement; therefore, the ELM was the most relevant to use for identifying consumer Facebook content preferences for horticultural businesses. The ELM, introduced in 1981 by Petty and Cacioppo, states that messages with information relevant and thought-provoking to the recipient are far more likely to stimulate central processing than advertisements

with which people cannot connect. Social-media post components that are appealing to consumers receive the most amount of interaction and central processing. Emotion toward advertisements and images guides cognitive processing, so appealing to consumers' needs and desires is important. In order to determine what type of social-media content was most effective and engaging, orthogonal conjoint design was used. Three online surveys featuring common horticultural products, garden petunias (*Petunia hybrid*), bell peppers (*Capsicum annuum*), and apples (*Malus pumila*), were used to represent bedding plant, direct-marketed produce, and pick-your-own produce businesses in the horticultural industry and were disseminated to Midwestern U.S. residents. Survey questions asked about consumer preferences for and likelihood of engagement with horticultural business posts on social media and the likelihood of purchasing horticultural products after viewing Facebook posts. Results of this study show features of Facebook posts do impact consumer engagement. Consumers are more likely to "like" posts, as the "like" emoji is the default reaction on Facebook, thus, interaction requires little effort. Promotional messages (672, 54.1%) were found to be the most engaging in horticultural Facebook posts. This study found bedding plant posts featuring petunias were preferred by consumers over direct-marketed and pick-your-own produce posts containing images of and information about bell peppers and apples, respectively. Flowers garnered the most positive reactions; whereas, apples and peppers received a mixture of mostly positive and some negative emoji reactions, indicating flowers are more popular than produce among Midwestern consumers. Produce and food items are considered necessity goods; therefore, it is possible consumers were generally less interested in the produce featured in this study. Distance of a business's location from social-media users' residence also influenced engagement, and most consumers were willing to "like" posts from businesses located one hour away or in the region.

Respondents were less willing to share or comment on posts, in general, but were especially unlikely to do so for businesses outside of their region or located elsewhere in their state of residence. When asked about likelihood of purchasing horticultural products after viewing Facebook posts, all survey respondents indicated, in general, a higher likelihood of purchasing in-store from horticultural businesses after viewing posts featuring people with products ($n = 754$, 63.5%) and educational messages ($n = 654$, 52.7%). Bedding plant consumers were more willing to purchase horticultural products after seeing them featured on Facebook than direct-marketed and pick-your-own produce shoppers. Results of this study show promotional and educational messages and images featuring products at a business or people with products are the most engaging and evoke emotion, thus, should be incorporated in independent horticultural business social-media campaigns.

Keywords: elaboration likelihood model, horticultural marketing, bedding plants, direct-marketed produce, pick-your-own produce, social media, Facebook, social-media marketing

Table of Contents

List of Figures	xiv
List of Tables	xv
Acknowledgements	xxviii
Chapter 1 - Introduction.....	1
1.1 Horticultural Products.....	2
1.2 Online & Social-Media Marketing	3
1.3 Elaboration Likelihood Model & Consumer Preferences.....	4
1.4 Statement of the Problem.....	4
1.5 Purpose of Study & Research Objectives	5
1.6 Summary.....	7
1.7 Definitions of Key Terms	9
Chapter 2 - Review of Literature	12
2.1 Industry Background.....	12
2.2 Bedding Plants: Petunias	15
2.3 Direct-Marketed Produce: Bell Peppers	15
2.4 Pick-Your-Own Produce: Apples	16
2.5 Elaboration Likelihood Model (ELM).....	17
2.6 History of Marketing & Online Marketing.....	20
2.7 History & Importance of Facebook	23
2.8 Role of Images & Content in Online Marketing.....	24
2.9 Reaction Emojis on Facebook	25
2.10 Social-Media Marketing Preferences.....	27
2.11 Agritourism & Local Foods	30
2.12 Consumer Willingness to Pay & Willingness to Travel to Purchase Food	31
2.13 Summary.....	33
Chapter 3 - Methodology	34
3.1 Research Objectives.....	34
3.2 Research Question	34
3.3 Design of the Study.....	35

3.4 Instrumentation	36
3.4.1 Pretesting.....	38
3.5 Dissemination	55
3.6 Data Analysis	57
3.6.1 Research Objectives.....	57
3.6.2 Research Question.	59
3.7 Potential Limitations.....	60
3.8 Summary.....	61
Chapter 4 - Results.....	62
4.1 Survey Sample	62
4.2 Likelihood & Type of Reaction (RO1).....	71
4.2.1 Bedding plant.	72
4.2.1.1 Message.....	72
4.2.1.1.1 Frequencies.	72
4.2.1.1.2 Means.	77
4.2.1.2 Image Component.....	79
4.2.1.2.1 Frequencies.	79
4.2.1.2.2 Means.....	83
4.2.1.3 Distance.....	85
4.2.1.3.1 Frequencies.	85
4.2.1.3.2 Means.....	90
4.2.2 Direct-Marketed Produce.....	92
4.2.2.1 Message.....	92
4.2.2.1.1 Frequencies.	92
4.2.2.1.2 Means.....	96
4.2.2.2 Image Component.....	98
4.2.2.2.1 Frequencies.	98
4.2.2.2.2 Means.....	102
4.2.2.3 Distance.....	104
4.2.2.3.1 Frequencies.	104
4.2.2.3.2 Means.....	109

4.2.3 Pick-your-own Produce	111
4.2.3.1 Message.....	111
4.2.3.1.1 Frequencies.	111
4.2.3.1.2 Means.	116
4.2.3.2 Image component.....	118
4.2.3.2.1 Frequencies.	118
4.2.3.2.2 Means.	122
4.2.3.3 Distance.....	124
4.2.3.3.1 Frequencies.	124
4.2.3.3.2 Means.	129
4.2.4 Total Likelihood of Reaction	131
4.2.4.1 Message.....	131
4.2.4.1.1 Frequencies.	131
4.2.4.1.2 Means.	136
4.2.4.2 Image component.....	138
4.2.4.2.1 Frequencies.	138
4.2.4.2.2 Means.	142
4.2.4.3 Distance.....	144
4.2.4.3.1 Frequencies.	144
4.2.4.3.2 Means.	149
4.2.5 Willingness to Engage	151
4.2.6 Bedding Plant.....	155
4.2.6.1 Message.....	155
4.2.6.1.1 Frequencies.	155
4.2.6.1.2 Means.	155
4.2.6.2 Image component.....	157
4.2.6.2.1 Frequencies.	157
4.2.6.2.2 Means.	157
4.2.6.3 Distance.....	159
4.2.6.3.1 Frequencies.	159
4.2.6.3.2 Means.	159

4.2.7 Direct-marketed produce.	161
4.2.7.1 Message.....	161
4.2.7.1.1 Frequencies.	161
4.2.7.1.2 Means.	161
4.2.7.2 Image component.....	163
4.2.7.2.1 Frequencies.	163
4.2.7.2.2 Means.	163
4.2.7.3 Distance.....	165
4.2.7.3.1 Frequencies.	165
4.2.7.3.2 Means.	165
4.2.8 Pick-your-own produce.....	168
4.2.8.1 Message.....	168
4.2.8.1.1 Frequencies.	168
4.2.8.1.2 Means.	168
4.2.8.2 Image component.....	170
4.2.8.2.1 Frequencies.	170
4.2.8.2.2 Means.	170
4.2.8.3 Distance.....	172
4.2.8.3.1 Frequencies.	172
4.2.8.3.2 Means.	172
4.2.9 Total Willingness to Engage.	175
4.2.9.1 Message.....	175
4.2.9.1.1 Frequencies.	175
4.2.9.1.2 Means.	175
4.2.9.2 Image component.....	177
4.2.9.2.1 Frequencies	177
4.2.9.2.2 Means.	177
4.2.9.3 Distance.....	179
4.2.9.3.1 Frequencies	179
4.2.9.3.2 Means.	179
4.2.10 Type of Reaction.....	181

4.2.10.1 Bedding Plants.....	181
4.2.10.2 Direct-Marketed Produce.....	182
4.2.10.3 Pick-your-own produce.....	183
4.2.10.4 Total Type of Reaction.....	184
4.3 Likelihood of Purchase (RO2).....	185
4.3.1 Bedding plant.....	186
4.3.1.1 Message.....	186
4.3.1.1.1 Frequencies.....	186
4.3.1.1.2 Means.....	190
4.3.1.2 Image component.....	192
4.3.1.2.1 Frequencies.....	192
4.3.1.2.2 Means.....	196
4.3.2 Direct-marketed produce.....	198
4.3.2.1 Messages.....	198
4.3.2.1.1 Frequencies.....	198
4.3.2.1.2 Means.....	202
4.3.2.2 Image component.....	204
4.3.2.2.1 Frequencies.....	204
4.3.2.2.2 Means.....	208
4.3.3 Pick-your-own produce.....	210
4.3.3.1 Message.....	210
4.3.3.1.1 Frequencies.....	210
4.3.3.1.2 Means.....	214
4.3.3.2 Image component.....	216
4.3.3.2.1 Frequencies.....	216
4.3.3.3.2 Means.....	220
4.3.4 Total purchase likelihood.....	222
4.3.4.1 Message.....	222
4.3.4.1.1 Frequencies.....	222
4.3.4.1.2 Means.....	226
4.3.4.2 Image component.....	228

4.3.4.2.1	Frequencies.	228
4.3.4.2.2	Means.	232
4.4	Willingness to Travel to Purchase (RO3).....	234
4.4.1	Bedding plant.	234
4.4.1.1	In-store purchase likelihood.....	234
4.4.1.1.1	Frequencies.	234
4.4.1.1.2	Means.	235
4.4.1.2	Online purchase likelihood.	235
4.4.1.2.1	Frequencies.	235
4.4.1.2.2	Means.	236
4.4.1.3	General purchase likelihood.	236
4.4.1.3.1	Frequencies.	236
4.4.1.3.2	Means.	237
4.4.2	Direct-marketed produce.	243
4.4.2.1	In-store purchase likelihood.....	243
4.4.2.1.1	Frequencies.	243
4.4.2.1.2	Means.	243
4.4.2.2	Online purchase likelihood.	244
4.4.2.2.1	Frequencies.	244
4.4.2.2.2	Means.	244
4.4.2.3	General purchase likelihood.	245
4.4.2.3.1	Frequencies.	245
4.4.2.3.2	Means.	245
4.4.3	Pick-your-own produce.....	252
4.4.3.1	In-store purchase likelihood.....	252
4.4.3.1.1	Frequencies.	252
4.4.3.1.2	Means.	252
4.4.3.2	Online purchase likelihood.	253
4.4.3.2.1	Frequencies.	253
4.4.3.2.2	Means.	253
4.4.3.4	General purchase likelihood.	254

4.4.3.4.1	Frequencies.	254
4.4.3.4.2	Means.	254
4.4.4	Total willingness to travel.	260
4.4.4.1	In-store purchase likelihood.	260
4.4.4.1.1	Frequencies.	260
4.4.4.1.2	Means.	260
4.4.4.2	Online purchase likelihood.	261
4.4.4.2.1	Frequencies.	261
4.4.4.2.2	Means.	261
4.4.4.3	General purchase likelihood.	262
4.4.4.3.1	Frequencies.	262
4.4.4.3.2	Means.	262
4.4.5	Employment and Willingness to Travel	269
4.5	Willingness to Engage Similarities across Horticultural Products (RQ1)	271
4.5.1	Message & Image component.	271
4.5.2	Distance.	272
4.6	Summary	274
Chapter 5	- Discussion, Conclusions, & Recommendations	275
5.1	Conclusions & Discussion	279
5.1.1	Likelihood & Type of Reaction (RO1)	279
5.1.2	Likelihood of Purchase (RO2)	286
5.1.3	Willingness to Travel to Purchase (RO3)	288
5.1.4	Willingness to Engage Similarities across Horticultural Products (RQ1)	291
5.2	Recommendations	292
5.2.1	Research Recommendations.	292
5.2.2	Literature Recommendations.	295
5.2.3	Theory.	296
5.2.4	Best Practice Recommendations.	296
5.3	Summary	299
References	301
Appendix A	- Institutional Review Board Approval	316

Appendix B - Bedding Plant Survey.....	317
Appendix C - Direct-Market Produce Survey	354
Appendix D - Pick-Your-Own Produce Survey	390
Appendix E - Demographics Tables	426

List of Figures

<i>Figure 2.1</i> Facebook reaction emoji options. Reprinted from <i>Facebook Brand Resource Center</i> . Retrieved from https://en.facebookbrand.com/assets/reactions/	27
<i>Figure 3.1</i> Pretest image of woman and child with petunias.....	41
<i>Figure 3.2</i> Pretest image of petunia flowers.....	42
<i>Figure 3.3</i> Pretest image of petunias in greenhouse.....	43
<i>Figure 3.4</i> Pretest image of red bell pepper.....	44
<i>Figure 3.5</i> Pretest image of father and son cutting bell peppers.	45
<i>Figure 3.6</i> Pretest image of girl eating apple.....	46
<i>Figure 3.7</i> Pretest image of apples.	47
<i>Figure 3.8</i> Pretest image of pick-your-own apple orchard.....	48
<i>Figure 4.1</i> Percentage of survey participants' reported ethnicity/race and Midwestern population ethnicity/race as reported by the U.S. Census Bureau (2107).	64
<i>Figure 4.2</i> Percentage of survey participants' reported income and Midwestern population income as reported by the U.S. Census Bureau (2017).	66
<i>Figure 4.3</i> Percentage of reported survey participant and Midwestern population education levels as reported by the U.S. Census Bureau (2017).	68

List of Tables

Table 3.1 <i>Conjoint orthogonal design used to create mock Facebook posts for all horticultural product surveys.</i>	37
Table 3.2 <i>Pretest responses when asked for three words that best describe image of woman and child with petunias.</i>	41
Table 3.3 <i>Pretest responses when asked for three words that best describe image of petunia flowers.</i>	42
Table 3.4 <i>Pretest responses when asked for three words that best describe image of petunias in greenhouse.</i>	43
Table 3.5 <i>Pretest responses when asked for three words that best describe red bell pepper image</i>	44
Table 3.6 <i>Pretest responses when asked for three words that best describe image of father and son cutting bell peppers.</i>	45
Table 3.7 <i>Pretest responses when asked for three words that best describe image of girl eating apple</i>	46
Table 3.8 <i>Pretest responses when asked for three words that best describe image of apples.</i>	47
Table 3.9 <i>Pretest responses when asked for three words that best describe image of pick-your-own apple orchard.</i>	48
Table 3.10 <i>Pretest responses to bedding plant lifestyle message "Bring color into your life." ...</i>	49
Table 3.11 <i>Pretest responses to educational message "Give your petunias a 'haircut' two weeks after planting to improve blooming."</i>	50
Table 3.12 <i>Pretest responses to pick-your-own produce lifestyle message "Family memories made here."</i>	51
Table 3.13 <i>Pretest responses to direct-marketed produce educational message "Red ones have the highest level of vitamin C."</i>	52
Table 3.14 <i>Pretest responses to direct-marketed produce lifestyle message "Sweet life."</i>	53
Table 3.15 <i>Pretest responses to pick-your-own produce lifestyle message "Two dollars off per quarter peck."</i>	54
Table 3.16 <i>Pretest responses to bedding plant, direct-marketed produce, and pick-your-own produce promotional message "Buy three, get one free."</i>	55

Table 4.1 <i>Total distribution of frequencies and percentages of survey respondents by state.</i>	63
Table 4.2 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing lifestyle messages for bedding plant survey respondents.</i>	74
Table 4.3 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing educational messages for bedding plant survey respondents. ..</i>	75
Table 4.4 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing promotional messages for bedding plant survey respondents. .</i>	76
Table 4.5 <i>Mean likelihood of engagement with Facebook posts featuring bedding plants by message type.</i>	78
Table 4.6 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of people with products for bedding plant survey respondents.</i>	80
Table 4.7 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of products alone for bedding plant survey respondents.</i>	81
Table 4.8 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of products at a business for bedding plant survey respondents.</i>	82
Table 4.9 <i>Mean likelihood of engagement with Facebook posts featuring bedding plants by image component.</i>	84
Table 4.10 <i>Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located one hour away from respondents’ residence for bedding plant survey respondents.</i>	86
Table 4.11 <i>Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located outside of respondents’ region of residence for bedding plant survey respondents.</i>	87
Table 4.12 <i>Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located in the respondents’ state of residence for bedding plant survey respondents.</i>	88

Table 4.13 <i>Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located in respondents’ region of residence for bedding plant survey respondents.</i>	89
Table 4.14 <i>Mean likelihood of engagement with Facebook posts featuring bedding plants by distance.</i>	91
Table 4.15 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing lifestyle messages for direct-marketed produce survey respondents.</i>	93
Table 4.16 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing lifestyle messages for direct-marketed produce survey respondents.</i>	94
Table 4.17 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing promotional messages for direct-marketed produce survey respondents.</i>	95
Table 4.18 <i>Mean likelihood of engagement with Facebook posts featuring direct-marketed produce by message type.</i>	97
Table 4.19 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of people with products for direct-marketed produce survey respondents.</i>	99
Table 4.20 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of products alone for direct-marketed produce survey respondents.</i>	100
Table 4.21 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of products at a business for direct-marketed produce survey respondents.</i>	101
Table 4.22 <i>Mean likelihood of engagement with Facebook posts featuring direct-marketed produce by image component.</i>	103
Table 4.23 <i>Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located one hour away from respondents’ residence for direct-marketed produce survey respondents.</i>	105

Table 4.24 <i>Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located outside of respondents’ region of residence for direct-marketed produce survey respondents.</i>	106
Table 4.25 <i>Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located in the respondents’ state of residence for direct-marketed produce survey respondents.</i>	107
Table 4.26 <i>Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located in respondents’ region of residence for direct-marketed produce survey respondents.</i>	108
Table 4.27 <i>Mean likelihood of engagement with Facebook posts featuring direct-marketed produce by distance.</i>	110
Table 4.28 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing lifestyle messages for pick-your-own produce survey respondents.</i>	113
Table 4.29 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing educational messages for pick-your-own produce survey respondents.</i>	114
Table 4.30 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing promotional messages for pick-your-own produce survey respondents.</i>	115
Table 4.31 <i>Mean likelihood of engagement with Facebook posts featuring pick-your-own produce by message type.</i>	117
Table 4.32 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of people with products for pick-your-own produce survey respondents.</i>	119
Table 4.33 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of products alone for pick-your-own produce survey respondents.</i>	120
Table 4.34 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of products at a business for pick-your-own produce survey respondents.</i>	121

Table 4.35 <i>Mean likelihood of engagement with Facebook posts featuring pick-your-own produce due to image component.</i>	123
Table 4.36 <i>Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located one hour away from respondents’ residence for pick-your-own produce survey respondents.</i>	125
Table 4.37 <i>Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located outside of respondents’ region of residence for pick-your-own produce survey respondents.</i>	126
Table 4.38 <i>Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located in the respondents’ state of residence for pick-your-own produce survey respondents.</i>	127
Table 4.39 <i>Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located in respondents’ region of residence for pick-your-own produce survey respondents.</i>	128
Table 4.40 <i>Mean likelihood of engagement with Facebook posts featuring pick-your-own produce by distance.</i>	130
Table 4.41 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing lifestyle messages share for total survey respondents.</i>	133
Table 4.42 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing educational messages for total survey respondents.</i>	134
Table 4.43 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing promotional messages for total survey respondents.</i>	135
Table 4.44 <i>Mean likelihood of engagement with independent horticultural business Facebook posts by message type for total survey respondents.</i>	137
Table 4.45 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of people with products for total survey respondents.</i>	139
Table 4.46 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of products alone for total survey respondents.</i>	140
Table 4.47 <i>Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of products at a business for total survey respondents.</i>	141

Table 4.48 <i>Mean likelihood of engagement with independent horticultural business Facebook posts by image component.</i>	143
Table 4.49 <i>Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located one hour away from respondents’ residence for total survey respondents.</i>	145
Table 4.50 <i>Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located outside of respondents’ region of residence for total survey respondents.</i>	146
Table 4.51 <i>Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located in the respondents’ state of residence for total survey respondents.</i>	147
Table 4.52 <i>Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located in respondents’ region of residence for total survey respondents.</i>	148
Table 4.53 <i>Mean likelihood of engagement with independent horticultural business Facebook posts by distance.</i>	150
Table 4.54 <i>Mean willingness to engage with independent horticultural business Facebook posts by message type.</i>	152
Table 4.55 <i>Mean willingness to engage with independent horticultural business Facebook posts by image component.</i>	153
Table 4.56 <i>Mean willingness to engage with independent horticultural business Facebook posts by distance.</i>	154
Table 4.57 <i>Combined frequency distribution of willingness to engage with twelve Facebook posts containing a lifestyle, an educational, or a promotional message (four posts each) for bedding plant survey respondents.</i>	156
Table 4.58 <i>Combined frequency distribution of willingness to engage with twelve Facebook posts containing a photo of people with products, a photo of products alone, or a photo of products at businesses (four posts each) for bedding plant survey respondents.</i>	158
Table 4.59 <i>Combined frequency distribution of willingness to engage with twelve Facebook posts from businesses located one hour away, outside of region, in the state, and in the region of residence (three posts each) for bedding plant survey respondents.</i>	160

Table 4.60 <i>Combined frequency distribution of willingness to engage with twelve Facebook posts containing a lifestyle, an educational, or a promotional message (four posts each) for direct-marketed produce survey respondents.</i>	162
Table 4.61 <i>Combined frequency distribution of willingness to engage with twelve Facebook posts containing a photo of people with products, a photo of products alone, or a photo of products at businesses (four posts each) for direct-marketed produce survey respondents.</i>	164
Table 4.62 <i>Combined frequency distribution of willingness to engage with twelve Facebook posts from businesses located one hour away, outside of region, in the state, and in the region of residence (three posts each) for direct-marketed produce survey respondents.</i>	167
Table 4.63 <i>Combined frequency distribution of willingness to engage with twelve Facebook posts containing a lifestyle, an educational, or a promotional message (four posts each) for pick-your-own produce survey respondents.</i>	169
Table 4.64 <i>Combined frequency distribution of willingness to engage with twelve Facebook posts containing a photo of people with products, a photo of products alone, or a photo of products at businesses (four posts each) for pick-your-own produce survey respondents.</i>	171
Table 4.65 <i>Combined frequency distribution of willingness to engage with twelve Facebook posts from businesses located one hour away, outside of region, in the state, and in the region of residence (three posts each) for pick-your-own produce survey respondents.</i>	174
Table 4.66 <i>Combined frequency distribution of willingness to engage with twelve Facebook posts containing a lifestyle, an educational, or a promotional message (four posts each) for total survey respondents.</i>	176
Table 4.67 <i>Combined frequency distribution of willingness to engage with twelve Facebook posts containing a photo of people with products, a photo of products alone, or a photo of products at businesses (four posts each) for total survey respondents.</i>	178
Table 4.68 <i>Combined frequency distribution of willingness to engage with twelve Facebook posts from businesses located one hour away, outside of region, in the state, and in the region of residence (three posts each) for total survey respondents.</i>	180
Table 4.69 <i>Frequency of engagement by type of emoji reaction to Facebook marketing posts from independent bedding plant businesses.</i>	182

Table 4.70 <i>Frequency of engagement by type of emoji reaction to Facebook marketing posts from independent direct-marketed produce businesses.</i>	183
Table 4.71 <i>Frequency of engagement by type of emoji reaction to Facebook marketing posts from independent pick-your-own produce businesses.</i>	184
Table 4.72 <i>Frequency of engagement by type of emoji reaction to Facebook marketing posts from independent horticultural businesses.</i>	185
Table 4.73 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing lifestyle messages for bedding plant survey respondents.</i>	187
Table 4.74 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing educational messages for bedding plant survey respondents.</i>	188
Table 4.75 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing promotional messages for bedding plant survey respondents.</i>	189
Table 4.76 <i>Mean likelihood and willingness to purchase products after seeing Facebook marketing posts featuring bedding plants by message type.</i>	191
Table 4.77 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of people with products for bedding plant survey respondents.</i>	193
Table 4.78 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of products alone for bedding plant survey respondents.</i>	194
Table 4.79 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of products at a business for bedding plant survey respondents.</i>	195
Table 4.80 <i>Mean likelihood and willingness to purchase products after seeing Facebook marketing posts featuring bedding plants by image component.</i>	197
Table 4.81 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing lifestyle messages for direct-marketed produce survey respondents.</i>	199

Table 4.82 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing educational messages for direct-marketed produce survey respondents.</i>	200
Table 4.83 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing promotional messages for direct-marketed produce survey respondents.</i>	201
Table 4.84 <i>Mean likelihood and willingness to purchase products after seeing Facebook marketing posts featuring direct-marketed produce by message type.</i>	203
Table 4.85 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of people with products for direct-marketed produce survey respondents.</i>	205
Table 4.86 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of products alone for direct-marketed produce survey respondents.</i>	206
Table 4.87 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of products at a business for direct-marketed produce survey respondents.</i>	207
Table 4.88 <i>Mean likelihood and willingness to purchase products after seeing Facebook marketing posts featuring direct-marketed produce by image component.</i>	209
Table 4.89 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing lifestyle messages for pick-your-own produce survey respondents.</i>	211
Table 4.90 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing educational messages for pick-your-own produce survey respondents.</i>	212
Table 4.91 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing promotional messages for pick-your-own produce survey respondents.</i>	213
Table 4.92 <i>Mean likelihood and willingness to purchase products after seeing Facebook marketing posts from independent pick-your-own produce businesses by message type.</i> ..	215

Table 4.93 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of people with products for pick-your-own produce survey respondents.</i>	217
Table 4.94 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of products alone for pick-your-own produce survey respondents.</i>	218
Table 4.95 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of products at a business for pick-your-own produce survey respondents.</i>	219
Table 4.96 <i>Mean likelihood and willingness to purchase products after seeing Facebook marketing posts from independent pick-your-own produce businesses by image component.</i>	221
Table 4.97 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing lifestyle messages for total survey respondents.</i>	223
Table 4.98 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing educational messages for total survey respondents.</i>	224
Table 4.99 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing promotional messages for total survey respondents.</i>	225
Table 4.100 <i>Mean likelihood and willingness to purchase products after seeing Facebook marketing posts from independent horticultural businesses by message type.</i>	227
Table 4.101 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of people with products for total survey respondents.</i>	229
Table 4.102 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of products alone for total survey respondents.</i>	230

Table 4.103 <i>Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of products at a business for total survey respondents.</i>	231
Table 4.104 <i>Mean likelihood and willingness to purchase products after seeing Facebook marketing posts from independent horticultural businesses by image component.</i>	233
Table 4.105 <i>Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located one hour away for bedding plant survey respondents.</i>	238
Table 4.106 <i>Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located outside of the region for bedding plant survey respondents.</i>	239
Table 4.107 <i>Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located in the state for bedding plant survey respondents.</i>	240
Table 4.108 <i>Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located in the region of residence for bedding plant survey respondents.</i>	241
Table 4.109 <i>Mean likelihood and willingness to purchase products after seeing Facebook marketing posts featuring bedding plants by distance.</i>	242
Table 4.110 <i>Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located one hour away for direct-marketed produce survey respondents.</i>	247
Table 4.111 <i>Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located outside of the region for direct-marketed produce survey respondents.</i>	248
Table 4.112 <i>Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located in the state for direct-marketed produce survey respondents.</i>	249
Table 4.113 <i>Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located in the region of residence for direct-marketed produce survey respondents.</i>	250

Table 4.114 <i>Mean likelihood and willingness to purchase products after seeing Facebook marketing posts featuring direct-marketed produce by distance.</i>	251
Table 4.115 <i>Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located one hour away for pick-your-own produce survey respondents.</i>	255
Table 4.116 <i>Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located outside of the region for pick-your-own produce survey respondents.</i>	256
Table 4.117 <i>Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located in the state for pick-your-own produce survey respondents.</i>	257
Table 4.118 <i>Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located in the region of residence for pick-your-own produce survey respondents.</i>	258
Table 4.119 <i>Mean likelihood and willingness to purchase products after seeing Facebook marketing posts from independent pick-your-own produce businesses by distance.</i>	259
Table 4.120 <i>Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located one hour away for total survey respondents.</i>	264
Table 4.121 <i>Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located outside of the region for total survey respondents.</i>	265
Table 4.122 <i>Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located in the state for total survey respondents.</i>	266
Table 4.123 <i>Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located in the region of residence for total survey respondents.</i>	267
Table 4.124 <i>Mean likelihood and willingness to purchase products after seeing Facebook marketing posts from independent horticultural businesses by distance.</i>	268

Table 4.125 <i>Frequency of employment level for participants in all surveys about horticultural marketing on Facebook.</i>	270
Table 4.126 <i>Response means above 3.0 for willingness to engage with image component by “liking” independent horticultural business Facebook posts.</i>	272
Table 4.127 <i>Response means above 3.0 for willingness to engage with by “liking” independent horticultural business Facebook posts due to distance from viewer.</i>	273
Table E1 <i>Frequency of participants by state for three surveys about independent horticultural products: petunias, bell peppers, and apples.</i>	426
Table E2 <i>Frequency of participants by state for bedding plant survey.</i>	426
Table E3 <i>Frequency of participants by state for direct-marketed produce survey.</i>	427
Table E4 <i>Frequency of participants by state for pick-your-own produce survey.</i>	427
Table E5 <i>Income level reported by respondents to three surveys about independent horticultural products: bedding plants, direct-marketed produce, and pick-your-own produce.</i>	428
Table E6 <i>Total frequency of 2017 income levels reported by survey participants.</i>	429
Table E7 <i>Frequency of 2017 income levels reported by survey participants from highest to lowest response.</i>	430
Table E8 <i>Frequency of 2017 income levels reported by bedding plant survey participants.</i>	431
Table E9 <i>Frequency of 2017 income levels reported by direct-marketed produce survey participants.</i>	432
Table E10 <i>Frequency of 2017 income levels reported by pick-your-own produce survey participants.</i>	433

Acknowledgements

Without the support of my parents, grandparents, husband, siblings, advisors, Umberger Hall faculty and office staff, and fellow graduate students, this thesis would not have been possible. I am grateful to everyone who encouraged, supported, and believed in me. I am grateful to have made new friends and learned many new things during my time at Kansas State University. Thank you, especially, to Dr. Lauri Baker, Dr. Cheryl Boyer, and Dr. Hikaru Peterson for guiding and mentoring me through the research process and graduate school. Fellow graduate student friends, I greatly appreciate the support, laughter, lunch adventures, Sonic drink runs, Call Hall ice cream dates, memes, and inside jokes shared in Umberger 317. Thank you to my husband, Lucas, for being there for me, even when I moved 1500 miles away to pursue my dreams. Thank you too, Lucas, for the phone calls, visits, and encouragement. Mom, Dad, Caroline, George, and David, thanks for keeping me on track and saying the things I may not have wanted but needed to hear. Without you all to support me, this dream and thesis would not have been accomplished. I could go on; however, in the words of Winnie the Pooh, "...perhaps the best thing to do is to stop writing introductions and get on with the book."

Chapter 1 - Introduction

In recent years, horticultural industry changes, rising popularity of local food movements, fluctuating consumer perceptions and motivations to buy fresh produce and plants, and new online marketing opportunities have impacted small and rural horticultural businesses. In response to recessions, consumer demand shifts, and evolving social-media trends, horticultural enterprises such as pick-your-own fruit or vegetable patches and on-farm produce stands are growing more popular as producers try to create a unique purchasing experience and draw consumers to their farms (Bond, Thilmany, & Bond, 2006; Ilbery, 1991; Nickerson et al., 2001; Ollenburg & Buckley, 2007; Veeck, Che, & Veeck, 2006; Wilson, Thilmany, & Watson, 2006). Media attention, burgeoning farmer's market popularity, and a rise in the number of producers directly marketing produce have made consumers more aware of the origin of produce and horticultural products, which has impacted purchasing decisions (Bond et al., 2008). Consumer demand for local, fresh produce and plants has prompted farmers to use different and new marketing and selling methods, such as social-media marketing (Huang & Chen, 2018; Peterson, Boyer, Baker, & Yao, 2018; Ball & Duval, 2001).

Direct-market horticultural product sales began increasing in the 1990s and 2000s, as the local food movement gained notoriety (Thilmany et al., 2008). In 1992, direct sales of fresh and value-added food products to consumers, retailers, institutions, and distributors in the United States (U.S.) totaled \$404 million (1992 Census, 1994; Gale, 1997). By 2015, however, U.S. farms direct-marketed \$8.7 billion (USDA, 2016). Consumers alone purchased \$3 billion worth of fresh and value-added food directly from farmers. Of this \$3 billion, 67% of sales were from on-farm stores or farmer's market sales (USDA, 2016).

1.1 Horticultural Products

One part of the direct-marketed agricultural product sector is the horticultural industry. In the United States this includes landscaping service firms, wholesale nursery and sod growers, retail garden centers, and mass merchandisers (Hodges, Hall, & Palma, 2011). The U.S. horticultural industry generates billions of dollars annually (Hodges et al., 2011; USDA, 2016). Hall (2010) and Hodges, Khachatryan, Palma, and Hall (2015a) state that, since the housing market crash in 2008-2009, consumers are spending less on horticultural products than before the recession. Additionally, mass merchandizers and big box stores have changed the wholesale and retail horticulture environment by offering a wider variety of horticultural and landscaping products and services than most independent horticultural businesses. Due to this, consumer purchasing habits have changed, and independent retailers must find new ways to appeal to the public (Hall, 2010; Hodges et al., 2015a).

According to a survey by Satterthwaite, Haydu, and Hodges (2006), garden-center customers seek different characteristics from independent retailers than from mass merchandisers. Respondents, mostly women, cited convenience as a major factor in their decision to shop at a specific location; however, convenience was a more common answer at large chain garden centers than at independent, retail operations (Satterthwaite et al., 2006). Top concerns of consumers that frequent independent garden centers were good service and plant health and quality.

A survey by Behe and Barton (2000) also found that independent garden center customers place higher emphases on plant health, plant quality, and customer service than other attributes. Additionally, consumers considered price, plant type, and origin of the product before

purchasing plants (Behe et al, 2013). These desired characteristics are important for horticultural business owners to keep in mind as they market to and connect with consumers.

1.2 Online & Social-Media Marketing

In regard to directly marketing produce, Bond et al. (2009) found that email newsletters and updates are an effective way to keep in touch with current customers. On the other hand, more recent studies of the horticultural industry show that, though traditional marketing media is most commonly used, social media can help businesses build relationships with customers (Peterson, Boyer, Baker, & Yao, 2018; Stebner, Boyer, Baker, & Peterson, 2017a). Stebner et al. (2017a) reaffirmed that consumers appreciate personal interaction with independent garden centers. Social media, such as Facebook, allow businesses to interact with customers and gives the opportunity for consumers to share information about businesses with their peers (Cui, 2014; Sashi, 2012).

The study by Stebner et al. (2017a) also found that horticultural businesses in the Midwestern U.S. are still more comfortable using traditional marketing methods. Though many still use newspaper or radio advertising, most garden centers are now aware of social media and some are beginning to use Facebook as a way to connect with consumers (Stebner et al., 2017a). Facebook allows synchronous communication between horticultural industry companies and consumers. In addition, Facebook allows companies to communicate with clients away from the physical location of the business. Customers can also build relationships with each other online and influence the purchasing behaviors of friends and family.

When using social media to advertise, it is important for companies to be aware of consumers' desires and to use that information to effectively market products (Davenport et al., 2011). Measuring engagement on social media is one way business owners can see how

interested customers are in products or services (Stebner et al., 2017a). Using Facebook as a marketing tool could reach more consumers and increase awareness of the availability of direct-marketed farm or horticultural products.

1.3 Elaboration Likelihood Model & Consumer Preferences

Cacioppo and Petty's (1984) Elaboration Likelihood Model (ELM) of Persuasion suggests two routes to persuasion: "central" or "peripheral" thinking. Elaboration likelihood refers to the likelihood that a person will engage in "issue-relevant thinking" to determine an action or an outcome (Cacioppo & Petty, 1984). Often, personal connections or involvement determines how much processing occurs (Cacioppo & Petty, 1984). The ELM states that receivers of persuasive messages can process messages one of two ways, centrally or peripherally, with different outcomes (O'Keefe, 2008). Messages processed centrally, or those examined more carefully, will be more influential (Cacioppo & Petty, 1984).

Consumers are much more likely to centrally process information from a business if it has meaning and personal relevancy. For example, Stebner, Baker, Peterson, and Boyer (2017b) found that, though garden center owners are not as comfortable using social media, personal relationships influence consumer behavior. While the researchers did not use the Elaboration Likelihood Model in their study, many of the garden center owners interviewed mentioned that their businesses were more successful if they were able to connect personally with their customers on a deeper, less peripheral level.

1.4 Statement of the Problem

Changes in agriculture in the United States have prompted smaller-scale producers to find new ways to keep land in production (Che, Veeck, & Veeck, 2005; Barbieri, Mahoney, & Butler, 2008; Nickerson, Black, & McCool, 2001). As horticultural product shopping habits have

changed and advances in social-media technology have been made, horticultural businesses need to update marketing practices. A study of 161 horticultural businesses by found that most businesses in the United States are using both conventional and new-media marketing methods (Peterson et al., 2018). While the majority of respondents were social-media users, over 10% of business owners surveyed did not use new-media marketing. Of those not using new media, 47% stated face-to-face customer interaction, lack of time, low and uncertain social-media returns, and lack of customer demand for new-media interaction were the main reasons (Peterson et al., 2018).

While recent research indicates social media and Facebook are effective marking tools, the parameters for the most engaging Facebook content posted by horticultural and direct-market produce businesses are not defined. Similar studies about horticultural new-media use by business owners or social-media managers have been conducted; however, this research determined consumer interest in horticultural Facebook content and how that content affects willingness to travel and purchase fresh produce and plants. This empirical study was built on theoretical facets of ELM and introduced consumer engagement with Facebook posts as a potential measurement for central and peripheral cognitive processing of horticultural marketing information. In an online setting, central processing may appear as consumer engagement with content as social-media users cognitively process actions such as sharing and leaving comments about information presented by businesses.

1.5 Purpose of Study & Research Objectives

Independent garden center owners do not know what consumers prefer seeing on social media (Peterson et al., 2018; Stebner et al., 2017a; Stebner et al., 2017b). Castronovo and Huang (2012) confirmed that word-of-mouth marketing and communication with consumers through

social media, when done correctly, can have a positive impact on sales; however, little is known about the effects of social media, specifically Facebook, marketing in direct-market produce and horticultural businesses. In a study by Huang and Chen (2018), educational and informational images and messages in Facebook posts in the floral industry were found to be more impactful to viewers. Consumer-desired Facebook post elements for horticultural and direct-market produce businesses have not been defined. Since 68% of American adults use Facebook regularly, it is important to create meaningful content that will reach and connect with horticultural product consumers (Smith & Anderson, 2018). Social-media users mostly read posts and messages because of usefulness and personal preferences (Chang, Yu, & Lu, 2014). Businesses should use messages that align with the level of processing of targeted consumers to encourage central processing and influence purchasing behavior (Baldwin et al, 2004). Using ELM as a theoretical framework, this study will determine the effects that different types of Facebook posts have on the likelihood of consumer engagement and purchase and will examine consumer willingness to purchase direct-marketed fresh produce, pick-your-own produce, and independent garden center products after viewing social-media posts.

The purpose of this study is to address the following research objectives (RO) and one research question (RQ):

RO1: Determine how, if at all, different features of Facebook posts affect consumer engagement with horticultural businesses.

RO2: Determine how, if at all, different features of Facebook posts affect the likelihood of purchase of horticultural products.

RO3: Determine the effects of different features of Facebook posts on willingness to travel to purchase these horticultural products.

RQ1: Will there be similarities in willingness to engage with Facebook feature variables across different horticultural products?

1.6 Summary

This study sought to find which elements of a Facebook post best influence consumers to shop at direct-market produce, pick-your-own, and independent greenhouse operations. To reach an audience that purchases farm and horticultural products, it was important to determine a representative sample of consumers in the Midwest area of the U.S. Since the focus of the study was on preferences related to social media, an online survey was administered to a stratified, randomly-selected sample of Midwestern residents. Based on the results, strategic recommendations were developed for independent horticultural businesses. The goal of this study was to provide researched suggestions for business owners to help them effectively engage with and market to customers on Facebook.

Social media, specifically Facebook, allows horticultural businesses to connect with potential clients; however, research shows that business owners are uncertain about how to transition from using traditional-media marketing to social-media marketing. In addition, businesses have different opinions than consumers about the most effective use of Facebook marketing. Being aware of preferences and audience desires allows horticultural businesses to create effective social-media marketing content that will increase sales and profit. In order to determine what type of content is the most effective and most engaging, this study seeks to define consumer Facebook content preferences for horticultural businesses. As outlined in the ELM, when the likelihood of elaboration or cognitive processing of information is low, such as when consumers are not interested in or paying direct attention to advertisements or messages, purchasing behaviors and attitudes are less likely to change (Petty & Cacioppo, 1984).

Consumers are most likely to think about, retain material, or change personal behaviors when messages are intriguing or contain familiar information (Petty & Cacioppo, 1984). The purpose of this study is to discover the impacts of varying types of Facebook posts on the likelihood of horticultural consumer engagement and purchasing, and to examine consumer willingness to pay for and travel to buy horticultural products as a result of Facebook interaction.

1.7 Definitions of Key Terms

Various terms were used in this study that may not be familiar to all audiences. Definitions of key terms used throughout this research include:

- **Apple** – Apples, a popular part of the American diet and landscape, are a tree fruit typically grown in orchards. Many varieties and colors of apples are grown all over the world (Bonner & Karrfelt, 2008).
- **Agritourism** – Weaver and Fennell (1997) define agritourism as “rural enterprises which incorporate both a working farm environment and a commercial tourism component” (p. 357). Examples include pick-your-own produce, farm tours, and agricultural festivals (McGehee & Kim, 2004).
- **Bell Pepper** – Bell peppers, members of the *Solanaceae* (nightshade) family, are the most commonly grown sweet garden pepper. Bell peppers come in a variety of colors, including red, orange, purple, yellow, green, and brown (Lindgren, Hodges, & Browning, 2008).
- **Elaboration Likelihood Model (ELM)** – The ELM is a framework for understanding attitudes and persuasive communication (Cacioppo & Petty, 1984). The ELM states that receivers of persuasive messages can process messages one of two ways, centrally or peripherally, with different outcomes (O’Keefe, 2008). Messages processed centrally, or those examined more carefully, will be more influential (Cacioppo & Petty, 1984).
- **Emojis** – “...Various small images, symbols, or icons used in text fields in electronic communication (as in text messages, e-mail, and social media) to express the emotional attitude of the writer, convey information succinctly, communicate a message playfully without using words, etc.” (Merriam Webster, 2019). Emojis were

created in Japan in the 1990s by Shegetaka Kurita (Negishi, 2014) and are used extensively online and in mobile messaging today (Rodrigues, Prada, Gaspar, Garrido, & Lopes, 2017).

- **Facebook** – Facebook is the most popular social-media website in which users and businesses can interact with one another (Smith & Anderson, 2018).
- **Facebook Features** - Facebook allows interaction in several ways, including viewing profiles or business pages, “liking,” sharing, commenting, and reacting to posts and content, and accruing “friends” or “fans” (Ellison, Steinfield, & Lampe, 2007).
- **Horticulture** – As defined by the Specialty Crops Competitiveness Act of 2004 and the United States Department of Agriculture (USDA) National Institute for Food and Agriculture (2018), horticulture is the “...branch of agriculture concerned with growing plants that are used by people for food, for medicinal purposes, and for aesthetic gratification” (para. 3).
- **Horticultural Business** – A horticultural business earns revenue from the sale of horticultural products or crops, as explained by the Specialty Crops Competitiveness Act of 2004 and the USDA’s National Institute for Food and Agriculture (2018).
- **Horticultural Product/Crop** – The Specialty Crops Competitiveness Act of 2004 and the USDA’s National Institute for Food and Agriculture (2018) defines a horticultural product or crop as “...fruits, vegetables, tree nuts, nursery crops and floricultural crops...” (para. 2) made up of “...plants that are cultivated either for sale or for subsistence” (para.6).
- **New-Media Marketing** – As defined by Stebner et al. (2017b), new-media marketing uses digital modes of advertisement, such as social media, email newsletters, and

websites, to connect with consumers. This technique is different from traditional marketing avenues like radio and print and is becoming increasingly effective as social media popularity and use grows.

- **Petunia** – Petunias are popular long-blooming, ornamental annual plants that come in a variety of colors and sizes (Polomski & Russ, 2007). Petunias grow well in most soils, so they are commonly grown throughout the United States (Polomski & Russ, 2007).
- **Pick-your-own** – Consumers come to pick-your-own operations to harvest produce or fruit directly from the producer (Govindasamy & Nayga, 1997). Pick-your-own operations are a form of agritourism and draw people to horticultural businesses to generate income, entertain, and educate (Agritourism Overview, n.d.).
- **Social media** – Social media is a type of media which includes “... a variety of new sources of online information that are created, initiated, circulated, and used by consumers intent on educating each other about products, brands, services, personalities, and issues” (Blackshaw & Nazzaro, 2004, p. 2). As of 2018, Facebook and YouTube were the most popular social-media sites in the U.S. (Smith & Anderson, 2018).

Chapter 2 - Review of Literature

The purpose of this study was to discover the impacts of varying types of Facebook posts on the likelihood of horticultural consumer engagement and purchasing. The study also examined consumer willingness to pay for and travel to buy horticultural products as a result of Facebook interaction. This research used the Elaboration Likelihood Model (ELM) to answer three research objectives and one research question. The research objectives are to determine how, if at all, different features of Facebook posts affect consumer engagement with horticultural businesses, the likelihood of purchase of horticultural products and to determine the effects of different features of Facebook posts on willingness to travel to purchase these horticultural products. The research question for this study explored similarities in willingness to engage with Facebook feature variables across different horticultural products. This chapter reviews literature related to the research objectives of determining if different features of Facebook posts affect the likelihood of consumer engagement with horticultural businesses and purchase of horticultural products.

2.1 Industry Background

The horticultural industry encompasses a variety of operations, including nursery and greenhouse producers, wholesale and retail businesses, landscapers and designers, and horticultural suppliers (Hall, 2010; Hodges, et al., 2015a; Hodges, Khachatryan, Palma, & Hall, 2015b; Perez, Palma, Behe, & Hall, 2016). The horticultural industry has had periods of rapid economic growth; however, as consumer demand has changed, industry growth has slowed and business owners are looking for ways to consolidate and concentrate their operations (Hodges et al., 2015a; Hodges et al., 2015b; Perez et al., 2016). Differing from a previous recession in 2001,

the 2008 economic crash caused Americans to reassess spending habits, which brought on a decline in consumer spending in the horticultural industry (Perez et al., 2016). Between 2007 and 2008, U.S. horticultural economic output was \$176.11 billion, with the horticultural industry in Midwestern U.S. contributing over \$34 million to the economy (Hodges et al., 2011); however, when the 2008-10 recession hit, the horticultural industry was greatly impacted. By 2013, though, the nationwide horticultural industry had recovered enough to produce an output of \$136.44 billion, which includes sales of horticultural products, services, and exports (Hodges et al., 2015a). In 2014, the U.S. Census of Horticultural Specialties revealed an eight percent increase in the total number of horticultural operations, with an 18% rise in product sales between 2009 and 2014 (USDA National Agricultural Statistics Service, 2016). Revenue solely from horticultural specialty sales in 2014, including floriculture, nursery, and specialty crops, totaled \$13.8 billion (USDA National Agricultural Statistics Service, 2016).

Growers and farm owners are increasingly using alternative venues to sell their products, such as pick-your-own patches, roadside stands, or farmer's market booths. As defined by Govindasamy and Nayga (1997), "pick-your-own operations are farms where consumers harvest their own agricultural products from farmers' fields" (p. 31). These agritourism ventures connect consumers with agriculture and food production in the community, provide income for producers, and keep farmland in use for agricultural production (Barbieri, Xu, Gil-Arroyo, & Rich, 2016; Koutsouris, Gidarakou, Grava, & Michailidis, 2014; Brandth & Haugen, 2011).

In addition to finding an online medium or physical venue in which to connect with consumers, farm-based businesses who are direct-marketing horticultural products need to be aware of the public's desire for and perceptions of horticultural products (Thilmany et al., 2008). To better understand fresh produce purchasing decisions, Bond et al. (2006) collected consumer

data regarding fresh produce purchasing habits, preferences, and purchase location motivations from members of the National Family Opinion Organization's online survey database. The survey targeted primary grocery shoppers. Results showed that, of the 1,549 predominantly female respondents, 56% buy produce primarily at supermarkets, while 16% buy directly from producers during the growing season. When asked about secondary purchase locations, 15% indicated they buy directly from a producer (Bond et al., 2006). Live plants and fresh produce are currently not commonly sold online, though e-commerce could be a viable marketing option in the future (Thomas, et al., 2016).

Bond et al., (2006) also asked consumers about motivations for buying from a specific location. The study also analyzed characteristics of direct-marketed produce most desired by United States consumers. Convenience, nutrition, safety, and value are the factors most important to consumers in the fresh food purchasing decision-making process; however, for direct-from-producer buyers, a personal connection was also influential (Bond et al., 2006). This corresponds to another study (Bond, Thilmany, & Bond, 2008) which indicated that fresh produce customers are interested in not only quality, but also where the product was grown, the environmental impact of production, shipping, and price.

The study by Bond et al. (2008) also found that many consumers are more concerned about local and pesticide-free food and flowers and are generally less concerned about organic produce because the meaning of the term "organic" is often misunderstood. A 2009 survey by Bond, Thilmany, and Bond confirmed that consumers perceive locally-grown, direct-marketed produce to be fresher and safer, which influences shopping behavior as well. Gorham, Rumble, and Holt (2015) also found that fresh produce purchasing reasons, in order of importance, were: personal preference, versatility, health benefits, preparation, and seasonality.

Though market demand has changed since 2008, the horticultural industry is still a diverse and influential part of the agricultural economy (Hodges et al., 2015b). According to a study by Hodges et al. (2013), bedding plants and flowering annuals were one of the most popular type of plants purchased from horticultural operations. Another survey by Behe, Campbell, Hall, Khachatryan, Dennis, and Yue (2013) revealed that vegetable plants were also popular horticultural products, in addition to flowering plants, herbs, and flowering shrubs. For the present research, three popular and common horticultural products were selected to be studied; petunias, apples, and sweet bell peppers.

2.2 Bedding Plants: Petunias

Petunias were originally classified by Jussieu in Uruguay in 1803 (Stehmann, Lorenz-Lemke, Freitas, & Semir, 2009). Members of the *Solanaceae* family, these common ornamental flowers are now popular all over the world. As defined by Stehmann et al., (2009), petunias are “...annual or perennial herbs, up to 1 m tall...” (p. 8). Garden petunias (*Petunia hybrida*), common plants available for sale today, were first hybridized by a British horticulturalist, James Atkins of Northampton, in 1834 and are grown ornamentally worldwide (Stehmann et al., 2009; Sink, 1984). In 2014, the value of sales of petunias alone from 6,041 horticultural businesses in the U.S. totaled \$262,959 (USDA National Agricultural Statistics Service NASS, 2016).

2.3 Direct-Marketed Produce: Bell Peppers

Bell peppers (*Capsicum annuum*) were incorrectly identified by Christopher Columbus during his exploration in the 1400s as part of the black pepper spice (*Piper nigrum*) family and were introduced to Asian and European countries after his visit to the Americas. While various researchers documented peppers in writing before the 1600s, Morrison documented 33 new varieties in 1699 (Basu & De, 2003; Bosland, Votava, & Votava, 2012). Bell peppers, part of the

tropical *Solanaceae* plant family, are grown and eaten all over the world today (Bosland et al., 2012). Consumption and, therefore production, of bell peppers is steadily increasing globally (Biswas, Guan, & Wu, 2017). The U.S. is the fifth largest producer of peppers, both chili and bell, in the world, and most bell peppers are grown in California, Florida, Georgia, New Jersey, Ohio, North Carolina, and Michigan (Western Institute for Food Safety & Security WIFSS, 2015). Peppers are nutritious and contain many vitamins, including A, C, and E (Bosland et al., 2012). Bell peppers are grown to be sold both fresh and to be processed, and fruits range in size, flavor, color, and texture (WIFSS, 2015). In 2018, the U.S. produced over 722,400 pounds of bell peppers whose value totaled \$533 million (USDA, National Agricultural Statistics Service NASS, 2019). Of the bell peppers grown, over 66,000 tons were processed into other products and over 644,000 tons were sold for fresh consumption (USDA, NASS, 2019).

2.4 Pick-Your-Own Produce: Apples

The apple (*Malus pumila*) was first discovered in Kazakhstan before 2500 B.C. and was introduced to North America in the 1600s (Burford, 2013). Johann Jonston began classifying domesticated apples in Wurtemberg, Germany in 1668 (Budd & Hansen, 1902). The apple, a member of the *Rosaceae* family, has long been an important part of American history as cider, made from apples, was a popular beverage and even currency for a time. As apple orchards were planted, orchardists kept trees producing the most desirable fruit, which allowed for natural breeding of new cultivars (Burford, 2013). In 1905, W.H. Ragan catalogued over 17,000 known varieties of apples. Prohibition and urbanization after World War II impacted the apple industry; however, the apple has remained a staple in diets worldwide (Burford, 2013).

After a U.S. market peak in the 1990s and early 2000s, recent commercial apple production has declined; however, consumption of fresh apples, thanks in part to the organic

food movement, remains constant (Lynch, 2010; National Agricultural Statistics Service (USDA-NASS), 2018). In 2009, Washington apple growers produced over five billion pounds of apples, allowing the state to retain its status as the leading apple-growing state followed by New York and Michigan (Slattery, Livingston, Greene, & Klonsky, 2011; Schotzko & Granatstein, 2004; Slattery et al., 2001). In 2010, U.S. apple production totaled \$2,220,817,000 (USDA, 2010). The harvest of 2017 was higher than usual, though 2018 production, in terms of pounds of apples, was affected by unseasonably cold weather (USDA-NASS, 2018).

Despite industry changes and weather impacts, the U.S. remains one of the top four exporters of apples in the world (Foreign Agricultural Service (USDA-FAO), 2018; Lynch, 2010). Apples are grown in all 50 states, with most production occurring in Washington, New York, and Michigan (Agricultural Marketing Service Specialty Crops Program (USDA-AMSSCP), 2019; Slattery et al., 2011; Lynch, 2010). U.S. apples are processed into juices, applesauce, and other products and are exported worldwide (USDA-AMSSCP, 2019; Slattery et al., 2001).

2.5 Elaboration Likelihood Model (ELM)

The purpose of this study was to define relevant and effective social-media post components in regard to horticultural consumer engagement and purchasing behaviors. While several theories, including diffusion of innovations theory, the Attention, Interest, Desire, and Action (AIDA) model, and Maslow's hierarchy of needs theory, applied to this research, the elaboration likelihood model (ELM) was selected as the most relevant. As defined by O'Keefe (2008, p. 1), "the elaboration likelihood model (ELM) of persuasion...is a "dual process" approach to persuasion..." In marketing, elaboration, or deliberate thought about communications, is what influences viewers. The diffusion of innovations theory states that

messages are spread in a two-step method: the viewer sees a message or advertisement and spreads that information to others by either human contact or word of mouth (Baldwin et al, 2004). While the idea of information being viewed and spread is somewhat relevant to this particular study, especially in regard to social-media, it does not fully inform this research. The emphasis this theory puts on the effect of human contact in the spread of information was not applicable to this study; therefore, this theory was not used. Similarly, Maslow's (1943, 1954) hierarchy of needs theory explains how human needs influence purchasing behaviors but relates more to physiological needs.

Compared to diffusion of innovations and Maslow's hierarchy of needs theories, the AIDA model is a more relevant theory and is similar to the ELM. The premise of the AIDA model is to appeal to both human needs and interests when advertising in order to sell a product (Baldwin et al., 2004). The ELM, introduced in 1981 by Petty and Cacioppo, states that messages with information relevant and thought-provoking to the recipient are far more likely to stimulate central processing than advertisements with which people cannot connect (Cacioppo, Petty, & Morris, 1983; Petty & Cacioppo, 1984; Petty & Cacioppo, 1986; O'Keefe, 2008; Kitchen, Kerr, Schultz, McColl, & Pals, 2014; Yang, 2015). Central processing represents high elaboration likelihood, such as when a person gives deliberate thought to an issue and determines an outcome. Petty & Cacioppo's (1981) research revealed "...whether a hearer processes persuasive cues centrally depends on the person's motivation, ability, and need to scrutinize the message" (Baldwin et al., 2004, p. 152); therefore, if someone does not need the information in an advertisement, for instance, it is highly probably the message will only be peripherally processed and will not impact the viewer as deeply. When messages are centrally processed, "argument quality, logical consistency," and amount of truth affects the amount and direction of

attitude or behavioral change (Baldwin et al., 2004, p. 152). Centrally-processed messages typically require more thought and care, which have a more profound impact on the receiver and can influence purchasing decisions and brand loyalty (Cacioppo & Petty, 1984; Baldwin et al., 2004).

On the other hand, peripheral processing represents low elaboration likelihood and does not require as much thought; peripheral processing does not usually change consumers' opinions about a company or product for a long period of time, unlike central processing (Cacioppo & Petty, 1984). Peripherally-processed messages use "attractiveness, source credibility," or other cues not related to the ideas or strength of the argument in the message (Baldwin et al., 2004, p. 152). Petty and Cacioppo (1986) found that messages that do not connect with people on a more personal or relatable level are less persuasive; therefore, peripherally-processed messages usually do not have lasting effects like those that are centrally processed (Yang, 2015).

Consumer purchasing decisions are influenced by multiple factors. Before buying anything, confirmation of the need for it must happen (Blackwell, Miniard, & Engel, 2005; De Medeiros, Ribeiro, & Cortimiglia, 2016). After recognition of the need, consumers then look for information and the location of the item they desire. Often, this includes assessing availability, options, and cost, which impacts the act of purchasing and using goods to fulfill the initial necessity (Blackwell et al., 2005; De Medeiros et al., 2016). When consumers think about purchasing, central processing is occurring (Baldwin et al., 2004). Consumers pay more attention and use more cognitive reasoning to messages or advertisements that relate to personal requirements or desires. Additionally, as emotion plays a key role in information processing (Percy, 2003), emotional responses to advertisements can also encourage deeper processing and influence recipient purchase intentions and brand loyalty (Mogaji, 2016; Percy & Rosenbaum-

Elliott, 2012; Batra & Ray, 1986). While attracting attention to a featured product and making advertising campaigns attractive to consumers is relevant, this study sought to operationalize consumer central processing through the framework of social-media engagement; therefore, the ELM was the most relevant to use as the theoretical framework.

In regard to purchasing food, it has been established that people are concerned about freshness and safety. Consumers are bombarded with marketing messages and often make food purchasing decisions based on peripheral information such as brand names, peer pressure, or general advertising appeal (Verbeke, 2005). Verbeke (2005) states, “the stronger the perceived need for information, the higher the likelihood of active information search and extensive information processing” (, p. 352). If horticultural business consumers actively seek or personally connect with information and products, it is more likely they will be positively influenced by marketing attempts and become loyal and lasting patrons.

2.6 History of Marketing & Online Marketing

Now, more than ever, the internet and social media give users the ability to customize and personalize online experiences, which allows for more relevant and personal meaningful messages to reach consumers (Montgomery & Chester, 2009). Since most marketing is received at the peripheral level, it is important to connect with consumers (Verbeke, 2005). In addition to providing social connections, the internet is used by companies as a communication, transaction, and distribution channel (Kiang, Raghu, & Shang, 2000). As a communication channel, the internet allows businesses to interact and exchange information bilaterally with consumers. Companies can also collect information about customer preferences and purchasing habits and create relationships through internet communications (Kiang et al., 2000).

Through the use of social media, companies build awareness and loyalty and increase sales (Castronovo & Huang, 2012). Success in social-media marketing is measured by increased awareness, sales, and loyalty to a brand or company (Castronovo & Huang, 2012). Businesses can create Facebook pages for free to promote and market specific brands and products (Cui, 2014). Facebook can be used by anyone with little or no training and business pages can be used to connect with both current and potential consumers (Cui, 2014).

Different types of media content such as text, photos, and video can be used to reach more people through social media, which helps build consumer engagement (Sashi, 2009). Facebook users react to, comment on, or share posts from a company's page to other Facebook profiles, either personal or business-related (Cui, 2014). This engagement is defined as "the intensity of an individual's participation in and connection with an organization's offerings and/or organizational activities, which either the customer or the organization initiate" (Vivek, Beatty, & Morgan, 2012, p. 4.). Luarn et al. (2015) found promotional messages announcing sales or special prices were valued higher by consumers. Additionally, previous research has shown engagement and brand valuation was higher when social-media posts used conversational tones and human voice (Beukeboom et al., 2015; Kelleher & Miller, 2009; Luarn et al., 2015; Park & Lee, 2013; Sweetser & Metzgar, 2007; van Noort & Willemsen, 2012; Yang et al., 2010). Social-media users do not enjoy campaigns using forceful and demanding language to encourage engagement and interaction (Beukeboom et al., 2015). To effectively engage social-media users, companies should consider business and marketing goals and perceptions when creating content and communicating to consumers (Castronovo & Huang, 2012).

Social-media users engage with other users and businesses, which is important for digital marketing (Montgomery & Chester, 2009). In regard to digital marketing, engagement is defined

as "...the ability of the brand to interact with the consumer..." (Namiranian, 2006, p. 6), and "...the subtle, subconscious process in which consumers begin to combine [an] ad's messages with their own associations, symbols and metaphors to make the brand more personally relevant..." (Nial, 2006, para. 7; Montgomery & Chester, 2009, p. S22). Social-media sites, perfect examples of online communication channels, were created for peer-to-peer networking and to allow users and companies to promote brands and actively engage with each other (Montgomery & Chester, 2009).

A study by Hodges et al. (2013) surveyed 699 U.S. plant producers and found that over 53% ($n = 376$) were using the internet or Facebook to advertise products. Of those using social media ($n = 150$, 21.5%), over 60% ($n = 123$) stated they promoted their business on Facebook, and smaller operations were just as likely to use social media for advertising as larger companies; however, large firms are currently using social media more (Hodges et al., 2013; Barton & Behe, 2017). As internet and social-media use has become a part of everyday life, horticultural marketing must respond to this shift.

Digital marketing research shows consumer behavior can be influenced by reviews, posts, or opinions posted by peers or friends on social media (Stephen, 2016). Since many consumers carry smartphones, they have the ability to search for relevant information at all time, even when shopping for specific products (Baker, Boyer, Peterson, King, 2018; Behe et al., 2013; Palma et al., 2011; Stephen, 2016). Marketers today have the opportunity to advertise and promote products at all times on two-way communication channels, such as social media, as opposed to one-way channels like newspapers or radio (Baker et al., 2018).

2.7 History & Importance of Facebook

Facebook is a low to no-cost advertising option for business both large and small. Though many horticultural business owners may be hesitant to learn the skills to use Facebook, the platform requires few technical skills to operate and maintain (Cui, 2014). Created in 2004, Facebook was originally marketed to college students and then targeted high school students (Ellison et al., 2007). Since its advent, Facebook has rapidly gained popularity among general users and businesses. In 2006, Facebook introduced commercial organization communities. By 2014, Facebook was the most popular social networking site with over 700 million users worldwide (Lee, Kim, & Ahn, 2014). As of 2018, 68% of adults in the U.S. had an active Facebook account. Of those accounts, about 75% were checked at least once daily by users in 2018 (Smith & Anderson, 2018), and that number remains nearly the same at 74% in 2019 (Perrin & Anderson, 2019). Women are somewhat more likely to use Facebook than men (Perrin & Anderson, 2019).

A case study by Cui (2014) about Facebook use by farmer's markets revealed that social media is a great way to advertise and market seasonal and changing horticultural products. An organization's Facebook page is public, which means anyone can access posts, images, and information about the business. The business's Facebook page manager can control what is posted and seen, which allows for professional presentation of marketing information (Cui, 2014). Often, social-media users trust other consumers and friends more than businesses (Gillin, 2009; Tsimonis & Dimitriadis, 2014). Though a business Facebook page is typically managed by someone related to the operation, social-media users can communicate in a more natural way with other consumers and the business itself, which allows relationship building to occur (Cui, 2014).

2.8 Role of Images & Content in Online Marketing

Websites or social-media sites are “stimuli-based decision-making environment[s]” (Tam & Ho, 2005, p. 272). Stimuli such as photos, text, audio, or video can be used to persuade consumers to support a business or purchase specific products (Tam & Ho, 2005). Visual content has been proven to impact shopping behaviors and decisions (Dolich, 1969; Sirgy, 1985; Stern, Zinkhan, & Jaju, 2001). Video, high-quality, relevant images, and unique, brand-specific content should be posted to increase consumer engagement and responsiveness (Tefasse, 2014). Cvijikj and Michahelles (2013) found photos to be the most engaging content as images do not require social-media users to process information like text or video. Personalized marketing content allows the user to connect on a deeper level with a company and can create longer-lasting business relationships. Social-media users, especially those peripherally processing information, are more likely to connect to and engage with photos and topics of personal interest (Cui, 2014).

In addition to visual elements of social-media posts, the type of content impacts user engagement and behavior. Messages that contain emotion or conversational tones more effectively encourage interaction from social-media users (Vaiciukynaite, Massara, & Gatautis, 2017). Social-media content is broken into three main types: entertaining, informational, and transactional/promotional (Cvijikj & Michahelles, 2013; De Vries, Gensler, & Leeflang, 2012; Muntinga, Moorman, & Smit, 2011; Shen & Bissell, 2013; Tefasse, 2015). Findings by Tefasse (2015) indicate businesses should plan and post Facebook content carefully, taking into consideration consumer interests. Vaiciukynaite et al. (2017) recommend businesses use positive emotion and sentiments in posts for optimal customer interaction. When consumers can connect emotionally with a post on social media, engagement is higher (Tefasse, 2014; Mogaji, 2016; Huang & Chen, 2018). This correlates with Petty and Cacioppo’s (1986) findings that people

with high motivation and capacity to think about and connect with advertisements will remember these longer and be influenced on a deeper level than those who do not fully process and relate to the content.

Since farmer's markets and other forms of horticultural product direct marketing are often based on consumer-producer relationships and two-way communication, Facebook extends that opportunity to connect online. Facebook interactivity is comprised of people "liking," commenting on, and sharing images and posts, which allow consumers to engage with each other, in addition to specific businesses (Khan & Boehmer, 2013; Cui, 2016). Horticultural businesses can use Facebook to post photos and business information about location, sales, current products, or seasonal changes. It is also important that businesses respond in a timely manner to reviews, questions, and comments to keep customers satisfied and to build a good reputation (Cui, 2016).

2.9 Reaction Emojis on Facebook

Emojis, as defined by Merriam-Webster (2019), are "...any of various small images, symbols, or icons used in text fields in electronic communication (as in text messages, e-mail, and social media) to express the emotional attitude of the writer, convey information succinctly, communicate a message playfully without using words, etc." Created by Shegetaka Kurita in Japan in the 1990s (Negishi, 2014), emojis are now used extensively online and in mobile messaging (Rodrigues, Prada, Gaspar, Garrido, & Lopes, 2017). Through an online survey and in accordance with previous findings by Fullwood, Orchard, and Floyd (2013), Rodrigues et al. (2017) determined men were less likely to identify with and use emojis than women when interacting online. This correlates with research by Perrin

and Anderson (2019) indicating women are the most likely to have and check social-media platforms regularly.

Facebook allows users to interact with posts and other content by choosing emojis that correspond with the users' emotional responses to images, videos, and text (Kelly & Watts, 2015; Mogaji, 2016). Facebook reaction emojis, as shown in Figure 2.1, are provided as choices for interacting with business and personal posts and include a thumbs up ("like"), heart ("love"), laughing face ("haha"), surprised face ("wow"), crying face ("sad"), and angry face ("angry") images. The default emoji reaction for a Facebook post is the "like" thumbs up emoji. Using emoji engagement options, consumers can emotionally respond to and interact with advertisements, and products, other consumers, and businesses (Mogaji, 2016), which also allows for deeper central processing of information.

Tian, Galery, Dulcinati, Molimpakis, and Sun (2017) conducted a content analysis of public media Facebook posts in the United Kingdom (U.K.), U.S., France, and Germany which found 78.9% of social-media users ($n = 57,444,404$) used the "like" emoji to react to Facebook posts ($n = 21,000$). In order of most to least used reactions were "love" (5.5%), "angry" (5.4%), "sad" (4.0%), "haha" (3.7%), and "wow" (2.5%) (Tian et al., 2017). The study found French social-media users were more likely to react to posts using the "angry" emoji, users in the U.S. were most likely to "love" content, and German social-media users reacted with the "haha" emoji more than those in other countries. It was found, however, that positive emoji responses were more commonly used in all countries (Tian et al., 2017). In regard to sharing Facebook posts, this research by Tian et al., (2017) revealed posts were more likely to be shared if people reacted with an emoji other than "like." This indicates post

sharing, one of the highest levels of engagements, is affected by social-media consumers' emotional attitudes toward Facebook posts (Tian et al., 2017; Vaiciukynaite et al., 2017).



Figure 2.1 Facebook reaction emoji options. Reprinted from *Facebook Brand Resource Center*. Retrieved from <https://en.facebookbrand.com/assets/reactions/>

2.10 Social-Media Marketing Preferences

While little research has been done regarding social-media marketing preferences in the horticultural industry, in 2012, Kelley and Hyde conducted a study to determine consumer interest in social-media marketing of fresh food and value-added products. The researchers surveyed residents of metropolitan areas in the mid-Atlantic U.S. region (Richmond, Baltimore, Philadelphia, Washington D.C., and New York City) and asked questions about how social media is used to promote fresh produce and businesses or producers who sell these products. Of 1210 respondents, 31% indicated they were more interested in seeing “websites promoting food products” than emails sent by companies, blogs, or specific social-media pages (Kelley & Hyde, 2012).

Overall, participants in the survey indicated Facebook was the best and most relevant social-media platform for on-farm markets/farmer’s markets (36.5%), pick-your-own operations (34%), roadside fruit and/or vegetable stands (28.6%), local wineries (33.3%), and local grocers (34.7%) to direct-market food products. Kelley and Hyde (2012) discovered 61.1% of respondents who consumed three or more servings of fresh fruit or vegetables per day were more interested in seeing products promoted online and on social media, specifically on Facebook.

Participants also indicated websites promoting food products, websites for selling products, email newsletters, and emails from businesses/companies were useful pertaining to fruit and vegetables. Respondents selected “print advertisements (newspaper, store circulars, mail)” as the best fit for promoting on-farm and farmer’s market direct-marketed fresh fruit and vegetable products; however, Facebook and other online modes of advertising were chosen to be interesting to consumers as well. As stated by Stebner et al. (2017b) and Paine (2011) and in agreement with ELM (Petty & Cacioppo, 1984), consumer interest controls, to an extent, the type of advertising that is most effective for businesses. In order to connect with customers, companies and producers must build online engagement and relationships (Stebner et al., 2017b; Paine, 2011). It is important for businesses to use marketing material that encourages central processing and personal connections with advertisements (Kim & Yang, 2017; Petty & Cacioppo, 1984). For example, if elaboration likelihood is low and information is not interesting or relatable, consumers are less likely to expend cognitive resources on an advertisement and may only peripherally process what they see while doing or thinking about other things. On the other hand, if social-media posts contain personally relevant and intriguing information the likelihood of elaboration and central processing increases and consumers are more likely to retain the information they have seen. In addition to posting relevant information, knowing the most effective platform to reach customers is key when promoting merchandise. Kelley and Hyde (2012) concluded that, while horticultural shoppers desire different advertising methods, Facebook is the most popular social-media platform among those who participated in the survey and is the best for promoting direct-market produce and value-added products online.

Building on previous conclusions that social media, specifically Facebook, is an effective platform for horticultural marketing, Huang and Chen (2018) analyzed message strategies and

media formats of Facebook posts by florists and how these affected social-media user behaviors. For the study, a content analysis of 1646 posts from 24 Taiwanese florist shops' Facebook pages. Based on previous research on social-media message classification by Cvijikj and Michahelles (2103), Coursaris, Van Osch, and Balogh (2013), Leung, Bai, & Erdem (2017), Luarn, Lin, and Chiu (2015), Su, Reynolds, and Sunday (2015), and Tafesse (2015), Huang and Chen (2018) developed a "taxonomy of florist's Facebook posts" that organized Facebook content by type of post. These classifications were broken into sales posts, brand image posts, interaction posts, and entertaining posts (Huang & Chen, 2018). Sales posts were divided into four categories: product information, sales promotion, business information, and consumer education. These posts contained messages relating to business operations, sales of products, promotions, and services offered. Brand image posts were broken down according to content including: work showcasing, business image construction, brand events, and charity events. These were more social in nature and served to build a positive image of the brand and business. Interaction posts contained gratitude to customers, holiday greetings, and sharing feelings subject matter. The final post category, entertaining posts, encompassed all posts featuring art, jokes, and information about flowers (Huang & Chen, 2018).

After creating their taxonomy, Huang and Chen (2018) found lifestyle-type posts showing customer appreciation, product information, and holiday greetings to be the most engaging types of Facebook posts. Social-media users were more likely to "like" holiday and customer appreciation posts; however, there was higher engagement in the form of "liking," commenting on, and sharing posts with product information. These results support findings from other studies in various industries which showed that social-media content does influence user behaviors (Huang & Chen, 2018; Leung, et al., 2017; Kwok & Yu, 2016; Kim, Spiller, &

Hettche, 2015; Tafesse, 2015; Cvijikj & Michahelles, 2013). Though engagement with informational posts was similar in different industries, messages expressing gratitude toward customers or conveying emotions is more interesting to floral industry consumers (Huang & Chen, 2018; Kim et al., 2015; Su et al., 2015). In agreement with previous research, Huang & Chen (2018) also found posts containing images were more effective and garnered more “likes,” comments, and shares than videos or text.

2.11 Agritourism & Local Foods

The definition of local food as detailed by the 2008 Food, Conservation, and Energy Act is a product that “is less than 400 miles from its origin, or within the State in which it is produced” (Martinez et al., 2010). While no general “local” food definition exists, direct-to-consumer markets are recognized by the USDA as local food businesses. The 2007 U.S. Census found that most farms directly marketing food were smaller operations close to or in metropolitan counties (Martinez et al., 2010). These farms usually produce multiple crops or products and do their own marketing.

Agritourism is an example of direct-to-consumer marketing. Agritourism includes pick-your-own operations, on-farm stands or stores, and agricultural festivals (Gale, 1997; Lawless, 1999; Martinez et al., 2010). During the Depression in the 1930s and after World War I in the 1940s, pick-your-own farms became popular (Lloyd, Tilley, & Nelson, 1995). Produce prices were low and labor was hard to find, so producers allowed the public to pick food for themselves (Lloyd et al., 1995). Tree fruits, berries, Christmas trees, pumpkins, and tomatoes are labor-intensive, yet easy to harvest crops that are commonly found on pick-your-own farms (Lloyd, 1995; Gale, 1997; Martinez et al., 2010).

To combat declines in production and agricultural restructuring and to preserve diversity in crops, like apples, some farmers have turned to agritourism (Che, Veeck, & Veeck, 2005). Adding agritourism components, such as pick-your-own fruit and produce patches, helps farms remain in production and provides financial benefits (Che et al., 2005). To further explore the shift to agritourism, Che et al., (2005) conducted a study in which focus groups consisting of Michigan horticultural producers told researchers some of the reasons they have chosen to diversify their operations. Participants represented tree fruit, vegetable, wine, and small fruit producers from across Michigan, in both urban and rural areas. During the study, researchers found that smaller agritourism operations often work together to sell products. One participant, a large, regional farm market and orchard company, sold products both on-site and at a smaller fruit producer. Both businesses benefitted from this arrangement, as the larger operation could sell excess product and the smaller farm could offer a wider array of horticultural goods (Che et al., 2005).

2.12 Consumer Willingness to Pay & Willingness to Travel to Purchase Food

Research has shown that direct marketing is easier for businesses closer to urban areas; however, rural operations can draw urban consumers by offering agritourism opportunities and connecting with consumers on a more personal level (Gale, 1997). Consumers who are more conscious of food quality and the environmental impacts of food production are willing to pay more for local food (Martinez et al., 2010). Other factors like support for producers, production methods, and nutrition also play a role in consumer willingness to pay for local foods (Martinez et al., 2010). Those who are concerned about where their food comes from or the environmental impacts of long-distance shipping are more likely to purchase from local growers (Gale, 1997; Martinez et al., 2010).

Yue and Tong (2009) conducted a study in the Midwestern U.S. to determine consumer willingness to pay for fresh produce. The research showed that, while consumers may prefer fresh, locally grown food, sociodemographic backgrounds, price, and availability could affect willingness to purchase. In their study, traditional hypothetical survey methods were used and Minnesota State Fair attendees were asked hypothetical and non-hypothetical choice questions to determine consumer preference and fresh food shopping habits and preferences. From the sample of 343 people, over 84% buy fresh fruit and vegetables more than once a week and 83% stated that freshness was the most important factor in their purchasing decision-making process (Yue & Tong, 2009). Many respondents indicated that they considered price ahead of growing location, especially in a supermarket setting. Wealthier individuals and those involved with environmental organizations were more willing to pay for local or organic produce (Yue & Tong, 2009).

Educational background also affected willingness to purchase. Yue and Tong (2009) hypothesized that those without horticultural experience or those living in urban settings may not understand that there is a significant difference in quality of locally grown and imported fresh fruits and vegetables. Interestingly, household size did not affect willingness to purchase fresh foods. Overall, Yue and Tong (2009) found that consumers in Minnesota are more likely and willing to purchase direct-marketed fresh fruits and vegetables from farmer's markets, roadside stands, or small farm operations than other retail establishments.

In addition to fresh food, ornamental plant consumers are also interested in buying products from local vendors, and, according to Yue, Dennis, Behe, Hall, Campbell, and Lopez (2011), they are concerned about environmental impacts of plant production and the origin of products. While the buzzword "organic" does not influence ornamental plant consumers like it does fresh food consumers, those purchasing plants state that local production is important.

When purchasing plants labeled as “locally grown,” consumers expect higher quality, healthier, and lower priced products. Yue et al. (2011) conducted an online survey of consumers in Indiana, Michigan, Minnesota, and Texas to see what factors influenced willingness to purchase. Researchers found that plants grown and sold in sustainable or biodegradable containers and locally produced plants are of interest to consumers, especially females.

2.13 Summary

Research shows that horticultural businesses do not always understand and use new technologies for online direct marketing and selling; however, businesses, especially those with rural locations, could benefit from the adoption of online direct-selling methods (Baker et al., 2018). In addition to traditional farming and selling methods, producers are also using the Internet and social media as marketing tools (Ball & Duval, 2001). Social media allows businesses to communicate with customers on a personal level immediately, which is an easy, inexpensive way for small, often rural, operations to connect with clients (Cui, 2014; Palmer & Koenig-Lewis, 2009). Using both direct and online advertising and selling methods, producers can target current customers and consumers searching for an on-farm experience (Bond et al., 2006).

Chapter 3 - Methodology

This research was conducted in order to determine the effects of Facebook posts and images on the likelihood of online social-media engagement, consumer willingness to travel, and willingness to purchase horticultural goods. A review of literature illustrated the need for horticultural businesses to connect with consumers on social-media platforms, specifically Facebook. This study provides recommendations about effective Facebook image components and messages to horticultural business owners. Apples, bell peppers, and petunias were chosen as representative products for ornamental plant, fresh fruit, and fresh vegetable products likely to be marketed by independent horticultural businesses. After conducting the review of literature, the following research objectives and a research question were developed:

3.1 Research Objectives

RO1: Determine how, if at all, different features of Facebook posts affect consumer engagement with horticultural businesses.

RO2: Determine how, if at all, different features of Facebook posts affect the likelihood of purchase of horticultural products.

RO3: Determine the effects of different features of Facebook posts on willingness to travel to purchase these horticultural products.

3.2 Research Question

RQ1: Will there be similarities in willingness to engage with Facebook feature variables across different horticultural products?

3.3 Design of the Study

To address the research objectives and questions, survey methodology was used. Unlike other research methods, surveys allow a sample from a specific population, residents of the Midwestern U.S. in this case, to give information that can be generalized to a larger population (Dillman et al., 2014). An online survey is also efficient and cost-effective, thus, this method was selected to analyze desired Facebook posts and image characteristics related to horticultural businesses and products and willingness to travel and purchase from direct-market horticultural businesses. Since the focus of the research was online media, it was appropriate to distribute an online questionnaire (Dillman et al., 2014).

This study differs from most previous research related to horticultural consumer social-media preferences, as it is not qualitative research. Baker et al. (2018) used the quantitative content analysis method to explore the possibility of online retail plant sales by horticultural businesses. Similarly, Stebner et al. (2017b) conducted interviews of Midwestern garden center owners, employees, and customers to determine how garden centers were using social media to connect with customers and whether or not horticultural consumers were interested in the garden centers' social-media presence. This research briefly analyzed consumer interests, but did not perform an in-depth look at horticultural consumer social-media desires. In another study by Stebner et al., (2017a), researchers interviewed social-media managers of Midwestern horticultural businesses to gain insight on the perceptions of, attitudes toward, and barriers when using social media to promote their business. Peterson et al. (2018) conducted a survey of U.S. horticultural business owners to determine the current level of new-media use nationwide in research with methodology more closely aligned with this consumer preference study in that a survey was distributed to gain insight on social-media use in the horticultural industry. As with

previous studies, consumer social-media interest was not a variable. This research is relevant to the horticultural industry and helped inform the decisions made to research social-media consumer preferences concerning horticultural marketing in this study; however, there is still a need to determine horticultural consumer needs to more effectively market products.

Since consumer interest in Facebook content is the purpose of this study, an online survey is the best way to gather relevant information from a diverse audience in the target area (Gorham, Qu, Shuyang, Telg, & Lamm, 2016). While previous research has focused on discerning the viewpoints and desires of horticultural business owners related to social-media demand and use, the goal of this research is to determine social-media preferences and their behavioral effects on horticultural consumers. Funded by the USDA's Federal-State Marketing Improvement Program (FSMIP), information will be collected from a varied sample of plant and produce customers to develop generalizable data and offer strategic recommendations for the horticultural industry in the Midwestern U.S. based on the results of the online survey.

3.4 Instrumentation

For the study, petunias, apples, and bell peppers were chosen as representative products for ornamental plant, pick-your-own fruit, and direct-marketed vegetable products likely to be offered by independent horticultural businesses. Surveys were developed for each of the selected products using the tailored-design method (Dillman, Smyth, & Christian, 2014) and orthogonal–design conjoint to collect information from horticultural consumers in the Midwestern U.S. about Facebook image post perceptions, willingness to purchase, and willingness to travel to buy ornamental flowers, fresh direct-marketed vegetables, or pick-your-own fruit from independent horticultural operations. By using a tailored survey design to discern the most effective types of Facebook post for Midwestern consumers, the results presented are more useful to business

owners and social-media managers. This method allowed for the customization of questions and types of questions for a Midwestern audience to make the survey more effective (Dillman et al., 2014). Specific examples of horticultural products (petunias, bell peppers, and apples) commonly grown in the region were chosen for mock Facebook posts to avoid unnecessary confusion. Since petunias are familiar ornamental bedding plants, they were chosen to represent products sold at independent garden centers and greenhouses in this study.

Using both tailored-design and conjoint design methods also allowed for reduced sampling error and encouraged responses by asking relevant questions to the target audience (Dillman et al., 2014). As displayed in Table 3.1, the conjoint design method presented choices varied by message type, image component, and the location of the hypothetical business making the Facebook post. These choices were created to appear similar to real-life social-media posts, and survey questions allowed consumers to select which feature of each post or Facebook reaction type they preferred. The components of the conjoint design, message type, image component, and distance of business from viewer, were chosen for the focus of this study as previous research indicated each factor impacts consumer purchasing habits.

Table 3.1 *Conjoint orthogonal design used to create mock Facebook posts for all horticultural product surveys.*

Hypothetical business name	Message type	Image component	Distance from viewer
AB	lifestyle	people	one hour
CD	educational	product	outside region
EF	promotional	people	outside region
GH	promotional	business	one hour
IJ	lifestyle	product	state
KL	lifestyle	people	region
MZ	educational	business	region
OP	promotional	business	state
QR	educational	product	one hour
ST	lifestyle	business	outside region
UV	educational	people	state
XY	promotional	product	region

3.4.1 Pretesting.

To develop meaningful and appropriate messages and Facebook post images, a pretest survey of messages and images contained in the final instrument was conducted with a pilot group of undergraduate students in the College of Agriculture at Kansas State University (Manhattan, KS). A panel of experts including an Extension horticulture specialist, an agricultural communications specialist, and an agricultural economist reviewed all questions before the surveys were pretested. The pretest survey was comprised of individual images with a question asking what three words came to the viewer's mind when looking at the image. Previous research has determined that Facebook posts containing images are more engaging than posts with just text (Tafesse, 2015; Cvijikj & Michahelles, 2013); however, in regard to horticulture, the most effective image content has yet to be determined. To test different types of image components, photos featuring the horticultural product alone, the product with a person, and the product at a business were used. Questions included a photo of bell peppers (Figure 3.1), an image of apples, and a picture of petunia blossoms (Figure 3.3), which were used to represent horticultural products. Representing photos of people with horticultural products, images featuring a father and son cutting bell peppers, one of a girl eating an apple (Figure 3.2), and a photo of two children with a pot of petunias were included. The last set of photos, signifying products at a business, contained a photo of an apple orchard with a "u-pick" sign, a picture of bell peppers in baskets on a table, and an image of a greenhouse full of petunias.

In addition to photos, the questionnaire asked for feedback about educational, lifestyle, and promotional messages for each type of product. Kwok and Yu (2013) found that hospitality industry consumers were more engaged with conversational Facebook messages than sales and

marketing messages. Consumers of large restaurant chains “liked” and shared more Facebook posts containing conversational posts than those marketing a product (Kwok & Yu, 2013). Based on this conclusion and to test consumer interest in the horticultural industry, educational, conversational lifestyle, and sales and promotional messages with information adapted to the product in the chosen image were added to the Facebook posts. Promotional messages included “buy three, get one free” (Table 3.10) and “two dollars off per quarter peck” (Table 3.15). Lifestyle messages were “bring color into your life” (Table 3.11), “family memories made here” (Table 3.12). Educational messages stated “give your petunias a haircut two weeks after planting to improve bloom” (Table 3.9), “red ones have the highest level of vitamin C” (Table 3.13), and “dunk apple slices in salt water to keep them from browning.”

The pretest survey was developed in Qualtrics (Qualtrics, LLC, Salt Lake City, UT, USA), and an online survey link was emailed to students. For the initial survey, 109 undergraduate students were asked to write down three words that described the image or messages. The 312 total answers were coded and analyzed using Glaser’s constant comparative method to determine the effectiveness of each image or message (Glaser, 1965). Accordingly, all relevant data was sorted, coded, and then analyzed to determine which images and messages students did not like or understand. Due to participant confusion about a few questions, specifically, the definition of “peck” and the statement “sweet life,” which was associated with a television show, wording was changed and a second pretest was performed with undergraduate students enrolled in the agricultural business communications course at Kansas State University. After completion and coding of pretests, questions in the final survey were created. Approval from the Institutional Review Board at Kansas State University was obtained, and the survey was sent to 1242 Midwestern residents in November 2018. Survey questions included researcher-

generated sample Facebook image posts from hypothetical horticultural businesses, Likert scale, and multiple-choice questions. Likert-type and multiple-choice questions were added to evaluate general opinions about the Facebook image post.



Figure 3.1 Pretest image of woman and child with petunias.

Table 3.2 Pretest responses when asked for three words that best describe image of woman and child with petunias.

Response Category	Examples of Answers	No. of Responses in Category
People	Child/children, family, female(s), girl(s), mom/mother, daughter, parenthood, people, youth, motherhood	103
Positive Emotive Responses	Bond, cheerful, comforted/comforting, compassion, cute, enjoy, fun, happy/happiness, joy/joyful, love, warm, close, connection, together, great smiles, life	97
Flower	Flower(s), petunia, planting, plants	34
Action	Learning, sharing, smile(s)/smiling	14
Negative Responses	Awkward, uncomfortable, unsure, advertisement, commercial, fake, force, annoyed, creepy, scared, cheesy	14
Other	Brown eyes, culture, detail, diversity, gifts, international, photo shoot, projects, teeth	12
Natural/Organic/Local	Healthy, local, natural, outdoors	9
Season/Time of Year	Spring, summer, Mother's Day	8
Appearance	Beautiful, pretty, sunny, bright, vibrant	6
Color	Color, green	5
Produce/Garden/Food/Edible	Garden, gardening	4
Unrelated	Asian, bounding, Chinese	3
Places	Home	2
Size/Quantity	Little	1
TOTAL RESPONSES		312



Figure 3.2 Pretest image of petunia flowers.

Table 3.3 Pretest responses when asked for three words that best describe image of petunia flowers.

Response Category	Examples of Answers	No. of Responses in Category
Appearance	Beautiful/beauty, bright, clean, contrast, delicate, detail, light, pretty, vibrant, vivid	76
Color	Black, color, purple, pink, violet	75
Flower	Blue bonnet, floral, flower(s), geranium, horticulture, pansy/pansies, petunia, plant	64
Other	Bees, butterfly, deep, life, perfume, scent, photography, unique	21
Season/Time of Year	Morning, spring, summer	14
Positive Emotive Responses	Calm, cheerful, interesting, intriguing, invigorating, inviting, nice, peaceful, refreshing, relaxing, soothing, memories	13
Natural/Organic/Local	Homegrown, natural, organic, wild	12
Produce/Garden/Food/Edible	Garden, nursery, producer, production, growth	11
Action	Focus, smell, fragrant, popping, thriving	11
Unrelated	Back, K-State, KSU, Wildcat	4
Freshness	Fresh	3
Texture	Smooth, soft, veins	3
Quality	Quality	2
Health	Healthy	1
People	Family	1
Places	Texas	1
TOTAL RESPONSES		312



Figure 3.3 Pretest image of petunias in greenhouse.

Table 3.4 Pretest responses when asked for three words that best describe image of petunias in greenhouse.

Response Category	Examples of Answers	No. of Responses in Category
Flower	Flower(s), horticulture, plants, petunia, arrangement, flower garden	60
Color	Color/colorful, monochromatic, pink, purple, rainbow	43
Produce/Garden/Food/Edible	Garden, gardening, greenhouse, nursery	41
Size/Quantity	A lot, array, assortment, compact, extra, many, much, more, numerous, plentiful, selection, variety, quantity, small	35
Appearance	Beautiful/beauty, bloomed, bright, flourishing, luscious, pretty, scenty, sunny	27
Shopping Related	Business, cheap, choices, consumer, market, purchase, sale/sales, sell, shop, store	25
Other	Aromatic, baskets, decoration, diversity, fragrant, gift, heaven, life, lines, long, pollen, scent, soil, variant, water, warm	20
Season/Time of Year	Mother's Day, spring, summer	16
Natural/Organic/Local	Go green, local, nature, outdoorsy, sustainable	10
Positive Emotive Responses	Amazing, blissful, calm, captivated, fun, happy, interesting, neat	9
Action	Smell, pop	7
Negative Responses	Laborious, old lady, busy	5
Freshness	Fresh	4
Unrelated	Crapped, Dillons, like, Menards	4
People	Mom, my wife	3
Health	Healthy	2
Texture	Soft	1
TOTAL RESPONSES		312



Figure 3.4 Pretest image of red bell pepper.

Table 3.5 Pretest responses when asked for three words that best describe red bell pepper image

Response Category	Examples of Answers	No. of Responses in Category
Color	Green, red, colorful	73
Pepper	Bell pepper, pepper	52
Freshness	fresh	33
Produce/Garden/Food/Edible	Food, garden, produce, salsa, vegetable(s), seeds, salad, market, grocery	32
Flavor	Delicious, flavor/flavorful, hot/spicy, juicy, sweet, tasty, warm, appetizing, refreshing, warm	31
Appearance	Bright, clean, shiny, vibrant	29
Health	Healthful, healthy	19
Ripeness	Ripe, juicy	14
Other	Bell, quality	10
Texture	Crisp. Firm, crunch	5
Natural/Organic/Local	Natural, organic	4
Size/Quantity	Giant, plump	4
Positive Emotive Responses	Appealing, happy, welcoming	3
Unrelated	Tomatoes	1
Shopping Related	Consumer	1
Negative Responses	Dirty	1
TOTAL RESPONSES		312



Figure 3.5 Pretest image of father and son cutting bell peppers.

Table 3.6 Pretest responses when asked for three words that best describe image of father and son cutting bell peppers.

Response Category	Examples of Answers	No. of Responses in Category
Action	Work, supervision, teaching, teamwork, teaching moment, slicing, parenting, life lesson, experience, learning, knife, cutting, help/helpful, cutting, cooking, instruction, baking, assist, concentration	135
People	Boys, chef, dad, family, son, father, kid(s), men, parent,	60
Positive Emotive Responses	Bond/bonding, determined, effort, enjoyable, enjoyment, focused, fun, good, happy, interested, joy, love, passion, patience, safe, together	43
Produce/Garden/ Food/Edible	Suppertime, dinner, eating, food, fresh vegetables, fruit, fruit, growing, onions, produce, tomatoes, vegetables, veggies	27
Health	Health/healthy	11
Pepper	Pepper(s)	10
Other	Classic, flannel, Italian, moment, quality time, tradition(s), young	8
Negative Responses	Dangerous, sharp, worry	6
Natural/Organic/ Local	Homegrown, nutrition, wholesome	3
Flavor	Spicy, tasty	2
Unrelated	To, wood	2
Color	Red	1
Freshness	Fresh	1
Ripeness	Juicy	1
Size/Quantity	Small	1
Season/Time of Year	Summer	1
Places	Kitchen	1
TOTAL RESPONSES		312



Figure 3.6 Pretest image of girl eating apple.

Table 3.7 Pretest responses when asked for three words that best describe image of girl eating apple

Response Category	Examples of Answers	No. of Responses in Category
Positive Emotive Responses	Enjoy, fulfilled, fun, happiness/happy, joy/joyful, love, refreshing, safe, satisfaction/satisfied, smile, freedom, friendly, relatable	85
Apple/Orchard	Apple(s), orchard	47
Flavor	Delicious, flavor, good, sweet, tasty, yum/yummy	45
Health	Health, healthful, nutritious, wholesome	30
People	Child/children, family, girl, kid, youth, girl eating apple	25
Produce/Garden/Food/Edible	Eat, food, fruit, produce, snack, crop, fruitful, growth	15
Freshness	Fresh	11
Natural/Organic/Local	Homegrown, local, natural, organic	11
Texture	Crisp, crunch/crunchy	7
Negative Responses	Smug, hungry	7
Action	Active, bite, focus	6
Season/Time of Year	Spring, summer, fall	5
Other	Coat, mouth/mouthful, worm, quality	5
Ripeness	Juicy	5
Color	Pink, red	3
Appearance	Bright, little	2
Unrelated	Jacket	1
Shopping Related	Consumer	1
Places	Michigan	1
TOTAL RESPONSES		312



Figure 3.7 Pretest image of apples.

Table 3.8 Pretest responses when asked for three words that best describe image of apples.

Response Category	Examples of Answers	No. of Responses in Category
Apple/Orchard	Apple, apple tree, orchard	66
Produce/Garden/Food/Edible	Grow/growing, farm/farmers, fruit, garden, production, harvest, fruitful	37
Freshness	Fresh	26
Natural/Organic/Local	Farm fresh, homegrown, local, natural, organic, sun, wild	26
Color	Colorful, red, green, greenery	22
Ripeness	Ready, ripe, juicy	22
Flower/Plant	Leaf/leaves, plant, tree	21
Flavor	Appetizing, delicious, flavorful, sweet, tasty, yummy	20
Health	Healthy, nutrition	16
Other	Clarity, double, processed, full, hardy, Jonathon, Michigan, pair, patience	12
Negative Responses	Boring, distaste, fake, not fresh, old, dull	10
Texture	Crisp, crunch, texture	7
Appearance	Bright, clean, contrast, plump, pretty, pure	6
Positive Emotive Responses	Inviting, safe, perfect/perfection, together	6
Action	Pick/picking, popping	6
Unrelated	Adam, Eve, Fiji, flush, Washington	5
Season/Time of Year	Fall, season, summer	4
TOTAL RESPONSES		312



Figure 3.8 Pretest image of pick-your-own apple orchard.

Table 3.9 Pretest responses when asked for three words that best describe image of pick-your-own apple orchard.

Response Category	Examples of Answers	No. of Responses in Category
Apple/Orchard	Apple(s), orchard	63
Produce/Garden/Food/Edible	Country, farm/farming, food, fruit, garden, greens, harvest, monoculture, pie, vineyard, peach(es), fruit	34
Positive Emotive Responses	Enjoyment, fun, friendly, generous, good, interactive, inviting, involved, peaceful, safe, organized	29
Action	Active, adventure, eventful, focused, learning, involved, pick/picking, pick your own, production, self serve, tourism, work, jobs, decisions	29
Freshness	Fresh, freshness	27
Shopping Related	Choice(s), free, sell, special, variety, options, selections, variety	19
Natural/Organic/Local	Local, market, natural, organic, outdoors	18
Other	Clarity, control, date, hand, lush, personal, public, row, self, time, you	17
Color	Color/colorful	11
Flavor	Aroma, delicious, sweet, tasty, yum/yummy	10
Health	Healthy	10
Season/Time of Year	Fall, spring, summer	8
Size/Quantity	Abundance, plentiful	7
People	Family	7
Appearance	Beautiful, bright, pretty, vibrant	6
Flowers	Blossom, tree(s)	5
Ripeness	Ready, ripe	5
Places	California, Georgia, Michigan, trip	5
Unrelated	Support, tropical	2
TOTAL RESPONSES		312

Table 3.10 *Pretest responses to bedding plant lifestyle message "Bring color into your life."*

Response Category	Examples of Answers	No. of Responses in Category
Positive Emotive Responses	Entertaining, enticing, excitement, fun, good, happiness/happy, improve, enlightenment, interesting, innovative, joy/joyful, lifting, motivational, nice, positivity, yes, wonderful, cheerful	62
Other	Add, art, camera, change, choice, counselor, creative, design, diverse/diversity, energy, faith, imagination, life, new, pictures, smart, spice, wholeness, splash, unity, vehicles, lights, live a little, self, thoughts, mood, hair, experience	56
Color	Blue, color, colorful, green, orange, pink, purple, rainbow, red, yellow	46
Appearance	Beauty, bright, brilliance, fancy, pretty, vibrant, vision, vivid	34
Action	Action, adventure, calling, helpful, paint, paintbrush, work, smiles, pop	20
Unrelated	Bring, clothes, contacts, crayons, diet, HD, into, life, Pocahontas, taste, the, TV, Up	15
Negative Responses	Bland, boring, bossy, busy, cheesy, depressed, dull, generalized, imploring, pushy, quirky, sad, sheltered	15
Shopping Related	Advertisement, buying, choice, marketing, need, new things, opportunity, persuade, sale, slogan, value, variety	15
Flowers	Flower, flowers	10
Produce/Garden/ Food/Edible	Crops, fruit, garden, vegetables	8
Natural/Organic/ Local	Nature, outdoors, wild, butterflies, earth, sunlight	7
Health	Healthy	4
People	Children, family, people, youthful	4
Season/Time of Year	Spring, summer, seasonal	4
Freshness	Fresh	3
TOTAL RESPONSES		303

Table 3.11 *Pretest responses to educational message "Give your petunias a 'haircut' two weeks after planting to improve blooming."*

Response Category	Examples of Answers	No. of Responses in Category
Action	Advice, care, clippers, control, directions, groom/grooming, haircut, help/helping, informative, instructions, maintain, planning, prepare, prune, recommendation, relax, remember, requirement, scissors, sprucing, shears, tip, trim/trimming, upkeep, water, work	115
Flower	Flower(s), petunias, plant(s), bloom/blooming, flowering sooner	51
Produce/Garden/Food/Edible	Ag, farming, garden/gardening, grow/growth, home, gloves	39
Other		28
Negative Responses	'Haircut'?, boring, cheesy, confused, demanding, dislike, dumb, lacking, no, odd, scary, silly, unusual, weird, why, what?	24
Positive Emotive Responses	Clever, funny, informational, interesting, patience	10
Appearance	Bright, fragrant, pretty, pretty flowers, fragrant	8
Health	Health, healthy	7
Season/Time of Year	Fall, spring	6
Size/Quantity	Short, full, height, lots	5
Natural/Organic/Local	Nature	4
Color	Color, pink, red	3
Unrelated	Wife, your	2
Shopping Related	Retailer	1
TOTAL RESPONSES		303

Table 3.12 *Pretest responses to pick-your-own produce lifestyle message "Family memories made here."*

Response Category	Examples of Answers	No. of Responses in Category
Positive Emotive Responses	Memories, experience, fun, happy, bonding, together, excited, joy, love, wholesome, comfort, cherish, laughter, nice, sweet, creation, cozy, good, nostalgia,	129
People	Family, parents, mom, dad, siblings, daughter, father, children, grandparents, people	52
Places	Lake, home, vacation, Disney, road trips, restaurants, barbecue, water/amusement park, camping, boat, mountains, Virginia	50
Other	Childhood, pictures, traditions, project, hearth, dinner, homey, time, pets, sentiment, moments, living room	36
Unrelated	Here, made, Bella, Josh, where am I, conception	11
Produce/Garden/Food/Edible	Farm, pick your own, food, pumpkins	7
Action	Travel, trips, hunting, adventure, helpful	5
Season/Time of Year	Thanksgiving, holiday, summer	4
Negative Responses	Fake, cost, work, noisy	4
Natural/Organic/Local	Local, outside	2
Shopping Related	Advertising	2
Apple/Orchard	Apples	1
TOTAL RESPONSES		303

Table 3.13 *Pretest responses to direct-marketed produce educational message "Red ones have the highest level of vitamin C."*

Response Category	Examples of Answers	No. of Responses in Category
Health	Health, healthy, fit, immune system, vitamins, nutrition, supplement	96
Produce/Garden/ Food/Edible	Cherries/cherry, citrus, fruit, grapefruit, grapes, growth, orange/orange juice, tomatoes, vegetable(s)	40
Other	Balance, body, diet, energy, fact/factual, GMO, fajitas, science, sustain, knowledge, Mexican, moms, strength, sturdy	25
Color	Color, green, red	23
Positive Emotive Responses	Best, beneficial, benefits, favorite, good, happiness, trustworthy, interesting, wholesome	19
Action	Description, details, eat, helpful, inform/information, pick, telling	16
Flavor	Delicious, hot, spicy, sweet, tangy, tasty, yummy	14
Negative Responses	Biased, bland, colds, ill, scurvy, sick/sickness, unspecified	14
Shopping Related	Buy, choice(s), consumer, sales, store, worth, selection	13
Pepper	Pepper, bell pepper, yellow peppers	10
Apple/Orchard	Apple(s)	10
Unrelated	By how much, have, ones, take	6
Size/Quantity	Assortment, highest, level	5
Natural/Organic/ Local	Natural, organic, sun	4
Texture	Crisp, crunch	3
Appearance	Clean, vibrant	2
Freshness	Fresh	2
Ripeness	Ripe	1
TOTAL RESPONSES		303

Table 3.14 *Pretest responses to direct-marketed produce lifestyle message "Sweet life."*

Response Category	Examples of Answers	No. of Responses in Category
Positive Emotive Responses	Blessed, bliss, chill, cool, sweet, enjoyable, content/contentment, dream, exciting, fulfilling/fulfillment, fun, good, great, happy/happiness, inspiration, joy/joyful, living life to the fullest, peaceful, positive, relaxation, serene, simple, successful, thrilling	87
Produce/Garden/Food/Edible	Candy, candy kane, chocolate, coffee, dessert, farm/farming, lemons, Nutella, sugar/sugary, tea, treats	39
People	Aaron Carter, Zach & Cody, family, friends, Disney/Disney/Channel	23
Other	A boat, cows/cattle, horses, puppies, hippie, sunglasses, sweet life of Zach & Cody/Suite Life on Deck, TV, wide open spaces	22
Places	A lake, bakery, beach, Candyland, country, home, vacation	14
Natural/Organic/Local/Nature	Sunset, sunshine, outdoors	7
Action	Adventure, smiles	6
Shopping Related	Money, rich, rich person, wealth	5
Unrelated	And, ass, dude, of	4
Season/Time of Year	Summer	2
Negative Responses	Sick, irresponsible	2
Health	Health	1
TOTAL RESPONSES		212

Table 3.15 *Pretest responses to pick-your-own produce lifestyle message "Two dollars off per quarter peck."*

Response Category	Examples of Answers	No. of Responses in Category
Shopping Related	Bargain, cheap, buy, clearance, deal, coupon, discount, dollars, frugal, math, measurement, money, on sale, opportunity, promotion, sale, save/savings, shopping, store, surplus, total, better, benefits, exchange	197
Negative Responses	What's a peck?, arbitrary, confused/confusing/confusion, cost, desperate, explain, huh, old, old-fashioned, outdated, questionable, size?, waste, unsure, what, why, peck?, ultimatum, not worth it	35
Other	Bird, bundle, change, check, chicken(s), duck?, egg, farmers, hamburger, kiss, meat?, more, off, sayings, spelling, try	23
Size/Quantity	Bushel, peck, two, quantity, volume, weight	14
Positive Emotive Responses	Enticing, exciting, good, helpful, interesting, nice, smart, useful, yes, not bad	13
Unrelated	2 dollars off, not, Washington	12
Produce/Garden/Food/Edible	Food, oranges, strawberries	6
Natural/Organic/Local	Homegrown	2
Freshness	Fresh	1
TOTAL RESPONSES		303

Table 3.16 *Pretest responses to bedding plant, direct-marketed produce, and pick-your-own produce promotional message "Buy three, get one free."*

Response Category	Examples of Answers	No. of Responses in Category
Shopping Related	Advertise, bargain, business, BOGO, buy, cheap, coupon, deal, discount, free, frugal, marketing, money, offer, options, persuasion, promotion, sale/sales, save/savings, shopping, special, store	218
Appearance	Appealing, awesome, choice, enticing, good, happy, helpful, incentive, interesting, intriguing, inviting, lucky, nice, ooh, opportunity, smart, yes	29
Size/Quantity	Four, lots, many, multiple, one, three, 25	17
Unrelated	Rapping, clothes, delicious, Dominoes, get, lemons, off, percent, pizza, tomatoes	13
Other	Acquire, extra, get 4, get one, information, rhyme	9
Negative Responses	Cost, not great, old, scam, too many, why	8
Produce/Garden /Food/Edible	Food, produce, producer	6
Apple/Orchard	Apples	2
Health	Healthy	1
TOTAL RESPONSES		303

3.5 Dissemination

The survey was designed in Qualtrics and sent to an overseeing account manager to be disseminated to recruited respondents (Qualtrics, LLC, Salt Lake City, UT, USA) and was compatible with both computer and mobile devices (Dillman et al., 2014). This research was funded by a grant from the United States Department of Agriculture's Federal-State Marketing

Improvement Program (FSMIP) which required 1,152 completed responses so that information can be generalized to other Midwestern consumers. A total of 1242 responses were recorded between November 12 and November 19, 2018.

At the beginning of the survey, respondents were given the choice to participate, information about the study and its impacts, and the researcher's full name and contact information. In order to obtain relevant, usable data, participants had to answer a series of screening questions before taking the survey. To enter the petunia survey, it was required for respondents to have visited or purchased from a horticultural operation or purchased bedding plants such as marigolds or petunias in the past two years, have a Facebook account they have checked within the past year, and have agreed to participate. For screening on the bell pepper and apple surveys, respondents were only allowed to participate if they had purchased fresh produce directly from a farm, pick-your-own business, farmer's market, or other agricultural place during the last two years and if they had a Facebook account that had been checked in the previous two weeks. Once screened and after filling out information about internet use and online presence related to social media, participants answered questions about interest in a hypothetical Facebook post, likelihood to engage with or comment on the post, likelihood of traveling to the business who posted the image, and likelihood of purchasing from the business. It was possible to return to previous questions and, to ensure that questions were answered, forced responses were imposed on 112 questions, including Facebook image post, type of Facebook reaction, likelihood to purchase, and willingness to travel to purchase.

3.6 Data Analysis

All data were analyzed with IBM SPSS version 25 using appropriate statistical models that handle limited dependent variables. Descriptive statistics were used to describe the sample and demographics.

3.6.1 Research Objectives.

To determine if different features of Facebook posts affect the likelihood of consumer engagement with horticultural businesses differently, messages in hypothetical Facebook image posts and a Likert scale were used. As shown in Appendix B, Facebook image posts were created with photos of products, people with products, and products at horticultural businesses. These posts contained an educational, lifestyle conversational, or promotional message pertaining to the image component. Likert-type questions followed the images in the survey and asked consumers to rate on a six-point scale how likely they would be to “like,” share, comment on or otherwise engage with the hypothetical business after viewing the Facebook post. Respondents were also asked to choose the most fitting Facebook reaction emoji for the post from a multiple-choice list. To interpret the data associated with this outcome, the means and responses were compared. Researchers also ran independent samples *t*-tests to determine the statistical significance of the likelihood of engagement and type of Facebook reaction.

Actions on Facebook are weighted by a mathematical algorithm to determine what content to show to social-media users (Calero, 2013). Sharing posts are weighted similar to two comments, and about seven “likes” are equal to one comment (Calero, 2013). Social-media users mostly read posts and messages because of usefulness and personal preferences (Chang, Yu, & Lu, 2014). Sharing and commenting on Facebook posts requires central processing; social-media users have to consider their motivation to either personally promote a company’s product or

brand or process the meaning of the message on which they are commenting (Felix, Rauschnabel, & Hinsch, 2017; Kim & Yang, 2017; Sashi, 2012; Petty & Cacioppo, 1984). “Liking” a post involves the least amount of effort, low cognitive processing, and does not cause a Facebook post to appear on other users’ timelines, like sharing and commenting. Of all three actions, sharing requires the highest amount of central cognitive processing and is more likely to alter attitudes or behaviors (Kim & Yu, 2014). To increase engagement on Facebook and the likelihood of reaching new and potential customers, horticultural businesses should create posts that encourage people to comment on and share information in addition to clicking the “like” button.

To determine if different features of Facebook posts, including the ability for consumers to “like,” share, comment on, or assign an emoji to a post affect the likelihood of purchase of horticultural products, a Likert-type scale question asking consumers to rate how likely they are to purchase from the horticultural business illustrated in the sample Facebook image post was used. Previous research has shown that consumers who are more engaged with businesses, especially if they are able to build up loyalty to a specific company, are more likely to support the operation financially (Keller, 2001). Responses were measured on a six-point Likert scale, and it was determined that means of 2.50 and higher indicated participants were likely and willing to engage with the content; whereas, means of 2.49 and below showed consumers were neither likely nor unlikely or willing to engage.

To see how the likelihood of purchase varied across the three different types of messages: (educational, lifestyle, and promotional) correlations were examined. As the variables are directly related, bivariate correlations were calculated to predict the likelihood to purchase by

using Facebook engagement data obtained from the survey. Additionally, independent samples *t*-tests were run to determine statistically significant differences in purchase likelihood means.

To determine the effects of features of Facebook posts on willingness to travel to purchase these horticultural products, each hypothetical business image post was assigned a particular distance from the residents' home using orthogonal factorial design. For example, a post with a photo of a person at an apple orchard with a lifestyle message was assigned the distance of one hour away from the respondent's residence. Distance choices given were within a one-hour drive from the residence, in the state of residence, in the region of residence, and outside the region of residence. Region was left undefined in all three surveys. After viewing the Facebook image post with travel distance information, respondents were then asked to select their likelihood to travel to purchase from a multiple-choice list with options ranging from extremely unlikely to extremely likely. Means were analyzed using independent samples *t*-tests to determine if there were statistically significant differences between the multiple independent variables of distance.

3.6.2 Research Question.

In order to determine if findings are similar across different horticultural products, three hypothetical businesses and three specific product images were featured in the Facebook image posts. Petunias were chosen to represent independent greenhouse operations, apples were selected to represent pick-your-own businesses, and bell peppers represented direct-market fresh vegetable producers. Results from each survey were compared and analyzed using independent samples *t*-tests to determine statistically significant differences.

3.7 Potential Limitations

There were a few potential limitations for this study. In an attempt to mirror historically documents demographics of horticultural consumers, there was no ethnic diversity in the photos selected for the survey. Photo content was consistent and featured Caucasian people, which matched the survey sample. Future research could feature greater diversity in photos to connect better with all ethnic groups.

Additionally, survey fatigue and confusion about the wording of a few questions could have impacted the results. Each survey included questions asking respondents to indicate how many children were in the household, select from a range of ages, and identify the number of people in their household. The results from these questions were omitted from the study as it was evident that participants could have been confused by the wording of the questions and gave inaccurate answers. For example, when asked to write in number of people living in their household, answers provided made it unclear whether or not participants included themselves in the number reported for the household. Additionally, a few participants indicated 40 people lived in their household, which appeared inaccurate to researchers and could indicate respondents were confused by the question. Also, questions asking for children's age ranges to be selected as multiple choice answers did not give useable data. In future studies, it would be prudent to word questions in a less confusing manner and ask those taking the survey to write in some information.

Since the survey was administered online, it is possible the particular audience might be more willing to engage online and on social media. Responses from a different type of survey or study and audience might vary from those of participants were already Facebook users and have

the skills to operate technology. Mock Facebook posts were created and used for this study. Since viewers were aware the content was not real, perceptions could have been skewed. Additionally, messages presented in the posts were short, simple, and did not contain much content or emotion, such as exclamation statements or questions. Another potential limitation to this study is that the screening process could have caused some differences between the sample for this study and the population of the entire Midwestern U.S. as Midwest population numbers could be larger.

3.8 Summary

In order to present recommendations for Facebook post content to Midwestern horticultural businesses, a survey was conducted to determine consumer preferences. The survey included questions about willingness to travel and purchase from businesses that use Facebook to market products. The effects of different features of Facebook posts, the dependent variable, on the independent variables were tested using various statistical analysis techniques. Independent variables for this study were willingness to travel specific distances to a horticultural business, likelihood and willingness to purchase from a horticultural business, and likelihood of engagement on Facebook. After pretesting of survey questions was completed using Glaser's constant comparative method and some changes were made to the final survey, it was disseminated through Qualtrics to horticultural consumers in the Midwestern U.S. Data was collected and analyzed using ANOVA, *t*-tests, comparison of responses, and bivariate correlation analysis. Results from this quantitative analysis are generalizable to the larger population of Midwestern residents.

Chapter 4 - Results

4.1 Survey Sample

The region of focus of this study was the Midwestern U.S., as defined by the United States Census Bureau (USCB). Independent horticultural businesses in the Midwest are often rural and struggle to compete with larger operations (Baker et al., 2018; Palma et al., 2012). In this region, plant hardiness zones range from 3a to 7a (USDA Plant Hardiness Zone Map, 2012) allowing varying produce and plants to be grown. When survey responses were received, researchers found most Midwestern U.S. population statistics to be similarly represented in the study sample. While these results were comparable, they were not all fully generalizable to the entire population. The states included in this study were Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio South Dakota, and Wisconsin (U.S. Census Bureau, 2015). While numbers varied in individual survey samples, as shown in Table 4.1, the majority of survey respondents ($n = 1242$) resided in Ohio ($n = 245$, 19.7%), Michigan ($n = 224$, 18.0%), and Illinois ($n = 189$, 15.2%). These higher frequencies of participants corresponds with 2017 population data indicating Ohio ($n = 11,664,129$), Michigan ($n = 9,976,447$), and Illinois ($n = 12,786,196$) had the largest populations among Midwestern U.S. states (U.S. Census Bureau, 2017).

Table 4.1 Total distribution of frequencies and percentages of survey respondents by state.

State	<u>Bedding Plants</u>		<u>Direct-Marketed Produce</u>		<u>Pick-your-own Produce</u>		<u>Total Survey Sample</u>	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Ohio	77	18.9	75	18.1	93	22.1	245	19.7
Michigan	73	17.9	72	17.3	79	18.8	224	18
Illinois	65	16	73	17.6	51	12.1	189	15.2
Indiana	48	11.8	50	12	49	11.7	147	11.8
Missouri	34	8.4	33	8	35	8.3	102	8.2
Wisconsin	30	7.4	29	7	35	8.3	94	7.6
Iowa	24	5.9	13	3.1	19	4.5	56	4.5
Minnesota	19	4.7	32	7.7	28	6.7	79	6.4
Kansas	19	4.7	19	4.6	10	2.4	48	3.9
Nebraska	8	2	11	2.7	10	2.4	29	2.3
South Dakota	6	1.5	2	0.5	6	1.4	14	1.1
North Dakota	4	1	6	1.4	5	1.2	15	1.2
Total	407	100.0	415	100.0	420	100.0	1242	100.0

Note: Frequency and percentage of survey participants separated by state of residency in the Midwestern U.S.

The Midwestern U.S. population as of 2017 was estimated at 68, 179,351 people, with the majority (61%) of residents between the ages of 18 and 64 years-old (U.S. Census Bureau, 2017). A total of 1242 responses from Midwestern residents were collected from a survey for this study. Analysis of the demographics of the Midwestern U.S. population shows residents were 51% female and 76% white (Caucasian). Other reported races and ethnicities included African American (10%), Hispanic, Latino, or Spanish (8.0%), Asian (3.0%), multiple (2.0%), American Indian or Alaskan Native (1.0%) (U.S. Census Bureau, 2017). As part of the survey, respondents were asked to report their ethnicity. Similar to population statistics, the survey sample consisted mostly of female respondents ($n = 1050$), which comprised 84.5% of participants. The majority of respondents identified themselves as Caucasian (white) ($n = 1076$,

86.6%), and others indicated they were African American ($n = 90$, 7.2%), American Indian or Alaskan Native ($n = 25$, 2.0%), Asian ($n = 28$, 2.1%), Hispanic, Latino, or Spanish ($n = 47$, 3.8%), and mixed/other ($n = 9$, 0.1%).

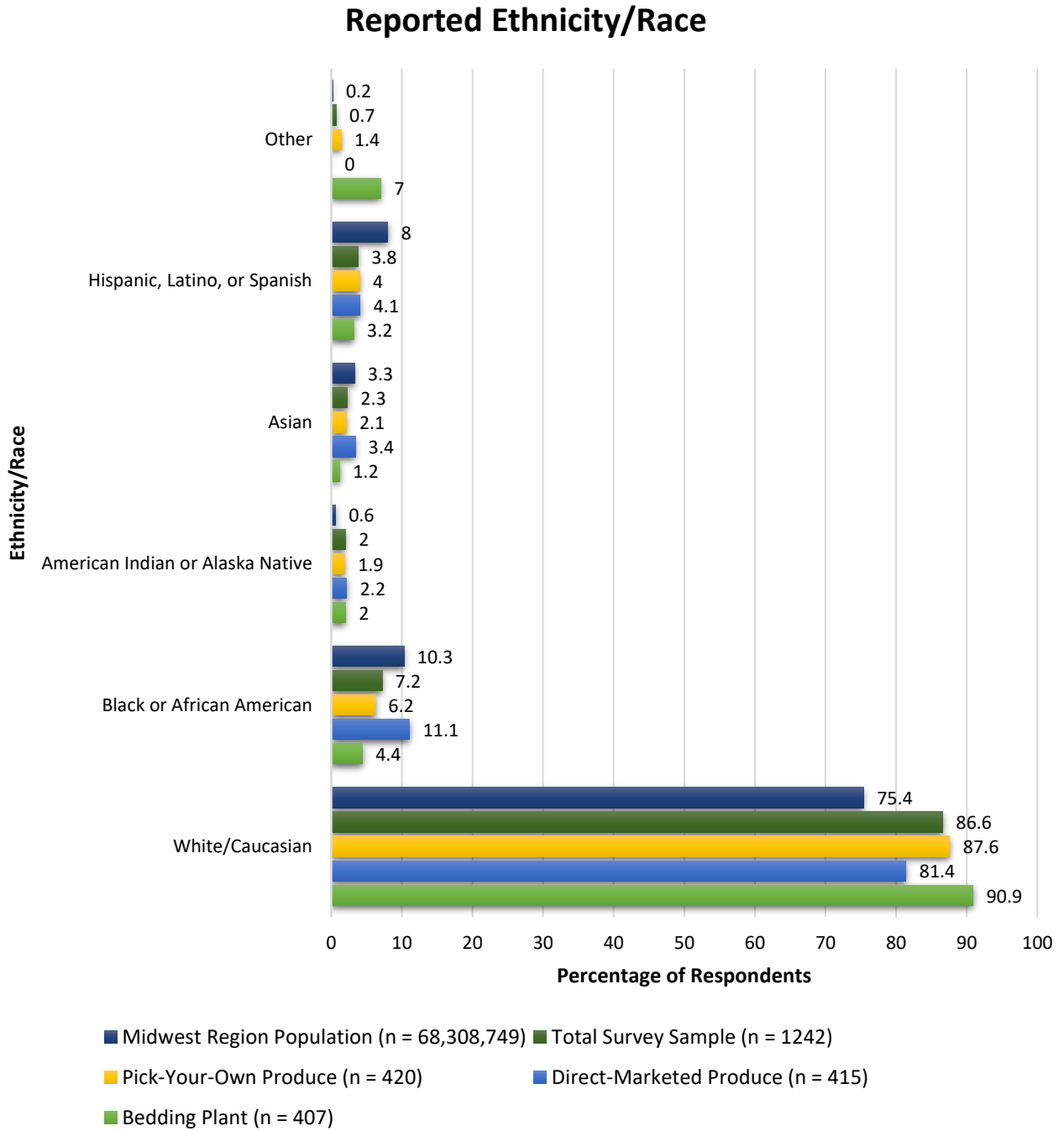


Figure 4.1 Percentage of survey participants' reported ethnicity/race and Midwestern population ethnicity/race as reported by the U.S. Census Bureau (2107).

For the Midwestern region population ($n = 68,308,749$), the median household income was \$57,778 with 43% of the population making under \$50,000 annually (U.S. Census Bureau, 2017). As shown in Figure 4.1, of all survey respondents, 13.0% ($n = 161$) indicated their annual income for 2017 was between \$75,000 and \$99,999, 11.8% ($n = 147$) indicated income between \$60,000 and \$74,999, and 9.5% ($n = 118$) stated they make between \$50,000 and \$59,000 per year. On either end of the spectrum, 8.1% ($n = 100$) of participants stated their income was less than \$10,000 and another 8.1% ($n = 101$) indicated they made \$100,000 to \$124,999 in 2017.

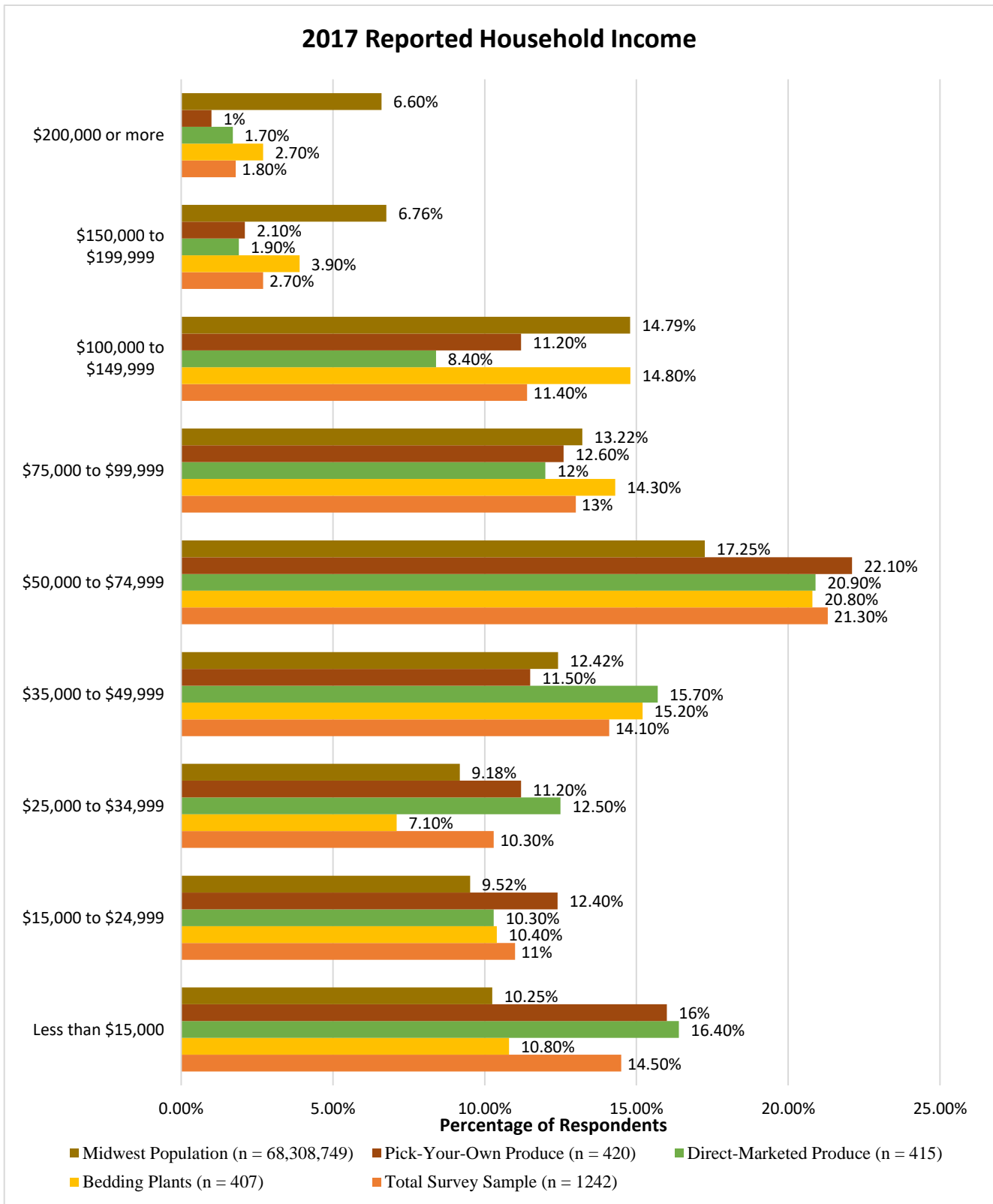


Figure 4.2 Percentage of survey participants’ reported income and Midwestern population income as reported by the U.S. Census Bureau (2017).

The survey also asked about participants' education level. Similar to Midwestern population data, the majority of respondents possessed high school, some college, or Bachelor's degrees. As illustrated in Figure 2.4.1, the survey sample had more college education experience than the Midwestern population, in general. Also shown in the figure, 9.2% ($n = 4,258,534$) of Midwestern residents possess no degree, 29.2% ($n = 13,533,588$) have graduated from high school, 30.6% ($n = 14,189,581$) have some college education, 19.5% ($n = 9,041,123$) have a Bachelor's degree, and 11.6% ($n = 5,398,649$) have post-graduate educational experience (U.S. Census Bureau, 2017). The age range of all survey respondents was between 18 and 82 years old with a mean age of 40.7 years old ($SD = 13.9$). Most participants indicated they were employed and working 40 or more hours per week ($n = 570, 45.9\%$) and had some college education but no degree ($n = 373, 30\%$) or were high school graduates ($n = 306, 24.6\%$). For the Midwestern U.S. population, the average travel time to work is 23.9 minutes with 80% of workers over the age of 16 driving alone to their place of employment. While participants were not directly asked about their work commute length, the survey determined how far consumers were willing to travel to shop for horticultural products.

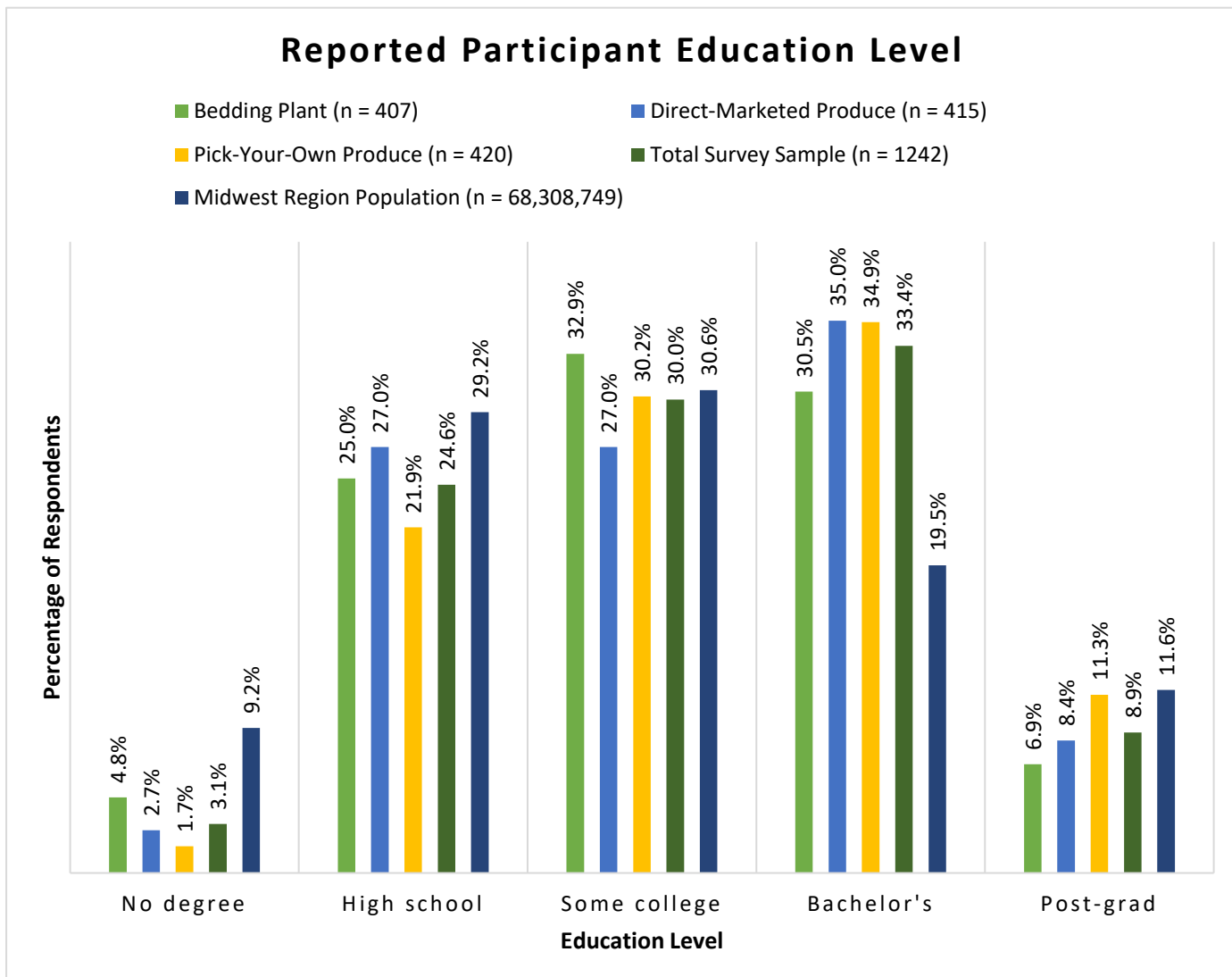


Figure 4.3 Percentage of reported survey participant and Midwestern population education levels as reported by the U.S. Census Bureau (2017).

When survey participants were asked to indicate the average number of children in the household, the mean response in the garden center survey was 2.1 ($SD = 1.3$), with a majority reporting zero children ($n = 198, 48.5\%$). In the produce operation survey, the average number of children in the household was 2.0 ($SD = 1.3$), with most respondents reporting zero children ($n = 201, 48.4\%$). Respondents in the pick-your-own produce survey indicated the average number of children in the household was 2.1 ($SD = 1.29$) with a majority reporting zero children ($n = 179, 42.5\%$).

To determine children's age ranges, yes or no questions were asked about three different age ranges in each survey: 0 to 5, 6 to 12, and 12 to 17 years old. Of the garden center survey respondents, 27.5% ($n = 112$) stated their children's age was 0 to 5 years old, 27.0% ($n = 110$) had children aged 6 to 12, and 19.4% ($n = 79$) stated their children were between 12 and 17 years old. Of the participants in the direct-marketed produce survey, 27.0% ($n = 112$) indicated their children were 0 to 5 years old, 23.4% ($n = 97$) responded their children's age ranged from 6 to 12 years old, and 20.5% ($n = 85$) chose the 12 to 17 year old option. Similarly, of those who participated in the pick-your-own produce survey, 32.1% ($n = 135$) reported having children ages 0 to 5, 27.9% ($n = 117$) indicated their children were between 6 and 12, and 20.0% ($n = 84$) had children between the ages of 12 and 17.

For the Midwestern U.S., the average number of people per household is 2.5. The largest amount of household types are made up of married couples (60%) and non-family households (18%) (U.S. Census Bureau, 2017). Survey respondents were also asked to write in how many adults lived in their household; however, due to unreliable responses and suspected participant misunderstanding, this question was omitted from the final results during the data cleaning process to keep the results of this study as accurate as possible.

As horticultural businesses diversify and social-media marketing becomes more popular, it is important for independent horticultural businesses to consider using social-media platforms as a way to connect with current and potential customers. In order to present online marketing suggestions for businesses, this study sought to determine consumer interest and willingness to engage with and buy from horticultural businesses after seeing Facebook image posts. Choosing personally relevant social-media content that encourages consumers to centrally process information increases the effectiveness of marketing materials (Petty & Cacioppo, 1984). Results

from the study are presented in this chapter in order of the following research objectives and questions. The research objectives for this study are:

RO1: Determine how, if at all, different features of Facebook posts affect consumer engagement with horticultural businesses.

RO2: Determine how, if at all, different features of Facebook posts affect the likelihood of purchase of horticultural products.

RO3: Determine the effects of different features of Facebook posts on willingness to travel to purchase these horticultural products.

A research question was also developed to further explore consumer preferences toward horticultural marketing on social media. The question is as follows:

- RQ1: Will there be similarities in willingness to engage with Facebook feature variables across different horticultural products?

The information in this chapter is presented in sections by research objective and research question. Each section presents results from the three individual survey samples, bedding plant, direct-marketed produce, and pick-your-own produce, and the total survey sample as well. For each product type, means and frequencies were examined. These results are presented in order of product for each research question.

4.2 Likelihood & Type of Reaction (RO1)

To determine how different features of Facebook posts affect consumer engagement with horticultural businesses, mock Facebook image posts and Likert scale questions were developed to measure likelihood of reaction, “like” or other emoji, “comment,” or “share.” After the likelihood to react question, a multiple choice question asked respondents which type of emoji reaction (“like,” “love,” “haha,” “wow,” “sad,” or “angry”) they would choose to react to the post. To determine likelihood of engagement, response means were compared and frequencies were analyzed. Survey respondents were asked to indicate how likely they were to react to a Facebook post from a horticultural business by moving a slider button across a Likert scale in which 0.0 equaled extremely unlikely and 5.0 equaled extremely likely.

Photos in all three surveys (refer to Appendix B, C, and D) included two children with a container of petunias, a petunia flower, baskets of petunias in a greenhouse, a father and son cutting bell peppers, red bell peppers, baskets of bell peppers on a table, a girl eating an apple outside, red apples on a tree, and an orchard with a “u-pick” sign. Three types of messages (lifestyle, promotional, and educational) were assigned to photos using orthogonal factorial design methods. The messages and photos were used in mock Facebook posts for hypothetical horticultural businesses. To explore the specific type of engagement, frequencies and means of messages, image components, and distance, the individual components of the Facebook posts, were compared. Independent samples t-tests were also conducted to determine statistical significance.

4.2.1 Bedding plant.

Within this section, all results will be reported related to the bedding plants survey presented in order of variables of message, image component, and distance. Within each variable, frequencies will be reported followed by means.

4.2.1.1 Message.

4.2.1.1.1 Frequencies.

Bedding plant survey participants ($n = 407$) indicated they were more likely to “like” a Facebook post than comment on or share. When all response frequencies of consumers were analyzed, 33.7% ($n = 137$) of participants were extremely likely to “like” lifestyle posts (Table 4.1), 35.4% ($n = 144$) were extremely likely to “like” educational posts (Table 4.2), and 39.6% ($n = 161$) were extremely likely to “like” promotional posts (Table 4.3). As shown in Table 4.2, the majority of respondents were either somewhat ($n = 127$, 31.2%) or extremely ($n = 137$, 33.7%) likely to “like” lifestyle messages. Conversely, 25.3% ($n = 103$) of respondents were extremely unwilling to leave a comment, and 27.6% ($n = 112$) were extremely unwilling to share posts with lifestyle messages (Table 4.2). As presented in Table 4.3, the number of consumers ($n = 144$, 35.4%) extremely likely to “like” educational messages was just slightly higher than lifestyle ($n = 137$, 33.7%) messages. Differing from both educational and lifestyle messages, as shown in Table 4.3, 39.6% ($n = 161$) participants indicated they would be extremely likely to “like” posts featuring promotional messages. Overall, the majority of consumers were both somewhat and extremely likely to “like” promotional ($n = 271$, 66.6%) and educational ($n = 270$, 66.3%) posts, but also indicated willingness to react to lifestyle ($n = 264$, 64.9%) posts.

When asked about the likelihood to comment on or share posts, the majority of consumers were extremely unlikely to do either. As shown in Tables 4.2, 4.3, and 4.4, for each

message type, just under 20.0% of respondents were extremely likely and willing to comment on or share Facebook posts. For educational messages, as presented in Table 4.3, 26.5% ($n = 108$) of participants were extremely unlikely to comment on the post, and 27.7% ($n = 113$) were extremely unlikely to share educational posts. Similar to other message types, consumers indicated they were less likely to comment on and share promotional posts than they were to choose the “like” option; although, the frequencies of those somewhat likely and extremely likely to both comment on and share posts were slightly higher for promotional messages than educational and lifestyle. Of the 407 total respondents in the bedding plant survey, as shown in Table 4.4, 24.8% ($n = 101$) were extremely unlikely to comment on and 25.2% ($n = 103$) indicated they were extremely unlikely to share promotional posts; however, more participants were willing to comment on ($n = 165$, 40.5%) and share ($n = 175$, 43.0%) promotional posts than educational and lifestyle messages.

Table 4.2 Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing lifestyle messages for bedding plant survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	18	4.4	52	12.8	65	16.0
	.25	5	1.2	21	5.2	20	4.9
	.50	4	1.0	12	2.9	10	2.5
	.75	7	1.7	18	4.4	17	4.2
Somewhat unlikely 1.00 to < 2.00	1.00	13	3.2	27	6.6	33	8.1
	1.25	10	2.5	21	5.2	23	5.7
	1.50	7	1.7	21	5.2	12	2.9
	1.75	15	3.7	11	2.7	13	3.2
Neither likely or unlikely 2.00 to < 3.00	2.00	10	2.5	11	2.7	16	3.9
	2.25	16	3.9	21	5.2	16	3.9
	2.50	21	5.2	17	4.2	13	3.2
	2.75	17	4.2	20	4.9	19	4.7
Somewhat likely 3.00 to < 4.00	3.00	30	7.4	36	8.8	30	7.4
	3.25	37	9.1	14	3.4	14	3.4
	3.50	31	7.6	13	3.2	23	5.7
	3.75	29	7.1	20	4.9	14	3.4
Extremely likely 4.00 to ≤ 5.00	4.00	40	9.8	19	4.7	18	4.4
	4.25	22	5.4	12	2.9	4	1.0
	4.50	21	5.2	7	1.7	12	2.9
	4.75	21	5.2	16	3.9	11	2.7
	5.00	33	8.1	18	4.4	24	5.9
Total		407	100.0	407	100.0	407	100.0

Table 4.3 Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing educational messages for bedding plant survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	21	5.2	64	15.7	66	16.2
	.25	5	1.2	14	3.4	16	3.9
	.50	7	1.7	13	3.2	14	3.4
	.75	4	1.0	17	4.2	17	4.2
Somewhat unlikely 1.00 to < 2.00	1.00	14	3.4	28	6.9	27	6.6
	1.25	9	2.2	21	5.2	14	3.4
	1.50	14	3.4	10	2.5	17	4.2
	1.75	5	1.2	11	2.7	8	2.0
Neither likely or unlikely 2.00 to < 3.00	2.00	13	3.2	16	3.9	11	2.7
	2.25	14	3.4	15	3.7	16	3.9
	2.50	11	2.7	19	4.7	11	2.7
	2.75	20	4.9	19	4.7	19	4.7
Somewhat likely 3.00 to < 4.00	3.00	30	7.4	30	7.4	29	7.1
	3.25	25	6.1	19	4.7	21	5.2
	3.50	34	8.4	21	5.2	25	6.1
	3.75	37	9.1	14	3.4	15	3.7
Extremely likely 4.00 to ≤ 5.00	4.00	44	10.8	25	6.1	25	6.1
	4.25	25	6.1	10	2.5	8	2.0
	4.50	13	3.2	9	2.2	10	2.5
	4.75	21	5.2	8	2.0	14	3.4
	5.00	41	10.1	24	5.9	24	5.9
Total		407	100.0	407	100.0	407	100.0

Table 4.4 Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing promotional messages for bedding plant survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	21	5.2	64	15.7	71	17.4
	.25	6	1.5	14	3.4	14	3.4
	.50	6	1.5	15	3.7	11	2.7
	.75	4	1.0	8	2.0	7	1.7
Somewhat unlikely 1.00 to < 2.00	1.00	10	2.5	24	5.9	29	7.1
	1.25	10	2.5	19	4.7	12	2.9
	1.50	8	2.0	14	3.4	11	2.7
	1.75	9	2.2	10	2.5	11	2.7
Neither likely or unlikely 2.00 to < 3.00	2.00	16	3.9	21	5.2	16	3.9
	2.25	12	2.9	12	2.9	16	3.9
	2.50	16	3.9	18	4.4	20	4.9
	2.75	18	4.4	23	5.7	14	3.4
Somewhat likely 3.00 to < 4.00	3.00	23	5.7	31	7.6	33	8.1
	3.25	30	7.4	13	3.2	21	5.2
	3.50	30	7.4	25	6.1	13	3.2
	3.75	27	6.6	17	4.2	18	4.4
Extremely likely 4.00 to ≤ 5.00	4.00	48	11.8	24	5.9	16	3.9
	4.25	24	5.9	17	4.2	14	3.4
	4.50	22	5.4	4	1.0	15	3.7
	4.75	21	5.2	10	2.5	17	4.2
	5.00	46	11.3	24	5.9	28	6.9
Total		407	100.0	407	100.0	407	100.0

4.2.1.1.2 Means.

As shown in Table 4.5, results showed a slightly higher mean likelihood of social-media users “liking” promotional posts ($M = 3.20$, $SD = 1.42$) than other types of messages. Bedding plant survey respondents were somewhat likely to comment on and share posts with promotional messages and images of products at a horticultural business. There were no statistically significant differences between means for the three types of message type tested: lifestyle, educational, and promotional. Though all means were very similar, promotional content ($M = 3.20$, $SD = 1.42$) had the highest mean.

Table 4.5 Mean likelihood of engagement with Facebook posts featuring bedding plants by message type.

Message	Like		Comment		Share	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Lifestyle	3.11 a	1.36	2.20 a	1.56	2.12 a	1.60
Educational	3.14 a	1.41	2.20 a	1.59	2.24 a	1.64
Promotional	3.20 a	1.42	2.26 a	1.59	2.32 a	1.67

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to react and 5 = extremely likely to react. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 407$).

4.2.1.2 Image Component.

4.2.1.2.1 Frequencies.

A comparison of bedding plant Facebook post image component frequencies showed social-media users were both somewhat and extremely willing to “like” images of people with a featured product ($n = 270$, 66.4%) and an image of the product alone ($n = 270$, 66.3%), comment on photos of products at a business ($n = 167$, 41.0%), and share posts with images of a product alone ($n = 173$, 42.5%). As shown in Tables 4.6, 4.7, and 4.8, similar to message type responses, the majority of survey respondents were extremely willing to “like” posts regardless of image component and were generally extremely unwilling to comment on or share posts. While frequencies were close for all image component types, as presented in Table 4.8, participants indicated a higher likelihood of being extremely willing to “like” photos of products at a business ($n = 161$, 39.5%) than images of people with products ($n = 148$, 36.4%) and images of the product alone ($n = 157$, 38.5%). Around 26.0% of respondents indicated they would be extremely unlikely to comment on or share posts containing each type of image component: people with products, products alone, and products at a business.

Table 4.6 Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of people with products for bedding plant survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	17	4.2	50	12.3	60	14.7
	.25	8	2.0	22	5.4	19	4.7
	.50	2	0.5	15	3.7	13	3.2
	.75	9	2.2	19	4.7	16	3.9
Somewhat unlikely 1.00 to < 2.00	1.00	13	3.2	22	5.4	32	7.9
	1.25	10	2.5	26	6.4	28	6.9
	1.50	9	2.2	22	5.4	16	3.9
	1.75	4	1.0	15	3.7	16	3.9
Neither likely or unlikely 2.00 to < 3.00	2.00	13	3.2	9	2.2	15	3.7
	2.25	26	6.4	17	4.2	15	3.7
	2.50	7	1.7	18	4.4	12	2.9
	2.75	19	4.7	14	3.4	17	4.2
Somewhat likely 3.00 to < 4.00	3.00	28	6.9	36	8.8	28	6.9
	3.25	30	7.4	17	4.2	18	4.4
	3.50	33	8.1	15	3.7	13	3.2
	3.75	31	7.6	17	4.2	17	4.2
Extremely likely 4.00 to ≤ 5.00	4.00	46	11.3	20	4.9	16	3.9
	4.25	23	5.7	7	1.7	8	2.0
	4.50	21	5.2	13	3.2	12	2.9
	4.75	20	4.9	11	2.7	12	2.9
	5.00	38	9.3	22	5.4	24	5.9
Total		407	100.0	407	100.0	407	100.0

Table 4.7 Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of products alone for bedding plant survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	23	5.7	66	16.2	71	17.4
	.25	8	2.0	12	2.9	12	2.9
	.50	4	1.0	14	3.4	14	3.4
	.75	5	1.2	16	3.9	17	4.2
Somewhat unlikely 1.00 to < 2.00	1.00	15	3.7	32	7.9	29	7.1
	1.25	10	2.5	13	3.2	12	2.9
	1.50	11	2.7	13	3.2	12	2.9
	1.75	12	2.9	12	2.9	9	2.2
Neither likely or unlikely 2.00 to < 3.00	2.00	8	2.0	14	3.4	15	3.7
	2.25	13	3.2	21	5.2	12	2.9
	2.50	15	3.7	12	2.9	17	4.2
	2.75	13	3.2	19	4.7	14	3.4
Somewhat likely 3.00 to < 4.00	3.00	31	7.6	26	6.4	24	5.9
	3.25	24	5.9	21	5.2	24	5.9
	3.50	30	7.4	19	4.7	25	6.1
	3.75	28	6.9	19	4.7	12	2.9
Extremely likely 4.00 to ≤ 5.00	4.00	53	13.0	23	5.7	21	5.2
	4.25	23	5.7	15	3.7	13	3.2
	4.50	20	4.9	8	2.0	10	2.5
	4.75	14	3.4	10	2.5	13	3.2
	5.00	47	11.5	22	5.4	31	7.6
Total		407	100.0	407	100.0	407	100.0

Table 4.8 Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of products at a business for bedding plant survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	23	5.7	75	18.4	73	17.9
	.25	8	2.0	10	2.5	11	2.7
	.50	5	1.2	10	2.5	7	1.7
	.75	6	1.5	11	2.7	13	3.2
Somewhat unlikely 1.00 to < 2.00	1.00	18	4.4	32	7.9	32	7.9
	1.25	7	1.7	11	2.7	11	2.7
	1.50	4	1.0	10	2.5	17	4.2
	1.75	5	1.2	16	3.9	12	2.9
Neither likely or unlikely 2.00 to < 3.00	2.00	12	2.9	17	4.2	14	3.4
	2.25	13	3.2	14	3.4	13	3.2
	2.50	16	3.9	13	3.2	16	3.9
	2.75	24	5.9	21	5.2	21	5.2
Somewhat likely 3.00 to < 4.00	3.00	23	5.7	31	7.6	29	7.1
	3.25	28	6.9	19	4.7	16	3.9
	3.50	32	7.9	15	3.7	14	3.4
	3.75	22	5.4	14	3.4	16	3.9
Extremely likely 4.00 to ≤ 5.00	4.00	53	13.0	25	6.1	26	6.4
	4.25	22	5.4	17	4.2	14	3.4
	4.50	15	3.7	5	1.2	9	2.2
	4.75	20	4.9	7	1.7	6	1.5
	5.00	51	12.5	34	8.4	37	9.1
Total		407	100.0	407	100.0	407	100.0

4.2.1.2.2 Means.

As shown in Table 4.9, when mean responses were compared, no significant differences occurred between photo component types for bedding plants. Standard deviations were relatively high, especially for likelihood to comment on and share response means. Means were highest for the likelihood of “liking” posts, indicated consumers were more unlikely to comment on and share posts.

Table 4.9 Mean likelihood of engagement with Facebook posts featuring bedding plants by image component.

Image component	Like		Comment		Share	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
People with product	3.16 a	1.38	2.19 a	1.57	2.12 a	1.60
Product only	3.12 a	1.45	2.21 a	1.61	2.27 a	1.68
Product at business	3.16 a	1.46	2.26 a	1.66	2.28 a	1.67

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to react and 5 = extremely likely to react. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 407$).

4.2.1.3 Distance.

4.2.1.3.1 Frequencies.

As reported in Tables 4.10 and 4.13, a comparison of frequencies revealed consumers were most likely and equally as willing to “like” a post from a business one hour away ($n = 285$, 70.0%) and in their region of residence ($n = 285$, 70.0%). Consumers were both somewhat likely ($n = 119$, 29.3%) and extremely likely ($n = 166$, 40.9%) to “like” posts from businesses located one hour away from their residence (Table 4.10). Frequencies for businesses located outside of the region, as reported in Table 4.11, showed consumers were also somewhat likely ($n = 114$, 27.9%) and extremely likely ($n = 147$, 36.2%) to “like” posts and around 27% were extremely unlikely to comment on ($n = 113$) or share ($n = 111$). Participants indicated, as shown in Tables 4.12 and 4.13, respectively, they were more willing to comment on posts from within their state ($n = 170$, 41.8%) and share posts from businesses in the region ($n = 172$, 42.3%).

Overall, as with message and image content type, consumers were more likely to “like” Facebook content than comment or share; however, more were willing to share content from businesses in their region of residence and comment on Facebook posts made by businesses in the state.

Table 4.10 *Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located one hour away from respondents’ residence for bedding plant survey respondents.*

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	14	3.4	49	12.0	61	15.0
	.33	7	1.7	24	5.9	24	5.9
	.67	8	2.0	22	5.4	20	4.9
Somewhat unlikely 1.00 to < 2.00	1.00	8	2.0	31	7.6	30	7.4
	1.33	11	2.7	20	4.9	23	5.7
	1.67	13	3.2	31	7.6	24	5.9
Neither likely or unlikely 2.00 to < 3.00	2.00	16	3.9	16	3.9	19	4.7
	2.33	20	4.9	23	5.7	17	4.2
	2.67	25	6.1	26	6.4	20	4.9
Somewhat likely 3.00 to < 4.00	3.00	28	6.9	40	9.8	35	8.6
	3.33	48	11.8	27	6.6	35	8.6
	3.67	43	10.6	26	6.4	18	4.4
Extremely likely 4.00 to ≤ 5.00	4.00	56	13.8	22	5.4	19	4.7
	4.33	34	8.4	15	3.7	18	4.4
	4.67	33	8.1	12	2.9	18	4.4
	5.00	43	10.6	23	5.7	26	6.4
Total		407	100.0	407	100.0	407	100.0

Table 4.11 *Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located outside of respondents’ region of residence for bedding plant survey respondents.*

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	23	5.7	67	16.5	75	18.4
	.33	11	2.7	23	5.7	21	5.2
	.67	6	1.5	23	5.7	15	3.7
Somewhat unlikely 1.00 to < 2.00	1.00	16	3.9	34	8.4	35	8.6
	1.33	14	3.4	17	4.2	20	4.9
	1.67	16	3.9	14	3.4	22	5.4
Neither likely or unlikely 2.00 to < 3.00	2.00	13	3.2	28	6.9	19	4.7
	2.33	19	4.7	18	4.4	15	3.7
	2.67	28	6.9	30	7.4	31	7.6
Somewhat likely 3.00 to < 4.00	3.00	38	9.3	39	9.6	35	8.6
	3.33	38	9.3	18	4.4	20	4.9
	3.67	38	9.3	24	5.9	24	5.9
Extremely likely 4.00 to ≤ 5.00	4.00	50	12.3	25	6.1	22	5.4
	4.33	28	6.9	8	2.0	12	2.9
	4.67	23	5.7	11	2.7	13	3.2
	5.00	46	11.3	28	6.9	28	6.9
Total		407	100.0	407	100.0	407	100.0

Table 4.12 *Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located in the respondents’ state of residence for bedding plant survey respondents.*

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	26	6.4	77	18.9	77	18.9
	.33	10	2.5	14	3.4	15	3.7
	.67	5	1.2	6	1.5	11	2.7
Somewhat unlikely 1.00 to < 2.00	1.00	14	3.4	39	9.6	39	9.6
	1.33	11	2.7	22	5.4	15	3.7
	1.67	17	4.2	20	4.9	18	4.4
Neither likely or unlikely 2.00 to < 3.00	2.00	21	5.2	23	5.7	26	6.4
	2.33	22	5.4	12	2.9	18	4.4
	2.67	17	4.2	24	5.9	17	4.2
Somewhat likely 3.00 to < 4.00	3.00	45	11.1	43	10.6	38	9.3
	3.33	33	8.1	22	5.4	30	7.4
	3.67	33	8.1	21	5.2	22	5.4
Extremely likely 4.00 to ≤ 5.00	4.00	57	14.0	30	7.4	20	4.9
	4.33	28	6.9	18	4.4	15	3.7
	4.67	21	5.2	9	2.2	15	3.7
	5.00	47	11.5	27	6.6	31	7.6
Total		407	100.0	407	100.0	407	100.0

Table 4.13 *Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located in respondents’ region of residence for bedding plant survey respondents.*

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	14	3.4	73	17.9	79	19.4
	.33	7	1.7	9	2.2	4	1.0
	.67	8	2.0	17	4.2	14	3.4
Somewhat unlikely 1.00 to < 2.00	1.00	8	2.0	32	7.9	35	8.6
	1.33	11	2.7	20	4.9	24	5.9
	1.67	13	3.2	23	5.7	18	4.4
Neither likely or unlikely 2.00 to < 3.00	2.00	16	3.9	24	5.9	17	4.2
	2.33	20	4.9	16	3.9	19	4.7
	2.67	25	6.1	25	6.1	25	6.1
Somewhat likely 3.00 to < 4.00	3.00	28	6.9	40	9.8	38	9.3
	3.33	48	11.8	17	4.2	17	4.2
	3.67	43	10.6	22	5.4	27	6.6
Extremely likely 4.00 to ≤ 5.00	4.00	56	13.8	27	6.6	24	5.9
	4.33	34	8.4	18	4.4	16	3.9
	4.67	33	8.1	12	2.9	12	2.9
	5.00	43	10.6	32	7.9	38	9.3
Total		407	100.0	407	100.0	407	100.0

4.2.1.3.2 Means.

As shown in Table 4.14, mean response for hypothetical business distances in the consumer's region of residence and one-hour away were the same ($M = 3.29$, $SD = 1.32$). Independent sample t-test results indicated significant differences between the likelihood to "like" posts either in the region of residence ($M = 3.29$, $SD = 1.32$) or one hour away ($M = 3.29$, $SD = 1.32$) and outside of the region ($M = 3.08$, $SD = 1.44$); $t(812) = 2.17$, $p = 0.03$. There were also significant differences between means for "liking" content from businesses located in the region or one hour away ($M = 3.29$, $SD = 1.32$) and within the state ($M = 3.07$, $SD = 1.45$); $t(812) = 2.26$, $p = 0.02$. In regard to the effect of distance on engagement other than "liking" social-media content, there were no significant differences in means for commenting on or sharing posts. Means were greatest for distances of one-hour away ($M = 3.29$, $SD = 1.32$) and in the viewer's region of residence ($M = 3.29$, $SD = 1.32$).

Table 4.14 Mean likelihood of engagement with Facebook posts featuring bedding plants by distance.

Distance	Like		Comment		Share	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
One hour away	3.29 a	1.32	2.25 a	1.53	2.23 a	1.62
Outside of region	3.08 b	1.44	2.14 a	1.60	2.14 a	1.63
Within state	3.07 b	1.45	2.22 a	1.62	2.22 a	1.65
In region	3.29 a	1.32	2.27 a	1.63	2.29 a	1.67

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to react and 5 = extremely likely to react. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 407$).

4.2.2 Direct-Marketed Produce.

All results in this section pertain to direct-marketed produce and are in order of variables of message, image component, and distance. Within each variable, frequencies will be reported followed by means.

4.2.2.1 Message.

4.2.2.1.1 Frequencies.

Direct-marketed produce survey results showed a higher likelihood of consumers reacting to a Facebook post by “liking” or choosing an emoji reaction than commenting on or sharing posts. After comparing frequencies of responses indicating willingness to engage, direct-marketed produce survey ($n = 415$) results showed that, unlike bedding plant consumers ($n = 407$), over 54% ($n = 225$) of respondents indicated they would be more inclined to “like” posts featuring educational messages, as shown in Table 4.16, than lifestyle (Table 4.15) and promotional (Table 4.17). Similarly, 54.6% ($n = 227$) were somewhat or extremely likely to “like” promotional messages (Table 4.17), and 54.2% ($n = 224$) were likely to “like” lifestyle posts (Table 4.15). For each type of message, around 15% of participants were extremely unlikely to “like” Facebook posts. When asked about commenting on or sharing messages, over 51.4% ($n = 213$) of respondents were extremely or somewhat unlikely to comment on lifestyle posts (Table 4.15), and 49.6% ($n = 206$) were unlikely to comment on posts with educational messages (Table 4.16). As shown in Table 4.17, frequencies for respondents willing to share messages indicated more were willing to share promotional messages ($n = 155, 37.3\%$); however, consumers were nearly as likely ($n = 175, 42.2\%$) to comment on a promotional post as they were unlikely to do so ($n = 148, 38.1\%$).

Table 4.15 Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing lifestyle messages for direct-marketed produce survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	29	7.0	59	14.2	69	16.6
	.25	8	1.9	16	3.9	22	5.3
	.50	12	2.9	15	3.6	16	3.9
	.75	12	2.9	21	5.1	17	4.1
Somewhat unlikely 1.00 to < 2.00	1.00	25	6.0	41	9.9	38	9.2
	1.25	17	4.1	31	7.5	21	5.1
	1.50	16	3.9	17	4.1	16	3.9
	1.75	11	2.7	13	3.1	17	4.1
Neither likely or unlikely 2.00 to < 3.00	2.00	19	4.6	11	2.7	12	2.9
	2.25	12	2.9	22	5.3	13	3.1
	2.50	16	3.9	18	4.3	15	3.6
	2.75	14	3.4	16	3.9	17	4.1
Somewhat likely 3.00 to < 4.00	3.00	38	9.2	25	6.0	21	5.1
	3.25	30	7.2	21	5.1	15	3.6
	3.50	31	7.5	13	3.1	13	3.1
	3.75	19	4.6	9	2.2	21	5.1
Extremely likely 4.00 to ≤ 5.00	4.00	31	7.5	13	3.1	14	3.4
	4.25	17	4.1	11	2.7	9	2.2
	4.50	11	2.7	11	2.7	12	2.9
	4.75	21	5.1	13	3.1	9	2.2
	5.00	26	6.3	19	4.6	28	6.7
Total		415	100.0	415	100.0	415	100.0

Table 4.16 *Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing lifestyle messages for direct-marketed produce survey respondents.*

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	34	8.2	68	16.4	77	18.6
	.25	17	4.1	14	3.4	14	3.4
	.50	4	1.0	10	2.4	5	1.2
	.75	8	1.9	15	3.6	23	5.5
Somewhat unlikely 1.00 to < 2.00	1.00	32	7.7	39	9.4	37	8.9
	1.25	11	2.7	23	5.5	16	3.9
	1.50	11	2.7	18	4.3	20	4.8
	1.75	14	3.4	19	4.6	12	2.9
Neither likely or unlikely 2.00 to < 3.00	2.00	4	1.0	12	2.9	9	2.2
	2.25	17	4.1	14	3.4	13	3.1
	2.50	25	6.0	25	6.0	17	4.1
	2.75	13	3.1	19	4.6	20	4.8
Somewhat likely 3.00 to < 4.00	3.00	34	8.2	24	5.8	25	6.0
	3.25	24	5.8	12	2.9	8	1.9
	3.50	21	5.1	11	2.7	12	2.9
	3.75	28	6.7	17	4.1	18	4.3
Extremely likely 4.00 to ≤ 5.00	4.00	47	11.3	22	5.3	23	5.5
	4.25	8	1.9	9	2.2	12	2.9
	4.50	21	5.1	12	2.9	20	4.8
	4.75	14	3.4	9	2.2	6	1.4
	5.00	28	6.7	23	5.5	28	6.7
Total		415	100.0	415	100.0	415	100.0

Table 4.17 Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing promotional messages for direct-marketed produce survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	32	7.7	41	9.9	0	0.0
	.25	10	2.4	16	3.9	2	0.5
	.50	9	2.2	6	1.4	17	4.1
	.75	15	3.6	25	6.0	25	6.0
Somewhat unlikely 1.00 to < 2.00	1.00	20	4.8	29	7.0	16	3.9
	1.25	9	2.2	17	4.1	44	10.6
	1.50	19	4.6	26	6.3	31	7.5
	1.75	8	1.9	15	3.6	26	6.3
Neither likely or unlikely 2.00 to < 3.00	2.00	13	3.1	25	6.0	26	6.3
	2.25	17	4.1	16	3.9	21	5.1
	2.50	18	4.3	17	4.1	28	6.7
	2.75	18	4.3	24	5.8	24	5.8
Somewhat likely 3.00 to < 4.00	3.00	23	5.5	20	4.8	32	7.7
	3.25	25	6.0	19	4.6	18	4.3
	3.50	27	6.5	18	4.3	31	7.5
	3.75	20	4.8	16	3.9	23	5.5
Extremely likely 4.00 to ≤ 5.00	4.00	42	10.1	20	4.8	40	9.6
	4.25	21	5.1	16	3.9	10	2.4
	4.50	19	4.6	13	3.1	1	0.2
	4.75	13	3.1	9	2.2	0	0.0
	5.00	37	8.9	27	6.5	0	0.0
Total		415	100.0	415	100.0	415	100.0

4.2.2.1.2 Means.

In general, engagement means for direct-marketed produce were lower than the other surveys. As in both the pick-your-own produce and bedding plant surveys, means were highest for the likelihood to “like” a photo of the direct-marketed product only ($M = 3.41, SD = 1.93$). As shown in Table 4.18, differences in means for “liking” message types were not significant. An independent-samples t-test did show, however, a significant difference between respondents’ likelihood to comment on lifestyle messages ($M = 2.03, SD = 1.55$) in posts about direct-marketed produce and promotional posts ($M = 2.32, SD = 1.54$); $t(828) = -2.70, p = 0.03$. Differences in means for promotional ($M = 2.32, SD = 1.54$) and educational messages ($M = 2.71, SD = 1.54$); $t(828) = -2.12, p = 0.01$ were also significant. Furthermore, there were significant differences between means for sharing lifestyle ($M = 2.05, SD = 1.64$) and promotional messages ($M = 2.37, SD = 1.12$); $t(828) = -3.28, p = 0.00$ and between educational ($M = 2.14, SD = 1.67$) and promotional message means ($M = 2.37, SD = 1.12$); $t(828) = -2.33, p = 0.02$.

Table 4.18 Mean likelihood of engagement with Facebook posts featuring direct-marketed produce by message type.

Message	Like		Comment		Share	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Lifestyle	2.69 a	1.49	2.03 b	1.55	2.05 b	1.64
Educational	2.71 a	1.54	2.09 bc	1.58	2.14 b	1.67
Promotional	2.80 a	1.55	2.32 a	1.54	2.37 a	1.12

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to react and 5 = extremely likely to react. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 415$).

4.2.2.2 Image Component.

4.2.2.2.1 Frequencies.

As shown in Table 4.19, according to survey responses, 54.2% ($n = 225$) of consumers were willing to “like” images of people with products. Of those, 28.0% ($n = 116$) indicated they would be extremely likely to “like” images of featured products with people. Presented in Table 4.20, response frequencies showed photos of the product alone ($n = 265$, 63.9%) were the most popular. Similar to bedding plant survey responses, consumers were not as likely ($n = 120$, 29.0%) to comment on or share posts with photos of people. In agreement with the other product survey results, frequencies for willingness to comment on ($n = 82$, 19.8%) photos of products at the business were higher than other image components, though responses indicated “liking” posts was the most likely form of engagement.

Table 4.19 Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of people with products for direct-marketed produce survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	31	7.5	63	15.2	71	17.1
	.25	12	2.9	20	4.8	19	4.6
	.50	7	1.7	16	3.9	13	3.1
	.75	12	2.9	21	5.1	17	4.1
Somewhat unlikely 1.00 to < 2.00	1.00	25	6.0	30	7.2	31	7.5
	1.25	12	2.9	22	5.3	20	4.8
	1.50	11	2.7	18	4.3	17	4.1
	1.75	16	3.9	18	4.3	14	3.4
Neither likely or unlikely 2.00 to < 3.00	2.00	8	1.9	15	3.6	15	3.6
	2.25	17	4.1	16	3.9	14	3.4
	2.50	22	5.3	21	5.1	18	4.3
	2.75	17	4.1	15	3.6	15	3.6
Somewhat likely 3.00 to < 4.00	3.00	25	6.0	22	5.3	18	4.3
	3.25	32	7.7	18	4.3	16	3.9
	3.50	26	6.3	15	3.6	23	5.5
	3.75	26	6.3	14	3.4	17	4.1
Extremely likely 4.00 to ≤ 5.00	4.00	27	6.5	14	3.4	16	3.9
	4.25	26	6.3	11	2.7	11	2.7
	4.50	18	4.3	11	2.7	10	2.4
	4.75	14	3.4	16	3.9	8	1.9
	5.00	31	7.5	19	4.6	32	7.7
Total		415	100.0	415	100.0	415	100.0

Table 4.20 Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of products alone for direct-marketed produce survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	32	7.7	72	17.3	75	18.1
	.25	9	2.2	13	3.1	13	3.1
	.50	13	3.1	10	2.4	12	2.9
	.75	10	2.4	14	3.4	13	3.1
Somewhat unlikely 1.00 to < 2.00	1.00	31	7.5	35	8.4	38	9.2
	1.25	7	1.7	22	5.3	19	4.6
	1.50	12	2.9	18	4.3	15	3.6
	1.75	13	3.1	22	5.3	16	3.9
Neither likely or unlikely 2.00 to < 3.00	2.00	14	3.4	17	4.1	16	3.9
	2.25	20	4.8	16	3.9	17	4.1
	2.50	18	4.3	13	3.1	15	3.6
	2.75	17	4.1	19	4.6	12	2.9
Somewhat likely 3.00 to < 4.00	3.00	34	8.2	18	4.3	20	4.8
	3.25	22	5.3	24	5.8	20	4.8
	3.50	21	5.1	19	4.6	12	2.9
	3.75	25	6.0	12	2.9	16	3.9
Extremely likely 4.00 to ≤ 5.00	4.00	35	8.4	16	3.9	20	4.8
	4.25	18	4.3	15	3.6	17	4.1
	4.50	18	4.3	9	2.2	15	3.6
	4.75	18	4.3	10	2.4	10	2.4
	5.00	28	6.7	21	5.1	24	5.8
Total		415	100.0	415	100.0	415	100.0

Table 4.21 Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of products at a business for direct-marketed produce survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	35	8.4	41	9.9	0	0.0
	.25	12	2.9	17	4.1	2	0.5
	.50	11	2.7	10	2.4	20	4.8
	.75	8	1.9	20	4.8	26	6.3
Somewhat unlikely 1.00 to < 2.00	1.00	25	6.0	31	7.5	15	3.6
	1.25	21	5.1	20	4.8	49	11.8
	1.50	11	2.7	13	3.1	31	7.5
	1.75	7	1.7	32	7.7	30	7.2
Neither likely or unlikely 2.00 to < 3.00	2.00	11	2.7	17	4.1	29	7.0
	2.25	12	2.9	17	4.1	18	4.3
	2.50	17	4.1	19	4.6	21	5.1
	2.75	18	4.3	18	4.3	29	7.0
Somewhat likely 3.00 to < 4.00	3.00	30	7.2	28	6.7	37	8.9
	3.25	27	6.5	19	4.6	16	3.9
	3.50	22	5.3	13	3.1	30	7.2
	3.75	30	7.2	18	4.3	18	4.3
Extremely likely 4.00 to ≤ 5.00	4.00	34	8.2	22	5.3	34	8.2
	4.25	21	5.1	10	2.4	8	1.9
	4.50	14	3.4	16	3.9	1	0.2
	4.75	16	3.9	8	1.9	0	0.0
	5.00	33	8.0	26	6.3	1	0.2
Total		415	100.0	415	100.0	415	100.0

4.2.2.2.2 Means.

For direct-marketed produce image components, as shown in Table 4.22, there were no statistically significant differences in mean responses. In the same way, response means were not significantly different for sharing a post, regardless of photo component. Concerning willingness to comment on posts, as presented in Table 4.22, a significant difference occurred between the image of people with the product ($M = 2.07$, $SD = 1.59$) and the product at a business ($M = 2.30$, $SD = 1.53$); $t(828) = 2.12$, $p = 0.03$ at the 95% confidence interval level.

Table 4.22 Mean likelihood of engagement with Facebook posts featuring direct-marketed produce by image component.

Image component	Like		Comment		Share	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
People with product	2.76 a	1.52	2.07 b	1.59	2.12 a	1.65
Product only	2.71 a	1.53	2.09 ab	1.58	2.14 a	1.65
Product at business	2.72 a	1.56	2.30 a	1.53	2.29 a	1.11

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to react and 5 = extremely likely to react. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 415$).

4.2.2.3 Distance.

4.2.2.3.1 Frequencies.

When distance results were compared, as shown in Tables 4.23 and 4.26, frequencies indicated 32.7% ($n = 136$) of consumers were extremely likely to “like” posts from businesses one hour away and in the region of residence . As presented in Table 4.24, 17.8% ($n = 74$) of respondents indicated they would be extremely unlikely to comment on and 6.5% ($n = 27$) were extremely unlikely to share posts from businesses located in their state. Differing from other distance results, as reported in Table 4.25, more consumers were only somewhat unlikely to comment on 24.1% ($n = 100$) and share 31.8% ($n = 132$) posts from businesses in the state. Similar to bedding plant consumers, as shown in Table 4.25, frequencies from the direct-marketed produce survey indicated social-media users would be somewhat likely to comment on ($n = 124$, 29.9%) posts within their state of residence. As reported in Table 4.26, 21.9% ($n = 91$) of respondents, the highest amount between all distance choices, indicated they were extremely willing to share ($n = 160$, 38.6%) posts from businesses in the region. Though some were willing to comment and share posts, around 25.0% of respondents indicated they would be extremely unwilling to comment on or share posts from businesses one hour away, out of the region, and in their region of residence.

Table 4.23 *Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located one hour away from respondents’ residence for direct-marketed produce survey respondents.*

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	25	6.0	56	13.5	67	16.1
	.33	17	4.1	23	5.5	22	5.3
	.67	11	2.7	25	6.0	16	3.9
Somewhat unlikely 1.00 to < 2.00	1.00	20	4.8	31	7.5	38	9.2
	1.33	23	5.5	26	6.3	25	6.0
	1.67	13	3.1	33	8.0	21	5.1
Neither likely or unlikely 2.00 to < 3.00	2.00	18	4.3	27	6.5	15	3.6
	2.33	15	3.6	22	5.3	24	5.8
	2.67	28	6.7	21	5.1	28	6.7
Somewhat likely 3.00 to < 4.00	3.00	34	8.2	24	5.8	30	7.2
	3.33	37	8.9	32	7.7	23	5.5
	3.67	38	9.2	22	5.3	19	4.6
Extremely likely 4.00 to ≤ 5.00	4.00	52	12.5	15	3.6	19	4.6
	4.33	22	5.3	19	4.6	15	3.6
	4.67	34	8.2	22	5.3	23	5.5
	5.00	28	6.7	17	4.1	30	7.2
Total		415	100.0	415	100.0	415	100.0

Table 4.24 *Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located outside of respondents’ region of residence for direct-marketed produce survey respondents.*

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	41	9.9	78	18.8	82	19.8
	.33	9	2.2	13	3.1	14	3.4
	.67	16	3.9	15	3.6	16	3.9
Somewhat unlikely 1.00 to < 2.00	1.00	25	6.0	46	11.1	44	10.6
	1.33	21	5.1	29	7.0	22	5.3
	1.67	17	4.1	26	6.3	20	4.8
Neither likely or unlikely 2.00 to < 3.00	2.00	27	6.5	24	5.8	29	7.0
	2.33	14	3.4	19	4.6	15	3.6
	2.67	30	7.2	21	5.1	19	4.6
Somewhat likely 3.00 to < 4.00	3.00	37	8.9	31	7.5	31	7.5
	3.33	34	8.2	25	6.0	25	6.0
	3.67	30	7.2	18	4.3	23	5.5
Extremely likely 4.00 to ≤ 5.00	4.00	41	9.9	18	4.3	19	4.6
	4.33	29	7.0	17	4.1	15	3.6
	4.67	17	4.1	12	2.9	16	3.9
	5.00	27	6.5	23	5.5	25	6.0
Total		415	100.0	415	100.0	415	100.0

Table 4.25 *Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located in the respondents’ state of residence for direct-marketed produce survey respondents.*

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	43	10.4	44	10.6	0	0.0
	.33	9	2.2	22	5.3	3	0.7
	.67	7	1.7	8	1.9	24	5.8
Somewhat unlikely 1.00 to < 2.00	1.00	38	9.2	47	11.3	35	8.4
	1.33	18	4.3	24	5.8	33	8.0
	1.67	17	4.1	29	7.0	64	15.4
Neither likely or unlikely 2.00 to < 3.00	2.00	24	5.8	39	9.4	42	10.1
	2.33	18	4.3	22	5.3	44	10.6
	2.67	20	4.8	22	5.3	30	7.2
Somewhat likely 3.00 to < 4.00	3.00	34	8.2	28	6.7	46	11.1
	3.33	34	8.2	26	6.3	37	8.9
	3.67	35	8.4	22	5.3	41	9.9
Extremely likely 4.00 to ≤ 5.00	4.00	40	9.6	30	7.2	13	3.1
	4.33	23	5.5	15	3.6	1	0.2
	4.67	21	5.1	10	2.4	1	0.2
	5.00	34	8.2	27	6.5	1	0.2
Total		415	100.0	415	100.0	415	100.0

Table 4.26 Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located in respondents’ region of residence for direct-marketed produce survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	25	6.0	76	18.3	87	21.0
	.33	17	4.1	15	3.6	16	3.9
	.67	11	2.7	12	2.9	8	1.9
Somewhat unlikely 1.00 to < 2.00	1.00	20	4.8	54	13.0	45	10.8
	1.33	23	5.5	20	4.8	22	5.3
	1.67	13	3.1	26	6.3	21	5.1
Neither likely or unlikely 2.00 to < 3.00	2.00	18	4.3	16	3.9	16	3.9
	2.33	15	3.6	19	4.6	18	4.3
	2.67	28	6.7	25	6.0	22	5.3
Somewhat likely 3.00 to < 4.00	3.00	34	8.2	35	8.4	31	7.5
	3.33	37	8.9	14	3.4	18	4.3
	3.67	38	9.2	25	6.0	20	4.8
Extremely likely 4.00 to ≤ 5.00	4.00	52	12.5	16	3.9	25	6.0
	4.33	22	5.3	21	5.1	15	3.6
	4.67	34	8.2	15	3.6	22	5.3
	5.00	28	6.7	26	6.3	29	7.0
Total		415	100.0	415	100.0	415	100.0

4.2.2.3.2 Means.

As shown in Table 4.27, response means related to direct-marketed produce business location distance from consumers were lower than those in both the bedding plant and pick-your-own produce surveys, indicating consumers were potentially likely to “like” posts but not as willing to leave comments or share information. There were significant differences between means for “liking” posts from businesses one hour away ($M = 2.89, SD = 1.49$) and outside the region ($M = 2.65, SD = 1.52$); $t(828) = 2.30, p = 0.02$, one hour away ($M = 2.89, SD = 1.49$) and within the state ($M = 2.38, SD = 1.31$); $t(828) = 5.24, p = 0.00$, within the state ($M = 2.38, SD = 1.31$) and outside the region ($M = 2.65, SD = 1.52$); $t(828) = -2.74, p = 0.01$, and also between posts within the state ($M = 2.38, SD = 1.31$) and in the region ($M = 2.89, SD = 1.49$); $t(828) = 5.24, p = 0.00$. For likelihood to comment on posts, the only means that were significantly different were one hour away ($M = 2.16, SD = 1.55$) and within the state ($M = 2.28, SD = 1.51$); $t(828) = -2.14, p = 0.03$. Similarly, the only means that were significantly different for sharing posts were within the state ($M = 2.28, SD = 0.97$) and outside of the region ($M = 2.09, SD = 1.63$); $t(828) = -2.04, p = 0.04$. Though response means were lower, standard deviations were higher than normal.

Table 4.27 Mean likelihood of engagement with Facebook posts featuring direct-marketed produce by distance.

Distance	Like		Comment		Share	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
One hour away	2.89 a	1.49	2.16 a	1.55	2.22 a	1.64
Outside of region	2.65 b	1.52	2.05 ab	1.58	2.09 ab	1.63
Within state	2.68 b	1.56	2.28 a	1.51	2.28 a	0.97
In region	2.89 a	1.49	2.12 a	1.62	2.15 a	1.69

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to react and 5 = extremely likely to react. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 415$).

4.2.3 Pick-your-own Produce

As in previous sections, all results from the pick-your-own produce survey will be presented in order of variables of message, image component, and distance. Within each variable, frequencies will be reported followed by means.

4.2.3.1 Message.

4.2.3.1.1 Frequencies.

Overall, as observed in the other surveys, more respondents were willing to “like” posts than comment on or share them. Just over 30% ($n = 129$) of respondents, as presented in Table 4.28, were extremely likely to “like” lifestyle messages, and 33.9% ($n = 142$) indicated they were extremely likely to “like” educational message posts (Table 4.29). The highest percentage, 35.2% ($n = 148$), of participants, reported in Table 4.30, indicated they were extremely likely to “like” promotional posts. As shown in Tables 4.28, 4.29, and 4.30, the amount of consumers both somewhat and extremely willing to “like” lifestyle ($n = 245$, 58.3%) and educational messages ($n = 258$, 61.6%), while lower than promotional messages ($n = 272$, 64.7%), was similar. Corresponding with responses in the direct-marketed produce survey, as reported in Tables 4.29 and 4.30, respectively, the highest amount of response frequencies indicated pick-your-own produce consumers were somewhat likely to comment on educational posts ($n = 100$, 23.9%) and promotional posts ($n = 103$, 24.6%), as opposed to lifestyle messages ($n = 74$, 17.6%). In contrast, as presented in Table 4.29, 22.3% ($n = 94$) of respondents specified they were extremely willing to share posts with educational messages instead of lifestyle ($n = 74$, 17.6%) and promotional (44, 10.4%) messages. Though consumers expressed willingness to “like” promotional messages, few were inclined to share that type of message.

Overall, according to somewhat likely and extremely likely frequency values (shown in Table 4.30), pick-your-own produce consumers were more likely to share posts with promotional information. Lifestyle message posts were not as likely to be commented on or shared, with 28.3% ($n = 119$) of consumers choosing extremely unlikely to comment and 27.3% ($n = 115$) indicating extremely unlikely to share. Attitudes toward educational posts varied. While the majority of respondents were most willing and likely to “like” educational material, 24.3 % ($n = 102$) were extremely unlikely to comment on posts, and 23.9% ($n = 100$) indicated they were somewhat likely to leave a comment. Frequencies for likelihood of sharing educational posts were very similar across all choice options, as presented in Table 4.29, indicating consumers may or may not share educational posts. When asked about likelihood to engage with pick-your-own produce businesses on Facebook, response frequencies showed consumers were most likely to “like” posts and not very willing to comment on or share posts.

Table 4.28 Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing lifestyle messages for pick-your-own produce survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	19	4.5	56	13.3	66	15.7
	.25	5	1.2	29	6.9	18	4.3
	.50	6	1.4	13	3.1	14	3.3
	.75	14	3.3	21	5.0	17	4.0
Somewhat unlikely 1.00 to < 2.00	1.00	16	3.8	22	5.2	32	7.6
	1.25	11	2.6	23	5.5	16	3.8
	1.50	9	2.1	16	3.8	22	5.2
	1.75	12	2.9	17	4.0	17	4.0
Neither likely or unlikely 2.00 to < 3.00	2.00	21	5.0	25	6.0	21	5.0
	2.25	20	4.8	22	5.2	17	4.0
	2.50	19	4.5	18	4.3	22	5.2
	2.75	23	5.5	21	5.0	19	4.5
Somewhat likely 3.00 to < 4.00	3.00	39	9.3	17	4.0	20	4.8
	3.25	26	6.2	18	4.3	14	3.3
	3.50	19	4.5	21	5.0	17	4.0
	3.75	32	7.6	18	4.3	14	3.3
Extremely likely 4.00 to ≤ 5.00	4.00	43	10.2	14	3.3	22	5.2
	4.25	20	4.8	10	2.4	10	2.4
	4.50	19	4.5	15	3.6	15	3.6
	4.75	22	5.2	11	2.6	11	2.6
	5.00	25	6.0	13	3.1	16	3.8
Total		420	100.0	420	100.0	420	100.0

Table 4.29 Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing educational messages for pick-your-own produce survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	12	2.9	62	14.8	51	12.1
	.25	8	1.9	14	3.3	12	2.9
	.50	5	1.2	8	1.9	8	1.9
	.75	11	2.6	18	4.3	20	4.8
Somewhat unlikely 1.00 to < 2.00	1.00	14	3.3	30	7.1	39	9.3
	1.25	11	2.6	22	5.2	25	6.0
	1.50	12	2.9	16	3.8	15	3.6
	1.75	11	2.6	18	4.3	18	4.3
Neither likely or unlikely 2.00 to < 3.00	2.00	13	3.1	24	5.7	18	4.3
	2.25	23	5.5	17	4.0	15	3.6
	2.50	22	5.2	11	2.6	17	4.0
	2.75	20	4.8	12	2.9	13	3.1
Somewhat likely 3.00 to < 4.00	3.00	36	8.6	36	8.6	20	4.8
	3.25	25	6.0	20	4.8	22	5.2
	3.50	22	5.2	18	4.3	17	4.0
	3.75	33	7.9	26	6.2	16	3.8
Extremely likely 4.00 to ≤ 5.00	4.00	39	9.3	15	3.6	26	6.2
	4.25	25	6.0	13	3.1	14	3.3
	4.50	19	4.5	10	2.4	11	2.6
	4.75	25	6.0	11	2.6	19	4.5
	5.00	34	8.1	19	4.5	24	5.7
Total		420	100.0	420	100.0	420	100.0

Table 4.30 *Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing promotional messages for pick-your-own produce survey respondents.*

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	15	3.6	22	5.2	0	0.0
	.25	3	0.7	14	3.3	1	0.2
	.50	7	1.7	8	1.9	17	4.0
	.75	11	2.6	20	4.8	17	4.0
Somewhat unlikely 1.00 to < 2.00	1.00	11	2.6	30	7.1	17	4.0
	1.25	14	3.3	25	6.0	45	10.7
	1.50	12	2.9	19	4.5	34	8.1
	1.75	8	1.9	23	5.5	26	6.2
Neither likely or unlikely 2.00 to < 3.00	2.00	12	2.9	21	5.0	25	6.0
	2.25	25	6.0	15	3.6	20	4.8
	2.50	9	2.1	25	6.0	28	6.7
	2.75	21	5.0	16	3.8	36	8.6
Somewhat likely 3.00 to < 4.00	3.00	40	9.5	31	7.4	33	7.9
	3.25	26	6.2	28	6.7	31	7.4
	3.50	23	5.5	26	6.2	25	6.0
	3.75	35	8.3	18	4.3	21	5.0
Extremely likely 4.00 to ≤ 5.00	4.00	45	10.7	22	5.2	32	7.6
	4.25	27	6.4	13	3.1	9	2.1
	4.50	18	4.3	6	1.4	1	0.2
	4.75	21	5.0	13	3.1	2	0.5
	5.00	37	8.8	25	6.0	0	0.0
Total		420	100.0	420	100.0	420	100

4.2.3.1.2 Means.

All pick-your-own produce response means were slightly higher than direct-marketed produce and similar to bedding plant survey response means. Results showed participants were willing to “like” or choose an emoji reaction for promotional messages ($M = 3.12, SD = 1.36$), photos of the product only ($M = 3.85, SD = 1.71$), and business location distances of one hour away ($M = 3.17, SD = 1.32$) or in the region ($M = 3.17, SD = 1.32$). The highest mean for message type was for promotional messages ($M = 3.12, SD = 1.36$), indicating pick-your-own produce consumers might be willing to engage with posts about sales and other marketing information. There were no significant differences in means for “liking” posts. As shown in Table 4.31, for commenting on posts, mean responses showed significant differences between lifestyle ($M = 2.07, SD = 1.53$) and promotional content ($M = 2.46, SD = 1.43$); $t(838) = -3.82, p = 0.01$ and educational ($M = 2.19, SD = 1.55$) and promotional content ($M = 2.46, SD = 1.43$); $t(838) = -2.62, p = 0.00$. In regard to sharing posts, lifestyle ($M = 2.08, SD = 1.56$) and educational message means ($M = 2.31, SD = 1.60$); $t(838) = -2.11, p = 0.04$ and lifestyle ($M = 2.08, SD = 1.56$) and promotional content ($M = 2.38, SD = 1.07$); $t(838) = -3.25, p = 0.00$ means were significantly different.

Table 4.31 Mean likelihood of engagement with Facebook posts featuring pick-your-own produce by message type.

Message	Like		Comment		Share	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Lifestyle	2.94 a	1.38	2.07 b	1.53	2.08 c	1.56
Educational	3.08 a	1.36	2.19 bc	1.55	2.31 ab	1.60
Promotional	3.12 a	1.36	2.46 a	1.43	2.38 a	1.07

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to react and 5 = extremely likely to react. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 420$).

4.2.3.2 Image component.

4.2.3.2.1 Frequencies.

In the pick-your-own produce survey, participants indicated they were most willing to “like” a post, rather than comment on or share the post. Responses for the image of people with the product, as presented in Table 4.32, were most similar to previous survey results in that participants were most likely to “like” the post and a majority were somewhat or extremely unlikely to comment on ($n = 115$, 27.4%) or share ($n = 109$, 25.9%). Consumers indicated, shown in Table 4.33, they would be nearly as likely ($n = 141$, 33.6%) to “like” a post with an image of a product alone. Frequencies for the image of a product alone, as shown in Table 4.33, were close to equally spread across choices for likelihood to share the post. Of the three image components presented, as shown in Table 4.34, the highest amount of respondents ($n = 150$, 35.7%) indicated they would be extremely likely to “like” a photo of a product at the business. More consumers ($n = 85$, 20.2%) indicated they were extremely likely to comment on posts with photos of the product at the business, as well, while consumers indicated, as presented in Table 4.32, they would be more willing to share images featuring products only ($n = 88$, 20.9%).

Table 4.32 Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of people with products for pick-your-own produce survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	17	4.0	55	13.1	56	13.3
	.25	5	1.2	20	4.8	18	4.3
	.50	6	1.4	18	4.3	19	4.5
	.75	14	3.3	22	5.2	16	3.8
Somewhat unlikely 1.00 to < 2.00	1.00	14	3.3	29	6.9	33	7.9
	1.25	9	2.1	18	4.3	18	4.3
	1.50	14	3.3	22	5.2	27	6.4
	1.75	14	3.3	23	5.5	23	5.5
Neither likely or unlikely 2.00 to < 3.00	2.00	20	4.8	15	3.6	19	4.5
	2.25	20	4.8	20	4.8	9	2.1
	2.50	24	5.7	19	4.5	21	5.0
	2.75	26	6.2	18	4.3	17	4.0
Somewhat likely 3.00 to < 4.00	3.00	28	6.7	23	5.5	24	5.7
	3.25	30	7.1	22	5.2	17	4.0
	3.50	28	6.7	16	3.8	16	3.8
	3.75	25	6.0	19	4.5	11	2.6
Extremely likely 4.00 to ≤ 5.00	4.00	36	8.6	17	4.0	25	6.0
	4.25	24	5.7	13	3.1	11	2.6
	4.50	14	3.3	11	2.6	15	3.6
	4.75	25	6.0	7	1.7	11	2.6
	5.00	27	6.4	13	3.1	14	3.3
Total		420	100.0	420	100.0	420	100.0

Table 4.33 Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of products alone for pick-your-own produce survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	11	2.6	54	12.9	48	11.4
	.25	6	1.4	22	5.2	17	4.0
	.50	7	1.7	11	2.6	11	2.6
	.75	10	2.4	16	3.8	14	3.3
Somewhat unlikely 1.00 to < 2.00	1.00	18	4.3	31	7.4	41	9.8
	1.25	12	2.9	19	4.5	17	4.0
	1.50	11	2.6	17	4.0	21	5.0
	1.75	12	2.9	17	4.0	16	3.8
Neither likely or unlikely 2.00 to < 3.00	2.00	15	3.6	18	4.3	18	4.3
	2.25	18	4.3	19	4.5	15	3.6
	2.50	17	4.0	9	2.1	10	2.4
	2.75	20	4.8	20	4.8	20	4.8
Somewhat likely 3.00 to < 4.00	3.00	40	9.5	30	7.1	28	6.7
	3.25	17	4.0	22	5.2	19	4.5
	3.50	36	8.6	26	6.2	23	5.5
	3.75	29	6.9	17	4.0	14	3.3
Extremely likely 4.00 to ≤ 5.00	4.00	45	10.7	18	4.3	22	5.2
	4.25	26	6.2	15	3.6	14	3.3
	4.50	20	4.8	8	1.9	16	3.8
	4.75	14	3.3	11	2.6	13	3.1
	5.00	36	8.6	20	4.8	23	5.5
Total		420	100.0	420	100.0	420	100.0

Table 4.34 Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of products at a business for pick-your-own produce survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	17	4.0	25	6.0	0	0.0
	.25	5	1.2	13	3.1	2	0.5
	.50	6	1.4	8	1.9	20	4.8
	.75	10	2.4	20	4.8	18	4.3
Somewhat unlikely 1.00 to < 2.00	1.00	10	2.4	33	7.9	21	5.0
	1.25	15	3.6	21	5.0	39	9.3
	1.50	9	2.1	26	6.2	29	6.9
	1.75	10	2.4	15	3.6	27	6.4
Neither likely or unlikely 2.00 to < 3.00	2.00	15	3.6	20	4.8	30	7.1
	2.25	14	3.3	25	6.0	22	5.2
	2.50	11	2.6	20	4.8	22	5.2
	2.75	25	6.0	17	4.0	31	7.4
Somewhat likely 3.00 to < 4.00	3.00	38	9.0	29	6.9	34	8.1
	3.25	28	6.7	27	6.4	33	7.9
	3.50	29	6.9	20	4.8	25	6.0
	3.75	28	6.7	16	3.8	23	5.5
Extremely likely 4.00 to ≤ 5.00	4.00	49	11.7	20	4.8	33	7.9
	4.25	22	5.2	17	4.0	8	1.9
	4.50	16	3.8	8	1.9	3	0.7
	4.75	17	4.0	9	2.1	0	0.0
	5.00	46	11.0	31	7.4	0	0.0
Total		420	100.0	420	100.0	420	100.0

4.2.3.2.2 Means.

As reported in Table 4.35, the image component with the highest mean ($M = 3.13$, $SD = 1.38$) and largest frequency ($n = 273$, 65.0%) of consumer likelihood of engagement overall was a photo of the product at a business. In regard to willingness to “like” a post, there were no statistically significant differences between image components. For likelihood to comment on posts, differences in means of images featuring people with the product ($M = 2.06$, $SD = 1.50$) and the product at the business ($M = 2.45$, $SD = 1.47$); $t(838) = -3.81$, $p = 0.00$ and photos of the product only ($M = 2.21$, $SD = 1.55$) and products at a business ($M = 2.45$, $SD = 1.47$); $t(838) = -2.30$, $p = 0.02$ were statistically significantly different at the $p < 0.05$ level. The only significant difference in means for sharing pick-your-own produce posts because of image component was between photos of people with products ($M = 2.10$, $SD = 1.54$) and an image of products at a business ($M = 2.37$, $SD = 1.09$); $t(838) = -2.93$, $p = 0.00$.

Table 4.35 Mean likelihood of engagement with Facebook posts featuring pick-your-own produce due to image component.

Image component	Like		Comment		Share	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
People with product	2.95 a	1.37	2.06 b	1.50	2.10 b	1.54
Product only	3.07 a	1.35	2.21 b	1.55	2.30 b	1.58
Product at business	3.13 a	1.38	2.45 a	1.47	2.37 a	1.09

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to react and 5 = extremely likely to react. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ (n = 420).

4.2.3.3 Distance.

4.2.3.3.1 Frequencies.

As in other surveys, frequency numbers for hypothetical business distances of one hour away and in the region of residence were the same. As shown in Table 4.36, frequencies for likelihood to “like” a post from a business either an hour away ($n = 158$, 37.6%) or, as reported in Table 4.39, in the region of residence ($n = 158$, 37.6%) were the same. As presented in Table 4.36 as well, 23.3% ($n = 98$) of consumers indicated they were extremely unlikely to comment on and 22% ($n = 92$) were extremely unlikely to share posts from businesses one hour away. Differing from the distance of one hour away, reported in Table 4.36, likelihood to share response frequencies were nearly equal across all likelihood choice options, though 23% ($n = 97$) of participants indicated they would be extremely likely to share posts from businesses in their region (Table 4.39). Just over 30% ($n = 133$) of respondents indicated there were extremely willing to “like” posts from outside their region of residence, as presented in Table 4.37; however, the majority of participants were extremely unlikely to comment on ($n = 111$, 26.5%) or share ($n = 109$, 25.9%) these posts. As shown in Table 4.38, 42.9% of respondents ($n = 180$) indicated they would be more willing to comment on posts from within their state. Similarly, 42.1% ($n = 177$) indicated they were willing to share posts in their region of residence (Table 4.39). Consumers also indicated they would only be somewhat unlikely to comment on ($n = 104$, 24.8%) and share ($n = 138$, 32.8%) posts from businesses in their state of residence (Table 4.38).

Table 4.36 *Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located one hour away from respondents’ residence for pick-your-own produce survey respondents.*

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely	.00	15	3.6	53	12.6	57	13.6
< 1.00	.33	6	1.4	18	4.3	10	2.4
	.67	7	1.7	27	6.4	25	6.0
Somewhat unlikely	1.00	13	3.1	34	8.1	37	8.8
1.00 to < 2.00	1.33	14	3.3	21	5.0	21	5.0
	1.67	16	3.8	25	6.0	25	6.0
Neither likely or unlikely	2.00	23	5.5	24	5.7	32	7.6
2.00 to < 3.00	2.33	17	4.0	35	8.3	21	5.0
	2.67	30	7.1	27	6.4	33	7.9
Somewhat likely	3.00	51	12.1	32	7.6	27	6.4
3.00 to < 4.00	3.33	35	8.3	30	7.1	24	5.7
	3.67	35	8.3	22	5.2	22	5.2
Extremely likely	4.00	52	12.4	31	7.4	25	6.0
4.00 to ≤ 5.00	4.33	33	7.9	13	3.1	26	6.2
	4.67	38	9.0	12	2.9	15	3.6
	5.00	35	8.3	16	3.8	20	4.8
Total		420	100.0	420	100.0	420	100.0

Table 4.37 Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located outside of respondents’ region of residence for pick-your-own produce survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely	.00	22	5.2	67	16.0	66	15.7
< 1.00	.33	9	2.1	23	5.5	21	5.0
	.67	11	2.6	21	5.0	22	5.2
Somewhat unlikely	1.00	21	5.0	43	10.2	34	8.1
1.00 to < 2.00	1.33	15	3.6	23	5.5	31	7.4
	1.67	21	5.0	29	6.9	25	6.0
Neither likely or unlikely	2.00	21	5.0	26	6.2	19	4.5
2.00 to < 3.00	2.33	26	6.2	23	5.5	26	6.2
	2.67	32	7.6	25	6.0	20	4.8
Somewhat likely	3.00	39	9.3	31	7.4	31	7.4
3.00 to < 4.00	3.33	40	9.5	20	4.8	19	4.5
	3.67	30	7.1	21	5.0	25	6.0
Extremely likely	4.00	51	12.1	18	4.3	22	5.2
4.00 to ≤ 5.00	4.33	21	5.0	13	3.1	15	3.6
	4.67	30	7.1	17	4.0	21	5.0
	5.00	31	7.4	20	4.8	23	5.5
Total		420	100.0	420	100.0	420	100.0

Table 4.38 Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located in the respondents’ state of residence for pick-your-own produce survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely	.00	28	6.7	31	7.4	0	0.0
< 1.00	.33	4	1.0	14	3.3	1	0.2
	.67	13	3.1	12	2.9	28	6.7
Somewhat unlikely	1.00	17	4.0	44	10.5	35	8.3
1.00 to < 2.00	1.33	15	3.6	32	7.6	38	9.0
	1.67	12	2.9	28	6.7	65	15.5
Neither likely or unlikely	2.00	27	6.4	22	5.2	46	11.0
2.00 to < 3.00	2.33	19	4.5	29	6.9	29	6.9
	2.67	29	6.9	33	7.9	43	10.2
Somewhat likely	3.00	54	12.9	30	7.1	43	10.2
3.00 to < 4.00	3.33	27	6.4	34	8.1	47	11.2
	3.67	32	7.6	25	6.0	35	8.3
Extremely likely	4.00	57	13.6	29	6.9	6	1.4
4.00 to ≤ 5.00	4.33	24	5.7	18	4.3	1	0.2
	4.67	18	4.3	13	3.1	2	0.5
	5.00	44	10.5	26	6.2	1	0.2
Total		420	100.0	420	100.0	420	100.0

Table 4.39 Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located in respondents’ region of residence for pick-your-own produce survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely	.00	15	3.6	67	16.0	63	15.0
< 1.00	.33	6	1.4	16	3.8	14	3.3
	.67	7	1.7	19	4.5	11	2.6
Somewhat unlikely	1.00	13	3.1	34	8.1	41	9.8
1.00 to < 2.00	1.33	14	3.3	21	5.0	22	5.2
	1.67	16	3.8	19	4.5	15	3.6
Neither likely or unlikely	2.00	23	5.5	22	5.2	23	5.5
2.00 to < 3.00	2.33	17	4.0	20	4.8	28	6.7
	2.67	30	7.1	22	5.2	26	6.2
Somewhat likely	3.00	51	12.1	39	9.3	31	7.4
3.00 to < 4.00	3.33	35	8.3	28	6.7	22	5.2
	3.67	35	8.3	20	4.8	27	6.4
Extremely likely	4.00	52	12.4	31	7.4	31	7.4
4.00 to ≤ 5.00	4.33	33	7.9	22	5.2	19	4.5
	4.67	38	9.0	12	2.9	9	2.1
	5.00	35	8.3	28	6.7	38	9.0
Total		420	100.0	420	100.0	420	100.0

4.2.3.3.2 Means.

Mean pick-your-own survey responses, as presented in Table 4.40, for horticultural Facebook posts from businesses one hour away ($M = 3.17$, $SD = 1.32$) or in the region ($M = 3.17$, $SD = 1.32$) were the same. There were significant differences in means for “liking” posts between distances of one hour away ($M = 3.17$, $SD = 1.32$) and outside of the region ($M = 2.92$, $SD = 1.41$); $t(838) = 2.65$, $p = 0.01$, one hour away ($M = 3.17$, $SD = 1.32$) and within the state ($M = 2.97$, $SD = 1.44$); $t(838) = 2.10$, $p = 0.04$, in the region ($M = 3.17$, $SD = 1.32$) and outside of the region ($M = 2.92$, $SD = 1.41$); $t(838) = 2.65$, $p = 0.01$, and in the region ($M = 3.17$, $SD = 1.32$) and within the state ($M = 2.97$, $SD = 1.44$); $t(838) = 2.10$, $p = 0.04$. For commenting on posts, response means between distances of one hour away ($M = 2.20$, $SD = 1.49$) and within the state ($M = 2.44$, $SD = 1.45$); $t(838) = 2.37$, $p = 0.018$, outside of the region ($M = 2.05$, $SD = 1.55$) and in the region ($M = 2.29$, $SD = 1.62$); $t(838) = -2.19$, $p = 0.029$, and within the state ($M = 2.44$, $SD = 1.45$) and outside of the region ($M = 2.05$, $SD = 1.55$); $t(838) = 3.77$, $p = 0.000$ were all statistically significantly different. There were no significantly different means for sharing pick-your-own produce posts based on location and travel distance.

Table 4.40 Mean likelihood of engagement with Facebook posts featuring pick-your-own produce by distance.

Distance	Like		Comment		Share	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
One hour away	3.17 a	1.32	2.20 ab	1.49	2.27 a	1.54
Outside of region	2.92 b	1.41	2.05 b	1.55	2.15 a	1.60
Within state	2.97 b	1.44	2.44 a	1.45	2.25 a	0.96
In region	3.17 a	1.32	2.29 a	1.62	2.36 a	1.62

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to react and 5 = extremely likely to react. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 420$).

4.2.4 Total Likelihood of Reaction

Responses in all three surveys ($n = 1242$) indicated social-media users were more likely to react to posts with educational messages and images of only the products. Total survey responses showed consumers were more likely to “like” or react to posts with an emoji than comment on or share a post. In the individual surveys, however, preferences varied. While image component and distance preferences were similar, in the bedding plant survey, respondents ($n = 407$) indicated they would be more likely to “like” a post with a promotional message ($M = 3.04$, $SD = 1.45$), and there was a higher likelihood of “liking” a post containing an image of a person with the product ($M = 3.16$, $SD = 1.38$) than in direct-marketed produce ($n = 415$) and pick-your-own produce ($n = 420$) surveys. When asked how likely they were to comment on or share a post, consumers revealed they would be more inclined to comment on posts with promotional messages ($M = 2.35$, $SD = 1.52$) featuring photos of a product ($M = 2.34$, $SD = 1.55$). Similarly, respondents stated they would be more likely to share a post with a promotional message ($M = 2.36$, $SD = 1.31$) and a photo of a product at a business ($M = 2.32$, $SD = 1.31$).

4.2.4.1 Message.

4.2.4.1.1 Frequencies.

Frequencies for the likelihood of commenting on and sharing educational posts were similar. Overall, consumers indicated they were most likely and willing to “like” educational posts. As presented in Tables 4.41 and 4.42, respectively, while likelihood to “like” lifestyle ($n = 372$, 30.1%) and educational ($n = 404$, 32.6%) messages followed a similar pattern with the majority of respondents being extremely likely to “like” each type of post, 28.4% ($n = 353$) of respondents indicated they were only somewhat likely to “like” promotional posts (Table 4.43). Shown in Table 4.42, combined frequencies for somewhat and extremely likely choices indicated

consumers were more inclined to “like” posts with educational messages ($n = 753$, 60.6%) than lifestyle ($n = 733$, 60.8%) and promotional ($n = 672$, 54.1%). Unlike other message types, 21.1% ($n = 262$) of participants were somewhat likely to comment on and 24.3% ($n = 302$) were somewhat unlikely to share posts with promotional messages (Table 4.43), though fewer respondents were extremely likely to interact with this type of message than others. As shown in Table 4.43, just over 40% of participants ($n = 505$) indicated they would be both somewhat and extremely likely to comment on promotional posts.

Table 4.41 *Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing lifestyle messages share for total survey respondents.*

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	66	5.3	167	13.4	200	16.1
	.25	18	1.4	66	5.3	60	4.8
	.50	22	1.8	40	3.2	40	3.2
	.75	33	2.7	60	4.8	51	4.1
Somewhat unlikely 1.00 to < 2.00	1.00	54	4.3	90	7.2	103	8.3
	1.25	38	3.1	75	6.0	60	4.8
	1.50	32	2.6	54	4.3	50	4.0
	1.75	38	3.1	41	3.3	47	3.8
Neither likely or unlikely 2.00 to < 3.00	2.00	50	4.0	47	3.8	49	3.9
	2.25	48	3.9	65	5.2	46	3.7
	2.50	56	4.5	53	4.3	50	4.0
	2.75	54	4.3	57	4.6	55	4.4
Somewhat likely 3.00 to < 4.00	3.00	107	8.6	78	6.3	71	5.7
	3.25	93	7.5	53	4.3	43	3.5
	3.50	81	6.5	47	3.8	53	4.3
	3.75	80	6.4	47	3.8	49	3.9
Extremely likely 4.00 to ≤ 5.00	4.00	114	9.2	46	3.7	54	4.3
	4.25	59	4.8	33	2.7	23	1.9
	4.50	51	4.1	33	2.7	39	3.1
	4.75	64	5.2	40	3.2	31	2.5
	5.00	84	6.8	50	4.0	68	5.5
Total		1242	100.0	1242	100.0	1242	100.0

Table 4.42 Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing educational messages for total survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	67	5.4	194	15.6	194	15.6
	.25	30	2.4	42	3.4	42	3.4
	.50	16	1.3	31	2.5	27	2.2
	.75	23	1.9	50	4.0	60	4.8
Somewhat unlikely 1.00 to < 2.00	1.00	60	4.8	97	7.8	103	8.3
	1.25	31	2.5	66	5.3	55	4.4
	1.50	37	3.0	44	3.5	52	4.2
	1.75	30	2.4	48	3.9	38	3.1
Neither likely or unlikely 2.00 to < 3.00	2.00	30	2.4	52	4.2	38	3.1
	2.25	54	4.3	46	3.7	44	3.5
	2.50	58	4.7	55	4.4	45	3.6
	2.75	53	4.3	50	4.0	52	4.2
Somewhat likely 3.00 to < 4.00	3.00	100	8.1	90	7.2	74	6.0
	3.25	74	6.0	51	4.1	51	4.1
	3.50	77	6.2	50	4.0	54	4.3
	3.75	98	7.9	57	4.6	49	3.9
Extremely likely 4.00 to ≤ 5.00	4.00	130	10.5	62	5.0	74	6.0
	4.25	58	4.7	32	2.6	34	2.7
	4.50	53	4.3	31	2.5	41	3.3
	4.75	60	4.8	28	2.3	39	3.1
	5.00	103	8.3	66	5.3	76	6.1
Total		1242	100.0	1242	100.0	1242	100.0

Table 4.43 Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing promotional messages for total survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	21	1.7	127	10.2	71	5.7
	.25	52	4.2	44	3.5	17	1.4
	.50	19	1.5	29	2.3	45	3.6
	.75	28	2.3	53	4.3	49	3.9
Somewhat unlikely 1.00 to < 2.00	1.00	44	3.5	83	6.7	62	5.0
	1.25	38	3.1	61	4.9	101	8.1
	1.50	32	2.6	59	4.8	76	6.1
	1.75	53	4.3	48	3.9	63	5.1
Neither likely or unlikely 2.00 to < 3.00	2.00	51	4.1	67	5.4	67	5.4
	2.25	58	4.7	43	3.5	57	4.6
	2.50	96	7.7	60	4.8	76	6.1
	2.75	73	5.9	63	5.1	74	6.0
Somewhat likely 3.00 to < 4.00	3.00	83	6.7	82	6.6	98	7.9
	3.25	111	8.9	60	4.8	70	5.6
	3.50	86	6.9	69	5.6	69	5.6
	3.75	73	5.9	51	4.1	62	5.0
Extremely likely 4.00 to ≤ 5.00	4.00	124	10.0	66	5.3	88	7.1
	4.25	46	3.7	46	3.7	33	2.7
	4.50	39	3.1	23	1.9	17	1.4
	4.75	58	4.7	32	2.6	19	1.5
	5.00	52	4.2	76	6.1	28	2.3
Total		1242	100.0	1242	100.0	1242	100.0

4.2.4.1.2 Means.

While means of “liking” lifestyle ($M = 2.91$, $SD = 1.42$) and promotional ($M = 2.87$, $SD = 1.31$) messages were similar, they were not significantly different, indicating consumers were not willing to “like” posts. Significant differences occurred between the likelihood to comment on posts with a promotional message ($M = 2.35$, $SD = 1.52$) and an educational message ($M = 2.16$, $SD = 1.58$); $t(2482) = 3.05$, $p = 0.00$. There were significant differences in means for sharing promotional ($M = 2.36$, $SD = 1.31$) and educational content ($M = 2.23$, $SD = 1.63$), and lifestyle ($M = 2.08$, $SD = 1.60$); $t(2482) = 2.19$, $p = 0.03$ with a 95% confidence interval.

Table 4.44 Mean likelihood of engagement with independent horticultural business Facebook posts by message type for total survey respondents.

Message	Like		Comment		Share	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Lifestyle	2.91 a	1.42	2.10 ab	1.54	2.08 c	1.60
Educational	2.97 a	1.45	2.16 b	1.58	2.23 b	1.63
Promotional	3.04 a	1.45	2.35 a	1.52	2.36 a	1.31

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to react and 5 = extremely likely to react. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 1242$).

4.2.4.2 Image component.

4.2.4.2.1 Frequencies.

When somewhat likely and extremely likely responses were combined, frequencies indicated consumers were most willing to “like” ($n = 871$, 70.1%) or share ($n = 499$, 40.2%) an image featuring the product only. Presented in Table 4.45, over 31% ($n = 390$) of respondents were extremely likely to “like” photos featuring people with products; however, as shown in Tables 4.46 and 4.47, more respondents were extremely willing to “like” images of a product alone ($n = 415$, 33.4%) and the product at a business ($n = 429$, 34.6%). Shown in Table 4.47, 20.4% ($n = 255$) of participants indicated they were extremely likely to comment on photos of products at a business. These results differ from responses about the likelihood to comment on photos featuring people ($n = 205$, 16.4%) and products alone (221, 17.8%), as reported in Tables 4.45 and 4.46. Similarly, as shown in Table 4.47, consumers indicated they were not quite as unwilling to share photos of products at a business as they were other photo types. As shown in Table 4.47, more respondents were either somewhat unlikely ($n = 313$, 25.3%) or somewhat likely ($n = 291$, 23.5%) to share images of products at a business, as opposed to being extremely unlikely to share photos of people with products ($n = 337$, 27.1%) and products alone ($n = 317$, 25.5%), reported in Tables 4.45 and 4.47, respectively.

Table 4.45 *Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of people with products for total survey respondents.*

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	65	5.2	168	13.5	187	15.1
	.25	25	2.0	62	5.0	56	4.5
	.50	15	1.2	49	3.9	45	3.6
	.75	35	2.8	62	5.0	49	3.9
Somewhat unlikely 1.00 to < 2.00	1.00	52	4.2	81	6.5	96	7.7
	1.25	31	2.5	66	5.3	66	5.3
	1.50	34	2.7	62	5.0	60	4.8
	1.75	34	2.7	56	4.5	53	4.3
Neither likely or unlikely 2.00 to < 3.00	2.00	41	3.3	39	3.1	49	3.9
	2.25	63	5.1	53	4.3	38	3.1
	2.50	53	4.3	58	4.7	51	4.1
	2.75	62	5.0	47	3.8	49	3.9
Somewhat likely 3.00 to < 4.00	3.00	81	6.5	81	6.5	70	5.6
	3.25	92	7.4	57	4.6	51	4.1
	3.50	87	7.0	46	3.7	52	4.2
	3.75	82	6.6	50	4.0	45	3.6
Extremely likely 4.00 to ≤ 5.00	4.00	109	8.8	51	4.1	57	4.6
	4.25	73	5.9	31	2.5	30	2.4
	4.50	53	4.3	35	2.8	37	3.0
	4.75	59	4.8	34	2.7	31	2.5
	5.00	96	7.7	54	4.3	70	5.6
Total		1242	100.0	1242	100.0	1242	100.0

Table 4.46 *Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of products alone for total survey respondents.*

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	66	5.3	192	15.5	194	15.6
	.25	23	1.9	47	3.8	42	3.4
	.50	24	1.9	35	2.8	37	3.0
	.75	25	2.0	46	3.7	44	3.5
Somewhat unlikely 1.00 to < 2.00	1.00	64	5.2	98	7.9	108	8.7
	1.25	29	2.3	54	4.3	48	3.9
	1.50	34	2.7	48	3.9	48	3.9
	1.75	37	3.0	51	4.1	41	3.3
Neither likely or unlikely 2.00 to < 3.00	2.00	37	3.0	49	3.9	49	3.9
	2.25	51	4.1	56	4.5	44	3.5
	2.50	50	4.0	34	2.7	42	3.4
	2.75	50	4.0	58	4.7	46	3.7
Somewhat likely 3.00 to < 4.00	3.00	105	8.5	74	6.0	72	5.8
	3.25	63	5.1	67	5.4	63	5.1
	3.50	87	7.0	64	5.2	60	4.8
	3.75	82	6.6	48	3.9	42	3.4
Extremely likely 4.00 to ≤ 5.00	4.00	133	10.7	57	4.6	63	5.1
	4.25	67	5.4	45	3.6	44	3.5
	4.50	58	4.7	25	2.0	41	3.3
	4.75	46	3.7	31	2.5	36	2.9
	5.00	111	8.9	63	5.1	78	6.3
Total		1242	100.0	1242	100.0	1242	100.0

Table 4.47 *Combined frequency distribution of likelihood to “like,” comment, and share four Facebook posts containing a photo of products at a business for total survey respondents.*

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	75	6.0	141	11.4	73	5.9
	.25	25	2.0	40	3.2	15	1.2
	.50	22	1.8	28	2.3	47	3.8
	.75	24	1.9	51	4.1	57	4.6
Somewhat unlikely 1.00 to < 2.00	1.00	53	4.3	96	7.7	68	5.5
	1.25	43	3.5	52	4.2	99	8.0
	1.50	24	1.9	49	3.9	77	6.2
	1.75	22	1.8	63	5.1	69	5.6
Neither likely or unlikely 2.00 to < 3.00	2.00	38	3.1	54	4.3	73	5.9
	2.25	39	3.1	56	4.5	53	4.3
	2.50	44	3.5	52	4.2	59	4.8
	2.75	67	5.4	56	4.5	81	6.5
Somewhat likely 3.00 to < 4.00	3.00	91	7.3	88	7.1	100	8.1
	3.25	83	6.7	65	5.2	65	5.2
	3.50	83	6.7	48	3.9	69	5.6
	3.75	80	6.4	48	3.9	57	4.6
Extremely likely 4.00 to ≤ 5.00	4.00	136	11.0	67	5.4	93	7.5
	4.25	65	5.2	44	3.5	30	2.4
	4.50	45	3.6	29	2.3	13	1.0
	4.75	53	4.3	24	1.9	6	0.5
	5.00	130	10.5	91	7.3	38	3.1
Total		1242	100.0	1242	100.0	1242	100.0

4.2.4.2.2 Means.

As presented in Table 4.48, no image component likelihood to “like” means were significantly different. Posts with an image of the product alone had the highest mean indicating, overall, respondents were likely to engage with the content. There was a significant difference between likelihood to comment on a photo of a product at a business ($M = 2.34, SD = 1.55$) and an image of the product alone ($M = 2.17, SD = 1.58$); $t(2482) = 2.71, p = 0.01$ with a 95% confidence interval. Means for likelihood of commenting on images of people with the product ($M = 2.10, SD = 1.55$) and the product at the business ($M = 2.34, SD = 1.55$); $t(2482) = -3.86, p = 0.00$ were also statistically significantly different. The only significant difference in likelihood to share a photo was between images of people with the product ($M = 2.11, SD = 1.59$) and a product at a business ($M = 2.32, SD = 1.31$); $t(2482) = -3.59, p = 0.000$ with a 95% confidence interval.

Table 4.48 Mean likelihood of engagement with independent horticultural business Facebook posts by image component.

Image component	Like		Comment		Share	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
People with product	2.95 a	1.43	2.10 b	1.55	2.11 b	1.59
Product only	2.97 a	1.46	2.17 b	1.58	2.23 ab	1.63
Product at business	3.01 a	1.48	2.34 a	1.55	2.32 a	1.31

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to react and 5 = extremely likely to react. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 1242$).

4.2.4.3 Distance.

4.2.4.3.1 Frequencies.

As shown in Tables 4.49 and 4.52, frequencies indicated more consumers were extremely willing to “like” posts from businesses an hour away from the viewer’s residence ($n = 460$, 37.1%) or in the region ($n = 460$, 37.1%) or than other distances. As reported in Table 4.50, just over 31% ($n = 394$) were extremely likely to “like” posts from outside of the region, while 33.3% ($n = 414$) were extremely likely to “like” posts from businesses in the state, as presented in Table 4.51. Overall, as in other surveys, more consumers were willing to “like” posts than comment on or share. The majority of respondents indicated they would either be somewhat unlikely ($n = 342$, 27.5) or somewhat likely ($n = 339$, 27.3%) to share posts from businesses in their state (Table 4.51), as opposed to most respondents being extremely unlikely to share posts from businesses outside of the region ($n = 332$, 26.8%), one hour away ($n = 302$, 24.3%), and in the region ($n = 296$, 23.8%)

Table 4.49 *Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located one hour away from respondents’ residence for total survey respondents.*

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	54	4.3	158	12.7	185	14.9
	.33	30	2.4	65	5.2	56	4.5
	.67	26	2.1	74	6.0	61	4.9
Somewhat unlikely 1.00 to < 2.00	1.00	41	3.3	96	7.7	105	8.5
	1.33	48	3.9	67	5.4	69	5.6
	1.67	42	3.4	89	7.2	70	5.6
Neither likely or unlikely 2.00 to < 3.00	2.00	57	4.6	67	5.4	66	5.3
	2.33	52	4.2	80	6.4	62	5.0
	2.67	83	6.7	74	6.0	81	6.5
Somewhat likely 3.00 to < 4.00	3.00	113	9.1	96	7.7	92	7.4
	3.33	120	9.7	89	7.2	82	6.6
	3.67	116	9.3	70	5.6	59	4.8
Extremely likely 4.00 to ≤ 5.00	4.00	160	12.9	68	5.5	63	5.1
	4.33	89	7.2	47	3.8	59	4.8
	4.67	105	8.5	46	3.7	56	4.5
	5.00	106	8.5	56	4.5	76	6.1
Total		1242	100.0	1242	100.0	1242	100.0

Table 4.50 *Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located outside of respondents’ region of residence for total survey respondents.*

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	86	6.9	212	17.1	223	18.0
	.33	29	2.3	59	4.8	56	4.5
	.67	33	2.7	59	4.8	53	4.3
Somewhat unlikely 1.00 to < 2.00	1.00	62	5.0	123	9.9	113	9.1
	1.33	50	4.0	69	5.6	73	5.9
	1.67	54	4.3	69	5.6	67	5.4
Neither likely or unlikely 2.00 to < 3.00	2.00	61	4.9	78	6.3	67	5.4
	2.33	59	4.8	60	4.8	56	4.5
	2.67	90	7.2	76	6.1	70	5.6
Somewhat likely 3.00 to < 4.00	3.00	114	9.2	101	8.1	97	7.8
	3.33	112	9.0	63	5.1	64	5.2
	3.67	98	7.9	63	5.1	72	5.8
Extremely likely 4.00 to ≤ 5.00	4.00	142	11.4	61	4.9	63	5.1
	4.33	78	6.3	38	3.1	42	3.4
	4.67	70	5.6	40	3.2	50	4.0
	5.00	104	8.4	71	5.7	76	6.1
Total		1242	100.0	1242	100.0	1242	100.0

Table 4.51 Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located in the respondents’ state of residence for total survey respondents.

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	97	7.8	152	12.2	77	6.2
	.33	23	1.9	50	4.0	19	1.5
	.67	25	2.0	26	2.1	63	5.1
Somewhat unlikely 1.00 to < 2.00	1.00	69	5.6	130	10.5	109	8.8
	1.33	44	3.5	78	6.3	86	6.9
	1.67	46	3.7	77	6.2	147	11.8
Neither likely or unlikely 2.00 to < 3.00	2.00	72	5.8	84	6.8	114	9.2
	2.33	59	4.8	63	5.1	91	7.3
	2.67	66	5.3	79	6.4	90	7.2
Somewhat likely 3.00 to < 4.00	3.00	133	10.7	101	8.1	127	10.2
	3.33	94	7.6	82	6.6	114	9.2
	3.67	100	8.1	68	5.5	98	7.9
Extremely likely 4.00 to ≤ 5.00	4.00	154	12.4	89	7.2	39	3.1
	4.33	75	6.0	51	4.1	17	1.4
	4.67	60	4.8	32	2.6	18	1.4
	5.00	125	10.1	80	6.4	33	2.7
Total		1242	100.0	1242	100.0	1242	100.0

Table 4.52 *Combined frequency distribution of likelihood to “like,” comment, and share three Facebook posts from businesses located in respondents’ region of residence for total survey respondents.*

		Like		Comment		Share	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	54	4.3	216	17.4	229	18.4
	.33	30	2.4	40	3.2	34	2.7
	.67	26	2.1	48	3.9	33	2.7
Somewhat unlikely 1.00 to < 2.00	1.00	41	3.3	120	9.7	121	9.7
	1.33	48	3.9	61	4.9	68	5.5
	1.67	42	3.4	68	5.5	54	4.3
Neither likely or unlikely 2.00 to < 3.00	2.00	57	4.6	62	5.0	56	4.5
	2.33	52	4.2	55	4.4	65	5.2
	2.67	83	6.7	72	5.8	73	5.9
Somewhat likely 3.00 to < 4.00	3.00	113	9.1	114	9.2	100	8.1
	3.33	120	9.7	59	4.8	57	4.6
	3.67	116	9.3	67	5.4	74	6.0
Extremely likely 4.00 to ≤ 5.00	4.00	160	12.9	74	6.0	80	6.4
	4.33	89	7.2	61	4.9	50	4.0
	4.67	105	8.5	39	3.1	43	3.5
	5.00	106	8.5	86	6.9	105	8.5
Total		1242	100.0	1242	100.0	1242	100.0

4.2.4.3.2 Means.

As presented in Table 4.53, there were significant differences between “liking” a post that was from a business one hour away ($M = 3.12, SD = 1.39$) and outside of the region ($M = 2.88, SD = 1.47$); $t(2482) = 4.18, p = 0.00$, between outside of the region ($M = 2.88, SD = 1.47$) and in the region ($M = 2.88, SD = 1.47$); $t(2482) = 4.18, p = 0.00$, and in the region ($M = 3.12, SD = 1.39$) and within the state ($M = 2.91, SD = 1.49$); $t(2482) = 3.63, p = 0.00$ with a 95% confidence interval. Means for posts one hour away and in the region of residence were higher than the rest, which indicated consumers could be likely to engage with Facebook content. For likelihood to comment, there were significant differences between means of posts from outside the region ($M = 2.08, SD = 1.57$) and within the state ($M = 2.31, SD = 1.53$); $t(2482) = 3.70, p = 0.000$ and between means for outside of the region ($M = 2.08, SD = 1.57$) and in the region ($M = 2.27, SD = 1.66$); $t(2482) = 1.42, p = 0.029$. There was also a significant difference between likelihood to share posts from within the region ($M = 2.27, SD = 1.66$) and outside of the region of residence ($M = 2.13, SD = 1.62$); $t(2482) = 2.13, p = 0.034$ and between business posts outside of the region ($M = 2.13, SD = 1.62$) and in the state ($M = 2.25, SD = 1.23$); $t(2482) = 2.08; p = 0.038$ with a 95% confidence interval.

Table 4.53 Mean likelihood of engagement with independent horticultural business Facebook posts by distance.

Distance	Like		Comment		Share	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
One hour away	3.12 a	1.39	2.20 a	1.52	2.24 ab	1.60
Outside of region	2.88 b	1.47	2.08 ab	1.57	2.13 b	1.62
Within state	2.91 b	1.49	2.31 a	1.53	2.25 a	1.23
In region	3.12 a	1.39	2.22 a	1.62	2.27 a	1.66

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to react and 5 = extremely likely to react. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 1242$).

4.2.5 Willingness to Engage

In each survey, participants were asked to rate, on a Likert scale, the likelihood of “liking” or choosing an emoji reaction, commenting on, and sharing the post. Survey respondents were asked to indicate how likely they were to react to a Facebook post from a horticultural business by moving a slider button across a Likert scale in which 0.0 equaled extremely unlikely and 5.0 equaled extremely likely. Confirming previous research, overall, consumers indicated they were more likely to “like” a post than comment on or share it. A comparison of frequencies showed most social-media users felt only somewhat likely to engage with a horticultural Facebook post, and engagement depended on content. A willingness to engage variable was created to include all responses to questions asking about likelihood to “like,” comment, or share a Facebook post, and means were compared to determine what post content consumers were most willing to engage with on social media.

Full means results, as shown in Tables 4.54, 4.55, and 4.56, are separated into message type (Table 4.54), image component (Table 4.55), and distance (Table 5.56) for each survey. Individual frequency response results are also presented in order of product type. Overall, consumers ($n = 1242$) showed an increased willingness to engage with posts containing educational messages ($n = 504$, 40.6%), photos of products by themselves ($n = 570$, 45.9%) and distances of one hour away ($n = 515$, 41.5%).

Table 4.54 Mean willingness to engage with independent horticultural business Facebook posts by message type.

Message	<u>Bedding Plants</u>		<u>Direct-Marketed Produce</u>		<u>Pick-your-own Produce</u>		<u>Total</u>	
	Willingness to Engage		Willingness to Engage		Willingness to Engage		Willingness to Engage	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Lifestyle	2.48 a	1.39	2.26 a	1.46	2.37 b	1.37	2.36 b	1.41
Educational	2.52 a	1.43	2.32 a	1.50	2.53 ab	1.37	2.45 b	1.43
Promotional	2.59 a	1.45	2.42 a	1.21	2.56 a	1.11	2.53 a	1.26
	<i>n</i> = 407		<i>n</i> = 415		<i>n</i> = 420		<i>n</i> = 1242	

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to react and 5 = extremely likely to react. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 1242$).

Table 4.55 Mean willingness to engage with independent horticultural business Facebook posts by image component.

Image component	<u>Bedding Plants</u>		<u>Direct-Marketed Produce</u>		<u>Pick-your-own Produce</u>		<u>Total</u>	
	Willingness to Engage		Willingness to Engage		Willingness to Engage		Willingness to Engage	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
People with product	2.59 a	1.45	2.42 a	1.21	2.56 a	1.11	2.53 a	1.26
Product only	2.54 a	1.46	2.31 a	1.49	2.53 a	1.36	2.46 a	1.44
Product at business	2.57 a	1.48	2.36 a	1.22	2.56 a	1.13	2.50 a	1.28
	<i>n</i> = 407		<i>n</i> = 415		<i>n</i> = 420		<i>n</i> = 1242	

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to react and 5 = extremely likely to react. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 1242$).

Table 4.56 Mean willingness to engage with independent horticultural business Facebook posts by distance.

Distance	<u>Bedding Plants</u>		<u>Direct-Marketed Produce</u>		<u>Pick-your-own Produce</u>		<u>Total</u>	
	Willingness to Engage	Willingness to Engage	Willingness to Engage	Willingness to Engage	Willingness to Engage	Willingness to Engage	Willingness to Engage	Willingness to Engage
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
One hour away	2.59 a	1.36	2.42 a	1.44	2.54 ab	1.31	2.52 abc	1.37
Outside of region	2.45 a	1.44	2.26 a	1.48	2.37 b	1.39	2.36 bc	1.44
Within state	2.51 a	1.46	2.31 a	1.14	2.43 b	1.08	2.42 b	1.24
In region	2.62 a	1.40	2.38 a	1.47	2.61 a	1.35	2.54 a	1.41
	<i>n</i> = 407		<i>n</i> = 415		<i>n</i> = 420		<i>n</i> = 1242	

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to react and 5 = extremely likely to react. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 1242$).

4.2.6 Bedding Plant.

In this section, all results will be reported related to the bedding plants survey presented in order of variables of message, image component, and distance. Within each variable, frequencies will be reported followed by means.

4.2.6.1 Message.

4.2.6.1.1 Frequencies.

In regard to message type, as shown in Table 4.57, bedding plant survey frequencies indicated 43.5% ($n = 177$) consumers were either somewhat willing or extremely willing to engage with educational and promotional messages. There were higher frequencies of somewhat and extremely unlikely to engage responses for lifestyle messages than other types. As presented in Table 4.57, 17.4% ($n = 71$) respondents indicated they would be extremely likely to engage with lifestyle messages. Similarly, 22.9% ($n = 93$) chose somewhat likely to engage with lifestyle messages, while 24.6% ($n = 100$) were somewhat likely to engage with educational messages, and 23.8% ($n = 97$) were extremely likely to engage with promotional messages.

4.2.6.1.2 Means.

As shown in Table 4.54, mean responses for the bedding plant survey were higher than other surveys but still indicated consumers were neither willing nor unwilling to engage with Facebook content. Lifestyle messages ($M = 2.48$, $SD = 1.39$) had the lowest mean, while educational ($M = 2.52$, $SD = 1.43$) and promotional ($M = 2.59$, $SD = 1.45$) message means were very similar. Standard deviations, as seen throughout all survey data, were noted to be high.

Table 4.57 Combined frequency distribution of willingness to engage with twelve Facebook posts containing a lifestyle, an educational, or a promotional message (four posts each) for bedding plant survey respondents.

		Lifestyle		Educational		Promotional	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	20	4.9	22	5.4	20	4.9
	.25	9	2.2	15	3.7	16	3.9
	.50	14	3.4	7	1.7	7	1.7
	.75	33	8.1	14	3.4	10	2.5
Somewhat unlikely 1.00 to < 2.00	1.00	19	4.7	26	6.4	32	7.9
	1.25	21	5.2	15	3.7	16	3.9
	1.50	22	5.4	24	5.9	14	3.4
	1.75	28	6.9	11	2.7	16	3.9
Neither likely or unlikely 2.00 to < 3.00	2.00	17	4.2	30	7.4	22	5.4
	2.25	17	4.2	18	4.4	17	4.2
	2.50	22	5.4	20	4.9	15	3.7
	2.75	35	8.6	16	3.9	26	6.4
Somewhat likely 3.00 to < 4.00	3.00	27	6.6	31	7.6	33	8.1
	3.25	10	2.5	30	7.4	26	6.4
	3.50	28	6.9	16	3.9	16	3.9
	3.75	28	6.9	23	5.7	22	5.4
Extremely likely 4.00 to ≤ 5.00	4.00	12	2.9	31	7.6	28	6.9
	4.25	6	1.5	15	3.7	26	6.4
	4.50	11	2.7	10	2.5	10	2.5
	4.75	22	5.4	8	2.0	11	2.7
	5.00	20	4.9	25	6.1	24	5.9
Total		407	100.0	407	100.0	407	100.0

4.2.6.2 Image component.

4.2.6.2.1 Frequencies.

As shown in Table 4.58, more consumers, overall, were willing and likely to engage with photos featuring a product alone. On the other hand, a larger number of bedding plant consumers specified they would be somewhat willing to engage with posts featuring images of products at the business ($n = 103$, 25.3%) and people with products ($n = 97$, 23.9%). Over 25% ($n = 103$) of consumers were somewhat likely to engage with posts containing images of produce or plants at a business, and 23.9% ($n = 97$) were somewhat likely to engage with images of people. In contrast, more respondents indicated they were extremely likely to engage with images of the product alone ($n = 99$, 24.3%) as opposed to photos featuring people with the product ($n = 82$, 20.1%) or products at the business ($n = 91$, 22.4%).

4.2.6.2.2 Means.

Analysis of bedding plant survey response means in regard to image component showed no statistically significant differences. All means, as presented in Table 4.55 were similar and not very high, indicating consumers were neither likely nor unlikely to engage with Facebook posts. All bedding plant mean values were similar as well.

Table 4.58 Combined frequency distribution of willingness to engage with twelve Facebook posts containing a photo of people with products, a photo of products alone, or a photo of products at businesses (four posts each) for bedding plant survey respondents.

		People with Product		Product Only		Product at Business	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	20	4.9	26	6.4	25	6.1
	.25	7	1.7	13	3.2	15	3.7
	.50	15	3.7	10	2.5	13	3.2
	.75	13	3.2	13	3.2	7	1.7
Somewhat unlikely 1.00 to < 2.00	1.00	21	5.2	27	6.6	30	7.4
	1.25	12	2.9	12	2.9	18	4.4
	1.50	29	7.1	19	4.7	7	1.7
	1.75	25	6.1	17	4.2	17	4.2
Neither likely or unlikely 2.00 to < 3.00	2.00	32	7.9	26	6.4	24	5.9
	2.25	20	4.9	16	3.9	15	3.7
	2.50	17	4.2	15	3.7	22	5.4
	2.75	17	4.2	23	5.7	20	4.9
Somewhat likely 3.00 to < 4.00	3.00	34	8.4	31	7.6	36	8.8
	3.25	26	6.4	23	5.7	21	5.2
	3.50	10	2.5	16	3.9	18	4.4
	3.75	27	6.6	21	5.2	28	6.9
Extremely likely 4.00 to ≤ 5.00	4.00	26	6.4	37	9.1	21	5.2
	4.25	13	3.2	22	5.4	23	5.7
	4.50	9	2.2	3	0.7	7	1.7
	4.75	12	2.9	14	3.4	7	1.7
	5.00	22	5.4	23	5.7	33	8.1
Total		407	100	407	100	407	100

4.2.6.3 Distance.

4.2.6.3.1 Frequencies.

When asked about the effect of distance on willingness to engage with Facebook posts, though all frequency values were similar, bedding plant consumers indicated they were more likely to engage with content from businesses outside of their region of residence ($n = 268$, 65.8%), as shown in Table 4.59. Twenty-six percent ($n = 106$) of respondents indicated they were somewhat likely to engage with posts from a business one hour away, and 23.8% ($n = 97$) were somewhat likely to engage with businesses within the state. Over 43% ($n = 43.2\%$) of consumers indicated they were extremely willing to engage with posts from businesses outside of their region of residence.

4.2.6.3.2 Means.

There were no significant differences in means for business location distance from social-media viewers, as reported in Table 4.56. All means except that of businesses outside of the region indicated consumers may or may not be willing to engage with content. Response means for the distance of in the region of the consumer's residence ($M = 2.62$, $SD = 1.40$) were the highest.

Table 4.59 Combined frequency distribution of willingness to engage with twelve Facebook posts from businesses located one hour away, outside of region, in the state, and in the region of residence (three posts each) for bedding plant survey respondents.

		One hour away		Outside of region		Within state		In region	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	14	3.4	29	7.1	31	7.6	16	3.9
	.33	17	4.2	22	5.4	17	4.2	17	4.2
	.67	15	3.7	10	2.5	13	3.2	13	3.2
Somewhat unlikely 1.00 to < 2.00	1.00	24	5.9	27	6.6	28	6.9	30	7.4
	1.33	28	6.9	30	7.4	31	7.6	29	7.1
	1.67	25	6.1	24	5.9	19	4.7	20	4.9
Neither likely or unlikely 2.00 to < 3.00	2.00	36	8.8	34	8.4	25	6.1	30	7.4
	2.33	25	6.1	30	7.4	25	6.1	29	7.1
	2.67	23	5.7	17	4.2	26	6.4	22	5.4
Somewhat likely 3.00 to < 4.00	3.00	51	12.5	44	10.8	48	11.8	43	10.6
	3.33	35	8.6	28	6.9	27	6.6	28	6.9
	3.67	20	4.9	20	4.9	22	5.4	34	8.4
Extremely likely 4.00 to ≤ 5.00	4.00	36	8.8	44	10.8	41	10.1	30	7.4
	4.33	23	5.7	11	2.7	17	4.2	29	7.1
	4.67	9	2.2	55	13.5	9	2.2	7	1.7
	5.00	26	6.4	66	16.2	28	6.9	66	16.2
Total		407	100	407	100	407	100	407	100

4.2.7 Direct-marketed produce.

Results in this section are related to the direct-marketed produce survey and are presented in order of variables of message, image component, and distance. Within each variable, frequencies will be reported followed by means.

4.2.7.1 Message.

4.2.7.1.1 Frequencies.

Frequencies, reported in Table 4.60, indicated a larger number of direct-marketed produce consumers were extremely willing to engage with educational messages ($n = 85$, 20.4%) than lifestyle ($n = 76$, 18.4%) or promotional ($n = 49$, 11.8%) messages. Promotional were the least favorite type of message among direct-marketed produce consumers with 26.0% ($n = 108$) of respondents indicating they were somewhat unwilling to engage with posts and 51.1% ($n = 111$) choosing the neither likely nor unlikely option. Frequency values for extremely likely to engage with lifestyle ($n = 76$, 18.4%) and educational ($n = 85$, 20.4%) messages were relatively similar, while only 11.8% ($n = 49$) of direct-marketed produce consumers were extremely willing to engage with promotional messages.

4.2.7.1.2 Means.

Independent samples t -test analysis of direct-marketed produce survey response means indicated no statistically significant differences in means for message type, as shown in Table 4.54. All means were lower than means in both the bedding plant and pick-your-own produce results. While still indicating a lack of willingness to engage, the highest mean was for promotional messages ($M = 2.42$, $SD = 1.21$).

Table 4.60 Combined frequency distribution of willingness to engage with twelve Facebook posts containing a lifestyle, an educational, or a promotional message (four posts each) for direct-marketed produce survey respondents.

		Lifestyle		Educational		Promotional	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	30	7.2	39	9.4	10	2.4
	.25	14	3.4	17	4.1	24	5.8
	.50	18	4.3	6	1.4	13	3.1
	.75	17	4.1	12	2.9	22	5.3
Somewhat unlikely 1.00 to < 2.00	1.00	39	9.4	43	10.4	29	7.0
	1.25	23	5.5	17	4.1	12	2.9
	1.50	13	3.1	10	2.4	25	6.0
	1.75	24	5.8	27	6.5	42	10.1
Neither likely or unlikely 2.00 to < 3.00	2.00	29	7.0	22	5.3	32	32.0
	2.25	17	4.1	25	6.0	11	2.7
	2.50	14	3.4	14	3.4	32	7.7
	2.75	15	3.6	14	3.4	36	8.7
Somewhat likely 3.00 to < 4.00	3.00	33	8.0	34	8.2	18	4.3
	3.25	25	6.0	17	4.1	18	4.3
	3.50	12	2.9	17	4.1	24	5.8
	3.75	16	3.9	16	3.9	28	6.7
Extremely likely 4.00 to ≤ 5.00	4.00	21	5.1	28	6.7	17	4.1
	4.25	5	1.2	12	2.9	5	1.2
	4.50	18	4.3	6	1.4	17	4.1
	4.75	11	2.7	17	4.1	10	2.4
	5.00	21	5.1	22	5.3	0	0.0
Total		415	100.0	415	100.0	415	100.0

4.2.7.2 Image component.

4.2.7.2.1 Frequencies.

Direct-marketed produce frequencies for image component, as presented in Table 4.61, indicated the most likely type of photo consumers were both somewhat and extremely willing to engage with was an image of the product only ($n = 168, 40.4\%$). Consumers were also somewhat and extremely willing to engage with images of people with the product ($n = 165, 39.7\%$). A higher number of consumers were neither likely nor unlikely to engage with photos of products at the business ($n = 107, 25.7\%$) than the other two types. As shown in Table 4.60, though frequencies were alike across all likelihood choice options, the largest concentration of consumers indicated they would be somewhat unlikely to engage with images of people with the product ($n = 97, 23.4\%$) and the product alone ($n = 88, 21.2\%$). Similarly, 22.9% ($n = 95$) of consumers also indicated they would be somewhat unlikely to engage with photos of products at a business.

4.2.7.2.2 Means.

When independent samples t-tests were conducted, it was found that there were no significant differences between response means for images in the direct-marketed produce survey, as shown in Table 4.55. All means for the direct-marketed produce survey were lower than other survey means. Though still indicative of unwillingness to engage, the highest mean was for images of people with the product ($M = 2.42, SD = 1.21$).

Table 4.61 Combined frequency distribution of willingness to engage with twelve Facebook posts containing a photo of people with products, a photo of products alone, or a photo of products at businesses (four posts each) for direct-marketed produce survey respondents.

		People with Product		Product Only		Product at Business	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	30	7.2	37	8.9	0	0.0
	.25	19	4.6	12	2.9	10	2.4
	.50	14	3.4	12	2.9	27	6.5
	.75	14	3.4	19	4.6	18	4.3
Somewhat unlikely 1.00 to < 2.00	1.00	36	8.7	33	8.0	24	5.8
	1.25	24	5.8	25	6.0	27	6.5
	1.50	12	2.9	7	1.7	22	5.3
	1.75	25	6.0	23	5.5	22	5.3
Neither likely or unlikely 2.00 to < 3.00	2.00	23	5.5	29	7.0	28	6.7
	2.25	21	5.1	22	5.3	30	7.2
	2.50	9	2.2	13	3.1	20	4.8
	2.75	23	5.5	15	3.6	29	7.0
Somewhat likely 3.00 to < 4.00	3.00	30	7.2	79	19.0	36	8.7
	3.25	18	4.3	28	6.7	27	6.5
	3.50	20	4.8	26	6.3	10	2.4
	3.75	20	4.8	15	3.6	20	4.8
Extremely likely 4.00 to ≤ 5.00	4.00	20	4.8	40	9.6	30	7.2
	4.25	9	2.2	11	2.7	14	3.4
	4.50	11	2.7	14	3.4	6	1.4
	4.75	15	3.6	9	2.2	15	3.6
	5.00	22	5.3	25	6.0	0	0.0
Total		415	100.0	415	100.0	415	100.0

4.2.7.3 Distance.

4.2.7.3.1 Frequencies.

As reported in Table 4.62, a larger amount of direct-marketed produce survey respondents indicated they were both somewhat and extremely willing to engage with horticultural businesses with locations outside of their region of residence ($n = 176$, 42.5%) than other locations. Consumers also indicated they were somewhat or extremely likely to engage with posts from businesses in the region ($n = 170$, 40.9%) and one hour away ($n = 170$, 41.0%) from their residence. Combined somewhat likely and extremely likely responses indicated engagement with businesses in the consumers' state of residence ($n = 141$, 34.0%) was least likely when compared with other location distances. Twenty-two percent ($n = 91$) and of participants indicated they would be neither likely nor unlikely and 21.9% ($n = 91$) specified they would be somewhat likely to engage with posts from businesses located one hour away. For businesses outside of the region, 23.0% ($n = 95$) of consumers were extremely likely to engage with Facebook posts. In contrast, only 11.8% ($n = 49$) were extremely willing to engage with posts from horticultural businesses within the state. In regard to engaging with businesses in the state, the majority of respondents were either somewhat unlikely ($n = 103$, 24.9%), neither likely nor unlikely ($n = 118$, 28.4%), or somewhat likely ($n = 92$, 22.2%). Frequencies for locations in the region of residence and outside the region were more evenly spread among all likelihood choices, as presented in Table 4.62.

4.2.7.3.2 Means.

As shown in Table 4.56, there were no significant differences in distance and business location means for the direct-marketed produce survey. Like response means for message type and image component, direct-marketed produce distance means were lower than those in other

surveys. The highest mean was for businesses located one hour away from the residence ($M = 2.42$, $SD = 1.44$) of social-media viewers.

Table 4.62 Combined frequency distribution of willingness to engage with twelve Facebook posts from businesses located one hour away, outside of region, in the state, and in the region of residence (three posts each) for direct-marketed produce survey respondents.

		One hour away		Outside of region		Within state		In region	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	26	6.3	43	10.4	0	0.0	29	7.0
	.33	23	5.5	20	4.8	1	0.2	23	5.5
	.67	21	5.1	25	6.0	52	12.5	23	5.5
Somewhat unlikely 1.00 to < 2.00	1.00	33	8.0	32	7.7	24	5.8	34	8.2
	1.33	24	5.8	21	5.1	46	11.1	21	5.1
	1.67	27	6.5	36	8.7	33	8.0	33	8.0
Neither likely or unlikely 2.00 to < 3.00	2.00	28	6.7	24	5.8	38	9.2	33	8.0
	2.33	29	7.0	25	6.0	40	9.6	23	5.5
	2.67	34	8.2	26	6.3	40	9.6	26	6.3
Somewhat likely 3.00 to < 4.00	3.00	33	8.0	39	9.4	36	8.7	34	8.2
	3.33	33	8.0	22	5.3	30	7.2	30	7.2
	3.67	25	6.0	20	4.8	26	6.3	24	5.8
Extremely likely 4.00 to ≤ 5.00	4.00	18	4.3	16	3.9	26	6.3	17	4.1
	4.33	22	5.3	19	4.6	18	4.3	28	6.7
	4.67	15	3.6	17	4.1	5	1.2	15	3.6
	5.00	24	5.8	43	10.4	0	0.0	22	5.3
Total		415	100.0	415	100.0	415	100.0	415	100.0

4.2.8 Pick-your-own produce.

Pick-your-own produce survey results will be reported in this section in order of variables of message, image component, and distance. Within each variable, frequencies will be reported followed by means.

4.2.8.1 Message.

4.2.8.1.1 Frequencies.

Pick-your-own produce survey results were in agreement with results from the other surveys. As shown in Table 4.63, 44.9% ($n = 189$) of consumers indicated they were somewhat willing and extremely willing to engage with educational messages. Combined somewhat willing and extremely willing responses showed promotional messages ($n = 186$, 44.3%) were the next choice, and consumer response frequencies indicated they would be less likely to engage with lifestyle messages ($n = 160$, 38.0%). Twenty-five percent ($n = 105$) of respondents indicated they would be neither likely nor unlikely to engage with lifestyle posts; whereas, 24.5% ($n = 103$) and 29% ($n = 122$) were somewhat likely to engage with educational and promotional messages, respectively. Fewer participants were both extremely unlikely ($n = 26$, 6.2%) and extremely likely ($n = 64$, 15.3%) to engage with promotional posts.

4.2.8.1.2 Means.

Response means, as presented in Table 4.54, for the pick-your-own survey sample were analyzed with independent samples t -tests. Statistically significant differences were found between lifestyle ($M = 2.37$, $SD = 1.37$) and promotional messages ($M = 2.56$, $SD = 1.11$); $t(838) = -2.21$, $p = 0.03$. No other response means were significantly different.

Table 4.63 Combined frequency distribution of willingness to engage with twelve Facebook posts containing a lifestyle, an educational, or a promotional message (four posts each) for pick-your-own produce survey respondents.

		Lifestyle		Educational		Promotional	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	21	5.0	16	3.8	0	0.0
	.25	16	3.8	11	2.6	5	1.2
	.50	12	2.9	7	1.7	10	2.4
	.75	12	2.9	12	2.9	11	2.6
Somewhat unlikely 1.00 to < 2.00	1.00	29	6.9	33	7.9	22	5.2
	1.25	21	5.0	17	4.0	26	6.2
	1.50	15	3.6	21	5.0	18	4.3
	1.75	29	6.9	29	6.9	18	4.3
Neither likely or unlikely 2.00 to < 3.00	2.00	37	8.8	28	6.7	45	10.7
	2.25	23	5.5	26	6.2	30	7.1
	2.50	17	4.0	14	3.3	16	3.8
	2.75	28	6.7	17	4.0	33	7.9
Somewhat likely 3.00 to < 4.00	3.00	30	7.1	34	8.1	50	11.9
	3.25	17	4.0	27	6.4	30	7.1
	3.50	18	4.3	17	4.0	18	4.3
	3.75	20	4.8	25	6.0	24	5.7
Extremely likely 4.00 to ≤ 5.00	4.00	24	5.7	29	6.9	20	4.8
	4.25	9	2.1	11	2.6	25	6.0
	4.50	13	3.1	11	2.6	8	1.9
	4.75	15	3.6	13	3.1	11	2.6
	5.00	14	3.3	22	5.2	0	0.0
Total		420	100.0	420	100.0	420	100.0

4.2.8.2 Image component.

4.2.8.2.1 Frequencies.

As reported in Table 4.64, 45% ($n = 189$) of pick-your-own produce survey respondents ($n = 420$) indicated they were both somewhat and extremely willing to engage with images of the product only than images featuring people with products ($n = 166$, 39.5%) and products at businesses ($n = 178$, 42.5%). Of those willing to engage, 22.4% ($n = 94$) were somewhat likely to engage with images of people with the product, while 24.6% ($n = 103$) were somewhat willing to engage with images of the product alone, and 25.2% ($n = 106$) were somewhat willing to engage with posts featuring the product at the business. Over 20% ($n = 86$) were extremely willing to engage with photos of products by themselves. Inversely, 25.2% ($n = 106$) of consumers indicated they would be somewhat unlikely to engage with photos of people with products.

4.2.8.2.2 Means.

As shown in Table 4.55, there were significant differences between pick-your-own produce response means for images of people with the product ($M = 2.36$, $SD = 1.35$) and the product only ($M = 2.78$, $SD = 1.46$); $t(838) = -4.33$, $p = 0.00$. Additionally, means for images of the product only ($M = 2.78$, $SD = 1.46$) and the product at a business ($M = 2.56$, $SD = 1.13$); $t(838) = -2.44$, $p = 0.02$ were significantly different at the $p \leq 0.05$ level. Response means for images of people with the product ($M = 2.36$, $SD = 1.35$) and the product at a business were also significantly different ($M = 2.56$, $SD = 1.13$); $t(838) = -2.33$, $p = 0.02$ with a confidence interval 95%.

Table 4.64 Combined frequency distribution of willingness to engage with twelve Facebook posts containing a photo of people with products, a photo of products alone, or a photo of products at businesses (four posts each) for pick-your-own produce survey respondents.

		People with Product		Product Only		Product at Business		
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	
Extremely unlikely	.00	20	4.8	13	3.1	0	0.0	
< 1.00	.25	12	2.9	16	3.8	5	1.2	
	.50	5	1.2	5	1.2	11	2.6	
	.75	19	4.5	17	4.0	16	3.8	
Somewhat unlikely	1.00	35	8.3	25	6.0	16	3.8	
	1.00 to < 2.00	1.25	18	4.3	24	5.7	20	4.8
	1.50	24	5.7	12	2.9	22	5.2	
	1.75	29	6.9	28	6.7	27	6.4	
Neither likely or unlikely	2.00	29	6.9	33	7.9	38	9.0	
	2.00 to < 3.00	2.25	24	5.7	21	5.0	32	7.6
	2.50	17	4.0	20	4.8	19	4.5	
	2.75	22	5.2	17	4.0	36	8.6	
Somewhat likely	3.00	42	10.0	35	8.3	42	10.0	
	3.00 to < 4.00	3.25	15	3.6	25	6.0	27	6.4
	3.50	10	2.4	25	6.0	19	4.5	
	3.75	27	6.4	18	4.3	18	4.3	
Extremely likely	4.00	24	5.7	32	7.6	25	6.0	
	4.00 to ≤ 5.00	4.25	14	3.3	13	3.1	25	6.0
	4.50	5	1.2	6	1.4	10	2.4	
	4.75	15	3.6	11	2.6	12	2.9	
	5.00	14	3.3	24	5.7	0	0.0	
Total		420	100.0	420	100.0	420	100.0	

4.2.8.3 Distance.

4.2.8.3.1 Frequencies.

When willingness to engage frequencies were compared for pick-your-own produce distance components, as shown in Table 4.65, the majority ($n = 189$, 44.9%) of respondents indicated they would be somewhat or extremely willing to engage with Facebook posts from businesses location in their region of residence. Participants also indicated they would be somewhat or extremely willing to engage with businesses one hour away ($n = 178$, 42.4%). Consumers were least willing to engage with posts from horticultural businesses in their state of residence ($n = 150$, 35.8). As shown in Table 4.65, only 10% ($n = 42$) of respondents indicated they would be extremely unlikely to engage with posts from businesses in the region; however, frequencies were higher and more evenly spread among other likelihood choices, making this the most popular distance. Frequencies were similar for the distance of one hour away, though more participants indicated they were neither likely nor unlikely to engage with posts from business one hour away ($n = 110$, 26.1%) than in the region ($n = 95$, 22.6%).

4.2.8.3.2 Means.

As shown in Table 4.56, pick-your-own produce survey response means showed statistically significant differences between hypothetical business locations outside of the region ($M = 2.37$, $SD = 1.39$) and within the state ($M = 2.43$, $SD = 1.08$); $t(838) = -2.54$, $p = 0.011$ and between locations within the state ($M = 2.43$, $SD = 1.08$) and in the region ($M = 2.61$, $SD = 1.35$); $t(838) = -2.13$, $p = 0.033$. Significant differences for total willingness to engage occurred between distances one hour away ($M = 2.52$, $SD = 1.37$) and outside the region ($M = 2.36$, $SD = 1.44$); $t(2482) = 2.83$, $p = 0.005$. Independent samples t -tests also showed statistically significant differences between engagement for distances outside the region ($M = 2.36$, $SD = 1.44$) and in

the region ($M = 2.54$, $SD = 1.41$); $t(2482) = -3.15$, $p = 0.002$, and within the state ($M = 2.42$, $SD = 1.24$) and in the region ($M = 2.54$, $SD = 1.41$); $t(2482) = -2.25$, $p = 0.024$ with a 95% confidence interval.

Table 4.65 Combined frequency distribution of willingness to engage with twelve Facebook posts from businesses located one hour away, outside of region, in the state, and in the region of residence (three posts each) for pick-your-own produce survey respondents.

		One hour away		Outside of region		Within state		In region	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely	.00	16	3.8	25	6.0	0	0.0	13	3.1
< 1.00	.33	12	2.9	15	3.6	9	2.1	16	3.8
	.67	14	3.3	22	5.2	23	5.5	13	3.1
Somewhat unlikely	1.00	26	6.2	29	6.9	24	5.7	28	6.7
1.00 to < 2.00	1.33	32	7.6	39	9.3	38	9.0	31	7.4
	1.67	32	7.6	33	7.9	48	11.4	35	8.3
Neither likely or unlikely	2.00	32	7.6	37	8.8	39	9.3	32	7.6
2.00 to < 3.00	2.33	43	10.2	29	6.9	44	10.5	22	5.2
	2.67	35	8.3	32	7.6	45	10.7	41	9.8
Somewhat likely	3.00	37	8.8	33	7.9	30	7.1	34	8.1
3.00 to < 4.00	3.33	31	7.4	24	5.7	40	9.5	30	7.1
	3.67	30	7.1	27	6.4	25	6.0	26	6.2
Extremely likely	4.00	25	6.0	23	5.5	33	7.9	39	9.3
4.00 to ≤ 5.00	4.33	23	5.5	14	3.3	20	4.8	17	4.0
	4.67	17	4.0	36	8.6	2	0.5	16	3.8
	5.00	15	3.6	20	4.8	0	0.0	27	6.4
Total		420	100.0	420	100.0	420	100.0	420	100.0

4.2.9 Total Willingness to Engage.

In this section, results from all three surveys related to willingness to engage with horticultural business Facebook posts will be presented in order of variables of message, image component, and distance. Within each variable, frequencies will be reported followed by means.

4.2.9.1 Message.

4.2.9.1.1 Frequencies.

As presented in Table 4.66, of those willing to engage with posts, 260 participants (21.1%) were extremely likely to engage with educational posts, and around 18% ($n = 230$) were extremely willing to engage with both lifestyle and promotional messages. In contrast, 15.6% ($n = 195$) of consumers were extremely unwilling to engage with lifestyle posts. This frequency was higher than the other two message types, though 14.4% ($n = 178$) of respondents were extremely unlikely to engage with educational messages and only 10.1% ($n = 126$) were extremely unwilling to engage with promotional posts. In general, 44.3% ($n = 547$) of consumers in the total sample surveyed ($n = 1242$) indicated they would be somewhat and extremely willing to engage with posts containing educational messages. Similarly, 43.9% ($n = 545$) indicated they would be somewhat and extremely likely to engage with promotional posts. Relatively fewer respondents were somewhat and extremely willing to engage with lifestyle messages ($n = 501$, 40.5%).

4.2.9.1.2 Means.

Shown in Table 4.54, as in each individual product survey, there were no statistically significant differences in response means for the total survey sample ($n = 1242$). Independent samples *t*-tests were conducted to compare means. Though not by much, promotional message means ($M = 2.53$, $SD = 1.26$) were the highest.

Table 4.66 Combined frequency distribution of willingness to engage with twelve Facebook posts containing a lifestyle, an educational, or a promotional message (four posts each) for total survey respondents.

		Lifestyle		Educational		Promotional	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	71	5.7	77	6.2	20	1.6
	.25	39	3.1	43	3.5	31	2.5
	.50	44	3.5	20	1.6	41	3.3
	.75	41	3.3	38	3.1	34	2.7
Somewhat unlikely 1.00 to < 2.00	1.00	95	7.6	102	8.2	76	6.1
	1.25	63	5.1	54	4.3	71	5.7
	1.50	49	3.9	50	4.0	44	3.5
	1.75	75	6.0	67	5.4	59	4.8
Neither likely or unlikely 2.00 to < 3.00	2.00	94	7.6	80	6.4	109	8.8
	2.25	57	4.6	69	5.6	79	6.4
	2.50	48	3.9	48	3.9	42	3.4
	2.75	65	5.2	47	3.8	91	7.3
Somewhat likely 3.00 to < 4.00	3.00	98	7.9	99	8.0	119	9.6
	3.25	69	5.6	74	6.0	74	6.0
	3.50	40	3.2	50	4.0	52	4.2
	3.75	64	5.2	64	5.2	70	5.6
Extremely likely 4.00 to ≤ 5.00	4.00	73	5.9	88	7.1	76	6.1
	4.25	31	2.5	38	3.1	68	5.5
	4.50	32	2.6	27	2.2	23	1.9
	4.75	37	3.0	38	3.1	39	3.1
	5.00	57	4.6	69	5.6	24	1.9
Total		1242	100.0	1242	100.0	1242	100.0

4.2.9.2 Image component.

4.2.9.2.1 Frequencies

Participants in the total survey sample ($n = 1242$) indicated they would be somewhat and extremely willing to engage with posts with images of products alone ($n = 547$, 44.1%). The second highest frequency was for somewhat and extremely willing responses for images of the product at a business ($n = 530$, 42.7%). As presented in Table 4.67, 22.5% ($n = 279$) of the total sample of consumers indicated they would be somewhat likely to engage with posts featuring an image of people with the product, 22.4% ($n = 278$) would be somewhat likely to engage with posts containing images of products alone, and 24.3% ($n = 302$) of respondents indicated they would be somewhat willing to engage with posts highlighting products at a business. In contrast, though, 25.1% ($n = 313$) and 34.8% ($n = 147$) of participants indicated they would be neither likely nor unlikely or extremely unlikely, respectively, to engage with posts containing images of products at the business.

4.2.9.2.2 Means.

As shown in Table 4.55, bedding plant and pick-your-own produce survey means were slightly higher than direct-marketed produce means. Independent samples *t*-tests were conducted to compare response means of individual image components. There were no statistically significant differences for overall willingness to engage in the total sample in regard to image component.

Table 4.67 Combined frequency distribution of willingness to engage with twelve Facebook posts containing a photo of people with products, a photo of products alone, or a photo of products at businesses (four posts each) for total survey respondents.

		People with Product		Product Only		Product at Business	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	70	5.6	76	6.1	25	25.0
	.25	38	3.1	41	3.3	30	2.4
	.50	34	2.7	27	2.2	51	4.1
	.75	46	3.7	49	3.9	41	3.3
Somewhat unlikely 1.00 to < 2.00	1.00	92	7.4	85	6.8	70	5.6
	1.25	61	4.9	67	5.4	65	5.2
	1.50	58	4.7	32	2.6	51	4.1
	1.75	79	6.4	68	5.5	66	5.3
Neither likely or unlikely 2.00 to < 3.00	2.00	84	6.8	88	7.1	90	7.2
	2.25	65	5.2	59	4.8	77	6.2
	2.50	43	3.5	48	3.9	61	4.9
	2.75	62	5.0	55	4.4	85	6.8
Somewhat likely 3.00 to < 4.00	3.00	106	8.5	94	7.6	114	9.2
	3.25	59	4.8	74	6.0	75	6.0
	3.50	40	3.2	56	4.5	47	3.8
	3.75	74	6.0	54	4.3	66	5.3
Extremely likely 4.00 to ≤ 5.00	4.00	70	5.6	94	7.6	76	6.1
	4.25	20	1.6	46	3.7	62	5.0
	4.50	41	3.3	23	1.9	23	1.9
	4.75	42	3.4	34	2.7	34	2.7
	5.00	58	4.7	72	5.8	33	2.7
Total		1242	100.0	1242	100.0	1242	100.0

4.2.9.3 Distance.

4.2.9.3.1 Frequencies

Frequencies, as presented in Table 4.68, indicated When the total sample results were analyzed, frequencies showed a majority of horticultural consumers ($n = 1242$) were extremely willing to engage with posts from businesses one hour away ($n = 292$, 23.5 %).

Consumers were less likely to engage with content from other distances, however. Twenty-six percent ($n = 322$) of respondents indicated they would be neither likely nor unlikely to engage with posts from a distance of within the state and 22.6% ($n = 280$) were indifferent about posts in their region of residence. For posts by businesses outside of the region, 21.9% ($n = 272$) of consumers specified they would be somewhat unlikely to engage.

4.2.9.3.2 Means.

As shown in Table 4.56, response means for willingness to engage with horticultural business Facebook posts in regard to distance from the viewer were similar across all surveys. Analysis using independent samples *t*-tests revealed significant differences for total sample willingness to engage occurred between distances one hour away ($M = 2.52$, $SD = 1.37$) and outside the region ($M = 2.36$, $SD = 1.44$); $t(2482) = 2.83$, $p = 0.01$. Response means for business location distances of outside the region ($M = 2.36$, $SD = 1.44$) and in the region ($M = 2.54$, $SD = 1.41$); $t(2482) = -3.15$, $p = 0.00$, and within the state ($M = 2.42$, $SD = 1.24$) and in the region ($M = 2.54$, $SD = 1.41$); $t(2482) = -2.25$, $p = 0.02$ were also statistically significant with a 95% confidence interval.

Table 4.68 Combined frequency distribution of willingness to engage with twelve Facebook posts from businesses located one hour away, outside of region, in the state, and in the region of residence (three posts each) for total survey respondents.

		One hour away		Outside of region		Within state		In region	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	70	5.6	97	7.8	34	2.7	58	4.7
	.33	57	4.6	61	4.9	47	3.8	56	4.5
	.67	37	3.0	57	4.6	70	5.6	57	4.6
Somewhat unlikely 1.00 to < 2.00	1.00	77	6.2	84	6.8	61	4.9	109	8.8
	1.33	84	6.8	90	7.2	95	7.6	89	7.2
	1.67	98	7.9	98	7.9	138	11.1	73	5.9
Neither likely or unlikely 2.00 to < 3.00	2.00	82	6.6	96	7.7	94	7.6	89	7.2
	2.33	97	7.8	83	6.7	109	8.8	72	5.8
	2.67	102	8.2	81	6.5	119	9.6	119	9.6
Somewhat likely 3.00 to < 4.00	3.00	111	8.9	96	7.7	106	8.5	94	7.6
	3.33	99	8.0	91	7.3	97	7.8	94	7.6
	3.67	82	6.6	75	6.0	108	8.7	74	6.0
Extremely likely 4.00 to ≤ 5.00	4.00	72	5.8	94	7.6	65	5.2	101	8.1
	4.33	68	5.5	28	2.3	57	4.6	40	3.2
	4.67	54	4.3	49	3.9	16	1.3	47	3.8
	5.00	52	4.2	62	5.0	26	2.1	70	5.6
Total		1242	100.0	1242	100.0	1242	100.0	1242	100.0




4.2.10 Type of Reaction.

After viewing mock Facebook posts, consumers were asked which emoji reaction they would most likely choose to react to horticultural business posts. Emoji choices were shown as they appear on Facebook and included a blue thumbs up, a heart, a smiley face, a sad face, a surprised face, and an angry face. Survey participants were asked to select which emoji they were the most likely to choose as if they saw each horticultural business Facebook post on Facebook in real life.

4.2.10.1 Bedding Plants.

Respondents in the bedding plant survey indicated they would be more likely to “like” posts with both educational and promotional messages ($n = 264$, 64.9%). Results also showed that consumers were more likely to choose “love” for bedding plant lifestyle messages ($n = 157$, 38.6%) and images with people and products ($n = 157$, 38.6%) than direct-marketed or you-pick-produce. The “haha” emoji was selected for posts with lifestyle messages ($n = 22$, 5.4%) and images of people with the product ($n = 22$, 5.4%). Participants in the bedding plant survey did not choose “wow,” “sad,” or “angry” emoji responses.

Table 4.69 Frequency of engagement by type of emoji reaction to Facebook marketing posts from independent bedding plant businesses.







Variables	 Like		 Love		 Haha	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Message						
Lifestyle	228	56.0	157	38.6	22	5.4
Educational	264	64.9	134	32.9	9	2.2
Promotional	264	64.9	124	30.5	19	4.7
Image component						
People with product	228	56.0	157	38.6	22	5.4
Product only	264	64.9	134	32.9	9	2.2
Product at business	260	63.9	133	32.7	14	3.4

Note: Participants only chose “like,” “love,” and “haha” responses in the bedding plant survey.

4.2.10.2 Direct-Marketed Produce.

In the direct-marketed produce survey, 75.2% of respondents chose “like” as a reaction to posts with educational messages ($n = 312$) and images of products ($n = 312$). Fewer chose “love” than in the bedding plant survey; however, 20.5% ($n = 85$) selected “love” in response to posts with lifestyle messages and photos of people with products. Posts with educational messages and images of products received “wow” responses from 23 participants (5.5%). Promotional messages received 300 (72.3%) “like” selections, but also some “haha” ($n = 15$, 3.6%), “sad” ($n = 15$, 3.6%), and “angry” ($n = 13$, 3.1%) emoji selections.







Table 4.70 Frequency of engagement by type of emoji reaction to Facebook marketing posts from independent direct-marketed produce businesses.

Variables	 Like		 Love		 Haha		 Wow		 Sad		 Angry	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Message												
Lifestyle	296	71.3	85	20.5	13	3.1	13	3.1	3	0.7	5	1.2
Educational	312	75.2	66	15.9	7	1.7	23	5.5	3	0.7	4	1.0
Promotional	300	72.3	64	15.4	15	3.6	15	3.6	8	1.9	13	3.1
Image component												
People with product	296	71.3	85	20.5	13	3.1	13	3.1	3	0.7	5	1.2
Product only	312	75.2	66	15.9	7	1.7	23	5.5	3	0.7	4	1.0
Product at business	299	72.0	71	17.1	17	4.1	22	5.3	2	0.5	4	1.0

4.2.10.3 Pick-your-own produce.

As in the other surveys, the “like” emoji was the most common reaction selected for pick-your-own produce. Slightly higher engagement was recorded for this survey than direct-marketed produce. Participants indicated they would choose “like” for posts with lifestyle messages ($n = 323$, 76.9%) and images of people with the product ($n = 323$, 76.9%). Educational messages ($n = 97$, 23.1%) and photos of products at business locations ($n = 118$, 28.1%) were more likely to be reacted to with a “love” emoji. Like in the direct-marketed produce survey, small numbers of consumers responded to posts with “haha,” “wow,” “sad,” and “angry” emojis.







Table 4.71 Frequency of engagement by type of emoji reaction to Facebook marketing posts from independent pick-your-own produce businesses.

Variables	 Like		 Love		 Haha		 Wow		 Sad		 Angry	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Message												
Lifestyle	323	76.9	62	14.8	18	4.3	8	1.9	2	0.5	7	1.7
Educational	278	66.2	97	23.1	17	4.0	24	5.7	2	0.5	2	0.5
Promotional	303	72.1	70	16.7	10	2.4	22	5.2	3	0.7	12	2.9
Image component												
People with product	323	76.9	62	14.8	18	4.3	8	1.9	2	0.5	7	1.7
Product only	278	66.2	97	23.1	17	4.0	24	5.7	2	0.5	2	0.5
Product at business	264	62.9	118	28.1	14	3.3	19	4.5	2	0.5	3	0.7

4.2.10.4 Total Type of Reaction.

The majority of responses indicated consumers would be most willing to “like” posts. Of the three different types of messages and photos, lifestyle messages ($n = 3488$, 70.2%) and photos of products at businesses ($n = 3493$, 70.3%) were the most popular. Respondents stated they were also somewhat likely to select the “love” emoji for promotional messages ($n = 1138$, 22.9%) and photos of the product by itself ($n = 1139$, 22.9%). As shown in Table 4.5, few participants chose “sad” and “angry” reactions.

Table 4.72 Frequency of engagement by type of emoji reaction to Facebook marketing posts from independent horticultural businesses.

Variables												
	Like		Love		Haha		Wow		Sad		Angry	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Message												
Lifestyle	3488	70.2	1124	22.6	181	3.6	79	1.6	27	0.5	69	1.4
Educational	3471	69.9	1068	21.5	153	3.1	188	3.8	29	0.6	59	1.2
Promotional	3432	69.1	1138	22.9	167	3.4	126	2.5	24	0.5	81	1.6
Image component												
People with product	3415	68.7	1122	22.6	206	4.1	127	2.6	28	0.6	70	1.4
Product only	3469	69.8	1139	22.9	146	2.9	138	2.8	16	0.3	60	1.2
Product at business	3493	70.3	1068	21.5	169	3.4	141	2.8	30	0.6	67	1.3

4.3 Likelihood of Purchase (RO2)

To determine how likely consumers were to purchase from a business after seeing mock Facebook posts, means were analyzed using independent samples *t*-tests and frequencies were compared. Survey respondents were asked to indicate how willing and likely they were to purchase from a horticultural business after seeing Facebook posts by moving a slider button across a Likert scale in which 0.0 equaled extremely unlikely and 5.0 equaled extremely likely. Consumers were asked about likelihood to purchase horticultural products in-store or online.

4.3.1 Bedding plant.

In this section, all results related to the bedding plants survey will be reported and presented in order of variables of in-store, online, and general purchase likelihood. Within each variable, frequencies will be reported followed by means.

4.3.1.1 Message.

4.3.1.1.1 Frequencies.

When individual message type frequencies were examined, all were found to have similar frequency patterns for the highest amount of responses. Consumers were somewhat likely to purchase in-store, extremely unlikely to purchase online, and neither likely nor unlikely to purchase in general. Though means were lower than engagement response means, of the bedding plant consumers ($n = 407$) who indicated they were likely to purchase after seeing horticultural marketing Facebook posts, 48.2% ($n = 196$) stated they would purchase from the business in general after viewing lifestyle messages (Table 4.73), 38.8% ($n = 158$) were willing to purchase online after viewing educational posts (Table 4.74), and 59.7% ($n = 243$) were somewhat and extremely willing to purchase in-store after seeing promotional messages (Table 4.75). Promotional messages, as shown in Table 4.75, received slightly the highest amount of somewhat likely to purchase in-store responses ($n = 132$, 32.4%), just above educational messages ($n = 131$, 32.2%). Presented in Table 4.74, educational messages, on the other hand, received the most extremely unlikely to purchase online responses ($n = 103$, 25.3%). In general, most consumers were neither likely nor unlikely to purchase after seeing promotional messages ($n = 148$, 36.2%). No respondents indicated they were extremely unwilling to purchase in general after seeing any of the three types of messages. .

Table 4.73 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing lifestyle messages for bedding plant survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	24	5.9	59	14.5	0	0.0
	.25	5	1.2	14	3.4	0	0.0
	.50	8	2.0	6	1.5	0	0.0
	.75	13	3.2	19	4.7	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	16	3.9	31	7.6	33	8.1
	1.25	8	2.0	16	3.9	16	3.9
	1.50	11	2.7	16	3.9	17	4.2
	1.75	14	3.4	18	4.4	14	3.4
Neither likely or unlikely 2.00 to < 3.00	2.00	15	3.7	14	3.4	47	11.5
	2.25	21	5.2	11	2.7	29	7.1
	2.50	30	7.4	24	5.9	21	5.2
	2.75	27	6.6	31	7.6	34	8.4
Somewhat likely 3.00 to < 4.00	3.00	52	12.8	36	8.8	71	17.4
	3.25	30	7.4	18	4.4	27	6.6
	3.50	27	6.6	21	5.2	26	6.4
	3.75	20	4.9	14	3.4	16	3.9
Extremely likely 4.00 to ≤ 5.00	4.00	29	7.1	19	4.7	16	3.9
	4.25	14	3.4	5	1.2	14	3.4
	4.50	11	2.7	8	2.0	7	1.7
	4.75	14	3.4	13	3.2	3	0.7
	5.00	18	4.4	14	3.4	16	3.9
Total		407	100.0	407	100.0	407	100.0

Table 4.74 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing educational messages for bedding plant survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	25	6.1	63	15.5	0	0.0
	.25	3	0.7	18	4.4	0	0.0
	.50	6	1.5	12	2.9	0	0.0
	.75	10	2.5	10	2.5	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	17	4.2	25	6.1	36	8.8
	1.25	12	2.9	19	4.7	15	3.7
	1.50	11	2.7	22	5.4	14	3.4
	1.75	13	3.2	17	4.2	20	4.9
Neither likely or unlikely 2.00 to < 3.00	2.00	9	2.2	7	1.7	47	11.5
	2.25	24	5.9	22	5.4	28	6.9
	2.50	20	4.9	14	3.4	31	7.6
	2.75	34	8.4	20	4.9	31	7.6
Somewhat likely 3.00 to < 4.00	3.00	48	11.8	41	10.1	67	16.5
	3.25	32	7.9	25	6.1	27	6.6
	3.50	31	7.6	15	3.7	30	7.4
	3.75	20	4.9	12	2.9	11	2.7
Extremely likely 4.00 to ≤ 5.00	4.00	32	7.9	21	5.2	18	4.4
	4.25	14	3.4	11	2.7	5	1.2
	4.50	12	2.9	8	2.0	7	1.7
	4.75	10	2.5	7	1.7	5	1.2
	5.00	24	5.9	18	4.4	15	3.7
Total		407	100.0	407	100.0	407	100.0

Table 4.75 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing promotional messages for bedding plant survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	24	5.9	66	16.2	0	0.0
	.25	1	0.2	12	2.9	0	0.0
	.50	3	0.7	5	1.2	0	0.0
	.75	9	2.2	8	2.0	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	20	4.9	39	9.6	38	9.3
	1.25	6	1.5	13	3.2	16	3.9
	1.50	7	1.7	14	3.4	21	5.2
	1.75	9	2.2	12	2.9	28	6.9
Neither likely or unlikely 2.00 to < 3.00	2.00	20	4.9	21	5.2	47	11.5
	2.25	16	3.9	17	4.2	29	7.1
	2.50	22	5.4	21	5.2	36	8.8
	2.75	27	6.6	23	5.7	36	8.8
Somewhat likely 3.00 to < 4.00	3.00	38	9.3	30	7.4	60	14.7
	3.25	41	10.1	20	4.9	24	5.9
	3.50	31	7.6	17	4.2	19	4.7
	3.75	22	5.4	12	2.9	10	2.5
Extremely likely 4.00 to \leq 5.00	4.00	36	8.8	31	7.6	18	4.4
	4.25	19	4.7	11	2.7	6	1.5
	4.50	19	4.7	9	2.2	2	0.5
	4.75	14	3.4	9	2.2	3	0.7
	5.00	23	5.7	17	4.2	14	3.4
Total		407	100.0	407	100.0	407	100.0

4.3.1.1.2 Means.

Mean responses in the bedding plant survey indicated, as shown in Table 4.76, consumers would be more inclined to shop in-store at horticultural businesses after seeing posts with promotional messages ($M = 2.94, SD = 1.33$). For in-store purchase likelihood, there was a significant difference between lifestyle ($M = 2.73, SD = 1.33$) and promotional messages ($M = 2.94, SD = 1.33$); $t(812) = -0.75, p = 0.03$. For online purchase likelihood, there were no statistically significant differences. For general purchase likelihood, lifestyle ($M = 2.73, SD = 1.02$) and promotional message ($M = 2.55, SD = 0.99$); $t(812) = 2.56, p = 0.01$ means were significantly different.

Table 4.76 Mean likelihood and willingness to purchase products after seeing Facebook marketing posts featuring bedding plants by message type.

Message	In-Store		Online		General Purchase Likelihood	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Lifestyle	2.73 b	1.33	2.17 a	1.50	2.73 a	1.02
Educational	2.80 ab	1.34	2.15 a	1.53	2.68 ab	1.01
Promotional	2.94 a	1.33	2.22 a	1.54	2.55 b	0.99

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to purchase and 5 = extremely likely to purchase. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 407$).

4.3.1.2 Image component.

4.3.1.2.1 Frequencies.

Images of bedding plant products at businesses ($n = 244$, 60.0%) had the highest in-store purchase likelihood response frequency (somewhat likely and extremely likely responses combined); however, consumers indicated a higher general purchase likelihood after seeing posts with a photo of people with the product ($n = 190$, 46.7%). Individual comparisons revealed a similar response frequency pattern for each type of purchase likelihood and image component. For in-store purchase likelihood, the majority of consumers indicated they would be somewhat willing to purchase after viewing all image components. Images of people with the product, as reported in Table 4.77, were the most popular ($n = 136$, 33.5%). Shown in Table 4.78, 25.7% ($n = 105$) of consumers indicated they would be extremely unlikely to purchase from a business after seeing a post featuring an image of the product alone. As shown in Table 4.79, when asked about online purchase likelihood, 32.5% ($n = 132$) of respondents indicated they would be somewhat likely to purchase after viewing posts with photos of the product at the business. For general purchase likelihood, 56.5% ($n = 230$) of consumers indicated they would be neither likely nor unlikely to purchase from a bedding plant business after seeing a post containing an image of a product at the business. This frequency was larger than both other image component types. Frequencies showed consumers were less inclined to purchase online than in-store.

Table 4.77 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of people with products for bedding plant survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	24	5.9	63	15.5	0	0.0
	.25	6	1.5	16	3.9	0	0.0
	.50	9	2.2	10	2.5	0	0.0
	.75	9	2.2	11	2.7	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	10	2.5	24	5.9	33	8.1
	1.25	12	2.9	16	3.9	11	2.7
	1.50	14	3.4	20	4.9	22	5.4
	1.75	17	4.2	11	2.7	14	3.4
Neither likely or unlikely 2.00 to < 3.00	2.00	20	4.9	21	5.2	45	11.1
	2.25	20	4.9	22	5.4	32	7.9
	2.50	25	6.1	21	5.2	30	7.4
	2.75	24	5.9	25	6.1	30	7.4
Somewhat likely 3.00 to < 4.00	3.00	43	10.6	31	7.6	65	16.0
	3.25	40	9.8	21	5.2	26	6.4
	3.50	30	7.4	13	3.2	29	7.1
	3.75	23	5.7	18	4.4	11	2.7
Extremely likely 4.00 to ≤ 5.00	4.00	34	8.4	21	5.2	16	3.9
	4.25	10	2.5	11	2.7	12	2.9
	4.50	7	1.7	10	2.5	7	1.7
	4.75	12	2.9	9	2.2	6	1.5
	5.00	18	4.4	13	3.2	18	4.4
Total		407	100.0	407	100.0	407	100.0

Table 4.78 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of products alone for bedding plant survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	26	6.4	62	15.2	0	0.0
	.25	4	1.0	18	4.4	0	0.0
	.50	7	1.7	12	2.9	0	0.0
	.75	8	2.0	13	3.2	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	17	4.2	36	8.8	36	8.8
	1.25	9	2.2	9	2.2	18	4.4
	1.50	14	3.4	13	3.2	15	3.7
	1.75	8	2.0	14	3.4	23	5.7
Neither likely or unlikely 2.00 to < 3.00	2.00	19	4.7	15	3.7	50	12.3
	2.25	18	4.4	17	4.2	31	7.6
	2.50	17	4.2	15	3.7	28	6.9
	2.75	32	7.9	16	3.9	27	6.6
Somewhat likely 3.00 to < 4.00	3.00	49	12.0	37	9.1	54	13.3
	3.25	28	6.9	25	6.1	31	7.6
	3.50	29	7.1	24	5.9	29	7.1
	3.75	22	5.4	13	3.2	12	2.9
Extremely likely 4.00 to ≤ 5.00	4.00	33	8.1	26	6.4	23	5.7
	4.25	16	3.9	10	2.5	6	1.5
	4.50	14	3.4	4	1.0	4	1.0
	4.75	15	3.7	9	2.2	3	0.7
	5.00	22	5.4	19	4.7	17	4.2
Total		407	100.0	407	100.0	407	100.0

Table 4.79 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of products at a business for bedding plant survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	25	6.1	69	17.0	0	0.0
	.25	5	1.2	7	1.7	0	0.0
	.50	4	1.0	11	2.7	0	0.0
	.75	9	2.2	11	2.7	1	0.2
Somewhat unlikely 1.00 to < 2.00	1.00	21	5.2	39	9.6	6	1.5
	1.25	8	2.0	15	3.7	6	1.5
	1.50	6	1.5	12	2.9	14	3.4
	1.75	6	1.5	14	3.4	31	7.6
Neither likely or unlikely 2.00 to < 3.00	2.00	15	3.7	13	3.2	58	14.3
	2.25	17	4.2	24	5.9	62	15.2
	2.50	22	5.4	14	3.4	63	15.5
	2.75	25	6.1	18	4.4	47	11.5
Somewhat likely 3.00 to < 4.00	3.00	46	11.3	37	9.1	51	12.5
	3.25	39	9.6	16	3.9	23	5.7
	3.50	19	4.7	22	5.4	12	2.9
	3.75	28	6.9	9	2.2	25	6.1
Extremely likely 4.00 to ≤ 5.00	4.00	36	8.8	32	7.9	7	1.7
	4.25	16	3.9	7	1.7	0	0.0
	4.50	11	2.7	8	2.0	1	0.2
	4.75	18	4.4	6	1.5	0	0.0
	5.00	31	7.6	23	5.7	0	0.0
Total		407	100.0	407	100.0	407	100.0

4.3.1.2.2 Means.

For in-store bedding plant purchase likelihood, as reported in Table 4.80, there was a significant difference between images of people with the product ($M = 2.73$, $SD = 1.32$) and products at the business ($M = 2.94$, $SD = 1.33$); $t(812) = -2.11$, $p = 0.04$ with a 95% confidence interval. There were no significant differences between online purchase likelihood means. Significant differences occurred between general purchase likelihood means for people with products ($M = 2.73$, $SD = 1.04$) and products at the business ($M = 2.53$, $SD = 0.66$); $t(812) = 1.98$, $p = 0.05$, and for images of products alone ($M = 2.65$, $SD = 1.03$) and products at the business ($M = 2.53$, $SD = 0.66$); $t(812) = 3.28$, $p = 0.00$.

Table 4.80 Mean likelihood and willingness to purchase products after seeing Facebook marketing posts featuring bedding plants by image component.

Image component	In-Store		Online		General Purchase Likelihood	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
People with product	2.73 b	1.32	2.16 a	1.51	2.73 a	1.04
Product only	2.82 ab	1.36	2.18 a	1.56	2.65 a	1.03
Product at business	2.93 a	1.39	2.19 a	1.57	2.53 b	0.66

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to purchase and 5 = extremely likely to purchase. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 407$).

4.3.2 Direct-marketed produce

This section reports all results related to the direct-marketed produce survey. Variables are presented in order of in-store, online, and general purchase likelihood. Within each variable, frequencies will be reported followed by means.

4.3.2.1 Messages.

4.3.2.1.1 Frequencies.

Direct-marketed produce frequencies differed from bedding plant responses in that consumers were slightly more willing to consider purchasing produce online across lifestyle (Table 4.81) and promotional message types (Table 4.82). Frequencies for somewhat and extremely likely to purchase responses for in-store after viewing Facebook posts, educational ($n = 206$, 49.6%) and promotional ($n = 201$, 48.4%) messages were higher than lifestyle messages ($n = 161$, 38.8%). Similar to bedding plant consumers, reported in Table 4.82, 30.6% ($n = 127$) of respondents in the direct-marketed produce survey were extremely unlikely to purchase after viewing educational messages. Over 26% ($n = 111$) of consumers indicated they were neither likely nor unlikely and 23.1% ($n = 96$) were somewhat likely to purchase products online after viewing Facebook posts with promotional messages. Though over half of respondents indicated they would be neither likely nor unlikely to purchase produce in general after viewing lifestyle ($n = 224$, 54.1%) and promotional posts ($n = 228$, 55.1%), only 33.9% ($n = 141$) of consumers would be neither likely nor unlikely to purchase after viewing posts with educational messages. In fact, 28.3% ($n = 117$) of produce consumers indicated they would be somewhat likely to purchase in general after seeing educational messages on social media.

Table 4.81 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing lifestyle messages for direct-marketed produce survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	27	6.5	0	0.0	0	0.0
	.25	15	3.6	2	0.5	0	0.0
	.50	9	2.2	6	1.4	0	0.0
	.75	18	4.3	28	6.7	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	20	4.8	23	5.5	4	1.0
	1.25	13	3.1	44	10.6	5	1.2
	1.50	15	3.6	30	7.2	12	2.9
	1.75	11	2.7	37	8.9	33	8.0
Neither likely or unlikely 2.00 to < 3.00	2.00	25	6.0	29	7.0	55	13.3
	2.25	24	5.8	26	6.3	58	14.0
	2.50	20	4.8	28	6.7	65	15.7
	2.75	16	3.9	34	8.2	46	11.1
Somewhat likely 3.00 to < 4.00	3.00	44	10.6	45	10.8	52	12.5
	3.25	23	5.5	27	6.5	27	6.5
	3.50	32	7.7	24	5.8	23	5.5
	3.75	20	4.8	10	2.4	24	5.8
Extremely likely 4.00 to ≤ 5.00	4.00	25	6.0	16	3.9	10	2.4
	4.25	13	3.1	5	1.2	1	0.2
	4.50	13	3.1	0	0.0	0	0.0
	4.75	14	3.4	1	0.2	0	0.0
	5.00	18	4.3	0	0.0	0	0.0
Total		415	100.0	415	100.0	415	100.0

Table 4.82 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing educational messages for direct-marketed produce survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	37	8.9	72	17.3	0	0.0
	.25	9	2.2	16	3.9	0	0.0
	.50	10	2.4	12	2.9	0	0.0
	.75	9	2.2	27	6.5	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	19	4.6	35	8.4	33	8.0
	1.25	13	3.1	16	3.9	13	3.1
	1.50	12	2.9	12	2.9	12	2.9
	1.75	15	3.6	10	2.4	15	3.6
Neither likely or unlikely 2.00 to < 3.00	2.00	15	3.6	16	3.8	51	12.3
	2.25	11	2.7	19	4.6	23	5.5
	2.50	36	8.7	23	5.5	35	8.4
	2.75	23	5.5	21	5.1	32	7.7
Somewhat likely 3.00 to < 4.00	3.00	41	9.9	38	9.2	51	12.3
	3.25	31	7.5	15	3.6	33	8.0
	3.50	22	5.3	9	2.2	17	4.1
	3.75	16	3.9	12	2.9	16	3.9
Extremely likely 4.00 to ≤ 5.00	4.00	35	8.4	24	5.8	19	4.6
	4.25	18	4.3	9	2.2	10	2.4
	4.50	12	2.9	7	1.7	14	3.4
	4.75	9	2.2	3	0.7	12	2.9
	5.00	22	5.3	19	4.6	29	7.0
Total		415	100.0	415	100.0	415	100.0

Table 4.83 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing promotional messages for direct-marketed produce survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	29	7.0	33	8.0	0	0.0
	.25	11	2.7	9	2.2	0	0.0
	.50	7	1.7	7	1.7	3	0.7
	.75	15	3.6	9	2.2	3	0.7
Somewhat unlikely 1.00 to < 2.00	1.00	23	5.5	23	5.5	11	2.7
	1.25	4	1.0	18	4.3	10	2.4
	1.50	18	4.3	27	6.5	30	7.2
	1.75	21	5.1	17	4.1	28	6.7
Neither likely or unlikely 2.00 to < 3.00	2.00	20	4.8	27	6.5	43	10.4
	2.25	24	5.8	23	5.5	43	10.4
	2.50	23	5.5	32	7.7	77	18.6
	2.75	21	5.1	29	7.0	65	15.7
Somewhat likely 3.00 to < 4.00	3.00	35	8.4	29	7.0	58	14.0
	3.25	22	5.3	20	4.8	22	5.3
	3.50	31	7.5	20	4.8	10	2.4
	3.75	21	5.1	27	6.5	7	1.7
Extremely likely 4.00 to \leq 5.00	4.00	25	6.0	25	6.0	4	1.0
	4.25	10	2.4	8	1.9	1	0.2
	4.50	20	4.8	11	2.7	0	0.0
	4.75	10	2.4	6	1.4	0	0.0
	5.00	25	6.0	15	3.6	0	0.0
Total		415	100.0	415	100.0	415	100.0

4.3.2.1.2 Means.

As reported in Table 4.84, there were no significant differences between means for in-store purchase likelihood. Message type response means for both online and general purchase likelihood, though, were all significantly different. For online purchase likelihood, there were statistically significant differences between lifestyle ($M = 2.23, SD = 0.98$) and educational messages ($M = 1.99, SD = 1.53$); $t(828) = 2.68, p = 0.01$, educational ($M = 1.99, SD = 1.53$) and promotional messages ($M = 2.42, SD = 1.36$); $t(828) = -4.28, p = 0.00$, and lifestyle ($M = 2.23, SD = 0.98$) and promotional messages ($M = 2.42, SD = 1.36$); $t(828) = -2.31, p = 0.02$. Similarly, significant differences in message type response means for general purchase likelihood occurred between lifestyle ($M = 2.59, SD = 0.66$) and educational messages ($M = 2.86, SD = 1.12$); $t(828) = -4.23, p = 0.00$, educational ($M = 2.86, SD = 1.12$) and promotional messages ($M = 2.42, SD = 0.66$); $t(828) = 6.90, p = 0.00$, and lifestyle ($M = 2.59, SD = 0.66$) and promotional messages ($M = 2.42, SD = 0.66$); $t(828) = 3.71, p = 0.00$.

Table 4.84 Mean likelihood and willingness to purchase products after seeing Facebook marketing posts featuring direct-marketed produce by message type.

Message	In-Store		Online		General Purchase Likelihood	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Lifestyle	2.56 a	1.43	2.23 b	0.98	2.59 b	0.66
Educational	2.62 a	1.45	1.99 c	1.53	2.86 a	1.12
Promotional	2.62 a	1.44	2.42 a	1.36	2.42 c	0.66

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to purchase and 5 = extremely likely to purchase. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 415$).

4.3.2.2 Image component.

4.3.2.2.1 Frequencies.

Reported in Table 4.85, for likelihood to purchase in-store, 29.8% ($n = 124$) of consumers indicated they would be somewhat willing to purchase after viewing posts containing an image of people with a direct-marketed product. Similarly, as shown in Table 4.86, 27.0% ($n = 112$) indicated they would be somewhat likely to purchase after viewing an image of the product alone, and, presented in Table 4.86, 26.0% ($n = 108$) would be somewhat likely to purchase after seeing a photo featuring the product at a business. Over 29.0% ($n = 121$) of consumers were extremely unwilling to purchase direct-marketed products online after viewing an image of people with produce (Table 4.85), while 31.5% ($n = 131$) were only somewhat unlikely to purchase after seeing a photo of the product alone (Table 4.86). After viewing a Facebook post containing an image of a product at a produce business (Table 4.87), 26.7% ($n = 111$) of respondents were neither likely nor unlikely to purchase. Over 33% ($n = 139$) of participants were neither likely nor unlikely to purchase in general after viewing a photo featuring people with products; however, consumers were much more indifferent to photos of products alone ($n = 231, 55.7%$) and images of products at the business 214, 51.5%, in regard to general purchase likelihood. The only image component with frequency values under extremely unlikely was the image of a product alone, which two people (0.5%) did not like. Combined somewhat and extremely likely response frequencies for images of people with direct-marketed products ($n = 212, 51.1%$) showed the highest likelihood to purchase in-store, while images of products at a business ($n = 157, 37.8%$) had the highest means for online purchase likelihood.

Table 4.85 *Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of people with products for direct-marketed produce survey respondents.*

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	29	7.0	61	14.7	0	0.0
	.25	16	3.9	14	3.4	0	0.0
	.50	9	2.2	26	6.3	0	0.0
	.75	16	3.9	20	4.8	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	17	4.1	25	6.0	29	7.0
	1.25	11	2.7	23	5.5	10	2.4
	1.50	16	3.9	18	4.3	14	3.4
	1.75	12	2.9	15	3.6	20	4.8
Neither likely or unlikely 2.00 to < 3.00	2.00	17	4.1	23	5.5	51	12.3
	2.25	17	4.1	9	2.2	26	6.3
	2.50	23	5.5	23	5.5	32	7.7
	2.75	20	4.8	23	5.5	30	7.2
Somewhat likely 3.00 to < 4.00	3.00	50	12.0	34	8.2	61	14.7
	3.25	30	7.2	17	4.1	25	6.0
	3.50	26	6.3	25	6.0	19	4.6
	3.75	18	4.3	7	1.7	16	3.9
Extremely likely 4.00 to \leq 5.00	4.00	30	7.2	17	4.1	27	6.5
	4.25	13	3.1	7	1.7	11	2.7
	4.50	14	3.4	7	1.7	14	3.4
	4.75	10	2.4	8	1.9	8	1.9
	5.00	21	5.1	13	3.1	22	5.3
Total		415	100.0	415	100.0	415	100.0

Table 4.86 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of products alone for direct-marketed produce survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	32	7.7	0	0.0	0	0.0
	.25	9	2.2	2	0.5	0	0.0
	.50	8	1.9	8	1.9	0	0.0
	.75	10	2.4	28	6.7	2	0.5
Somewhat unlikely 1.00 to < 2.00	1.00	20	4.8	15	3.6	5	1.2
	1.25	15	3.6	57	13.7	5	1.2
	1.50	9	2.2	34	8.2	18	4.3
	1.75	16	3.9	25	6.0	32	7.7
Neither likely or unlikely 2.00 to < 3.00	2.00	19	4.6	30	7.2	52	12.5
	2.25	20	4.8	25	6.0	69	16.6
	2.50	21	5.1	26	6.3	66	15.9
	2.75	28	6.7	36	8.7	44	10.6
Somewhat likely 3.00 to < 4.00	3.00	38	9.2	29	7.0	38	9.2
	3.25	22	5.3	31	7.5	26	6.3
	3.50	32	7.7	19	4.6	18	4.3
	3.75	20	4.8	24	5.8	27	6.5
Extremely likely 4.00 to \leq 5.00	4.00	32	7.7	24	5.8	8	1.9
	4.25	16	3.9	1	0.2	4	1.0
	4.50	15	3.6	1	0.2	1	0.2
	4.75	6	1.4	0	0.0	0	0.0
	5.00	27	6.5	0	0.0	0	0.0
Total		415	100.0	415	100.0	415	100

Table 4.87 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of products at a business for direct-marketed produce survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	36	8.7	36	8.7	0	0.0
	.25	8	1.9	7	1.7	0	0.0
	.50	7	1.7	8	1.9	0	0.0
	.75	14	3.4	9	2.2	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	28	6.7	26	6.3	1	0.2
	1.25	10	2.4	17	4.1	5	1.2
	1.50	18	4.3	24	5.8	8	1.9
	1.75	16	3.9	20	4.8	22	5.3
Neither likely or unlikely 2.00 to < 3.00	2.00	21	5.1	28	6.7	30	7.2
	2.25	28	6.7	26	6.3	40	9.6
	2.50	19	4.6	29	7.0	75	18.1
	2.75	18	4.3	28	6.7	69	16.6
Somewhat likely 3.00 to < 4.00	3.00	39	9.4	37	8.9	93	22.4
	3.25	25	6.0	15	3.6	28	6.7
	3.50	20	4.8	18	4.3	24	5.8
	3.75	24	5.8	19	4.6	13	3.1
Extremely likely 4.00 to \leq 5.00	4.00	19	4.6	21	5.1	6	1.4
	4.25	17	4.1	13	3.1	1	0.2
	4.50	14	3.4	11	2.7	1	0.2
	4.75	9	2.2	8	1.9	0	0.0
	5.00	25	6.0	15	3.6	0	0.0
Total		415	100.0	415	100.0	415	100.0

4.3.2.2.2 Means.

For the direct-marketed produce survey sample, as shown in Table 4.88, there were no significant differences in means for in-store purchase likelihood; however, there were significant differences in means for online purchase likelihood. Regarding the likelihood to purchase direct-marketed produce online, differences occurred between images of people with the product ($M = 2.00$, $SD = 1.48$) and the product only ($M = 2.26$, $SD = 1.02$); $t(828) = -2.95$, $p = 0.00$ and people with the product ($M = 2.00$, $SD = 1.48$) and the product at the business ($M = 2.39$, $SD = 1.37$); $t(828) = -3.94$, $p = 0.00$. There were significant differences between means for general purchase likelihood for the three types of horticultural photos: people with the product ($M = 2.84$, $SD = 1.07$) and the product only ($M = 2.55$, $SD = 0.69$); $t(828) = 4.64$, $p = 0.00$, the product only ($M = 2.55$, $SD = 0.69$) and products at a business ($M = 2.69$, $SD = 0.56$); $t(828) =$, $p = 0.00$, and people with the product ($M = 2.84$, $SD = 1.07$) and the product at the business ($M = 2.69$, $SD = 0.56$); $t(828) = 2.53$, $p = 0.01$.

Table 4.88 Mean likelihood and willingness to purchase products after seeing Facebook marketing posts featuring direct-marketed produce by image component.

Image component	In-Store		Online		General Purchase Likelihood	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
People with product	2.60 a	1.44	2.00 b	1.48	2.84 a	1.07
Product only	2.67 a	1.44	2.26 a	1.02	2.55 c	0.69
Product at business	2.53 a	1.46	2.39 a	1.37	2.69 b	0.56

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to purchase and 5 = extremely likely to purchase. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 415$).

4.3.3 Pick-your-own produce

In this section, all results related to the pick-your-own produce survey will be reported and presented in order of variables of in-store, online, and general purchase likelihood. Within each variable, frequencies will be reported followed by means.

4.3.3.1 Message.

4.3.3.1.1 Frequencies.

More pick-your-own produce consumers ($n = 420$) indicated, similar to the bedding plant and direct-marketed produce surveys, they were somewhat likely to purchase produce in-store at a physical business after viewing promotional messages ($n = 194$, 46.2%) than other message types. As shown in Table 4.90, 31.1% ($n = 131$) of consumers indicated they would be more likely to buy from a horticultural business in-store after viewing educational posts on Facebook. In regard to general purchase likelihood, 56.7% of consumers as shown in Table 4.89, indicated they would be neither likely nor unlikely to purchase after viewing lifestyle messages. Just over 35% ($n = 148$) indicated they would be neither likely nor unlikely to buy produce after seeing educational messages, as shown in Table 4.90, and 46.2% ($n = 194$) were indifferent to purchasing due to promotional messages (Table 4.91).

Pick-your-own produce purchase likelihood frequencies indicated consumers were either somewhat unlikely or neither unlikely nor likely to purchase products online. When asked about online purchase likelihood after viewing educational messages on Facebook, 33.9% ($n = 142$) of consumers indicated they would be extremely unlikely to buy from the business. As in other surveys, consumers indicated they were more likely to purchase in-store than online or in general.

Table 4.89 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing lifestyle messages for pick-your-own produce survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	25	6.0	0	0.0	0	0.0
	.25	5	1.2	2	0.5	0	0.0
	.50	8	1.9	16	3.8	0	0.0
	.75	10	2.4	45	10.7	2	0.5
Somewhat unlikely 1.00 to < 2.00	1.00	13	3.1	25	6.0	4	1.0
	1.25	18	4.3	46	11.0	12	2.9
	1.50	15	3.6	44	10.5	27	6.4
	1.75	19	4.5	33	7.9	31	7.4
Neither likely or unlikely 2.00 to < 3.00	2.00	22	5.2	27	6.4	62	14.8
	2.25	20	4.8	31	7.4	65	15.5
	2.50	20	4.8	26	6.2	69	16.4
	2.75	32	7.6	23	5.5	42	10.0
Somewhat likely 3.00 to < 4.00	3.00	42	10.0	26	6.2	51	12.1
	3.25	25	6.0	20	4.8	17	4.0
	3.50	27	6.4	26	6.2	19	4.5
	3.75	27	6.4	12	2.9	16	3.8
Extremely likely 4.00 to ≤ 5.00	4.00	31	7.4	15	3.6	2	0.5
	4.25	16	3.8	2	0.5	1	0.2
	4.50	13	3.1	16	3.8	0	0.0
	4.75	13	3.1	0	0.0	0	0.0
	5.00	19	4.5	2	0.5	0	0.0
Total		420	100.0	420	100.0	420	100.0

Table 4.90 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing educational messages for pick-your-own produce survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	24	5.7	83	19.8	0	0.0
	.25	2	0.5	24	5.7	0	0.0
	.50	7	1.7	12	2.9	0	0.0
	.75	15	3.6	23	5.5	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	23	5.5	36	8.6	37	8.8
	1.25	16	3.8	15	3.6	23	5.5
	1.50	10	2.4	13	3.1	17	4.0
	1.75	17	4.0	21	5.0	20	4.8
Neither likely or unlikely 2.00 to < 3.00	2.00	16	3.8	21	5.0	45	10.7
	2.25	16	3.8	14	3.3	34	8.1
	2.50	29	6.9	11	2.6	34	8.1
	2.75	20	4.8	20	4.8	35	8.3
Somewhat likely 3.00 to < 4.00	3.00	43	10.2	35	8.3	69	16.4
	3.25	31	7.4	7	1.7	15	3.6
	3.50	27	6.4	10	2.4	31	7.4
	3.75	30	7.1	17	4.0	14	3.3
Extremely likely 4.00 to ≤ 5.00	4.00	30	7.1	17	4.0	22	5.2
	4.25	14	3.3	11	2.6	6	1.4
	4.50	18	4.3	7	1.7	9	2.1
	4.75	14	3.3	7	1.7	2	0.5
	5.00	18	4.3	16	3.8	7	1.7
Total		420	100.0	420	100.0	420	100.0

Table 4.91 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing promotional messages for pick-your-own produce survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	21	5.0	0	0.0	0	0.0
	.25	2	0.5	0	0.0	0	0.0
	.50	6	1.4	8	1.9	4	1.0
	.75	6	1.4	17	4.0	3	0.7
Somewhat unlikely 1.00 to < 2.00	1.00	21	5.0	18	4.3	22	5.2
	1.25	16	3.8	39	9.3	22	5.2
	1.50	18	4.3	40	9.5	33	7.9
	1.75	12	2.9	42	10.0	47	11.2
Neither likely or unlikely 2.00 to < 3.00	2.00	23	5.5	41	9.8	50	11.9
	2.25	31	7.4	34	8.1	42	10.0
	2.50	24	5.7	30	7.1	58	13.8
	2.75	29	6.9	34	8.1	44	10.5
Somewhat likely 3.00 to < 4.00	3.00	36	8.6	31	7.4	54	12.9
	3.25	28	6.7	30	7.1	20	4.8
	3.50	25	6.0	20	4.8	15	3.6
	3.75	26	6.2	17	4.0	4	1.0
Extremely likely 4.00 to \leq 5.00	4.00	27	6.4	17	4.0	1	0.2
	4.25	16	3.8	2	0.5	0	0.0
	4.50	10	2.4	0	0.0	0	0.0
	4.75	19	4.5	0	0.0	1	0.2
	5.00	24	5.7	0	0.0	0	0.0
Total		420	100.0	420	100.0	420	100.0

4.3.3.1.2 Means.

As shown in Table 4.92, there were no statistically significant differences between means for in-store purchase likelihood. Significant differences in means for online purchase likelihood occurred between educational ($M = 1.86$, $SD = 1.55$) and promotional messages ($M = 2.25$, $SD = 0.92$); $t(838) = -3.28$, $p = 0.00$ and lifestyle ($M = 2.03$, $SD = 1.02$) and promotional messages ($M = 2.25$, $SD = 0.92$); $t(828) = -4.34$, $p = 0.00$. All message type means in relation to general purchase likelihood were statistically significantly different. There were significant differences between lifestyle ($M = 2.43$, $SD = 0.64$) and educational messages ($M = 2.59$, $SD = 0.97$); $t(838) = -2.82$, $p = 0.01$, educational ($M = 2.59$, $SD = 0.97$) and promotional messages ($M = 2.26$, $SD = 0.72$); $t(838) = 5.60$, $p = 0.00$, and lifestyle ($M = 2.43$, $SD = 0.64$) and promotional messages ($M = 2.26$, $SD = 0.72$); $t(828) = 3.62$, $p = 0.00$. All response frequencies revealed educational messages were more popular than lifestyle or promotional.

Table 4.92 Mean likelihood and willingness to purchase products after seeing Facebook marketing posts from independent pick-your-own produce businesses by message type.

Message	In-Store		Online		General Purchase Likelihood	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Lifestyle	2.72 a	1.35	2.03 bc	1.02	2.43 b	0.64
Educational	2.74 a	1.36	1.86 c	1.55	2.59 a	0.97
Promotional	2.78 a	1.33	2.25 a	0.92	2.26 c	0.72

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to purchase and 5 = extremely likely to purchase. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 420$).

4.3.3.2 Image component.

4.3.3.2.1 Frequencies.

When image component frequencies were compared, results showed 28.2% ($n = 119$) of consumers were somewhat likely to purchase in-store after viewing an image of people with a product (Table 4.93), 30.0% ($n = 126$) after viewing a post featuring a product alone (Table 4.94), and 25.7% ($n = 108$) after seeing a photo of a product at a business (Table 4.95). As shown in Tables 4.94 and 4.95, respectively, when asked about online purchase likelihood, for both images of a product alone ($n = 139$, 33.0%) and a product at a business ($n = 148$, 35.2%), participants indicated they would only be somewhat unwilling to purchase after viewing on social media. Frequencies for neither likely nor unlikely to purchase in general were lowest, shown in Table 4.93, for images of people with products ($n = 152$, 36.2%), and more consumers indicated, as reported in Table 4.94, they would be somewhat willing to purchase after seeing a picture of a person with the product ($n = 131$, 31.2%) than other image components. Overall, participants in the pick-your-own produce survey ($n = 420$) revealed they were more likely to purchase from a hypothetical business's physical location if Facebook post contained a photo of the product ($n = 225$, 53.6%), as shown in Table 4.96.

Table 4.93 *Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of people with products for pick-your-own produce survey respondents.*

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	17	4.0	70	16.7	0	0.0
	.25	8	1.9	25	6.0	0	0.0
	.50	9	2.1	15	3.6	0	0.0
	.75	11	2.6	23	5.5	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	17	4.0	35	8.3	34	8.1
	1.25	15	3.6	16	3.8	18	4.3
	1.50	17	4.0	24	5.7	26	6.2
	1.75	16	3.8	19	4.5	10	2.4
Neither likely or unlikely 2.00 to < 3.00	2.00	19	4.5	25	6.0	47	11.2
	2.25	23	5.5	17	4.0	32	7.6
	2.50	25	6.0	22	5.2	37	8.8
	2.75	31	7.4	20	4.8	36	8.6
Somewhat likely 3.00 to < 4.00	3.00	37	8.8	12	2.9	63	15.0
	3.25	30	7.1	16	3.8	24	5.7
	3.50	30	7.1	14	3.3	24	5.7
	3.75	22	5.2	13	3.1	20	4.8
Extremely likely 4.00 to \leq 5.00	4.00	34	8.1	15	3.6	16	3.8
	4.25	13	3.1	10	2.4	7	1.7
	4.50	18	4.3	12	2.9	8	1.9
	4.75	10	2.4	4	1.0	8	1.9
	5.00	18	4.3	13	3.1	10	2.4
Total		420	100.0	420	100.0	420	100.0

Table 4.94 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of products alone for pick-your-own produce survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	23	5.5	0	0.0	0	0.0
	.25	3	0.7	3	0.7	0	0.0
	.50	6	1.4	15	3.6	0	0.0
	.75	9	2.1	45	10.7	2	0.5
Somewhat unlikely 1.00 to < 2.00	1.00	21	5.0	30	7.1	4	1.0
	1.25	22	5.2	51	12.1	12	2.9
	1.50	14	3.3	28	6.7	28	6.7
	1.75	10	2.4	30	7.1	43	10.2
Neither likely or unlikely 2.00 to < 3.00	2.00	15	3.6	23	5.5	64	15.2
	2.25	21	5.0	33	7.9	72	17.1
	2.50	26	6.2	25	6.0	60	14.3
	2.75	25	6.0	23	5.5	47	11.2
Somewhat likely 3.00 to < 4.00	3.00	30	7.1	36	8.6	46	11.0
	3.25	34	8.1	22	5.2	20	4.8
	3.50	34	8.1	20	4.8	8	1.9
	3.75	28	6.7	10	2.4	11	2.6
Extremely likely 4.00 to \leq 5.00	4.00	35	8.3	22	5.2	2	0.5
	4.25	12	2.9	3	0.7	0	0.0
	4.50	17	4.0	0	0.0	1	0.2
	4.75	12	2.9	0	0.0	0	0.0
	5.00	23	5.5	0	0.0	0	0.0
Total		420	100.0	420	100.0	420	100.0

Table 4.95 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of products at a business for pick-your-own produce survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	22	5.2	0	0.0	0	0.0
	.25	10	2.4	0	0.0	0	0.0
	.50	4	1.0	11	2.6	0	0.0
	.75	7	1.7	18	4.3	2	0.5
Somewhat unlikely 1.00 to < 2.00	1.00	16	3.8	23	5.5	11	2.6
	1.25	16	3.8	43	10.2	12	2.9
	1.50	17	4.0	47	11.2	29	6.9
	1.75	20	4.8	35	8.3	39	9.3
Neither likely or unlikely 2.00 to < 3.00	2.00	22	5.2	37	8.8	63	15.0
	2.25	31	7.4	29	6.9	63	15.0
	2.50	25	6.0	32	7.6	76	18.1
	2.75	27	6.4	24	5.7	42	10.0
Somewhat likely 3.00 to < 4.00	3.00	32	7.6	32	7.6	32	7.6
	3.25	32	7.6	24	5.7	20	4.8
	3.50	21	5.0	26	6.2	12	2.9
	3.75	23	5.5	12	2.9	15	3.6
Extremely likely 4.00 to \leq 5.00	4.00	28	6.7	25	6.0	3	0.7
	4.25	18	4.3	1	0.2	1	0.2
	4.50	9	2.1	0	0.0	0	0.0
	4.75	16	3.8	0	0.0	0	0.0
	5.00	24	5.7	0	0.0	0	0.0
Total		420	100.0	420	100.0	420	100.0

4.3.3.3.2.2 Means.

To find statistically significant differences in pick-your-own survey response means, as presented in Table 4.96, independent samples *t*-tests were conducted. For image component, the only significant differences in means occurred for online purchase likelihood. Response means indicated significant differences between images of people with the product ($M = 1.86, SD = 1.49$) and the product only ($M = 2.07, SD = 1.05$); $t(838) = -2.36, p = .018$, the product alone ($M = 2.07, SD = 1.05$) and products at the business ($M = 2.22, SD = 0.97$); $t(838) = -2.15, p = 0.03$, and people with products ($M = 1.86, SD = 1.49$) and products at the business ($M = 2.22, SD = 0.97$); $t(838) = -4.15, p = 0.00$ with a 95% confidence interval.

Table 4.96 Mean likelihood and willingness to purchase products after seeing Facebook marketing posts from independent pick-your-own produce businesses by image component.

Image component	In-Store		Online		General Purchase Likelihood	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
People with product	2.73 a	1.32	1.86 c	1.49	2.36 a	0.61
Product only	2.79 a	1.36	2.07 b	1.05	2.35 a	0.65
Product at business	2.72 a	1.36	2.22 a	0.97	2.33 a	0.67

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to purchase and 5 = extremely likely to purchase.

Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ (n = 420).

4.3.4 Total purchase likelihood.

Results from all three surveys will be reported and presented in this section in order of variables of in-store, online, and general purchase likelihood. Within each variable, frequencies will be reported followed by means.

4.3.4.1 Message.

4.3.4.1.1 Frequencies.

As shown in Table 4.97, for in-store purchase likelihood, 29.7% ($n = 369$) of consumers indicated they would be somewhat likely to buy from a business after seeing lifestyle posts. Similarly, 29.9% ($n = 372$) were somewhat likely to purchase in-store after seeing educational messages (Table 4.98), and 28.7% ($n = 356$) after viewing promotional posts (Table 4.99). Over 26% ($n = 332$) of respondents, as shown in 4.99, indicated they would be neither likely nor unlikely to purchase from a horticultural business after viewing promotional messages on social media; whereas, 30% ($n = 372$) of consumers indicated they would be extremely unlikely to purchase online after seeing posts with educational messages (Table 4.98). Some survey participants were somewhat likely to purchase online after seeing promotional information on Facebook ($n = 273$, 21.9%); however, more were neither likely nor unlikely ($n = 332$, 26.8%) or somewhat unlikely ($n = 302$, 24.2%).

Table 4.97 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing lifestyle messages for total survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	76	6.1	59	4.8	0	0.0
	.25	25	2.0	18	1.4	0	0.0
	.50	25	2.0	28	2.3	0	0.0
	.75	41	3.3	92	7.4	2	0.2
Somewhat unlikely 1.00 to < 2.00	1.00	49	3.9	79	6.4	41	3.3
	1.25	39	3.1	106	8.5	33	2.7
	1.50	41	3.3	90	7.2	56	4.5
	1.75	44	3.5	88	7.1	78	6.3
Neither likely or unlikely 2.00 to < 3.00	2.00	62	5.0	70	5.6	164	13.2
	2.25	65	5.2	68	5.5	152	12.2
	2.50	70	5.6	78	6.3	155	12.5
	2.75	75	6.0	88	7.1	122	9.8
Somewhat likely 3.00 to < 4.00	3.00	138	11.1	107	8.6	174	14.0
	3.25	78	6.3	65	5.2	71	5.7
	3.50	86	6.9	71	5.7	68	5.5
	3.75	67	5.4	36	2.9	56	4.5
Extremely likely 4.00 to ≤ 5.00	4.00	85	6.8	50	4.0	28	2.3
	4.25	43	3.5	11	0.9	16	1.3
	4.50	37	3.0	9	0.7	7	0.6
	4.75	41	3.3	13	1.0	3	0.2
	5.00	55	4.4	16	1.3	16	1.3
Total		1242	100.0	1242	100.0	1242	100.0

Table 4.98 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing educational messages for total survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	86	6.9	218	17.6	0	0.0
	.25	14	1.1	58	4.7	0	0.0
	.50	23	1.9	36	2.9	0	0.0
	.75	34	2.7	60	4.8	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	59	4.8	96	7.7	106	8.5
	1.25	41	3.3	50	4.0	51	4.1
	1.50	33	2.7	47	3.8	43	3.5
	1.75	45	3.6	48	3.9	55	4.4
Neither likely or unlikely 2.00 to < 3.00	2.00	39	3.1	43	3.5	143	11.5
	2.25	51	4.1	55	4.4	85	6.8
	2.50	85	6.8	48	3.9	100	8.1
	2.75	77	6.2	61	4.9	98	7.9
Somewhat likely 3.00 to < 4.00	3.00	132	10.6	114	9.2	187	15.1
	3.25	94	7.6	47	3.8	75	6.0
	3.50	80	6.4	34	2.7	78	6.3
	3.75	66	5.3	41	3.3	41	3.3
Extremely likely 4.00 to \leq 5.00	4.00	97	7.8	62	5.0	59	4.8
	4.25	46	3.7	31	2.5	21	1.7
	4.50	42	3.4	22	1.8	30	2.4
	4.75	33	2.7	17	1.4	19	1.5
	5.00	64	5.2	53	4.3	51	4.1
Total		1242	100.0	1242	100.0	1242	100.0

Table 4.99 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing promotional messages for total survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	74	6.0	99	8.0	0	0.0
	.25	14	1.1	21	1.7	0	0.0
	.50	16	1.3	20	1.6	7	0.6
	.75	30	2.4	34	2.7	6	0.5
Somewhat unlikely 1.00 to < 2.00	1.00	64	5.2	80	6.4	71	5.7
	1.25	26	2.1	70	5.6	48	3.9
	1.50	43	3.5	81	6.5	84	6.8
	1.75	42	3.4	71	5.7	103	8.3
Neither likely or unlikely 2.00 to < 3.00	2.00	63	5.1	89	7.2	140	11.3
	2.25	71	5.7	74	6.0	114	9.2
	2.50	69	5.6	83	6.7	171	13.8
	2.75	77	6.2	86	6.9	145	11.7
Somewhat likely 3.00 to < 4.00	3.00	109	8.8	90	7.2	172	13.8
	3.25	91	7.3	70	5.6	66	5.3
	3.50	87	7.0	57	4.6	44	3.5
	3.75	69	5.6	56	4.5	21	1.7
Extremely likely 4.00 to \leq 5.00	4.00	88	7.1	73	5.9	23	1.9
	4.25	45	3.6	21	1.7	7	0.6
	4.50	49	3.9	20	1.6	2	0.2
	4.75	43	3.5	15	1.2	4	0.3
	5.00	72	5.8	32	2.6	14	1.1
Total		1242	100.0	1242	100.0	1242	100.0

4.3.4.1.2 Means.

For online purchase likelihood, as shown in Table 4.100, there were significant differences between all types of messages: lifestyle ($M = 2.14$, $SD = 1.19$) and educational ($M = 2.00$, $SD = 1.54$); $t(2482) = 2.54$, $p = 0.01$, educational ($M = 2.00$, $SD = 1.54$) and promotional ($M = 2.30$, $SD = 1.30$); $t(2482) = 5.25$, $p = 0.00$, and lifestyle ($M = 2.14$, $SD = 1.19$) and promotional ($M = 2.30$, $SD = 1.39$); $t(2482) = 3.20$, $p = 0.00$. Similarly, general purchase likelihood means were all significantly different: lifestyle ($M = 2.58$, $SD = 0.80$) and educational ($M = 2.71$, $SD = 1.04$); $t(2482) = -3.49$, $p = 0.00$, educational ($M = 2.71$, $SD = 1.04$) and promotional ($M = 2.41$, $SD = 0.81$); $t(2482) = 8.02$, $p = 0.00$, and lifestyle ($M = 2.58$, $SD = 0.80$) and promotional ($M = 2.41$, $SD = 0.81$); $t(2482) = 5.26$, $p = 0.00$. For in-store purchase likelihood, there were significant differences between lifestyle ($M = 2.67$, $SD = 1.37$) and promotional messages ($M = 2.78$, $SD = 1.37$); $t(2482) = 2.00$, $p = 0.046$.

Table 4.100 Mean likelihood and willingness to purchase products after seeing Facebook marketing posts from independent horticultural businesses by message type.

Image component	In-Store		Online		General Purchase Likelihood	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
People with product	2.67 b	1.37	2.14 b	1.19	2.58 b	0.80
Product only	2.72 ab	1.39	2.00 c	1.54	2.71 a	1.04
Product at business	2.78 a	1.37	2.30 a	1.30	2.41 c	0.81

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to purchase and 5 = extremely likely to purchase. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 1242$).

4.3.4.2 Image component.

4.3.4.2.1 Frequencies.

When frequencies for individual image components were compared, as displayed in Tables 4.101, 4.102, and 4.103, researchers found consumer response patterns for the effects of images of products alone (Table 4.102) and products at a business (4.103) on purchase likelihood to be similar. For in-store purchase likelihood, as reported in Table 4.101, 30.6% ($n = 379$) of participants indicated they were somewhat likely to shop for produce in store after seeing photos featuring people with products. Likewise, 29.4% ($n = 366$) of respondents, shown in Table 4.102, were somewhat likely to purchase from a business after seeing an image of a product alone in a social-media post, and 27.95, ($n = 348$) of participants, as displayed in Table 4.103, were somewhat likely to purchase after viewing an image of a product at a business. As shown in Table 4.102, more consumers were extremely likely to purchase in-store after seeing photos featuring products alone ($n = 23.8\%$, 295) than other image components. In contrast, over 27% ($n = 342$) of consumers were somewhat unlikely to purchase online after seeing an image of a product alone, and 25.4% ($n = 315$) were somewhat unlikely after seeing a photo of a product at the business. In the same way, around half of respondents indicated they were neither likely nor unlikely to purchase from a business in general after seeing photos of product alone ($n = 610$, 49.1%) or products at a business ($n = 688$, 55.4%), respectively. Differing from these results, consumers indicated seeing a photo of people with a product would make them somewhat likely to purchase in-store ($n = 379$, 30.6%), extremely unlikely to purchase online ($n = 354$, 28.4%), and neither likely nor unlikely to purchase in general ($n = 428$, 34.4%).

Table 4.101 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of people with products for total survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	70	5.6	194	15.6	0	0.0
	.25	30	2.4	55	4.4	0	0.0
	.50	27	2.2	51	4.1	0	0.0
	.75	36	2.9	54	4.3	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	44	3.5	84	6.8	96	7.7
	1.25	38	3.1	55	4.4	39	3.1
	1.50	47	3.8	62	5.0	62	5.0
	1.75	45	3.6	45	3.6	44	3.5
Neither likely or unlikely 2.00 to < 3.00	2.00	56	4.5	69	5.6	143	11.5
	2.25	60	4.8	48	3.9	90	7.2
	2.50	73	5.9	66	5.3	99	8.0
	2.75	75	6.0	68	5.5	96	7.7
Somewhat likely 3.00 to < 4.00	3.00	130	10.5	77	6.2	189	15.2
	3.25	100	8.1	54	4.3	75	6.0
	3.50	86	6.9	52	4.2	72	5.8
	3.75	63	5.1	38	3.1	47	3.8
Extremely likely 4.00 to \leq 5.00	4.00	98	7.9	53	4.3	59	4.8
	4.25	36	2.9	28	2.3	30	2.4
	4.50	39	3.1	29	2.3	29	2.3
	4.75	32	2.6	21	1.7	22	1.8
	5.00	57	4.6	39	3.1	50	4.0
Total		1242	100.0	1242	100.0	1242	100.0

Table 4.102 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of products alone for total survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	81	6.5	62	5.0	0	0.0
	.25	16	1.3	23	1.9	0	0.0
	.50	21	1.7	35	2.8	0	0.0
	.75	27	2.2	86	6.9	4	0.3
Somewhat unlikely 1.00 to < 2.00	1.00	58	4.7	81	6.5	45	3.6
	1.25	46	3.7	117	9.4	35	2.8
	1.50	37	3.0	75	6.0	61	4.9
	1.75	34	2.7	69	5.6	98	7.9
Neither likely or unlikely 2.00 to < 3.00	2.00	52	4.2	67	5.4	166	13.4
	2.25	59	4.8	75	6.0	172	13.8
	2.50	64	5.2	66	5.3	154	12.4
	2.75	85	6.8	75	6.0	118	9.5
Somewhat likely 3.00 to < 4.00	3.00	117	9.4	102	8.2	138	11.1
	3.25	84	6.8	78	6.3	77	6.2
	3.50	95	7.6	63	5.1	55	4.4
	3.75	70	5.6	47	3.8	50	4.0
Extremely likely 4.00 to \leq 5.00	4.00	100	8.1	72	5.8	33	2.7
	4.25	44	3.5	14	1.1	10	0.8
	4.50	46	3.7	5	0.4	6	0.5
	4.75	33	2.7	9	0.7	3	0.2
	5.00	72	5.8	20	1.6	17	1.4
Total		1242	100.0	1242	100.0	1242	100.0

Table 4.103 Combined frequency distribution of likelihood to purchase in-store, online, and in general after viewing four Facebook posts containing a photo of products at a business for total survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	83	6.7	105	8.5	0	0.0
	.25	23	1.9	14	1.1	0	0.0
	.50	15	1.2	30	2.4	0	0.0
	.75	30	2.4	38	3.1	3	0.2
Somewhat unlikely 1.00 to < 2.00	1.00	65	5.2	88	7.1	18	1.4
	1.25	34	2.7	75	6.0	23	1.9
	1.50	41	3.3	83	6.7	51	4.1
	1.75	42	3.4	69	5.6	92	7.4
Neither likely or unlikely 2.00 to < 3.00	2.00	58	4.7	78	6.3	151	12.2
	2.25	76	6.1	79	6.4	165	13.3
	2.50	66	5.3	75	6.0	214	17.2
	2.75	70	5.6	70	5.6	158	12.7
Somewhat likely 3.00 to < 4.00	3.00	117	9.4	106	8.5	176	14.2
	3.25	96	7.7	55	4.4	71	5.7
	3.50	60	4.8	66	5.3	48	3.9
	3.75	75	6.0	40	3.2	53	4.3
Extremely likely 4.00 to ≤ 5.00	4.00	83	6.7	78	6.3	16	1.3
	4.25	51	4.1	21	1.7	2	0.2
	4.50	34	2.7	19	1.5	0	0.0
	4.75	43	3.5	14	1.1	0	0.0
	5.00	80	6.4	39	3.1	0	0.0
Total		1242	100.0	1242	100.0	1242	100.0

4.3.4.2.2 Means.

As displayed in Table 4.104, differences in means for in-store purchase likelihood were not statistically significant; however, for online purchase likelihood, there were significant differences between images of people with products ($M = 2.00$, $SD = 1.50$) and products at the business ($M = 2.27$, $SD = 1.32$); $t(2482) = 4.76$, $p = 0.00$ and people with the product ($M = 2.00$, $SD = 1.50$) and the product only ($M = 2.17$, $SD = 1.23$); $t(2482) = -3.09$, $p = 0.00$. Similarly, there were significant differences between images of people with products ($M = 2.74$, $SD = 1.04$) and products at the business ($M = 2.52$, $SD = 0.64$); $t(2482) = 6.35$, $p = 0.00$. Likewise, general purchase likelihood means of images of people with the product ($M = 2.74$, $SD = 1.04$) and the product only ($M = 2.52$, $SD = 0.81$); $t(2482) = 5.88$, $p = 0.00$ were significantly different.

Table 4.104 Mean likelihood and willingness to purchase products after seeing Facebook marketing posts from independent horticultural businesses by image component.

Image component	In-Store		Online		General Purchase Likelihood	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
People with product	2.68 a	1.36	2.00 c	1.50	2.74 a	1.04
Product only	2.76 a	1.39	2.17 ab	1.23	2.52 b	0.81
Product at business	2.72 a	1.41	2.27 a	1.32	2.52 b	0.64

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to purchase and 5 = extremely likely to purchase. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ (n = 1242).

4.4 Willingness to Travel to Purchase (RO3)

To determine the effects of different features of Facebook posts on willingness to travel to purchase horticultural products, each hypothetical business image post was assigned a particular distance from the residents' home using the orthogonal factorial design method. This data was analyzed using independent samples *t*-tests. In each survey, participants were asked to rate, on a Likert scale (0 = extremely unlikely to purchase and 5 = extremely likely to purchase) how inclined they would be to travel certain given distances to purchase fresh vegetables, fruits, or plants. Participants in all surveys indicated a higher likelihood of traveling to buy from businesses within an hour away from their residences or in the region. Means of 2.50 indicated consumers were neither likely nor unlikely to travel; however, means 3.0 and above indicated consumers were willing to travel to purchase horticultural products.

4.4.1 Bedding plant.

In this section, all bedding plant survey results related to willingness to travel to purchase products will be reported and presented in order of variables of in-store, online, and general purchase likelihood. Within each variable, frequencies will be reported followed by means.

4.4.1.1 In-store purchase likelihood.

4.4.1.1.1 Frequencies.

Response frequency results, as shown in Table 4.105, in the bedding plant survey ($n = 407$) revealed businesses located an hour away were preferred by consumers who indicated they were somewhat likely ($n = 412, 33.3\%$) and extremely likely ($n = 342, 27.6\%$) to purchase products in-store. Similarly, as reported in Table 4.108, 30.4% ($n = 376$) of consumers indicated they would be extremely willing, and 30.3% ($n = 376$) specified they would be somewhat likely

to purchase in-store from a business in their region of residence. More consumers were extremely unlikely to travel to purchase from businesses outside of their region of residence ($n = 338, 27.3\%$), shown in Table 4.106, and, as reported in Table 4.108, in their region of residence ($n = 353, 28.4\%$). Fewer consumers indicated, as shown in Table 4.107, they would be somewhat likely to purchase in-store from the physical location of businesses in their state ($n = 313, 25.2\%$) after seeing Facebook posts than other distances.

4.4.1.1.2 Means.

As presented in Table 4.109, for in-store purchase likelihood, there were significant differences in means between posts from businesses one hour away ($M = 2.97, SD = 1.29$) and outside of region ($M = 2.56, SD = 1.45$); $t(812) = 4.26, p = 0.00$, outside of the region ($M = 2.56, SD = 1.45$) and in the region ($M = 2.97, SD = 1.37$); $t(2482) = 4.15, p = 0.00$. Significant differences were also found for willingness to purchase in-store from businesses outside of the region ($M = 2.56, SD = 1.45$) and within the state ($M = 2.81, SD = 1.39$); $t(2482) = 2.51, p = 0.01$. Differing from the overall responses; however, means showed consumers would be most likely to purchase in-store from businesses either one hour away ($M = 2.97, SD = 1.29$) or in their region of residence ($M = 2.97, SD = 1.29$).

4.4.1.2 Online purchase likelihood.

4.4.1.2.1 Frequencies.

Response frequencies were alike among all likelihood to purchase choices. When each response choice was analyzed, for distances outside of the region ($n = 102, 25.1\%$), in the state ($n = 93, 22.9\%$), and in the region ($n = 95, 23.3$), relatively large amounts of consumers indicated they would be extremely unlikely to purchase products online. While 22.1% ($n = 90$) of consumers indicated they would be extremely unlikely to travel one hour away, as shown in

Table 4.105, 22.6% ($n = 92$) specified they would be somewhat likely to travel to purchase and only 17% ($n = 69$) indicated they would be willing to purchase produce online. Similarly, reported in Table 4.106, 15.2% ($n = 62$) of respondents indicated they would be willing to buy horticultural products online from businesses out of the region. As presented in Table 4.107, 22.4% ($n = 91$) of consumers indicated they would be somewhat willing to purchase products online from a business in the state. While the highest frequency of participants for each distance choice, other than one hour away, fell in the extremely unlikely choice option, around 22% of respondents indicated they would be somewhat likely to purchase from each distance after viewing Facebook posts featuring bedding plants.

4.4.1.2.2 Means.

Independent samples t -tests were conducted to compare response means. As shown in Table 4.109, means for distance did not differ significantly for online purchases. All means were very similar; however, the mean for online purchase likelihood for businesses one hour away ($M = 2.23$, $SD = 1.51$) was the highest.

4.4.1.3 General purchase likelihood.

4.4.1.3.1 Frequencies.

When survey participants were asked to indicate their likelihood of traveling to buy from horticultural businesses after seeing posts on Facebook, 39.1% ($n = 159$) of participants were neither unlikely nor likely to travel an hour away, as shown in Table 4.105. Differing slightly, the largest frequency of consumers ($n = 120$, 29.5%) indicated, as presented in Table 4.106, they would be willing to travel outside of the region to purchase bedding plants. General purchase likelihood frequencies for business locations in the state ($n = 131$, 32.2%) indicated consumers were somewhat willing to travel to buy products; however, the greatest amount of respondents

indicated they were neither likely nor unlikely to travel to purchase bedding plants from businesses in the region ($n = 149$, 36.6%).

4.4.1.3.2 Means.

As shown in Table 4.109, response means for the effect of distance on the likelihood to purchase bedding plants were analyzed with independent samples t -tests. Significant differences for general purchase likelihood means were found between posts from businesses one hour away ($M = 2.54$, $SD = 0.98$) and outside of the region ($M = 2.89$, $SD = 1.17$); $t(812) = -4.63$, $p = 0.00$, outside of the region ($M = 2.89$, $SD = 1.17$) and within the state ($M = 2.67$, $SD = 1.05$); $t(812) = 2.82$, $p = 0.01$. Additional significant differences were found between distances of outside of the region ($M = 2.89$, $SD = 1.17$) and in the region ($M = 2.51$, $SD = 1.01$); $t(812) = 4.96$, $p = 0.00$, and within the state ($M = 2.67$, $SD = 1.05$) and in the region ($M = 2.51$, $SD = 1.01$); $t(812) = 2.22$, $p = 0.03$ with a 95% confidence interval.

Table 4.105 Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located one hour away for bedding plant survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	18	4.4	60	14.7	0	0.0
	.33	7	1.7	20	4.9	0	0.0
	.67	9	2.2	10	2.5	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	14	3.4	33	8.1	42	10.3
	1.33	13	3.2	23	5.7	17	4.2
	1.67	12	2.9	22	5.4	35	8.6
Neither likely or unlikely 2.00 to < 3.00	2.00	23	5.7	18	4.4	69	17.0
	2.33	28	6.9	31	7.6	39	9.6
	2.67	31	7.6	29	7.1	51	12.5
Somewhat likely 3.00 to < 4.00	3.00	57	14.0	36	8.8	69	17.0
	3.33	42	10.3	32	7.9	21	5.2
	3.67	37	9.1	24	5.9	20	4.9
Extremely likely 4.00 to ≤ 5.00	4.00	47	11.5	25	6.1	16	3.9
	4.33	27	6.6	19	4.7	11	2.7
	4.67	20	4.9	10	2.5	5	1.2
	5.00	22	5.4	15	3.7	12	2.9
Total		407	100.0	407	100.0	407	100.0

Table 4.106 Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located outside of the region for bedding plant survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	43	10.6	68	16.7	0	0.0
	.33	9	2.2	19	4.7	0	0.0
	.67	11	2.7	15	3.7	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	23	5.7	35	8.6	41	10.1
	1.33	12	2.9	21	5.2	14	3.4
	1.67	19	4.7	22	5.4	24	5.9
Neither likely or unlikely 2.00 to < 3.00	2.00	38	9.3	25	6.1	45	11.1
	2.33	20	4.9	22	5.4	36	8.8
	2.67	36	8.8	29	7.1	33	8.1
Somewhat likely 3.00 to < 4.00	3.00	53	13.0	45	11.1	66	16.2
	3.33	35	8.6	19	4.7	20	4.9
	3.67	25	6.1	25	6.1	34	8.4
Extremely likely 4.00 to ≤ 5.00	4.00	29	7.1	21	5.2	28	6.9
	4.33	12	2.9	14	3.4	20	4.9
	4.67	15	3.7	7	1.7	13	3.2
	5.00	27	6.6	20	4.9	33	8.1
Total		407	100.0	407	100.0	407	100.0

Table 4.107 Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located in the state for bedding plant survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	30	7.4	69	17.0	0	0.0
	.33	7	1.7	13	3.2	0	0.0
	.67	7	1.7	11	2.7	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	19	4.7	40	9.8	46	11.3
	1.33	18	4.4	21	5.2	17	4.2
	1.67	18	4.4	23	5.7	24	5.9
Neither likely or unlikely 2.00 to < 3.00	2.00	24	5.9	21	5.2	59	14.5
	2.33	16	3.9	22	5.4	34	8.4
	2.67	37	9.1	22	5.4	36	8.8
Somewhat likely 3.00 to < 4.00	3.00	59	14.5	50	12.3	76	18.7
	3.33	34	8.4	23	5.7	28	6.9
	3.67	31	7.6	18	4.4	27	6.6
Extremely likely 4.00 to ≤ 5.00	4.00	42	10.3	27	6.6	25	6.1
	4.33	20	4.9	16	3.9	15	3.7
	4.67	18	4.4	10	2.5	4	1.0
	5.00	27	6.6	21	5.2	16	3.9
Total		407	100.0	407	100.0	407	100.0

Table 4.108 Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located in the region of residence for bedding plant survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	28	6.9	75	18.4	0	0.0
	.33	4	1.0	11	2.7	0	0.0
	.67	5	1.2	9	2.2	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	23	5.7	42	10.3	47	11.5
	1.33	10	2.5	19	4.7	23	5.7
	1.67	12	2.9	17	4.2	32	7.9
Neither likely or unlikely 2.00 to < 3.00	2.00	20	4.9	26	6.4	67	16.5
	2.33	16	3.9	18	4.4	40	9.8
	2.67	25	6.1	22	5.4	42	10.3
Somewhat likely 3.00 to < 4.00	3.00	64	15.7	55	13.5	76	18.7
	3.33	39	9.6	20	4.9	15	3.7
	3.67	36	8.8	18	4.4	21	5.2
Extremely likely 4.00 to ≤ 5.00	4.00	51	12.5	29	7.1	16	3.9
	4.33	26	6.4	14	3.4	8	2.0
	4.67	22	5.4	13	3.2	5	1.2
	5.00	26	6.4	19	4.7	15	3.7
Total		407	100.0	407	100.0	407	100.0

Table 4.109 Mean likelihood and willingness to purchase products after seeing Facebook marketing posts featuring bedding plants by distance.

Distance	In-Store		Online		General Purchase Likelihood	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
One hour away	2.97 a	1.29	2.23 a	1.51	2.54 bc	0.98
Outside of region	2.56 b	1.45	2.12 a	1.53	2.89 a	1.17
Within state	2.81 a	1.39	2.19 a	1.55	2.67 b	1.05
In region	2.97 a	1.37	2.18 a	1.56	2.51 c	1.01

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to purchase and 5 = extremely likely to purchase. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 407$).

4.4.2 Direct-marketed produce.

Within this section, all direct-marketed produce survey results related to willingness to travel to purchase horticultural products will be reported and presented in order of variables of in-store, online, and general purchase likelihood. Within each variable, frequencies will be reported followed by means.

4.4.2.1 In-store purchase likelihood.

4.4.2.1.1 Frequencies.

In the direct-marketed produce survey, as shown in Table 4.110, 25.4% ($n = 105$) of consumers indicated they would be extremely willing to purchase in-store from businesses one hour away. As shown in Table 4.113, 27.2% ($n = 113$) participants specified they would be extremely likely to travel to purchase in-store within their region of residence. Slightly less than the responses from the distance of one hour away. Participant responses were more spread out and indicated less interest in traveling to purchase in-store from a distance within the state. 27.3% ($n = 113$) of consumers also indicated they would be somewhat likely to travel to purchase from a business in the state, as shown in Table 4.112. Frequencies for all distances, overall, indicate consumers were somewhat likely to travel to purchase direct-marketed produce in-store.

4.4.2.1.2 Means.

For in-store purchase likelihood, as presented in Table 4.114, means were significantly different for distances of one hour away ($M = 2.79$, $SD = 1.40$) and outside of the region ($M = 2.52$, $SD = 1.50$); $t(828) = 2.68$, $p = 0.01$. Independent samples t -tests found statistically significant differences in business locations one hour away ($M = 2.97$, $SD = 1.40$), and within the state ($M = 2.39$, $SD = 1.51$); $t(828) = 3.96$, $p = 0.00$. Additionally, significant differences in

means for willingness to purchase bedding plants in-store were found between locations within the state ($M = 2.39$, $SD = 1.51$) and in the region ($M = 2.70$, $SD = 1.50$); $t(828) = -2.97$, $p = 0.00$.

4.4.2.2 Online purchase likelihood.

4.4.2.2.1 Frequencies.

A comparison of frequency responses, as shown in Table 4.110, revealed 23.9% ($n = 99$) of consumers were somewhat willing to purchase online from businesses one hour away after viewing Facebook posts, while 15.2% ($n = 63$) were extremely willing. Differing slightly, as reported in Table 4.111, only 19% ($n = 79$) of respondents were somewhat willing and 14% ($n = 58$) were extremely willing to purchase products from their region of residence online. In sharp contrast, as shown in Table 4.112, 35.6% ($n = 148$) of respondents were willing to purchase direct-marketed produce online from businesses within their state. In general, though, the online purchase option was not popular among fresh, horticultural product consumers. Participants indicated they would be somewhat likely to purchase produce online from a business one hour away ($n = 99$, 23.9%), but 25.7% ($n = 107$) were extremely unwilling to purchase online from businesses outside of the region (Table 4.111) and 29.1% ($n = 121$) were extremely unwilling to buy online from companies located and in the region (Table 4.113).

4.4.2.2.2 Means.

Independent samples t -tests were conducted to test for statistically significant differences between direct-marketed produce online purchase likelihood means. Comparisons, as presented in Table 4.114, found significant differences between distances of one hour away ($M = 2.35$, $SD = 1.36$) and outside the region ($M = 1.98$, $SD = 1.50$); $t(828) = 3.72$, $p = 0.00$ and between business location distances of one hour away ($M = 2.35$, $SD = 1.36$) and within the state ($M = 2.55$, $SD = 0.77$); $t(828) = 2.61$, $p = 0.01$. There were also significant differences between

distances of one hour away ($M = 2.35, SD = 1.36$) and in the region ($M = 1.97, SD = 1.56$); $t(828) = 3.74, p = 0.00$, outside of the region ($M = 1.98, SD = 1.50$) and within the state ($M = 2.55, SD = 0.77$); $t(828) = -6.89, p = 0.00$, and within the state ($M = 2.55, SD = 0.77$) and in the region ($M = 1.97, SD = 1.56$); $t(828) = 6.79, p = 0.00$ for online purchase likelihood response means.

4.4.2.3 General purchase likelihood.

4.4.2.3.1 Frequencies.

For direct-marketed produce, as shown in Table 4.110, a majority of consumers ($n = 223, 53.7\%$) were neither likely nor unlikely to purchase from businesses located an hour away. Comparable to distances within the state ($n = 141, 34.0\%$) and in the region ($n = 149, 36.0\%$) and as displayed in Table 4.111, 32.2% ($n = 134$) of respondents indicated they would be neither likely nor unlikely to purchase from For business locations one hour away, while 29.9% ($n = 124$) of consumers indicated they were somewhat likely to purchase, 53.7% ($n = 223$) were neither likely nor unlikely to purchase direct-marketed products in general from businesses one hour away from their residence. The majority of responses for each distance indicated consumers were neither likely nor unlikely to buy products in general.

4.4.2.3.2 Means.

All means for general purchase likelihood were significantly different from each other, as shown in Table 4.114. Response means were significantly different for business locations one hour away ($M = 2.50, SD = 0.65$) and outside the region ($M = 2.97, SD = 1.19$); $t(828) = -7.06, p = 0.00$ and also one hour away $M = 2.50, SD = 0.65$) and within the state ($M = 2.26, SD = 0.89$); $t(828) = 4.44, p = 0.00$. Independent samples t -test analysis revealed that locations one hour away ($M = 2.50, SD = 0.65$) and in the region ($M = 2.76, SD = 1.13$); $t(828) = -4.06, p = 0.00$ were

also statistically significantly different. Likewise, locations outside of the region ($M = 2.97$, $SD = 1.19$) and in the region ($M = 2.76$, $SD = 1.13$); $t(828) = 2.61$, $p = 0.00$, outside of the region ($M = 2.97$, $SD = 1.19$) and within the state ($M = 2.26$, $SD = 0.89$); $t(828) = 9.73$, $p = 0.00$, and within the state ($M = 2.26$, $SD = 0.89$) and in the region ($M = 2.76$, $SD = 1.13$); $t(828) = -7.08$, $p = 0.00$ were all significantly different with a 95% confidence interval.

Table 4.110 Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located one hour away for direct-marketed produce survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	23	5.5	33	8.0	0	0
	.33	15	3.6	5	1.2	0	0
	.67	16	3.9	25	6.0	2	0.5
Somewhat unlikely 1.00 to < 2.00	1.00	18	4.3	28	6.7	5	1.2
	1.33	20	4.8	37	8.9	23	5.5
	1.67	15	3.6	28	6.7	31	7.5
Neither likely or unlikely 2.00 to < 3.00	2.00	18	4.3	37	8.9	60	14.5
	2.33	20	4.8	25	6.0	97	23.4
	2.67	35	8.4	35	8.4	66	15.9
Somewhat likely 3.00 to < 4.00	3.00	40	9.6	38	9.2	65	15.7
	3.33	49	11.8	33	8.0	44	10.6
	3.67	41	9.9	28	6.7	15	3.6
Extremely likely 4.00 to ≤ 5.00	4.00	39	9.4	20	4.8	5	1.2
	4.33	26	6.3	17	4.1	1	0.2
	4.67	21	5.1	9	2.2	1	0.2
	5.00	19	4.6	17	4.1	0	0
Total		415	100.0	415	100.0	415	100

Table 4.111 Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located outside of the region for direct-marketed produce survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	41	9.9	72	17.3	0	0.0
	.33	17	4.1	17	4.1	0	0.0
	.67	15	3.6	18	4.3	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	20	4.8	51	12.3	32	7.7
	1.33	26	6.3	28	6.7	15	3.6
	1.67	21	5.1	18	4.3	23	5.5
Neither likely or unlikely 2.00 to < 3.00	2.00	22	5.3	30	7.2	47	11.3
	2.33	26	6.3	23	5.5	40	9.6
	2.67	23	5.5	21	5.1	47	11.3
Somewhat likely 3.00 to < 4.00	3.00	51	12.3	37	8.9	50	12.0
	3.33	33	8.0	25	6.0	26	6.3
	3.67	29	7.0	17	4.1	23	5.5
Extremely likely 4.00 to ≤ 5.00	4.00	34	8.2	21	5.1	30	7.2
	4.33	15	3.6	12	2.9	22	5.3
	4.67	12	2.9	7	1.7	17	4.1
	5.00	30	7.2	18	4.3	43	10.4
Total		415	100.0	415	100.0	415	100.0

Table 4.112 Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located in the state for direct-marketed produce survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	46	11.1	0	0.0	0	0
	.33	13	3.1	3	0.7	3	0.7
	.67	18	4.3	0	0.0	15	3.6
Somewhat unlikely 1.00 to < 2.00	1.00	36	8.7	13	3.1	28	6.7
	1.33	22	5.3	14	3.4	39	9.4
	1.67	18	4.3	53	12.8	71	17.1
Neither likely or unlikely 2.00 to < 3.00	2.00	31	7.5	47	11.3	44	10.6
	2.33	31	7.5	69	16.6	56	13.5
	2.67	28	6.7	60	14.5	41	9.9
Somewhat likely 3.00 to < 4.00	3.00	28	6.7	57	13.7	45	10.8
	3.33	33	8.0	46	11.1	31	7.5
	3.67	27	6.5	45	10.8	28	6.7
Extremely likely 4.00 to ≤ 5.00	4.00	26	6.3	6	1.4	9	2.2
	4.33	16	3.9	1	0.2	5	1.2
	4.67	18	4.3	0	0.0	0	0
	5.00	24	5.8	1	0.2	0	0
Total		415	100.0	415	100.0	415	100

Table 4.113 Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located in the region of residence for direct-marketed produce survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	45	10.8	91	21.9	0	0.0
	.33	11	2.7	13	3.1	0	0.0
	.67	5	1.2	17	4.1	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	27	6.5	48	11.6	38	9.2
	1.33	10	2.4	20	4.8	19	4.6
	1.67	18	4.3	7	1.7	21	5.1
Neither likely or unlikely 2.00 to < 3.00	2.00	20	4.8	22	5.3	70	16.9
	2.33	16	3.9	25	6.0	36	8.7
	2.67	31	7.5	22	5.3	43	10.4
Somewhat likely 3.00 to < 4.00	3.00	61	14.7	56	13.5	74	17.8
	3.33	32	7.7	16	3.9	18	4.3
	3.67	26	6.3	14	3.4	16	3.9
Extremely likely 4.00 to ≤ 5.00	4.00	50	12.0	29	7.0	23	5.5
	4.33	16	3.9	8	1.9	13	3.1
	4.67	17	4.1	9	2.2	8	1.9
	5.00	30	7.2	18	4.3	36	8.7
Total		415	100.0	415	100.0	415	100.0

Table 4.114 Mean likelihood and willingness to purchase products after seeing Facebook marketing posts featuring direct-marketed produce by distance.

Distance	In-Store		Online		General Purchase Likelihood	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
One hour away	2.79 a	1.40	2.35 b	1.36	2.50 c	0.65
Outside of region	2.52 ab	1.50	1.98 c	1.50	2.97 a	1.19
Within state	2.39 b	1.51	2.55 a	0.77	2.26 d	0.89
In region	2.70 a	1.50	1.97 c	1.56	2.76 b	1.13

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to purchase and 5 = extremely likely to purchase. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 415$).

4.4.3 Pick-your-own produce.

In this section, all results from the pick-your-own produce survey pertaining to willingness to travel to purchase produce will be reported and presented in order of variables of in-store, online, and general purchase likelihood. Within each variable, frequencies will be reported followed by means.

4.4.3.1 In-store purchase likelihood.

4.4.3.1.1 Frequencies.

When individual likelihood of purchase choice option frequencies were compared, it was noted that a majority of consumers were extremely likely to travel to purchase in store from businesses one hour away ($n = 121, 28.8\%$), presented in Table 4.115, and in the region ($n = 138, 33.0\%$), as shown in Table 4.118. Reported in Table 4.116, consumers were somewhat likely to travel to purchase from businesses outside of their region of residence ($n = 106, 25.2\%$) and, as shown in Table 4.117, in the state ($n = 101, 24.0\%$). Pick-your-own produce consumers were most likely to travel to purchase produce and goods in-store, rather than online or in general.

4.4.3.1.2 Means.

In the pick-your-own produce survey ($n = 420$), as in the other surveys, overall response means were lower, indicating a general unwillingness to travel to purchase horticultural products. As shown in Table 4.119, for in-store purchase likelihood, means for business location distances one hour away ($M = 2.97, SD = 1.30$) and outside the region ($M = 2.57, SD = 1.46$); $t(838) = 4.19, p = 0.000$ and outside of the region ($M = 2.57, SD = 1.46$) and in the region ($M = 2.92, SD = 1.43$); $t(838) = -3.51, p = 0.000$ were statistically significantly different. Response means for distances of within the state ($M = 2.53, SD = 1.45$) and in the region ($M = 2.92, SD = 1.43$); t

(838) = -3.93, $p = 0.000$, and one hour away ($M = 2.97$, $SD = 1.30$) and within the state ($M = 2.53$, $SD = 1.45$); $t(838) = 4.63$, $p = 0.000$ were also significantly different.

4.4.3.2 Online purchase likelihood.

4.4.3.2.1 Frequencies.

Though pick-your-own online purchase likelihood means and frequencies were lower than in-store likelihood, consumers indicated they would be likely to purchase products online from businesses within their state ($n = 142$, 33.8%), as shown in Table 4.117, or in the region ($n = 131$, 31.2%), presented in Table 4.118. While most respondents indicated they were somewhat unlikely or neither likely nor unlikely to purchase online, as reported in Table 4.118, the largest numbers of participants were extremely unlikely to buy from stores in the region ($n = 137$, 32.6%). Likewise, shown in Table 4.116, 30.5% ($n = 128$) of consumers indicated they were extremely unlikely to purchase pick-your-own products online from businesses out of their region of residence. Overall, pick-your-own produce customers were more willing to purchase horticultural products online from businesses one hour away or in their region of residence

4.4.3.2.2 Means.

For online purchase likelihood, as presented in Table 4.119, means between distances one hour away ($M = 2.02$, $SD = 0.95$) and within the state ($M = 2.45$, $SD = 0.75$); $t(838) = -7.28$, $p = 0.00$ were statistically significantly different. Response means were significantly different for business location distances outside of the region ($M = 1.85$, $SD = 1.54$) and within the state ($M = 2.45$, $SD = 0.75$); $t(838) = -7.18$, $p = 0.00$. Additionally, means between within the state ($M = 2.45$, $SD = 0.75$) and in the region ($M = 1.87$, $SD = 1.60$); $t(838) = 6.28$, $p = 0.00$ were significantly different.

4.4.3.4 General purchase likelihood.

4.4.3.4.1 Frequencies.

For pick-your-own produce general purchase likelihood, as shown in Table 4.115, 56.6% (n = 238) of respondents would be neither likely nor unlikely to purchase from a horticultural business one hour away. In contrast, 28.8% (n = 121) of consumers were neither likely nor unlikely to purchase from businesses out of the region (Table 4.116), and, as shown in Table 4.117, 39.2% (n = 165) of respondents were neither likely nor unlikely to purchase from locations in the state. 50.0% (n = 210) of consumers indicated they would be likely to purchase from businesses outside of the region after seeing horticultural marketing Facebook posts. In contrast, only just over 33% (n = 138) of participants indicated they would be willing to buy from a business in their region of residence. The majority of consumers indicated they were neither likely nor unlikely to purchase from a pick-your-own business in general.

4.4.3.4.2 Means.

As shown in Table 4.119, response means for general purchase likelihood for pick-your-own business location distances one hour away ($M = 2.13$, $SD = 0.94$) and outside the region ($M = 2.42$, $SD = 1.04$); $t(838) = -4.24$, $p = 0.00$ and outside of the region ($M = 2.42$, $SD = 1.04$) and in the region ($M = 2.59$, $SD = 0.97$); $t(838) = -2.45$, $p = 0.01$. Significant differences were found between response means for businesses within the state ($M = 2.43$, $SD = 0.64$) and in the region ($M = 2.59$, $SD = 0.97$); $t(838) = -2.82$, $p = 0.01$. Independent samples t -tests also revealed that distances one hour away ($M = 2.13$, $SD = 0.94$) and within the state ($M = 2.43$, $SD = 0.64$); $t(838) = -5.41$, $p = 0.00$, and one hour away ($M = 2.13$, $SD = 0.94$) and in the region ($M = 2.59$, $SD = 0.97$); $t(838) = -6.98$, $p = 0.00$ were significantly different with a 95% confidence interval.

Table 4.115 Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located one hour away for pick-your-own produce survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	14	3.3	0	0.0	0	0.0
	.33	11	2.6	9	2.1	0	0.0
	.67	9	2.1	41	9.8	3	0.7
Somewhat unlikely 1.00 to < 2.00	1.00	10	2.4	46	11.0	13	3.1
	1.33	24	5.7	47	11.2	31	7.4
	1.67	20	4.8	51	12.1	49	11.7
Neither likely or unlikely 2.00 to < 3.00	2.00	23	5.5	38	9.0	69	16.4
	2.33	22	5.2	56	13.3	98	23.3
	2.67	20	4.8	32	7.6	71	16.9
Somewhat likely 3.00 to < 4.00	3.00	59	14.0	44	10.5	38	9.0
	3.33	45	10.7	29	6.9	33	7.9
	3.67	42	10.0	20	4.8	10	2.4
Extremely likely 4.00 to ≤ 5.00	4.00	54	12.9	3	0.7	2	0.5
	4.33	19	4.5	2	0.5	1	0.2
	4.67	21	5.0	1	0.2	1	0.2
	5.00	27	6.4	1	0.2	1	0.2
Total		420	100.0	420	100.0	420	100.0

Table 4.116 Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located outside of the region for pick-your-own produce survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	41	9.8	86	20.5	0	0.0
	.33	13	3.1	22	5.2	0	0.0
	.67	5	1.2	20	4.8	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	24	5.7	41	9.8	37	8.8
	1.33	21	5.0	33	7.9	24	5.7
	1.67	30	7.1	33	7.9	28	6.7
Neither likely or unlikely 2.00 to < 3.00	2.00	31	7.4	23	5.5	46	11.0
	2.33	23	5.5	27	6.4	30	7.1
	2.67	31	7.4	17	4.0	45	10.7
Somewhat likely 3.00 to < 4.00	3.00	43	10.2	24	5.7	59	14.0
	3.33	34	8.1	18	4.3	34	8.1
	3.67	29	6.9	15	3.6	23	5.5
Extremely likely 4.00 to ≤ 5.00	4.00	34	8.1	17	4.0	31	7.4
	4.33	23	5.5	15	3.6	23	5.5
	4.67	13	3.1	11	2.6	16	3.8
	5.00	25	6.0	18	4.3	24	5.7
Total		420	100.0	420	100.0	420	100.0

Table 4.117 Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located in the state for pick-your-own produce survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	38	9.0	0	0.0	0	0.0
	.33	9	2.1	0	0.0	7	1.7
	.67	17	4.0	3	0.7	20	4.8
Somewhat unlikely 1.00 to < 2.00	1.00	26	6.2	19	4.5	43	10.2
	1.33	22	5.2	18	4.3	47	11.2
	1.67	25	6.0	51	12.1	75	17.9
Neither likely or unlikely 2.00 to < 3.00	2.00	31	7.4	70	16.7	38	9.0
	2.33	26	6.2	60	14.3	43	10.2
	2.67	34	8.1	57	13.6	34	8.1
Somewhat likely 3.00 to < 4.00	3.00	43	10.2	60	14.3	42	10.0
	3.33	29	6.9	47	11.2	31	7.4
	3.67	29	6.9	29	6.9	27	6.4
Extremely likely 4.00 to ≤ 5.00	4.00	31	7.4	4	1.0	11	2.6
	4.33	21	5.0	1	0.2	1	0.2
	4.67	13	3.1	0	0.0	0	0.0
	5.00	26	6.2	1	0.2	1	0.2
Total		420	100.0	420	100.0	420	100.0

Table 4.118 Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located in the region of residence for pick-your-own produce survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	30	7.1	95	22.6	0	0.0
	.33	7	1.7	21	5.0	0	0.0
	.67	8	1.9	21	5.0	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	15	3.6	47	11.2	60	14.3
	1.33	24	5.7	21	5.0	31	7.4
	1.67	16	3.8	21	5.0	25	6.0
Neither likely or unlikely 2.00 to < 3.00	2.00	19	4.5	26	6.2	82	19.5
	2.33	19	4.5	16	3.8	40	9.5
	2.67	26	6.2	21	5.0	43	10.2
Somewhat likely 3.00 to < 4.00	3.00	51	12.1	31	7.4	65	15.5
	3.33	35	8.3	13	3.1	15	3.6
	3.67	32	7.6	16	3.8	8	1.9
Extremely likely 4.00 to ≤ 5.00	4.00	60	14.3	27	6.4	19	4.5
	4.33	25	6.0	14	3.3	10	2.4
	4.67	20	4.8	12	2.9	7	1.7
	5.00	33	7.9	18	4.3	15	3.6
Total		420	100.0	420	100.0	420	100.0

Table 4.119 Mean likelihood and willingness to purchase products after seeing Facebook marketing posts from independent pick-your-own produce businesses by distance.

Distance	In-Store		Online		General Purchase Likelihood	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
One hour away	2.97 a	1.30	2.02 b	0.95	2.13 c	0.94
Outside of region	2.57 b	1.46	1.85 b	1.54	2.42 b	1.04
Within state	2.53 b	1.45	2.45 a	0.75	2.43 b	0.64
In region	2.92 a	1.43	1.87 b	1.60	2.59 a	0.97

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to purchase and 5 = extremely likely to purchase. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 420$).

4.4.4 Total willingness to travel.

In this section, results from all three surveys will be reported and presented in order of variables of in-store, online, and general purchase likelihood. Within each variable, frequencies will be reported followed by means.

4.4.4.1 In-store purchase likelihood.

4.4.4.1.1 Frequencies.

As shown in Table 4.120, a comparison of frequencies of consumers indicated 27.6% ($n = 342$) were extremely willing to purchase in-store from businesses one hour away from their residence. Similarly, 376 (30.4%) respondents specified they would be extremely likely to travel to purchase from horticultural businesses in the region, as presented in Table 4.123. When asked about the likelihood of traveling to purchase in-store from businesses outside of the region, a majority of consumers ($n = 332$, 26.7%) indicated they would be somewhat willing. In the same way, 25.2% ($n = 313$) of respondents were somewhat willing to travel to businesses in the state, as shown in Table 4.122. The majority of horticultural consumers were somewhat willing to purchase products in-store. All frequencies were similar, indicating consumers were mostly willing to travel to purchase horticultural products in-store.

4.4.4.1.2 Means.

For in-store purchase likelihood, as shown in Table 4.124, independent samples t -test analysis revealed statistically significant differences between means for horticultural business distances of one hour away ($M = 2.91$, $SD = 1.33$) and outside of the region ($M = 2.55$, $SD = 1.47$); $t(2482) = 6.40$, $p = 0.00$. Also, significant differences were found for locations one hour away ($M = 2.91$, $SD = 1.33$) and within the state ($M = 2.57$, $SD = 1.46$); $t(2482) = 6.07$, $p = 0.00$. Response means for business locations outside of the region ($M = 2.55$, $SD = 1.47$) and in the

region ($M = 2.86$, $SD = 1.44$); $t(2482) = -5.31$, $p = 0.00$ and within the state ($M = 2.57$, $SD = 1.46$) and in the region ($M = 2.86$, $SD = 1.44$); $t(2482) = -4.98$, $p = 0.00$ were also statistically significantly different with a confidence level of 95%.

4.4.4.2 Online purchase likelihood.

4.4.4.2.1 Frequencies.

When frequencies were analyzed individually, as shown in Table 4.120, the majority ($n = 315$, 25.3%) of participants indicated they would be somewhat unlikely to purchase horticultural products online from a business located an hour away. As presented in Table 4.121, 27.3% ($n = 338$) of respondents indicated they were extremely unlikely to purchase online from businesses out of the region. In contrast, as reported in Table 4.122, 30.1% ($n = 375$) of participants were somewhat likely to purchase online from businesses in their state of residence. Similar to responses for distances of one hour away (Table 4.120) and outside the region (Table 4.121), 28.4% ($n = 353$) of consumers indicated they were extremely unlikely to purchase online from businesses in their region of residence, as shown in Table 4.123. Overall frequencies also indicate consumers do not wish to purchase horticultural products online but are more likely to buy online from businesses located in their state.

4.4.4.2.2 Means.

As reported in Table 4.124, significant differences in means for online purchase likelihood occurred between distances one hour away ($M = 2.20$, $SD = 1.30$) and outside of the region ($M = 1.98$, $SD = 1.52$); $t(2482) = 3.88$, $p = 0.00$. Independent samples t -tests found statistically significant differences between locations of one hour away ($M = 2.20$, $SD = 1.30$) and within the state ($M = 2.40$, $SD = 1.09$); $t(2482) = 4.16$, $p = 0.00$, one hour away ($M = 2.20$, $SD = 1.30$) and in the region ($M = 2.01$, $SD = 1.58$); $t(2482) = 3.27$, $p = 0.00$ with a 95%

confidence interval. Additionally, response means for willingness to travel to horticultural businesses outside of the region ($M = 1.98, SD = 1.52$) and within the state ($M = 2.40, SD = 1.09$); $t(2482) = 7.91, p = 0.00$, and within the state ($M = 2.40, SD = 1.09$) and in the region ($M = 2.01, SD = 1.58$); $t(2482) = 7.16, p = 0.00$ were significantly different.

4.4.4.3 General purchase likelihood.

4.4.4.3.1 Frequencies.

Frequencies for each distance option were compared and results indicated, regardless of distance, the majority of consumers responded they were neither likely nor unlikely to purchase from horticultural businesses in general. As shown in Table 4.120, 49.8% ($n = 620$) of consumers indicated they would be neither likely nor unlikely to buy from horticultural businesses in general. Likewise, 29.7% ($n = 369$) of consumers indicated they would be neither likely nor unlikely to purchase from businesses outside of their region of residence (Table 4.121), 31.0% ($n = 385$) were neither likely nor unlikely to buy from locations in their state (Table 4.122), and 37.2% ($n = 463$) were indifferent about purchasing from businesses in the region (Table 4.123). After viewing horticultural Facebook posts, as shown in Table 4.122, the largest number of consumers indicated they were extremely willing to buy from businesses outside of their region of residence ($n = 300, 24.2\%$). This result differs from other product surveys slightly; however, most consumers in the total survey sample indicated they were neither likely nor unlikely to purchase from horticultural businesses after viewing Facebook posts.

4.4.4.3.2 Means.

For general purchase likelihood, as shown in Table 4.124, all response means were significantly different. Response means for distances one hour away ($M = 2.45, SD = 0.79$) and outside of the region ($M = 2.90, SD = 1.16$); $t(2482) = 11.30, p = 0.00$, one hour away ($M =$

2.45, $SD = 0.79$) and within the state ($M = 2.35$, $SD = 0.99$); $t(2482) = 2.78$, $p = 0.01$, and one hour away ($M = 2.45$, $SD = 0.79$) and in the region ($M = 2.56$, $SD = 1.07$); $t(2482) = -2.92$, $p = 0.00$. Means were also statistically significantly different for locations outside of the region ($M = 2.90$, $SD = 1.16$) and within the state ($M = 2.35$, $SD = 0.99$); $t(2482) = 12.71$, $p = 0.00$, outside of the region ($M = 2.90$, $SD = 1.16$) and in the region ($M = 2.56$, $SD = 1.07$); $t(2482) = 7.59$, $p = 0.00$. Finally, a comparison of means within the state ($M = 2.35$, $SD = 0.99$) and in the region ($M = 2.56$, $SD = 1.07$); $t(2482) = 5.01$, $p = 0.00$ were also found to be statistically significantly different with a 95% confidence interval.

Table 4.120 Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located one hour away for total survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	55	4.4	93	7.5	0	0.0
	.33	33	2.7	34	2.7	0	0.0
	.67	34	2.7	76	6.1	5	0.4
Somewhat unlikely 1.00 to < 2.00	1.00	42	3.4	107	8.6	60	4.8
	1.33	57	4.6	107	8.6	71	5.7
	1.67	47	3.8	101	8.1	115	9.3
Neither likely or unlikely 2.00 to < 3.00	2.00	64	5.2	93	7.5	198	15.9
	2.33	70	5.6	112	9.0	234	18.8
	2.67	86	6.9	96	7.7	188	15.1
Somewhat likely 3.00 to < 4.00	3.00	156	12.6	118	9.5	172	13.8
	3.33	136	11.0	94	7.6	98	7.9
	3.67	120	9.7	72	5.8	45	3.6
Extremely likely 4.00 to ≤ 5.00	4.00	140	11.3	48	3.9	23	1.9
	4.33	72	5.8	38	3.1	13	1.0
	4.67	62	5.0	20	1.6	7	0.6
	5.00	68	5.5	33	2.7	13	1.0
Total		1242	100.0	1242	100.0	1242	100.0

Table 4.121 Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located outside of the region for total survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	126	10.1	227	18.3	0	0.0
	.33	39	3.1	58	4.7	0	0.0
	.67	31	2.5	53	4.3	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	67	5.4	127	10.2	110	8.9
	1.33	59	4.8	82	6.6	53	4.3
	1.67	70	5.6	73	5.9	75	6.0
Neither likely or unlikely 2.00 to < 3.00	2.00	91	7.3	77	6.2	138	11.1
	2.33	69	5.6	72	5.8	106	8.5
	2.67	90	7.2	67	5.4	125	10.1
Somewhat likely 3.00 to < 4.00	3.00	147	11.8	106	8.5	175	14.1
	3.33	102	8.2	62	5.0	80	6.4
	3.67	83	6.7	57	4.6	80	6.4
Extremely likely 4.00 to ≤ 5.00	4.00	97	7.8	59	4.8	89	7.2
	4.33	50	4.0	41	3.3	65	5.2
	4.67	40	3.2	25	2.0	46	3.7
	5.00	81	6.5	56	4.5	100	8.1
Total		1242	100.0	1242	100.0	1242	100.0

Table 4.122 Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located in the state for total survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	114	9.2	69	5.6	0	0.0
	.33	29	2.3	16	1.3	10	0.8
	.67	42	3.4	14	1.1	35	2.8
Somewhat unlikely 1.00 to < 2.00	1.00	81	6.5	72	5.8	117	9.4
	1.33	62	5.0	53	4.3	103	8.3
	1.67	61	4.9	127	10.2	170	13.7
Neither likely or unlikely 2.00 to < 3.00	2.00	86	6.9	138	11.1	141	11.4
	2.33	73	5.9	151	12.2	133	10.7
	2.67	99	8.0	139	11.2	111	8.9
Somewhat likely 3.00 to < 4.00	3.00	130	10.5	167	13.4	163	13.1
	3.33	96	7.7	116	9.3	90	7.2
	3.67	87	7.0	92	7.4	82	6.6
Extremely likely 4.00 to ≤ 5.00	4.00	99	8.0	37	3.0	45	3.6
	4.33	57	4.6	18	1.4	21	1.7
	4.67	49	3.9	10	0.8	4	0.3
	5.00	77	6.2	23	1.9	17	1.4
Total		1242	100.0	1242	100.0	1242	100.0

Table 4.123 Combined frequency distribution of willingness to travel to purchase in-store, online, or in general after viewing three Facebook posts from businesses located in the region of residence for total survey respondents.

		In-Store Purchase Likelihood		Online Purchase Likelihood		General Purchase Likelihood	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Extremely unlikely < 1.00	.00	103	8.3	261	21.0	0	0.0
	.33	22	1.8	45	3.6	0	0.0
	.67	18	1.4	47	3.8	0	0.0
Somewhat unlikely 1.00 to < 2.00	1.00	65	5.2	137	11.0	145	11.7
	1.33	44	3.5	60	4.8	73	5.9
	1.67	46	3.7	45	3.6	78	6.3
Neither likely or unlikely 2.00 to < 3.00	2.00	59	4.8	74	6.0	219	17.6
	2.33	51	4.1	59	4.8	116	9.3
	2.67	82	6.6	65	5.2	128	10.3
Somewhat likely 3.00 to < 4.00	3.00	176	14.2	142	11.4	215	17.3
	3.33	106	8.5	49	3.9	48	3.9
	3.67	94	7.6	48	3.9	45	3.6
Extremely likely 4.00 to ≤ 5.00	4.00	161	13.0	85	6.8	58	4.7
	4.33	67	5.4	36	2.9	31	2.5
	4.67	59	4.8	34	2.7	20	1.6
	5.00	89	7.2	55	4.4	66	5.3
Total		1242	100.0	1242	100.0	1242	100.0

Table 4.124 Mean likelihood and willingness to purchase products after seeing Facebook marketing posts from independent horticultural businesses by distance.

Distance	In-Store		Online		General Purchase Likelihood	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
One hour away	2.91 a	1.33	2.20 b	1.30	2.45 c	0.79
Outside of region	2.55 b	1.47	1.98 c	1.52	2.90 a	1.16
Within state	2.57 b	1.46	2.40 a	1.09	2.35 d	0.99
In region	2.86 ab	1.44	2.01 c	1.58	2.56 b	1.07

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to purchase and 5 = extremely likely to purchase. Means within column followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$ ($n = 1242$).

4.4.5 Employment and Willingness to Travel

In addition to performing independent samples *t*-tests, a one-way ANOVA and bivariate correlations were conducted to compare the effect of demographic variables on willingness to travel to purchase horticultural products. Employment was the only variable correlated with willingness to travel. As shown in Table 4.125, the majority of participants in each survey reported being employed and working 40 or more hours per week ($n = 570$, 45.9%) or employed and working 1-39 hours per week ($n = 265$, 21.3%). In the combined survey sample ($n = 1242$), there was a significant difference between employment and willingness to travel for the three survey groups at the $p < .05$ level [$F(60, 1180) = 1.34$, $p = 0.045$]. Employment was found to be correlated with willingness to travel to purchase, though it was a slightly negative correlation. When analyzed separately by each survey type, bedding plant, direct-marketed produce, and pick-your-own produce, there were no significant differences or correlations between employment and willingness to travel. The difference in employment is significant in the model containing all participants; however, it is unknown which level of employment impacted willingness to travel to purchase horticultural goods.

Table 4.125 *Frequency of employment level for participants in all surveys about horticultural marketing on Facebook.*

Employment	<i>f</i>	%
Total Sample		
Employed, working 40 or more hours per week	570	45.9
Employed, working 1-39 hours per week	265	21.3
Not employed, NOT looking for work	122	9.8
Disabled, not able to work	107	8.6
Retired	94	7.6
Not employed, looking for work	84	6.8
Total	1242	100.0
Bedding plant survey		
Employed, working 40 or more hours per week	200	49.1
Employed, working 1-39 hours per week	77	18.9
Retired	39	9.6
Not employed, NOT looking for work	35	8.6
Disabled, not able to work	29	7.1
Not employed, looking for work	27	6.6
Total	407	100.0
Direct-marketed produce survey		
Employed, working 40 or more hours per week	193	46.5
Employed, working 1-39 hours per week	91	21.9
Not employed, NOT looking for work	44	10.6
Not employed, looking for work	30	7.2
Disabled, not able to work	29	7.0
Retired	28	6.7
Total	415	100.0
Pick-your-own produce survey		
Employed, working 40 or more hours per week	177	42.1
Employed, working 1-39 hours per week	97	23.1
Disabled, not able to work	49	11.7
Not employed, NOT looking for work	43	10.2
Not employed, looking for work	27	6.4
Retired	27	6.4
Total	420	100.0

4.5 Willingness to Engage Similarities across Horticultural Products (RQ1)

Results from each survey were compared and analyzed. In all surveys, the highest response means for “liking” posts indicated consumers were likely to engage with the content by “liking” or choosing a reaction emoji. Direct-marketed produce means were slightly lower than other survey response means; while bedding plant means were consistently higher overall. No means were higher than 3.0 for likelihood of purchase or willingness to travel to purchase products, which indicated consumers were unwilling to travel to and disinclined to purchase from businesses after seeing horticultural Facebook posts.

4.5.1 Message & Image component.

Results of independent sample *t*-tests indicated there were no significant differences between the highest means for message type; however, there were statistically significant differences between image component means for images featuring a product alone. As presented in Table 4.9, there was a significant difference between bedding plant survey ($M = 3.12, SD = 1.45$) and direct-marketed produce survey means for the image of the product only ($M = 3.41, SD = 1.93$); $t(820) = -2.43, p = 0.015$. A statistically significant difference was also found between the pick-your-own produce survey ($M = 3.84, SD = 11.71$) and direct-marketed survey mean for an image of the product only ($M = 3.41, SD = 1.93$); $t(825) = -6.14, p = 0.000$ with a 95% confidence interval. There was no significant difference in means for a photo of just a product between bedding plant and pick-your-own produce responses.

Table 4.126 Response means above 3.0 for willingness to engage with image component by “liking” independent horticultural business Facebook posts.

Product	People with product		Product only		Product at business	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Bedding Plants (<i>n</i> = 407)	3.16	1.38	3.12a	1.45	3.16	1.46
Direct-Marketed Produce (<i>n</i> = 415)	--	--	3.41b	1.93	--	--
Pick-your-own Produce (<i>n</i> = 420)	--	--	3.84a	1.71	--	--

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to purchase and 5 = extremely likely to purchase. Means within column for separate variables and variable category followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$.

Mean values below 3.0 are available in Tables 4.9, 4.22, and 4.35.

4.5.2 Distance.

In regard to distance as a factor of willingness to engage with horticultural Facebook posts, there were no significant differences. As shown in Table 4.127, mean responses indicated bedding plant and pick-your-own produce consumers were more willing to “like” or engage with social-media posts from businesses one hour away from their residence or within the region. According to the results, bedding plant customers were, overall, more willing to engage with business Facebook posts no matter the distance. On the other hand, direct-marketed produce shoppers were not willing to engage with Facebook posts at all, regardless of the company’s location. Pick-your-own produce responses showed survey participants would engage with posts from businesses one hour away or in the region.

Table 4.127 Response means above 3.0 for willingness to engage with by “liking” independent horticultural business Facebook posts due to distance from viewer.

Product	One hour away		Outside of region		Within state		In region	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Bedding Plants (<i>n</i> = 407)	3.29 a	1.32	3.08	1.32	3.07	1.45	3.29 a	1.32
Direct-Marketed Produce (<i>n</i> = 415)	--	--	--	--	--	--	--	--
Pick-your-own Produce (<i>n</i> = 420)	3.17 a	1.32	--	--	--	--	3.17 a	1.32

Note: Based on a 6-point Likert scale in which 0 = extremely unlikely to purchase and 5 = extremely likely to purchase.

Means within column for separate variables and variable category followed by a different letter are significantly different based on independent-samples t-tests at $\alpha = 0.05$.

Indicates means are not significantly different.

Mean values below 3.0 are available in Tables 4.14, 4.27, and 4.40.

4.6 Summary

To determine if and how Facebook posts impacted consumer likelihood to engage with and purchase from independent horticultural businesses, a survey was administered to Midwestern U.S. residents. Consumers were asked to view mock Facebook posts from hypothetical businesses and indicate how willing they were to interact with posts and buy from plant and produce businesses. After analyzing means and frequencies for engagement, willingness to travel, and willingness to purchase, results showed horticultural consumers were most willing to engage with promotional messages, images of products at a business, and business distance locations of one hour away or in the region.

Chapter 5 - Discussion, Conclusions, & Recommendations

The purpose of this study was to determine consumer preferences for content posted on Facebook by horticultural businesses. Three online surveys were administered to anonymous consumers in the Midwestern U.S. who had recently purchased horticultural goods similar to those featured in the instrument. Photos included in the surveys, as shown in Appendix B, C, and D, featured a boy and girl sitting with a container of petunias, a close-up image of a petunia flower, hanging petunia baskets and flats of petunias on tables in a greenhouse, a father and young son cutting bell peppers, a close-up image of red bell peppers, small baskets of bell peppers on a table, a young girl eating an apple in front of apple trees, an image of ripe, red apples on a tree, and a “u-pick” sign at an apple orchard. Lifestyle, promotional, and educational messages related to the subject matter in post images were chosen, pre-tested, and assigned to the photos using orthogonal factorial design. Hypothetical business names and logos were also created to give posts a feeling of authenticity. The full survey instrument is available in the appendix.

This study was guided by the theoretical framework of the elaboration likelihood model (ELM) because of the persuasive nature of Facebook marketing, the availability of marketing information online today, and the opportunities social media presents for both peripheral and central processing of advertisements and company stories. To encourage central processing and gain loyal and lasting customer relationships, it is important for researchers and independent business owners to understand how social-media viewers process information posted on Facebook (Petty & Cacioppo, 1984).

In order to ascertain the most effective horticultural message and image component, consumers in the present study were asked to indicate on a Likert scale their likelihood of engagement, travel, and purchase after viewing Facebook posts from horticultural businesses. Results were used to provide strategic recommendations for independent horticultural businesses to use to improve Facebook marketing. As little research exists for horticultural consumer social-media content preferences, this study identified desirable message types and image components for use in horticultural Facebook posts.

Additionally, this empirical research determined the effects of Facebook posts and images on horticultural consumer engagement and purchasing behaviors while attracting attention to a featured product and making advertising campaigns attractive to consumers is relevant. The study sought to operationalize consumer central processing through the framework of social-media engagement. Results showed, in order to encourage and increase engagement, horticultural businesses should use varied types of messages and images in social-media posts. Respondents preferred to see and interact with promotional messages; however, educational and lifestyle messages were also of interest to many social-media consumers and are good for businesses to post intermittently. As well as to choosing appropriate messages, image components are important to consider when posting engaging content on Facebook. Results indicated images of products at a business are most preferred by horticultural consumers, though photos of products alone and people with products were also found to be appealing.

The present study used horticultural-related lifestyle, educational, and promotional messages along with images of products, people with the products, and products featured at the business to determine if consumers were willing to engage with Facebook posts and what type of emoji reaction was most popular. This study builds on research by Huang and Chen (2018) about

Facebook post engagement in the floral industry. Huang and Chen's (2018) classification system was slightly more complex yet still comparable to the components included in this study's hypothetical horticultural business Facebook posts. Similarly, Huang and Chen (2018) included categories of sales posts, brand image posts, interaction posts, and entertaining posts.

Comparable to the findings of Huang and Chen (2018), educational information and images of products at a business were found to be influential; however, differing from Huang and Chen's (2018) research, the majority of participants in the present study indicated they were most likely to engage with Facebook posts featuring promotional messages.

This study also sought to determine if Facebook posts influenced purchase likelihood and willingness to travel to purchase from horticultural businesses. This study tested survey participant willingness to purchase from businesses an hour away from their home, outside of their region of residence, in the state, and in their region of residence. While it appeared participants considered distances of an hour away and in the region to be the same, the majority of consumers indicated they were more interested in "liking" Facebook posts from businesses located an hour away or in the region. Similarly, respondents preferred to shop for live plants and fresh produce in-store and up to an hour away from their residence. Supporting these results, previous research by Behe and Barton (2000), Behe et al. (2013), Bond et al. (2009), Yue et al. (2011), and Yue and Tong (2009) established many consumers are concerned about the environmental impacts and costs of horticultural production and shipping and prefer to purchase food and plants locally. Though the definition of "local" was not researched in the present study, consumers indicated they were more likely to purchase fresh horticultural products from businesses close to their home.

In order to make conclusions and recommendations, research objectives and a research question were answered, and consumer perceptions of horticultural Facebook and willingness to engage with and purchase from businesses after viewing posts were identified. Specific research objectives and the research question were;

- **RO1:** Determine how, if at all, different features of Facebook posts affect consumer engagement with horticultural businesses.
- **RO2:** Determine how, if at all, different features of Facebook posts affect the likelihood of purchase of horticultural products.
- **RO3:** Determine the effects of different features of Facebook posts on willingness to travel to purchase these horticultural products; and
- **RQ1:** Will there be similarities in willingness to engage with Facebook feature variables across different horticultural products?

This chapter includes conclusions made from the data obtained and relates back to past research, when applicable. Discussion of results is organized in order of research objectives and the research question, which are explained by survey type. Recommendations for future research, theory, and practice were also made, based on the findings of this study.

5.1 Conclusions & Discussion

5.1.1 Likelihood & Type of Reaction (RO1)

To determine how, if at all, different features of Facebook posts affect consumer engagement with horticultural businesses, respondents were asked to indicate how likely they were to react to Facebook posts and what type of reaction they would choose by moving a slider button on a 6-point Likert scale. Results were analyzed by message type, image component, and distance. In regard to message, overwhelmingly, consumers indicated they would be more willing to engage with bedding plant posts featuring petunias rather than direct-marketed and pick-your-own produce posts containing information about and images of bell peppers and apples, respectively. In general, engagement for direct-marketed produce was lower than the other surveys, indicating consumers were less interested in and not as willing to process information about produce or bell peppers. All pick-your-own produce response means and frequencies were slightly higher than direct-marketed produce and similar to bedding plant survey results. A comparison of frequencies showed most social-media users felt only somewhat likely to engage with a horticultural Facebook post, and engagement depended on content.

Corresponding with previous research by Cvijikj and Michahelles (2013), Luarn et al. (2015), Tian et al. (2017), and Huang and Chen (2018), consumers across all surveys were more willing and likely to “like” a Facebook post, regardless of message type, than comment on or share content. The majority of consumers were extremely unlikely to comment on or share bedding plant posts, which indicates most posts could have been peripherally processed (Petty & Cacioppo, 1984). However, for each message type (lifestyle, educational, promotional) in the bedding plant survey, just under 20.0% of respondents ($n = 407$) indicated they were extremely likely and willing to comment on or share Facebook posts. This conclusion differs from other

product surveys and, in this study, appears to be unique to petunias. These responses could also indicate consumers were more familiar with or specifically enjoy petunias.

In the bedding plant survey, among consumers who indicated they were extremely likely to “like” horticultural social-media content, promotional messages ($n = 161$, 39.6%) were found to be more popular than lifestyle ($n = 137$, 33.7%) or educational ($n = 144$, 35.4%) messages. In the same way, larger numbers of direct-marketed produce consumers were extremely likely to “like” promotional messages ($n = 132$, 31.8%) than educational messages ($n = 118$, 28.4%) and lifestyle messages ($n = 106$, 25.7%). Pick-your-own produce consumers were also most willing to “like” posts with promotional messages ($n = 148$, 35.2%) and educational messages ($n = 142$, 33.9%). These findings align with previous research by Yue et al. (2016) indicating millennial social-media users are more likely to engage with promotional messages in the floral industry and adds new knowledge about non-millennials as the present study included more than just millennials. Additionally, these results confirm findings by Stebner et al. (2017b) revealing consumers seek advertising information on Facebook and desire to be informed about sales on social media. It is recommended that horticultural businesses feature promotional information in social-media messages to catch consumers’ attention and could encourage central processing and influence purchasing intents and behaviors.

In regard to commenting on and sharing posts, a deeper level of consumer engagement, the majority of bedding plant consumers indicated they were either somewhat or extremely likely to comment on ($n = 165$, 40.6%) or share ($n = 175$, 43.0%) posts containing promotional messages. Likewise, in the direct-marketed produce survey, frequencies of “somewhat likely” and “extremely likely” responses showed a higher likelihood of commenting on ($n = 158$, 38.1%) and sharing ($n = 155$, 37.2%) promotional posts; however, differing from other product survey

results, 40.1% of pick-your-own produce consumers indicated they were more willing to share ($n = 169$) posts with educational messages. These findings support previous research by Luarn et al. (2015), Yue et al. (2016), and Stebner et al. (2017b) which indicates consumers prefer to see and interact with promotional information about products available at the businesses they buy from and follow on social-media. Pick-your-own survey results support findings outside of the horticultural industry by Tafasse (2104) and Cvijikj and Michahelles (2013) which state entertaining and educational social-media content receives the most engagement and more positive reactions than promotional content. Keeping in mind that variation of content is key, horticultural businesses should promote sales and products while also using entertaining and informational messages to keep Facebook pages engaging and not repetitive.

In agreement with previous research, consumers indicated they were most likely to “like” Facebook posts and were interested in seeing photos of products at a business. Huang and Chen (2018) found that social-media posts containing images, as opposed to other types of media, elicited the most engagement from consumers. To determine the effect of image component on social-media user engagement, Huang and Chen (2018) examined images of florists’ work and designs, educational information about flowers, and entertaining material such as jokes or popular topics, which was somewhat different from this study. For this research, images featuring people with flowers and produce, a flower or produce only, and products at a horticultural business were presented to survey respondents. Results across different products varied, but respondents in all surveys were much more willing to “like” posts than comment on them or share posts.

Total survey results indicated photos of plants or produce at a business ($n = 766, 61.7\%$) were most desirable; however, the majority of bedding plant survey participants favored the

photo of people with flowers ($n = 270$, 66.4%) and the petunia flower alone ($n = 270$, 66.3%) over an image of a business ($n = 266$, 65.4). Produce consumers were most interested in seeing actual products at a physical business location. For direct-marketed produce, though fewer consumers indicated they were likely to engage with Facebook posts, 54.8% ($n = 227$) found the photo of bell peppers at the business engaging, and 54.3% ($n = 225$) were willing to interact with the photo featuring people with bell peppers. Pick-your-own produce survey respondents were most likely to “like” a photo of apples at the business ($n = 273$, 65.0%) or an image of just apples ($n = 263$, 62.6%).

In regard to the effects of image components on commenting on and sharing posts, most respondents were unwilling to do either. In the total survey sample, the majority of consumers were “somewhat unlikely” or “extremely unlikely” to comment on ($n = 606$, 48.7%) or share ($n = 612$, 49.2%) posts with images of people with products. Bedding plant consumers were also much less likely to comment on ($n = 191$, 47.0%) or share ($n = 200$, 49.1%) photos of people with flowers. The majority of direct-marketed produce respondents indicated they were unwilling to comment on either photos of people with produce ($n = 208$, 50.1%) or images of the product alone ($n = 206$, 49.5%). In the same way, about 48% of respondents were unlikely to share posts containing people with products or the produce alone. Pick-your-own produce consumers were also least likely to comment on ($n = 207$, 49.3%) or share ($n = 210$, 50.0%) Facebook posts featuring people with produce; however, differing from bedding plant and direct-marketed produce survey results, 42.1% ($n = 177$) of pick-your-own produce consumers were “somewhat” or “extremely” willing to comment on images of products at the business. Thirty-eight percent ($n = 159$) of respondents were willing to share posts containing images of products at a pick-your-own produce business as well.

It is recommended, after analysis of the results of this study, that horticultural businesses feature available products and what is happening at the physical business location in social-media posts. Like messages, as found in previous social-media research in various industries (Cvijikj & Michahelles, 2013; Huang & Chen, 2018; Kwok & Yu, 2013; Leung et al., 2013), different types of images should be used to keep followers engaged. After finding that “work showcasing” photos were interesting to consumers, Huang and Chen (2018) recommended florists should add more text and contextual information to posts in order to not only attract attention but also to allow users to interact, ask questions or leave comments, and share posts. In the same way, horticultural businesses should not only post relevant images that interest social-media audiences but also informative descriptions and interesting and pertinent messages to enhance the images featured. Giving consumers a glimpse into current work or promotions or behind-the-scenes events at the business through text and images also adds a human aspect to social-media posts and allows consumers to feel connected on a more personal level.

In regard to the effects of distance on Facebook engagement, as in preceding research (Cvijikj & Michahelles, 2013; Tefasse, 2015), it was determined that consumers were most willing to “like” posts over commenting on or sharing. In the bedding plant, direct-marketed produce, and pick-your-own surveys frequencies and means were identical for distances of one hour away and in the viewer’s region of residence. This could indicate consumers prefer to engage with local businesses, as opposed to those farther away from their residence. Or, perhaps, distances presented were regarded by participants as being either the same or similar. Overall, bedding plant survey respondents ($n = 407$) were less likely to comment on or share posts than “like” content; however, 43.7% ($n = 178$) were more likely to comment on posts from within their state, and 46.2% ($n = 188$) were likely to share posts from businesses outside of the region.

These results align with research by Yue et al. (2011) which found that ornamental plant consumers were concerned about the environmental impacts of plant production and more interested in purchasing plants grown nearby or locally.

Survey participants were asked to select the emoji reaction they would be most likely to choose when viewing horticultural business. All current Facebook emoji options, as shown in Figure 2.1, were included as images to avoid confusion. Positive reaction emojis include “like,” “love,” “haha,” and “wow,” while negative reactions include “sad” and “angry” emojis (Tian et al., 2017). Similar to findings by Tian et al., (2017), both positive and negative reactions were recorded for pick-your-own and direct-marketed produce surveys; however, bedding plant posts were preferred and received only positive reaction emoji feedback from participants. Though the “love” emoji was chosen for direct-marketed and pick-your-own produce content, more participants chose this emoji in the bedding plant survey, which was the only survey to feature children with products (in this case, toddlers). This could have affected the results, as the majority of respondents were female ($n = 1050$, 84.5%), and women are more likely to identify with and use emojis to express emotion (Fullwood, et al., 2013; Rodrigues, et al., 2018).

Direct-marketed produce posts, which featured bell peppers, were the least engaging, overall, which could mean consumers may not like the featured vegetable. In both direct-marketed and pick-your-own produce surveys, there were negative reactions to all types of messages and image components. While no clear explanation is offered for the reason behind use of negative emoji reactions, Tian et al., (2017) encountered similar varied responses. While the negative feedback in this survey could be partially credited to survey fatigue and presentation order of Facebook image posts in the survey, it is also possible consumers did not identify with or enjoy the featured products, photo subject matter, or messages. It is also possible participants

were having a “bad day” or were not in a “good mood” when taking the survey. Emoji reactions typically reflect the current emotions of social-media users; however, other motivations, including cultural background and attitude toward a company or brand, can influence reactions, making it difficult to ascertain a specific reason for negative engagement on posts (Mogaji, 2016; Tian, et al., 2017).

Pick-your-own produce survey responses, overall, were slightly more positive than direct-marketed produce responses. Posts with educational messages and images of products received “wow” responses from 23 participants (5.5%). In direct-marketed and pick-your-own produce surveys, promotional messages received more varied responses, including “wow,” “sad,” and “angry” emoji selections. Though emoji choices selected were varied, this supports conclusions made by Luarn et al. (2015) that promotional and entertainment or lifestyle messages are the most frequently engaged with on social-media.

Overall, when combined survey responses were analyzed, promotional messages ($n = 81$, 1.6%) and images of people with products ($n = 70$, 1.4%) received the largest amounts of “angry” reactions, though still relatively low. Of the three different types of messages and photos, lifestyle messages ($n = 3488$, 70.2%) and photos of products at businesses ($n = 3493$, 70.3%) were the most popular. Apples and petunias shown in posts, overall, garnered positive emotive reactions, and consumers were more willing to “like” posts for bedding plants and flowers than food products.

In answer to RO1, results of this study indicate features of Facebook posts do impact consumer engagement. Responses show consumers are more likely to “like” posts and, as the “like” emoji is the default reaction on Facebook, thus, interaction requires little effort. Flowers garnered the most positive reactions; whereas, apples and peppers received a mixture of mostly

positive and some negative emoji reactions, indicating flowers are more popular than produce among Midwestern consumers. Produce and food items are considered necessity goods; therefore, it is possible consumers are generally less interested in the products featured in this study. Distance of a business's location from social-media users' residence also influenced engagement, especially in regard to commenting on or sharing posts. Respondents were less willing to share or comment on posts, in general, but were especially unlikely to do so for businesses outside of their region or located elsewhere in their state of residence. As local food and plants have been growing in popularity since the mid-1990s and are considered healthier, fresher, more sustainable, and safer (Behe et al., 2013; Bond, et al., 2009; Bond et al., 2008; Thilmany et al., 2008), results of the present research indicate current consumers could be more conscientious of the origin of their food and bedding plants, and these preferences impact social-media interest.

5.1.2 Likelihood of Purchase (RO2)

In order to determine how, if at all, different features of Facebook posts affect the likelihood of purchase of horticultural products, survey respondents were asked to indicate, on a Likert scale, their likelihood to purchase products as a result of viewing mock social-media posts. Overall, results showed the majority of consumers would be somewhat likely to purchase in-store, extremely unlikely to purchase online, and neither likely nor unlikely to purchase in general. Bedding plant consumers willing to shop in-store preferred promotional messages ($n = 243, 59.7\%$) and a photo of plants at the business ($n = 244, 59.9\%$). Direct-marketed produce survey respondents, however, were more likely to shop in-store after seeing messages with educational information ($n = 206, 49.7\%$) and images of people with products ($n = 212, 51.0\%$). Similarly, pick-your-own produce consumers preferred educational messages ($n = 225, 53.4\%$);

however, the majority of survey respondents indicated they would be more likely to buy from a horticultural store after viewing photos of products alone ($n = 225, 53.6\%$). Though bedding plant consumer responses differ for likelihood to purchase in-store, results from direct-marketed and pick-your-own produce surveys confirm educational and informative messages are the most engaging and likely to encourage social-media user interaction (Cvijikj & Michahelles, 2013; Huang & Chen, 2018).

Frequencies were consistently lower for all online purchase likelihood responses; however, consumers indicated they would be more likely to shop online for bedding plants ($n = 158, 38.8\%$) and pick-your-own products ($n = 127, 30.2\%$) after seeing posts with educational messages. These conclusions align with Huang and Chen's (2018) observation that specific types of social-media messages impact purchasing decisions. Though consumers were much less interested in purchasing online, overall, photos of products at businesses ($n = 438, 35.1\%$) were chosen as the most likely to influence online shopping for horticultural products. Since plants and produce are not commonly sold online, and especially not on Facebook, consumers are accustomed to purchasing live plant material or fresh food from a physical location (Thomas, et al., 2016). As with live plant material, online purchasing of produce from independent businesses is not common (Thomas et al., 2016); therefore, consumers may not consider it a viable food buying option. Specifically, pick-your-own produce consumers were most likely to travel to purchase produce and goods in store, rather than online or in general. This result is not surprising as the business model of a pick-your-own operation is based on consumers traveling to and purchasing from a physical location (Govindasamy & Nayga, 1997).

In answer to RO2, results indicated message and image component Facebook features do affect the likelihood of purchasing horticultural products. In agreement with previous literature,

both image and message type in Facebook posts were important to consumers (Cvijikj & Michahelles, 2013; Huang & Chen, 2018; Kwok & Yu, 2013; Leung et al., 2017). Similar to the engagement trend in the present study, bedding plant consumers were more willing to purchase horticultural products after seeing them featured on Facebook than direct-marketed and pick-your-own produce shoppers. All survey respondents indicated, in general, a higher likelihood of purchasing from horticultural businesses after viewing posts featuring people with products ($n = 573$, 46.1%) and educational messages ($n = 654$, 52.7%).

5.1.3 Willingness to Travel to Purchase (RO3)

It has been established that increasing numbers of plant and fresh produce consumers are interested in buying from local sources (Behe et al., 2013; Yue et al., 2011; Yue & Tong, 2009). This is beneficial for independent horticultural businesses but can present a challenge for smaller, rural businesses away from urban customers to draw customers to their physical location (Gale, 1997; Yue et al., 2011; Yue & Tong, 2009). Social media offers a method to advertise, for free, to consumers worldwide and should be used in such a manner (Stebner et al., 2017b).

To determine the effects of different features of Facebook posts on willingness to travel to purchase these horticultural products, consumers were given information along with every mock Facebook post in each survey about where the hypothetical business was located. Location choices were an hour away from their residence, outside of their region of residence, in the state, and in their region of residence. Survey respondents were then asked to select how likely they were to purchase from a multiple choice list.

Supporting research by Bond et al. (2009), Behe et al. (2013) and Yue et al. (2011), results of the present study indicate bedding plant and produce consumers would rather purchase quality plants and produce locally, which could be an indication of concern or due to

convenience about the environmental impacts of plant and food production. While the present study did not explore purchasing reasons, previous research has found consumers who make an effort to shop locally and support businesses in the community are more likely to purchase direct-marketed produce (Bond et al., 2009; Bond et al., 2008), which could impact social-media interest and engagement. It is important for businesses to remember, though many consumers are conscious of the origin of their food, for items such as fresh produce, buying directly from producers is not always possible or convenient (Bond et al., 2009); however, social-media campaigns and information can catch consumer attention and influence travel and willingness to purchase products. As results of the present study show, fresh direct-marketed produce consumers may not be as likely to travel to purchase as bedding plant or pick-your-own produce shoppers; however, could be more willing to buy from businesses close to their homes, especially after seeing Facebook posts and advertisements.

Bedding plant consumers indicated they would be willing to travel within their region of residence ($n = 264$, 64.8%), whereas, those shopping for direct-marketed ($n = 235$, 56.7%) and pick-your-own produce ($n = 267$, 63.5%) were only willing to travel an hour away to buy products in-store. While total survey sample responses showed 37.3% ($n = 463$) of consumers were somewhat likely to purchase online from businesses within their state of residence, the online purchase option was not popular among fresh horticultural product consumers. Direct-marketed produce ($n = 162$, 39.1%) and bedding plant ($n = 168$, 41.2%) consumers indicated they would rather purchase fresh food products online from businesses an hour away from their residence, which aligns with previous research and indicates produce consumers might prefer to buy fresh food closer to their home (Bond et al., 2009; Bond et al., 2006; Bond, et al., 2000).

Since consumers are not accustomed to purchasing produce from horticultural businesses online (Thomas et al., 2016), especially from pick-your-own or agritourism ventures, distance does not increase willingness to purchase produce online and consumers remain most likely to purchase from physical store locations. Also, in order to take part in agritourism activities, specifically, consumers usually have to travel within their communities and even outside of the region (Che et al., 2005; Govindasamy & Nayga, 1997), which could influence willingness to do so. Additionally, shopping for produce and plants online could be an emerging market or, as previous literature suggests, consumers could prefer to shop locally for horticultural products. Another factor that could affect willingness to travel to purchase plants and food is convenience. Satterthwaite et al. (2006) found convenience as a major factor in their decision to shop at a specific location.

All consumers indicated they would be most willing to shop for plants and produce in general outside of their region of residence ($n = 635, 51.1\%$). These results, while somewhat contradictory to each other and previous literature, indicate those consumers willing to travel to purchase live plants and fresh products will travel varied distances. This conclusion is not supported by previous literature and is in contrast to individual survey results. It is possible consumers meant they would be more likely to purchase from a business outside of their region after they learn about what the company offers on Facebook. Shoppers may not be as familiar with business selling live plants and fresh produce away from their region; therefore, seeing social-media posts could influence them to travel away from their region of residence.

Though little previous research about social media's impact on travel to purchase exists in the horticultural industry, consumers in this empirical study indicated they preferred to travel to businesses located up to an hour away from their residence to purchase products in-store. Those

purchasing bedding plants and pick-your-own products were more likely to travel any distance to purchase than direct-marketed produce. This could indicate consumers consider petunia flowers and apples more desirable than bell peppers, which would explain lower direct-marketed produce mean and frequency values. Likewise, consumers did not seem to like bell peppers, the produce product selected for this study; however, they were likely to purchase them at a store. Unlike bedding plants (Yue et al., 2013), bell peppers are not an aesthetic product that people buy for beautification, but are a common necessity item; therefore, consumers appear to not be as interested in seeing peppers featured in horticultural marketing Facebook posts.

Overall, though participants indicated they were willing to travel out of their region to purchase horticultural products in general, the majority of consumers were most likely to shop for bedding plants and produce close to home and at a physical business location after viewing Facebook posts. As supported by previous research, it appears consumers prefer to stay close to home to buy locally-grown and produced horticultural products. This study found horticultural Facebook post features could have encouraged consumers to think about shopping out of their region more because they may already be familiar with businesses and products offered in their area. As horticultural consumers are generally willing to travel out of their region of residence to buy products, businesses should keep in mind that Facebook's reach extends beyond the local community, even if most perennial shoppers do not live far away, and should post relevant messages and images to draw customers from outside of the region.

5.1.4 Willingness to Engage Similarities across Horticultural Products (RQ1)

To determine whether similarities in willingness to engage with Facebook feature variables across different horticultural products existed, product means were compared. Overwhelmingly, bedding plant customers were more willing to engage with business Facebook posts regardless of

image component and distance from the viewer. On the other hand, direct-marketed produce shoppers were not willing to engage with Facebook posts at all, regardless of the company's location, and were selective about the image component they were likely to interact with on social media.

5.2 Recommendations

This study filled gaps in knowledge related to consumer preferences for horticultural social-media content and sets a baseline for measured consumer engagement with horticultural products on Facebook. This research also added to literature in the areas of horticultural consumer preferences for message and image component on Facebook and consumer willingness to engage with horticultural Facebook posts due to content or business location. Additionally, this research yielded recommendations for future research and practice, which emerged when data was analyzed. Recommendations are presented below in order of research, literature, theory, and best practice recommendations. These recommendations detail consumer-preferred social-media content and business location distance effects on Facebook engagement.

5.2.1 Research Recommendations.

Recommendations for further research include additional exploration into consumer attitudes toward Facebook posts made by horticultural businesses. Keeping in mind the evolving nature of the internet, online marketing, and the horticultural industry, this study could be repeated to further analyze connections between demographics and horticultural purchasing preferences. Investigating how the availability of online sales for fresh produce or bedding plants and distance from the viewer affect social-media engagement would build on this study and could provide more insight into horticultural product purchase behavior. Examining greater detail in messaging could also be helpful as the messages in this instrument were short, to the

point, and relatively basic. Measuring the importance of storytelling in online business messages could also add important information to practice recommendations.

Another area of study could be the effects of distance of businesses from viewers on social-media engagement. Results from this study indicate participants may have considered distances of one hour away from the viewer's residence and in the region of residence to be the same thing; therefore, for future studies, it would be beneficial to further define distance and examine the difference between one hour away and in the region. Though results from this study show a correlation between willingness to travel to purchase horticultural goods and employment type, this should be further explored to provide recommendations for the more effective marketing methods tailored to consumers with varied economic statuses.

During analysis, a correlation was found between willingness to travel and the number of children in the household; however, due to unclear survey instrument design in the form of confusing wording for questions collecting write-in answer information, data could not be further evaluated. Specifically, the instrument lacked the language "including yourself" when asking respondents to report household size. Some answers provided did not make sense in the context of the survey, and some data was not in the correct format to run statistical analyses. Questions in future studies should be written so they are clearly understood by all respondents and easy for researchers to analyze. To investigate the potential connection between willingness to travel and number of children, information could be collected about the number and age of children in households and the efficacy of horticultural social-media campaigns directed at people with children could be examined. In the same way, potential connections between horticultural marketing on Facebook and the general number of people in a household, age, and location of

residence in the U.S. could be studied. Future studies could investigate whether or not horticultural social-media campaigns directed at people with children would be effective.

As part of the examination of most engaging social-media components, this research found photos of products at the business to be the most engaging; however, future studies should delve deeper into specific components of images in regard to horticultural consumer preference and interaction. Building on this study and previous research, future studies could also explore different types of Facebook content, including photos, links, and video in regard to the horticultural industry. The post classification categories in the study by Huang and Chen (2018), while somewhat more in-depth, relate to this study and could be helpful to build on for future, similar studies as well. When structuring and conducting future research, though, consideration should be given to the differences in culture and demographics between this study and the research by Huang and Chen (2018).

Related to Facebook, specifically, exploration into reaction emojis and the reasoning behind choosing different emojis could also help determine how to elicit positive reactions from consumers. Though Tian et al. (2017) noted the use of “angry” emojis, more study and explanation is needed to fully understand why social-media users choose the “angry” emoji to react to posts. Further exploration into specific emoji use is needed to explore this. Additionally, looking deeper into whether consumers comment on posts or not, what motivates them to do so, and what, specifically, the comments say could be interesting and enlightening.

Different types of studies should be considered for further research into horticultural consumer social-media behaviors. Case studies, interviews, focus groups, or other types of research could yield additional insight into desires of Facebook users shopping for horticultural

products. A follow-up qualitative study could help further understand whether information encountered on social media was considered centrally or peripherally processed by consumers.

5.2.2 Literature Recommendations.

As a result of this research, more information is now known about consumer preferences for horticultural Facebook posts. Most current literature focuses on business preferences in regard to social media so this area remains underexplored; however, it is a current topic of interest as social-media advertising is relatively new and evolving rapidly. This research builds on results of a 2018 study of Facebook posts in the floral industry by Huang and Chen and confirms a need to understand which types of social-media content are most relevant and allow consumers to build lasting relationships with independent horticultural businesses. The relationship between availability of fresh produce and live plant product sales online and horticultural social-media marketing is another developing area of study as Amazon and other retailers have begun offering live plant sales (Baker et al., 2018).

Additionally, this study builds on exploration by Stebner et al. (2107a) into perceptions of a small amount of garden center consumers about horticultural marketing online, and research by Stebner et al. (2017b) that explored primarily garden-center business owners' perceptions of and preferences for social-media content but did not address specific consumer desires. This study adds to previous knowledge about the types of messages and image content preferred by horticultural consumers. Luarn et al. (2015) found posting links and videos on Facebook increased "likes," comments, and shares. According to Luarn et al. (2015), photos included in social-media posts are most effective at catching viewers' attention and, though often peripherally-processed, encourage more investigation into advertisements and brand pages. The results of this study show that consumers prefer educational messages on Facebook, which

indicates central-processing of social-media content could be occurring. This study also found that consumers were most likely to “like” image posts and, while generally unwilling to comment on or share posts, were possibly willing to share promotional messages from businesses in their state of residence.

5.2.3 Theory.

The ELM is reinforced in this empirical study as consumer responses suggested engagement was tied to purchase needs and desires. Building innovatively on original ELM research, this study operationalized central processing through the framework of engagement and offered a way to measure social-media engagement. Additionally, this study revealed social-media engagement is a potential way to measure central processing of information. Online central processing may be expressed by horticultural consumers as engagement with social-media content. For example, educational messages were selected as the most engaging feature of Facebook posts. Consumers want to learn, as shown by the indicated preference of educational messages, which prompts them to interact with horticultural businesses online. Emotion toward advertisements and images guides cognitive processing, so appealing to consumers’ needs and desires is important. As outlined in the ELM (Petty & Cacioppo, 1981) and established in this study, social-media post components that are appealing to consumers receive the most amount of interaction and central processing, which builds brand loyalty and increases or shapes purchase habits.

5.2.4 Best Practice Recommendations.

As outlined in the ELM (Petty & Cacioppo, 1986), it is best to use marketing material relevant to viewers so as to encourage central processing and build brand loyalty and relationships; however, consumers also peripherally process social-media content, so it is

important to use high-quality photos of and messages about products currently in stock or in season that are attractive and eye-catching. Since centrally-processed information is retained longer (Petty & Cacioppo, 1981), presenting advertisements or Facebook posts with items consumers want and need is best. Additionally, social-media content that encourages comments and shares suggests users are actively processing and thinking more deeply about information. In order to most effectively connect with consumers and influence purchasing habits and desires, businesses should post content that intrigues and interests shoppers.

Results of this study show promotional messages and images featuring products at a business or people with products are the most engaging and evoke emotion, thus, should be incorporated in current or built into social-media campaigns. Promotional messages elicit more comments and shares, in general, from horticultural consumers, so social-media campaigns should include information about sales and discounts to both engage new consumers, retain current customer attention, and spread the word about current promotions and sales to drive more traffic to the store.

Horticultural businesses should use high-quality, relevant images in social-media marketing posts (Huang & Chen, 2018). By posting images, in general, there is a greater likelihood of social-media users centrally processing and remembering information. In general, horticultural consumers indicated a photo of the product at a business is the most popular for Facebook image post content. Generally, social-media users are most likely to “like” a post, which is a form of peripheral engagement and means information is less likely to be retained. “Liking” content on Facebook requires a minimal amount of social-media user effort, but is the most common reaction (Civijikj & Michahelles, 2013; Tefasse, 2014; Tian et al., 2017).

Though promotional messages and images of products at a business were the most popular Facebook post components in this survey, posting relevant and intriguing images and conversational message content, such as photos of products or people with products and promotional and lifestyle messages, with the intention of having users “like” it is a good way to connect with new consumers and build brand engagement. If consumers are loyal to a specific brand, purchase attitudes and information processing and retention will be more easily influenced (Beukeboom, et al., 2015; Mogaji, 2016; Petty & Cacioppo, 1981).

In agreement with previous research by Beukeboom, et al. (2015), Kelleher and Miller, (2009), Luarn et al., (2015), Park and Lee (2013), Sweetser and Metzgar (2007), van Noort and Willemsen (2012), and Yang, et al. (2010), this study found, in addition to using captivating image components, creating posts with conversational language instead of advertising jargon is one way to increase engagement and build relationships with customers. To encourage consumers to shop in-store, promotional messages and photos of products in season and currently available at the actual business should be posted on Facebook. Presenting images of what is currently happening at the business or behind-the-scenes allows consumers to feel as if they are part of the business’s story and increases interaction with a business in a different, more personal way. Educational messages and photos that feature people or family members connected to the business are also suitable to post, especially if those people are familiar to customers. Lifestyle messages evoking positive emotions should be used to give business posts a more “human” and relatable aspect. Additionally, posting different types of messages and photos that feature products and people or family members can add diversity to social-media content and add to the business’s story and authenticity. As horticultural consumers have historically

been primarily female, using images featuring children or toddlers in photos could increase engagement and allow for deeper connections to social-media content.

In regard to distances shoppers are willing to travel to purchase fresh food and live plants, results of this aligned with previous research by Bond et al., (2008) and indicated consumers prefer to buy horticultural products close to their homes or in their region of residence. Similarly, as online purchasing of live plants and fresh foods is not readily available and common at this time, particularly for rural businesses and consumers, shoppers are accustomed to traveling within their locality to buy these items (Thomas, et al., 2016). Social-media, though, has worldwide reach and should be used to market to consumers both locally and further away from the business location. Since Facebook offers the opportunity to boost posts, businesses can pay to boost posts and advertise to specific audiences and locations. In order to reach new consumers outside of local areas, it may be prudent for small, rural horticultural businesses to consider boosting posts.

5.3 Summary

The purpose of this study was to determine Midwestern U.S. consumer preferences for horticultural marketing content on Facebook and social-media. Millions of people worldwide use social media, specifically Facebook, daily (Perrin & Anderson, 2019; Smith & Anderson, 2018). This study empirically supports the assertion that, for effective social-media communication, it is important to focus on customers and followers that are actively involved online and with business pages. By posting relevant and appropriate content on Facebook, horticultural businesses can more effectively promote fresh food and plants and can connect on a more personal level with consumers.

Some Midwestern U.S. horticultural business owners are using social media as a way to build relationships with customers and advertise available products; however, many are still using more traditional forms of media (Peterson et al., 2018). Additionally, consumer preferences for horticultural business social-media content have not been fully studied and defined for the horticultural industry. Results of this study indicated horticultural consumers prefer photos of products offered at the business and people with products and are more likely to engage with or react to promotional or educational messages on Facebook. Regarding appropriate content to post on Facebook, the results of this study were used to provide recommendations to include images featuring available products and promotional and educational and informative messages in order to connect effectively with consumers. Though consumers prefer educational and promotional messages and images of products alone, posting different types of content components retains social-media user interest and keeps information interesting. Using social-media to advertise to local customers would most likely be more effective, especially for smaller, rural independent businesses.

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: <https://doi.org/10.21273/HORTTECH03901-17>
- Ball, T., & Duval, Y. L. (2001). Direct marketing of farm products via the Internet: A survey of smallfarms.com members. *Farm Management-Institute of Agricultural Management*, 11, 123-129.
- Barbieri, C., Mahoney, E., & Butler, L. (2008). Understanding the nature and extent of farm and ranch diversification in North America. *Rural Sociology*, 73(2), 205e229.
- Barton, S. S. & Behe, B. K. (2017). Retail promotion and advertising in the green industry: An overview and exploration of the use of digital advertising, *HortTechnology*, 27(1), 99-107. Retrieved from <https://journals.ashs.org/view/journals/horttech/27/1/article-p99.xml>
- Batra, R. & Ray, M. L. (1986). Affective responses mediating acceptance of advertising. *Journal of Consumer Research*, 13(2), 234-249. Retrieved from https://www.jstor.org/stable/pdf/2489229.pdf?casa_token=mXNc83Q7G40AAAAA:qTFWpHXVhLxnXhy6dky8EMeZalI6XIpwdDYDbFwZtfxsy6mHCugjiSZFpJeQ7VWnQKRhAYQxNdhbqICF4J-3leUFMtUG823aakgzfuAxP06n3rSp_dSk
- Behe, B. & Barton, S. (2000). Consumer perceptions of product and service quality attributes in six US states. *Journal of Environmental Horticulture*, 18(2), 71-78.
- Behe, B. K., Campbell, B. L. , Hall, C. R., Khachatryan, H. , Dennis, J. H., & Yue, C. (2013). Consumer preferences for local and sustainable plant production characteristics. *HortScience* 48, 200–208.

- Blackwell, R. D., Miniard, P. W., Engel, J. F. (2005). *Consumer Behavior* (10th ed.). South-Western College Pub, Cincinnati.
- Bonner, F. T. & Karrfalt, R. P. (2008). *The Woody Plant Seed Manual*. Washington, D.C.: U.S. Department of Agriculture, Forest Service.
- Biwas, T., Guan, Z., & Wu, F. (2017). *An overview of the US bell pepper industry*. (FE1028). Food and Resource Economics Department, UF/IFAS Extension. Retrieved from <http://edis.ifas.ufl.edu/fe1028>.
- Bond, J., Thilmany, D., & Bond, C. (2006). Direct marketing of fresh produce: Understanding consumer purchasing decisions. *Choices*, 21(4), 1-6.
- Bond, C. A., Thilmany, D., & Bond, J. K. (2008). Understanding consumer interest in product and process-based attributes for fresh produce. *Agribusiness*, 24(2), 231-252.
doi:10.1002/agr.20157
- Bond, J., Thilmany, D., & Bond, C. (2009). What influences consumer choice of fresh produce purchase location? *Journal of Agricultural and Applied Economics*, 41(01), 61-74.
doi:10.1017/s1074070800002558
- Brandth, B. & M. S. Haugen. (2011). Farm diversification into tourism: Implications for social identity? *Journal of Rural Studies*, 27(1), 35-44.
- Bosland, P. W., Votava, E. J., & Votava, E. M. (2012). *Peppers: Vegetable and spice capsicums* (Vol. 22). Cabi.
- Burford, T. (2013). *Apples of North America: Exceptional Varieties for Gardeners, Growers, and Cooks*. Timber Press.

- Cacioppo, J. T., Petty, R. E., and Morris, K. J. (1983), Effects of need for cognition on message evaluation, recall, and persuasion. *Journal of Personality and Social Psychology*, 45, 805-818.
- Cacioppo, J. T., & Petty, R. E. (1984). The elaboration likelihood model of persuasion. *Advances in Consumer Research*, 11, 673-675. Retrieved from acrwebsite.org/volumes/6329/volumes/v11/NA-11.
- Castronovo, C. & Huang, L. (2012). Social media in an alternative marketing communication model. *Journal of Marketing Development and Competitiveness* 6(1):117-134.
- Che, D., Veeck, A., & Veeck, G. (2005). Sustaining production and strengthening the agritourism product: Linkages among Michigan agritourism destinations. *Agriculture and Human Values*, 22(2), 225-234.
- Coursaris, C. K., Van Osch, W., & Balogh, B. A. (2013, June). A social media marketing typology: Classifying brand Facebook page messages for strategic consumer engagement. In *ECIS* (p. 46).
- Cui, Y. (2014). Examining farmers markets' usage of social media: An investigation of a farmer's market Facebook page. *Journal of Agriculture, Food Systems, and Community Development*, 5(1), 87-103. Retrieved from <http://dx.doi.org/10.5304/jafscd.2014.051.008>
- Cvijikj, I. P., & Michahelles, F. (2013). Online engagement factors on Facebook brand pages. *Social Network Analysis and Mining*, 3(4), 843-861.
- Davenport, T. H., Dreyer, L.D. & Lucker, J. (2011). Know what your customers want before they do. *Harvard Business Review* 89(12):84-92.

- De Medeiros, J. F., Ribeiro, J. L. D., & Cortimiglia, M. N. (2016). Influence of perceived value on purchasing decisions of green products in Brazil. *Journal of Cleaner Production*, 110, 158-169. Retrieved from <https://doi.org/10.1016/j.jclepro.2015.07.100>
- De Vries, L., Gensler, S., & Leeflang, P. S. (2012). Popularity of brand posts on brand fan pages: An investigation of the effects of social media marketing. *Journal of Interactive Marketing*, 26(2), 83-91.
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method* (4th ed.). Hoboken, NJ: Wiley.
- Dolich, I. J. (1969). Congruence relationships between self images and product brands. *Journal of marketing research*, 6(1), 80-84.
- Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook “friends:” Social capital and college students’ use of online social network sites. *Journal of Computer-Mediated Communication*, 12(4), 1143-1168.
- Facebook Brand Resource Center (2019). (<https://en.facebookbrand.com/assets/reactions/>)
- Fullwood, C., Orchard, L. J., & Floyd, S. A. (2013). Emoticon convergence in Internet chat rooms. *Social Semiotics*, 23(5), 648-662.
- Gale, F. (1997). Direct farm marketing as a rural development tool. *Rural Development Perspectives*, 12, 19-25.
- Glaser, B. G. (1965). The constant comparative method of qualitative analysis. *Social problems*, 12(4), 436-445.
- Gillin, P. (2009). *The new influencers: A marketer's guide to the new social media*. Linden Publishing.

- Gorham, L. M., Rumble, J. N., & Holt, J. (2015). The impact of local: exploring availability and location on food buying decisions. *Journal of Applied Communications*, 99(2): 30-43.
- Gorham, L. M., Qu, S., Telg, R., & Lamm, A. J. (2016). Testing the usability of communication materials through heat maps in online survey platforms. *Journal of Applied Communications*, 100(3). doi:10.4148/1051-0834.1226
- Hall, C. R. (2010). Making cents of green industry economics. *HortTechnology*, 20(5), 832–835. Retrieved from http://aggie-horticulture.tamu.edu/faculty/hall/publications/2010_08_Making_Cents_of_Green_Industry.pdf
- Hassan, S., Nadzim, S. Z. A., & Shiratuddin, N. (2015). Strategic use of social media for small business based on the AIDA model. *Procedia-Social and Behavioral Sciences*, 172, 262-269.
- Hodges, A. W., Hall, C. R., & Palma, M. A. (2011). Economic contributions of the green industry in the United States in 2007–08. *HortTechnology*, 21(5), 628-638. Hodges, A. W., Hall, C. R., Palma, M. A., & Khachatryan, H. (2015a). Economic contributions of the green industry in the United States in 2013. *HortTechnology*, 25(6), 805-814.
- Hodges, A. W., Khachatryan, H., Palma, M. A., & Hall, C. R. (2015b). Production and marketing practices and trade flows in the United States green industry in 2013. *Journal of Environmental Horticulture*, 33(3), 125-136.
- Holt, J., Rumble, J. N., Telg, R., & Lamm, A. (2018) Understanding consumer intent to buy local food: Adding consumer past experience and moral obligation toward buying local blueberries in Florida within the theory of planned behavior. *Journal of Applied Communications*, 102(2). <https://doi.org/10.4148/1051-0834.2203>

- Huang, L. C., & Chen, L. C. (2018). Message strategies and media formats of florists' Facebook posts and their effects on users' engagement behaviors. *HortScience*, 53(11), 1647-1654. Retrieved from <https://doi.org/10.21273/HORTSCI13330-18>
- Ilbery, B. W. (1991). Farm diversification as an adjustment strategy on the urban fringe of the West Midlands. *Journal of Rural studies*, 7(3), 207-218.
- Kelley, K., & Hyde, J. (2012). Social media opportunities for value-added businesses. *Journal of Food Distribution Research*, 43(856-2016-58067), 43.
- Keller, K. L. *Building customer-based brand equity: A blueprint for creating strong brands*. Cambridge, MA: Marketing Science Institute, 2001.
- Kelleher, T. & Miller, B. M. (2006). Organizational blogs and the human voice: Relational strategies and relational outcomes. *Journal of Computer-Mediated Communication*, 11(2), 395-414.
- Khan, M. L. & Boehmer, J. (2013). Small business use of Facebook for marketing: The case of a family owned Mediterranean restaurant. *Proceedings of the 78th Annual International Convention of the Association for Business Communication (ABC)*, New Orleans, La. 1-13.
- Kiang, M. Y., Raghu, T. S., & Shang, K. H. M. (2000). Marketing on the Internet—who can benefit from an online marketing approach? *Decision Support Systems*, 27(4), 383-393.
- Kim, D. H., Spiller, L., & Hettche, M. (2015). Analyzing media types and content orientations in Facebook for global brands. *Journal of Research in Interactive Marketing*, 9(1), 4-30.
- Kitchen, J. P., Kerr, G. E., Schultz, D., McColl, R., & Pals, H. (2014). The elaboration likelihood model: Review, critique and research agenda. *European Journal of Marketing*, 48(11/12), 2033-2050.

- Koutsouris, A. I., Gidarakou, F., Grava, & Michailidis, A. (2014). The phantom of (agri)tourism and agriculture symbiosis? A Greek case study, *Tourism Management Perspectives*, (12), 94–103.
- Kwok, L. & Yu, B. (2013). Spreading social media messages on Facebook: An analysis of restaurant business-to-consumer communications. *Cornell Hospitality Quarterly*, 54(1), 84-94.
- Kwok, L. & Yu, B. (2016). Taxonomy of Facebook messages in business-to-consumer communications: What really works?. *Tourism and Hospitality Research*, 16(4), 311-328.
- Lawless, G. M. (1999). *The Farmer-Food Buyer Dialogue Project* (No. 13). University of Wisconsin Center for Cooperatives, University of Wisconsin--Madison.
- Lee, E., Kim, Y. J., & Ahn, J. (2014). How do people use Facebook features to manage social capital?. *Computers in Human Behavior*, 36, 440-445.
- Lindgren, D. T., Hodges, L., & Browning, S. J. (2008). Garden Peppers (Publication No. G1879). Retrieved from <https://extension.unl.edu/statewide/douglas-sarpy/pdfs/ce/resources/ce-g1879-garden-peppers.pdf>
- Lloyd, R. M., Tilley, D. S., & Nelson, J. R. (1995). Pick-your-own markets. *Direct Farm Marketing and Tourism*, 62.
- Leung, X. Y., Bai, B., & Erdem, M. (2017). Hotel social media marketing: A study on message strategy and its effectiveness. *Journal of Hospitality and Tourism Technology*, 8(2), 239-255.
- Luarn, P., Lin, Y. F., & Chiu, Y. P. (2015). Influence of Facebook brand-page posts on online engagement. *Online Information Review*, 39(4), 505-519.

- Lynch, B. (2010). *Apples: Industry & Trade Summary* (Report No. ITS-04). Washington, D.C.: United States International Trade Commission.
- Martinez, S., et al. (2010). *Local food systems: Concepts, impacts, and issues* (Vol. 97). Washington, D.C.: U.S. Dept. of Agriculture, Economic Research Service.
- Maslow, A. H. (1943). A theory of human motivation. *Psychology Review*, 50, 370-396.
- Maslow, A. H. (1954). *Motivation and personality*. New York: Harper & Row.
- McGehee, N. G., & Kim, K. (2004). Motivation for agri-tourism entrepreneurship. *Journal of Travel Research*, 43, 161-170. doi:10.1177/0047287504268245
- Montgomery, K. C., & Chester, J. (2009). Interactive food and beverage marketing: targeting adolescents in the digital age. *Journal of Adolescent Health*, 45(3), S18-S29.
- Muntinga, D. G., Moorman, M., & Smit, E. G. (2011). Introducing COBRAs: Exploring motivations for brand-related social media use. *International Journal of Advertising*, 30(1), 13-46.
- Namiranian L. (2006). Teenagers and brand engagement in emerging markets [Online]. *Decision Analyst*. <http://www.decisionanalyst.com/Downloads/TeenagerWebUse.pdf>; 2006.
- Nail J. (2006). The 4 types of engagement. *iMedia Connection*. [Online]. Retrieved from <http://www.imediaconnection.com/articles/ported-articles/red-dot-articles/2006/oct/the-4-types-of-engagement/>
- Negishi, M. (2014). Meet Shigetaka Kurita, the father of emoji. *Wall Street Journal*, 26.
- Nickerson, N., Black, R., & McCool, S. (2001). Agritourism: Motivations behind farm/ranch business diversification. *Journal of Travel Research*, 40(1), 19-26.
- National Agricultural Statistics Service. (2018). *Noncitrus fruits and nuts*. Washington, D.C.: U.S. Dept. of Agriculture, Economics and Statistics Service, Crop Reporting Board.

- O'Keefe, D. J. (2008). Elaboration likelihood model. *The International Encyclopedia of Communication*, 4, 1475-1480. Retrieved from <http://www.dokeefe.net/pub/okeefe08iecelm.pdf>
- Ollenburg, C., & Buckley, R. (2007). Stated economic and social motivations of farm tourism operators. *Journal of Travel Research*, 45(4), 444-452.
- Paine, K. (2011). *Measure what matters: Online tools for understanding customers, social media, engagement, and key relationships*. Hoboken, NJ: Wiley & Sons.
- Palma, M. A., Hall, C. R., & Collart, A. (2011). Repeat buying behavior for ornamental plants: A consumer profile. *Journal of Food Distribution Research*, 42(2), 67-77.
- Palmer, A. & Koenig-Lewis, N. (2009). An experiential, social network-based approach to direct marketing. *Direct Marketing: An International Journal*, 3(3), 162-176.
- Perez, M., Palma, M., Behe, B., & Hall, C. (2016). Structural breaks and future growth of the green industry. *Journal of Environmental Horticulture*, 34(2), 52-55.
- Percy, L. (2003). Understanding the role of emotion in advertising. Retrieved from <https://openarchive.cbs.dk/bitstream/handle/10398/6643/lp%20rp.pdf?sequence=1>
- Percy, L., Rosenbaum-Elliott, R., & Elliott, R. H. (2012). *Strategic Advertising Management*. Oxford University Press.
- Perrin, A. & Anderson, M. (2019, April 1). *Share of U.S. adults using social media, including Facebook, is mostly unchanged since 2018*. Retrieved from <https://www.pewresearch.org/fact-tank/2019/04/10/share-of-u-s-adults-using-social-media-including-facebook-is-mostly-unchanged-since-2018/>

- Peterson, H. H., Boyer, C. R., Baker, L. M., & Yao, B. (2018). Trends in use of new-media marketing in ornamental horticulture industries. *Horticulturae*, 4(4). doi: 10.3390/horticulturae4040032
- Peterson, H. H., T. Selfa, T. & Janke, R. (2010). Barriers and opportunities for sustainable food systems in northeastern Kansas. *Sustainability*, 2(1):232-251.
- Petty, R. E. & Cacioppo, J. T., (1981). *Attitudes and persuasion: Classic and contemporary approaches*. Dubuque, IA: Wm. C. Brown.
- Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In *Communication and Persuasion* (pp. 1-24). Springer, New York, NY.
- Polomski, B. & Russ, K. (2007). Petunia. [Fact sheet HGIC 1171]. *Clemson University Extension Service, Home & Garden Information Center*. Retrieved from <https://hgic.clemson.edu/factsheet/petunia/>
- Rodrigues, D., Prada, M., Gaspar, R., Garrido, M. V., & Lopes, D. (2018). Lisbon Emoji and Emoticon Database (LEED): Norms for emoji and emoticons in seven evaluative dimensions. *Behavior Research Methods*, 50(1), 392-405.
- Sashi, C. (2012). Customer engagement, buyer-seller relationships, and social media. *Management Decision*, 50(2), 253-272. doi: 10.1108/00251741211203551
- Satterthwaite, L. N., Haydu, J. J., & Hodges, A. W. (2006). Consumer purchasing habits of environmental horticulture products in Florida. *Journal of Environmental Horticulture*, 24(2), 68-73.
- Schotzko, R. T., & Granatstein, D. (2004). A brief look at the Washington apple industry: Past and present. *Washington State University, School of Economic Sciences, SES*, 04-05.

- Shen, B. & Bissell, K. (2013). Social media, social me: A content analysis of beauty companies' use of Facebook in marketing and branding. *Journal of Promotion Management*, 19(5), 629-651.
- Sink, K. C. (1984). Taxonomy. In Sink, K.C. (Eds) *Petunia: Monographs on theoretical and applied genetics* (Vol. 9, pp. 3-9). Berlin, Heidelberg: Springer.
- Sirgy, M. J. (1985). Using self-congruity and ideal congruity to predict purchase motivation. *Journal of business Research*, 13(3), 195-206.
- Slattery, E., Livingston, M., Greene, C., & Klonsky, K. (2011). *Characteristics of conventional and organic apple production in the United States*. Washington, D.C.: U.S. Dept. of Agriculture, Economic Research Service.
- Smith, A., & Anderson, M. (2018, March 1). *Social media use in 2018* (Rep.). Retrieved from <http://www.pewinternet.org/2018/03/01/social-media-use-in-2018/>
- Specialty Crops Competitiveness Act of 2004, Pub. L. No. 108-465 § 118 Stat 3882 (2004).
- Stebner, S., Boyer, C. R., Baker, L. M., & Peterson, H. H. (2017a). Relationship marketing: A qualitative case study of new-media marketing use by Kansas garden centers. *Horticulturae*, 3(1), 26-36. doi: 10.3390/horticulturae3010026
- Stebner, S., Baker, L. M., Peterson, H. H., & Boyer, C. R. (2017b). Marketing with more: An in-depth look at relationship marketing with new media in the green industry. *Journal of Applied Communications*, 101(2), 7-16. doi:10.4148/1051-0834.1001
- Stehmann, J. R., Lorenz-Lemke, A. P., Freitas, L. B., & Semir, J. (2009). The genus *Petunia*. In Gerats T., Strommer J. (Eds) *Petunia*. New York, NY: Springer.
- Stephen, A. T. (2016). The role of digital and social media marketing in consumer behavior. *Current Opinion in Psychology*, 10, 17-21.

- Stern, B., Zinkhan, G. M., & Jaju, A. (2001). Marketing images: construct definition, measurement issues, and theory development. *Marketing Theory, 1*(2), 201-224.
- Su, N., Reynolds, D., & Sun, B. (2015). How to make your Facebook posts attractive: A case study of a leading budget hotel brand fan page. *International Journal of Contemporary Hospitality Management, 27*(8), 1772-1790.
- Tafesse, W. (2015). Content strategies and audience response on Facebook brand pages. *Marketing Intelligence & Planning, 33*(6), 927-943. Retrieved from <http://dx.doi.org/10.1108/MIP-07-2014-0135>
- Tam, K. Y. & Ho, S. Y. (2005). Web personalization as a persuasion strategy: An elaboration likelihood model perspective. *Information systems research, 16*(3), 271-291.
- Thilmany, D., Bond, C. A., & Bond, J. K. (2008). Going local: Exploring consumer behavior and motivations for direct food purchases. *American Journal of Agricultural Economics, 90*(5), 1303-1309. doi:10.1111/j.1467-8276.2008.01221.x
- Thomas, D., Craig, C., Capoun, S., Baker, L. M., King, E. H., Boyer, C. R., & Peterson, H. H. (2016). *The e-commerce landscape: An environmental scan of online greenhouse retailing*. HortScience 51(9): S336.
- Tian, Y., Galery, T., Dulcinati, G., Molimpakis, E., & Sun, C. (2017, April). Facebook sentiment: Reactions and emojis. In *Proceedings of the Fifth International Workshop on Natural Language Processing for Social Media* (p. 11-16). Retrieved from <https://www.aclweb.org/anthology/W17-1102>
- Tsimonis, G. & Dimitriadis, S. (2014). Brand strategies in social media. *Marketing Intelligence & Planning, 32*(3), 328-344.

- U.S. Census Bureau (2017). *American Community Survey 1-year estimates*. Retrieved from *Census Reporter Profile page for United States*, <http://censusreporter.org/profiles/01000US-united-states/>
- U.S. Census Bureau (2015). *Census Regions and Divisions of the United States*. Retrieved from www.census.gov
- USDA (2016). *Direct farm sales of food: results from the 2015 local food marketing practices survey, ACH12-35*. Retrieved from https://www.agcensus.usda.gov/Publications/2012/Online_Resources/Highlights/Farm_Demographics/Highlights_Farm_Demographics.pdf.
- USDA, Agricultural Marketing Service Specialty Crops Program (USDA-AMSSCP). (2019, May 9). *National apple processing report*. (Vol XXXV, No. 88). Retrieved from <https://downloads.usda.library.cornell.edu/usda-esmis/files/2j62s492k/ww72bm23f/fx719w45f/FVWAPLPROC.PDF>
- USDA, Economics, Statistics and Market Information System. (2010). *U.S. Apple Statistics*. Retrieved from <https://usda.library.cornell.edu/concern/publications/1j92g7448?locale=en>
- USDA, Foreign Agricultural Service (USDA-FAO). (2018). *Fresh deciduous fruit: World markets and trade (apples, grapes, & pears)*. Retrieved from <https://apps.fas.usda.gov/psdonline/circulars/fruit.pdf>
- USDA, National Agricultural Statistics Service (USDA-NASS). (2016). *U.S. horticulture in 2014: Results from the 2014 census of horticultural specialties*. Retrieved from https://www.nass.usda.gov/Publications/AgCensus/2012/Online_Resources/Census_of_Horticulture_Specialties/

- USDA, National Agricultural Statistics Service (USDA-NASS). (2019). *Vegetables 2018 summary*. (ISSN 0884-6413). Washington, DC: U.S. Department of Agriculture, National Agricultural Statistics Service, March. Retrieved from <https://downloads.usda.library.cornell.edu/usda-esmis/files/02870v86p/gm80j322z/5138jn50j/vegean19.pdf>
- USDA, National Institute of Food and Agriculture (USDA-NIFA). (2018). *USDA definition of specialty crop*. [Fact sheet]. Retrieved from https://nifa.usda.gov/sites/default/files/resources/definition_of_specialty_crops.pdf
- USDA Plant Hardiness Zone Map. (2012). Agricultural Research Service, U.S. Department of Agriculture. Retrieved from <https://planthardiness.ars.usda.gov>
- Vaiciukynaite, E., Massara, F., & Gatautis, R. (2017). An investigation on consumer sociability behaviour on Facebook. *Inzinerine Ekonomika*, 28(4), 467-474.
- Veeck, G., Che, D., & Veeck, A. (2006). America's changing farmscape: A study of agricultural tourism in Michigan. *The professional geographer*, 58(3), 235-248.
- Verbeke, W. (2005). Agriculture and the food industry in the information age. *European Review of Agricultural Economics*, 32(3), 347-368.
- Vivek, S. D., Beatty, S. E., & Morgan, R. M. (2012). Customer engagement: Exploring customer relationships beyond purchase. *The Journal of Marketing Theory and Practice*, 20(2), 122–146. <http://dx.doi.org/10.2753/MTP1069-6679200201>
- Weaver, D. B. & Fennell, D. A. (1997). The vacation farm sector in Saskatchewan: A profile of operations. *Tourism Management*, 18(6), 357-365.

- Western Institute for Food Safety & Security (2015). Bell and Chile Peppers. [Production Summary]. UC Davis: Western Institute for Food Safety & Security, U.S. Food and Drug Administration.
- Wilson, J., Thilmany, D., & Watson, P. (2006). "The role of agritourism in western states: Place-specific and policy factors influencing recreational income for producers." *Review of Regional Studies*, 36, 381-99.
- Yang, S. F. (2015). An eye-tracking study of the Elaboration Likelihood Model in online shopping. *Electronic Commerce Research and Applications*, 14(4), 233-240.
- Yue, C., Dennis, J. H., Behe, B. K., Hall, C. R., Campbell, B. L., & Lopez, R. G. (2011). Investigating consumer preference for organic, local, or sustainable plants. *HortScience*, 46(4), 610-615.
- Yue, C. & Tong, C. (2009). Organic or local? Investigating consumer preference for fresh produce using a choice experiment with real economic incentives. *HortScience*, 44(2), 366-371.

Appendix A - Institutional Review Board Approval



University Research Compliance Office

TO: Dr. Lauri Baker
Communications and Agricultural Education
307 Umberger Hall

Proposal Number: 9452

FROM: Rick Scheidt, Chair 
Committee on Research Involving Human Subjects

DATE: 09/27/2018

RE: Proposal Entitled, "Courting the Consumer: Social-Media Marketing of Farm Products"

The Committee on Research Involving Human Subjects / Institutional Review Board (IRB) for Kansas State University has reviewed the proposal identified above and has determined that it is EXEMPT from further IRB review. This exemption applies only to the proposal - as written – and currently on file with the IRB. Any change potentially affecting human subjects must be approved by the IRB prior to implementation and may disqualify the proposal from exemption.

Based upon information provided to the IRB, this activity is exempt under the criteria set forth in the Federal Policy for the Protection of Human Subjects, **45 CFR §46.101, paragraph b, category: 2, subsection: ii.**

Certain research is exempt from the requirements of HHS/OHRP regulations. A determination that research is exempt does not imply that investigators have no ethical responsibilities to subjects in such research; it means only that the regulatory requirements related to IRB review, informed consent, and assurance of compliance do not apply to the research.

Any unanticipated problems involving risk to subjects or to others must be reported immediately to the Chair of the Committee on Research Involving Human Subjects, the University Research Compliance Office, and if the subjects are KSU students, to the Director of the Student Health Center.

Appendix B - Bedding Plant Survey



Screening Questions

This survey, *Courting the Consumer: Social-Media Marketing of Farm Products*, will take approximately 25 minutes to complete.

The results of this study will be used to recommend more effective ways for agricultural businesses to communicate with consumers. Your participation is completely voluntary. You don't have to answer any questions that you don't want to, and you may quit at any time.

Please read this consent document carefully before you decide to participate in this study. Thank you for taking the time to participate in this study. Your participation is completely voluntary. There is no penalty for not participating. If you choose to participate, the survey will take approximately 25 minutes to complete. You can withdraw from the survey at any time without penalty, and you do not have to answer any question you do not wish to answer. All answers are confidential to the extent provided by law.

This project is sponsored by the USDA Federal State Marketing Improvement Program and examines consumers' preferences toward social-media marketing by farm-based businesses. There are no known risks associated with this study, and there is no compensation or other direct benefit to you for participation. We will not collect any identifying information from you. If you would like to learn more about this study, please contact Dr. Lauri Baker by e-mail at lbaker@ksu.edu. If you have questions about your rights as a research participant, please contact Rick Scheidt, Chair, Committee on Research Involving Human Subjects, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224, IRB#9452.

By clicking agree below, you are saying you have read the procedure described above and voluntarily agree to participate in the procedure, and have received a copy of this description. By clicking agree below, you agree that you have read this statement and are aware of your rights.

Do you agree to participate?

- Yes
 No

In which state do you currently reside?

Have you checked your Facebook account at least once during the last two weeks?

- Yes
 No
 I do not have a Facebook account
-

Have you purchased bedding plants such as petunias or marigolds during the last two years?

- Yes
- No

Have you purchased fresh produce directly from a farm, pick-your-own business, farmer's market, or other agricultural places during the last two years?

- Yes
- No

The following questions are related to your perspective on Facebook posts.

Internet Use

In the next series of questions, you will be asked about technology and social-media use.

On the Internet, approximately how often do you...

	Never	Once a Year or Less	Several Times a Year	Once a Month	2-3 Times a Month	Once a Week	2-3 Times a Week	Daily
Publish or update your own Web page/site	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Write a blog	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Upload videos to the web for the purpose of sharing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Post original content to Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Post original content to Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Post original content to another social-media site besides Facebook or Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Initiate a discussion on a forum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Upload photos to the web for the purpose of sharing (using Facebook, Twitter, Flickr, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Post original content to a wiki (Wikipedia, pbworks, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

On the Internet, approximately how often do you...

	Never	Once a Year or Less	Several Times a Year	Once a Month	2-3 Times a Month	Once a Week	2-3 Times a Week	Daily
Read/look at posts on Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Never	Once a Year or Less	Several Times a Year	Once a Month	2-3 Times a Month	Once a Week	2-3 Times a Week	Daily
Read/look at posts on Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Read a blog	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
View user-generated videos online	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Listen to podcasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Search for and read reviews	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Search for and read online forums	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Search for and read articles found in an internet search	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

On the Internet, approximately how often do you...

	Never	Once a Year or Less	Several Times a Year	Once a Month	2-3 Times a Month	Once a Week	2-3 Times a Week	Daily
Comment on webpages (i.e., news story)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comment on blogs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comment on tweets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comment on Facebook posts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Post ratings/reviews on products or services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reply to a discussion thread on a forum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Like" a post on Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

On the Internet, approximately how often do you...

	Never	Once a Year or Less	Several Times a Year	Once a Month	2-3 Times a Month	Once a Week	2-3 Times a Week	Daily
Tag webpages for yourself or others using social bookmarking (i.e., Digg, StumbleUpon)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subscribe to a website or blog using RSS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subscribe to a podcast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subscribe to a video website channel (i.e., YouTube Channel)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subscribe to an online forum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Which of the following social-media sites have you joined and created an account?

	Yes	No
Google + (Plus)	<input type="radio"/>	<input type="radio"/>

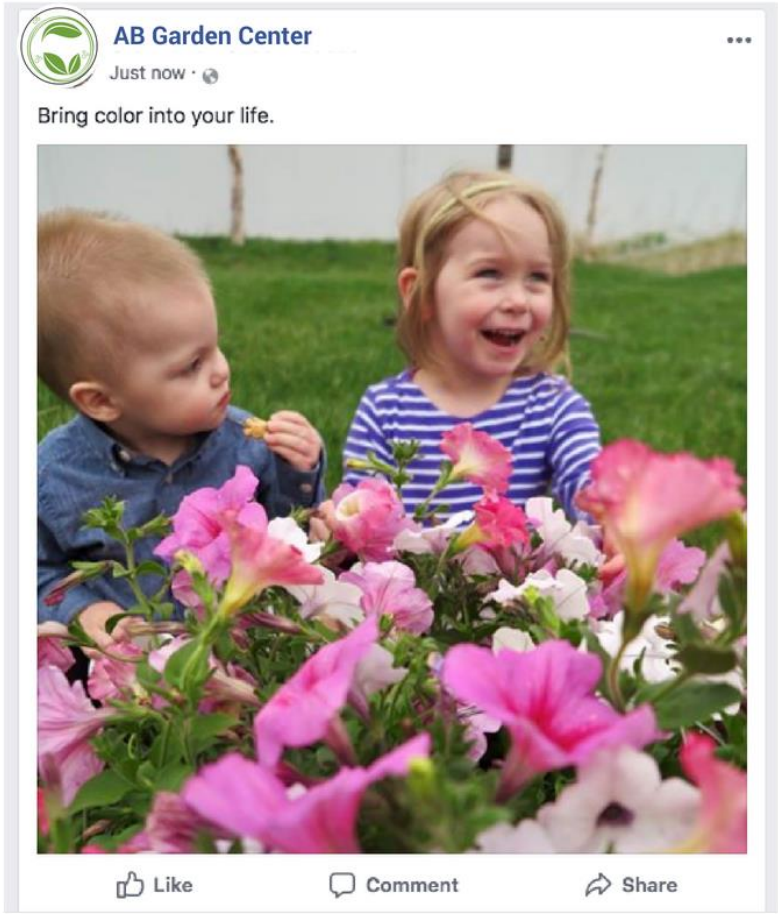
	Yes	No
Twitter	<input type="radio"/>	<input type="radio"/>
Facebook	<input type="radio"/>	<input type="radio"/>
YouTube	<input type="radio"/>	<input type="radio"/>
Blogging Website (i.e., Wordpress, Blogger)	<input type="radio"/>	<input type="radio"/>
Social Bookmarking (i.e., Digg, StumbleUpon, Delicious)	<input type="radio"/>	<input type="radio"/>
Social media management tool (i.e., HootSuite, Tweetdeck, etc.)	<input type="radio"/>	<input type="radio"/>
Other(s)	<input type="radio"/>	<input type="radio"/>

AB

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

While some posts may appear similar, each post will differ in either photo, message, or distance of business from your residence. Please consider each post carefully.

Please click on the part of the post that stands out the most to you.



This Facebook post was posted by a garden center within one-hour drive from your residence. It is the same post you just saw, but it is here for your reference on the next series of questions.

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

CD

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that stands out the most to you.



This Facebook post was posted by a garden center outside of your region of residence. It is the same post you just saw, but it is here for your reference on the next series of questions.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?




Please keep in mind this Facebook post was from a garden center outside of your region of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
 - Somewhat likely
 - Neither likely nor unlikely
 - Somewhat unlikely
 - Extremely unlikely
-


EF




In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that stands out the most to you.

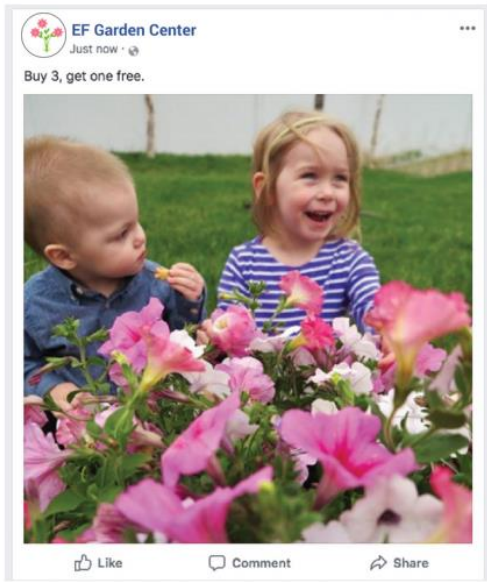
 **EF Garden Center**
Just now · 🌐

Buy 3, get one free.

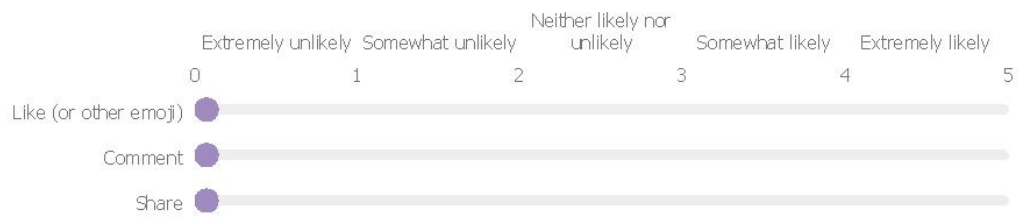


 Like  Comment  Share

This Facebook post was posted by a garden center outside of your region of residence. It is the same post you just saw, but it is here for your reference on the next series of questions.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



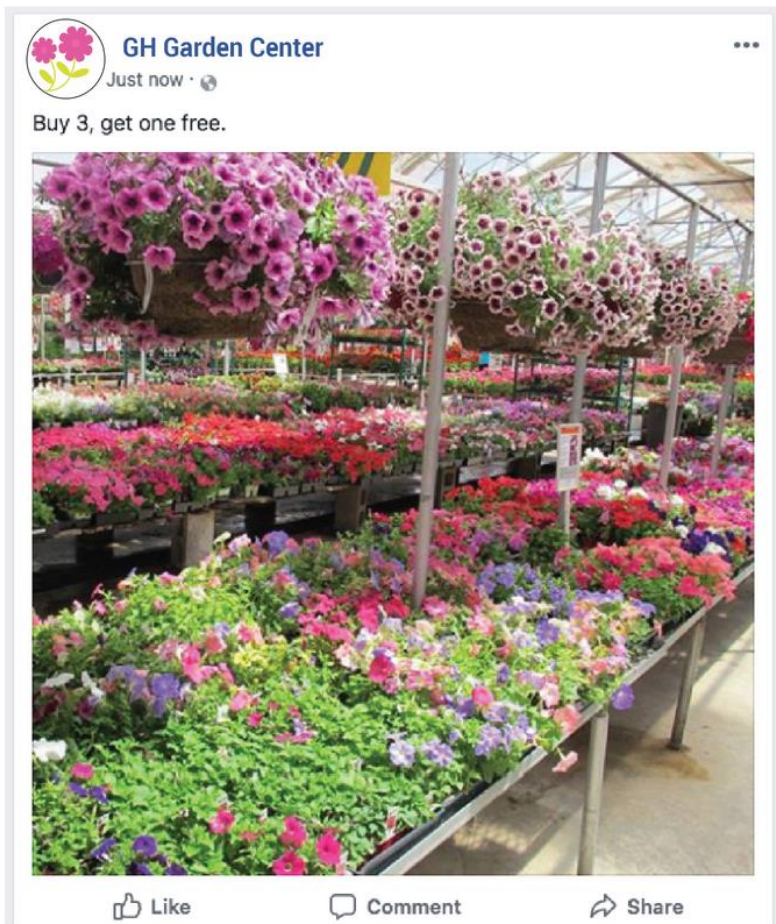
Please keep in mind this Facebook post was from a garden center outside of your region of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

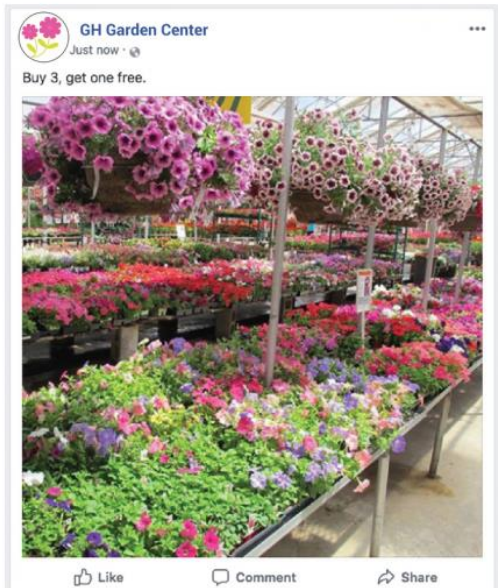
GH

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that stands out the most to you.



This Facebook post was posted by a garden center within one-hour drive from your residence. It is the same post you just saw, but it is here for your reference on the next series of questions.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center within one-hour drive from your residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
 - Somewhat likely
 - Neither likely nor unlikely
 - Somewhat unlikely
 - Extremely unlikely
-

IJ

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that stands out the most to you.



This Facebook post was posted by a garden center in your state of residence. It is the same post you just saw, but it is here for your reference on the next series of questions.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



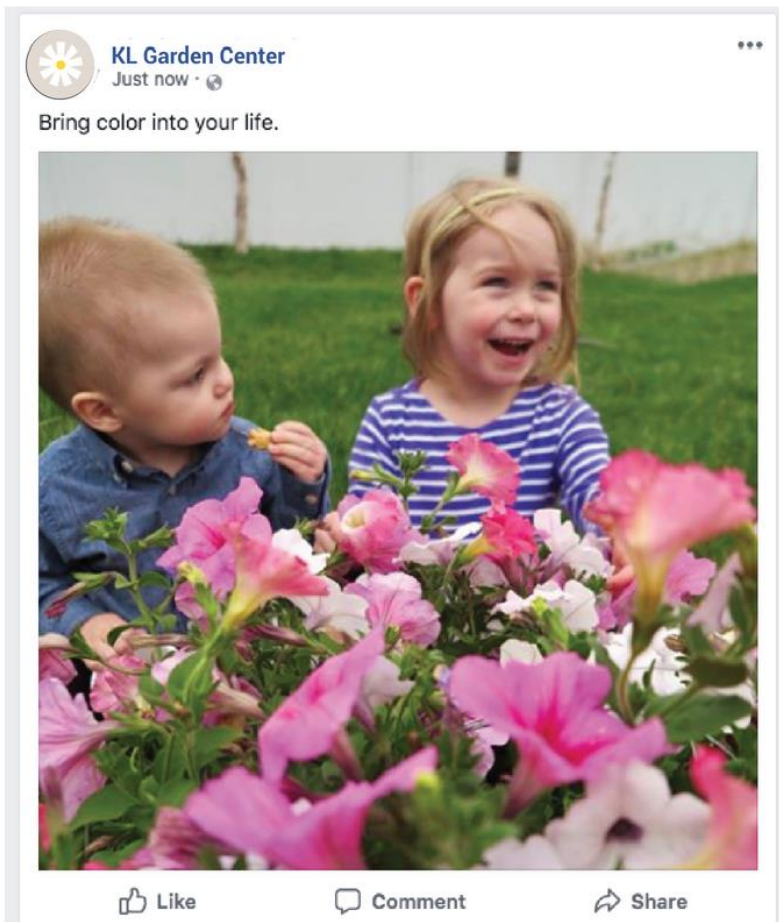
Please keep in mind this Facebook post was from a garden center in your state of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

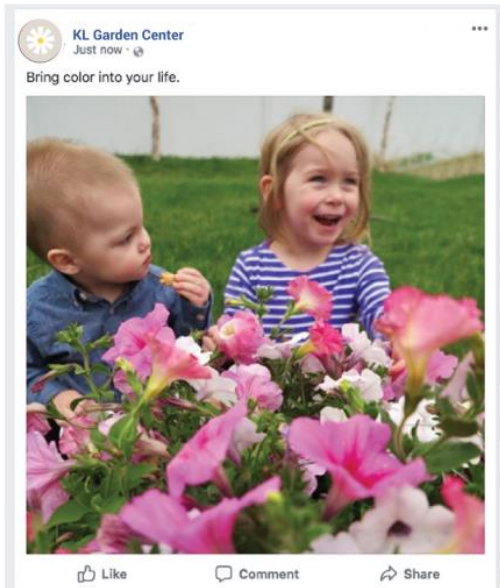
KL

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that stands out the most to you.



This Facebook post was posted by a garden center in your region of residence. It is the same post you just saw, but it is here for your reference on the next series of questions.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center in your region of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
 - Somewhat likely
 - Neither likely nor unlikely
 - Somewhat unlikely
 - Extremely unlikely
-

MZ

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that stands out the most to you.



MZ Garden Center

Just now · 🌐



Trim your petunias two weeks after planting to promote bloom.



👍 Like

💬 Comment

➦ Share

This Facebook post was posted by a garden center in your region of residence. It is the same post you just saw, but it is here for your reference on the next series of questions.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center in your region of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
 - Somewhat likely
 - Neither likely nor unlikely
 - Somewhat unlikely
 - Extremely unlikely
-

Manipulation Check



The previous post was about which product?

- Apples
 - Bell Peppers
 - Oranges
 - Petunias
-


OP




In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that stands out the most to you.

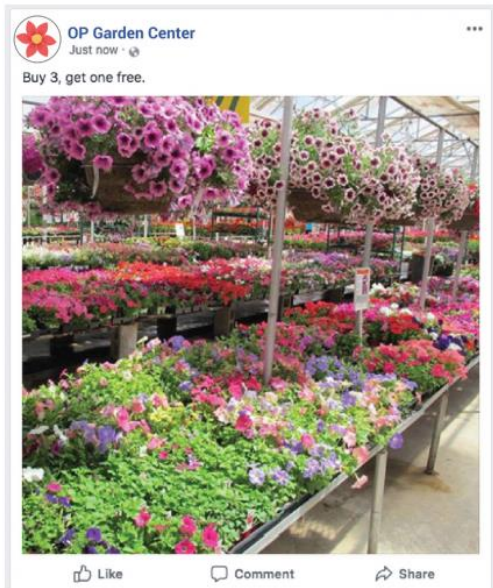
 **OP Garden Center**
Just now · 

Buy 3, get one free.

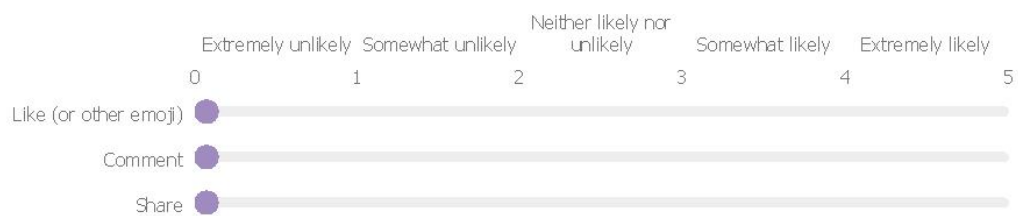


 Like  Comment  Share

This is the same post you just saw, but it is here for your reference on the next series of questions.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?




Please keep in mind this Facebook post was from a garden center in your state of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

QR


In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.




Please click on the part of the post that stands out the most to you.



QR Garden Center
Just now · 🌐

Trim your petunias two weeks after planting to promote bloom.



 Like  Comment  Share

This Facebook post was posted by a garden center within one-hour drive from your residence. It is the same post you just saw, but it is here for your reference on the next series of questions.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?




Please keep in mind this Facebook post was from a garden center within one-hour drive from your residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
 - Somewhat likely
 - Neither likely nor unlikely
 - Somewhat unlikely
 - Extremely unlikely
-


ST




In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that stands out the most to you.

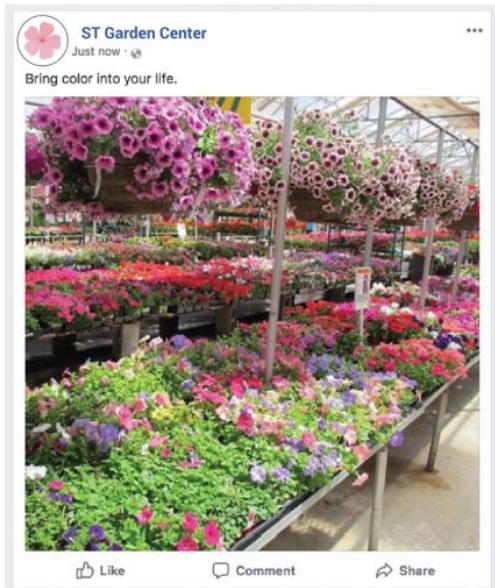
 **ST Garden Center**
Just now · 🌐

Bring color into your life.



 Like  Comment  Share

This Facebook post was posted by a garden center outside your region of residence. It is the same post you just saw, but it is here for your reference on the next series of questions.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



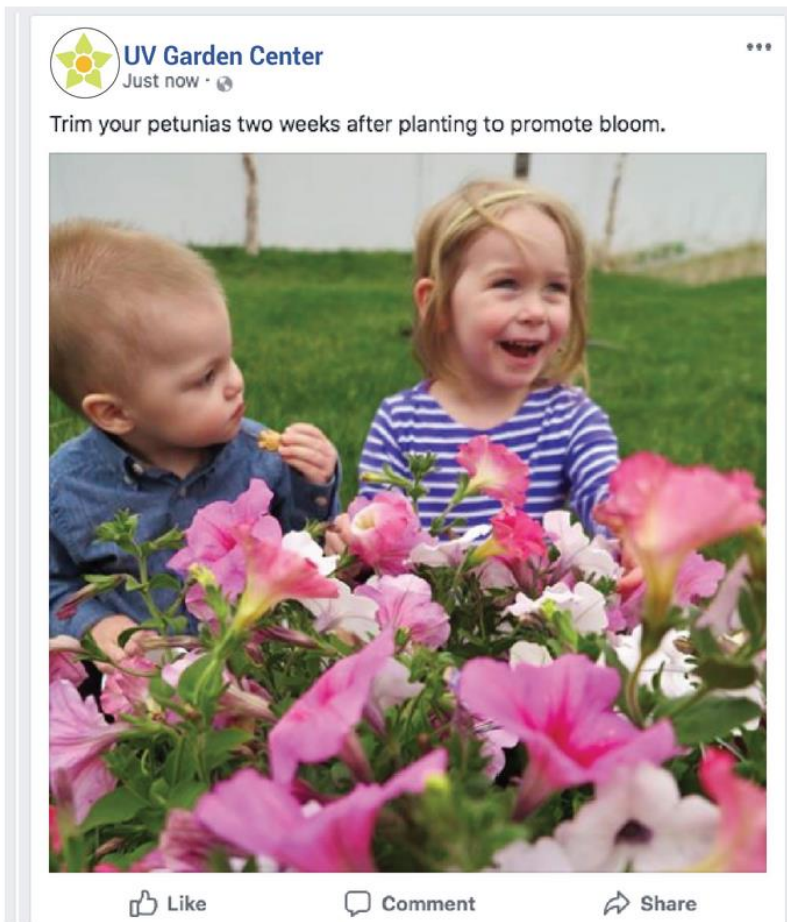
Please keep in mind this Facebook post was from a garden center outside your region of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

UW

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that stands out the most to you.



Please keep in mind this Facebook post was from a garden center your state of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
 - Somewhat likely
 - Neither likely nor unlikely
 - Somewhat unlikely
 - Extremely unlikely
-

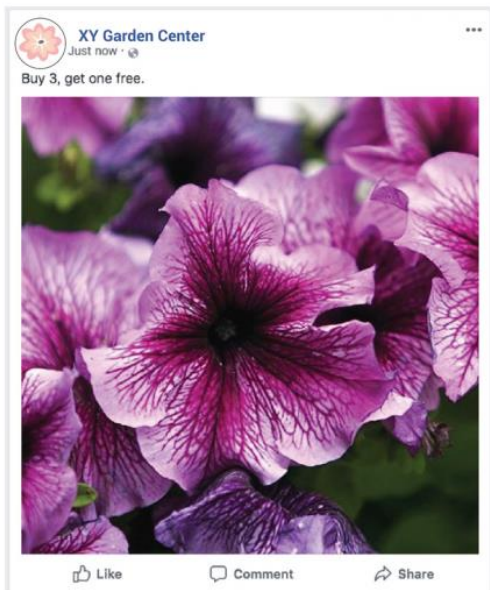
XY

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that stands out the most to you.



This Facebook post was posted by a garden center in your region of residence. It is the same post you just saw, but it is here for your reference on the next series of questions.



How likely are you to react to this post??



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center in your region of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

Sociodemographic Questions

In this final section, you will be asked a series of demographic questions.

What is the five-digit zip code of your residence?

Zip Code

What year were you born?

Select your gender.

- Male
- Female
- Self identified

What is your racial/ethnic background? Please check all that apply.

- | | |
|---|---|
| <input type="checkbox"/> White | <input type="checkbox"/> Asian/Pacific Islander |
| <input type="checkbox"/> Black or African American | <input type="checkbox"/> Hispanic, Latino, or Spanish |
| <input type="checkbox"/> American Indian or Alaska Native | <input type="checkbox"/> Other |

How many adults live in your household?

How many children live in your household?

- 0
- 1
- 2
- 3
- 4
- 5+

Are your children in the following age ranges?

	Yes	No
Age 0-5	<input type="radio"/>	<input type="radio"/>
Age 6-12	<input type="radio"/>	<input type="radio"/>
Age 13-17	<input type="radio"/>	<input type="radio"/>

Please indicate the answer that includes your entire household income before taxes in 2017.

- | | |
|--|--|
| <input type="radio"/> Less than \$10,000 | <input type="radio"/> \$45,000 to \$49,999 |
| <input type="radio"/> \$10,000 to \$14,999 | <input type="radio"/> \$50,000 to \$59,000 |
| <input type="radio"/> \$15,000 to \$19,999 | <input type="radio"/> \$60,000 to \$74,999 |
| <input type="radio"/> \$20,000 to \$24,999 | <input type="radio"/> \$75,000 to \$99,999 |
| <input type="radio"/> \$25,000 to \$29,999 | <input type="radio"/> \$100,000 to \$124,999 |
| <input type="radio"/> \$30,000 to \$34,999 | <input type="radio"/> \$125,000 to \$149,000 |
| <input type="radio"/> \$35,000 to \$39,999 | <input type="radio"/> \$150,000 to \$199,999 |
| <input type="radio"/> \$40,000 to \$44,999 | <input type="radio"/> \$200,000 or more |

What is the highest level of school you have completed or the highest degree you have received?

- Less than high school degree
- High school graduate (high school diploma or equivalent including GED)
- Some college, but no degree
- Associate degree in college (2-year)
- Bachelor's degree in college (4-year)
- Master's degree
- Doctoral degree
- Professional degree (JD, MD)

Which of the following categories best describes your current employment status?

- Employed, working 40 or more hours per week

- Employed, working 1-39 hours per week
 - Not employed, looking for work
 - Not employed, NOT looking for work
 - Retired
 - Disabled, not able to work
-

Thank You

You have reached the end of this survey. Your answers will be used to improve marketing of small, rural agricultural businesses on social media. Thank you for your participation.

Powered by Qualtrics

Appendix C - Direct-Market Produce Survey

KANSAS STATE
UNIVERSITY

Screening Questions

This survey, Courting the Consumer: Social-Media Marketing of Farm Products, will take approximately 25 minutes to complete.

The results of this study will be used to recommend more effective ways for agricultural businesses to communicate with consumers. Your participation is completely voluntary. You don't have to answer any questions that you don't want to, and you may quit at any time.

Please read this consent document carefully before you decide to participate in this study. Thank you for taking the time to participate in this study. Your participation is completely voluntary. There is no penalty for not participating. If you choose to participate, the survey will take approximately 25 minutes to complete. You can withdraw from the survey at any time without penalty, and you do not have to answer any question you do not wish to answer. All answers are confidential to the extent provided by law.

This project is sponsored by the USDA Federal State Marketing Improvement Program and examines consumers' preferences toward social-media marketing by farm-based businesses. There are no known risks associated with this study, and there is no compensation or other direct benefit to you for participation. We will not collect any identifying information from you. If you would like to learn more about this study, please contact Dr. Lauri Baker by e-mail at lbaker@ksu.edu. If you have questions about your rights as a research participant, please contact Rick Scheidt, Chair, Committee on Research Involving Human Subjects, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224, IRB#9452.

By clicking agree below, you are saying you have read the procedure described above and voluntarily agree to participate in the procedure, and have received a copy of this description. By clicking agree below, you agree that you have read this statement and are aware of your rights.

Do you agree to participate?

- Yes
 No
-

In which state do you currently reside?

Have you checked your Facebook account at least once during the last two weeks?

- Yes
 No
 I do not have a Facebook account
-

Have you purchased fresh produce directly from a farm, u-pick/you-pick business, farmer's market, or other agricultural places during the last two years?

- Yes
 No

The following questions are related to your perspective on Facebook posts.

Internet Use

In the following 5 questions, you will be asked about technology and social-media use.

On the Internet, approximately how often do you...

	Never	Once a Year or Less	Several Times a Year	Once a Month	2-3 Times a Month	Once a Week	2-3 Times a Week	Daily
Publish or update your own Web page/site	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Write a blog	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Upload videos to the web for the purpose of sharing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Post original content to Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Post original content to Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Post original content to another social-media site besides Facebook or Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Initiate a discussion on a forum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Upload photos to the web for the purpose of sharing (using Facebook, Twitter, Flickr, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Post original content to a wiki (Wikipedia, pbworks, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

On the Internet, approximately how often do you...

	Never	Once a Year or Less	Several Times a Year	Once a Month	2-3 Times a Month	Once a Week	2-3 Times a Week	Daily
Read/look at posts on Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Read/look at posts on Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Read a blog	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
View user-generated videos online	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Listen to podcasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Never	Once a Year or Less	Several Times a Year	Once a Month	2-3 Times a Month	Once a Week	2-3 Times a Week	Daily
Search for and read reviews	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Search for and read online forums	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Search for and read articles found in an internet search	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

On the Internet, approximately how often do you...

	Never	Once a Year or Less	Several Times a Year	Once a Month	2-3 Times a Month	Once a Week	2-3 Times a Week	Daily
Comment on webpages (i.e., news story)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comment on blogs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comment on tweets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comment on Facebook posts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Post ratings/reviews on products or services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reply to a discussion thread on a forum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Like" a post on Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

On the Internet, approximately how often do you...

	Never	Once a Year or Less	Several Times a Year	Once a Month	2-3 Times a Month	Once a Week	2-3 Times a Week	Daily
Tag webpages for yourself or others using social bookmarking (i.e., Digg, StumbleUpon)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subscribe to a website or blog using RSS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subscribe to a podcast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subscribe to a video website channel (i.e., YouTube Channel)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subscribe to an online forum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Which of the following social media sites have you joined and created an account?

	Yes	No
Google + (Plus)	<input type="radio"/>	<input type="radio"/>
Twitter	<input type="radio"/>	<input type="radio"/>
Facebook	<input type="radio"/>	<input type="radio"/>
YouTube	<input type="radio"/>	<input type="radio"/>
Blogging Website (i.e., Wordpress, Blogger)	<input type="radio"/>	<input type="radio"/>

	Yes	No
Social Bookmarking (i.e., Digg, StumbleUpon, Delicious)	<input type="radio"/>	<input type="radio"/>
Social media management tool (i.e., HootSuite, Tweetdeck, etc.)	<input type="radio"/>	<input type="radio"/>
Other(s)	<input type="radio"/>	<input type="radio"/>

AB

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

While some posts may appear similar, each post will differ in either photo, message, or distance of business from your residence. Please consider each post carefully.

Please click on the part of the post that is most interesting to you.

 **AB Farm Produce**
Just now · 🌐

Enjoy life together.



 Like  Comment  Share

This Facebook post was posted by a garden center within one-hour drive from your residence.



How likely are you to react to this post??



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



This Facebook post was posted by a garden center within a one-hour drive from your residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

CD

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.



CD Farm Produce
Just now · 🌐

Red peppers have the highest level of vitamin C.



👍 Like 💬 Comment ➦ Share

This Facebook post was posted by a garden center outside of your region of residence. It is the same post you just saw, but it is here for your reference on the next series of questions.



How likely are you to react to this post??



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center outside of your region of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
 - Somewhat likely
 - Neither likely nor unlikely
 - Somewhat unlikely
 - Extremely unlikely
-

EF

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.



This Facebook post was posted by a garden center outside of your region of residence. It is the same post you just saw, but it is here for your reference on the next series of questions.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center outside of your region of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

GH

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.



This Facebook post was posted by a garden center within one-hour drive from your residence. It is the same post you just saw, but it is here for your reference on the next series of questions.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



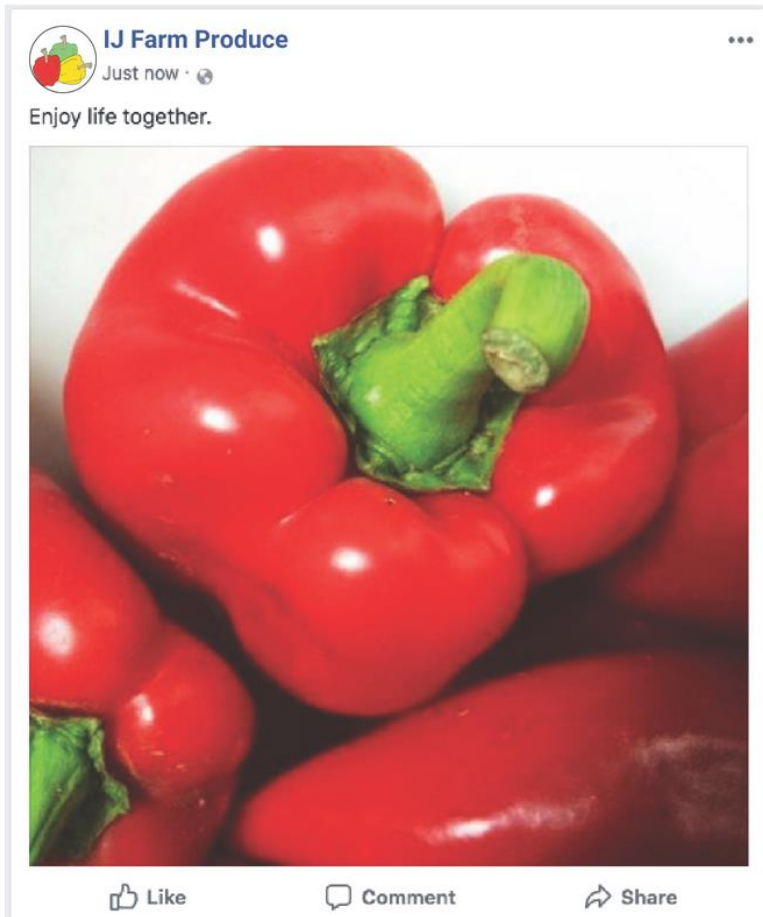
How likely are you to purchase from this business after seeing this post?



IJ

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.



This Facebook post was posted by a garden center in your state of residence. It is the same post you just saw, but it is here for your reference on the next series of questions.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center in your state of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
 - Somewhat likely
 - Neither likely nor unlikely
 - Somewhat unlikely
 - Extremely unlikely
-

KL

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.



This Facebook post was posted by a garden center in your region of residence. It is the same post you just saw, but it is here for your reference on the next series of questions.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center in your region of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

MZ

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.



MZ Farm Produce
Just now · 🌐

Red peppers have the highest level of vitamin C.



Please keep in mind this Facebook post was from a garden center in your region of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
 - Somewhat likely
 - Neither likely nor unlikely
 - Somewhat unlikely
 - Extremely unlikely
-

Manipulation Check

The previous post was about which product?

- Apples
 - Bell Peppers
 - Oranges
 - Petunias
-

OP

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.

 **OP Farm Produce** Just now · 🌐

Buy 3, get one free.



 Like  Comment  Share

This is the same post you just saw, but it is here for your reference on the next series of questions.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center in your state of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

QR

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.



This Facebook post was posted by a garden center within one-hour drive from your residence. It is the same post you just saw, but it is here for your reference on the next series of questions.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



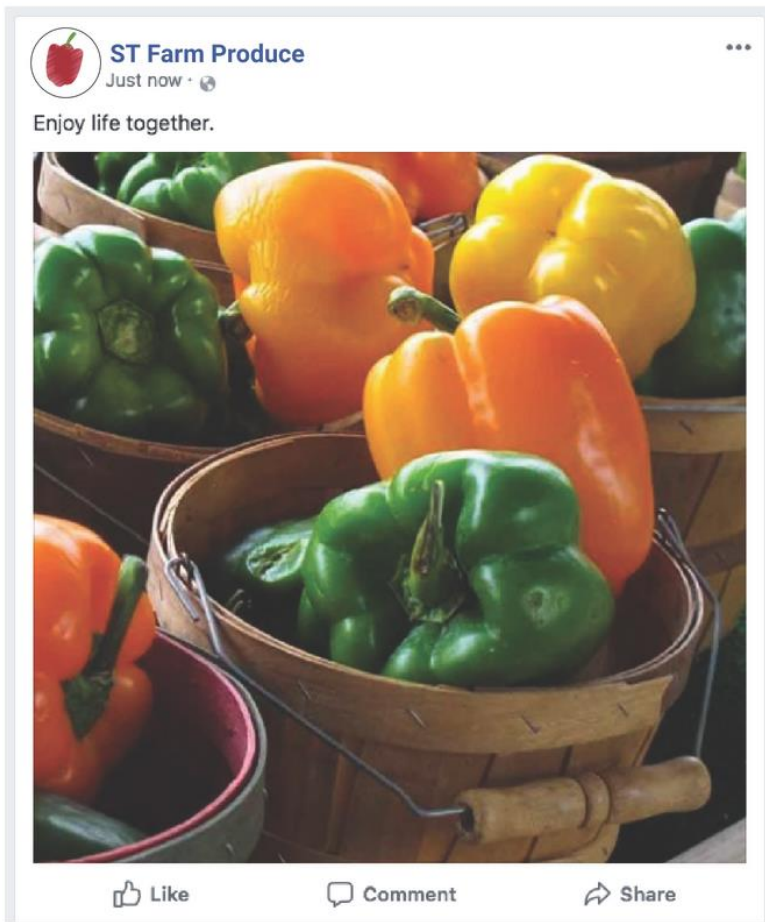
Please keep in mind this Facebook post was from a garden center within one-hour drive from your residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
 - Somewhat likely
 - Neither likely nor unlikely
 - Somewhat unlikely
 - Extremely unlikely
-

ST

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

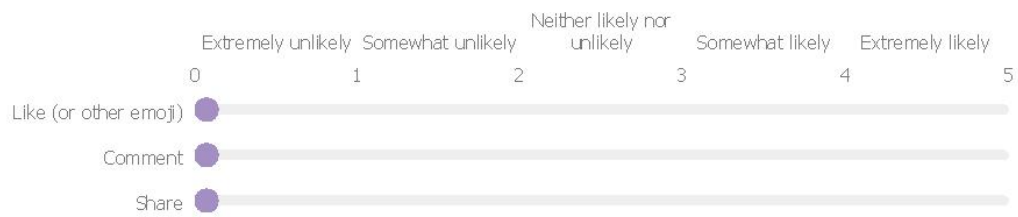
Please click on the part of the post that is most interesting to you.



This Facebook post was posted by a garden center outside your region of residence. It is the same post you just saw, but it is here for your reference on the next series of questions.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center outside your region of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

UW

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.



UV Farm Produce
Just now · 🌐

Red peppers have the highest level of vitamin C.



 Like  Comment  Share

This Facebook post was posted by a garden center your state of residence. It is the same post you just saw, but it is here for your reference on the next series of questions.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



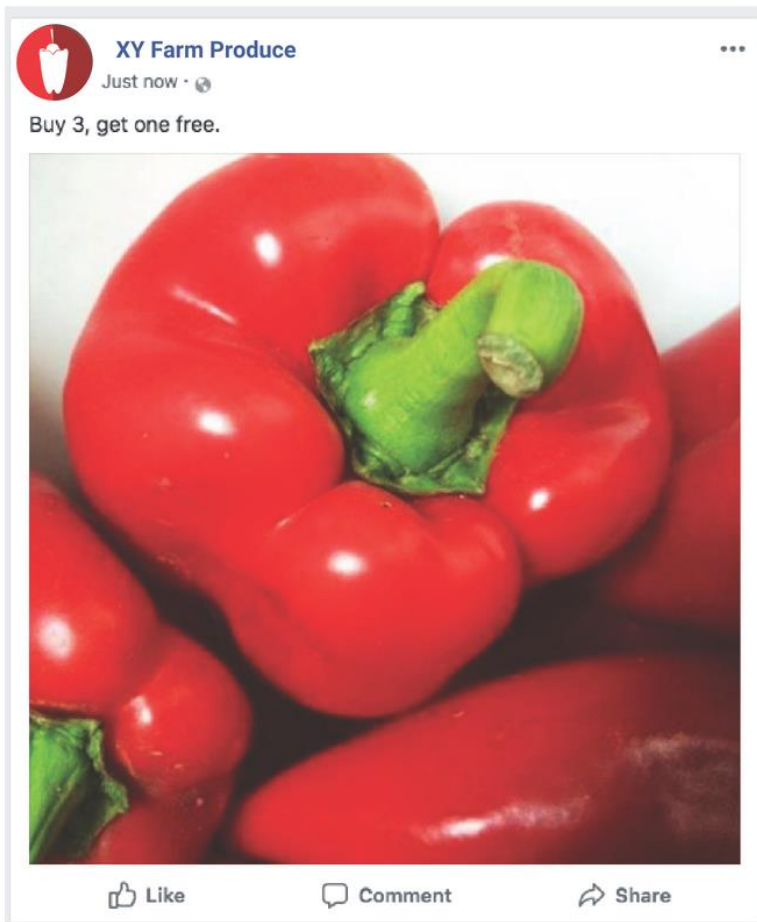
Please keep in mind this Facebook post was from a garden center your state of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
 - Somewhat likely
 - Neither likely nor unlikely
 - Somewhat unlikely
 - Extremely unlikely
-

XY

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.



This Facebook post was posted by a garden center in your region of residence. It is the same post you just saw, but it is here for your reference on the next series of questions.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center in your region of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

Sociodemographic Questions

In this final section, you will be asked a series of demographic questions.

What is the five-digit zipcode of your residence?

Zip Code

What year were you born?

Select your gender.

- Male
- Female
- Self identified

What is your racial/ethnic background? Please check all that apply.

- | | |
|---|---|
| <input type="checkbox"/> White | <input type="checkbox"/> Hispanic, Latino, or Spanish |
| <input type="checkbox"/> Black or African American | <input type="checkbox"/> Native Hawaiian Pacific Islander |
| <input type="checkbox"/> American Indian or Alaska Native | <input type="checkbox"/> Other |
| <input type="checkbox"/> Asian | <input type="text"/> |

How many adults live in your household?

How many children live in your household?

- 0
- 1
- 2
- 3
- 4
- 5+

Are your children in the following age ranges?

	Yes	No
Age 0-5	<input type="radio"/>	<input type="radio"/>
Age 6-12	<input type="radio"/>	<input type="radio"/>
Age 13-17	<input type="radio"/>	<input type="radio"/>

Please indicate the answer that includes your entire household income before taxes in 2017.

- Less than \$10,000
- \$10,000 to \$14,999
- \$15,000 to \$19,999
- \$20,000 to \$24,999
- \$25,000 to \$29,999
- \$30,000 to \$34,999
- \$35,000 to \$39,999
- \$40,000 to \$44,999
- \$45,000 to \$49,999
- \$50,000 to \$59,000
- \$60,000 to \$74,999
- \$75,000 to \$99,999
- \$100,000 to \$124,999
- \$125,000 to \$149,000
- \$150,000 to \$199,999
- \$200,000 or more

What is the highest level of school you have completed or the highest degree you have received?

- Less than high school degree
- High school graduate (high school diploma or equivalent including GED)
- Some college, but no degree
- Associate degree in college (2-year)
- Bachelor's degree in college (4-year)
- Master's degree
- Doctoral degree
- Professional degree (JD, MD)

Which of the following categories best describes your current employment status?

- Employed, working 40 or more hours per week
 - Employed, working 1-39 hours per week
 - Not employed, looking for work
 - Not employed, NOT looking for work
 - Retired
 - Disabled, not able to work
-

Thank You

You have reached the end of this survey. Your answers will be used to improve marketing of small, rural agricultural businesses on social media. Thank you for your participation.

Powered by Qualtrics

Appendix D - Pick-Your-Own Produce Survey



Screening Questions

This survey, *Courting the Consumer: Social-Media Marketing of Farm Products*, will take approximately 25 minutes to complete.

The results of this study will be used to recommend more effective ways for agricultural businesses to communicate with consumers. Your participation is completely voluntary. You don't have to answer any questions that you don't want to, and you may quit at any time.

Please read this consent document carefully before you decide to participate in this study. Thank you for taking the time to participate in this study. Your participation is completely voluntary. There is no penalty for not participating. If you choose to participate, the survey will take approximately 25 minutes to complete. You can withdraw from the survey at any time without penalty, and you do not have to answer any question you do not wish to answer. All answers are confidential to the extent provided by law.

This project is sponsored by the USDA Federal State Marketing Improvement Program and examines consumers' preferences toward social-media marketing by farm-based businesses. There are no known risks associated with this study, and there is no compensation or other direct benefit to you for participation. We will not collect any identifying information from you. If you would like to learn more about this study, please contact Dr. Lauri Baker by e-mail at lbaker@ksu.edu. If you have questions about your rights as a research participant, please contact Rick Scheidt, Chair, Committee on Research Involving Human Subjects, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224, [IRB#9452](#).

By clicking agree below, you are saying you have read the procedure described above and voluntarily agree to participate in the procedure, and have received a copy of this description. By clicking agree below, you agree that you have read this statement and are aware of your rights.

- >> Yes
 >> No
-

Do you agree to participate?

- Yes
 No
-

In which state do you currently reside?

Have you checked your Facebook account at least once during the last two weeks?

- Yes
 No

I do not have a Facebook account

Have you been to a u-pick farm such as an apple orchard or pumpkin patch during the last two years?

- Yes
 No
-

Have you purchased fresh produce directly from a farm, u-pick/you-pick business, farmer's market, or other agricultural places during the last two years?

- Yes
 No
-

The following questions are related to your perspective on Facebook posts.

Internet Use

In the following 5 questions, you will be asked about technology and social-media use.

On the Internet, approximately how often do you...

	Never	Once a Year or Less	Several Times a Year	Once a Month	2-3 Times a Month	Once a Week	2-3 Times a Week	Daily
Publish or update your own Web page/site	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Write a blog	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Upload videos to the web for the purpose of sharing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Post original content to Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Post original content to Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Post original content to another social-media site besides Facebook or Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Initiate a discussion on a forum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Upload photos to the web for the purpose of sharing (using Facebook, Twitter, Flickr, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Post original content to a wiki (Wikipedia, pbworks, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

On the Internet, approximately how often do you...

	Never	Once a Year or Less	Several Times a Year	Once a Month	2-3 Times a Month	Once a Week	2-3 Times a Week	Daily
Read/look at posts on Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Read/look at posts on Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Read a blog	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
View user-generated videos online	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Listen to podcasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Search for and read reviews	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Search for and read online forums	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Search for and read articles found in an internet search	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

On the Internet, approximately how often do you...

	Never	Once a Year or Less	Several Times a Year	Once a Month	2-3 Times a Month	Once a Week	2-3 Times a Week	Daily
Comment on webpages (i.e., news story)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comment on blogs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comment on tweets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comment on Facebook posts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Post ratings/reviews on products or services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reply to a discussion thread on a forum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Like" a post on Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

On the Internet, approximately how often do you...

	Never	Once a Year or Less	Several Times a Year	Once a Month	2-3 Times a Month	Once a Week	2-3 Times a Week	Daily
Tag webpages for yourself or others using social bookmarking (i.e., Digg, StumbleUpon)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subscribe to a website or blog using RSS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subscribe to a podcast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subscribe to a video website channel (i.e., YouTube Channel)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subscribe to an online forum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Which of the following social media sites have you joined and created an account?

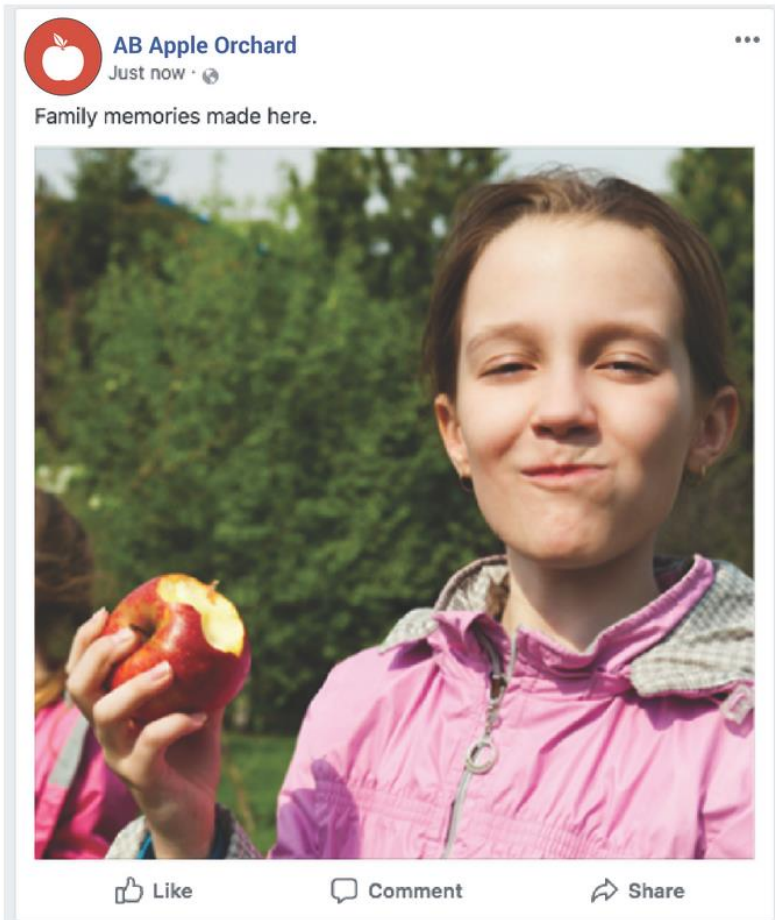
	Yes	No
Google + (Plus)	<input type="radio"/>	<input type="radio"/>
Twitter	<input type="radio"/>	<input type="radio"/>
Facebook	<input type="radio"/>	<input type="radio"/>
YouTube	<input type="radio"/>	<input type="radio"/>
Blogging Website (i.e., Wordpress, Blogger)	<input type="radio"/>	<input type="radio"/>
Social Bookmarking (i.e., Digg, StumbleUpon, Delicious)	<input type="radio"/>	<input type="radio"/>
Social media management tool (i.e., HootSuite, Tweetdeck, etc.)	<input type="radio"/>	<input type="radio"/>
Other(s)	<input type="radio"/>	<input type="radio"/>

AB

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

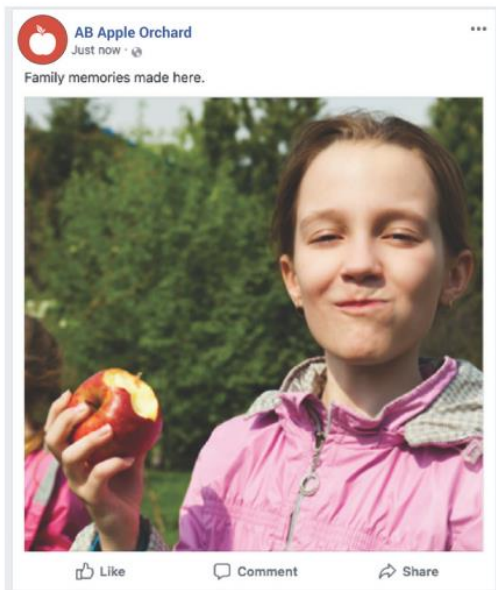
While some posts may appear similar, each post will differ in either photo, message, or distance of business from your residence. Please consider each post carefully.

Please click on the part of the post that is most interesting to you.



This is the same image that you saw before. Please use this as a reference for the following questions.

This Facebook post was posted by a garden center within a one-hour drive from your residence.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center within a one-hour drive from your residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

CD

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.

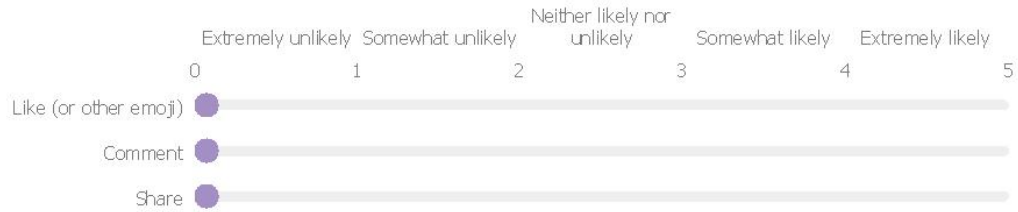


This is the same image that you saw before. Please use this as a reference for the following questions.

This Facebook post was posted by a garden center outside of your region of residence.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



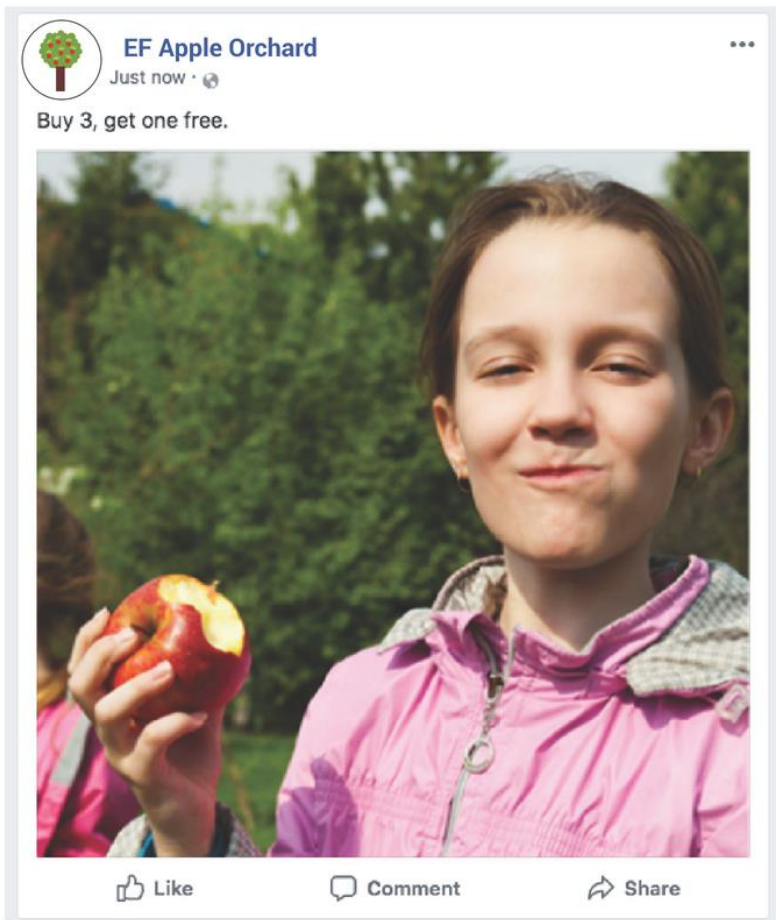
Please keep in mind this Facebook post was from a garden center outside of your region of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
 - Somewhat likely
 - Neither likely nor unlikely
 - Somewhat unlikely
 - Extremely unlikely
-

EF

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.



This is the same image that you saw before. Please use this as a reference for the following questions.

This Facebook post was posted by a garden center outside of your region of residence.

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

GH

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.

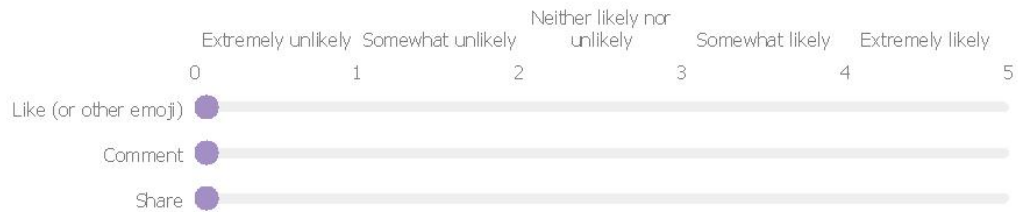


This is the same image that you saw before. Please use this as a reference for the following questions.

This Facebook post was posted by a garden center within a one-hour drive from your residence.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center within a one-hour drive from your residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
 - Somewhat likely
 - Neither likely nor unlikely
 - Somewhat unlikely
 - Extremely unlikely
-

IJ

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.



This is the same image that you saw before. Please use this as a reference for the following questions.

This Facebook post was posted by a garden center in your state of residence.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center in your state of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

KL

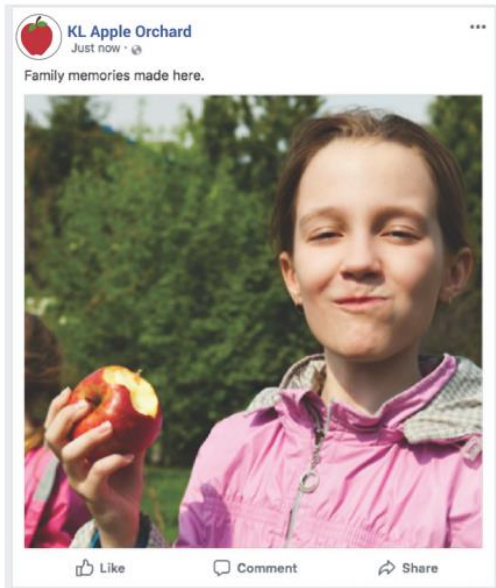
In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.



This is the same image that you saw before. Please use this as a reference for the following questions.

This Facebook post was posted by a garden center in your region of residence.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center in your region of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

MZ

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.

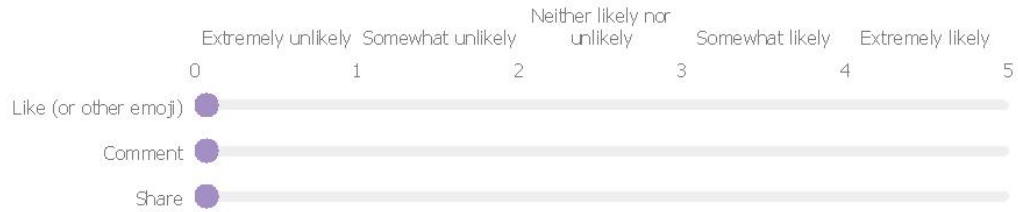


This is the same image that you saw before. Please use this as a reference for the following questions.

This Facebook post was posted by a garden center in your region of residence:



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center in your region of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
 - Somewhat likely
 - Neither likely nor unlikely
 - Somewhat unlikely
 - Extremely unlikely
-

Manipulation Check

The previous post was about which product?

- Apples
 - Bell Peppers
 - Oranges
 - Petunias
-

OP

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.

 **OP Apple Orchard**
Just now · 🌐

Buy 3, get one free.



 Like  Comment  Share

This is the same image that you saw before. Please use this as a reference for the following questions.

This Facebook post was posted by a garden center in your state of residence.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center in your state of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

QR

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.



This is the same image that you saw before. Please use this as a reference for the following questions.

This Facebook post was posted by a garden center within a one-hour drive from your residence.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center within a one-hour drive from your residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

ST

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.



This is the same image that you saw before. Please use this as a reference for the following questions.

This Facebook post was posted by a garden center outside your region of residence.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center outside your region of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
 - Somewhat likely
 - Neither likely nor unlikely
 - Somewhat unlikely
 - Extremely unlikely
-

UV

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.



This is the same image that you saw before. Please use this as a reference for the following questions.

This Facebook post was posted by a garden center in your state of residence.



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center in your state of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

XY

In the next series of questions, you will be shown images of Facebook posts and will be asked how you would respond to these as a consumer.

Please click on the part of the post that is most interesting to you.

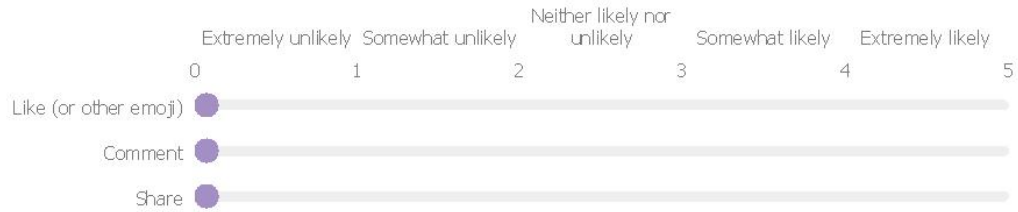


This is the same image that you saw before. Please use this as a reference for the following questions.

This Facebook post was posted by a garden center in your region of residence:



How likely are you to react to this post?



Which emoji would you choose to react to this post?



How likely are you to purchase from this business after seeing this post?



Please keep in mind this Facebook post was from a garden center in your region of residence. How likely are you to purchase from this business after seeing this post?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

Sociodemographic Questions

In this final section, you will be asked a series of demographic questions.

What is the five-digit zipcode of your residence?

Zip Code

What year were you born?

Select your gender.

- Male
- Female
- Self identified

What is your racial/ethnic background? Please check all that apply.

- | | |
|---|---|
| <input type="checkbox"/> White | <input type="checkbox"/> Asian/Pacific Islander |
| <input type="checkbox"/> Black or African American | <input type="checkbox"/> Hispanic, Latino, or Spanish |
| <input type="checkbox"/> American Indian or Alaska Native | <input type="checkbox"/> Other |

How many adults live in your household?

How many children live in your household?

- 0
- 1
- 2
- 3
- 4
- 5+

Are your children in the following age ranges?

	Yes	No
Age 0-5	<input type="radio"/>	<input type="radio"/>
Age 6-12	<input type="radio"/>	<input type="radio"/>
Age 13-17	<input type="radio"/>	<input type="radio"/>

Please indicate the answer that includes your entire household income before taxes in 2017.

- Less than \$10,000
- \$10,000 to \$14,999
- \$15,000 to \$19,999
- \$20,000 to \$24,999
- \$25,000 to \$29,999
- \$30,000 to \$34,999
- \$35,000 to \$39,999
- \$40,000 to \$44,999
- \$45,000 to \$49,999
- \$50,000 to \$59,000
- \$60,000 to \$74,999
- \$75,000 to \$99,999
- \$100,000 to \$124,999
- \$125,000 to \$149,000
- \$150,000 to \$199,999
- \$200,000 or more

What is the highest level of school you have completed or the highest degree you have received?

- Less than high school degree
- High school graduate (high school diploma or equivalent including GED)
- Some college, but no degree
- Associate degree in college (2-year)
- Bachelor's degree in college (4-year)
- Master's degree
- Doctoral degree
- Professional degree (JD, MD)

Which of the following categories best describes your current employment status?

- Employed, working 40 or more hours per week

- Employed, working 1-39 hours per week
 - Not employed, looking for work
 - Not employed, NOT looking for work
 - Retired
 - Disabled, not able to work
-

Thank You

You have reached the end of this survey. Your answers will be used to improve marketing of small, rural agricultural businesses on social media. Thank you for your participation.

Powered by Qualtrics

Appendix E - Demographics Tables

Table E1 *Frequency of participants by state for three surveys about independent horticultural products: petunias, bell peppers, and apples.*

State	<i>f</i>	%
Ohio	245	19.7
Michigan	224	18
Illinois	189	15.2
Indiana	147	11.8
Missouri	102	8.2
Wisconsin	94	7.6
Minnesota	79	6.4
Iowa	56	4.5
Kansas	48	3.9
Nebraska	29	2.3
North Dakota	15	1.2
South Dakota	14	1.1
TOTAL	1242	100.0

Table E2 *Frequency of participants by state for bedding plant survey.*

State	<i>f</i>	%
Ohio	77	18.9
Michigan	73	17.9
Illinois	65	16
Indiana	48	11.8
Missouri	34	8.4
Wisconsin	30	7.4
Iowa	24	5.9
Kansas	19	4.7
Minnesota	19	4.7
Nebraska	8	2
South Dakota	6	1.5
North Dakota	4	1
TOTAL	407	100.0

Table E3 *Frequency of participants by state for direct-marketed produce survey.*

State	<i>f</i>	%
Ohio	75	18.1
Illinois	73	17.6
Michigan	72	17.3
Indiana	50	12
Missouri	33	8
Minnesota	32	7.7
Wisconsin	29	7
Kansas	19	4.6
Iowa	13	3.1
Nebraska	11	2.7
North Dakota	6	1.4
South Dakota	2	0.5
Total	415	100.0

Table E4 *Frequency of participants by state for pick-your-own produce survey.*

State	<i>f</i>	%
Ohio	93	22.1
Michigan	79	18.8
Illinois	51	12.1
Indiana	49	11.7
Missouri	35	8.3
Wisconsin	35	8.3
Minnesota	28	6.7
Iowa	19	4.5
Kansas	10	2.4
Nebraska	10	2.4
South Dakota	6	1.4
North Dakota	5	1.2
Total	420	100.0

Table E5 *Income level reported by respondents to three surveys about independent horticultural products: bedding plants, direct-marketed produce, and pick-your-own produce.*

Income Level	<u>Bedding Plants</u>		<u>Direct-Marketed Produce</u>		<u>Pick-your-own Produce</u>		<u>Total Survey Sample</u>	
	<i>f</i>	%	<i>f</i>	<i>f</i>	%	%	<i>f</i>	%
Less than \$10,000	22	5.4	37	100	8.1	8.9	41	9.8
\$10,000 to \$14,999	22	5.4	31	79	6.4	7.5	26	6.2
\$15,000 to \$19,999	21	5.2	20	66	5.3	4.8	25	6.0
\$20,000 to \$24,999	21	5.2	23	71	5.7	5.5	27	6.4
\$25,000 to \$29,999	11	2.7	27	62	5.0	6.5	24	5.7
\$30,000 to \$34,999	18	4.4	25	66	5.3	6.0	23	5.5
\$35,000 to \$39,999	18	4.4	26	57	4.6	6.3	13	3.1
\$40,000 to \$44,999	6	1.5	8	26	2.1	1.9	12	2.9
\$45,000 to \$49,999	38	9.3	31	92	7.4	7.5	23	5.5
\$50,000 to \$59,000	38	9.3	35	118	9.5	8.4	45	10.7
\$60,000 to \$74,999	47	11.5	52	147	11.8	12.5	48	11.4
\$75,000 to \$99,999	58	14.3	50	161	13.0	12.0	53	12.6
\$100,000 to \$124,999	41	10.1	27	101	8.1	6.5	33	7.9
\$125,000 to \$149,000	19	4.7	8	41	3.3	1.9	14	3.3
\$150,000 to \$199,999	16	3.9	8	33	2.7	1.9	9	2.1
\$200,000 or more	11	2.7	7	22	1.8	1.7	4	1.0
Total (<i>n</i> =)	407	100.0	415	1242	100.0	100.0	420	100.0

Table E6 *Total frequency of 2017 income levels reported by survey participants.*

Income Level	<i>f</i>	%
Less than \$10,000	100	8.1
\$10,000 to \$14,999	79	6.4
\$15,000 to \$19,999	66	5.3
\$20,000 to \$24,999	71	5.7
\$25,000 to \$29,999	62	5.0
\$30,000 to \$ \$34,999	66	5.3
\$35,000 to \$39,999	57	4.6
\$40,000 to \$44,999	26	2.1
\$45,000 to \$49,999	92	7.4
\$50,000 to \$59,000	118	9.5
\$60,000 to \$74,999	147	11.8
\$75,000 to \$99,999	161	13.0
\$100,000 to \$124,999	101	8.1
\$125,000 to \$149,000	41	3.3
\$150,000 to \$199,999	33	2.7
\$200,000 or more	22	1.8
Total	1242	100.0

Table E7 *Frequency of 2017 income levels reported by survey participants from highest to lowest response.*

Income Level	<i>f</i>	%
\$75,000 to \$99,999	161	13
\$60,000 to \$74,999	147	11.8
\$50,000 to \$59,000	118	9.5
\$100,000 to \$124,999	101	8.1
Less than \$10,000	100	8.1
\$45,000 to \$49,999	92	7.4
\$10,000 to \$14,999	79	6.4
\$20,000 to \$24,999	71	5.7
\$15,000 to \$19,999	66	5.3
\$30,000 to \$ \$34,999	66	5.3
\$25,000 to \$29,999	62	5
\$35,000 to \$39,999	57	4.6
\$125,000 to \$149,000	41	3.3
\$150,000 to \$199,999	33	2.7
\$40,000 to \$44,999	26	2.1
\$200,000 or more	22	1.8
Total	1242	100.0

Table E8 *Frequency of 2017 income levels reported by bedding plant survey participants.*

Income Level	<i>f</i>	%
Less than \$10,000	22	5.4
\$10,000 to \$14,999	22	5.4
\$15,000 to \$19,999	21	5.2
\$20,000 to \$24,999	21	5.2
\$25,000 to \$29,999	11	2.7
\$30,000 to \$34,999	18	4.4
\$35,000 to \$39,999	18	4.4
\$40,000 to \$44,999	6	1.5
\$45,000 to \$49,999	38	9.3
\$50,000 to \$59,000	38	9.3
\$60,000 to \$74,999	47	11.5
\$75,000 to \$99,999	58	14.3
\$100,000 to \$124,999	41	10.1
\$125,000 to \$149,000	19	4.7
\$150,000 to \$199,999	16	3.9
\$200,000 or more	11	2.7
Total	407	100.0

Table E9 *Frequency of 2017 income levels reported by direct-marketed produce survey participants.*

Income Level	<i>f</i>	%
Less than \$10,000	37	8.9
\$10,000 to \$14,999	31	7.5
\$15,000 to \$19,999	20	4.8
\$20,000 to \$24,999	23	5.5
\$25,000 to \$29,999	27	6.5
\$30,000 to \$34,999	25	6.0
\$35,000 to \$39,999	26	6.3
\$40,000 to \$44,999	8	1.9
\$45,000 to \$49,999	31	7.5
\$50,000 to \$59,000	35	8.4
\$60,000 to \$74,999	52	12.5
\$75,000 to \$99,999	50	12.0
\$100,000 to \$124,999	27	6.5
\$125,000 to \$149,000	8	1.9
\$150,000 to \$199,999	8	1.9
\$200,000 or more	7	1.7
Total	415	100.0

Table E10 *Frequency of 2017 income levels reported by pick-your-own produce survey participants.*

Income Level	<i>f</i>	%
Less than \$10,000	41	9.8
\$10,000 to \$14,999	26	6.2
\$15,000 to \$19,999	25	6.0
\$20,000 to \$24,999	27	6.4
\$25,000 to \$29,999	24	5.7
\$30,000 to \$34,999	23	5.5
\$35,000 to \$39,999	13	3.1
\$40,000 to \$44,999	12	2.9
\$45,000 to \$49,999	23	5.5
\$50,000 to \$59,000	45	10.7
\$60,000 to \$74,999	48	11.4
\$75,000 to \$99,999	53	12.6
\$100,000 to \$124,999	33	7.9
\$125,000 to \$149,000	14	3.3
\$150,000 to \$199,999	9	2.1
\$200,000 or more	4	1.0
Total	420	100.0