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Identifying Generational Differences to Target Extension Programming when Discussing Genetic Modification

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Abstract

Genetic modification (GM) science has received considerable pushback from consumers despite the research finding GM products are safe for consumption. This may be partly due to the disconnect between consumers and farms since most consumers are disconnected from the farm by at least three generations. The largest consumer population is composed of millennials, which is the generation furthest removed from the farm which may mean they need to be educated differently about GM science than other generations. The purpose of this research was to determine if there were generational differences regarding the perceived attributes of GM science to inform the development of extension programs designed to educate consumers about GM science. A survey was used to collect consumers' perceptions of GM science. The respondents were grouped into generational classifications and perceptions between groups were compared. The findings revealed generations do perceived GM science differently and extension programs should be designed for specific generational audiences.

Keywords: generational differences; Extension; genetic modification

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Introduction

The topic of genetic modification (GM) science has become one of much controversy stemming from consumer perceptions that GM food products are a cause for concern despite research findings supporting their safety (Mahgoub, 2016). Consumers often develop their perceptions emotionally, due largely to biased media reporting rather than from an educated, informed perspective (Mahgoub, 2016). It has been hypothesized that consumers' lack information about agriculture is impacting their decision-making because, on average, most consumers are disconnected from farming or agriculture by three generations (American Farm Bureau Federation, 2017). Recent research highlighted the farm to consumer disconnect with research findings indicating consumers in major citrus producing states (Florida, California, and Texas) reported regularly purchasing citrus but over half of those consumers did not believe their community's

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economy was dependent upon the citrus industry (Ruth, Beattie, Lamm & Rumble, 2017). Therefore, an opportunity exists for Extension agents to take GM science research conducted at land grant universities, translate it into understandable information, and disseminate it to their local communities in order for the public to be better informed when purchasing food.

The consumer population is largely composed of millennials (Hais & Winograd, 2011); the generation farthest removed from production agriculture (Fyksen, 2017). Millennials have the largest purchasing power (Hais & Winograd, 2011) but are not the only consumers involved in the purchasing and consumption of food. Baby boomers, generation Xers, and traditionalists are also a part of the education, decision-making, and food purchasing equation. There is a need to decrease the farm to consumer gap through educational programming so consumers can make informed food purchasing decisions (King, Tietyen, & Vickner, n.d.). Extension agents will be more effective at developing effective consumer programs targeted toward specific generational groups if they understand how different generations perceive GM attributes. This research aligns with the American Association of Agricultural Education (AAAE) National Research Agenda priority five, developing ways to better communicate with diverse audiences (Thoron, Myers, & Barrick, 2016) by better understanding generations as audiences and also addresses the complex problem of public acceptance of GM food which aligns with research priority seven of the AAAE National Research Agenda (Andenoro, Baker, Stedman, & Weeks, 2016).

Generations are groups of individuals, in this case consumers, that are classified by the events, trends, and changes that occurred in the time-period of their birth year (The Center for Generational Kinetics, 2016). Trends that are responsible for forming the identity of generational groups are parents, technology, and economics (The Center for Generational Kinetics, 2016). Millennials were born between the years 1981 and 2000 (The Center for Generational Kinetics, 2016) and constitute 30% of the adult population (Pew Research Center, 2015). Although millennials are the youngest generations among the adult population, they are on the fast track to becoming the Unites State's "largest living generation" and will soon be the force "driving changes" around the types of foods consumers purchase (Duff & Phelps Corporation, 2016, p. 6). Millennials depend on the opinions of others and outside sources to guide their purchasing decisions and are expected to struggle with financial management (U. S. News and World Report, 2014).

Generation Xers were born between the years 1965 and 1980 (The Center for Generational Kinetics, 2016) and are responsible for 27% of the adult population (Pew Research Center, 2015). Generation Xers are the informed generation. The development of the internet and other technologies occurred during this generation. Their increased access to information has made them the most involved generation in researching products before purchasing (Williams, n.d.).

Baby Boomers were born between the years 1946 and 1964 (The Center for Generational Kinetics, 2016) and make up 30% of the adult population (Pew Research Center, 2015). The Baby Boomer generation tends to be brand loyal, informed, and financially stable (U. S. News & World Report, 2015). Traditionalists were born prior to the year 1945 (The Center for Generational Kinetics, 2016) and only constitute 11% of the population (Pew Research Center, 2015). Traditionalists are traditional in their values, hesitate to change, and are consistent in their brand devotion (Williams & Page, 2013).

Theoretical Framework

Rogers' (2003) diffusion of innovations theory guided the framework of this study. Diffusion of innovations theory describes the process in which a new idea is diffused through a

social system (Rogers, 2003). More specifically the process includes "(1) an *innovation* (2) [being] *communicated* through certain *channels* (3) over *time* (4) among the members of a *social system*" (Rogers, 2003, p. 11). An innovation is recognized as any idea, technological advancement, or product that is perceived as new to an individual or unit. Communication channels are the space where those who are familiar with the innovation communicate with the less familiar to generate an understanding of the innovation. Time is the variable in which the decision to adopt or reject the innovation is formulated. The social system where the innovation is diffused acts as a constraint in norms, belief, views, etc. and ultimately effects the individual or unit's decision to adopt or reject an innovation (Rogers, 2003).

Rogers (2003) identified five attributes of an innovation that should impact rate of adoption: relative advantage, compatibility, complexity, observability, and trialability. Relative advantage is the idea that the innovation possesses characteristics that are perceived to be advantageous as compared to the characteristics of the idea, product, or technology being replaced (Rogers, 2003). Compatibility is defined as how closely the innovation aligns with "existing values, past experiences, and needs" (Rogers, 2003, p. 240). The complexity of an innovation includes the difficulty level and level of knowledge needed to successfully use the innovation (Rogers, 2003). The observability of an innovation is described as how visible the innovation is to the people in the social system in which the innovation is being diffused (Rogers, 2003). Finally, trialability is the ability to sample the innovation before engaging in adoption or rejection of the innovation (Rogers, 2003). The degree to which each of these five attributes are experienced with the innovation builds the positive or negative perception of the innovation by the individual or unit in the social system in which the innovation was diffused (Rogers, 2003).

Previous research has been conducted examining generational differences in the adoption of new technologies. Blackburn (2011) found millennials bring large amounts of expertise in technological advancements to the learning environment (in this case a library) which, in turn, positively impacts efficiency. Blackburn (2011) suggested libraries should consider a millennial workforce due to their level of technology knowledge that could assist with the adoption of new technologies.

Quan-Haase, Martin, and Schreurs (2014) conducted a study of the traditionalist generation and their adoption of e-book technology. They found most of their research participants were aware of e-book technology but had yet to make a decision to adopt or reject the innovation (Quan-Haase et al., 2014). Three factors were found that hindered traditionalist's adoption of e-books: the e-books lacked the physical book and print aspect, the e-book innovation lacked the trialability attribute, and traditionalists lacked confidence to navigate a new technology.

A study conducted by Gafni and Geri (2013) discussed Generation X's use of smartphones and the adoption of the internet capabilities on the smartphones as compared to Generation Y or millennials. The results indicated that Generation Xers have been more likely to use smartphones in the last 12 years, compared to a 25-year time span. However, progression of time did not increase the likelihood of Generation Xers using the internet capabilities on their smartphones. Therefore, this study indicated that Generation Xers were slower in their adoption of technology and have not fully adopted all of the capabilities of the technology as compared to Generation Y or millennials (Gafni & Geri, 2013).

Rumble et al. (2016) conducted a study of millennial's perceptions of GM science and their likelihood to adopt GM citrus products. The study indicated that 56.1% millennial respondents would be likely or extremely likely to consume GM citrus products. The study also indicated that

the compatibility attribute of an innovation was a predictor of their likelihood to consume GM citrus products (Rumble et al., 2016).

Purpose and Objectives

The purpose of this study was to determine if generational differences existed in the perceived adoption characteristics of GM science. This study was conducted to inform the development of extension programs focused on educating about GM science to a variety of generational audiences. The purpose was addressed through the following objectives:

1. Describe the perceived relative advantage, compatibility, complexity, observability, and trialability of GM science within each generation; and
2. Determine if there are statistical differences between the perceived attributes of GM science by generation.

Methods

The research shared here is part of a larger study designed to understand U.S. consumer perceptions of GM science. An online survey was developed and reviewed by a panel of experts. The survey was pilot tested with slight revisions made to ensure internal and external validity and reliability of the constructs. Responses were collected using non-probability, opt-in sampling techniques (Baker et al., 2013). U.S. residents ages 18 and older were invited to participate in the online survey. Of the 1,751 invited to participate, 1,047 completed responses were returned after quota sampling and attention filters were met which accounts for a 60% usable response rate. The survey data was weighted to reflect the 2010 U.S. Census data to increase generalizability of the results to U.S. consumers (Baker et al., 2013).

First, survey respondents were asked to indicate the year in which they were born. The years reported by the respondents were then recoded into generational categories: 1981-2000 = Millennials, 1965-1980 = Generation X, 1946-1964 = Baby Boomers, before-1945 = Traditionalist (The Center for Generational Kinetics, 2016). Perceptions of the five attributes of GM science were then measured using respondent reactions to a series of statements for each attribute.

Perceived relative advantage was measured using a five-point Likert type scale. Respondents were asked to indicate their level of agreement or disagreement to the following statements: GM science enhances the taste of food, GM science increases the amount of food a farmer can grow, GM science reduces the use of pesticides, GM science combats plant disease, GM science makes food more affordable, GM science enables plants to grow when less water is available, GM science is part of a solution to end world hunger, and GM science fosters more opportunities for the next generation. The responses to the eight statements were averaged to create a relative advantage index. Reliability was measured *post hoc* ($\alpha = .92$).

Consumers' perceived compatibility was measured using a five-point Likert type scale. Respondents were asked to indicate their level of agreement or disagreement with the following statements as they pertain to GM science: developments in GM science help make society better, GM science is essential for improving the quality of human lives, GM science does not pay attention to the moral of society, GM science makes out way of life change too fast, even if it brings no immediate benefit GM science that advances knowledge is necessary, and overall GM science does more harm than good. The responses to the six statements were averaged to create a compatibility index. Reliability was measured *post hoc* ($\alpha = .74$)

Perceived complexity was measured using a semantic differential scale. Survey respondents were asked to select the circle between each set of adjectives that best represents their thoughts about GM science. The sets of adjectives included: complex/simple, easy to understand/difficult to understand, clear/unclear, confusing/straightforward, ambiguous/definitive, and complicated/not complicated. The responses to the six sets of adjectives were averaged to create a complexity index. Reliability was measured *post hoc* ($\alpha = .83$).

Consumers' perceived observability was measured using a semantic differential scale. Respondents were asked to select the circle between each set of adjectives that best represents their thoughts about GM science. The sets of adjectives included: easy to identify/difficult to identify, something I can observe/something I cannot observe, obvious/not obvious, evident/concealed, visible/invisible, and disclosed/withheld. The responses to the six sets of adjectives were averaged to create an observability index. Reliability was measured *post hoc* ($\alpha = .92$).

Lastly, perceived trialability was measured using a five-point Likert type scale. Respondents were asked to indicate their level of agreement or disagreement with the following statements as they pertain to GM science: food products that result from plants made with GM science are easy to try, food products that result from plants made with GM science are readily available to test before I buy, I can easily try food products that result from plants made with GM science in a grocery store, the opportunity to try food products that result from plants made with GM science is not available to me, if given the opportunity I would try food products that results from plants made with GM science, and I want the opportunity to try out food products that result from plants made with GM science before deciding whether I like them or not. The statement *the opportunity to try food products that result from plants made with GM science is not available to me* was removed before creating the trialability construct in order for the construct to be reliable. The remaining five statements were averaged to create a trialability index. Reliability was measured *post hoc* ($\alpha = .66$).

Mean scores and standard deviations were interpreted using the real limits of the scale: 1.00 - 1.49 = *strongly disagree*, 1.50 - 2.49 = *disagree*, 2.50 - 3.49 = *neither agree nor disagree*, 3.50 - 4.49 = *agree*, 4.50 - 5.00 = *strongly agree*. ANOVAs were used to determine if generational differences existed. Tukey post hoc tests were used to identify specific differences between groups. Effect sizes were calculated to determine the magnitude of the differences between generational groups. Cohen's (1988) guidelines were used to guide the interpretation of the effect size.

Results

For the most part millennial and generation X respondents were similar in their responses. Respondents in both groups agreed GM science provided a relative advantage and neither agreed nor disagreed GM science was compatible, complex, or observable (see Table 1). Millennials agreed with the trialability of GM science, whereas generation Xers neither agreed nor disagreed on their perceptions of GM science trialability.

Respondents who indicated being in the baby boomer and traditionalist generations were also similar. The baby boomers and traditionalists neither agreed nor disagreed that GM science provided a relative advantage, was compatible, or provided trialability characteristics. The baby boomer and traditionalist generations disagreed GM science is observable. The baby boomers and traditionalists differed in their perceptions of GM science's complexity. The baby boomers neither agreed nor disagreed it was complex, where the traditionalists disagreed that GM science was complex.

Table 1

Perceived Attributes of GM Science by Generation

	Millennials $n = 333$	Generation X $n = 295$	Baby Boomers $n = 312$	Traditionalist $n = 107$
	M (SD)	*M (SD)*	*M (SD)*	*M (SD)*
Relative Advantage	3.78 (.64)	3.63 (.78)	3.40 (.77)	3.44 (.73)
Compatibility	3.42 (.59)	3.19 (.71)	3.18 (.79)	3.28 (.77)
Complexity	2.87 (.76)	2.69 (.81)	2.59 (.77)	2.45 (.65)
Observability	3.12 (.89)	2.69 (1.00)	2.41 (.94)	2.13 (.72)
Trialability	3.62 (.63)	3.34 (.70)	3.15 (.64)	3.23 (.54)

Note. Real limits of the scale: 1.00 - 1.49 = *strongly disagree*, 1.50 - 2.49 = *disagree*, 2.50 - 3.49 = *neither agree nor disagree*, 3.50 - 4.49 = *agree*, 4.50 - 5.00 = *strongly agree*

ANOVAs were used to determine if statistical differences existed between the generational groups for the five attribute indices (see Table 2). Statistical differences were found for all five of the attributes. The results indicated a small effect size for compatibility and complexity and a medium effect size for relative advantage, trialability, and observability (Cohen, 1988).

Table 2

Differences in Perceived Attributes between Generational Groups

	F	p	η_p^2
Observability	46.73	.00**	.13
Trialability	30.00	.00**	.09
Relative Advantage	16.03	.00**	.06
Complexity	11.59	.00**	.04
Compatibility	7.92	.00**	.02

Note. **$p < .01$

Tukey post hoc tests were run to determine which specific generational groups had significant differences for each of the five attributes. The differences in the generational groups for the relative advantage attribute are depicted in Table 3. Baby boomers and traditionalists differed significantly from millennials in their perceptions of the relative advantage of GM science. Baby boomers also differed significantly in their perceptions to the generation X group.

Table 3

Tukey Post Hoc Test for Relative Advantage

Generation	Generation Comparison	Mean Difference	*p*
Millennials	Generation X	.15	.06
	Baby Boomers	.38	.00**
	Traditionalist	.34	.00**
Generation X	Millennials	-.15	.06
	Baby Boomers	.23	.00**
	Traditionalist	.19	.10
Baby Boomers	Millennials	-.38	.00**
	Generation X	-.23	.00**
	Traditionalist	-.04	.97
Traditionalist	Millennials	-.34	.00**
	Generation X	-.19	.10
	Baby Boomers	.04	.97

Note. **$p < .01$

Consumers in the generation X and baby boomer generations' perceptions of the compatibility of GM science differed significantly from the perceptions of the millennial generation (see Table 4). The millennial generation had a higher mean score on their perceptions of compatibility of GM than the traditionalist generation, whereas the traditionalist generation had a higher mean score than the baby boomers and the generations Xers. However, the differences between the traditionalist generation and the other generations was not significant.

Table 4

Tukey Post Hoc Test for Compatibility

Generation	Generation Comparison	Mean Difference	*p*
Millennials	Generation X	.23	.00**
	Baby Boomers	.24	.00**
	Traditionalist	.14	.29
Generation X	Millennials	-.22	.00**
	Baby Boomers	.02	.99
	Traditionalist	-.09	.71
Baby Boomers	Millennials	-.24	.00**
	Generation X	-.02	.99
	Traditionalist	-.10	.55
Traditionalist	Millennials	-.04	.29
	Baby Boomers	.09	.71
	Generation X	.10	.55

Note. **$p < .01$

The millennial consumers' perceptions of the complexity of GM science differed significantly from the perceptions of the consumers in the generation X, baby boomer, and traditionalist groups (see Table 5). In addition, millennials' perceptions had a higher mean score than the other three generation groups. Traditionalists differed significantly in their perceptions of the complexity of GM science from generation Xers.

Table 5

Tukey Post Hoc Test for Complexity

Generation	Generation Comparison	Mean Difference	*p*
Millennials	Generation X	.18	.02*
	Baby Boomers	.28	.00**
	Traditionalist	.43	.00**
Generation X	Millennials	-.18	.02*
	Baby Boomers	.10	.35
	Traditionalist	.25	.02*
Baby Boomers	Millennials	-.28	.00**
	Generation X	-.10	.35
	Traditionalist	.14	.34
Traditionalist	Millennials	-.43	.00**
	Generation X	-.25	.02*
	Baby Boomers	-.14	.34

Note. **$p < .01$, *$p < .05$

The perceptions of the observability of GM science differed significantly in every generation group (see Table 6). Millennials had a higher mean score than generation X, baby boomer, and traditionalist generations. Millennial, generation Xer, and baby boomer consumers had higher mean scores than the traditionalist consumers.

Table 6

Tukey Post Hoc Test for Observability

Generation	Generation Comparison	Mean Difference	*p*
Millennials	Generation X	.43	.00**
	Baby Boomers	.71	.00**
	Traditionalist	.99	.00**
Generation X	Millennials	-.43	.00**
	Baby Boomers	.28	.00**
	Traditionalist	.56	.00**
Baby Boomers	Millennials	-.71	.00**
	Generation X	-.28	.00**
	Traditionalist	.28	.03*
Traditionalist	Millennials	-.99	.00**
	Generation X	-.56	.00**
	Baby Boomers	-.28	.03*

Note. ** $p < .01$, * $p < .05$

The millennial consumers perceived the trialability of GM science differently than the generation X, baby boomer, and traditionalist generations (see Table 7). The difference was significant, and millennials had a higher mean score compared to the other three generation groups. Generation X differed significantly in their perceptions compared to the baby boomer generation where generation X had the higher mean score.

Table 7

Tukey Post Hoc Test for Trialability

Generation	Generation Comparison	Mean Difference	*p*
Millennials	Generation X	.28	.00**
	Baby Boomers	.47	.00**
	Traditionalist	.39	.00**
Generation X	Millennials	-.28	.00**
	Baby Boomers	.19	.00**
	Traditionalist	.11	.43
Baby Boomers	Millennials	-.47	.00**
	Generation X	-.19	.00**
	Traditionalist	-.08	.68
Traditionalist	Millennials	-.39	.00**
	Generation X	-.11	.43
	Baby Boomers	.08	.68

Note. **$p < .01$

Conclusions

The results indicated generational groups perceived GM science differently, affecting the rate in which the generations may be adopting GM science. Blackburn (2011) indicated the millennial generation is more likely to engage in new technologies and more willing adopt new technologies compared to other generations. The findings from this study confirmed this to a certain degree. In this study millennials did agree GM science provided a relative advantage and trialability, however the millennials were neutral in their perceptions of GM science offering compatibility, reduced complexity, and observability. Generation X perceived GM science similarly to the millennial generation which is in opposition to Blackburn's findings.

Quan-Haase et al. (2014) found a majority of traditionalists had not adopted e-book technology, some were unaware of the technology and some were aware and chose not to adopt. These finding are partially consistent with the findings of this GM study. Of the four generations, the traditionalist generation disagreed with two attributes of an innovation, complexity and observability. The traditionalists were neutral in their perceptions of GM science in regards to its relative advantage, compatibility, and trialability. Quan-Haase et al. (2014) indicated traditionalist were hesitant to adopt because there was a lack of trialability of the e-book technology. Results of this study indicated the same, as traditionalist were neutral in their perceptions of the trialability of GM products.

Gafni and Geri (2013) found Generation Xers were slower in their adoption of smartphone technologies and did not fully adopt the technologies capabilities as compared to generation Y or millennials. The results of this study are similar. Millennials and generation Xers were most similar

in their perceptions, taking into consideration all four generation groups. However, when comparing millennials and generation Xers, millennials agreed with two attributes and neither agreed nor disagreed with three. Whereas, generation Xers only agreed with one attribute and neither agreed nor disagreed with four attributes.

The study conducted by Rumble et al. (2016) indicated that over half of the millennial respondents would be likely to consume GM food products. The results of this study indicated the millennial generation agreed with the most attributes compared to the other three generation groups. Rumble et al. (2016) indicated that the millennial generation was most likely to consume GM citrus products if the products were compatible. This result differs from the findings of this study which indicated millennials neither agreed nor disagreed GM science was compatible.

Implications and Recommendations

Due to the generational differences in perceptions of GM science, Extension agents should target specific generations when developing educational efforts about GM science. In terms of relative advantage, millennial's and generation x's views aligned closely with each other where baby boomers and traditionalists perceived relative advantage similarly. Therefore, when facilitating outreach efforts to educate consumers around GM science's relative advantages, millennials and generation Xers should be a target audience group and baby boomers and traditionalists should be another target audience group. The millennial and generation X generations had a more positive perception of GM science's relative advantages, whereas baby boomers and traditionalist were more conservative with their perceptions. With this, Extension agents can provide programming for baby boomers and traditionalists in areas that focus on their perceptions of the relative advantages of GM science. Agents can focus efforts to share with consumers unbiased, university researched information on how products made using GM science can be advantageous in price, health, safety, quality, and efficiency.

Mixing audience groups could help opposing audiences understand both the positive and negative aspects of GM science. Providing a space where a discussion can be facilitated and mediated by an unbiased professional to discuss both sides of the GM science debate can be helpful. Facilitated discussions can include but are not limited to topics such as what stance do you take, what events led you to take this stance, why do you believe your stance is better than the opposing, would you consider eating food from the opposing stance, and what facts would you share about your stance. The discussion could lead both parties to a better and more informed understanding of both sides and lead to educated purchasing decisions.

The results of this study indicated all four generations' perceptions of both compatibility and trialability of GM science were similar, implying members of all four generations can be grouped together when outreach efforts target the compatibility of GM science. Because perceptions across all generational groups are similar for the compatibility of GM science, Extension agents should be diligent in providing outreach materials that capture positive and negative features of GM science. Creating opportunities for consumers to experience or try GM science-related items can be presented in the form of field days to talk with farmers that grow GM crops, opportunities to speak with scientists, and chances to try GM and non-GM food products.

Traditionalists viewed the complexity of GM science more negatively than the other generations. However, millennials viewed the complexity of GM science differently than those from other generations. There were also differences in the views of generation Xers and traditionalist. The findings imply that when carrying out outreach in the space of complexity of GM science, millennials should be targeted as a group of their own, and baby boomers and

traditionalist can be a segmented audience. Complexity can be addressed by Extension agents as it pertains to each generation group. Assessing the needs of each group in terms of what they find complex about GM science will help Extension agents provide appropriate programming for the segmented audience. Points of complexity could include lack of knowledge, misinformation, lack of resources, or miscommunication.

Millennials and generation Xers perceived the observability of GM science similarly, as well as, baby boomers and traditionalists. Outreach efforts around the observability of GM science should be targeted toward the groups reflective of their similar perceptions. Ensuring that the segmented audiences are educated on both sides of the GM science story will help consumers develop a well-rounded level of knowledge of GM science and be able to make educated decisions about whether they accept or reject GM science as an innovation. In an effort to make GM science more observable to consumers, social media campaigns can be formed, videos can be composed, and live experiences can be created for consumer to have opportunities to interact with various aspects of GM science. Aspects of GM science can include but are not limited to GM crops, GM science labs, GM food in the grocery store, or other GM products.

Duff and Phelps Corporation (2016) indicated that the millennial generation will have the largest consumer purchasing power. Millennials should largely be the target audience for GM science extension programs because of their predominant stake in the consumer market. In addition to their ability to control changes in purchasing trends (Duff & Phelps Corporation, 2016), millennials are the furthest generation removed from the agriculture industry (American Farm Bureau Federation, 2017). A better understanding of agriculture and the root of their food supply will better educate millennial consumers and guide them in their decision process to accept or reject GM science.

Future research on the generational differences in consumers' perceptions of GM science is needed to develop appropriate programming to meet consumers where they are in their perceptions. Future studies should be conducted to investigate which specific barriers related to each attribute keep consumers from adopting GM science. Findings of this study can more specifically guide the content of Extension programming. Also, research can be conducted to understand consumer perceptions according to segments other than generations. Other segments that should be investigated include regional location in the US, gender, religion, age, and rural or urban residences, to name a few. Results from this study can help Extension agents provide their specific audience with the content needed to become educated purchasing consumers.

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