HOW GENERATION Z COLLEGE STUDENTS IN

THE FERGUSON COLLEGE OF AGRICULTURE

PERCEIVE TECHNOLOGY IN THEIR LIVES:

A Q METHODOLOGY STUDY

By

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Abstract: Generation Z is the generation everyone is talking about (Dimock, 2019). The oldest are entering the workforce, and the rest are in classrooms (Dimock, 2019). They are the most unique generation to date, and they have been shaped by numerous domestic and international tragedies (Katz, 2019). Their perception of privacy is different than previous generations because of these experiences (Parker, Graf, & Igielnik, 2019). However, little is known about them, specifically what they think about technology in their life.

Q methodology was chosen for this study for its ability to gain subjective insight about participants (Brown, 1980; Stephenson, 1953). The 40-statement Q set provided descriptions of how technology integrates in life, developed through naturalistic and hybrid methods. Twenty-five Ferguson College of Agriculture Generation Z students sorted the Q set with the condition of instruction, "*What are your feelings about technology in your life?*

The 25 participant sorts were entered into the Q methodology software PCQ. The software correlated and factor analyzed the data. For a stronger solution, the researchers used judgmental rotation, resulting in a three-factor solution. To explain the factors the following labels were applied: *Zennial, Silent Z,* and *Baby Zoomer.*

The *Zennial* perspective strives for balance in their life between technology, social media and the real world. They are similar to the Millennial generation with their drive for success, and their healthy fear of abusing technology and social media. Additionally, the perspective values face-to-face relationships, and their parents some of their best friends. The *Silent Z* perspective sees technology as a tool. They are analytical and like to solve problems. However, they struggle losing the simplicity of previous generations, while appreciating new technologies. The *Baby Zoomer* perspective desires security, both physically, emotionally, and professional.

The most surprising finding from this study was some Generation Z individuals actually want to step away from their devices, more so than other generations assume. It is also apparent Generation Z has a different perspective of privacy than previous generations, and more research must be done to adapt privacy theories accordingly.

Keywords: Q methodology, Generation Z, privacy, technology

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CHAPTER I

INTRODUCTION TO THE STUDY

Generation Z, those born between 1997 and 2012 (Dimock, 2019), is coming of age and entering classrooms and the workplace after a childhood shaped by more world events than many previous generations (Katz, 2019). They are quickly overtaking the much talked about Millennial generation in understanding what makes them different (Dimock, 2019). The oldest in this generation just joined the workforce, but a majority of them are in college and high school (Dimock, 2019). They do not know a world without social media, and researchers do not know much about them.

These young people are the first generation to not know a world without constant connectivity (Dimock, 2019). They are the first generation to not know a life without connectivity through cellular data, WIFI, and broadband at their fingertips (Parker, Graf, & Igielnik, 2019). Their perception of safety and privacy is also impacted by not knowing a life before 9/11 (Parker, Graf, & Igielnik, 2019) and being old enough to see the impact of the Great Recession on their families (Dimock, 2019). And, just when they thought things were looking up as they approached adulthood with a solid economy and low unemployment rates, COVID-19 spread like rapid fire across the world (Parker & Igielink, 2020). In the process, the pandemic shut down businesses, governments, and schools (Parker & Igielink, 2020). Many have been personally impacted by a lost job, or at least decreased pay, to them or someone in their household (Parker & Igielink, 2020).

In addition to a lack of general information about Generation Z, a lack of information exists on how the technology they have grown up with impacts the generation. Several articles have surfaced raising concern about social media and technology use increasing anxiety and depression in adolescents (Curtin & Heron, 2019; Horowitz & Graf, 2019). However, recent reviews of these studies show the connection may not be as strong as researchers first believed (Odgers & Jensen, 2020). This combined with an increase in burnout in the working generations (WHO, 2019) makes for a perfect storm for this newest professional generation.

Theoretical Framework

The idea of privacy has been around for centuries. However, it did not enter the U.S. legal system until 1965, when a Supreme Court Case ruled the First, Third, Fourth, Fifth and 14th Amendments infer privacy (Auxier et al., 2019a). After the ruling researchers began exploring the idea of privacy, specifically in the field of psychology (Stuart, Bandara, & Levine, 2019). During the height of privacy research Laufer and Wolfe (1977) developed a popular privacy theory, which said a person's perception of privacy is determined by personal experiences, as well as location, stage of life, relationships and societal technology. The theory is explained by three tenants: self-ego, environment, and interpersonal. Laufer and Wolfe's Privacy Theory (1977) served as the theoretical foundation for this study. After the 1970s, privacy research dwindled until the rise of technology and social media in the 2000s (Stuart, Bandara, & Levine, 2019). However, the surge in privacy research came from computer science and human resource fields (Stuart, Bandara, & Levine, 2019).

Most of the research conducted about Generation Z to date is quantitative in nature and lacks subjectivity (Pew Research Center, 2019). As such, Q methodology was chosen for this study to understand more about the subjectivity of Generation Z. Q methodology was developed by William Stephenson as a scientific way to examine human subjectivity (Stephenson, 1953). The methodology uses self-reference (Brown, 1980) to understand why and how someone believes something, rather

than just what they believe (McKeown & Thomas, 2013). The nuances in opinion Q methodology can uncover cannot be achieved by other methodologies (Brown, 1980).

Purpose of the Study

The purpose of this study was to examine the perspectives of Generation Z college students in the Ferguson College of Agriculture toward the technology in their lives. This study was developed from two previous studies, which sought to understand how undergraduate students felt about social media usage and burnout. Additionally, limited information is available to understand what the youngest professional generation thinks about technology in their lives.

Problem and Significance of the Study

Generation Z is the generation in college classrooms; they are also the next workforce generation. At this point, limited information is known about how this group views technology and how they integrate it into their lives. The literature available focuses on numbers, looking at large populations. Little subjective information is available to describe the nuances of this generation. Prior to COVID-19, this research was needed to arm educators and future bosses with information to best prepare Generation Z for the workforce, to have a smooth transition into the workforce, and to help these individuals be successful members of society. This research is a foundational piece to start understanding these ideas. While other generations have come before them, they are the first generation to not know a life without technology, as they are digital natives. This puts them in a unique position, to which older generations cannot totally relate.

Finally, the COVID-19 pandemic has also totally shifted the world Generation Z was prepared to inherit as they entered adulthood. In a matter of weeks, their futures drastically changed. The positive economy and job market they saw disappeared, and many are experiencing a totally different educational world than they have known the rest of their academic careers.

Finally, what information is known about the impact of technology on this generation is largely quantitative. Pew Research Center (2019; 2020) has produced a great amount of quantitative data about Generation Z. While numbers are helpful, they do not truly show all the nuances to this issue. A more subjective look at this generation is needed. Educators, mentors, and future bosses need to learn more about this generation so they can help prepare and lead them to a place of success personally and professionally.

Scope of the Study

The scope of this study includes students within the Ferguson College of Agriculture who fall in Generation Z and participated in the study between March and April 2020.

Research Question

The research question that guided this research study was, "What are the perspectives of Generation Z college students in the Ferguson College of Agriculture toward technology in their lives?" In Q methodology, the research question is defined by the condition of instruction (Watts & Stenner, 2012), as it guides how participants sort the statements for the study (Brown, 1980). The Q set for a study can be shuffled and applied in many different ways, so the condition of instruction is what brings meaning to a study (Stephenson, 1953). The condition of instruction must be simple and easily applied to the statements for the participants to sort (Watts & Stenner, 2012). The condition of instruction for this study was *What are your feelings about technology in your life?*

Assumptions

The following assumptions were made for this study:

1. Students engage with some form of technology on a daily basis.

2. Students truthfully and authentically present their opinions about technology in their life.

Limitations

The results of this study cannot be generalized to all college students. They represent the opinions and perspectives of the participants.

Definitions of Terminology

Concourse: An all-encompassing collection of thoughts, ideas, and opinions about a phenomenon (Stephenson, 1986a).

Condition of Instruction: How the participants are directed to complete the Q sorts (Brown, 1980).

Factor array: After all q sorts are factor analyzed, the *z*-scores is converted for each statement create a single q sort to represent one factor (Stephenson, 1935)

Factor loading: McKeown and Thomas (2013) explain them as correlation coefficients, which tell you how similar or dissimilar an individual sort is to the composite sort.

P set: The participants in the study (Watts & Stenner, 2012).

Q methodology: A methodology created by William Stephenson in 1935, which uses factor analysis to scientifically evaluate human subjectivity (Brown, 1980)

Q sample: Forty to 50 statements sampled from the concourse, which represent the breadth of opinions about the topic at hand (Brown, 1980).

Q sort: An individual's ranking of the q sample, usually from Most Like to Most Unlike (McKeown & Thomas, 2013).

CHAPTER II

REVIEW OF LITERATURE

The purpose of this study was to examine the perspectives of Generation Z college students in the Ferguson College of Agriculture toward the technology in their lives. This chapter explores previous research related to the research topic, to create a foundation for the study in literature.

Privacy

The definition of privacy is "the quality or state of being apart from company or observation, freedom from unauthorized intrusion (Merriam-Webster, n.d.). The word is often associated with American rights, but the word privacy is never mentioned in the U.S. Constitution. However, it has been a prominent concept in the U.S. for more than 140 years, as Supreme Court Justice Louis Brandeis wrote of the importance of privacy in an 1890 Harvard Law Review article (Auxier et al., 2019). In the article, he said Americans have a "right to privacy" and a "right to be let alone" (Warren & Bradeis, 1890, para. 1). The word privacy officially entered the U.S. legal system when a 1965 Supreme Court case ruled the First, Third, Fourth, Fifth, and 14th Amendments infer privacy; thus, upholding the Bradeis view (Auxier et al., 2019a).

After the entrance of privacy into the legal system in 1965, research on the topic started to expand. The 1970s brought several studies, especially in psychology, which explored individuals' perceptions of privacy (Stuart, Bandara, & Levine, 2019). One such study said,

"Privacy, as a whole or in part, represents the control of transactions between person(s) and other(s), the ultimate aim of which is to enhance autonomy and/or minimize vulnerability" (Margulis, 1977, p. 10). However, after the 1970s, privacy studies dwindled, but in the late 1990s and early 2000s, studies relating to technology and data began to emerge (Stuart, Bandara, & Levine, 2019). Most of these studies were found in computer science and human resources. The need to understand the interaction between human privacy and technology continues today, and Stuart, Bandara, & Levine (2019) call for fields such as psychology to be part of the exploration.

Today, the term privacy varies a bit by person. The increase in technology and sharing of personal information has brought different definitions for the idea of privacy and digital privacy. The Pew Research Center explored these various meanings in a 2019 study. The themes for privacy from this study can be seen in Figure 1, and the themes for digital privacy are in Figure 2. The top concerns for general privacy and digital privacy revolve around the tenets of controlling information and possessions from other people and organizations (Auxier et al., 2019).

Figure 1

The Meaning of Privacy to American Adults

Note. Pew Research Center (Auxier et al., 2019).

Figure 2

The Meaning of Digital Privacy to American Adults

In their words: What does digital privacy mean to you?

% of U.S. adults who mention the following themes when asked "What does digital privacy mean to you?"

Themselves, their personal information and possessions, the desire to keep things to themselves	17%
Control over information, possessions, self; deciding what aspects of their lives are accessible to others	14
Other people and organizations not being able to access their possessions or private life	13
Privacy is a myth/means nothing/doesn't exist	9
Having their information sold, third party involvement	6
Crime, hacking, fraud, any threats of illicit activity	5
General security references, i.e. "secure," "guarded," "protective"	4
Tracking, surveillance, monitoring, spying	3
Company measures, how websites/companies should secure data, terms of service, privacy settings	2
Personal information is only accessible with the person's knowledge or consent	2
Threat from the government regarding themselves, possessions or private life	1
Other	4
Did not answer	31

Note: Verbatim responses have been coded into categories. Results may add to more than 100% because each response could have up to three codes.
Source: Survey conducted June 3-17, 2019.
"Americans and Privacy: Concerned, Confused and Feeling Lack of Control Over Their Personal Information"

PEW RESEARCH CENTER

Note. Pew Research Center (Auxier et al., 2019).

While individuals believe personal control over information is part of privacy, six of 10 Americans believe they could not go a day without some kind of data collected about them (Auxier et al., 2019). Another part of this study asked Americans how they felt about the safety of their personal information, and seven of 10 said they believe their information is less secure than it was five years ago (Auxier et al., 2019). The study also found 97% of Americans have been asked to accept a company's privacy policy at some point (Auxier et al., 2019) in their lives. Of those, 32% said they are asked weekly, and 24% said they are asked once a month to accept privacy policies (Auxier et al., 2019). However, only 9% report reading the policy fully before agreeing, and 36% said they never read the policy (Auxier et al., 2019). Part of these differences can be explained by demographics. Only 15% of individuals 18 to 29 read the policies, compared to 26% of individuals over 65 who read before accepting (Auxier et al., 2019).

These numbers could be explained by Americans' lack of confidence in companies to protect their information. The same study found 79% of Americans had little confidence

companies would admit mistakes and take ownership for compromised customer information (Auxier et al., 2019). When it comes to companies sharing information with outside sources for something like research, the difference in opinions is related to age. Individuals over 50 were less likely to be OK with data being shared (29%) compared to those under 50 (42%) (Auxier et al., 2019).

The push for more people to complete the 2020 Census online led to further research by Pew on individuals' privacy thoughts. At 66%, American adults are more confident the U.S. Census Bureau and their credit card companies will protect their private information than other businesses and retailers (Cohn et al., 2020). When comparing trust by age, individuals 50 and older (70%) are more likely to believe the Census Bureau will protect their information, compared to adults 18 to 49 (63%) (Cohn et al., 2020).

Americans believe the risk of their personal information being collected by businesses (81%) and the government (66%) is greater than the benefit they receive (Auxier et al., 2019). As technology has expanded, the privacy discussion has also expanded, especially to explain individuals' thoughts about privacy online. Research supports the idea people make decisions on privacy by weighing the benefits and rewards, whether through social media or sharing personal information with businesses/organizations (Marwick & Hargittai, 2019). The Privacy Theory developed in 1977 by Laufer and Wolfe helps explain the risk and reward pieces of privacy.

Privacy Theory

Laufer and Wolfe described their developmental privacy theory as one that "relates to individual's understanding and experience of privacy and invasion of privacy to his/her growth and life, over time, within a particular sociohistorical environment" (1977, p. 25). They explained an individual's perception of privacy, or invasion of privacy, is molded by personal experiences, history, societal technology, relationships, stage in life, and location (Laufer & Wolfe, 1977).

These elements are further combined and explained as three major dimensions of Laufer and Wolfe's privacy theory: environmental, interpersonal and self-ego. These dimensions help explain how privacy perceptions change over time and why people perceive privacy and privacy invasion differently (Laufer & Wolfe, 1977).

Self-ego focuses on personal development, specifically personal dignity and autonomy (Laufer & Wolfe, 1977). An individual needs space and aloneness to develop the autonomy, but it must be chosen aloneness. Forced aloneness will not have the same effect, as a person does not have the freedom of choice (Laufer & Wolfe, 1977). Additionally, limited privacy is linked to low self-esteem (Laufer & Wolfe, 1977).

The environmental aspect of Privacy Theory focuses on elements acting as boundaries, including cultural expectations, social differences or physical spaces (Laufer & Wolfe, 1977). The specific elements are "cultural meanings, the interaction between the social arrangements and the physical settings, and the state of the life cycle" (Laufer & Wolfe, 1977, p. 28).

The interpersonal tenant is connected to the environmental and self-ego concepts. The core of privacy in everyday life is having chosen aloneness, being able to control access to information, and the ability to feel people respect their time and space (Laufer & Wolfe, 1977).

Generations Defined

Generations are groups of people born during a given period, and they are defined by social, cultural, and economic events going on at the time of their birth and/or early childhood. However, the boundary lines of generations are often fuzzy (Taylor & Gao, 2014). According to Pew Research (2019), the Silent Generation members were born between 1928-1945, Baby Boomers were born between 1946-1964, Generation X members were born from 1965-1980, and Millennials were born from 1981-1996.

The Silent generation is defined by their desire to work within the system and are considered calmer than their parents of the Roaring '20s (Howe, 2014a). They were too young to serve in WWII, but they were too old to participate in the Summer of Love (Raphelson, 2014). They are sometimes described as acting like middle-aged adults, even when they were in their 20s (Raphelson, 2014). Many experienced a good economy from the time they started working through retirement (Howe, 2014b). They are known as the healthiest, wealthiest, and most educated of the elder population (Howe, 2014b).

Baby Boomers are defined by the economic growth after WWII, in addition to an increase in fertility rates during this time (Colby & Ortman, 2014). They are defined by a specific date range, more so than other generations (Colby & Ortman, 2014). The generation has a greater range than other generations; thus, there are sometimes differences between the oldest and youngest members of the generation (Pew, 2008). At the time of this writing, many are in retirement or close to it. Research shows they are anxious about their financial future, even though they were the peak earners in their professional careers compared to other generations (Pew, 2008).

Generation X followed Baby Boomers from 1965 to 1980 (Pew, 2019). They are a smaller generation than Baby Boomers and Millennials, which they are between (Taylor & Gao, 2014). Generation X is often categorized by being overlooked, or the 'middle child' (Taylor & Gao, 2014). This is because they are the demographic bridge between the two starkly different generations before and after them (Taylor & Gao, 2014). They also tend to fall in the middle on issues like technology adoption and political/social issues (Taylor & Gao, 2014). Additionally, there are fewer experiences/attributes to make the generation unique; even the members of the generation have a hard time explaining what defines them (Taylor & Gao, 2014). Even though the generation is hard to define, there is consistency around their attributes. Generation X is known

for being "savvy, skeptical and self-reliant; they're not into preening or pampering;" and they often do not care what others think about them (Taylor & Gao, 2014, par. 12).

Millennials brought the most racial and ethnical diversity the U.S. had seen, up to that generation (Bialik & Fry, 2019). The generation is known for delaying marriage and living with their parents longer than previous generations (Bialik & Fry, 2019). Compared to older generations, Millennials are more educated, with 39% who have bachelor's degrees (Bialik & Fry, 2019). When it comes to work, Millennial women followed the lead of Generation X women, and more of them than the Silent and Baby Boomer generations are in the workforce (Bialik & Fry, 2019). However, many entered the workforce during the Great Recession, which is one of the tenants to shape this generation (Bialik & Fry, 2019; Dimock, 2019).

Technology also made a huge impact on the development of the Millennial generation. They were the generation to come of age with social media and technologies like cable TV and cell phones at their fingertips (Nielsen, 2014). They also believe technology makes their lives easier (Nielsen, 2014). The impact of technology is also shaping Generation Z, the generation currently coming of age.

Generation Z

Generation Z includes anyone born between 1997 and 2012 (Dimock, 2019). This generation follows Millennials, who are now wholly in adulthood as the oldest are nearing 40 years old at the time of this writing. Commonly known as Generation Z, or Gen Z, as the oldest members of Generation Z enter the workforce and begin to graduate from college, this new generation in the United States has already made a name for themselves through their diversity and childhood marked by traumatic world events. Though Generation Z is the most common name for the group, other names considered include the iGeneration and Homelanders (Dimock, 2019).

Defining Issues and Experiences for Generation Z

Generation Z has little to no memory of a life before 9/11 (Dimock, 2019). As such, terrorism has been a big factor to their generational development. Additionally, an increase of school shootings in the 2000s has also impacted their views of physical security in the world (Stillman & Stillman, 2017). The growing conversation around climate change was another defining topic for Generation Z (Dimock, 2019; Stillman & Stillman, 2017). Another early distinguisher of the generation is their diversity. Prior to them, Millennials were the most ethnically diverse generation, but Generation Z has topped them (Dimock, 2019). Finally, culturally sensitive topics, like gay marriage, became the new normal, making the generation more accepting of challenging topics (Stillman & Stillman, 2017).

These influences are what make Generation Z different than the generation before them, Millennials. While Millennials were the early adopters of many new forms of technology like cell phones and personal computers, Generation Z was born into the connectivity of cell phone data and high speech internet (Dimock, 2019). The other major differences between Millennials and Generation Z come from the acceptance of culturally sensitive topics (Stillman & Stillman, 2017). Generation Z, as a whole more open-minded and truer to themselves, could care less about what the definition of normal is (Stillman & Stillman, 2017).

Family Dynamics

As with any generation, family dynamics are one of the places where generational differences show up the most. Most individuals in Generation Z have parents who are part of Generation X. Generation Z saw their family units redesigned (Stillman & Stillman, 2017). There were more situations of two moms or two dads; additionally, their families had more balance than Generation X families (Stillman & Stillman, 2017). Parents worked hard for balance between

family and work, and overall, they had a healthier balance than their parents. Generation Z is continuing this desire for balance (Stillman & Stillman, 2017).

Parents and Generation Z kids have more common ground, because parents are more comfortable with technology, even though kids know more (Stillman & Stillman, 2017). This connection also comes from the family spending more time together. Mothers spend more time with their children now than they did in the 1960s (Pew, 2013). However, the increase in father/child time is even more staggering, almost tripling. Fathers moved from 2.5 to 7.3 hours spent with their children per week (Pew, 2013). While Generation Z and their parents are close, and kids rely on parents for wisdom and advice, parents are less likely to bail kids out, especially compared to Boomers bailing Millennials out (Merriman, 2015; Stillman & Stillman, 2017). Generation Z'ers have been and will continue to be allowed to fail more often (Stillman & Stillman, 2017). Furthermore, Generation Z parents realized they could not shelter their children, because of the internet and social media (Merriman, 2015). Instead, they chose to educate kids about consequences of actions, which resulted in more open relationships (Merriman, 2015).

Kids play a role in buying decisions in the family because of a more open relationship (Merriman, 2015). Thus, being part of the conversation continues to be a desire Generation Z has in the workplace (Stillman & Stillman, 2017). They understand their need to work their way up in the company; however, they still expect their ideas and opinions to be heard (Stillman & Stillman, 2017).

Security and Safety

Generation Z watched companies fail in the 2008 recession, so their hustle at work is not just to climb the corporate ladder but to ensure their job (Stillman & Stillman, 2017). The up-and-down economy this generation has seen will be a major shaping piece. They were old enough to see their families struggle through the Great Recession of 2008. They then watched the economy

and job market gain momentum as they approached adulthood, only to see it crash from COVID-19 in a matter of weeks (Pew, 2020).

Columbine and other school shootings showed Generation Z lockdown drills were common at school (Stillman & Stillman, 2017). At the same time, a 62% increase in homeschooling occurred between 2003 and 2012 (Stillman & Stillman, 2017). Security concerns even transitioned online, as major cyber-attacks on Target and Sony happened during Generation Z's young life (Stillman & Stillman, 2017). Environmental concerns are also strong within Generation Z, as they have seen more natural disasters than previous generations (Stillman & Stillman, 2017). The need for security even transcends into relationships.

Technology and Work

Technology played a part in the development of previous generations, but none as much as Generation Z (Merriman, 2015). The iPhone launched in 2007, and by the time Generation Z was in their teens connection through technology was common (Dimock, 2019). Social media, WiFi, high-bandwidth cellular data, and constant connection are things they have always had at their disposal (Dimock, 2019). Technology is who this generation is (Stillman & Stillman, 2017). Whereas previous generations experienced one or two major technology changes, Generation Z has experienced almost one change a year in their life (Stillman & Stillman, 2017).

The lack of barriers between the physical and digital world has been dubbed 'phigital' by Stillman and Stillman (2017). The increase in technology has brought about an increase in problem-solving ability and adaptability in Generation Z (Stillman & Stillman, 2017). When it comes to evaluating companies, a company does not exist to Generation Z if they do on have a digital presence (Stillman & Stillman, 2017). This also applies to companies a Gen Z'er has a desire to work for (Stillman & Stillman, 2017). However, even though they want to see up-to-date uses of technology, in the professional world, the most important thing to Generation Z is respect

(Stillman & Stillman, 2017). They are not worried about climbing the corporate ladder; this is not success to them (Stillman & Stillman, 2017). Generation Z defines success as having a healthy and loving family (Stillman & Stillman, 2017).

The interesting dynamic with Generation Z when it comes to communication is while they embrace technology, they still value face-to-face, authentic conversations (Stillman & Stillman, 2017). Instead of technology taking away this desire, it has shown them the variety of opinions people have should be heard (Stillman & Stillman, 2017). As such, Generation Z believes everyone should have a right to express themselves, even in a workplace (Stillman & Stillman, 2017).

Another difference between Generation Z and previous generations in the workplace is their desire to personalize their experience, which comes from the customization technology gives them (Stillman & Stillman, 2017). Stillman and Stillman (2017) explain this customization does not mean doing less work, but rather it will allow for more ownership in the job. One example some businesses have begun using is allowing new employees to pick their own job title, instead of making generation Z feel like they are conforming to a perceived box (Stillman & Stillman, 2017).

When Generation Z enters the workforce, some bosses will struggle with their desire for feedback (Stillman & Stillman, 2017). Generation Z has an immediate need for feedback, because their experiences with technology (Stillman & Stillman, 2017). However, they do not want to be checked-up on by their boss (Stillman & Stillman, 2017). They also have a desire to work independently because they believe in the idea they must do something for it to be done correctly (Stillman & Stillman, 2017).

Education

Generation Z does not just have a different approach to the workplace; their educational expectations are also different (Merriman, 2015). The generation has a desire to understand how what they are learning will be beneficial to their future; even in high school, they are concerned about their future career, finances, and the economy (Merriman, 2015). This is partly reflective of pressure from parents to work towards a future career from an early age (Merriman, 2015). Since technology can teach Generation Z so much, the interest in specialized schools is growing (Stillman & Stillman, 2017). For previous generations, college was about exploring possibilities, but for many Generation Z students, college is about the experiences they need to reach their desired career (Stillman & Stillman, 2017). Many are not afraid to turn to an online program to reach their desired goals and financial security (Stillman & Stillman, 2017). COVID-19 is sure to have an impact on educational expectations of Generation Z, as well, especially since many have seen someone in their household have their job impacted (Parker & Igielink, 2020), which further adds to the economic challenges Generation Z has seen in their lives.

Personal Relationships

Relationships, real and imagined, are also not immune from differences between generations. According to the Pew Research Center (2020), 48% of young adults (18-29) say an important way for them to show affection to their partner is through social media; however, 34% of this same age group said they have felt jealous or worried about their relationship because of something they saw on social media (Vogels & Anderson, 2020). Additionally, Stillman & Stillman (2017) say YouTube stars are more popular than traditional celebrities to Generation Z. Finally, a 2014 Market Watch story interviewed Yalda Uhls, regional director of Common Sense Media and senior researcher at the Children's Digital Media Center at the University of

California, Los Angeles, who explained young people think they have personal connections to celebrities, like Beyonce, through Twitter and other social media sites (Fottrell, 2014).

Social Issues

Generation Z and Millennials differ in many ways; however, it appears their views on social issues are more similar than other generations (Parker, Graf, & Igielnik, 2019). Since not all Generation Z members are old enough to vote, some of these opinions could shift, but it appears the two generations are closely aligned (Parker, Graf, & Igielnik, 2019). Most of these issues relate to government and diversity (Parker, Graf, & Igielnik, 2019). Figure 3 shows the comparison of generations for three of primary issues Pew Research Center (2019) investigated in this study.

Figure 3

Generational Differences on Key Social Issues

Gen Z and Millennials differ from older generations in views on Trump, role of government and growing diversity in U.S.

% saying ...

	They approve of Trump's job performance	Government should do more to solve problems	Increasing racial/ethnic diversity is good for society
Gen Z	30%	70	62
Millennial	29	64	61
Gen X	38	53	52
Boomer	43	49	48
Silent	54	39	42

Source: Surveys of U.S. adults ages 18 and older conducted Sept. 24-Oct. 7, 2018, and U.S. teens ages 13 to 17 conducted Sept. 17-Nov. 25, 2018.
"Generation Z Looks a Lot Like Millennials on Key Social and Political Issues"

PEW RESEARCH CENTER

Note. Pew Research Center. (Parker, Graf, & Igielnik, 2019)

Concerns for Generation Z

With an increase in connectivity in Generation Z (Dimock, 2019), there also seems to be an increase in anxiety and depression challenges in Generation Z (Horowitz & Graf, 2019). A Pew Research study found seven in ten teens believe anxiety and depression are major issues with teens, whether they or someone they know are suffering (Horowitz & Graf, 2019). The same study found a majority of pressure the teens feel comes from a desire to perform well academically in high school, mostly because they have goals to attend four-year post-secondary institutions (Horowitz & Graf, 2019). In addition to more teens being affected by anxiety and depression, there has also been an increase in teen suicide rates (Curtin & Heron, 2019).

According to the National Center for Health Statistics (2019), trends of teen suicide rates were stable from 2000-2007. However, from 2007-2017 teen suicide rates increased (Horowitz & Graf, 2019). For teens 10 to 14, the trend decreased from 2000-2007, but increased 56% from 2007-2017 (Horowitz & Graf, 2019). For individuals 15-19, suicide rates increased 76% from 2007-2017, with the greatest increase happening from 2014-2017 (Horowitz & Graf, 2019). The rate of suicides in individuals 20 to 24, increased at a slower rate of 36% from 2000-2017, with the greatest increase happening 2013-2017 (Horowitz & Graf, 2019).

While data shows more teens suffer from mental illnesses than previous generations, the cause is currently being debated. Some research supports a connection to technology, while others question this connection. A study published in the journal JAMA Psychiatry found there is an increased risk of mental health issues in teens who spend more than three hours a day on social media (Riehm, Feder, Tormohlen et al, 2019). However, another a paper by Amy Orben (2019) found, through a narrative review of recent studies, the link between mental health issues in adolescents and technology use is smaller than some believe. They go on to say the quality of methodology in many of the studies they reviewed was low (Orben, 2019). This idea is further

supported by Odgers and Jensen (2020), who say most studies have been correlations between adults and adolescents. Additionally, the studies they reviewed were minimal connections between social media usage and increased mental health issues (Odgers & Jensen, 2020).

Research shows 95% of teens say they have their own, or access to a, smartphone, and of those, 45% say they are almost constantly online (Anderson & Jiang, 2018). The use of social media is common with the technology, but the teens have varying opinions on how social media impacts them (Anderson & Jiang, 2018). A third say the impact is positive, almost a quarter the impact is negative, but 45% have a neutral feeling about the impact of social media (Anderson & Jiang, 2018). While teens have mixed feeling about social media, so do other research studies.

While Generation Z is at the forefront of research to examine the connection between technology, social media and increased cases of anxiety and depression, they are not alone. Research shows other generations around the world are experiencing more loneliness, which can lead to anxiety and depression issues (Howe, 2019). While technology plays into this, researchers believe there is a connection to more people living alone (Howe, 2019).

Ferguson College of Agriculture

The Generation Z participants of this study were part of the Ferguson College of Agriculture at Oklahoma State University. The Ferguson College of Agriculture was the fourth largest college at OSU during spring 2020, with 2,759 undergraduate and graduate students. Of those students, 60.09% were female and 39.91% were male (OSU, 2020). The breakdown of undergraduate and graduate student classification was 87.31% undergraduate and 12.69% graduate students (OSU, 2020). Figure 4 further shows the breakdown of undergraduate and graduate classifications. The race/ethnicity of students in the Ferguson College of Agriculture is primarily white. A further breakdown can be found in Figure 5.

Figure 4

Ferguson College of Agriculture Students by Classification
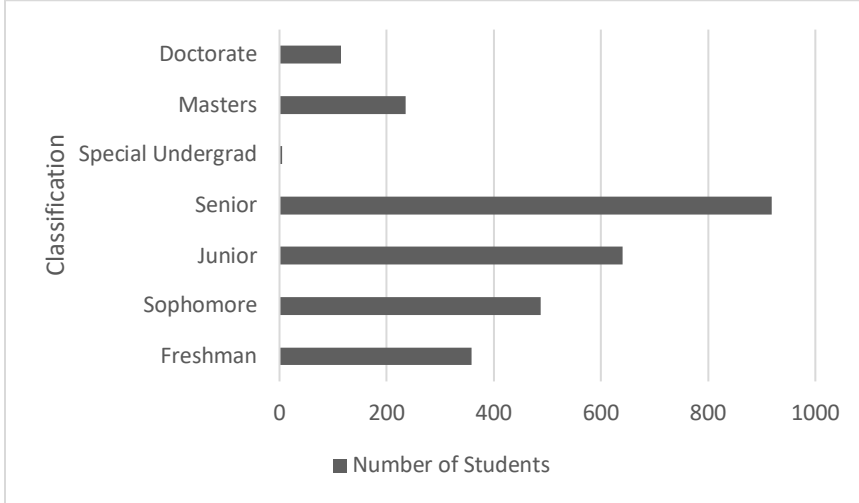
Note. (OSU, 2020)

Figure 5

Ferguson College of Agriculture Students by Race/Ethnicity
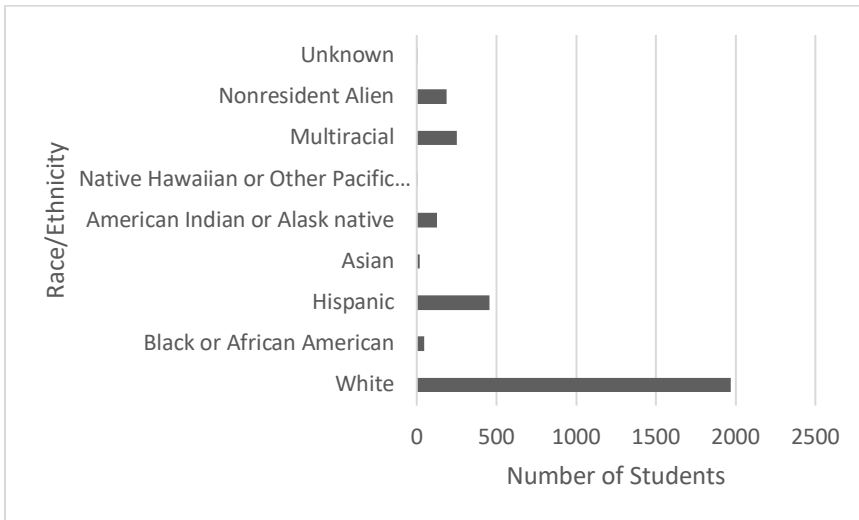
Note. (OSU, 2020)

Within the Ferguson College of Agriculture there are 46 states and 35 countries represented (OSU, n.d.). There are 16 undergraduate majors and more than 50 options (OSU, n.d.). The undergraduate majors are organized in 10 departments and programs: Department of Agricultural Economics; Department of Agricultural Education, Communications and Leadership; Department of Animal and Food Sciences; Department of Biochemistry and Molecular Biology; Department of Biosystems and Agricultural Engineering; Department of Entomology and Plant Pathology; Department of Horticulture and Landscape Architecture; Department of Natural Resource Ecology and Management; Department of Plant and Soil Sciences; and Environmental Science Program (OSU, n.d.) .

Burnout

In May 2019, the World Health Organization categorized burnout as an occupational phenomenon. They define burnout as "a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed" (World Health Organization, 2019a, par. 4). The symptoms of burnout are exhaustion, negative or cynical feelings toward work, and reduced efficacy at work (WHO, 2019a). Burnout can further be explained by a mismatch of "six areas of worklife: workload, control, rewards, community, fairness, and values" (Leiter & Maslach, 1999, p. 473).

Burnout can lead to mental health challenges, which can be costly for a company. According to the WHO, depression and anxiety cost the global economy one trillion dollars a year because of lost productivity (2019b). Schwarz (2011) found a connection between a worker's inability to withdraw from work and next-day recovery and fatigue. Likewise, Sonnentag (2012) found those who mentally disconnect from work during leisure time are more satisfied with their lives and do not encounter as must psychological strain. Those who

experience high job involvement, stressful job situations and poor environments at work are at the greatest risk of not detaching from work during non-work hours (Sonnentag, 2012).

Based on the positive connection to disengaging from work and employee health, it is interesting that according to the U.S. Travel Association, Americans left 768 million vacation days unused in 2018 (U.S. Travel, n.d.). A majority of these days were rolled over to a new year, but 236 million were completely forfeited from not being used (U.S. Travel, n.d.). These days forfeited account for $65.6 billion in lost benefits for employees (U.S. Travel, n.d.). Americans are actively choosing to work over leisure time as a result of a competitive, free agency work environment (Howe, 2017), which makes workers feel like they are paid for projects completed rather than hours worked. Thus, many feel like they cannot take time off. Additionally, the growth of technology has added to the feeling of being constantly connected to work, as workers can now take the work home with them (Howe, 2017). Millennials admit feeling vacation-shamed for wanting to take their vacation days, as Baby Boomers explain themselves as workaholics and Generation X is in the middle of child-raising and more freelance/contract work where vacation days are not an option (Howe, 2017).

In addition to generational differences, technology can also impact burnout in employees, specifically through technostress. Technostress is when a person does cope with technology well, and it causes distress (Atanasoff & Venable, 2017). The increase in technology incorporated into professional settings means technostress will continue to be an issue (Atanasoff & Venable, 2017). To maintain healthy employees it is important to understand how individuals are impacted by different types of technology (Atanasoff & Venable, 2017).

A 2016 study found a positive connection to the burnout tenet, emotional fatigue, with increased social media use of employees, who practiced low levels of mindfulness

(Charoensukmongkol, 2016). Emotional fatigue often leads to depersonalization and then decreased personal accomplishment (Charoensukmongkol, 2016).

A 2018 study in Finland also found digital communication at work and expectations of constant connectivity, because of technology, were major factors to an employee's feelings of well-being at work (Bordi, Okkonen, Makiniemi, & Heikkila-Tammi, 2018). While the study participants largely found the constant connectivity demanding, some employees did view technology as a way to add flexibility to their lives, as it gave them more control over lives (Bordi, Okkonen, Makiniemi, & Heikkila-Tammi, 2018).

Finally, there is also evidence behaviors seen in college students can predict future career burnout. Research shows students with high optimism and low task-avoidance in college are less likely to experience burnout later in their professional career (Salmela-Aro, Tolvanen, & Nurmi, 2009). On the other hand, students with high task-avoidance tendencies can be a predictor for burnout down the road (Salmela-Aro, Tolvanen, & Nurmi, 2009).

Q Methodology

The earliest academic publication of Q methodology came in a 1935 letter by William Stephenson and published in Nature. As explained in Stephenson's 1953 book, *The Study of Behavior*, Q methodology rests on the concept of correlating people, rather than test items. In Stephenson's words, the summary of the methodology is "Q samples drawn from concourse are administered as Q sorts, which are factor analyzed and interpreted, leading to understanding" of human beliefs, opinions, and perceptions (Stephenson, 1986, p. 37). Essentially, Q methodology allows for a scientific approach to examine human subjectivity. Stephenson, a student of Charles Spearman, realized factor analysis could aid in the study of subjectivity and was especially applicable in the field of psychology (Stephenson, 1953).

Subjectivity

Objectivity is the idea something is testable or can be observed by others (Stephenson, 1953). Subjectivity, on the opposite side of the spectrum, can only be experienced; it is expressed through self-reference (Brown, 1980). Q methodology allows researchers to bring subjective ideas to an "operant framework" to understand them scientifically (Brown, 1980, p. 6). McKeown and Thomas explain Q methodology is not interested in explaining how many people believe an idea, but rather why and how they believe what they do (2013).

R Methodologies

Before diving deeper into Q methodology, it is helpful to have a base understanding of R methodologies to then compare and contrast the two. R methodology is a form of multivariate analysis, which searches for objective understanding of an issue (Stephenson, 1953). R methodology allows researchers to measure traits (variables) and make generalizations about a population of people (Stephenson, 1953). This approach highlights associations and differences between variables at the population level, but it does not tell you anything about individual people (Watts & Stenner, 2012). This methodology often uses factor analysis to objectively understand a phenomenon (Stephenson, 1953).

Comparisons of Q and R methodologies

Charles Spearman is credited with the development of factor analysis within R methodologies (Stephenson, 1953). William Stephenson saw a way to use factor analysis to scientifically evaluate subjectivity by using people as the variables and traits as the sample or population (Watts & Stenner, 2012). This different approach has led to confusion between Q and R methodologies over the years (Stephenson, 1953). Figure 4 shows the connection of R and Q methodologies to their parent, multivariate analysis, to begin understanding the similarities and differences.

In R, when data is normalized for factor analysis the true difference a person feels about differences in traits is lost (Brown, 1980). "R provides a perspective on behavior that is external, i.e., from the observer's standpoint. Q provides a perspective on behavior that is internal, i.e., from the subject's standpoint" (Brown, 1980, p. 176). R methodology comes from gathering and analyzing information about objects, where Q is suited for the communication of subjective responses with self-referent meaning (Brown, 1980). R methodologies allow for generalization to a larger group, but Q methodology does not allow for the same type of generalizations (Stephenson, 1953). Figure 6 further explains the relationships between Q and R methodologies.

Figure 6

Relationships Between Q and R Methodologies to Multivariate Analysis
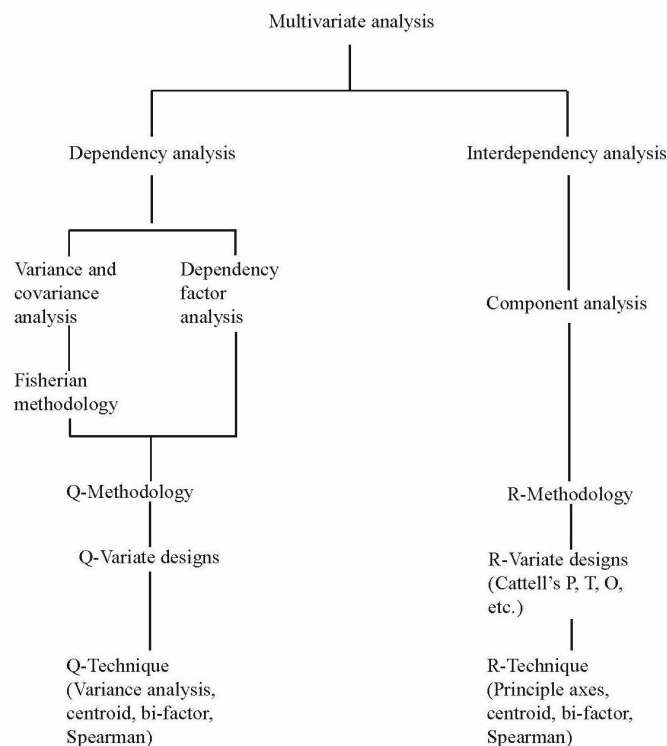
Note. Recreated from Stephenson's *The Study of Behavior* (1953, p. 32)

R methodology breaks a phenomenon into parts, which the researcher reconstructs after analysis. Thus, the researcher inserts his/her own subjectivity for the subject into the findings. Whereas, Q methodology relates one whole to another whole, and the researcher does not have to put the components back together (Brown, 1980). Brown explains "…one of the virtues of Q methodology is that it permits the emergence of an unanticipated behavior, thereby encouraging the abduction of new explanations and the growth of more general theories" (1980, p. 31). Q methodology gives us a way to examine different units of measurement by examining all ideas on the unit of significance to the person (Brown, 1980). This brings more depth to the relationship, rather than relying on a linear understanding when the issue is more complex.

R methodology is any method where the people are sampled to test for a variance in traits (Watts & Stenner, 2012). R further shows associations and differences between variables at the population level, but it does not explain differences between people (Watts & Stenner, 2012). Q methodology inverts R methodologies by using people as the variables and tests items as the sample (Watts & Stenner, 2012). This develops a person by person matrix for factor analysis, rather than a trait by trait matrix. Q methodology is not a test of difference, as every participant is a variable (Watts & Stenner, 2012).

Q methodology is helpful to make rigorous methods available when budgets are small (McKeown & Thomas, 2013). It brings qualitative into quantitative without defining either (McKeown & Thomas, 2013). It is a systematic means to examine human subjectivity (Brown, 1980).

Pandemics

"Pandemics are large-scale outbreaks of infectious disease that can greatly increase morbidity and mortality over a wide geographic area and cause significant economic, social, and political disruption" (Madhav et al., 2018, p. 315). The infectious diseases are usually new

viruses, or strains of viruses, which increases their spread because many people do not have immunity (Madhav et al., 2018). Some notable worldwide pandemics, prior to COVID-19: Bubonic plague from 1346 to 1353, Spanish flu from 1918 to 1920, Asian flu from 1957 to 1958, Swine flu from 2009 to 2010 (Taylor, 2019), and the Zika virus in 2015 (Madhav et al., 2018). Research suggests the likelihood of pandemics has increased with globalization and urbanization (Madhav et al., 2018).

COVID-19 Pandemic

The impacts of pandemics include economic (short- and long-term), psychological and political (Madhav et al., 2018; Taylor, 2019). As the world was in the middle of COVID-19 during the writing of this paper, many of these impacts were starting to surface during this research.

First, researchers believe there will be an increase in individuals who do not have a pre-existing mental health diagnose experiencing anxiety and depression symptoms as well as post-traumatic stress disorder as a result of COVID-19 (Cullen, Gulati, & Kelly, 2020). Heath and social care workers are at the highest risk of experiencing these psychological symptoms (Cullen, Gulati, & Kelly, 2020).

According to a Pew Research Center (2020) study conducted March 19-24, 2020, 33% of the U.S. population was specifically impacted financially by the COVID-19 pandemic. Participants in the Pew study reported they, or someone in their home, lost a job, experienced a pay cut, or had work hours reduced because of COVID-19 (Pew, 2020). Also, 65% of Americans believe the coronavirus will lead to a recession or depression (Pew, 2020).

Generation Z was one of the most financially impacted groups. According to the Pew Research (2020) study, 46% of young adults between ages 18 and 29 experienced pay cuts or a job loss, or someone in their household has, because of COVID-19. In comparison, financial

impacts for older generations were 36% for those ages 30 to 49; 32% for those ages 50 to 64, and 19% for those ages 65 and older (Pew, 2020). However, Generation Z does not see the virus as a major threat to their health (27%) compared with older generations (Pew, 2020).

Pew Research Center (2020) released an updated article specifically about Generation Z on May 14, 2020, providing further explanation as to how the pandemic has already impacted the generation. At the start of 2020, Generation Z saw a positive economic future with record low unemployment, which was in stark contrast to what the Millennial generation inherited during the Great Recession as they reached adulthood (Parker & Igielnik, 2020). A generation that does not know a world before the Sept. 11 attacks or a life without technology at their fingertips (called digital natives) now faces a worldwide pandemic, which is changing economic, social, and political outlooks (Parker & Igielnik, 2020).

CHAPTER III

METHODOLOGY

The purpose of this study was to examine the perspectives of Generation Z college students in the Ferguson College of Agriculture toward the technology in their lives. This chapter explains the rationale for using Q methodology for this study as well as the procedures used in the research.

Rationale for Q Methodology

Q methodology was chosen for this study because of its unique ability to identify nuances within students' perceptions of technology use in their lives. It also fits within the call from to Edgar, Rutherford, and Briers (2009) to diversify agricultural communications research methods and Leggette and Redwine's (2016) claim Q methodology is an appropriate fit for research in the discipline. According to Stephenson (1953, p. 5), the use of Q methodology allows for the scientific study of "man's attitudes, his thinking behavior, his personality, his social interaction, his *self,* his psychoanalytic mechanisms" without the use of formal scales.

Studies using traditional R methodologies have been conducted about Generation Z, with the Pew Research Center (2013, 2019, 2020) leading many of these efforts. However, these types of studies, using R methods, rely on correlating large groups of people to find ways they are alike (Stephenson, 1935). Thus, these studies do not reflect the subjective nature of how Generation Z feels about technology. For a more thorough understanding of this generation, both objective and subjective nature of the phenomenon must be explored. Q methodology is ideal in this effort.

This methodology brings scientific rigor to the study of subjectivity (McKeown & Thomas, 2013; Watts & Stenner, 2012), which is needed to understand the intricacies of the youngest professional generation.

Q Methodology

The first step in Q methodology is to identify the phenomena to be examined (Stephenson, 1935). A concourse of communication is created around the phenomena, which is essentially an exhaustive list of all ideas, thoughts and opinions fully explaining the given phenomena (Stephenson, 1986). The concourse can be words, statements, pictures, music, etc. (Brown, 1993), and may be developed through theory, naturalistic, and hybrid methods (Brown, 1980). However, using theory to structure a concourse is recommended, as it places boundaries around the phenomena and provides focus as the concourse is developed (Brown, 1980). It also helps ensure balance to the phenomena, that all breadth of ideas and opinions are included (Brown, 1980). Another approach is the naturalistic method, in which statements are gathered through indirect information, including popular media sources and interviews (Brown, 1993). This approach is particularly helpful to generate statements in the vernacular of the P set (Watts & Stenner, 2012). Additionally, a hybrid approach to concourse development allows for a combination of theory and naturalistic techniques (Brown, 1980).

Q Set

After the concourse is developed, it is sampled to reveal a final set of items, known as a Q set. In this research, those items are statements, as opposed to pictures or some other media. To sample the concourse, principles of homogeneity and heterogeneity are applied (Brown, 1980; Stephenson, 1953). Essentially, the researchers group similar statements before working within each group to ensure each statement is different (Watts & Stenner, 2012). The Q set ideally includes 40 to 60 statements (Brown, 1980).

P set

In Q methodology, participants, known as a P set, represent a similar, yet diverse demographic (Brown, 1980). They are a purposeful sample (Brown, 1980). The ideal P set size for a study is roughly half the number of statements included in the Q set, or at least 20 individuals (Brown, 1980). Stephenson explained a large P set would make calculations "impractical and reach into astronomical figures" (1953, p. 67); and, Q methodology is more focused on the statements as populations rather than a random sampling of people as the population (Stephenson, 1953).

Q Analysis and Interpretation

The Q sort allows for a participant to create a relationship between stimuli (Stephenson, 1953), that is, the Q set. Once all sorts are completed, the data are analyzed through factor analysis. A correlation matrix is created, in which all sorts are correlated to each other and factor analyzed with statements correlated within the resulting factors (Brown, 1993). Additionally, factor loadings are generated, which show how closely each Q sort is associated to each factor (Brown, 1993). The correlation of statements within each factor is used to develop a composite sort for each factor, known as a factor array (Stephenson, 1986).

Once the data analysis is complete, the process of interpretation begins. According to Brown, "there is no correct solution out of the infinite number of solutions available, so the investigator is free to pursue his own inclinations, guided by his theory" (1980, p. 33). The interpretation is completed through abductive reasoning. Abductive reasoning is the logic approach formalized by Charles Peirce (Watts & Stenner, 2012). Abductive reasoning aims to observe facts to explain the why of a phenomenon, rather than just describe the idea (Watts & Stenner, 2012). Abductive reasoning uses the statistically analyzed data, field notes from the sorting experiences, demographic information collected, and post-sort interviews (Brown, 1980).

Stephenson explains the conversations in the post-sort interviews are an important part of the process, to ensure the participants who loaded on a factor represent the factor (Stephenson, 1986). In this study, the researcher used statement placement within each factor, interview data, and field notes to develop themes to help interpret each perspective.

Validity and Reliability

Watts and Stenner (2012, p. 51) explain the concepts of validity and reliability are applied differently in Q methodology as compared to R methodology. Q methodology examines participant perspectives; thus, reliability, having a participant sort multiple times, only shows you more about the participants' viewpoints, not the reliability of the method (Watts & Stenner, 2012). Additionally, according to Brown, "The concept of validity has very little status since there is no outside criterion for a person's own point of view" (1980, p. 174-175). However, providing a condition of instruction to prime participants to consider the same phenomena produces validity (Watts & Stenner, 2012).

Participants

This study's P set is Generation Z students within the Ferguson College of Agriculture. Generation Z, as defined by Pew Research Center, is anyone born between 1997 and 2012 (Dimock, 2019). This P set is the focus of this research because of this group's interest in studying agriculture and potential future careers within the industry. The researcher conducted previous Q studies regarding agricultural and natural resources students' perceptions about social media and work/life balance. This research, which also explores the perceptions of agricultural and natural resource students, aims to add to the literature regarding the diverse perspectives of Generation Z. Finally, the researcher also teaches in the College of Agriculture and seeks to learn more about this new generation of students in an effort to better understand, serve, and teach them.

To ensure a variety of opinion in the P set, students from each of the 16 majors within the College of Agriculture were recruited. Specifically, students were recruited from a service writing-based class, which is a college-required course for nearly all majors in the college. Additionally, flyers were sent to a professor who advises students in environmental sciences, which is a major with a smaller number of students, thus less likely to be in service classes at the time of the study.

The researcher met with the participants in the researcher's office or a classroom, depending on the number of participants sorting at a time to maintain consistency in data collection. Additionally, a question on the demographic survey asked the participants' age, which was used to ensure all participants fell within Generation Z.

Condition of Instruction

A condition of instruction is how subjects are directed to complete their sorts (Brown, 1980). Due to the nature of subjective research, the condition of instruction is needed to ensure all sorters analyze the statements in the same way (Brown, 1980). The condition of instruction used for this study was "What are your feelings about technology in your life?" The P set used this condition of instruction to rank statements on a continuum from "Most Like" to "Most Unlike."

Instrument Development

The first step of instrument development in this research was the creation of a concourse, or a "collection of self-referable statements" (Stephenson, 1980, p. 882) pertaining to any given phenomena. The concourse demonstrates the depth and breadth of all given opinions on the phenomena (McKeown & Thomas, 2013). To help facilitate this organization, Stephenson (1953) recommended using a Fisherian design based around a theory. This approach helps ensure a phenomenon is fully explored, as you need to ensure all thoughts and opinions are part of the

concourse. For this study, the concourse was guided by the three dimensions of the Laufer and Wolfe Privacy Theory: self-ego, environmental, and interpersonal (Laufer & Wolfe, 1977).

The concourse of more than 100 statements was developed through a hybrid technique, incorporating methods both naturalistic, or of everyday conversation, and theoretical, or those stemming from literature (McKeown & Thomas, 2013). Specifically, statements for this research stemmed from literature, informal conversations, media accounts, and observations of the researcher and her colleagues who work with members of this generation.

The theoretical aspect of statement development for this research included statements garnered from literature relating to technology use and Generation Z. As statements from this research were generated, they were categorized into a corresponding element of the Laufer and Wolfe (1977) privacy theory. An example of this approach is statement 26, "I'm more afraid of missing out on something new than failing at something new." This statement stemmed from Stillman and Stillman's (2017) book, *Gen Z@Work,* and it aligns with the interpersonal category of the Laufer and Wolfe (1977) privacy theory. Several other statements stemmed from Stillman and Stillman's work, as well.

The naturalistic method of statement generation was critical to the development of this concourse because writing about Generation Z has only recently started taking off, as people realized Generation Z is different than the Millennials (Katz, 2019). It is also important for the statements to be in the vernacular of the participants, which is easier to accomplish by generating statements from popular media and members of Generation Z themselves. The naturalistic process began with the researcher observing content on social media, including personal posts and responses to personal posts and popular news articles.

For example, a Nature Valley (Most Watched Today, n.d.) commercial the researcher viewed on Facebook led to statements reflecting the perspectives of members of Generation Z

toward being outdoors. Statement 15, "My sense of well-being is replenished when I'm in the outdoors, because of the lack of technology. I feel myself exhale and my shoulders relax" was the resulting statement. It aligned with the environmental category of the Laufer and Wolfe (1977) privacy theory.

One statement stemmed from an Ellen DeGeneres commercial advertising Spectrum internet the researcher viewed on TV (iSpot.tv, n.d.). The result was statement 37, "All the technology we have to make our lives easier actually wears me out. That's why I'm always tired and wanting to take a nap." This statement fit into the self-ego category.

Everyday conversations also led to statements generated for the concourse. Statement 9, "It's important for me to have multiple accounts on several social media platforms, so I can be who I'm 'supposed' to be and still have an outlet to be myself with my friends," came from a conversation between the researcher had with a Gen Z cousin. In the conversation, for example, the cousin explained the concept of a 'Finsta,' or the practice of setting up two Instagram accounts. One is 'real,' curated for public, parent, and professional approval, and the other is a 'fake' account that is more unencumbered and geared toward peers and their true personality. This statement fell into the environmental category of the Laufer and Wolfe (1977) privacy theory.

After organizing the concourse by likeness or applying the principle of homogeneity as recommended by (McKeown & Thomas, 2013), the concourse was then examined for heterogeneity principles to ensure statement diversity. This process included comparing the statements in each Laufer and Wolfe (1977) privacy theory category to identify the statements with greatest differences (McKeown & Thomas, 2013). A final Q set of 40 statements was sampled, and a form board with a +4 to -4 distribution was created, which aligns with Brown (1980) form board development recommendations. Appendix D lists the full Q set and Figure 7

shows the form board used for this study. The statements and form board were pilot tested with graduate students who are part of Generation Z to establish clarity of wording and heterogony of statements.

Figure 7

Form Board and Record Sheet for the Study

Record Sheet

What are your feelings about technology in your life?
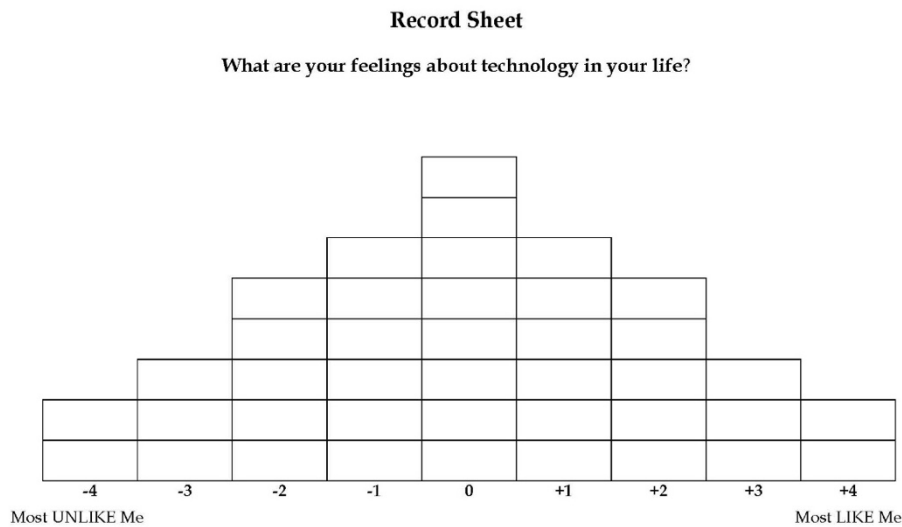
Note. Form board used to achieve forced distribution.

It is also customary to include a demographic survey in the sorting process (Watts & Stenner, 2012). The demographic survey should ask questions about personal information that could influence the participants' ideas about the topic of your Q study (Watts & Stenner, 2012). The delomorphic survey for this study included questions about age, major, parental generations, population of hometown, number of devices used each day, number of social media accounts, and time spent on cell phones. The demographic survey can be found in Appendix G.

IRB Approval

The statements and procedures were approved by the Oklahoma State University

Institutional Review Board on February 28, 2020. See Appendix A for IRB approval.

Data Collection and Procedures

After IRB approval was received, the researcher prepared all necessary materials for data

collection.

Materials

Twelve sets of 1-inch by 1-inch statement cards were printed on colorful cardstock.

Cardstock was used instead of regular printing paper to make it easier for sorters to organize and

move statements on the formboard. A variety of colored paper was used to keep materials

organized. At times, more than one participant was sorted, and the colored paper helped link

statements and formboards to individual participants until sorts were recorded on the formboard.

The cards were cut and placed into individual baggies for organizational purposes. Additionally,

individual form boards (Figure 7) with demographic surveys printed on the back were printed on

11x17 sheets of paper and numbered. Individual form boards ensured data was not lost or

separated as the research is conducted anonymously. Samples of all materials can be found in

Appendices B through F. Recruitment flyers were printed and distributed within the College of

Agriculture to students who fit the participant description. This approach did not directly recruit

students, and students currently enrolled in the researcher's classes were not recruited by the

researcher. Additionally, the snowball method was used for recruitment as participants received a

flyer upon completion of their sorts to distribute to other potential participants.

Sorting Procedure

Before beginning the sorting procedure, participants were asked to read a Participant Information Sheet explaining the study and provision of consent. They then received a set of the 40 statement cards and a formboard. Next, they were directed to sort the statements into three piles. The participants were to place the statements in piles based on the condition of instruction, "What are your feelings about technology in your life?" The pile on the right was to be statements 'Most Like' them, the pile on the left was statements 'Most Unlike' them, and the middle pile was neutral.

From there, participants were asked to begin placing the statements on the formboard by selecting the two statements "Most Like" them and placing those statements in column +4. They were then asked to select to the two "Most Unlike" statements and place them in the -4 column. The participants were directed to move back and forth across the board placing statements until they reached the center, or 0 column. All remaining statement cards were placed in this column. While participants read and sorted statements, the researcher took field notes to assist with interpretation.

After all cards were placed, the participants wrote the statement number on the corresponding formboard square in which it was placed. After all statement numbers were recorded, the participants were asked to complete the demographic survey on the back of the formboard. The demographic survey can be found in Appendix G.

Data Analysis

The basic premise of Q methodology is to correlate, and factor analyze sorts (Brown, 1980). The software system PCQ for Windows Academic Edition (Stricklin & Almeida, 2004) was used for analysis. The software was developed by Dr. Michael Stricklin, a renowned Q methodologist and an emeritus professor of graduate journalism at the University of Nebraska-

Lincoln. Stricklin was also a student of William Stephenson, developer of Q methodology and emeritus professor in the University of Missouri School of Journalism. Stricklin provided instrumental support and guidance for this research, especially in data analysis.

All 25 sorts were entered in the program. After centroid analysis, which extracted nine factors, the researchers applied a varimax rotation. A varimax rotation is the computer-generated mathematical solution (Brown, 1980). This solution produced eight factors; however, as varimax accounts for all data by distributing it over the eight factors, it did not provide the clearest representation of the data (Stricklin, 2020) for the purposes of this dissertation. Thus, the researchers used judgmental rotation, which maintains theoretical rather than mathematical criteria (Brown, 1980) and exploits the experimental potential of Q. The judgmental rotation for this study identified a three-factor centroid solution chosen for its strength, diversity, and clarity.

Post-Sort Interviews

After identifying the three-factors, post-sort interviews were conducted with individuals on each factor. Brown (1980) explained this is often an overlooked step in the process but an important part of the methodology. It gives the participants a chance to expand on their sorts and add more meaning to the data (Stephenson, 1935), which will result in more depth to the interpretations (Brown, 1980). Additionally, it offers the opportunity to check and affirm the factors. Typically, interviews are completed with the sorters who have the highest and purest loadings on a factor. However, the post-sort interviews are voluntary, and not all sorters were available for the follow-up interviews. Thus, interviews for this study were requested with participants with the highest factor loadings and who voluntarily provided contact information.

<div align="center">

COVID-19 Impact

</div>

Spring 2020 arrived with unique circumstances that arose as the COVID-19 spread across the United States. The spread was swift, and the ramifications intense. According to the

Oklahoma Department of Health, the first people in the United States tested positive for the virus on January 21, 2020 (OK Health, n.d.). Within a matter of weeks schools, businesses, and organizations across the country were closed. People were asked, or required in some places, to stay home and social distance. At Oklahoma State University, plans originally called for two-weeks of online classes rather than students returning to traditional classes after spring break. However, during spring break, classes were officially moved online for the duration of the semester and the university closed to all but essential personnel (OSU, 2020). Additionally, Oklahoma State University IRB halted all in-person research procedures for the second half of the spring semester (University Research Compliance, 2020). While this did not impact the outcome of this research, it did play a part in the process.

All the sorts for this research were collected before the beginning of COVID-19 shutdowns. However, analysis and post-sort interviews were conducted during the shutdown. Post-sort interviews are traditionally completed over the phone; thus, this research could be completed without any change to procedures. Many interviewees spontaneously referred to the shutdown experience in examples to further explain their perspectives during the post-sort interviews. They merely explained their perceptions through the lens of the pandemic. For example, when asked specifically about statement 15, Sorter 4, who loaded 0.69 on Factor A, mentioned being outside has helped him cope while social distancing. Additionally, Sorter 4's explanation for this positive placement of statement 19 was, "The less I've been on my phone during quarantine the better I feel my mental health has been." In some ways, participating in this research at the time of the pandemic may have increased participants' awareness of technology use. Sorter 23, who loaded 0.47 On Factor C, explained, for example, she had not thought a lot about the topics described in the statements and enjoyed thinking about the concepts.

CHAPTER IV

FINDINGS

The purpose of this study was to examine the perspectives of Generation Z college students in the Ferguson College of Agriculture toward the technology in their lives. This chapter explains the findings from the research, specifically the demographics of the P set and interpretations of the factors.

Factor Solution

The 25 participant sorts were entered into the Q methodology software PCQ. The software correlated and factor analyzed the data. After centroid analysis, which extracted nine centroids, the researchers applied varimax rotation. However, for a stronger and more defined solution, the researchers opted for judgmental rotation, resulting in a three-factor solution. The factor score correlations are listed in Table 1.

Table 1

Correlation of Factor Scores

	Factor A	Factor B	Factor C
Factor A	1.00		
Factor B	-0.16	1.00	
Factor C	0.50	-0.38	1.00

In Q methodology the equation $SE = 1/\sqrt{n}$ is used to calculate standard error, where n is the number of statements (Watts & Stenner, 2012). For this study, the standard error is $SE = 1\sqrt{40} = 0.16$. Significance was then determined at the 0.01 level with the equation $1/\sqrt{n}*2.58$, where n is the number of statements (Brown, 1980). Thus, $1/\sqrt{40}*2.58 = 0.41$ was used for this study.

In this research, significance for defining sorts of factor loadings was raised to 0.47. The 25 sorts resulted in 21 significant factor loadings. Of the remaining sorts, one was confounded, meaning they were significant on more than one factor, while three were nonsignificant, meaning they did not reach significance on any factor. Table 2 lists all sorts, the label for each sort, and the sort's loading on each factor. All sorts load on all factors, but factors are defined by sorts reaching significance on one factor. All defining sorts are denoted in bold and with an asterisk. For this study, this would be any sort to load at 0.47, or higher, on only one factor.

Table 2

Factor Matrix Showing Defining Sorts

Q Sort	Descriptors	Factor A	Factor B	Factor C
1	Female, 22, Graduate	0.29	**0.50***	0.05
2	Male, 20, Sophomore	**0.66***	0	0.14
3	Male, 22, Senior	**0.67***	0.17	0.20
4	Male, 21, Junior	**0.69***	0.14	0.08
5	Female, 19, Sophomore	**0.60***	0.04	0.05
6	Female, 19, Sophomore	**0.50***	0.05	0.16
7	Female, 20, Sophomore	0.30	0.04	0.23
8	Female, 21, Senior	0.34	**0.59***	0.20
9	Male, 23, Senior	**0.56***	0.20	0.14

10	Male, 21, Junior	0.02	**0.61***	0.17
11	Female, 19, Freshman	0.56	0.54	0.08
12	Female, 19, Freshman	**0.76***	0.17	0.17
13	Female, 18, Freshman	**0.56***	0	0.34
14	Female, 19, Sophomore	0.33	0.16	0.11
15	Female, 19, Sophomore	**0.54***	0.17	0.08
16	Female, 20, Sophomore	0.04	**0.60***	0.05
17	Male, 20, Junior	**0.66***	0.11	0.22
18	Male, 18, Sophomore	**0.63***	0.08	0.20
19	Female, 21, Junior	**0.68***	0.10	0.01
20	Female, 21, Senior	**0.69***	0.10	0.14
21	Female, 24, Graduate	**0.46***	0.02	0.29
22	Female, 19, Junior	0.39	0.20	**0.47***
23	Female, 20, Junior	0.32	0.32	**0.47***
24	Male, 21, Junior	0.16	0.07	0.01
25	Female, 22, Senior	0.26	0.20	**0.48***

Note. Defining sorts are listed as starred and bold.

Participants

The P set was made up of 25 college students in the Ferguson College of Agriculture who are members of Generation Z, ranging in age from 18 to 23. The P set included 17 female participants and eight male participants. Two participants were graduate students, five were seniors, seven were juniors, eight were sophomores, and three were freshmen. Of the college's 16 majors, eight majors were listed by participants in this research.

Interpretations of Perspectives

The condition of instruction for this study was *What are your feelings about technology in your life?* In addition to the factor solution, field notes, observations, and post-sort interviews were used to interpret the findings. This research identified three perspectives that represent the feelings of technology in the lives of Generation Z college students named here as *Zennials, Silent Z, and Baby Zoomers.*

Zennials

The *Zennial* perspective was defined by14 sorts. Of those sorts, six reported they were male and eight reported they were female. The perspective is made up of all classifications: one graduate student, three seniors, four juniors, five sophomores, and two freshmen. Sorters included in the *Zennial* perspective reported the following majors: agricultural communications (3), biochemistry and molecular biology (2), agribusiness (3), animal science (3), environmental science (1), animal science/agricultural communications double (1), and agribusiness/agricultural communications double (1).

Zennials reported in demographic questioning using cell phones, desktop computers, laptops, and TVs every day (Figure 8). All sorters use a cell phone and laptop every day, but none of the sorters reported using a tablet each day. Additionally, sorters included in this perspective reported they collectively use 12 unique social media platforms (Figure 9). These sorters have the most Instagram, Facebook, Twitter, and Snapchat accounts. Some sorters reported multiple accounts for one social media outlet, which explains why there are more accounts than sorters.

Figure 8

Zennial Screens Used Each Day
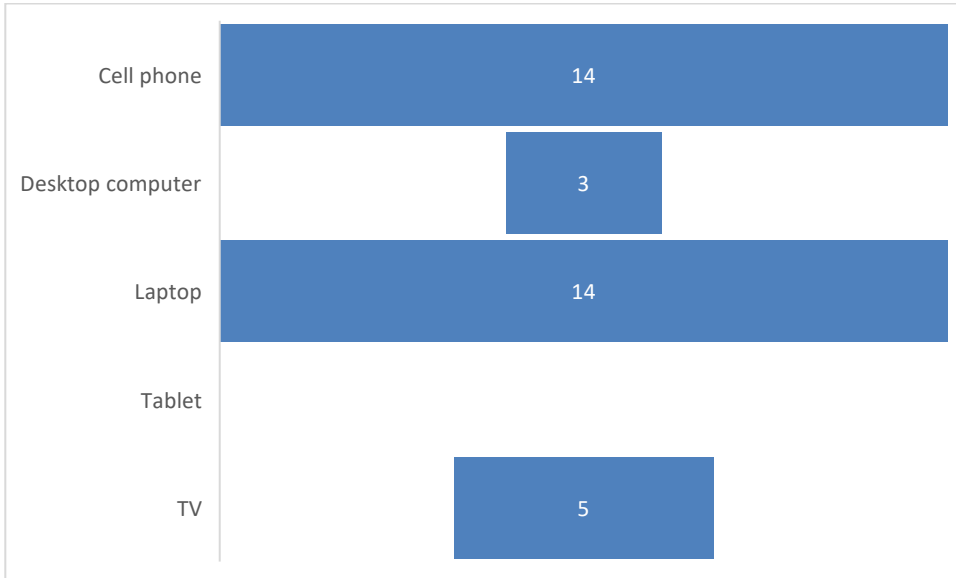
Figure 9

Zennial Social Media Accounts
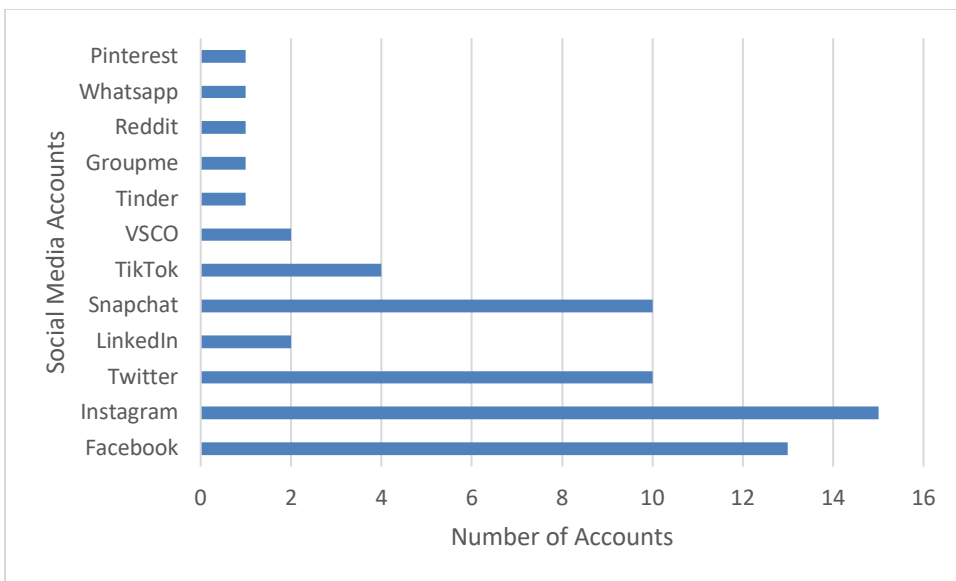
Demographic questioning asked participants to report how much time they spend on their phones each day (Figure 10). Compared to the other perspectives, *Zennials* spend less time each day on their phones. Sorters on the *Zennial* perspective were the only ones to report spending 1 to 2.5 hours a day on their phone. Additionally, seven sorters on the *Zennial* perspective reported spending 2.5 to 5 hours a day on their phones. Only one sorter on the *Silent Z* and *Baby Zoomer* perspectives said the same. There was an equal number of sorters for all three perspectives in the 5 to 7.5 and 7.5 to 10 hours a day on their phone categories.

Figure 10

Hours Spent Each Day on Cell Phones, By Perspective
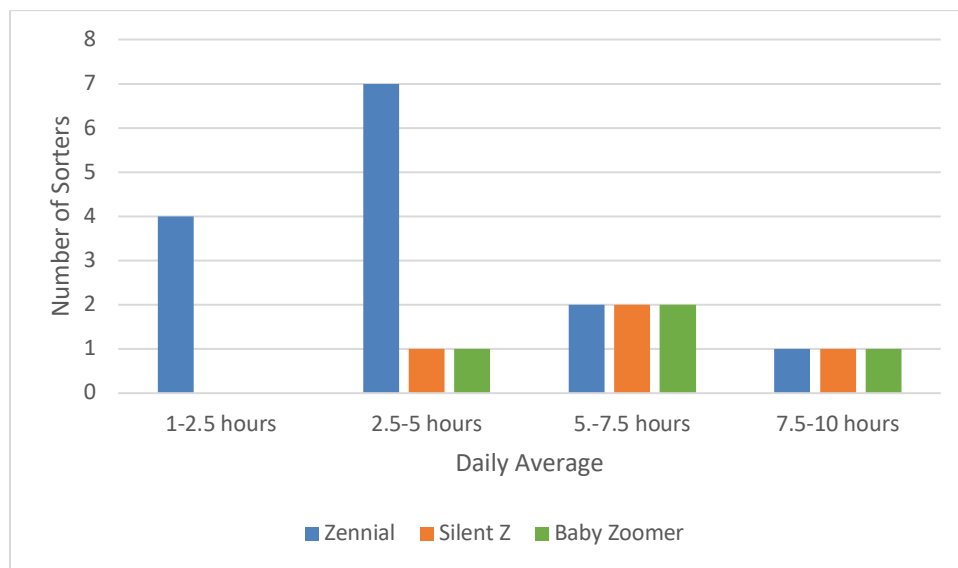
Zennials grew up in primarily rural areas (40%), but 27% are from urban areas and 33% from urban clusters (Figure 11). Populations were defined as urban >50,000, urban cluster 2,500-50,000, and rural less than 2,500 (Ratcliffe, Burd, Holder & Fields, 2016).

Figure 11

Size of Zennials' Hometowns
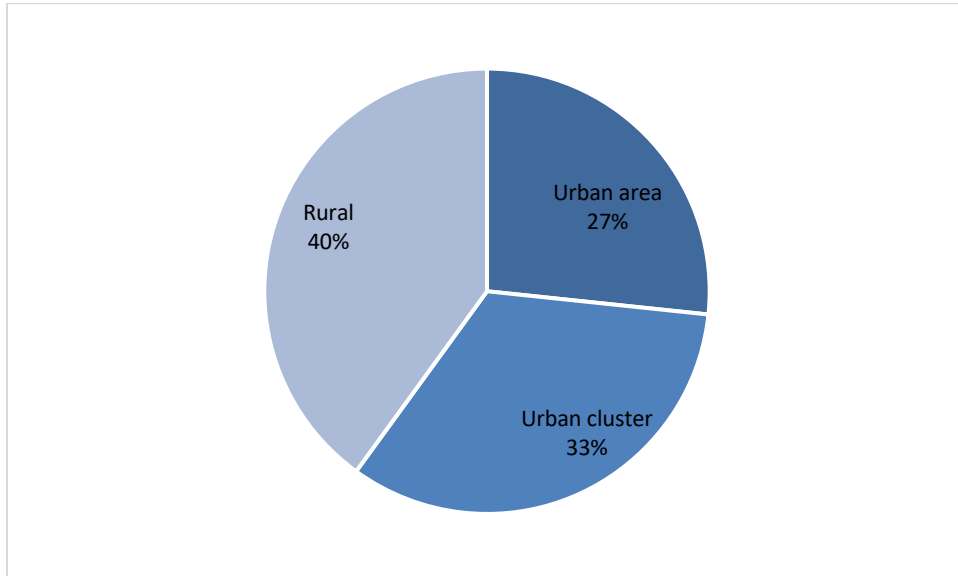
Additionally, several themes identified from this group's factor array helped describe the *Zennials* and led to this perspective's name: Balance, Driven, Valued Relationships, and appreciation for Freedom of Choice. *Zennial's* "Most Like" and "Most Unlike" statements, as arranged by *z*-score, are listed in Table 3.

Table 3

Zennials' Most Like and Most Unlike Statements

No.	Statement	Array Position	Z-Score
	Most Like Statements		
25	People underestimate my desire for good, face-to-face conversation.	+4	2.20
15	**My sense of well-being is replenished when I'm in the outdoors, because of the lack of technology. I feel myself exhale and my shoulders relax.**	**+4**	**1.68**
4	My parents are some of my best friends—I tell them everything. I know they're just a text away to help with any major decisions or everyday dilemmas.	+3	1.67
32	I wish I could go back in time to when my ancestors lived with only one phone and tv. I'm sure they were happier and more productive than I am.	+3	1.56
23	I appreciate the flexibility technology brings to my life. Some days I want to work in the office with my peers to brainstorm and build off their creative energy. But other days I need to be at home on my couch or in a coffee shop to really focus and be productive.	+3	1.43
	Most Unlike Statements		
2	I wish professors understood the anxiety they cause students by making us put our phones away in class. It takes away my ability to clarify content and learn successfully.	-3	1.38
9	It's important for me to have multiple accounts on several social media platforms, so I can be who I'm 'supposed' to be and still have an outlet to be myself with my friends.	-3	1.40
21	When adults in my life wanted me to leave them alone, they put a toy/gadget/electronic in front of me—now I'm lost without one.	-3	1.47
19	I feel like it's hard to breathe fully without my phone with me.	-4	1.83
38	Sometimes I have to remind myself celebrities are not my real friends.	-4	2.17

Note. Distinguishing statements are bolded.

Balance

Zennials have been told for years social media can be detrimental, especially for their mental health and self-confidence. Sorters included in this perspective may also have first-hand experience with the negative effects of social media (statement 33, array position +1, *z*-score 0.33). Sorter 19, a 21-year-old junior female, said in a post-sort interview, "Social media has an influence on self-confidence for girls my age." Thus, *Zennials* try to balance their time online with real life to stay grounded. Sorter 19 added, "People think you have to have a certain image (online)." However, *Zennials* are not worried about being the 'right' person online (statement 9, array position -3, *z*-score 1.40). Sorter 10, a 21-year-old junior male, said in a post-sort interview that people need to be reminded to "step away and be yourself."

However, *Zennials* realize they need social media and technology for their professional success. Sorter 19 said in a post-sort interview, she only posts on social media professional-related topics. Additionally, *Zennials* are cautious of their reactions to what they see from others on social media. During a post-sort interview, Sorter 4, a 21-year-old junior male, said being outside and away from technology, lets him "not think about what everyone else is doing."

Being separated from their devices and being outside allows *Zennials* to calm their mental state (statement 15, array position +4, *z*-score 1.68; statement 19, array position -4, *z*-score 1.83). Sorter 20, a 21-year-old senior female, said it "feels great to get away, get outside." It allows *Zennials* to stop constantly looking for the negative impact of social media and technology. Sorter 4 said "I actually feel better without my phone, and I sleep better without my phone there."

Driven

Zennials focus on the end goal and they appreciate wisdom from older generations to help them get there. Sorter 19 said people "can gain a lot from talking to the older generation."

Zennials also have a desire to learn, and they will gladly put their technology away in a classroom setting because they want to give the professor their undivided attention (statement 2, array position -3, *z*-score 1.38). *Zennials* value the information professors have to share. Sorter 19 said she believes it is "100% okay" for professors to have a class put phones away. "I'm paying a lot of money to be there, so I should listen," she said. The perspective does not have trouble focusing, because as kids their parents did not distract them with toys or electronics (statement 21, array position -3, *z*-score 1.47).

The last part of being driven and reaching goals is having the flexibility to be where they need to be to work effectively, and *Zennials* appreciate technology does give them this option (statement 23, array position +3, *z*-score 1.43).

Relationships

Zennials value authentic relationships, whether online or in person (statement 38, array position -4, *z*-score 2.17). They wish more people would engage in good conversation to build stronger relationships with them (statement 25, array position +4, *z*-score 2.20). Because of this, *Zennials* wish they could go back in time to when their ancestors lived because they crave the relationships they believe their ancestors had (statement 32, array position +3, *z*-score 1.56).

Having strong relationships is especially true with their parents; *Zennials* and their parents have extremely close relationships (statement 15, array position +4, *z*-score 1.68). Sorter 4 said "I genuinely do feel like my parents are my best friends, especially since moving out for college. They are understanding. They are constant." Sorter 20 said, "My parents are people who have been there for me."

If they do engage in relationships online, they seek authenticity. Sorter 4 said, "I don't really fangirl over celebrities. I don't even follow many. The celebrities I do follow is for the content not the person." The rest of their online engagement is with people they know in real life.

Freedom of Choice

Zennials desire freedom of choice and personalization. This perspective likes to have control over their choices, even if it is when they unplug from social media (statement 30, array position +2, *z*-score 1.09). While discussing the use of technology during COVID-19, Sorter 20 said she did not appreciate being "forced online" to finish the semester.

As a result, *Zennials* struggle with the lack of boundaries between personal and professional life because of technology (statement 6, array position +2, *z*-score 0.89). *Zennials* want to decide when, and if, those boundaries are broken. Technology also takes a lot of the perspective's privacy away. Sorter 20 said, "My personal life is my life; I just don't want people knowing what I'm doing." Sorter 20 also said she wanted to be off the map. She does not want to be tracked, and she does not want to be followed. Sorter 20 especially does not want the choice taken away from her to live this way.

Finally, the *Zennial* perspective likes to control how they spend their time. When asked about volunteering, they said they wished to use their specific talents when volunteering (statement 13, array position +2, *z*-score 0.97). They do not want to volunteer just for the sake of volunteering.

Silent Z

The *Silent Z* perspective is made of four sorts. There are three females and one male. There was is graduate student, one senior, one junior, and one sophomore. The majors represented are agricultural communications (2), wildlife pre-vet, and entomology.

The students who loaded on this perspective use cell phones, desktop computers, laptops, tablets, and TVs every day (Figure 12). All four sorters use a cell phone, laptop, and TV each day, but only half of them use a desktop computer and tablet each day. Compared to *Zennials* and

Baby Zoomers, they use more unique devices on a daily basis. As a group, the students who loaded on the *Silent Z* perspective use 12 different social media accounts (Figure 13). Some participants have multiple accounts for one social media outlet. Instagram and Tumbler are the leading social media accounts for the *Silent Z.* Snapchat and Twitter are also popular platforms for the perspective. Half of the students on this perspective grew up in an urban cluster, a quarter grew up in an urban area, and a quarter grew up in a rural area (Figure 14). Additionally, several themes help describe *Silent Z's* factor array: Analytical, Independent, People are Great but Exhausting, and Science v. Simplicity. The "Most Like" and "Most Unlike" statements for this perspective can be found in Table 4.

Figure 12

Silent Z Screens Used Each Day
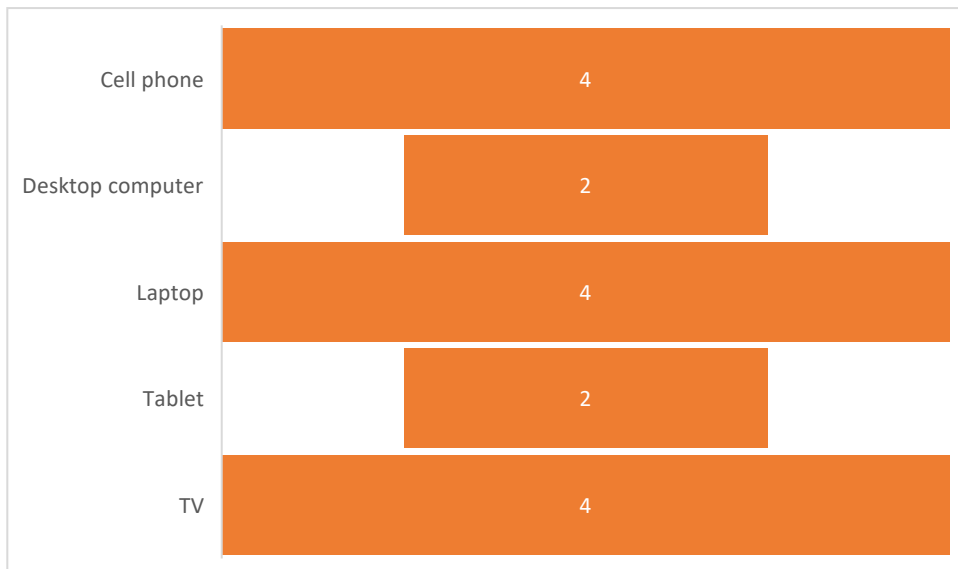
Figure 13

Silent Z Social Media Accounts

Figure 14

Size of Silent Z's Hometowns
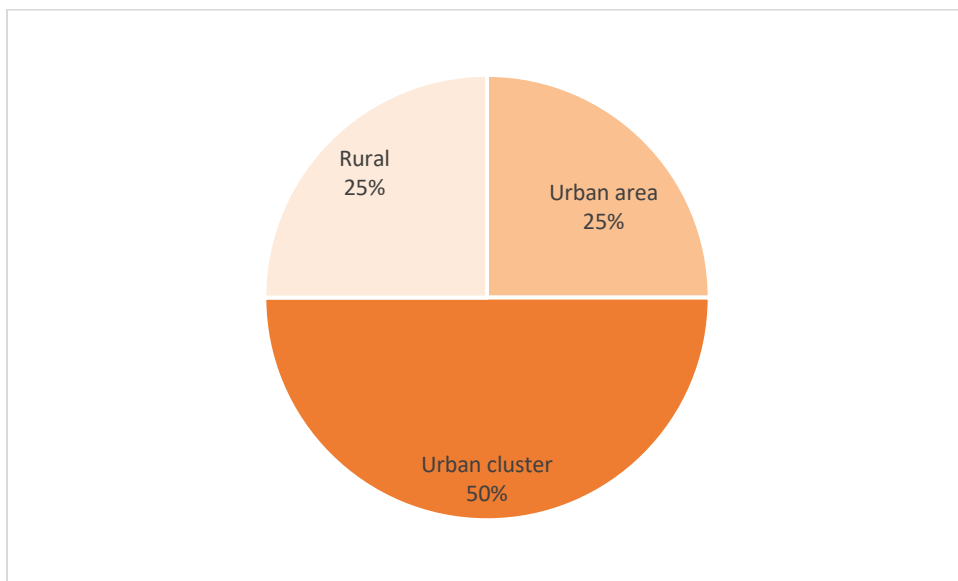
Table 4

Most Like and Most Unlike Statements for the Silent Z

No.	Statement	Array Position	*Z*-Score
	Most Like Statements		
32	I wish I could go back in time to when my ancestors lived with only one phone and tv. I'm sure they were happier and more productive than I am.	+4	1.30
35	If I am unable to immediately figure out how to handle/operate/use a new technology, it makes me feel worthless. I'm supposed to know this stuff.	+4	1.05
21	**When adults in my life wanted me to leave them alone, they put a toy/gadget/electronic in front of me—now I'm lost without one.**	**+3**	**0.99**
10	I'm getting tired of taking all the pictures for social media. I just want to experience my life.	+3	0.71
33	My screen time is taking a toll on my physical and mental health.	+3	0.60
	Most Unlike Statements		
7	It makes me feel safer when my parents/family know where I am at all times through tracking (track my friend, Life 360, Snapchat, other technologies like Hum, etc.).	-3	0.84
23	**I appreciate the flexibility technology brings to my life. Some days I want to work in the office with my peers to brainstorm and build off their creative energy. But other days I need to be at home on my couch or in a coffee shop to really focus and be productive.**	**-3**	**0.87**
25	**People underestimate my desire for good, face-to-face conversation.**	**-3**	**0.88**
8	I keep the TV or music on all the time because I get anxious when it's too quiet in my house/apartment.	-4	1.21
4	**My parents are some of my best friends—I tell them everything. I know they're just a text away to help with any major decisions or everyday dilemmas.**	**-4**	**1.23**

Note. Distinguishing statements are bolded. *Statement 38 is also distinguishing at +2, z-score*

0.45.

Analytical

The *Silent Z* perspective sees technology is a tool, especially to help them solve problems. In a post-sort interview, Sorter 8, a 21-year-old senior female, said she sees technology as something "new and exciting to learn." This ability and desire to problem-solve also causes the perspective to take on more responsibility than others might, and they take it personally if they cannot solve a problem (statement 35, array position +4, *z*-score 1.05). Thus, the *Silent Z* might find themselves afraid of failure. When it comes to working with technology, Sorter 1, 22-year-old female graduate student, said, "I feel like I should have this knowledge in me." Sorter 1 also mentioned feeling bad when older family members ask for assistance with technology and she cannot figure it out.

Another key to the *Silent Z* perspective is their desire for schedules and routines. They do not need technology to add flexibility to their work life (statement 23, array position -3, *z*-score 0.87). They appreciate regulated work hours, according to Sorter 1 in her post-sort interview. Sorter 1 also said, "I like more structure than flexibility at work." Sorters 8 and 16, a 20-year-old sophomore female, echoed similar needs for schedules and routines at work.

Finally, the *Silent Z* values data generated by computers, even when it comes to their love life (statement 20, array position +2, *z*-score 0.43). During their post-sort interview, Sorter 16 said she would trust a friend more than an algorithm to set them up on a blind date, but she would still trust an algorithm. This is different than our other perspectives. Sorter 16 went on to say she trusts technology with other choices, as well. She said, "While shopping online, I do like algorithms, like Amazon suggestions."

Independent

The second conceptual theme used to describe the *Silent Z* is their level of independence, which was instilled in them from an early age. As children, they were often expected to entertain

themselves, whether that be with technology, toys, books, siblings, or being outside (statement 21, array position +3, z-score 0.99). It was not for parental neglect, but rather parents needing to complete tasks and wanting children to learn to be self-sufficient. Sorter 16 recalled their parents giving her a toy or video to entertain her for a little bit while they finished a task.

This perspective also has a traditional relationship with their parents, which is different than other Generation Z peers. They *Silent Z* is close to their parents and rely on their wisdom, but there is a distinct relational difference between their parents and friends (statement 4, array position -4, z-score 1.23). Sorter 1 said, "I'm close with my parents, but they aren't my friends. They're my family." This perspective also does not need their family to use technology to track them to feel safe. In fact, they do not want to be tracked (statement 7, array position -3, z-score 0.84).

Finally, this level of independence also translates to work and school. Sorter 16 said members of her generation like being in their own element to work on projects, rather than surrounded by a bunch of other people and opinions. Similarly, members of the *Silent Z* perspective can handle working in silence with their own thoughts more than other perspectives (statement 8, array position -4, z-score 1.21).

People are Great but Exhausting

The next conceptual theme used to explain the *Silent Z* is their relationship with other people. The perspective values people and relationships; however, people who align with this perspective are most likely introverts who also need space to recharge. It is not that they do not want to be around others, but they are not going to be the ones to reach out (statement 25, array position -3, z-score 0.88). Sorter 1 said, "Face-to-face is important, but I don't sit here longing to talk and hang out."

There is also a hard balance for *the Silent Z* to find. The perspective enjoys being around their small group of close friends and family, but technology also gives them a connection to a lot of other people through a screen, which they enjoy. "We feel like we have so much access to people," Sorter 1 said. They feel so connected with people online, they sometimes have to remind themselves celebrities they follow on social media are not their real friends (statement 38, array position +2, *z*-score 0.50). This does not stop the *Silent Z* from investing in a variety of connections online, though.

However, too much technology can also cause the *Silent Z* challenges. Sorter 1 said she does not always like being home alone. It can make the *Silent Z* feel depressed, and then when they see people online it can make their loneliness worse.

Science vs. Simplicity

The final conceptual theme to explain the *Silent Z* is their struggle with appreciating scientific advancements and their desire for a simpler time. People who align with this perspective struggle living in the here and now; they believe their ancestors lived simpler lives with less technology. However, they also value technology advancements, like vaccines, and science. Sorter 1 said, "I really like vaccines, but I don't like that I don't put my phone down. If I leave my phone at home, it bothers me."

The *Silent Z* also believes technology is creating productivity and mental health issues. Sorter 16 said, "I have more success when I put the phone away." The appreciation of simpler times adds undue stress to the *Silent Z*. This is because the perspective believes they have more resources at their disposal, which makes it easier for them to accomplish goals. The *Silent Z* believe their mental health could be better without technology (statement 33, array position +3, *z*-score 0.66). They wish they could live like their ancestors (statement 32, array position +4, *z*-score 1.30), but they also are not willing to give up technology. The *Silent Z* also experience a

perceived pressure to share their life experiences, but really, they just want to experience life (statement 10, array position +3, z-score 0.71). This adds to mixed feelings about technology.

Finally, the *Silent Z* enjoys to problem solve and fix things, but it makes them feel like they failed than when they cannot figure out the latest technology. The *Silent Z* feel as if they are "supposed to know" how it works, according to Sorter 1. They are striving for more because they believe technology has made it easier for them to achieve their goals than their ancestors; so, they must do more to reach the same level of achievement as those before them to feel worthy (statement 37, array position +1, z-score 0.31). So, the *Silent Z* add extra pressure to themselves. Sorter 1 said, "I think things were a lot easier without the constant flow of information, but they had hardships, too." Sorter 16 added older generations had to work a little harder to achieve their goals.

Baby Zoomers

The *Baby Zoomers* perspective is made up of three sorts, and they are all females. There is one senior and two juniors. All sorters are agricultural communications majors.

The students who loaded on this perspective use cell phones, laptops, tablets, and TVs every day (Figure 15). *Baby Zoomers* are different than the other two perspectives because the sorters do not use a desktop computer daily. All three sorters who loaded on this perspective use a laptop and cell phone each day, but only one uses a tablet and TV each day. As a group, they use eight different social media accounts (Figure 16). Some participants have multiple accounts for one social media outlet. Facebook and Instagram are the most popular accounts for *Baby Zoomers* with six accounts. The next closest social media accounts only have two accounts. The students on this factor grew up in an urban cluster (33%) or in a rural area (67%) (Figure 17). This is the only factor without someone who grew up in an urban area.

Figure 15

Baby Zoomer Screens Used Each Day

Figure 16

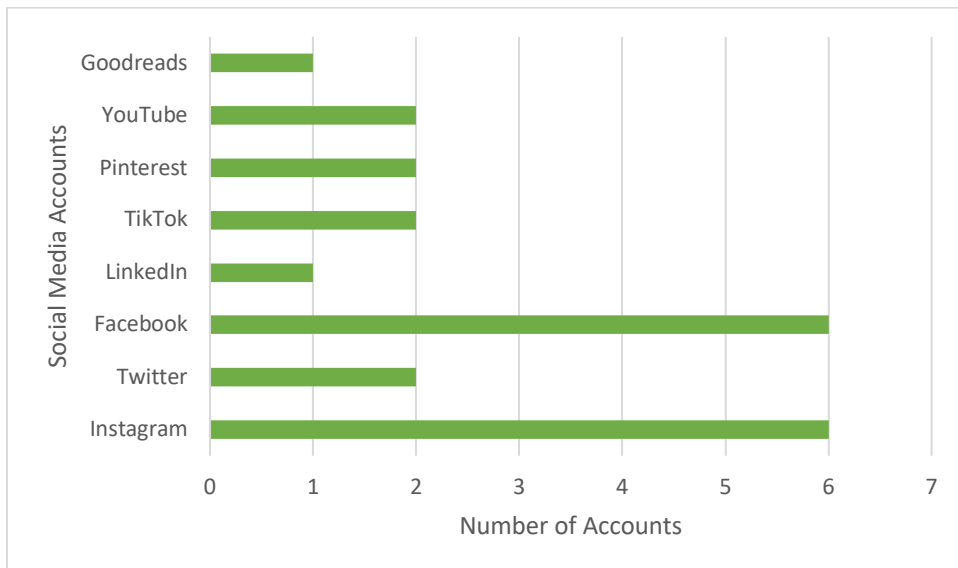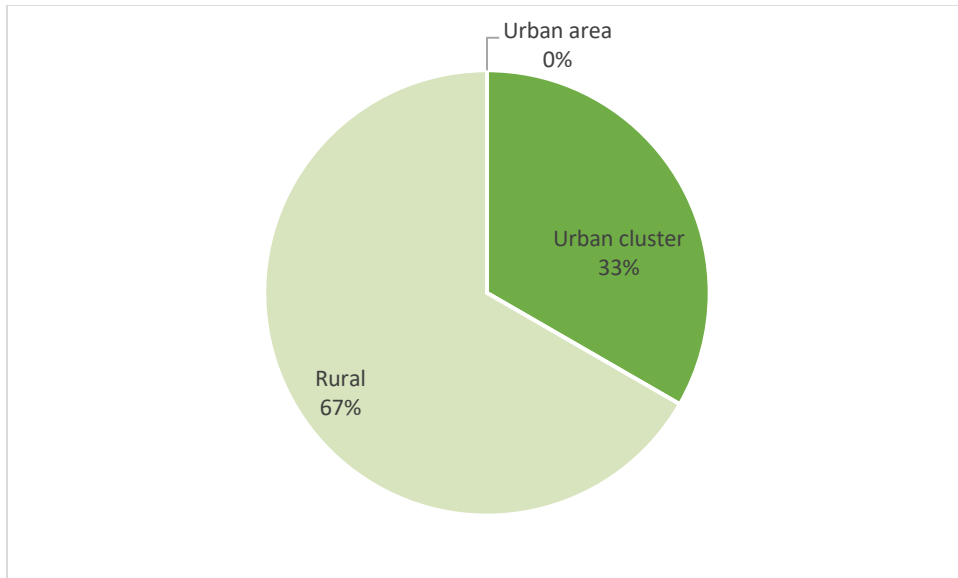*Baby Zoomer Social Media Accounts*

Figure 17

Baby Zoomers' Hometowns

Additionally, three themes identified from this group's factor array helped describe *Baby Zoomers* and led to this factor's name: Efficiency, Security, and being Intentional. The "Most Like" and "Most Unlike" statements for this perspective can be found in Table 5.

Table 5

Most Like and Most Unlike Statements for Baby Zoomers

No.	Statement	Array Position	Z-Score
	Most Like Statements		
4	My parents are some of my best friends—I tell them everything. I know they're just a text away to help with any major decisions or everyday dilemmas.	+4	0.67
23	I appreciate the flexibility technology brings to my life. Some days I want to work in the office with my peers to brainstorm and build off their creative energy. But other days I need to be at home on my couch or in a coffee shop to really focus and be productive.	+4	0.67
5	With how much I work, personal relationships/friendships would be impossible without technology. Thank you, social media.	+3	0.54
7	It makes me feel safer when my parents/family know where I am at all times through tracking (track my friend, Life 360, Snapchat, other technologies like Hum, etc.).	+3	0.33
24	To sleep at night, I need my phone close to me. What if someone needs me?	+3	0.20
	Most Unlike Statements		
10	**I'm getting tired of taking all the pictures for social media. I just want to experience my life.**	**-3**	**0.33**
12	I'm okay with genealogy companies (like Ancestry and 23andme) sharing my personal information with law enforcement agencies.	-3	0.40
21	When adults in my life wanted me to leave them alone, they put a toy/gadget/electronic in front of me—now I'm lost without one.	-3	0.47
9	It's important for me to have multiple accounts on several social media platforms, so I can be who I'm 'supposed' to be and still have an outlet to be myself with my friends.	-4	0.61
22	Calling to make an appointment (like a doctor's appointment) makes me anxious. I wish for an online appointment system.	-4	0.67

Note. Distinguishing statements are bolded.

Efficiency

The first conceptual theme to explain *Baby Zoomers* is one of efficiency. They prefer

face-to-face conversations, or at least phone calls, because it allows them to get all the details

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correct the first time and not waste their time (statement 22, array position -4, *z*-score 0.67).

Sorter 23, a 20-year-old junior female, said during a post-sort interview she "would call Walmart

before going to make sure they had" what she needed. *Baby Zoomers* are not interested in wasting

time driving to Walmart, if they do not have the items needed. Additionally, Sorter 25, a 22-year-

old senior female, said, "I think online appointments are fine, but at certain companies there

might be a disconnect; I think it's easier to call. Human interaction is more efficient." She went

on to give the theoretical example of calling a doctor to set up an appointment. When she called

the doctor's office, she was told they really needed to see a chiropractor. The sorter explained, if

she had made the appointment online, she would have wasted time going to the doctor's office to

then be told to visit a chiropractor.

Another reason *Baby Zoomers* feel the need for this efficiency in stores is because crowds

are most likely overwhelming to them (statement 28, array position +2, z-score 0.27). They use

technology to lessen the time they spend in the stores and around crowds, as security is a major

concern for them.

Finally, *Baby Zoomers* appreciate the ability technology gives them to be where they

need or want to be (statement 23, array position +4, *z*-score 0.67). This could be working at a

coffee shop with friends or taking care of a loved one during the day and working at night. Sorter

23 said "technology allows you to take work/school where you want to go."

Security

Physical safety and feeling secure is a major conceptual theme for *Baby Zoomers*. The

students who loaded on this perspective grew up in hometowns of 50,000 or less, so they

probably grew up in a place with lower crime rates. However, students who loaded on this

perspective have probably heard stories of bad things happening outside of your 'safe' hometown

and away from your family (statement 7, array position +2, z-score 0.33). As such, *Baby Zoomers* appreciate what technology can do to protect them and make them feel safer.

Baby Zoomers like their parents, or friends, to track them, so they know someone is checking on their safety (statement 7, array position +3, *z*-score 0.33). It could be making sure they got back to their apartment safely from a night out with friends or that they are safe while traveling. It does not bother *Baby Zoomers* for people to use tracking services like Life 360, Find My Friends, or location services in social media sites. It also does not bother them when someone checks on their location without asking first. Sorter 23 said, in a post-sort interview, "In today's world, you can't trust a lot of people. I just like people knowing I'm safe." Sorter 25 also said "Security cameras are important, especially in public places. It's important for women to have something to back up their stories."

In addition to security technology, *Baby Zoomers* rely on their parents for emotional and physical support and security (statement 4, array position +4, *z*-score 0.67). Whether it is a minor inconvenience in the day or a major life decision, *Baby Zoomers* look to their parents for support and wisdom. Their parents fostered this close connection with them from a young age (statement 21, array position -4, *z*-score 0.47).

Next, it would be easy to think *Baby Zoomers* have an addiction to their phones and technology, especially with statement 24 (array position +3, *z*-score 0.20). It says they cannot sleep at night without their phones next to them. While *Baby Zoomers* do use their phones as a safety blanket, it is because they worry about those they care about. They know if no one is contacting them about a problem, then everyone is safe. However, if *Baby Zoomers* do not have their devices with them, they lose the security of knowing everything is "OK." Sorter 25 said "I think it gives me a lot of stress when my phone isn't near me." Sorter 25 went on to say this anxiety does not go away in a classroom: "A lot of students have a lot going on." When

professors make them put their phones away, "It takes away a way for us to make sure others are OK, which causes them anxiety." The unknown is hard for *Baby Zoomers* to handle, and constant access to technology allows them to alleviate a lot of uncertainty.

Finally, *Baby Zoomers* have strong feelings about genealogy companies sharing their information shared with the police (statement 12, array position -3, *z*-score 0.40). They do not want their private information shared unless they specifically ask for it to be. Even though this information is held by the genealogy company, *Baby Zoomers* feel their personal information is theirs to disseminate as they see fit. Sorter 23 said she thinks genealogy sites sharing information with the police is weird. "If the police need information, they can contact me directly," she said. Sorter 25 called it a "breach of security" if a genealogy site shared her information.

Intentional

The final conceptual theme to explain *Baby Zoomers* is intentional. They love people, and the perspective is intentional about making memories and developing those connections. *Baby Zoomers* also want to record those memories for enjoyment at a later date. The perspective loves pictures and the ability technology gives them to capture and relive memories (statement 10, array position -3, *z*-score 0.33). Sorter 25 said she catches herself looking through photos and social media to relive past memories. Sorter 23 said social media is "something you can look on 20 years down the road;" like a "virtual scrapbook" you can show your kids. *Baby Zoomers* do not want to lose those special memories, and they are intentional about creating and saving those authentic memories (statement 9, array position -3, *z*-score 0.61).

However, during post-sort interviews, sorters were clear to distinguish being stuck in the past and unable to enjoy the present with their desire to live every moment to the fullest but still enjoy reminiscing about past memories. "I think you can live in the moment and still take photos

for memories," Sorter 25 said. Sorter 23 added, "Some people use social media negatively, but it's something you have to decipher for yourself."

This intentionality comes from a place of loving people for *Baby Zoomers*. The perspective engages with people in person. Sorter 25 said their love language is quality time. However, *Baby Zoomers* are thankful for technology, which allows them to always be able to connect with their people (statement 5, array position +3, *z*-score 0.54). Sorter 23 said she is a people person and being engaged with people keeps them happy and motivated.

Consensus Statements

Several statements reached consensus on all three factors. The consensus statements and array positions for this study can be found in Table 6. While consensus statements were sorted in a similar manner, it is important to realize each factor has a different interpretation of the statement, which leads them to their placement (Brown, 1980). Additionally, all of the consensus statements for this study fall in the +2 to -1 range, which shows the three factors are distinct in those opinions that are 'Most Like' or 'Most Unlike' them.

Table 6

Consensus Statements

No.	Statement	*Zennial* AP	*Silent Z* AP	*Baby Zoomer* AP
13	Volunteering in a way that uses my unique skillset is more important than just volunteering for the sake of volunteering. That's a waste of everyone's time.	+2	+1	+1
16	People think privacy is a right, but it's really a privilege.	0	0	-1
17	The ability technology gives us to work anywhere makes me feel like enough is never enough.	+1	+1	+2
29	I understand people who have a camera to watch their dog and give them treats. There's so much guilt leaving them alone all day.	-1	-1	0
31	If I'm being honest, I would use services like grocery pick-up and other delivery services because going into the store with crowds of people is overwhelming.	-1	-1	-1
34	I enjoy the fact I can customize the information/ideas/opinions I see on social media. It bothers me when too many people on my feeds disagree with my opinions.	0	0	-1
37	All the technology we have to make our lives easier actually wears me out. That's why I'm always tired and wanting to take a nap.	0	+1	0
40	I struggle with patience. Technology has taught me I should get responses in an instant.	+1	+2	+2

Note. AP represents array position.

CHAPTER V

SUMMARY, CONCLUSIONS, AND APPLICATIONS

The purpose of this study was to explore the perspectives of Generation Z college students in the Ferguson College of Agriculture toward the technology in their lives. This chapter discusses the findings of the research and proposes practical applications of the findings as well as ideas for future research.

Discussion

This study found three distinct viewpoints of Generation Z members toward the use of technology in their lives: *Zennials, Silent Z,* and *Baby Zoomers.* One of the surprising findings for this study was two of the perspectives, and a majority of the participants, are actually not huge fans of technology. *Zennials* and *Silent Z's* would often rather leave technology aside, which is counter to what a lot of common culture and some research found (Stillman & Stillman, 2017).

Technology

Zennials present a unique and surprising perspective within Generation Z. In a time when technology dependence and "screen time" are hotly debated from preschool to the workplace (Most Watched Today, n.d.), *Zennials* seem to crave time away from their electronics. All three perspectives recognize the benefits technology brings, but they are wary of the influence of constant connection to technology and media. Some research shows technology could influence mental health issues (Riehm et al., 2019). Generation Z has grown up with the connections of

social media and the influence of a 24-hour news cycle (Dimock, 2019), and they realize stepping away from social media allows them to stay healthier.

Generation Z realizes social media can be good and bad, depending on how you use it (Anderson & Jiang, 2018). This is especially true for the *Silent Z* and *Baby Zoomers.* The *Silent Z* does not like the control technology could have in their lives, but, at the same time, they appreciate scientific advancements. *Silent Z's* appreciate the advancements technology has brought to their lives. However, these advancements make followers of this perspective feel a little guilty they can do more than their ancestors. So, those with this belief pressure themselves to achieve more than others to feel truly "successful." *Silent Z's* feel like enough is never enough, as shown by research finding Generation Z is most stressed about performing well in school (Horowitz & Graf, 2019).

Baby Zoomers are thankful for social media and the ability it gives them to connect with friends and family and preserve memories. *Baby Zoomers* also realize social media can be used negatively, but it is up to the person how they engage with technology and social media.

Zennials experience some of the carryover of Millennials of being told social media is bad for them (Nielsen Company, 2014); thus, they work hard to find balance in their lives between a virtual and real world. *Zennials'* balance has led them to being outside more, which they now love. *Zennials*, named for their more balanced expectations toward technology, are in more control of their screen time and seek to be recharged when they are outside.

Even though *Zennials*, *Silent Z*, and *Baby Zoomers* appreciate technology, a level of frustration also arises. These perspectives were born into technology. Generation Z does not know a life without broadband, WIFI, and constant connectivity. However, collectively sorters included in these perspectives feel some level of pressure to instinctively know how to do anything related to technology. This is especially true for the *Silent Z.* When someone of an older

generation asks them for technological help and they cannot provide that help, the *Silent Z* feel like they failed. However, many people with a *Zennial*, *Silent Z*, or *Baby Zoomer* perspective were never taught how to use technology. Generations older than Generation Z assume members of Generation Z instinctively know how to use a variety of technology.

Flexibility

A major descriptor of Generation Z is their desire for flexibility (Stillman & Stillman, 2017). *Zennials* and *Baby Zoomers* embody this desire for flexibility, but *Silent Z's* do not. *Zennials* appreciate technology allows them to have this flexibility, especially at work and school. Some days they may want to be outside during the day and work at night. For students, technology may allow them to spend time at home with their parents and complete their schoolwork there. It may also mean *Zennials* take their computer to work in a park with their dog, instead of sitting in the office.

Baby Zoomers also appreciate the flexibility to work where they want. It allows them to be where their family and friends are, especially if someone needs help. However, *Silent Z's* do not like the large amount of flexibility technology allows for. *Silent Z's* thrive in structure, especially at work. They have to be careful that while they do not thrive in large groups, loneliness can also set in. This relates to a growing problem with other generations, as well (Howe, 2019). The *Silent Z* enjoys connections they make online, but it would be easy for them to not have human connection for several days.

Generational Connections

An interesting finding from this research was a connection with each perspective to an older generation. Whereas the Silent Generation was known for keeping their heads down and not working outside the system (Howe, 2014a), *Silent Z's* also appreciate the structure of working within the system. The Silent Generation has also been explained as acting like a middle-aged

person in their 20s (Ralpheson, 2014). *Silent Z's,* with their introverted tendencies and lack of desire to engage with many social situations, align with the Silent Generation's personality.

Baby Boomers were known for their passion for causes, even though there were differences of opinions within the generation (Colby & Ortman, 2014) as well as having more anxiety than most about the future (Pew, 2008). The *Baby Zoomers* relate to this generation with their desire for security and passion for what they believe in.

Millennials are defined, in part, by the demographic diversity making up the generation, achieving the highest level of education (Bialik & Fry, 2019), and technological advancements (Nielsen Company, 2014). *Zennials* relate to this generation, specifically because of technology advances, and a lot of Millennial mentalities have been applied to this generation. As such, *Zennials* have a fear of the damage social media can do to their mental health and professional future. *Zennials* strive for balance between technology and the real-world. They are also cautious about what they post online, not wanting to jeopardize future employment opportunities.

Privacy

Another major finding of the research shows *Zennials, Silent Z's*, and *Baby Zoomers* have a different concept of privacy than previous generations. Much of the discussion is around privacy, specifically digital privacy, and Generation Z is connected to Millennials. However, whereas Millennials came of age during the rise of technology and are known as digital natives, Generation Z was born into the age of connectivity (Dimock, 2019). They do not know a life without technology, which changes how they perceive the idea of privacy. The consensus statements for this study show there is a different perspective about privacy held by *Zennials*, *Silent Z's*, and *Baby Zoomers*. The consensus statements show the three perspectives either do not understand the concept of privacy the way the statements were worded, or the perspectives genuinely do not care about the privacy topics presented in the statements of this study.

Security

A lot of social change and traumatic national and international events have been part of

Generation Z's development (Dimock, 2019), which has greatly impacted *Baby Zoomers* and

their sense of security. There is also an increase in anxiety, depression, and suicide within

Generation Z (Curtin & Heron, 2019; Horowitz & Graf, 2019). As such, security is one of *Baby*

Zoomers greatest concerns at a physical and emotional level. They desire knowing they are

physically safe, their loved ones are safe at all times, and they are secure in their professional

endeavors. One way they mitigate their anxiety related to safety is through devices. Their level of

anxiety from being away from their phone is intense. This heightened concern leads them to

constantly be vigilant in case someone needs them. They sleep with their phones to insure they do

not miss a call in the middle of the night from someone who needs assistance

Education

Generation Z is all about personalization, even in higher education. They believe they do

not need the time to explore career options like past generations; they know where they are

headed. Educators need to continue explaining the relevance of what students are learning in the

classroom to how it applies to the real world (Stillman & Stillman, 2017), especially for *Zennials.*

Zennials are driven, and they have goals they want to accomplish. While they appreciate the

knowledge they are learning in their classrooms, faculty members need to connect the knowledge

to what this generation will experience in the real world.

Anecdotally, it has been discussed Generation Z asks a lot of questions and want their

hands held through the education process. However, research shows this generation has always

had answers at their fingertips. Educators should not be frustrated when students ask a lot of

questions. There is a need to find a balance between "holding their hands" and giving them

helpful feedback. On the other hand, some members of Generation Z need to also realize a

balance is needed. Generation Z is known to thrive on feedback, and they expect it immediately

(Stillman & Stillman, 2017). However, there is a need for some members of Generation Z to

embrace the expectations of other generations as well.

A lot of students already understand how technology can help them problem solve, but

they look to faculty members to help them apply the technology to their real-world goals,

especially *Zennials*. The *Silent Z* is analytic, so the educational experience should value this in the

way information is presented. *Baby Zoomers* desire security, so they request feedback to confirm

their security in what they are doing. They also want to do something correctly the first time

because of their efficiency nature.

Professional Expectations and Burnout

If companies want to attract the youngest professional generation, they need to embrace

technology, even if it means a younger person leads the way through the adoption. Generation Z

is not going to be part of an organization that does not embrace new technology (Stillman &

Stillman, 2017). This is especially true for *Zennials* and *Baby Zoomers*. *Silent Z's* still expect new

technologies; however, they do not want the new technology to change their structured schedule.

Even though Generation Z expects technology to be a part of their professional lives, and

they appreciate technology allowing them to have flexibility in their lives, they still have

expectations to step away. *Zennials* need to spend time outside or with friends/family to recharge.

They also do not want to be forced to blur the lines of personal and professional life. *Silent Z's*

have a strict schedule and structure. They do not want to be forced to take work home with them.

Baby Zoomers need time to spend with their friends and families to build memories, so even

though they do not disengage from devices much, they do not want the expectation to be

connected to work all the time. This desire Generation Z has to step away from technology and

work could help them avoid burnout in the workforce, according to research conducted by Schwarz (2011).

Family Dynamics

One of the findings of this study the researcher expected to find relates to family dynamics. Generation Z is known to be close to their parents; many say their parents are their best friends (Stillman & Stillman, 2017). This idea was supported by *Zennials* and *Baby Zoomers*. Both perspectives were adamant they were extremely close to their parents. However, the relationship is based on wisdom and guidance, not intervention. These two Generation Z perspectives do not expect their parents to bail them out, like Millennial parents often did with their children (Stillman & Stillman, 2017).

The exception to this finding is with the *Silent Z*. The followers of this perspective did not align at all with this idea. They believe in strict divisions between parents and friends. They have a good relationship with their parents, but the *Silent Z* is adamant their parents are not their friends. This finding is another generational connection to the Silent Generation.

COVID-19

The data for this study was gathered at the beginning of COVID-19 shutdowns; thus, findings of this study were not influenced by the pandemic. However, after interpretation of the factors, explanations can be made to understand how perspectives are handling the pandemic after three months.

Zennials and *Baby Zoomers* love people; they are recharged from being around real people. So, the social distancing aspect of COVID-19 was a challenge. To work through this, *Zennials* spent more time outside. It was better for them to step away from social media and too much technology. They knew they could be easily sucked in, and they mentally felt better when

they stepped away. However, *Baby Zoomers* are the opposite. They were surviving being away from their people through connecting with them via technology and social media. They were Zooming and sharing Facebook memories with their friends to relive fun memories until they could be together again.

In the middle of all this, the *Silent Z* was enjoying the time alone, for the most part. They were diving into social media to connect with new people, many of whom could have a celebrity status. However, they were not a fan of having to move their offices home; it changed their schedule. So, they put in ample time at the beginning to set a dedicated workspace in their home, figured out how they could best use technology to make the best of working from home, and set a specific schedule for themselves. When they finished work for the day, they closed the guest bedroom door and walked away.

Consensus Statements

Several statements reached consensus on all three factors. While consensus statements mean all factors have a similar perspective on the statements, it is important to realize each factor has a different interpretation of the statement, which leads them to this placement (Brown, 1980). These differences may be interpreted through the lens of each factor and their conceptual themes.

Statement 16 most likely landed in the middle of the factor array because of the age of this P set. Most have not experienced life outside of their parents' control or insight. They do not have a good grasp for what privacy truly means. Several sorters asked for clarification about the genealogy statement while sorting. Also, while discussing the same statement, several interviewees said they did not realize genealogy sites sharing information with the police was a possibility. It is also possible they did not realize why the information would be shared.

The next consensus statement is 13. All factors believe everyone has a unique gift or talent, and it is a shame if they cannot use their talent to serve others. The *Silent Z* knows

technology can accomplish a lot more than human power, so volunteering for the sake of volunteering is not something they are interested in, especially if technology could help solve the problem. Additionally, they do not like a lot of people, so they would rather stay behind the technology to help others, rather than be around people for the sake of being around people. *Baby Zommers* definitely want to help others, but their efficiency mind cannot handle situations where efficiency is not part of the equation. They know they could help more people if everyone used their unique skills, rather than trying to do something they are not good at for the sake of volunteering. Finally, *Zennials* have goals and plans, so they do not do well with meaningless tasks. They would rather do something to help others but also hone their skills for a future job opportunity.

Statement 31 shows *Zennials* have a lot going on. As such, they would rather use a pick-up service to save time then be able to spend more time with those they care about, do something beneficial with their talents, or be outside. The *Silent Z* likes people, but small groups of people. Their introverted selves would just as soon avoid crowds. *Baby Zoomers* place security at a high level. Large crowds actually make them a little nervous. They would rather use a pick-up service to keep them out of the crowds, lowering their anxiety and keeping them more secure. Also, they know a pick-up service would be a more efficient use of their time.

Statement 40 shows us Generation Z appreciates technology could have a negative impact on them. However, the *Silent Z* struggles with this; they appreciate technology and simplicity. If they have the privilege of more technology than their ancestors, they expect things to get done quickly so they can accomplish more. *Baby Zoomers* are efficient; they expect things to be done in a quick manner. They do not handle extra steps or poor instructions well. *Zennials* strive for balance in their lives, but they recognize they could easily rely on technology and social media too much. They constantly work on their patience and being away from technology to be healthier and more patient.

Finally, statement 17 shows *Zennials* are achieving individuals. They have goals they want to accomplish and have to work through comparison issues with what they see on social media. Thus, they sometimes struggle with feeling like enough is never enough. The *Silent Z* thinks they should accomplish more to reach the same level of success as their ancestors, which pushes them to work more. Finally, with the balance of security and efficiency, *Baby Zoomers* feel like they always need to accomplish more. Since they tend to be more efficient than other students, they can find themselves done working before others. Then, their security issues kick in, but with security of work. So, they feel the need to work more to prove themselves.

Implications for Future Research

The concourse for this study was developed around Laufer & Wolfe's Privacy Theory (1977). However, it was interesting to observe many participants were confused about statements using privacy language (statement 12 and statement 16). Findings also showed the perspectives had a different concept of privacy than previous generations. This suggests Laufer and Wolfe's Privacy Theory should be updated to better fit Generation Z and their perceptions of privacy. Further research should be completed to understand this different concept of privacy and adapt the theory.

While COVID-19 did not impact the results of this study, it is still shaping Generation Z (Parker & Igielink, 2020). As the 'most connected' generation (Dimock, 2019), older generations have assumed Generation Z is OK with the way the pandemic has pushed everyone online. However, this research indicates this is not the case. These perspectives desire face-to-face conversation and relationships with real people, not just a screen.

Additionally, they are most likely being turned to for technological assistance by those close to them. In a way, they were pushed into a leadership position earlier than most generations before them. How are they handling this stress? Has it changed them? Are they OK with it? The

Silent Z perspective already feels pressure to solve problems; did this experience heighten their perceived level of pressure?

As more Generation Z members enter the workforce, it will be important to continue learning about the integration into the working world. Specifically, it is important to understand how Generation Z will handle the possibility of burnout, especially because the generation already has higher levels of anxiety and depression (Horowitz & Graf, 2019) Additionally, it is already known the Millennial generation has felt pressure to not take vacation days (Howe, 2017), and this continued pressure could be detrimental for Generation Z. More research should be done to understand what makes Generation Z different, how they can add to the success of businesses, how they will change the multi-generational workforce, and how educators can continue to adapt teaching styles to prepare this generation.

Finally, research needs to be conducted to understand how other generations feel about technology in their lives. This could be accomplished by having populations of other generations sort the same Q set to identify generational differences.

Implications for Future Practice

The findings of this study show some major differences among *Zennials, Silent Z's* and *Baby Zoomers*. These differences make each perspective unique and a valuable asset, but this means educators and future bosses must learn there is not a cookie-cutter approach to working with all Generation Z members. They are the most ethically and culturally diverse generation to date (Dimock, 2019).

Educators need to find a way to balance the need of *Baby Zoomers* who desire to have a device with them for security, to know their people are safe, with the desire of *Zennials* to have no distractions in the classroom. They are there to learn from the professor, and they are paying a lot of money to be there. They do not want to be distracted by a classmate on their phone. This

balance could be accomplished by having more designated areas for students who wish to have electronics with them in a classroom. However, educators need to be careful they do not just put them in the back of the room and forget them. Students using a device in class may not mean they are disengaged. The solution could simply be splitting the room vertically instead of horizontally. *Baby Zoomers* still want to learn, but they need access to their devices to keep anxiety levels low so they can focus. If no one is contacting them for help, then their anxiety is lower, and they can focus on what the professor is saying. At the same time, some members of Generation Z may need to learn to adapt to working with other generations and realize there are some situations where devices must be put away.

Mentorship programs are a common practice throughout the professional world. From college students to CEOs, mentorship is a well-known idea. However, more purposeful pairings and structure with those mentorship programs would be beneficial as Generation Z enters the workforce. More focus should be placed on the individuals paired, rather than their career and stature. *Zennials* value knowledge and wisdom, so they would thrive in situations where they can have more face-to-face conversations with a mentor. The *Silent Z* would benefit from a mentorship program to ensure they do not get lost in the shuffle of a business. This perspective will work all day and all night, but their introverted tendencies will keep them in their own bubble. A mentor who is not afraid to reach out and check on them would be appreciated. This perspective appreciates authentic relationships with a small group of people, so a well-placed mentor would be of great value. Lastly, *Baby Zoomers* just love people, and they love intentionality. Thus, a mentor who is willing to invest in them and their careers would be well received. They will invest just as much in the mentor, if they feel connected to them.

As stated before, mentorship programs are not a new idea. However, the key to a mentorship program for Generation Z is making sure matches are made strategically. Random assignments will not work for this group, but purposeful pairs of mentor and mentee could have a

massive positive impact on Generation Z as they enter the workforce. They will thrive in the right relationships, but some work on the front end is essential for success.

Volunteering has also been a desire of generations for decades. It is a part of many company missions, and college students are basically expected to volunteer somewhere, somehow. Generation Z is no different than previous generations in their desire to serve. However, the key to successful volunteering for this generation is doing something that uses their unique skill set. They do not have a desire to volunteer just for the sake of volunteering. Their fulfillment in this situation comes from using their skills to best serve others. They realize they are not good at everything, and they believe having them do something they are not talented at is just a waste of time and not helpful for anyone. Specifically, *Baby Zoomers* think this is not efficient. The *Silent Z* does not enjoy being around large groups of people, so finding a place for them to use a specific skillset will help them thrive. *Zennials* want to freedom to choose how they volunteer. They also know volunteering using their specific skillset is a way to hone their skills and help them achieve profession goals.

The loneliness and lack of personal contact technology has created is what is taking a toll on the mental health of Generation Z, more so than them choosing to be on a device. Devising community programs to pair multigenerational groups together could also increase mental health for all generations, alleviating the loneliness so many are experiencing. This would also be a way for Generation Z to volunteer in a meaningful way, when a thoughtful pairing is developed.

Another practical application from this study has to do with correspondence with the perspectives. It would be easy for educators and bosses to assume this generation wants all correspondence to come through technology, but this is clearly not the case. An effort needs to be made to look this generation in the eye. Generation Z desires it, and older generations will appreciate these interactions. The stereotype of the iGeneration being constantly buried in their

devices is not as applicable as we once thought. Additionally, these face-to-face conversations will probably lead to more authentic relationships, which is really what this generation desires. Focusing on more face-to-face conversations can make the integration of Generation Z into the workforce less stressful for all generations.

Finally, if COVID-19 truly has pushed Generation Z into more leadership positions, or just more of the limelight, it is essential to make sure educators, mentors and bosses check on them. They desire to achieve, to solve problems and to help people, but this could quickly lead to burnout. Many young professionals already feel like they cannot take vacation days, and Generation Z admits some of their stress comes from the desire to perform well academically. There are ways to decrease burnout and psychiatric struggles, such as anxiety and depression in this generation, while also leveraging the strengths of Generation Z. However, it is up to educators, mentors, and bosses to engage with these changes and help the youngest professional generation succeed.

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APPENDICES

APPENDIX A

IRB Approval

Oklahoma State University Institutional Review Board

Date: 02/28/2020
Application Number: IRB-20-123
Proposal Title: Student perceptions of the impact of technology on work-life interactions.

Principal Investigator: Samantha Blackwell
Co-Investigator(s):
Faculty Adviser: Angel Riggs
Project Coordinator:
Research Assistant(s):

Processed as: Exempt
Exempt Category:

Status Recommended by Reviewer(s): Approved

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in 45CFR46.

This study meets criteria in the Revised Common Rule, as well as, one or more of the circumstances for which <u>continuing review is not required.</u> As Principal Investigator of this research, you will be required to submit a status report to the IRB triennially.

The final versions of any recruitment, consent and assent documents bearing the IRB approval stamp are available for download from IRBManager. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:
1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be approved by the IRB. Protocol modifications requiring approval may include changes to the title, PI, adviser, other research personnel, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2. Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3. Report any unanticipated and/or adverse events to the IRB Office promptly.
4. Notify the IRB office when your research project is complete or when you are no longer affiliated with Oklahoma State University.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact the IRB Office at 405-744-3377 or irb@okstate.edu.

Sincerely,
Oklahoma State University IRB

APPENDIX B

Participant Information Form

Agricultural Education, Communications and Leadership

PARTICIPANT INFORMATION FORM
Student perceptions of the impact of technology on work-life interactions.

Background Information
You are invited to be in a research study about student perceptions of technology in their life. We ask you read this form and ask any questions you may have before agreeing to be in the study. Your participation in this research is voluntary. There is no penalty for refusal to participate, and you are free to withdraw your consent and participation in this project at any time. If you choose to provide contact information for a follow up interview and are contacted, you can skip any questions that make you uncomfortable and can stop the interview at any time. Your decision whether to participate in this study will not affect your grades in any course.

This study is being conducted by: Samantha Blackwell, M.S., Department of Agricultural Education, Communications and Leadership, Oklahoma State University, under the direction of Dr. Angel Riggs, Department of Agricultural Education, Communications, and Leadership, Oklahoma State University.

Procedures
If you agree to be in this study, we would ask you to do the following things: You will be asked to complete a Qsort, which involves reading several statements and sorting them into categories based on the extent to which the statements reflect your opinions. You will then be asked to record your results on a Record Sheet and to complete a short survey with demographic questions about you. The session should last about 30 minutes. If you choose to provide a first name (or code name) and phone number, you may be called for a follow up interview regarding study results from your perspective. The call will last about ten minutes.

Participation in the study involves the following time commitment: 30 minutes for initial Q-sort and demographic survey, and a potential 10-minute follow up interview

Compensation
You will receive no payment for participating in this study.

Confidentiality
The information your give in the study will be stored anonymously. This means your name will not be collected or linked to the data in any way, unless you voluntarily provide your name for a potential follow up interview. This information will be stored in a locked file cabinet in a locked office and will be kept until publication of the results of this study. Information identifying you as a participant will not be published. Only the researchers will know you participated in the study. The researchers will not be able to remove your data from the dataset once your participation is complete.

Contacts and Questions
The Institutional Review Board (IRB) for the protection of human research participants at Oklahoma State University has reviewed and approved this study. If you have questions about the research study itself, please contact the Principal Investigator at 405-744-9372, samantha.warner@okstate.edu. If you have questions about your rights as a research volunteer or would simply like to speak with someone other than the research team about concerns regarding this study, please contact the IRB at (405) 744-3377 or irb@okstate.edu. All reports or correspondence will be kept confidential.

Statement of Consent
Your willingness to continue with the Q sorting process indicates your agreement to participate in this research.

APPENDIX C

Recruitment Flyer

Research Study
Technology and Work-Life Interactions
2020

Our research team is investigating the ideas about how students feel towards technology in their life. We would like to invite you to participate in our study, which will require about 30 minutes of your time. You will be asked to read several statements and sort them according to how they reflect your opinions.

To Sign Up for the Study contact:
Samantha Blackwell: samantha.warner@okstate.edu; 744-9372

Consistent with previous research in this area, we will request your permission to find out descriptors of demographic information (e.g. age, gender, work experience, etc.). No names will be given or used in any way. The information you submit can only be accessed by our research team and will remain private. All data collected in this study will remain strictly confidential and only group results will be reported. Risks associated with participating in this study are minimal.

Questions?

Samantha Blackwell, M.S.: samantha.warner@okstate.edu; 744-9372
Dr. Angel Riggs: angel.riggs@okstate.edu; 744-5133

Approved: 02/28/2020
Protocol #: IRB-20-123

APPENDIX D

Q Set

1. It's totally normal to have my phone in the bathroom—social media is the new bathroom magazine.

2. I wish professors understood the anxiety they cause students by making us put our phones away in class. It takes away my ability to clarify content and learn successfully.

3. I'm more worried about maintaining privacy with my family than my social media followers.

4. My parents are some of my best friends—I tell them everything. I know they're just a text away to help with any major decisions or everyday dilemmas.

5. With how much I work, personal relationships/friendships would be impossible without technology. Thank you, social media.

6. Boundaries are gone, and it's because of technology. Your personal and professional worlds are a melting pot.

7. It makes me feel safer when my parents/family know where I am at all times through tracking (track my friend, Life 360, Snapchat, other technologies like Hum, etc.).

8. I keep the TV or music on all the time because I get anxious when it's too quiet in my house/apartment.

9. It's important for me to have multiple accounts on several social media platforms, so I can be who I'm 'supposed' to be and still have an outlet to be myself with my friends.

10. I'm getting tired of taking all the pictures for social media. I just want to experience my life.

11. Technology allows me access to people generations before me couldn't even dream about. For example, previous generations could never send a message directly to the president.

12. I'm okay with genealogy companies (like Ancestry and 23andme) sharing my personal information with law enforcement agencies.

13. Volunteering in a way that uses my unique skillset is more important than just volunteering for the sake of volunteering. That's a waste of everyone's time. What are your feelings about technology in your life?

14. When I say I want balance in my life, older people hear I want to work less.

15. My sense of well-being is replenished when I'm in the outdoors, because of the lack of technology. I feel myself exhale and my shoulders relax.

16. People think privacy is a right, but it's really a privilege.

17. The ability technology gives us to work anywhere makes me feel like enough is never enough.

18. Our generation goes to the extreme, we either work all the time or we have the 'treat yourself' attitude. Work hard, play hard.

19. I feel like it's hard to breathe fully without my phone with me.

20. I trust an algorithm more than a friend to set me up on a blind date.

21. When adults in my life wanted me to leave them alone, they put a toy/gadget/electronic in front of me—now I'm lost without one.

22. Calling to make an appointment (like a doctor's appointment) makes me anxious. I wish for an online appointment system.

23. I appreciate the flexibility technology brings to my life. Some days I want to work in the office with my peers to brainstorm and build off their creative energy. But other days I need to be at home on my couch or in a coffee shop to really focus and be productive.

24. To sleep at night, I need my phone close to me. What if someone needs me?

25. People underestimate my desire for good, face-to-face conversation.

26. I'm more afraid of missing out on something new than failing at something new.

27. Mixing work and pleasure is helpful for me. It just means I'm being more efficient and considerate of everyone's time.

28. I feel safer with security cameras and systems because it gives me more knowledge of what's going on around me.

29. I understand people who have a camera to watch their dog and give them treats. There's so much guilt leaving them alone all day.

30. I'm all about choosing to 'unplug' for the weekend.

31. If I'm being honest, I would use services like grocery pick-up and other delivery services because going into the store with crowds of people is overwhelming. What are your feelings about technology in your life?

32. I wish I could go back in time to when my ancestors lived with only one phone and tv. I'm sure they were happier and more productive than I am.

33. My screen time is taking a toll on my physical and mental health.

34. I enjoy the fact I can customize the information/ideas/opinions I see on social media. It bothers me when too many people on my feeds disagree with my opinions.

35. If I am unable to immediately figure out how to handle/operate/use a new technology, it makes me feel worthless. I'm supposed to know this stuff.

36. Where do I even start? I'm so overwhelmed I feel stuck…so I just scroll.

37. All the technology we have to make our lives easier actually wears me out. That's why I'm always tired and wanting to take a nap.

38. Sometimes I have to remind myself celebrities are not my real friends.

39. Downtime is hard for me, because it's so hard to disengage from everyone.

40. I struggle with patience. Technology has taught me I should get responses in an instant.

APPENDIX E

Directions for Sorting

Researcher's Script: Directions for Sorting Q Statements

Thank you for agreeing to participate in this study. Please make sure you have the materials in front of you. You should have a Form Board and an envelope containing 40 cards, each with a statement describing ideas about technology in your life. You will need a pencil later.

Step 1: Please read through the statements and sort them into three (3) piles according to the question: **"What are your feelings about technology in your life?"**

The pile on your right are those statements **most like** what you think about the question and the pile on your left are those statements **most unlike** what you think about the question. Put any cards you don't have strong feelings about in a middle pile.

Step 2: Now that you have three piles of cards, start with the pile to your right, the "most like" pile and **select** the two (2) cards from this pile that are **most like** your response to the question and place them in the two (2) spaces at the far right of the Form Board in front of you in column +4. The order of the cards within the column-that is, the vertical positioning of the cards-does not matter.

Step 3: Next, from the pile to your left, the "most unlike" pile, **select** the two (2) cards that are **most unlike** your response to the question and place them in the two (2) spaces at the far left of the Form Board in front of you in column -4.

Step 4: Now, go back to the "most like" pile on your right and select the four (4) cards from those remaining in your **most like** pile and place them into the four (4) open spaces in column +3.

Step 5: Now, go back to the "most unlike" pile on your right and select the four (4) cards from those remaining in your **most unlike** pile and place them into the four (4) open spaces in column -3.

Step 6: Working back and forth, continue placing cards onto the Form Board until all of the cards have been placed into all of the spaces.

Step 7: Once you have placed all the cards on the Form Board, feel free to rearrange the cards until the arrangement best represents your opinions.

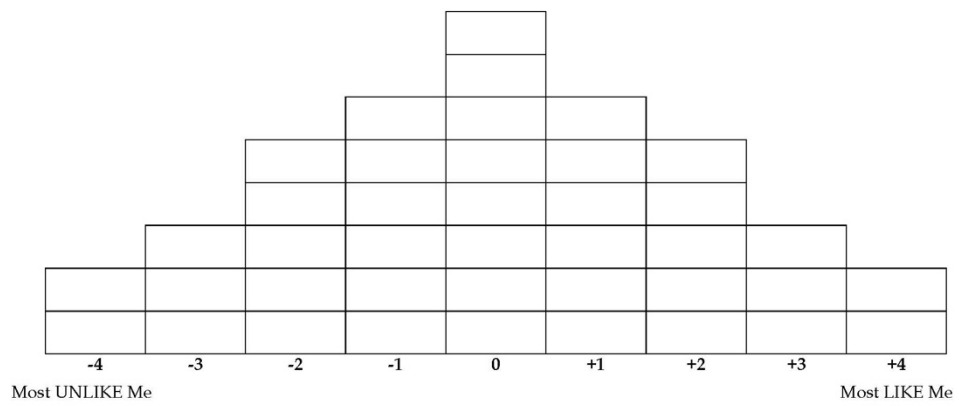Step 8: Record the number of the statement on the Record Sheet.

Finally, please complete the survey printed on the back of the Record Sheet and add any comments.

Thank you for your participation!

APPENDIX F

Record Sheet

What are your feelings about technology in your life?

| -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 |

Most UNLIKE Me   Most LIKE Me

APPENDIX G

Demographic Survey

1. What is your gender (check one)?
_____Female   _____Male   _____ Prefer not to answer

2. How old are you?   _____ years

3. What generation are your parents? (M for mom, D for dad)

_____ Boomer (1946-1964)   _____ Gen X (1965-1980)   _____ Millennial (1981-1996)

4. What is your classification?
_____Freshman
_____Sophomore
_____Junior
_____Senior
_____Graduate

5. What is your major?

6. What best represents the population where you **grew up**?
_____Urban area (>50,000 people)
_____Urban cluster (>2,500 but <50,000)
_____Rural (<2,500)

7. How old were you when you received your first activated cell phone, with data?

8. How old were you when you received your own computer, tv, or tablet for personal use?

9. How old were you when you were issued a computer or tablet from school, if applicable?

10. How old were you when you had your first paying job? In what industry was your first job (food service, retail, agriculture, etc.)?

11. What screens do you interact with each day? (check all that apply)
_____Cell phone
_____Desktop computer
_____Laptop
_____Tablet
_____TV

12. According to your phone, on average how many hours a day do you spend on your phone?
    _____ < 1 hour
    _____ 1-2.5 hour(s)
    _____ 2.5-5 hours
    _____ 5-7.5 hours
    _____ 7.5-10 hours
    _____ 10-15 hours
    _____ 15-20 hours
    _____ >20 hours

13. List all of the social media accounts you have and how many accounts you have on each platform. (i.e. an Instagram and a Finsta).

14. What else would you like to say about the ideas on the statements you sorted?

A follow-up phone interview may be conducted to clarify results. If you would be willing to participate in a phone interview, please write your first name (or a code name that you will know) and a telephone number where you can be reached.

(CODE) NAME _____PHONE_____

APPENDIX H

Post Sort Interview Script

Post Sort Telephone Interview Script

Someone at this number with a code name or first name of _____ participated in a research project sorting statements about their feelings about technology in their life recently. May I talk to him/her?

Thank you for agreeing to participate in this study and for consenting to a follow up interview. This interview should only take about ten minutes, is this a good time for you?

One of the things that the aggregate results of the study has shown is people who sorted like you _____.

What do you think of this?

Repeat as necessary.

Thank you again for your participation!

Bye!

VITA

Samantha Ashley Blackwell

Candidate for the Degree of

Doctor of Philosophy

Dissertation: HOW GENERATION Z COLLEGE STUDENTS IN THE FERGUSON COLLEGE OF AGRICULTURE PERCEIVE TECHNOLOGY IN THEIR LIVES: A Q METHODOLOGY STUDY

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Completed the requirements for the Doctor of Philosophy in Agricultural Education at Oklahoma State University, Stillwater, Oklahoma in July, 2020.

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