

GENERATIONAL DIFFERENCES IN VIRTUAL TEAMING IN THE UNITED STATES: CULTURE, TIME, AND TECHNOLOGY

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SUMMARY: *The globalization of the workplace has led to the extensive use of virtual teams. Virtual teams are groups of geographically distributed workers that use technology to collaborate and communicate. Due to their geographic distribution, these teams experience high levels of cultural diversity and time dispersion among team members. Millennials and Baby Boomers in the United States have been reported as having differing views in regards to cultural diversity, time, and technology in the workplace. These differing views could lead to conflict and poor performing virtual teams. However, there is a lack of research on generational differences in the context of virtual teams. This study sought to quantify these generational differences (or lack thereof) in virtual teams, focusing specifically on differences between Baby Boomers and Millennials working in the fields of engineering and construction. The results show that Millennials may have relative strengths related to handling cultural diversity, time-distributed team members, and technology use in the context of a virtual team when compared to Baby Boomers. These findings will help inform virtual team leaders by allowing them to better leverage their team members' strengths.*

KEYWORDS: *baby boomers, generations, millennials, virtual teams*

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1. INTRODUCTION

The workplace of today benefits from drawing upon expertise from geographically dispersed employees to work on specific projects through the use of virtual technology (e.g., video conferencing, e-mail, etc.). However, getting these team members to work effectively together in a non-traditional setting can be challenging. Having a team made up of members who are distributed geographically and communicating through technological mediums may lead to issues that a face-to-face (FtF) team would not encounter. Virtual teams will not succeed if they do not learn to “adjust to this new reality” (Lipnack and Stamps, 2000, p. 19), a reality which may include cultural and linguistic diversity (Staples and Zhao, 2006). In addition, if the team is spread across different time zones, team members may also have to cope with temporal (time) boundaries. Therefore, geographic distribution can lead to cultural, linguistic, and temporal diversity. Difficulty with the technology that is being used to break down these cultural and language barriers, as well as temporal boundaries (team members being in different time zones), can intensify the problem by negatively affecting team performance. Lower team performance may impact common metrics used to measure project status (e.g., cost, schedule, etc.).

Individual team members tend to react and adjust to these virtual teaming challenges differently. Generational differences could contribute to differing points of view regarding the impact of cultural differences, temporal boundaries, and technology. The Pew Research Center (2015a) has identified four prominent generations that are of working age – Millennials, Generation X, Baby Boomers, and the Silent Generation. This is likely the first time there have been four distinct generations in the workplace simultaneously (Bennett et al., 2012; Downing, 2006). Having more generations in the workplace increases the number of cross-generational interactions and magnifies the potential impact that generational differences could have on a virtual team. This has motivated the authors to further examine generational issues in virtual teams. Other researchers have also identified a need for a better understanding of the generational impact in virtual teams (e.g., Gilson et al., 2015). As previously mentioned, cultural diversity, time distribution, and technology are important aspects of virtual teaming, for which generations have been described as having differing views. These differences could be detrimental to a virtual team if not fully understood. Conversely, generational strengths are more likely to be leveraged if they are better quantified. Therefore, it is important to understand differing generational views on culture, temporal boundaries, and technology in the context of the virtual team environment.

2. LITERATURE REVIEW

It is essential to understand what constitutes a virtual team before moving on to consider potential generational impacts. Although there is no common definition of virtual teams in the literature, several themes emerge when reviewing virtual team definitions. Many definitions imply that virtual teams are being challenged to overcome boundaries and barriers such as cultural differences or time distribution through the use of a technological medium. The following subsections include a review of the relevant literature focused on these concepts.

2.1 Culture

The ability for virtual teams to cross geographic boundaries through technology generally results in more culturally-diverse teams. Chinowsky and Rojas (2003) describe that a virtual team functions “without regard to geographic location” (p. 98). Similarly, Hosseini and Chileshe (2013) offer a definition that indicates that Global Virtual Engineering Teams (GVETs) are often distributed spatially. This geographic distribution may result in teams that cross international borders, causing global virtual team (GVT) members to be composed of workers from different national backgrounds (Jarvenpaa et al., 1998). Varying national backgrounds will lead to cultural differences in these teams. Chen and Messner (2010) make the connection between spatial distribution and cultural differences when they describe GVETs as teams that are “geographically dispersed” and cross “cultural barriers” (2010, p. 208).

It has been argued that cultural diversity is linked to global virtual team conflict (Kankanhalli et al., 2006) and the development of trust (Uden and Naaranoja, 2007) but efforts in forming relationships with heterogeneous individuals can increase the cohesion among virtual teams (Son and Rojas, 2011), which can affect the performance of the team (Franz et al., 2016). Staples and Zhao (2006) found partial support that cultural diversity can lead to conflict and less contentment within virtual teams. Project teams that experience cultural and language diversity have been found to exhibit poorer performance during early project phases when compared to more culturally and linguistically homogenous teams (Comu et al., 2011). Technology can help to mitigate these types

of issues typically encountered in cross-cultural communication. For instance, Shachaf (2008) has proposed that e-mail can improve cross-cultural communication in virtual teams as it allows participants that do not speak the primary language of the team as their first language to communicate their thoughts more effectively. E-mail also allows team members more time to consider information and formulate a response in comparison to more synchronous technologies. Culturally heterogeneous groups tend to use technology differently than their homogenous counterparts. For example, it has been found that global virtual teams will turn to technologically mediated boundary objects (i.e., plans, specifications, etc.) sooner than domestic virtual teams during conflict identification (Iorio and Taylor, 2014). It is also important to note that not all virtual teams are completely culturally heterogeneous. Daim et al. (2012) found a complaint of virtual team members is that the cultural distribution in the teams can be skewed. During interviews, they found that participants in GVTs that meet in real-time largely consist of team members from English-speaking cultures (Daim et al., 2012).

2.2 Time

The same spatial distribution that can lead to cultural differences can also lead to a time-dispersed team (having team members in different time zones). Chen and Messner (2010) stress in their definition that time distribution is an issue that virtual teams must overcome. In their definition, Lipnack and Stamps (1999) also highlight the need for these teams to be able to span time zones effectively. In agreement with other definitions, Hosseini and Chileshe (2013) suggest in their definition that virtual teams may experience time distribution. Time zones add to the complexity experienced in virtual team collaboration.

Having team members located in different time zones may cause meetings to be held outside of typical work hours. This could explain why virtual team members who meet simultaneously have been reported to have a “poor work-life balance” (Daim et al. 2012, p. 202). Time zones can be more difficult for virtual teams to deal with than the physical distance spanned by the team members (Cummings et al., 2009). Differing time zones among team members have been found to contribute to coordination delays in virtual teams (Cummings et al., 2009). Research has also identified a 9-12 hour time difference amongst team members as having the most intense negative effect on coordination (Espinosa et al., 2012).

2.3 Technology

Virtual team definitions, for the most part, similarly describe time and cultural differences as common barriers faced in the virtual environment. But how do virtual teams break down these barriers? Many definitions state that virtual teams communicate through a technological medium (Chen and Messner, 2010; Chinowsky and Rojas, 2003; Hosseini and Chileshe, 2013; Lipnack and Stamps, 1999). Accordingly, both time differences (Lipnack and Stamps, 1999) and cultural differences (Chen and Messner, 2010) can be spanned by taking advantage of available technologies.

Information and communication technologies (ICTs) appear to be the most common type of technology examined in the context of virtual teams. ICTs include technologies such as e-mail and video conferencing and virtual team members' skill at using such ICTs has been examined in the context of AEC virtual teams (Sher et al. 2009). Video conferencing attempts to mimic FtF meetings and increase the effectiveness of collaborative work by introducing socialization in virtual project teams (El-Tayeh and Gil, 2007). However, it has not been shown to be as productive as FtF meetings (Andres, 2002). Synchronous and asynchronous communication through technology have been found to be effective in limiting coordination issues when team members have work hours that intersect (Cummings et al. 2009). ICTs enable virtual teams to communicate and help span the barriers experienced in the virtual environment (Iorio et al., 2011). Researchers have found that when these barriers are effectively spanned, knowledge synthesis can occur across a virtual team (Ramalingam and Mahalingam, 2011; Dossick et al., 2014).

Virtual teams face barriers and challenges related to cultural diversity, time distribution, and reliance on technology for communication. Generational differences may exacerbate these difficulties experienced in the virtual environment. However, this has not been well-quantified in the context of a virtual team. Therefore, research is needed that focuses specifically on quantitatively examining generational views on culture, time, and technology.

2.4 The Generational Point of View

A generation has been defined as a set of individuals of similar ages that experiences “significant life events at critical developmental stages (times)” (Kupperschmidt 2000, p. 66). These generations can be split into different

groups depending on when in the generational time-frame they are born (early, middle, late) (Kupperschmidt, 2000). As previously mentioned, there are four generations in the workplace today (Bennett et al., 2012; Downing, 2006). The newest of these generations in the United States is the Millennial generation. The Millennials (born between 1981-2001) are generally described as having a greater familiarity with digital media, in particular communications and social media, and tend to be more civic minded. The Millennials are followed in age by Generation X (born between 1965-1980), which are then followed by the Baby Boomer generation (born between 1946-1964). The Baby Boomers are generally described as being the most physically fit generation compared to generations that preceded them and this generation is marked by increased consumerism. The oldest generation in the workplace today is the Silent Generation (born between 1928-1945) (Pew Research Center, 2015a). These generations have been characterized in the literature when views on cultural diversity, temporal issues in the workplace, and technology are separately considered.

This study aims to explore the differences between the Millennials and the Baby Boomers in the context of virtual teams. These generations do not exhibit the overlap that would be experienced if two consecutive generations were examined, thus ensuring two distinct groups. In 2015, the Millennials represented 34% of the workforce, while the Baby Boomers represented 29% (Pew Research Center, 2015b). In contrast, in 1995 the Millennials were not present in the workforce while the Baby Boomers comprised nearly half of it (Pew Research Center, 2015b). Many Baby Boomers are now in leadership positions (Gibson et al., 2011) while younger employees will likely tend to hold entry level positions. Examining these two specific generations will shed light on key differences experienced between the younger and older cohorts in the workforce.

The Millennials have been characterized as having differing views on cultural differences (Myers and Sadaghiani, 2010). Culture is a broad term that encompasses aspects of race, ethnicity, and language, as well as other constructs. Millennials have been characterized as not tolerating a lack of racial diversity (Martin, 2006). In agreement with other characterizations, Bell and Narz (2007) and Downing (2006) describe the youngest generation as being at ease when experiencing diversity, although neither employed robust statistical analyses to make these claims. Downing (2006) also states that the Millennials are “the most culturally diverse generation yet” (p. 6). The Millennials have also been characterized as the most diverse generation in terms of race and ethnic backgrounds (Nielsen Company, 2014). Still, research published to date has yet to establish why Millennials are more accepting in their views on diversity and cultural differences. Research has also failed to completely address the older generations’ (such as the Baby Boomers) views on cultural diversity. Existing literature is not clear if the Baby Boomers are less skilled with handling cultural diversity in the workplace. Rather, the generational literature simply does not address it. This study seeks to clarify if the Millennials have differing views on cultural diversity when compared to the Baby Boomers.

Generational views on time distribution in the workplace is a topic that has not been examined in great depth in the current literature. However, generational views on the relation between work and time have been discussed. For example, Millennials have been said to seek a “work-life balance” (Baldonado, 2013, p. 42; Downing, 2006, p. 6) and more “flexible work arrangements” (Bell and Narz, 2007, p. 57). However, the younger cohort may find conflict with older cohorts related to scheduling differences as observed by Kankanhalli et al. (2006). Their less rigid views on temporal boundaries in the workplace could make Millennials more reliable contributors in distributed virtual teams that may require participation outside of normal working hours. However, these less rigid views among the Millennials on temporal boundaries could lead to coordination issues among team members since the Millennials’ working hours could be less predictable. Research is not clear if these less rigid views are truly a strength for the Millennials in virtual teams. The Millennials also prefer jobs that allow telecommuting (Bell and Narz, 2007), showing a more fluid conception of the boundaries of work and time than previous cohorts. In contrast, the Baby Boomers have been characterized as being in opposition with these more flexible work arrangements (such as telecommuting) (Glass, 2007). In addition, Brody et al. (2011) note that the older generations (such as the Baby Boomers) were raised in a society where “9-to-5” workdays were the norm and found that changing these temporal norms will negatively affect the loyalty of the older cohorts. However, Brody et al. (2011) do not exclusively examine the Millennials and the Baby Boomers. Still, having more rigid views on temporal boundaries can be a strength for the Baby Boomers in virtual teams. This could make them more predictable contributors. Despite all these characterizations in the literature, there is still an appreciable lack of quantitative research of generational views on time-distributed work environments. This gap is especially present for the older cohorts such as the Baby Boomers.

The Millennials have been said to have a competitive advantage due to their affinity for technology (Kaifi et al., 2012). The younger cohort has even been proposed to be well-suited to be co-leaders (alongside older generations) of virtual teams due to their technological competence (Iorio and Taylor, 2015). Millennials have also been referred to as “digital natives” (Hershatter and Epstein 2010, p. 212) as they have been learning to use technology throughout their lives (Simoneaux and Stroud, 2010). In comparison, the older generational cohorts, such as the Baby Boomers, learned “modern technology” either in an educational setting or on the job (Simoneaux and Stroud 2010, p. 70). Wang and Haggerty (2011) have proposed that using ICTs for personal matters may increase virtual competence. The Millennials generally have more exposure to ICTs in their personal lives compared to the Baby Boomers as the ‘digital native’ contention argues. However, it is important to note that previous generations were also affected by new technology such as the advent of the television (Deal et al., 2010). Also, there have been critiques of the digital divide that contend that older and younger cohorts should not be considered greatly different when it comes to technological ability (e.g., Bennett et al., 2008). Nonetheless, the Millennials likely have a better modern technological literacy when compared to the Baby Boomers due to their increased exposure at a young age. This study seeks to confirm and clarify these views in the context of a virtual team.

Despite the large amount of research regarding characteristics of generations, there is a dearth of knowledge regarding the generational impact in virtual teams (Gilson et al., 2015; Myers and Sadaghiani, 2010). Given the differences found across generations in the workplace, this study aims to examine how and whether such differences manifest in the context of virtual teams in the areas of: cultural differences, temporal boundaries, and technology use.

3. HYPOTHESES

Generational differences have been identified by researchers in regard to cultural issues, temporal boundaries, and technology use. The following hypotheses have been developed based on a careful consideration of both the existing virtual team research and generational research. Culture and language differences (H1) (e.g., Chen and Messner, 2010), time (H2) (e.g., Lipnack and Stamps, 1999), and technology (H3) (e.g., Chinowsky and Rojas, 2003) are essential elements of virtual teaming. Language diversity is assumed to be related to cultural diversity and is therefore included in H1. The Millennials are the generation that has most recently entered the workforce. In comparison, the Baby Boomers hold power in the workplace and have represented the largest demographic for much of the time preceding the Millennials entrance to the workplace. In addition, these two generations do not have the overlap that would be experienced if two consecutive generations were analyzed. Therefore, this study examines the differences between the Millennials and the Baby Boomers.

Millennials have been characterized in the reviewed literature as being especially skilled at dealing with cultural diversity (e.g., Bell and Narz, 2007; Downing, 2006) as well as being the most diverse generation yet (Nielsen Company, 2014). This leads us to our formulation of H1:

H1 – *Millennials view cultural and language differences as less of a barrier and challenge compared to Baby Boomers in the context of a virtual team.*

Millennials have also been characterized in the reviewed literature as having a more fluid sense of time in the context of the workplace (e.g., Baldonado, 2013; Downing, 2006). This leads us to our formulation of H2:

H2 – *Millennials view time distribution amongst team members as less of a barrier and challenge compared to Baby Boomers in the context of a virtual team.*

Finally, Millennials have been characterized as being proficient with technology in the reviewed literature (e.g., Simoneaux and Stroud, 2010). This leads us to our formulation of H3:

H3 – *Millennials view technology use and implementation as less of barriers and challenges compared to Baby Boomers in the context of a virtual team.*

4. METHODOLOGY

The research presented in this paper is based on the efforts of Construction Industry Institute Research Team 326 (CII RT 326) to which the authors contributed. The focus of CII RT 326's efforts was maximizing the performance of virtual teams in the engineering and construction industry. The team developed a survey instrument and collected survey data. The survey was distributed to approximately 1,386 individuals. A total of 207 survey responses were collected from participants with experience working in virtual teams. The survey population

included participants from the Silent Generation, Baby Boomers, Generation X, and Millennials (distribution of participants by generation provided in Table 1). The participants worked in a number of different engineering and construction sectors. It is important to note that generations are unique to certain areas of the globe. Millennials and Baby Boomers are well agreed-upon generations in the United States, but other areas of the world may not recognize similar generations. Therefore, responses from individuals working outside the United States were not analyzed. This left 84 Baby Boomer responses and 40 Millennial responses that were analyzed for this study (n=124). Table 2 shows information on the companies that employ the Millennials and Baby Boomers considered in the analysis (n=124) as well as the participants' positions.

TABLE. 1: Generation Distribution (n = 207)

Generation	Participants
Silent Generation (born before 1946)	3
Baby Boomers (born 1946-1964)	88
Gen X (born 1965-1980)	75
Millennials (born 1980-2001)	41

Note: The survey read "before 1946." However, the Silent Generation has been defined as having birth years ranging from 1928-1945 (Pew Research Center 2015a)

TABLE. 2: Company Information for Domestic Millennials and Baby Boomers (n = 124)

Category	Demographic	Count	%
Company Type	<i>Engineer/Contractor</i>	65	52%
	<i>Private Owner</i>	29	23%
	<i>Public Owner</i>	30	24%
Company Reach	<i>Local (in-state)</i>	1	1%
	<i>Regional</i>	4	3%
	<i>National</i>	7	6%
	<i>Multinational</i>	112	90%
Number of Employees	<i><100</i>	3	2%
	<i>100-500</i>	4	3%
	<i>501-1,000</i>	15	12%
	<i>1,001-5,000</i>	21	17%
	<i>5,001-10,000</i>	19	15%
	<i>10,001-50,000</i>	20	16%
Participants' Positions	<i>>50,000</i>	42	34%
	<i>Project Engineer</i>	29	23%
	<i>Project Management</i>	36	29%
	<i>Upper Management</i>	19	15%
	<i>None of the Above</i>	40	32%

Seven (7) questions from the survey were selected to test the hypotheses (Table 3). The selected questions all used a 5-point Likert scale for responses. The Likert scale responses showed the participants' level of agreement with statements (ranging from Strongly Agree / Very Challenging to Strongly Disagree / Not Challenging).

TABLE. 3: Questions Linked to Each Hypothesis

Hypothesis	Questions Analyzed
H1	1, 2, 3
H2	4, 5
H3	6, 7

- i) Question 1 – How challenging is dealing with different languages in virtual team collaborations (in your organization)? (1= Not Challenging to 5 = Very Challenging)
- ii) Question 2 – How challenging is dealing with different cultures in virtual team collaborations (in your organization)? (1= Not Challenging to 5 = Very Challenging)
- iii) Question 3 – In your experience, to what extent do you agree that the following items are barrier(s) to effective virtual teams? – Cultural/language differences (1 = Strongly Disagree to 5 = Strongly Agree)
- iv) Question 4 - How challenging is dealing with different time zones in virtual team collaborations (in your organization)? (1= Not Challenging to 5 = Very Challenging)
- v) Question 5 – In your experience, to what extent do you agree that the following items are barrier(s) to effective virtual teams? – Time difference between distributed team members (1 = Strongly Disagree to 5 = Strongly Agree)
- vi) Question 6 - How challenging is the use of virtual technologies in virtual team collaborations (in your organization)? – (1= Not Challenging to 5 = Very Challenging)
- vii) Question 7 – In your experience, to what extent do you agree that the following items are barrier(s) to effective virtual teams? – Difficulty with technology implementation (1 = Strongly Disagree to 5 = Strongly Agree)

The selected Likert scale questions were analyzed using pooled one-tailed t-tests to compare the differences between the Millennials’ and Baby Boomers’ responses ($H_a = \mu \text{ Millennials} < \mu \text{ Baby Boomers}$). Variances were assumed to be equal based on the results of a 2-sided F-test for unequal variances. Qualitative responses were converted to numerical values (Strongly Agree = 5, Agree = 4, etc.). A p-value of ≤ 0.05 was used to determine significance.

Parametric tests are a valid statistical approach to analyze Likert scale responses as Norman (2010) attests. Norman (2010) cites the Central Limit Theorem to explain that if the number of responses is “greater than 5 or 10 per group” then the distribution of the means can be assumed to be “approximately normal” (p. 628). Therefore, the distribution of the means can be assumed to be normal considering the sample size (Millennials (n=40) and Baby Boomers (n=84)). By following Norman’s (2010) interpretation of the Central Limit Theorem we are able to validate that the data meets the normality assumption of the parametric statistical test that we are using.

5. RESULTS

The t-test scores and means for the selected survey questions are displayed in Table 4. All three questions (1, 2, & 3) corresponding to H1 show that the Millennials’ responses were statistically distinct and lower than the Baby Boomers’ responses. Therefore, support was found for H1 showing that Millennials view cultural and linguistic diversity as less of a challenge and a barrier in the context of a virtual team when compared to their Baby Boomer counterparts. The two questions corresponding to H2 (4 & 5) show again that the Millennials’ responses were statistically distinct and lower than the Baby Boomers’ responses. Therefore, support was also found for H2 showing that Millennials view time-distributed team members as less of a challenge and a barrier when compared to the views of their Baby Boomer counterparts. Statistically significant support was found for Question 6, but was not found for Question 7. Therefore, H3 (technology) cannot be fully supported.

Cronbach’s alpha was calculated for the three hypotheses – H1 ($\alpha = 0.8341$), H2 ($\alpha=0.6997$), and H3 ($\alpha=0.5041$). The Cronbach’s alpha results for H3 show that Questions 6 and 7 may actually be testing different constructs (as

revealed by the substantially differing p-values for these questions). Questions 6 and 7 will be discussed separately in the next section.

6. DISCUSSION

The results for H1 show that the characterization in the literature of the younger generation having more encompassing views on the topic of cultural diversity appears to be true in the context of virtual teams (e.g. (Myers and Sadaghiani, 2010)). As Bell and Narz (2007) argue, this youngest generation may be more comfortable with cultural diversity since they were exposed to it more in their schooling. As the generational definition provided by Kupperschmidt (2000) hints, a generation is formed by common experiences during their youth. This exposure to diversity in the Millennials' schooling may have helped define this youngest generation. Millennials are also characterized by their relatively higher levels of diversity in their demographical makeup (Nielsen Company, 2014). Thus, Millennials may have developed strengths related to handling cultural diversity due to exposure to their diverse generational peers. Possibly, increased diversity in subsequent generations will make them have even more encompassing views than the Millennials when it comes to cultural diversity in the workplace.

TABLE. 4: Summary Hypothesis Test Results

Hypothesis	Survey Questions	Likert Scale Means		p-value	
		Millennials (n = 40)	Baby Boomers (n = 84)		
H1	Millennials < Baby Boomers	1	2.200	2.952	0.0015**
		2	2.150	2.786	0.0033**
		3	2.600	3.119	0.0065**
H2	Millennials < Baby Boomers	4	2.525	2.929	0.0242*
		5	2.700	3.310	0.0011*
H3	Millennials < Baby Boomers	6	2.150	2.583	0.0254*
		7	3.625	3.619	0.5116

* $p < 0.05$, ** $p < 0.01$.

As Kankanhalli et al. (2006) proposed, cultural diversity can lead to conflict in a virtual team. It is not clear, however, if the Millennials are actually less prone to conflict when compared to their older generational counterparts. Millennials could also increase conflict in virtual teams due to their substantial differences to the Baby Boomers (who hold much of the power still in the workplace). Studying generational proneness to conflict in virtual teams is an opportunity for future research. Millennials may actually be able to help reduce conflict by aiding in cross-cultural communication in virtual teams. Cultural boundary spanners (CBSs) are already a topic discussed in the virtual team literature (e.g., Di Marco et al., 2010; Ramalingam and Mahalingam, 2011; Zelkowitz et al., 2015), but this topic warrants further study in the context of generational differences.

The results for H2 support the characterization in the literature of Millennials having a more fluid conception of time and work than previous cohorts. As discussed earlier, Millennials seek out opportunities for telecommuting (Bell and Narz, 2007). Telecommuting may increase worker availability outside of normal work hours. It is unclear if these differences are attributed to generational differences or age differences. It is possible that all young people (regardless of generation) prefer to work on a less-rigid work schedule. This is another topic that warrants future research. It is also not clear if this less fluid sense of time and work will automatically increase the performance of a Millennial-rich virtual team.

In the generational literature, the work-life balance described by Downing (2006) and Baldonado (2013) is unclear. Work-life balance may relate to either the overall hours worked weekly (i.e., 40 hours/week) or the distribution of those hours (i.e., five 8-hour days, four 10-hour days). Globally-distributed teams will require team members to be flexible with the distribution of their working hours (i.e., staying late to meet with team members in different time zones). Bell and Narz (2007) have suggested that Millennials want to work in a flexible environment. This desired flexibility could make the Millennials more willing to accept the challenge of working the odd hours that time-distributed teams may encounter, as our results show. The results for H2 help demonstrate that the "work-

life balance” desired by the Millennials may not actually be related to the distribution of the hours worked, since they appear to be less challenged than the older cohort to work odd hours to accommodate their time-distributed team members. It is possible that “work-life balance” is not the best phrase to be using to describe an individual’s views on the relation between work and time. This term suggests that “work” and “life” are two separate constructs that should be balanced, possibly equally (50/50). The literature needs a more nuanced and accurate term to describe this relation between work and time. Individuals each have a work-life distribution. This distribution varies among individuals depending on age (as this study examines) or other factors. Therefore, future literature might productively examine an individual’s distribution of work hours rather than their balancing of them with their personal lives.

The Millennials have also been characterized as having a “‘work-to-live’ mentality” (Ferri-Reed, 2014, p. 20). This could mean that Millennials would view time distribution as more of a challenge and barrier than older generational cohorts. In contrast, Baby Boomers are described as “workaholic[s]” (Simoneaux and Stroud, 2010, p. 69). This characterization of the Baby Boomers implies that they would be more willing to work the extended hours that can be required of a time-distributed team. The Millennials look for ample feedback (Hershatler and Epstein, 2010) and are considered to be collaborative (Ferri-Reed, 2014). The desire for feedback and collaboration may make the Millennials more willing to work extended hours to meet with their time-distributed virtual team members. Existing generational characterizations do not explicitly state their views on working in a time-distributed team (these views can only be inferred). The results from our study clarify generational views on working as a member of a time-distributed team. The results demonstrate that Millennials (when compared to the Baby Boomers) view time-distributed team members as less of a barrier and a challenge in the context of a virtual team. Still, there appears to be no consensus in the literature on how Millennials (or any generation, for that matter) are impacted by working with time-distributed team members and this represents an avenue for future research. Future research should also explore the previously discussed contention of deploying certain generations to virtual teams that are more or less time-distributed. Identifying generational strengths for specific time distributions in virtual teams (i.e., 3 hours, 6 hours, etc.) may offer a more nuanced perspective on this issue.

The results for H3 support the assumption that Millennials struggle less with technology use than the Baby Boomers (Question 6). However, the two cohorts are nearly indistinguishable when views on technology implementation are considered (Question 7). The results for Question 7 (technology implementation) are similar to points offered from Deal et al. (2010). They acknowledge that this youngest generation may use technology differently when compared to their older cohorts. However, they also acknowledge that this relationship is not unique to today’s generations (2010). They go on to say that it is not yet known if the Millennials “will be more fundamentally affected by the explosion of technology options when compared with previous generations” (p. 193). With that thought in mind, it is logical to propose that the rate of technology implementation in recent decades makes it hard for the Millennials (or any other generation) to cope with this implementation. It may be that the Baby Boomers are equally equipped to implement technology in the context of a virtual team when compared to their Millennial counterparts, as our results show. Technology implementation is also related to an organization’s ability to implement new technology, while technology use relates more to personal ability to use technology. Companies may benefit from having standard procedures set in place for implementing new technology in virtual teams. The findings of this study show that both the Millennials and the Baby Boomers tended to agree (Likert scale average > 3.0) that technology implementation is a barrier for the virtual teams in their organizations. Virtual teams depend on technology for almost all communication in the team, and technology is evolving quickly. Therefore, companies should recognize the importance of effectively implementing new technologies in their virtual teams.

In contrast, the results for Question 7 may be in conflict with Simoneaux and Stroud (2010) who state that the Millennials are “always looking for the next cool thing” when it comes to technology (p. 69), which suggests that Millennials may view the task of implementing a new technology as less of a barrier. Implementing new technology is clearly important for any organization that utilizes virtual teams. However, compliance and support of the current technology used in a team is also an important attribute of virtual team members. Further defining generational differences and views in regards to implementing new technology (particularly ICTs) is a topic for future research.

Virtual teams use a great deal of “work technology” (e-mail, video conferencing, etc.). This is different from “social technology” (texting, social media, etc.). The Millennials may have a higher technological literacy when

social technology is concerned as they were likely exposed to social technologies (such as Facebook) during their formative years. As Downing (2006) notes, the Millennials will often defer to their social network for guidance. This competence with social technologies during a young age may translate to competence with work technology. It has been proposed that proficiency with ICTs outside of the work setting will transfer to more virtual competence in the work setting (Wang and Haggerty, 2011). The results from our study support Wang and Haggerty's (2011) proposition. Millennials view technology use as less of an issue than Baby Boomers in the context of a virtual team. This may be from competence with social technology gained at a young age.

7. LIMITATIONS AND FUTURE RESEARCH

This study only examined the views of virtual team members working in the United States. However, many virtual teams have members working globally. This limits confidence when applying the findings of this study to international members of global virtual teams. Future research should test if the findings of this study hold true for a more globally-diverse set of survey participants. This study has broadly examined generational views on three major constructs in virtual teaming and can serve as a point of departure for future research on the generational impact in virtual teams. In the case of the culture and time hypotheses, future research can serve to confirm and refine the findings of this study. However, future research in regards to generational views on technology in virtual teams should focus on distinguishing generational views on technology use and technology implementation as well as examining specific ICTs commonly used in virtual teams. In particular, further clarity on the differences between technological barriers and challenges may improve the robustness of the findings. Future research should also attempt to collect a larger data set and collect more demographical information about the participants in order to enable a more nuanced investigation of this issue. Qualitative insights achieved through observational research (Leicht et al., 2010) are significant in evaluating the performance of such multigenerational virtual teams. The data collected was substantial from larger companies and, therefore, future research should seek to achieve a more representative balance of companies in its sample. Additionally, although many of the mean differences for hypotheses tested were significant, the absolute differences were not substantial. Therefore, a larger and more representative data set may refine the views described in this paper.

8. CONCLUSIONS AND IMPLICATIONS

The results from this study support some of the generational characterizations that have been reported in the literature. This study extends this literature by examining these characterizations in the context of a virtual team. The Millennials exhibited statistically distinct and lower means (less challenging / less of a barrier) than the Baby Boomers in their responses to all but one of the questions analyzed. Millennials have been thought to have a competitive advantage when using technology (Kaifi et al., 2012). However, the Millennials may also be at an advantage in the modern workplace in terms of cultural and time distribution issues. Conversely, the findings show that the Millennials are not statistically distinct from the Baby Boomers with respect to issues related to technology implementation. According to the results in this study, Millennials are suited to be virtual team leaders due to their relative ease in dealing with cultural, language, and temporal differences. Still, the Baby Boomers likely have many other strengths outside the scope of this study that make them well-suited to be virtual team members, such as experience in the industry. Hence, a co-leadership model (Iorio and Taylor, 2015) between younger and more senior members of a virtual team may be warranted.

This study provides quantitative evidence for the existence of generational differences in virtual teams. This fills a gap in both the generational and virtual team literatures. The findings from this study have important implications for virtual team project leaders. The results show that Millennials find overcoming the challenges and barriers of cultural diversity and time distribution in a virtual team as less of a challenge than their Baby Boomer counterparts in the workforce. Though our findings regarding views on technology were mixed, this study also found that Millennials view technology use as less of a challenge than their Baby Boomer counterparts. Virtual team leaders will benefit from these findings and can use them to deploy virtual team members to tasks where their strengths can be best leveraged.

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