Exploring the Components of Individual Virtual Competence in Virtual Team Members by Generation

Ravi Paul
East Carolina University

Claire Tuttle
NetApp

This research seeks to determine the influence of aspects of Individual Virtual Competence based on the generation of a virtual team member. We empirically tested several hypotheses with data collected from 262 professionals with virtual teams experience across three generations. The results indicate that remote work self-efficacy (RWSE) impacts IVC more significantly for Generation X than for Baby Boomers and Millennials. By contrast, virtual social skill (VSS) impacts the IVC of Baby Boomers more than it does for Generation X or millennials. The findings are important for any individuals engaged in virtual teamwork, both as team members and team managers.

Keywords: individual virtual competence, virtual teams, generational differences, baby boomers, Generation X, Millennials

INTRODUCTION

The 21st century workplace is changing and evolving at a rapid pace. From education to medicine to business to communication, Information Technology (IT) has been instrumental in driving significant change. One of the major ways IT has shaped the world is by releasing various industries from the rigidity of the past that required all meaningful work to be conducted in a specific physical location. Companies now utilize an ever-increasing array of media and technology to facilitate communication and collaboration between team members with the flexibility to work from any location at any time. These increasingly prevalent and important workforce structures are commonly referred to as virtual teams. The recent Pandemic has further accelerated the need for virtual work and, consequently, a fresh sense of urgency to understand this important topic area.

According to (Schweitzer & Duxbury, 2010), virtual teams are characterized by space/geographic dispersion, organization/boundary-less, time, cultural/national diversity, and their enabling/reliant use of technology. There are great advantages of teams that can operate with such flexibility without compromising effectiveness. Many companies have found it convenient to globalize because they can have teams working harmoniously in different time zones and countries. Research has also found that virtual teams can be cheaper and more efficient to manage because they require less travel expenses, travel time, and meeting time. These teams also provide members with more autonomy in choosing where and when to work on projects.

There are unique struggles and obstacles to overcome when working virtually, many of which are exaggerated because virtual teams are recent compared to traditional business teams. In addition to the need to learn new platforms for communication (Cardon & Marshall, 2015), virtual teams face other struggles related to team cohesion, leadership, knowledge sharing, and trust (Z. Schiller, Mennecke, Nah, & Luse, 2014) (Duarte & Cunha, 2015); (Watanuki, Laurindo, & de Oliveira Moraes, 2015). Successful virtual teamwork requires each team member to overcome these challenges by developing new skills and learning how to operate in new settings.

Wang and Haggerty (2011) proposed a new construct, Individual Virtual Competence (IVC), which refers to an individual's ability to perform well and carry out meaningful work in a virtual setting, and posit that individuals who possess these skills are generally more successful and effective in their virtual work settings. IVC is composed of 4 main components: computer self-efficacy (CSE), remote work self-efficacy (RWSE), virtual media skill (VMS), and virtual social skill (VSS). Computer self-efficacy "is an individual's belief in his or her ability to use computer technology broadly". Remote work self-efficacy is focused on a person's confidence in their ability to be a part of group tasks and carry out work in a remote, faceless, virtual format. Virtual media skill "describes an individual's skill level (versus his or her confidence as in self-efficacy above) in using technologies to communicate in virtual settings to their full potential" (Wang & Haggerty, 2011). Lastly, an individual's ability to socially interact in a virtual setting is called virtual social skill. Individuals with higher levels of IVC should perform more efficiently and effectively than members with low IVC (Watanuki et al., 2015). However, IVC is not naturally ingrained in most virtual team members, it must be developed over time. It is quite likely that team members from different generations will face different challenges as they adjust to working in this new, virtual environment. These unique challenges will impact the competence of individuals on a virtual team differently.

The purpose of this study is to assess the impact of each component of Individual Virtual Competence across the three generations that comprise most of the workforce today – Baby Boomers, Gen Xers and Millennials. Understanding how IVC varies between generations should help managers build more balanced virtual teams. This research comes at a critical time when many individuals are transitioning from a face-to-face role to a virtual role.

The next section reviews the literature and develops the research model followed by a section that presents the hypotheses with theoretical support. The research methodology and survey instrument development and administration are described in the Research Method section. The full survey can be found in the appendix. The Data Analysis section describes the data analysis and hypothesis testing results. A discussion of the results and implications are presented next. Finally, some limitations and ideas for future research are described before presenting the conclusions.

LITERATURE REVIEW

Individual Virtual Competence (IVC)

The success of a virtual team is dependent on many factors (Schulze & Krumm, 2017). Studies have explored the connections between social media use (Cardon & Marshall, 2015); personality characteristics (Krumm, Kanthak, Hartmann, & Hertel, 2016), (Kapur, Paul, & Gupta, 2013); coordination effectiveness, trust, cohesion (Choi & Cho, 2019) (Paul, Drake, & Liang, 2016); information sharing (Bhat, Pande, & Ahuja, 2017) and virtual team performance in various organizational settings. At the individual level, these factors include the four components that make up the Individual Virtual Competence (IVC) construct: computer self-efficacy, remote work self-efficacy, virtual media skill, and virtual social skill (Wang & Haggerty, 2011). The IVC Construct has been validated and provides a reliable framework to measure an otherwise theoretical, non-quantifiable set of skills. A person's IVC can help predict his or her experience and performance in a virtual team. Developing these efficacy (CSE and RWSE) and social (VMS and VSS) skills, i.e. IVC, in virtual settings is especially important because they result in higher performance through the development of higher reliability, intra-team trust and satisfaction in groups. In turn, these better experiences and performance in a virtual team result in better overall business outcomes. However, these

skills, especially the virtual social skills, can be especially difficult to develop because it can be difficult to get to know one another and develop trusting, close-knit relationships in an environment with no facial expressions or physical cues.

(Porter & Donthu, 2008) found that companies which strive to develop trust and make their customers feel rooted in the virtual community, by developing virtual social skills, have better overall business with their clients. Another empirical study of the factors of IVC found that IVC significantly impacted both the work performance and job satisfaction of professionals (Gaioshko & Armasheva, 2018). However, most of their respondents were young professionals from the Millennial generation, so they recommended that future research delve into the generational differences of individual virtual competence.

(Cardon & Marshall, 2015), studied the preferences and attitudes of professionals towards the use of Enterprise Social networking Platforms for communication and found a preference for traditional communication channels. But they also found that professionals from younger generations were indicating a significant shift towards using Social Networking platforms as the primary communication medium. There is much more that needs to be understood and taught about the most effective ways to use these newer technologies and social network platforms in the virtual workplace (Watanuki et al., 2015).

An area that suffers from a dearth of knowledge at this point is the impact of relative differences in an individual's virtual competence based on their generation (Qureshi, Fang, Haggerty, Compeau, & Zhang, 2018); (Gaioshko & Armasheva, 2018). After a comprehensive review of virtual team research, Gilson and a team (2015) included 10 recommendations for future research. After identifying virtual competence as a general topic that needed further exploration, they concluded, "Particularly because of the increased comfort that the younger generations have with technology, we propose that virtual competence and generational impacts are an interesting opportunity for future scholarship." (Gilson, Maynard, Jones Young, Vartiainen, & Hakonen, 2015) p.1235)

Generational Differences

Researchers take one of two perspectives in classifying different generations. The first, cohort perspective simply uses a time period to categorize generations. The second is the social forces perspective which "views generations as inter-related and multi-dimensional social groups that take shape within the flow of history" (Lyons & Kuron, 2014). The studies typically find generational differences ranging from different work values, attitudes, personalities, career experiences and outcomes, leadership preferences, and behaviors. For example, the baby boomer generation is more likely to stick with one job and attempt to move up in the company for much of their careers while Millennials are more likely to switch from job to job in search of a new position or something more challenging. Millennials are also more likely to consider new ideas instead of comparing the current times to how things once were because they are closer to the social change that is taking place. Baby Boomers were the highest population in the workforce for the past couple of decades but that is no longer the case.

Figure 1 shows the classification of generations widely used in research (Lyons & Kuron, 2014), (Woodward, Vongswasdi, & More, 2015)) and the one we adopted in this study.

FIGURE 1
GENERATIONAL GROUPS AND THEIR BIRTH YEAR RANGE

Generational Groups	Birth Year Ranges
Baby Boomers	1945 - 1964
Gen X	1965 - 1979
Millennials (Gen Y)	1980 - 2000

We live in a unique time when the workforce is comprised of a significant number of people from three different generations. Technology has changed in indescribable ways since the oldest generation still in the workforce (Baby Boomers) began working. Virtual teams today have members from all three generations listed above. A thesis, "The Generational Impact in Virtual Teams" (Ferrara, 2016), takes a closer look at

how generational differences can present themselves among members of a virtual team. The results showed differences specifically between Millennials and Baby Boomers in their views on cultural, language, and time distribution inequalities among virtual team members. Millennials viewed differences in these areas as less of a barrier to the virtual team than their baby boomer peers. His study also provided validated questions that can be used to compare the differences between generations in virtual teams.

Virtual teams that have many age groups represented can face many of these same issues. Members of older generations in a workforce are likely to have longer tenure at a job or on a virtual team, which may affect their behavior and their work output. Optimizing the make-up of a virtual team with members from multiple generations is important but challenging. According to (Holian, 2015), most research on incorporating different generations into virtual teams recommends that members of older generations should learn to connect with and understand the younger workers. This is based on the premise that younger workers may have more experience with newer technology and techniques. However, this recommendation fails to acknowledge the views of team members from older generations who feel they should be more respected for their knowledge and experience and should not be viewed as limited solely because of their age. Holian concludes that the best method for incorporating the knowledge, experience, and desires of all generations in a workgroup is to be flexible and fair to each group while respecting what each has to offer. Failure to do so can cause major disconnects and underdeveloped trust and cohesion that stem from different levels of virtual social skills among the team members.

There has been a lot of research conducted in recent years on many of these converging topics, including virtuality, virtual teams, generational differences in the workforce, and Individual Virtual Competence. However, there remains a distinct need to understand what, if any, differences exist in which individual components of IVC influence each generations' performance on virtual teams. That is the focus of this study.

HYPOTHESES

Impact of Computer Self Efficacy (CSE) and Remote Work Self Efficacy (RWSE) on IVC

A study examining the impact of tenure on a person's socialization found that a person who has been a member of a virtual team longer than one year assumes a sort of "senior" position that entails providing information. According to their study, those who are seeking information typically have less than one year of experience with the team and assume a more subordinate role, regardless of knowledge or seniority in other roles. While this may seem similar to face-to-face teams, they found that newcomers to a virtual team were willing to take part in discussions dealing with the task at hand without reaching out for help in learning how the group functions, how to fit in, or how to connect with other members (Ahuja & Galvin, 2003). They utilized the "faceless" aspect of virtuality to essentially hit the ground running with work tasks but skipped the "forming" stage that is invaluable for effective group work.

Professionals with more tenure, typically from the baby boomer generation, play a more senior, information-providing role. These Baby Boomers want to be respected for their experience and work-related knowledge that stem from a longer tenure (Holian, 2015). It is findings like these which support our first hypothesis. Virtual self-efficacy, made up of computer self-efficacy and remote work self-efficacy, are both developed from experience in a work setting.

The Baby Boomers and the Millennials are on opposite ends of the spectrum, with Generation X in the middle. Generation X and Baby Boomers have been in the work force for some time, but the baby boomer generation still has more experience and tenure, which would lead one to expect higher levels of computer self- efficacy and remote work self-efficacy from boomers. This would lead one to believe that both these scores for an older generation (Baby Boomers) with more experience would impact their IVC more than it would for GenXers and Millennials.

H1. *Computer Self-Efficacy (CSE) and Remote Work Self-Efficacy (RWSE) will impact IVC levels more for Baby Boomers (3) than Millennials (1) and GenXers (2), in that order.*

Impact of Virtual Media Skill (VMS) and Virtual Social Skill (VSS) on IVC

Wang and Haggerty (2011) discussed the difficulty of forming Virtual Social Skills in general. It is hard to develop trust and create relationships in a virtual environment. Because Millennials are much more involved with the social aspect of technology and typically choose to spend ample time on relationship forming platforms like Facebook, we believe their Virtual Social Skills will impact IVC more than the older generations.

The Millennials have experienced a technology-fueled world since birth, and it has shaped their experiences in everything from their childhood toys to how they complete schoolwork. This has provided Millennials with much more hands-on technology time. Based on this experience and the high use of technology for social purposes, we expect to see the virtual media skills of Millennials impact IVC scores at the highest level among the generations. Generation X also has some similar aspects as the Millennials, such as exposure to more technology at a younger age and social media use. Thus, hypothesis two suggests that the VMS and VSS scores of professionals from younger generations impact IVC greater than the Baby Boomers.

H2. *Virtual Media Skill (VMS) and Virtual Social Skill (VSS) will impact IVC scores for Millennials (1) more than Baby Boomers (3) or GenXers (2), in that order.*

RESEARCH METHOD

Our research study included gathering relevant survey responses from individuals in three different generations who had been a part of at least one virtual team. We created the survey using questions from previously validated and well-regarded sources (Appendix A).

Participants

Since our focus was on participants with virtual teams' experience, we used a qualifier question to select the survey responses to use in the study. The participants were a mix of graduate students in business and other business professionals recruited from Amazon Mechanical Turk. The professionals recruited from Mechanical Turk were paid $1 for a completed survey. Permission from the Institutional Review Board (IRB) was acquired before administering the survey. We had a total of 262 usable survey responses. Demographics of the survey respondents are presented below in Table 1.

TABLE 1
DEMOGRAPHICS OF PARTICIPANTS

Gender	Male	137
	Female	126
Generation	Baby Boomers	92
	Gen-X	85
	Millennials	86
Years of Work Experience	Mean	18.7 years
	Std. Dev.	0.812 years
Participation on Virtual Teams (Number)	Mean	2.39
	Std. Dev.	0.812

Survey Instruments

We used Qualtrics to distribute the survey. Our survey was made up of three sections including a background, Individual Virtual Competence, and Generational section. The background section asked basic questions about the survey taker to gain demographical information. Questions such as “In what year were you born?” and “How many virtual teams have you been a part of in your career?” were necessary to

establish what generation they were apart of as well as their level of experience with virtual teams. The section titled "Individual Virtual Competence" included questions about each of the components that make up the IVC construct. These were necessary to quantify the skill level of the individuals in each of these areas as well as their level of individual virtual competence. The final section, "Generational Questions" was used to gather information about how different generations respond and interact in virtual teams. The answers to these questions by each generation can potentially provide insight into the relative scores of the IVC skill sections. The survey instrument is included in the Appendix.

Control Variables

We included gender as a control variable to rule out the possibility that it may impact the results of the relationship being tested.

DATA ANALYSIS AND RESULTS

We used partial least squares (PLS) that uses ordinary least squares as the estimation technique to simultaneously assess both measurement and structural models. Smart PLS 3.0 (Ringle, Wende, & Becker, 2015) was used to conduct data analyses. We conducted a series of assessments using Smart PLS before proceeding to the hypotheses testing stage. Since we are studying differences between groups, first we conducted tests to assess measurement invariance between the groups (Hair Jr, Sarstedt, Ringle, & Gudergan, 2017)

Invariance Assessment

First, we conducted tests to assess measurement invariance between groups (Hair, 2018). In Step 1, we confirmed configurable invariance since identical indicators were used for each measurement model, each group was given identical data treatment and identical algorithms were used in Smart PLS to test the models. All three checks were confirmed. The second step involved checking for compositional invariance between pairs of generational groups. To test compositional invariance, we examined Step 2 results of the MICOM procedure in Smart PLS 3. None of the permutation p-values were less than 0.05 between the pairs confirming that compositional invariance was established for all constructs.

Finally, we tested the equality of composite mean values and variances and confidence intervals. There was no overlap in the confidence intervals and none of the step 3 p-values were less than 0.05 supporting the equal mean values for all constructs across all 3 groups We can, therefore, conclude that all the composite mean values and variances are equal, providing support for full measurement invariance (see Exhibit 4.13 in chapter pdf to summarize results). So, we can continue to the assessment of the Measurement Model.

Measurement Model Assessment

Next, we conducted the assessment of the measurement model following the recommendations of (Sarstedt, Henseler, & Ringle, 2011). Convergent and Discriminant validity were assessed for the instrument. Convergent validity examines the extent to which multiple questions used to capture the same construct agree. We assessed convergent validity by examining two aspects – the composite reliability or Cronbach's Alpha score (> 0.7) and the average variance extracted (AVE) from the measures (>0.5). All constructs achieved high composite reliability or Cronbach's Alpha score values of 0.80 and higher and, the constructs' average variance extracted (AVE) values were above 0.50 (Table 2)

TABLE 2
CRONBACH'S ALPHA AND AVE

	CR	Average Variance Extracted (AVE)
CSE	0.856	0.635
RWSE	0.888	0.749
VMS	1.000	1.000 (Formative)
VSS	0.861	0.643

We used two approaches to assess the constructs' discriminant validity. First, we examined the indicators' cross-loading, which revealed that no indicator loads higher on an opposing construct and all outer loadings were > 0.7 (Hair et al., 2012) (Table 3).

TABLE 3
OUTER LOADINGS

	CSE	RWSE	VMS	VSS
CSE_1	0.815			
CSE_2	0.779			
CSE_3	0.849			
CSE_4	0.798			
CSE_5	0.74			
RWSE_1		0.857		
RWSE_2		0.872		
RWSE_3		0.871		
RWSE_4		0.861		
VMS_1			0.876	
VMS_2			0.864	
VMS_3			0.904	
VMS_4			0.86	
VSS_1				0.81
VSS_2				0.813
VSS_3				0.766
VSS_4				0.822
VSS_5				0.797

Second, we applied the Heterotrait-monotrait ratio of correlations (HTMT) criterion (Henseler, Ringle, & Sarstedt, 2015) and tested whether the HTMT value is below 0.9 (Table 4)

TABLE 4
HETEROTRAIT MONOTRAIT RATIO OF CORRELATIONS (HTMT)

	CSE	Gender	RWSE	VSS
CSE				
Gender		0.078		
RWSE	0.737	0.196		
VSS	0.323	0.072	0.512	

Both analyses indicate that the constructs exhibit discriminant validity. Overall, these results provide clear support for the measures' reliability and convergent validity. So, we continue to the multi-group analysis stage.

Multi-Group Analysis Using Smart PLS

Overall Model

Table 5 shows the results of the overall structural model evaluation. We ran the bootstrap analyses using 5,000 samples using the individual sign change option and the Percentile Bootstrap CI Method. Table 5 shows that the RWSE -> IVC paths are significant for the Gen Xers and baby boomer generations while the VSS -> IVC path is significant only for the Baby Boomers. Finally, there is a weaker effect (at the .1 level) for the CSE-> IVC relationship for the Millennials.

TABLE 5
GENERATION-SPECIFIC RESULTS

	Path Coefficients (Gen_1_Mill)	Path Coefficients (Gen_2_GenX)	Path Coefficients (Gen_3_BB)
CSE -> IVC	0.386 *	-0.082	-0.022
RWSE -> IVC	0.379	1.053***	0.433***
VMS -> IVC	0.254	-0.051	0.217
VSS -> IVC	0.201	0.044	0.524***

*Notes: *Significance at 0.10, **significance at 0.05, ***significance at 0.01.*

The next question we addressed is whether these numeric differences between generations are statistically significant. We do that via hypotheses testing using pairs using the Multi Group Analysis (PLS-MGA) in Smart PLS.

Hypothesis Testing Using Pairs

We conducted hypothesis testing by comparing generations in pairs, using gender as a control variable. Thus, these results apply regardless of Gender.

H1 – CSE and RWSE. CSE - Our hypotheses related to CSE's differential impact on IVC were not supported for either generation comparisons.

RWSE - Our hypothesis that RWSE scores would impact the IVC scores for Baby Boomers more than Gen X was not supported. Instead, the inverse found support at p = 0.034. RWSE's impact on IVC for GenXers was greater than for Baby Boomers. Our Hypothesis that RWSE will impact IVC levels for GenXers more than Millennials was supported at p=.049. The Baby Boomers to Millennials comparison was not significant.

Thus, the relative impact of RWSE on the IVC scores was greater for GenXers over both Baby Boomers and Millennials.

H2 – VMS and VSS. Our hypotheses related to VMS's differential impact on IVC were not supported for either generation comparisons.

Our hypothesis that VSS impacts IVC greater for Millennials than Baby Boomers was not confirmed. Instead, our results supported exactly the opposite notion that VSS scores impacted Baby Boomers IVC scores more than it did Millennials at p = 0.075. Our hypothesis that virtual social skill (VSS) will impact IVC levels for Gen Xers more than Baby Boomers (3) was also not supported but the inverse was at p = 0.028. The Gen Xers to Millennials comparison was not significant.

Thus, the relative impact of VSS on the IVC scores for Baby Boomers was greater than both Gen Xers and Millennials.

DISCUSSION AND IMPLICATIONS

The results indicate that virtual social skill (VSS) scores impact the overall IVC levels of Baby Boomers more than they do for both GenXers and Millennials. The most likely reason for this is differences in the types of experiences between Baby Boomers and professionals from the other two generations. We hypothesized that Millennials' IVC levels would be impacted more by virtual social skills because of their use of technology for social media purposes and because they have grown up in a time when virtual social outlets are very common. However, it seems that experience in this setting does not necessarily translate directly into greater virtual social skills in the business world. The virtual social skill portion of the survey asks participants to rate their level of agreeance to prompts such as "In virtual settings, I am keenly aware of how I am perceived by others" and "In virtual settings, I am particularly good at sensing the motivations and hidden agendas of others". Baby Boomers, having developed VSS by lengthier experience in a work setting, are more confident in response to these prompts than Millennials who have developed VSS mainly in a virtual social setting. Developing virtual social skills in a virtual work setting provides more experience than a personal, social setting with things like etiquette, clear communication, and how to be professional and appropriate.

Baby Boomers are known for their loyalty to a company and tendency to stay at one job for a long time, assuming low risk and generally remaining content with their jobs. On the other hand, members of Gen X grew up watching their parents work at the same company for years, sometimes without being rewarded for their loyalty. This explains why they are typically more self-centered, less loyal to an organization, and expect faster upward mobility than their older peers (Becton, Walker, & Jones-Farmer, 2014). Because GenXers are less likely to stay at one job as long and are typically more individualistic than Baby Boomers, they are less likely to put effort into developing work relationships, including, if not especially, virtual ones where they would develop their virtual social skill. Research has also shown that they tend to place lower importance on "self-enhancement values", including the development of virtual social skills (Becton et al., 2014).

The impact of RWSE on IVC scores show that it has a greater impact on Baby Boomers than either GenXers or Millennials. Remote work self-efficacy is a measure of the individual's belief that they can effectively conduct work and group projects in a virtual setting, without meeting in person. According to an article in the Journal of Applied Social Psychology, members of Generation X are known to be more individualistic and often grew up as school-age children who spent part of their day unsupervised at home while their parents worked (Becton et al., 2014). They also place high importance on the outcome of projects. Working well without supervision, individualism, and being outcome-focused make for an ideal remote work candidate. The combination of more experience working on teams in the workplace and higher level of comfort using technology to conduct business seems to have given the professionals from the Gen X generation the edge in the development of RWSE skills and thus higher levels of IVC.

The findings from this study have several practical implications. Understanding the IVC strengths and weaknesses of each generation can increase self-awareness and help team members make improvements to develop the components of IVC that are lacking. Knowing the preferences and events that define other generations and how these relate to their IVC strengths and weaknesses can help team members be more open to learning and consequently serve as a better teammate.

Project leads and managers can also benefit from a better understanding of their team members' strengths, weaknesses, and preferences to aid in the formation and management of teams. While it is useful to understand that virtual team competence is different from competence in a conventional face-to-face team is useful, specific understanding about the aspects of individuals that lead to competence in virtual work is important. Similarly, understanding the relative characteristics of professionals from various generations in the development of virtual competence is needed. The findings from this study should provide helpful insight into the differential aspects of some of the factors that go into developing virtual competence among professionals from different generations. And, combined with the insight gained by other research in this area, they allow for the development of action plans for forming effective virtual teams.

LIMITATIONS AND FUTURE RESEARCH

As with all research, this study has some limitations that prevent generalizing our findings globally. But we hope that our findings will provide a basis for further research on this important topic and thus extend our understanding of effectively working in virtual teams. Our results did not show a significant differential impact of CSE or VMS on IVC for any generation pair. This is interesting and requires further research. Researchers could build upon this research by studying how levels of IVC affect trust and performance in a virtual work environment. Future research could also explore how previous experience with virtual work and virtual teams affects IVC. With more understanding of the differences in levels of IVC and the components that make individuals successful in virtual work environments, more research can focus on bridging gaps and addressing misunderstandings in existing virtual team research. Further research with a specific focus on Virtual Daily Life Experience and Virtual Work Experience and its effect on an individual's performance on a virtual team would also likely provide beneficial results. During data collection and analysis, we controlled for gender to ensure that it didn't affect the results. Future research could do the opposite and clarify the role that gender plays on Individual Virtual Competence. Lastly, a larger sample size would have increased our level of confidence with the sample estimates and precision (Littler, 2018)

CONCLUSIONS

As technology continues to improve and shape our world, many business professionals need to possess the competencies to thrive in a technology-filled- environment. This requires individuals to possess skills that weren't required in the past. Individual virtual competence is especially necessary in companies that actively participate in virtual business practices or require employees to work in virtual teams. For virtual team members to possess individual virtual competence they must have high computer self-efficacy, remote work self-efficacy, virtual media skills, and virtual social skills. Our study compares the impacts of these components on IVC levels between Baby Boomers, GenXers, and Millennials. We used the social-forces perspective to try to understand what constitutes a generation, more than just a range of birthdays. The results show that there is no significant difference between the impact of computer self-efficacy or virtual media skills on IVC between the three generations. However, Gen Xers remote work self-efficacy scores had a higher impact on their IVC levels over both the Baby Boomers and the Millennials while the Baby Boomers virtual social skill scores impacted their IVC levels more than members of Generation X and Millennials. These results are interesting and useful for understanding how to form the most effective virtual teams that use each member's potential to the fullest.

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APPENDIX – SURVEY INSTRUMENT

I – Background

In what year were you born:
Sex:
What is the highest degree or level of education that you have completed?
How many years of professional experience do you have?
How many virtual teams have you been a part of in your career?

II - Individual Virtual Competence (Wang and Haggerty, 2011)

Computer Self-Efficacy (CSE)
1 = "not at all confident," 4 = "moderately confident," 7 = "totally confident"

1. I could complete my job using a new software package if I had never used one like this before.
2. I could complete my job using a new software package if there is no one around to tell me what to do as I go.
3. I could complete my job using a new software package if I had only the manuals for reference.
4. I could complete my job using a new software package if I could call someone for help if I got stuck.
5. I could complete my job using a new software package if I had seen someone else using it before trying it myself.

Remote Working Self-Efficacy (RWSE)
1 = "strongly disagree" 7 = "strongly agree"

1. I have confidence that I can complete my virtual work because I can access appropriate support staff readily.
2. I have confidence that I can complete my virtual work because I can access information needed to perform my job.
3. I have confidence that I can complete my virtual work because I can set objectives that align with the organization's goals.
4. I have confidence that I can complete my virtual work because I can prioritize tasks to use my time effectively.

Virtual Social Skill (VSS)
1 = "strongly disagree" 7 = "strongly agree"

1. In virtual settings, I am keenly aware of how I am perceived by others.
2. In virtual settings, I am good at making myself visible with influential people in my organization.
3. In virtual settings, I find it is simple to put myself in other people's positions to understand their point of view.
4. In virtual settings, I always know what to say to others in social situations.
5. In virtual settings, I am particularly good at sensing the motivations and hidden agendas of others.

Virtual Media Skill (VMS)
1 = "extremely incapable" 7 = "extremely capable"

Media types: telephone, e-mail, videoconference, instant messaging, online forum, group support systems (e.g., Intranet, Lotus Notes, and Sharepoint)

1. To what extent do you feel you are capable of using [Media Type] to give and receive timely feedbacks when communicating with others whom you are not able to meet in person?
2. To what extent do you feel you are capable of using [Media Type] to convey multiple types of information (e.g., factual information, emotional information) when communicating with others whom you are not able to meet in person?
3. To what extent do you feel you are capable of [Media Type] to transmit varied symbols (e.g., words, numbers, and pictures) when communicating with others whom you are not able to meet in person?
4. To what extent do you feel you are capable of tailoring the message to fit other parties' requirements when [Media Type] communicating with people whom you are not able to meet in person?

III - Generational Questions (Ferrara, 2015)

(1= Not Challenging, 5 = Very Challenging)

1. How challenging is dealing with different languages in virtual team collaborations (in your organization)?
2. How challenging is dealing with different cultures in virtual team collaborations (in your organization)?
3. How challenging is dealing with different time zones in virtual team collaborations (in your organization)?
4. How challenging is the use of virtual technologies in virtual team collaborations (in your organization)?