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You're No Longer on Mute: Social Norms, Generational Differences, Working-from-Home, and the Acceptance of Workplace Communication and Collaboration Technologies

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Due to COVID-19, there has been a radical shift in workplace configurations, with an increase in work-from-home and hybrid work environments. Given this shift, this study sought to understand the motivations for adopting workplace communication and collaboration technologies, including differences in generational and work-from-home configurations. Using an online, cross-sectional survey of full-time employees in the United States ($N = 425$), it was determined that while perceived usefulness and ease-of-use predicted technology adoption, it was subjective norms that exerted the most direct influence on behavioral intentions, which were positively related to job satisfaction expectations, employee engagement expectations, and perceived career growth opportunities. Finally, while there were no generational differences in perceived usefulness and ease-of-use, work-from-home and hybrid workers viewed technologies as more useful as well as more easy-to-use than in-office workers.

Keywords: work-from-home, workplace communication and collaboration, technology acceptance, generational differences

The COVID-19 pandemic caused a major shift in workplace cultures and practices across the globe. According to Pew, 71% of workers whose duties could be performed at home worked from home during the pandemic, compared to only 20% who worked from home before the pandemic (Parker et al., 2020). Not confined to pandemic conditions, workers have continued to pursue work-from-home and hybrid work conditions as pandemic restrictions have abated. It was estimated that 12.7% of full-time workers worked from home recently, while 28.2% are hybrid workers (Haan & Main, 2023). Furthermore, 16% of companies report working fully remote, and 98% of workers report wanting to work from home at least part of their time (Haan & Main, 2023).

Along with the rise of work-from-home arrangements, there has been a rapid increase in the widespread adoption of technologies designed to facilitate office interpersonal communication and collaboration. This is illustrated most clearly by the adoption of the multimedia collaboration tool Zoom, which saw its daily meeting participants increase 2,900% during the pandemic, from 10 million daily participants in late 2019 to 300 million daily meeting participants in 2023 (Dean, 2023). As workers increasingly adopt alternative workplace contexts, information technology professionals have prioritized collaboration technologies as a means to manage organizational operations (O'Halloran, 2023).

Given the continued investment in and proliferation of workplace communication and collaboration technologies, it is important to identify the key factors motivating the adoption of these technologies, as well as the possible workplace outcomes of using these technologies. While older generations may continue to lag behind younger users in their adoption of technological innovations, the share of older users continues to rise (Faverio, 2022). In addition, new workplace contexts are also influencing dependence on these technologies. The purpose of this study is to understand the motivations for adopting mediated workplace communication and collaboration technology, and to determine if there are generational and work-from-home configuration differences contributing to those attitudes. In addition, this study seeks to understand if there is a positive relation between technology adoption behaviors and positive outcomes in the workplace, such as job satisfaction and employee engagement. Using the technology acceptance model (TAM) (Davis, 1989), this study utilized a cross-sectional survey of U.S. based full-time workers to explore the motivations and perceived outcomes of adopting workplace communication and collaboration technologies.

LITERATURE REVIEW

Technology Acceptance Model

Building on Rogers' (2003) diffusion of innovation theory, the technology acceptance model (TAM) posits that individuals adopt technology based on how useful it is in its context, as well as the relative simplicity of using the technology (Davis, 1989). If individuals find the technology is easy to incorporate into their routines, and the technology provides them with practical advantages in its use, they are more likely to adopt the technology. Davis defines these key concepts as usefulness, or "the degree to which a person believes that using a particular system would enhance his or her job performance," and ease-of-use, or "the degree to which a person believes that using a particular system would be free of effort" (p. 320).

The strength of the TAM model, and the importance of its two main concepts as the key predictors in the model, have been "confirmed by numerous studies emphasizing its broad applicability

to various technologies” (Marangunić & Granić, 2015, p. 92). TAM has been utilized to understand the office automation and information technology systems in hospitality (Kim et al., 2008), healthcare (Raitoharju et al., 2006), and accounting (Cakmak et al., 2011). In regard to communication, the model has been applied widely to help researchers understand the adoption of a variety of technologies in a variety of contexts, including teleconferencing (Park et al., 2014), email (Gefen & Straub, 1997), social media (Rauniar et al., 2014), wireless internet (Lu et al., 2003), and electronic courseware (Park et al., 2007). Despite the continued introduction of additional variables and boundary conditions in an established and growing body of literature, perceived usefulness and perceived ease-of-use have consistently demonstrated their robustness as predictors of technological use behavioral intentions (Lee et al., 2003). As such, the following hypotheses are proposed:

H1: Perceived usefulness of workplace communication and collaboration technology will predict intentions to use workplace communication technology.

H2: Perceived ease-of-use of workplace communication and collaboration technology will predict intentions to use workplace communication technology.

Subjective Norms. TAM is an extension of the theory of planned behavior (Ajzen, 1985), which argues that our behavioral intentions are influenced by our attitudes, the subjective norms of our social circles regarding the behaviors, and our behavioral control. TAM addresses the attitudinal and behavioral control aspects of the theory, as usefulness can be described as an attitude toward the technology, and ease-of-use addresses whether or not an individual feels they are able to use the technology, which is congruent with the conception of behavioral control. Behavioral control in the context of the theory of planned behavior addresses an individuals’ perceived ability or necessary agency to engage in a behavior. However, the original TAM model does not address a key component of the theory of planned behavior: subjective norms.

Subjective norms represent the product of an individual’s beliefs regarding their social circles’ attitudes toward a behavior and the individual’s willingness to comply with their social circle (Ajzen & Fishbein, 1980). In terms of the overall reasoned-action model, Trafimow and Finlay (1996) have suggested that subjective norms are not as strong predictors of behavior as attitudes; however, they found that subjective norms exerted more influence on behavioral intentions when the behaviors in question were social in nature. In the case of office communication technology subjective norms may be an important contributor to technology adoption, given the social expectations of the technology. This has been demonstrated with workplace interruption management technologies, where the use of the technology directly influences office social behaviors and relational expectations (Donmez et al., 2014). Despite highly positive evaluations of the usefulness of these technologies, social norms were critical in encouraging adoption since the focus of the technology was social and relational outcomes.

While Ajzen and Fishbein’s (1980) conception of subjective norms focuses on interpersonal connections in an individual’s social circle, another type of norms, descriptive norms, also exert influence. Descriptive norms can be defined as “how most people behave in a situation” (Goldstein et al., 2008, p. 473). The descriptive norm is the normal behavior by most individuals in a context. In office settings, descriptive norms established through focused messaging have shown to be effective in influencing coworkers to adopt light physical activity at work (Priebe & Spink, 2014) as well as promoting voluntary green behaviors among employees (Mo et al., 2022).

Regarding technology adoption, social norms have been found to influence adoption in congruence with TAM if the adoption is mandated by the organization (Venkatesh & Davis, 2000). In other words, social influence is exerted through the formal, organization-wide adoption of the technology rather than through voluntary acceptance, though norms can influence adoption both directly and indirectly. Indirect effects include the potential advancement of social status by using new workplace technologies (Moore & Benbasat, 1991), as well as social norms influencing perceived usefulness of the product (Lu et al., 2005).

Social norms have been shown to influence the adoption of new communication technologies, specifically (e.g. Green, 1998, Schmitz & Fulk, 1991), and social influence has been recommended as a key variable of interest in continuing TAM research (Lee et al. 2003). Through interpersonal and descriptive norms within the organization, it is expected that individuals will adopt workplace communication technologies if they perceive their colleagues and the organizational culture are also committed to adopting these technologies. Thus, the following hypothesis is proposed:

H3: Subjective norms of using workplace communication and collaboration technology will predict intentions to use workplace communication technology.

Positive Employee Outcomes

Job Satisfaction. The COVID-19 pandemic created a variety of new work situations and provisions, the most obvious one being work-from-home in order to comply with safety precautions. As organizations transitioned post-COVID, many employees demanded the option to continue working from home in some capacity. The result is employers offering a largely hybrid situation where employees spend portions of the work week working from home, and portions of the work week working in the traditional office setting (Toledano et al., 2022). According to McKinsey's American Opportunity Survey (2022), when people have the option to work flexibly, 85% report taking advantage of it and acknowledge the flexibility as a contributor to job satisfaction. Further, employees cite an improvement in work-life balance and productivity (Wigert & White, 2022). However, inefficient communication among teams and disconnection from organizational culture are among the key challenges facing a hybrid work environment.

Additionally, technology allows for flexible, hybrid work arrangements, such as remote work and flexible hours, which impact overall job satisfaction. Employees who can balance their professional and personal lives effectively experience less stress and greater job satisfaction (Zeffane & McLoughlin, 2006). Technology allows organizations to streamline processes, increasing efficiency and reducing repetitive tasks. This impacts employee job satisfaction by enabling employees to utilize their skills and expertise to focus on more meaningful and challenging work.

Positive workplace culture and effective communication are also key indicators of job satisfaction (Bellou, 2010). Job satisfaction is often heavily influenced by organizational culture (Bellou, 2010), and one of the most commonly cited descriptors of a positive organizational culture is recognition and feedback. Research on the role of job satisfaction emphasizes this recognition because employees feel as if their talents and competencies are being effectively utilized within their organization (De Bos et al., 2011; Wong et al., 2017). Regular feedback and recognition for work done can play a significant role in job satisfaction as employees appreciate constructive feedback and acknowledgement of their contributions (Crant, 2000). It is expected that positive communication facilitated through

communication and collaboration technologies will contribute to increased job satisfaction. Thus, the following hypothesis is proposed:

H4: Behavioral intentions of using workplace communication and collaboration technology positively predicts perceived job satisfaction.

Employee Engagement. While job satisfaction is used to describe an employees' feelings toward their employer, the term employee engagement reflects a deeper, more emotional assessment of the overall work experience. As defined by Gallup, employee engagement is indicated by a worker's enthusiasm and involvement with their work (Mann & Harter, 2016). Research describes employee engagement as a two-way relationship between the employer and the employee where the engagement reflects passion and commitment to invest oneself and expand one's efforts to assist with the success of their employer (Erickson, 2005; Macey & Schneider, 2008). Aware of the business context, engaged colleagues work together to improve productivity and benefit the organization (Robinson et al., 2004).

While employee engagement can vary depending on individual, organizational, and contextual factors, several common themes have been identified in research as having a positive impact on overall employee engagement. The culture of an organization significantly influences employee engagement, and this is directly connected to communication and feedback, as well as leadership support (Men & Yue, 2019). Clear and transparent communication channels, open dialogue, and regular feedback from supervisors and colleagues helps to foster a sense of belonging and involvement (Waymer et al., 2018). Further, supportive and transformational leadership provides guidance, inspiration, and recognition which positively influences employee engagement levels (Bellou, 2010). When leaders demonstrate a genuine interest in employees' well-being, it empowers them to take ownership of their work and leads to positive acclimation and socialization experiences in the workplace (LaGree & Olsen, 2022).

Employee engagement is also directly impacted by the use of technology in the workplace. Utilizing mediated technology to communicate with employees aids a sense of responsibility and engagement by recognizing and rewarding employees for a job well done. This regular appreciation and acknowledgement of their contributions helps employees find meaning and purpose in their work, particularly how it contributes to the large organizational goals or societal impact (Aldoory & Toth, 2004).

Organizations that provide training programs, advancement opportunities, and challenging assignments demonstrate their investment in employees' personal growth, which enhances engagement and motivation. As such, use of tools to promote communication and collaboration should promote perceived employee engagement. Thus, the following hypothesis is proposed:

H5: Behavioral intentions of using workplace communication and collaboration technology positively predicts perceived employee engagement.

Career Growth. By providing a workplace environment that supports employees' individual career growth, organizations are demonstrating employability culture; this in turn helps the organization's employees become more adaptable with a focus on flexible and broader skills (Nauta et al., 2009). Communication from leaders and managers is a key piece of this management strategy as these top-level positions are capable of extending workplace culture directives to their subordinates (Boudrias et al., 2009). Mediated technology and how leadership chooses to use it to communicate professional development feedback and opportunities can help determine effective strategies to improve awareness and participation.

Additionally, advancements in technology have facilitated remote work and flexible work arrangements, providing opportunities to balance personal commitments and professional growth. This flexibility can enhance career growth by opening up new possibilities for job opportunities, networking, and accessing talent pools that were previously geographically limited (Panteli et al., 2023). Further, technology provides access to a wealth of information and learning resources, including online courses, webinars, and virtual training programs that allow employees to learn and acquire new skills at their convenience. This continuous learning through technology contributes to career growth by enhancing employability and expanding job-related skills. As such communication and collaboration technology acceptance should contribute to perceptions of growth opportunities. Thus, the following hypothesis is proposed:

H6: Behavioral intentions of using workplace communication and collaboration technology positively predicts perceived career growth.

Demographic Differences. The COVID-19 pandemic created a massive shift of employees going from an office space to a home environment space in either a remote or hybrid work model (Barath & Schmidt, 2022). As organizations grappled with these changes, they also faced the task of employee engagement and retention, especially in an increasingly diverse and hybrid work environment. The shift to a hybrid work environment has created a new workplace reality for multiple generations of workers. And with each generation there are wide variations and employee differences for how they prefer to use technology.

With the increasing retirement of the Boomer generation, the three generations that are most visible in the workplace today are Generation X (1965-1980), Millennials (1981-1996), and Generation Z (1997-2012) (Dimock, 2019; Mahmoud, Fuxman, Mohr et al., 2021). It's important to note that these generational cohorts are merely guidelines that serve as a tool to better understand how people's formative experiences interact with their life-cycle experiences (Dimock, 2019).

Gen Zs are the youngest and most digitally agile group with more than 95% preferring to use their mobile devices to access news, entertainment, and for overall communication. In terms of workplace technology, Gen Zs prefer to use direct messaging instead of relying on more traditional forms of communication, such as email, phone calls, and the intranet (Baskin, 2023). Unlike their other generational counterparts, they never experienced the normal or standard workplace environment in which employees would work in the office five days a week. Therefore, they are more likely to seek employment opportunities that provide workplace flexibility such as remote or hybrid work arrangements that can enable their preferences for online communication.

Millennials (or Gen Y) grew up with digital technology and are perhaps the most acclimated to the ease of use in all things digital, which is why they're often known as digital natives. Like their Gen Z colleagues, they prefer a mobile-first experience and place greater emphasis on the user experience (Mahmoud, Fuxman, Mohr et al., 2021; Vogels, 2019).

Gen Xers have a stronger preference for a balance between their work and personal lives, which can be a challenge in an increasingly hybrid environment. Their need for workplace productivity and access to tools and technology is paramount for them to be effective and engaged workers, as many of them have numerous caretaking responsibilities in the home whether it's taking care of their growing children or helping an elderly parent (Baskin, 2023).

Unlike their younger colleagues, Boomers have a stronger preference for more traditional forms of communication, such as face-to-face and phone communication (Baskin, 2023). However, they have been able to adapt and adjust to changing technology throughout the course of their careers. According to Pew Research, more than 68% of Boomers are more likely to own a smartphone than they were in 2011 (25%) (Vogels, 2019). Additionally, Boomers are the highest users of the Internet, representing 25% of users in the U.S. (Chung, Park, Wang et al., 2010).

It is important to understand generational differences in the workplace, especially considering the increase in remote and hybrid work preferences. By seeking a greater understanding of generational differences, organizations can gain a greater understanding of employee work preferences and mitigate conflict and low engagement (Mahmoud, Fuxman, Mohr et al., 2021). Therefore, to understand how generational differences are perceived in terms of technology use and perceptions of workplace accommodations, the following research questions are posed:

RQ1: Are there generational differences in a) perceived usefulness and b) perceived ease-of-use of workplace communication and collaboration technology?

RQ2: Are there differences in a) perceived usefulness and b) perceived ease-of-use of workplace communication and collaboration technology for work-from-home, hybrid, and office-based employees?

METHODS

To address study hypotheses and research questions, an online, cross-sectional survey was deployed by Qualtrics ($N = 425$), who ensured data quality by eliminating incomplete and careless respondents and ensuring respondents met study criteria. Study participants were required to be currently employed full-time (40 hours per week) in the United States. The sample was 34.4% male ($n = 146$), 64.2% female ($n = 273$), and 1.4% nonbinary ($n = 6$). Caucasian respondents made up 68.2% of the sample ($n = 290$). Black or African American respondents were the next largest group (11.3%, $n = 48$), followed by Hispanic or Latino respondents (9.4%, $n = 40$), Asian respondents (5.6%, $n = 24$), and Native American respondents (1.2%, $n = 5$). 4.2% of respondents identified as other races ($n = 18$).

The average age of the sample was 40 ($SD = 12.6$). Broken down by generation, Gen Z represented 13.6% of the sample ($n = 58$), Millennials represented 43.3% ($n = 184$), Generation X represented 31.1% ($n = 132$), and Baby Boomers were 12% of the sample ($n = 51$). 52% of the sample ($n = 221$) reported working from home at least part of the time. Of that group, 42.1% had a hybrid work-from-home arrangement ($n = 93$), 36.7% worked from home exclusively ($n = 81$), and 21.3% worked from home only when necessary ($n = 47$). Finally, respondents indicated using an average of 2.06 ($SD = 1.26$) communication and collaboration tools in their work. Table 1 provides a breakdown of how frequently each tool was indicated it was used by respondents.

Measures

Study Variables. Study variables were measured using established items measured on 5-point, Likert scales ranging from “strongly disagree” to “strongly agree.”

Technology Adoption. *Perceived usefulness* ($M = 3.92$, $SD = 0.93$) as well as *perceived ease-of-use* ($M = 3.99$, $SD = 0.93$) of workplace communication and collaboration technology were both measured using five-item scales adapted from Davis (1989). Both the usefulness ($\alpha = .94$) and ease-of-use scales ($\alpha = .91$) were reliable. The *subjective norms* ($M = 4.03$, $SD = 0.92$) of using communication and collaboration technology were measured using two items derived from Ajzen’s approach (2006).

The measure was reliable, $\alpha = .87$. Finally, *behavioral intentions* ($M = 4.09$, $SD = 0.99$) were measured using one item derived from Ajzen (2006), "I intend to actively use my organization's communication and collaboration tools."

Employment Outcomes. *Employee engagement* ($M = 4.02$, $SD = .90$) was measured using five items for cognitive and emotional engagement taken from Rich et al. (2010). The scale was reliable, $\alpha = .87$. *Career growth opportunity* ($M = 3.66$, $SD = 1.13$) was measured using two items drawn from Bedeian et al. (1991). The scale was reliable, $\alpha = .87$. Finally, *job satisfaction* ($M = 3.90$, $SD = .97$) was measured using three items (Hackman & Oldham, 1975). The scale was also reliable, $\alpha = .88$.

Table 1

Frequency of Communication & Collaboration Technology Use

<i>Technology</i>	<i>Website</i>	<i>Frequency</i>
Asana	https://asana.com/	7
Discord	https://discord.com/	19
Google Chat	https://chat.google.com/	91
Google Workspace	https://workspace.google.com/	92
Meta Workplace	https://www.workplace.com/	18
Microsoft Teams	https://www.microsoft.com/en-us/microsoft-teams/group-chat-software/	210
Skype	https://www.skype.com/	55
Slack	https://slack.com/	30
Trello	https://trello.com/	6
Webex	https://www.webex.com/	40
Zoom	https://zoom.us/	238
Custom		23
Other		48

Demographics. Demographic measures included age, gender, and ethnic origin. In order to define generation categories based on reported age, the Pew Research Center's definitions (Dimock, 2019) were employed. Respondents' generation was categorized based on the following: Gen Z (born 1997-2012), Millennials (born 1981-1996), Generation X (born 1965-1980), and Baby Boomers (born 1946-1964).

For work-from-home status, respondents were asked if they currently had the opportunity to work some or all of their job from home. If so, they were asked if their status was hybrid (part-time at home and part-time in the office), 100% at work-from-home, or work-from-home only when necessary.

In addition, respondents were provided a list of 11 common workplace communication and collaboration tools as determined through collaboration with the researchers' workplace advisors. Respondents were asked to indicate which communication tools they used, with the ability to select as many options as necessary (See Table 1).

RESULTS

Based on study hypotheses, intentions to use workplace communication and collaboration technology are predicted by the perceived usefulness of the technology (H1), the perceived ease-of-use of the technology (H2), and workplace subjective norms (H3). Intentions to use workplace communication and collaboration technology positively predict perceived job satisfaction (H4), employee engagement (H5), and career growth perceptions (H6). To test these hypotheses, a structural equation model was utilized. Prior to testing the structural model, a confirmatory factor analysis (CFA) was performed, $\chi^2(194) = 617.60, p < .001, CFI = .94, RMSEA = .07, SRMR = .05$. Table 2 presents the results of the CFA. No average variance extracted was less than .5, and no composite reliability was less than .7 for the CFA. The structural model with standardized coefficients for model paths is presented in Figure 1. The model achieved adequate fit, $\chi^2(9) = 33.80, p < .001, CFI = .98, RMSEA = .08, SRMR = .05$.

Within the structural model, perceived usefulness was a significant predictor of behavioral intentions to use workplace communication and collaboration technology ($Coeff. = .27, SE = .05, p < .001$), as was perceived ease-of-use ($Coeff. = .19, SE = .05, p < .001$) and subjective norms ($Coeff. = .51, SE = .04, p < .001$), with subjective norms exerting the most influence based on standardized coefficients ($\beta = .48$). Intentions to use communication and collaboration technology was positively associated with job satisfaction ($Coeff. = .33, SE = .04, p < .001$), employee engagement ($Coeff. = .23, SE = .04, p < .001$), and career growth perceptions ($Coeff. = .42, SE = .05, p < .001$). Hypotheses 1-6 were supported.

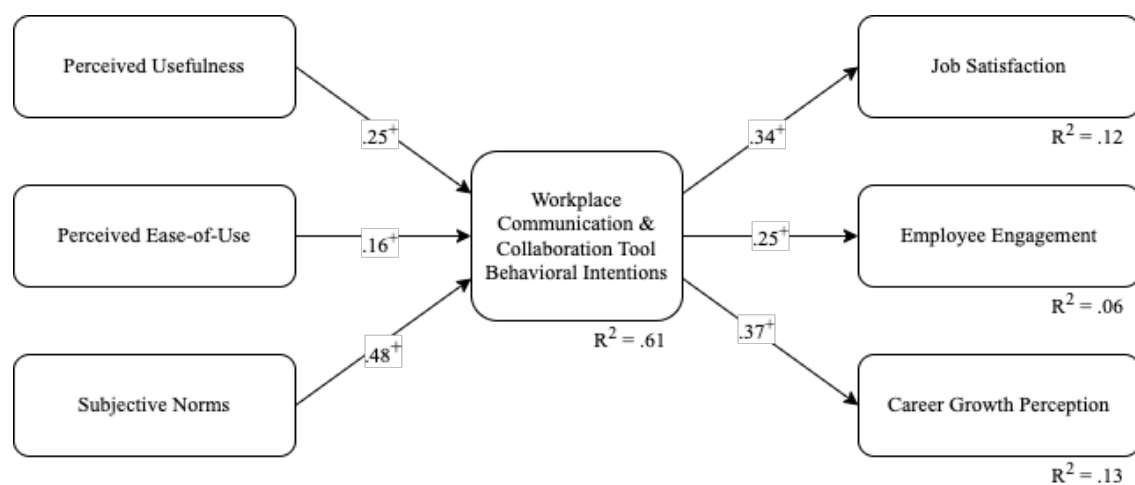


Figure 1. Structural Equation Model of Workplace Communication and Collaboration Technology Adoption and Job Outcomes. Model depicts standardized coefficients. + $p < .001$.

Table 2

Confirmatory Factor Analysis of Multi-Item Study Variables

<i>Factor/Items</i>	<i>Est.</i>	<i>S.E.</i>	<i>A.V.E.</i>	<i>C.R.</i>
Perceived Usefulness			.77	.94
Using office communication and collaboration technology in my job enables me to accomplish tasks more quickly.	0.89 ⁺	0.04		
Using office communication and collaboration technology improves my job performance.	0.90 ⁺	0.04		
Using office communication and collaboration technology in my job increases my productivity.	0.92 ⁺	0.04		
Using office communication and collaboration technology enhances my effectiveness on the job.	0.92 ⁺	0.04		
Using office communication and collaboration technology makes it easier to do my job.	0.89 ⁺	0.04		
Perceived Ease-of-Use			.68	.91
Learning to operate office communication and collaboration technology is easy for me.	0.87 ⁺	0.04		
I find it easy to get office communication and collaboration technology to do what I want it to do.	0.79 ⁺	0.04		
My interaction with office communication and collaboration technology is clear and understandable.	0.79 ⁺	0.04		
It is easy for me to become skillful at using office communication and collaboration technology.	0.80 ⁺	0.04		
I find office communication and collaboration technology easy to use.	0.81 ⁺	0.04		
Subjective Norms			.77	.87
Most people in my organization who are important to me actively use our organization's communication and collaboration tools.	0.84 ⁺	0.04		
Most people like me in my organization actively use our organization's communication and collaboration tools.	0.87 ⁺	0.04		
Job Satisfaction			.72	.89
Generally speaking, I am very satisfied with my job.	1.01 ⁺	0.05		
I am generally satisfied with the feeling of worthwhile accomplishment I get from doing my job.	0.93 ⁺	0.04		
I am generally satisfied with the kind of work I do in this job.	0.79 ⁺	0.04		
Employee Engagement			.57	.87
I am excited about my job.	0.96 ⁺	0.05		
I am proud of my job.	0.88 ⁺	0.04		
I feel positive about my job.	1.01 ⁺	0.05		
While working, my mind is focused on my job.	0.67 ⁺	0.05		
While working, I pay a lot of attention to my job.	0.62 ⁺	0.05		
Career Growth			.77	.87
I feel that my present job will lead to future attainment of my career goals.	1.09 ⁺	0.05		
I feel that my present job is relevant to the growth and development of my career.	1.02 ⁺	0.05		

Note. + $p < .001$, Est. = estimate, S.E. = standard error, A.V.E. = average variance extracted, C.R. = composite reliability

The first research question asked if there were generational differences in the a) perceived usefulness and b) perceived ease-of-use of workplace communication and collaboration technology. To test this research question, two ANOVAs were utilized. The first ANOVA tested the influence of generational differences on the perceived usefulness of workplace communication and collaboration technologies. The model was not statistically significant, $F(3, 421) = 0.41, p = .75, \eta^2 = .003$. Likewise, the second ANOVA to test the influence of generational differences on the perceived ease-of-use of the technologies was also not statistically significant, $F(3, 421) = 2.03, p = .11, \eta^2 = .01$. To address the first research question, there were no generational differences in the perceived usefulness nor ease-of-use of workplace communication and collaboration technologies.

The second research question asked if there were differences in the a) perceived usefulness and b) perceived ease-of-use of workplace communication and collaboration technology for work-from-home, hybrid, and office-based employees. To address the research question, two ANOVAs were utilized. The first ANOVA tested the differences in perceived usefulness of workplace communication and collaboration technologies for office-based, work-from-home, hybrid, and work-from-home when necessary employees. The model was significant, $F(3, 421) = 10.15, p < .001, \eta^2 = .07$. Post-hoc tests using the LSD comparison were performed to test for group differences. Office-based employees ($M = 3.71, SD = 1.02$), were less likely to perceive communication technology as useful than hybrid ($M = 4.23, SD = 0.66, p < .001$) and work-from-home ($M = 4.19, SD = 0.75, p < .001$) employees. There was no difference in perceived usefulness for office-based and home only-when-necessary employees ($M = 3.79, SD = 1.01, p = .56$). Home only-when-necessary employees were also less likely to perceive communication technology as useful than hybrid ($p = .01$) and work-from-home employees ($p = .02$). There was no difference in perceived usefulness between hybrid and work-from-home employees ($p = .76$).

The ANOVA to test if there were differences in work-from-home status for the perceived ease-of-use of workplace communication and collaboration technologies was statistically significant, $F(3, 421) = 7.16, p < .001, \eta^2 = .05$. Post-hoc tests using the LSD comparison were performed to test for group differences. Office-based workers ($M = 3.84, SD = 0.93$) were less likely to perceive communication and collaboration technology as easy-to-use than hybrid ($M = 4.24, SD = 0.66, p < .001$) and work-from-home ($M = 4.18, SD = 0.64, p = .002$) employees. There was no difference for office-based and home only-when-necessary ($M = 3.82, SD = 0.98, p = .88$) employees. As with usefulness, home only-when-necessary employees were also less likely to perceive communication technology as easy-to-use than hybrid ($p = .01$) and work-from-home ($p = .02$) employees. There was no difference in perceived ease-of-use for hybrid and work-from-home employees ($p = .63$).

To address research question two, office-based and employees who work from home only-when-necessary were less likely to perceive workplace communication and collaboration technologies as useful or easy-to-use as hybrid or work-from-home employees.

DISCUSSION

This study sought to understand the motivations for adopting workplace communication and collaboration technologies, and if there were differences in generational and work-from-home configurations contributing to those attitudes. Based on the results of the survey, it was determined that concurrent with the technology acceptance model (Davis, 1989), the perceived usefulness and ease-of-

use of workplace communication technologies were significant predictors of behavioral intentions. Furthermore, subjective norms exerted the most direct influence on behavioral intentions. In addition, behavioral intentions were positively related to job satisfaction expectations, employee engagement expectations, and perceived career growth opportunities. Finally, while there were no generational differences in perceived usefulness and ease-of-use, work-from-home and hybrid workers viewed communication and collaboration technologies as more useful as well as more easy-to-use than in-office workers.

Theoretical Contributions

Consistent with a wealth of TAM research (Marangunić & Granić, 2015), both perceived usefulness and perceived ease-of-use were significant predictors of behavioral intentions. However, the current study found a strong, direct connection between perceived subjective norms and acceptance. In fact, subjective norms exerted the most influence on behavioral intentions. While previous research suggests subjective norms are not as important as attitudes in predicting behaviors (Trafimow & Finlay, 1996), this study found that social influence was essential in technology acceptance, most likely owing to the communicative and interpersonal nature of the technologies. This is consistent with prior research examining the adoption of technologies with social workplace implications (Donmez et al., 2014). If there are social implications, establishing social norms for the use of the technologies is imperative.

While past research suggests subjective norms may influence acceptance indirectly by influencing perceived usability or social status (Lu et al., 2005; Moore & Benbasat, 1991), the current investigation suggests subjective norms may have a direct influence on intentions. Again, this may be explained by the social nature of the communication technologies. Since the technology will be utilized for interpersonal connection, communication, and collaboration, its acceptance depends on perceived acceptance from the workplace community.

In addition to the influence of social norms, this study did not find generational differences in adoption factors. While prior research has typically drawn from younger, more educated populations, with the need for age-diverse samples identified as an avenue for further research (Marangunić & Granić, 2015), the current study did not find older users to perceive technology as less useful or easy-to-use. Perhaps the technological demands of the modern workforce limit access to workers who have apprehensions about engaging with technology.

Not surprising, work-from-home workers found communication technologies to be useful; given the lack of face-to-face communication available in work-from-home contexts, these workers are more likely to rely on these technologies. However, these workers also found these technologies to be more easy-to-use. This could be owed to increased trialability of these technologies. From diffusion of innovation theory, *trialability* refers to the ability of users to work with and test an innovation prior to implementation (Rogers, 1983). Given the nature of their work environment, it is likely work-from-home employees have had more time to test and learn the technologies than their in-office counterparts. As such, trialability deserves more attention as a variable of interest in TAM research.

Practical Implications

As more organizations embrace work-from-home and hybrid configurations for some or all of their workforces, it is essential to understand how users embrace and adopt communication and collaboration technologies. While implementing technologies that are useful and perceived as easy-to-use is essential – and information technology offices would be wise to evaluate potential tools based on

these criteria – for communication technologies, an organizational culture that embraces the technologies is also essential. While this may be easier to establish for work-from-home employees who will be increasingly dependent on technologies in lieu of interpersonal connections, this will be more important for in-office employees, as they have more interpersonal communication options available. Information technology departments should consider that in-office employees may be slow to accept collaboration technologies. This could be especially problematic for offices that employ both work-from-home and in-office populations, where adoption of these practices may be essential for the ongoing health of the organization.

Furthermore, the current study found that the adoption of communication and collaboration technologies was seen as contributing to job satisfaction, employee engagement, and career growth. As these technologies offer opportunities for training, collaboration, and direct interaction, it is not surprising that workers would associate them with long-term employment predictors. As such, whether fully remote or embracing a hybrid organizational model, incorporating communication technologies provides an important boost to employee morale and key markers of loyalty.

Limitations and Future Research

A key limitation of the current study is its dependence on a cross-sectional survey, making causal inferences difficult, and excluding the possibility of studying actual behaviors. Future research should employ longitudinal or experimental methods, perhaps through a field experiment, to test the impact of the model on actual acceptance behaviors. In addition, by focusing on current full-time employees, the impact of technological apprehension on perceived usefulness or ease-of-use may have been missed, as current employees may be technologically literate as a requirement of their employment. Future research should examine the technological attitudes of the unemployed or underemployed to understand how technology acceptance influences their employment opportunities. Finally, future research should more fully examine the role of subjective norms in the TAM model, especially concerning communication and collaboration technologies.

REFERENCES

- Aldoory, L. & Toth, E. (2004). Leadership and gender in public relations: Perceived effectiveness of transformational and transactional leadership styles. *Journal of Public Relations Research*, 16(2), 157-183. https://doi.org/10.1207/s1532754xjpr1602_2.
- Ajzen, I. (1985). From Intentions to Actions: A Theory of Planned Behavior. In J. Kuhl & J. Beckmann (Eds.), *Action Control* (pp. 11–39). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-69746-3_2.
- Ajzen, I., & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behavior*. New Jersey: Prentice-Hall.
- Ajzen, I. (2006). Constructing a theory of planned behavior questionnaire. Retrieved from <http://people.umass.edu/~ajzen/pdf/tpb.measurement.pdf>
- Barath, M., & Schmidt, D. A. (2022). Offices after the COVID-19 pandemic and changes in perception of flexible office space. *Sustainability*, 14(18), 11158. <https://doi.org/10.3390/su141811158>.
- Baskin, E. (2023). Generational Preferences in the Employee Digital Experience. *Forbes*. Retrieved from <https://www.forbes.com/sites/forbescommunicationscouncil/2023/03/13/generational-preferences-in-the-employee-digital-experience/?sh=4bc6cd247677>
- Bedeian, A. G., Kemery, E. R., & Pizzolatto, A. B. (1991). Career commitment and expected utility of present job as predictors of turnover intentions and turnover behavior. *Journal of Vocational Behavior*, 39(3), 331-343. [https://doi.org/10.1016/0001-8791\(91\)90042-K](https://doi.org/10.1016/0001-8791(91)90042-K).
- Bellou, V. (2010). Organizational culture as a predictor of job satisfaction: the role of gender and age. *Career Development International*, 15(1), 4–19. <https://doi.org/10.1108/13620431011020862>

- Boudrias, J. S., Gaudreau, P., Savoie, A., & Morin, A. J. (2009), "Employee empowerment: From managerial practices to employees' behavioral empowerment", *Leadership & Organization Development Journal*, Vol. 30, No. 7, pp. 625–638. <https://psycnet.apa.org/doi/10.1108/01437730910991646>.
- Cakmak, A. F., Benk, S., & Budak, T. (2011). The acceptance of tax office automation system (VEDOP) by employees: factorial validation of Turkish adapted Technology Acceptance Model (TAM). *International Journal of Economics and Finance*, 3(6), 107-116. <https://doi.org/10.5539/ijef.v3n6p107>.
- Chung, J. E., Park, N., Wang, H., Fulk, J., & McLaughlin, M. (2010). Age differences in perceptions of online community participation among non-users: An extension of the Technology Acceptance Model. *Computers in Human Behavior*, 26(6), 1674-1684. <https://doi.org/10.1016/j.chb.2010.06.016>.
- Crant, J. M. (2000). Proactive behavior in organizations. *Journal of Management*, 26(3), 435- 462. <https://doi.org/10.1177/014920630002600304>.
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319. <https://doi.org/10.2307/249008>.
- De Vos, A., De Hauw, S. and Van der Heijden, B.I.J.M. (2011), "Association between perceived employability, employee well-being, and its contribution to organizational success: a matter of psychological contract?", *The International Journal of Human Resource Management*, Vol. 22 No. 7, pp. 438-447, doi: <http://dx.doi.org/10.1016/j.jvb.2011.05.010>.
- Dean, B. (2023). Zoom user stats: How many people use Zoom in 2023? *Backlinko*. <https://backlinko.com/zoom-users>
- Dimock, M. (2019, January 17). Defining generations: Where Millennials end and Generation Z begins. *Pew Research Center*. Retrieved from <https://www.pewresearch.org/fact-tank/2019/01/17/where-millennials-end-and-generation-z-begins/>
- Donmez, B., Matson, Z., Savan, B., Farahani, E., Photiadis, D., & Dafoe, J. (2014). Interruption management and office norms: Technology adoption lessons from a product commercialization study. *International Journal of Information Management*, 34(6), 741-750. <https://doi.org/10.1016/j.ijinfomgt.2014.08.003>.
- Faverio, M. (2022). Share of those 65 and older who are tech users has grown in the past decade. *Pew Research Center*. <https://www.pewresearch.org/short-reads/2022/01/13/share-of-those-65-and-older-who-are-tech-users-has-grown-in-the-past-decade/#:~:text=There%20are%20notable%20differences%20between,of%20those%2065%20and%20older>.
- Gefen, D., & Straub, D. W. (1997). Gender differences in the perception and use of e-mail: An extension to the technology acceptance model. *MIS Quarterly*, 389-400. <https://doi.org/10.2307/249720>.
- Goldstein, N. J., Cialdini, R. B., & Griskevicius, V. (2008). A room with a viewpoint: Using social norms to motivate environmental conservation in hotels. *Journal of Consumer Research*, 35(3), 472-482. <https://psycnet.apa.org/doi/10.1086/586910>.
- Green, C. W. (1998). Normative influence on the acceptance of information technology: Measurement and effects. *Small Group Research*, 29(1), 85-123. <https://doi.org/10.1177/1046496498291004>.
- Haan, K. & Main, K. (2023). Remote work statistics and trends in 2023. *Forbes Advisor*. <https://www.forbes.com/advisor/business/remote-work-statistics/#:~:text=As%20of%202023%2C%2012.7%25%20of,to%20a%20hybrid%20work%20model>.
- Hackman, J. R., & Oldham, G. R. (1975). Development of the job diagnostic survey. *Journal of Applied Psychology*, 60(2), 159–170. <https://psycnet.apa.org/doi/10.1037/h0076546>.
- Kim, T. G., Lee, J. H., & Law, R. (2008). An empirical examination of the acceptance behaviour of hotel front office systems: An extended technology acceptance model. *Tourism Management*, 29(3), 500-513. <https://doi.org/10.1016/j.tourman.2007.05.016>.
- LaGree, D., & Olsen, K. (2022). Building a strong career foundation through proactivity behaviors: An exploration of organizational socialization experiences of early-career women in public relations. *Public Relations Journal*, 15(1). Retrieved from https://prjournal.instituteforpr.org/wp-content/uploads/LaGree_PRJ_15.1.pdf
- Lee, Y., Kozar, K.A., & Larsen, K.R.T. (2003) The Technology Acceptance Model: Past, Present, and Future. *Communications of the Association for Information Systems*, 12(50). <https://doi.org/10.17705/1CAIS.01250>
- Lu, J., Yu, C. S., Liu, C., & Yao, J. E. (2003). Technology acceptance model for wireless Internet. *Internet Research*, 13(3), 206-222.
- Lu, J., Yao, J. E., & Yu, C. S. (2005). Personal innovativeness, social influences and adoption of wireless Internet services

- via mobile technology. *The Journal of Strategic Information Systems*, 14(3), 245-268.
<https://doi.org/10.1016/j.jsis.2005.07.003>.
- Mahmoud, A. B., Fuxman, L., Mohr, I., Reisel, W. D., & Grigoriou, N. (2021). “We aren't your reincarnation!” workplace motivation across X, Y and Z generations. *International Journal of Manpower*, 42(1), 193-209.
- Mani, V.. (2011). Analysis of Employee Engagement and its Predictors. *International Journal of Human Resource Studies*, 1(2), 15–. <https://doi.org/10.5296/ijhrs.v1i2.955>
- Mann, A., & Harter, J. (2016). The worldwide employee engagement crisis. *Gallup Business Journal*, 7(1), 1-5.
<https://allenvisioninc.com/wp-content/uploads/2023/02/TheWorldwideEmployeeEngagementCrisisGallup.pdf?x79180>
- Marangunić, N., & Granić, A. (2015). Technology acceptance model: a literature review from 1986 to 2013. *Universal Access in the Information Society*, 14, 81-95. <https://doi.org/10.1007/s10209-014-0348-1>.
- Men, L. R., & Yue, C. A. (2019). Creating a positive emotional culture: Effect of internal communication and impact on employee supportive behaviors. *Public relations review*, 45(3), 101764.
<https://doi.org/10.1016/j.pubrev.2019.03.001>.
- Mo, Z., Liu, M. T., Wong, I. A., & Wu, P. (2022). The role of (in) congruence modes between supervisor prescriptive and descriptive norms on employee green behavior. *Tourism Management*, 93, 104627.
<https://doi.org/10.1016/j.tourman.2022.104627>.
- Moore, G. C., & Benbasat, I. (1991). Development of an instrument to measure the perceptions of adopting an information technology innovation. *Information Systems Research*, 2(3), 192-222. <https://doi.org/10.1287/isre.2.3.192>.
- Nauta, van Vianen, A., van der Heijden, B., van Dam, K., & Willemsen, M. (2009). Understanding the factors that promote employability orientation: The impact of employability culture, career satisfaction, and role breadth self-efficacy. *Journal of Occupational and Organizational Psychology*, 82(2), 233–251.
<https://doi.org/10.1348/096317908X320147>
- O'Halloran, J. (2023). IT priorities 2023: Collaboration technologies to benefit from future of work investment drive. *Computer Weekly*. <https://www.computerweekly.com/news/366536932/IT-Priorities-2023-Collaboration-technologies-to-benefit-from-Future-of-Work-investment-drive>
- Panteli, N., Nurse, J.R.C., Collins, E. and Williams, N. (2023). Trust disruption and preservation in the Covid-19 work from home context. *Journal of Workplace Learning*, 35(3), 306-321. <https://doi.org/10.1108/JWL-02-2022-0017>.
- Park, N., Lee, K. M., & Cheong, P. H. (2007). University instructors' acceptance of electronic courseware: An application of the technology acceptance model. *Journal of Computer-Mediated Communication*, 13(1), 163-186.
<https://doi.org/10.1111/j.1083-6101.2007.00391.x>.
- Park, N., Rhoads, M., Hou, J., & Lee, K. M. (2014). Understanding the acceptance of teleconferencing systems among employees: An extension of the technology acceptance model. *Computers in Human Behavior*, 39, 118-127.
<https://doi.org/10.1016/j.chb.2014.05.048>.
- Parker, K., Horowitz, J.M., & Minkin, R. (2020). How the Coronavirus outbreak has – and hasn't – changed the way Americans work. *Pew Research Center*. <https://www.pewresearch.org/social-trends/2020/12/09/how-the-coronavirus-outbreak-has-and-hasnt-changed-the-way-americans-work/>
- Priebe, C. S., & Spink, K. S. (2014). Getting active in the office: Using descriptive norm messages to decrease sedentary behaviour and increase light physical activity at work. *Journal of Exercise, Movement, and Sport (SCAPPS refereed abstracts repository)*, 46(1), 201-201. <https://scapps.org/jems/index.php/1/article/view/962/0>.
- Rauniar, R., Rawski, G., Yang, J., & Johnson, B. (2014). Technology acceptance model (TAM) and social media usage: an empirical study on Facebook. *Journal of Enterprise Information Management*, 27(1), 6-30.
<https://doi.org/10.1108/JEIM-04-2012-0011>.
- Raitoharju, R. & Laine, M. (2006). Exploring the differences in information technology acceptance between healthcare professionals. *AMCIS 2006 Proceedings*. 322.
<https://aisel.aisnet.org/cgi/viewcontent.cgi?article=1870&context=amcis2006>
- Rich, B. L., Lepine, J. A., & Crawford, E. R. (2010). Job engagement: Antecedents and effects on job performance. *Academy of Management Journal*, 53(3), 617–635. <https://doi.org/10.5465/amj.2010.51468988>.
- Robinson D., Perryman S., and Hayday S. (2004). *The drivers of employee engagement report 408*. Institute for Employment Studies, UK.
- Rogers, E. M. (1983). *Diffusion of innovations* (3rd ed). Free Press ; Collier Macmillan.
- Schmitz, J., & Fulk, J. (1991). Organizational colleagues, media richness, and electronic mail: A test of the social influence

model of technology use. *Communication Research*, 18(4), 487-523.

<https://psycnet.apa.org/doi/10.1177/009365091018004003>.

Toledano, C. A., Segarra, S. M., & López-de-Ayala, M. C. (2022). The impact of the Covid-19 pandemic. The perception of communications executives in companies: The role and challenges of internal communication. *Anàlisi*, 67, 27-43.

<https://analisi.cat/article/view/v67-aced-miquel-lopez>.

Trafimow, D., & Finlay, K. A. (1996). The importance of subjective norms for a minority of people: Between-subjects and within-subjects analyses. *Personality and Social Psychology Bulletin*, 22, 820-828.

<https://psycnet.apa.org/doi/10.1177/0146167296228005>.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2), 186-204. <https://doi.org/10.1287/mnsc.46.2.186.11926>.

Vogels, E. (2019). Millennials stand out for their technology use, but older generations also embrace digital life. *Pew Research Center*. <https://www.pewresearch.org/short-reads/2019/09/09/us-generations-technology-use/>

Wanberg, C. R. & Kammeyer-Mueller, J. D. (2000). Predictors and outcomes of proactivity in the socialization process. *Journal of Applied Psychology*, 85(3), 373-385.

https://carlsonschool.umn.edu/sites/carlsonschool.umn.edu/files/2018-10/wanberg_kammeyer-mueller_2000_proactivity.pdf.

Wayne, J., Matthews, R., Crawford, W., & Casper, W. J. (2020). Predictors and processes of satisfaction with work-family balance: Examining the role of personal, work, and family resources and conflict and enrichment. *Human Resource Management*, 59(1), 25-42. <https://doi.org/10.1002/hrm.21971>

Wong, S. C., Mohd Rasdi, R., Abu Samah, B., & Abdul Wahat, N. W. (2017). Promoting protean career through employability culture and mentoring: Career strategies as moderator. *European Journal of Training and Development*, 41(3), 277-302.

Zeffane, Ibrahim, M. E., & Mehairi, R. A. (2008). Exploring the differential impact of job satisfaction on employee attendance and conduct: The case of a utility company in the United Arab Emirates. *Employee Relations*, 30(3), 237-250. <https://doi.org/10.1108/01425450810866514>

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