Exploring intergenerational differences in technology-oriented ethical behavior

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Abstract

Purpose – The proliferation of information technology (IT) and IT-enabled devices has brought various challenges for modern organizations. These challenges are aggravated by the fact that the employees of different generations have a varying degree of expertise and ethical orientation regarding technology. This study has two primary objectives to have an in-depth understanding of technology-related ethical behavior of a diverse workforce. First, it aims to develop a valid and reliable scale to measure technology-oriented ethical behavior. Second, it investigates variations in technology-oriented ethical behavior among Generation X (pre-millennial), Generation Y (millennial) and Generation Z (post-millennial) using the scale.

Design/methodology/approach – The study is conducted in two steps. The first step, a techno-ethical scale, is developed with the help of the six steps of scale development proposed by Churchill (1979). These steps include exploratory factor analysis (EFA), confirmatory factor analysis (CFA), reliability analysis (composite reliability) and validity analysis (convergent and divergent validity). In the second step, intergenerational variation in different factors of technology-oriented ethical behavior among generation X, Y and Z employees is explored with the help of ANOVA and mean plots.

Findings – The study suggests a four-dimensional techno-ethical scale comprising fourteen statements. These four dimensions of the scale are the invasion of the right of privacy, defamation, self-enrichment and loafing during office hours. The scale is reported to have adequate reliability and validity estimates. Results also recommend statistically significant variations in all four dimensions of technology-oriented ethical behavior among generation X, Y and Z employees is explored with the help of ANOVA and mean plots.

Originality/value – This study is one of the pioneer studies that explore ethical orientation towards technology usage of three generations of employees.

Keywords Pre-millennial, Millennial, Post-millennial, Intergenerational difference, Technology-oriented behavior

Paper type Research paper

Introduction
The contemporary workplace witnesses a peculiar challenge of management of the diverse workforce. Although diversity brings diverse perspectives to the table, it constantly tests the HR manager to collaborate values and aspirations of people of different gender, caste, creed, nationality, cultures and generations. Previous researchers have well researched and documented the generation-based variations in various organizational factors. Rudolph and Zacher (2015) reported different generations’ work values and career priorities. Westerman and Yamamura (2007) found a lower level of job satisfaction among baby boomers than generation X and Y. Other researchers also reported significant intergenerational variation across a variety of work behaviors like work values (Bennett et al., 2012; Smola and Sutton, 2002; Yogamalar and Samuel, 2016), work ethics and motivation (Soto and Lugo, 2013; Zemke et al., 2000; Olson and Brescher, 2011), learning orientation (D’Amato and Herzfeldt, 2008), psychological empowerment and flexibility (Toro et al., 2019), use of influence tactics (Landry, 2009) intention to leave the job (Benson and Brown, 2011) and narcissism (Trzesniewski and Donnellan, 2010). These differences have a significant effect on the successful implementation of HR policies and practices of an organization.
The proliferation of information technology (IT) and IT-enabled devices brought specific challenges for the modern organizations that employ people of all generations. One such challenging issue is the different technology usage and expertise levels across different generations. Several researchers, including Purcell et al. (2012) and Zickuhr and Madden (2012), have highlighted significant differences in IT usage across different generations. Although these studies vary in sample, methodology and design, they unanimously conclude generation-based differences. Studies have posited that age-based obstacles might prohibit older generations from taking full advantage of digital avenues for communication. Older adults may be less familiar with the nuances of newer digital forms of interaction (Comunello et al., 2017).

Now, similar to technology usage, research has also reported considerable variations in ethical ideologies and ethical orientation among generations (Zabel et al., 2017; Weber and Urick, 2017). Now, when IT has become an indispensable part of human life, it is imperative to understand the techno-ethical orientation of different age cohorts. Although few studies conducted by Boyd (2010) and Wright et al. (2014) tried to explore techno-ethical orientation based on generational differences, literature still lacks a systematic comparative study of pre-millennial, millennial and post-millennial, especially in the Indian context. Such explorations are highly desirable in an age where diverse generations work under a common roof. HR managers find it challenging to implement a uniform code of conduct in their respective organizations. Thus, learning more about this unexplored area becomes necessary, which will serve as an essential thrust for corporate HR policymakers to strategize and implement policies accordingly.

The extensive survey of the existing literature reveals two major research gaps in these domains. First, it reveals the scarcity of a scale that could measure technology-oriented ethical behavior of the employees. Thus, this study develops a valid and reliable techno-ethical scale using wide range of statistical tools like exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The study offers a four-dimensional scale to measure techno-ethical orientation of an individuals. The four dimensions of the scale are infringement of right to privacy, defamation, self-enrichment and loafing during office time. Second, available literature highlights lack of studies exploring the technology-oriented ethical behavior among Generation X (pre-millennial), Generation Y (millennial) and Generation Z (post-millennial). Accordingly, the present study explores generation-based variations across four dimensions of techno-ethical scale using ANOVA.

**Theoretical framework**

**Defining generations**

Becker (1992) defined a generation as “a clustering of birth cohorts that are marked by a specific historic location, common traits at an individual level (life courses, value orientations, and behavioral patterns) and at a system level (size and composition, generational culture and generational organizations)” (p. 23). It may also be referred to as an “aggregate of all people born over roughly the span of a phase of life who share a common location in history and, hence, a common collective persona” (Strauss and Howe, 1997, p. 61). The basis of these and other definitions is the generational cohort theory developed by Mannheim (1952). The theory states that people of a generation experience the same economic, political, environmental and social events. Thus, they develop similar values, attitudes, habits and behaviors (Inglehart, 1977). The generational cohort theory identifies two pivotal aspects that form the basis of the formation of a generation: generational context and generational unit. Generational contexts are the resemblance of experience of similar social, technological, economical and political events by people of same generation. Such similar experience leads to development of informal cooperation and collaborations among people of same generation (Ng and Parry, 2017).
McMullin et al. (2007) argue that the variations in people’s attitudes and values of different generations result from important economic, political and social events they witness during their childhood. This explanation resembles the “critical period” concept for learning societal values and aspiration studies by developmental psychologists (Schuman and Scott, 1989).

As such, the differentiation of generations is done on the basis of birth years. Generation X was born between the 1960 and 1980s (Gordinier, 2008). Today, Generation X enjoys prominent positions in work organizations. They are the decision-makers and are generally in their late-career. Generation Y’s birth years range from the early 1980s to the mid-1990s, i.e. until 1996 (Horovitz, 2012). The people of this generation are trying to consolidate their position in the workplace. Generation Z is the cohort of people born from 1996 onwards (Dimock, 2019). This generation has started to enter the labor market with enthusiasm and energy. Some of them are keen to start their ventures. A notable change can be seen in the generational distribution in 2020, wherein Gen Y constitutes 35%, Gen X 33%, Boomers 18% and Gen Z 11% in the global workforce (Abdullah et al., 2021). Modern-day workplace is also referred as multigenerational workforce, as they house employees from different generational cohort (Hisel, 2020; Lang, 2020).

**Ethical and techno-ethical orientation**

Ethics may be defined as “guidelines to influence human behavior in a manner intended to protect and fulfill the rights of individuals in a society” (Marshall, 1999, p. 82). In other words, ethics is a “systematic approach to understand, analyze and distinguish between the matters of right and wrong, good or bad, admirable and deplorable as they relate to the well-being of and the relationships among sentient beings” (Rich, 2013, p. 4). In a nutshell, it includes a code of conduct of how to behave in a society. And, ethical orientation is one’s internal inclination towards ethical paradigms like deontology or ontology (Sullivan and Kymlicka, 2007). One’s orientation towards moral values like honesty, utilitarianism, etc. influences decision-making (Burton-Jones and Hubona, 2005). Understanding ethical orientation is a prerequisite for judging one’s choice for ethical or unethical behavior (Garg and Sarkar, 2020).

The term “techno-ethics” was first coined by Bunge (1977), who advocated the development of ethical and moral theories to deal with unique challenges posed by the rapid growth of IT. According to Galvan (2001), techno-ethics is the “total of ideas that bring into evidence a system of ethical reference that justifies that profound dimension of technology as a central element in the attainment of a finalized perfection of man.” In other words, techno-ethics is an interdisciplinary field that deals with all the ethical aspects of technology (Martin and Roberts, 2021). Techno-ethics provides a perfect amalgamation of technology and ethics as socially embedded enterprises. It focuses on identifying the ethical use of technology and preventing misuse of technology. Also, it tends to explore universal principles that guide technological advancement and its application for the benefit of society (Luppicini, 2009a). Techno-ethics essentially ensures tickle down of benefits of technology to last rung of the society.

**Generational differences in technology-oriented ethical behavior**

The intergenerational differences in techno-ethical orientations are theoretically premised in generational theory (Mannheim, 1952), the uses and gratification theory (Katz et al., 1974) and the technology acceptance theory (Davis et al., 1989; Venkatesh et al., 2003). The generational theory states that the age cohort that experiences and remembers the same social and political event develops similar values, attitudes and expectations. Clark (2017) maintained that generational differences dictate how each person can and will learn. The three generations (generation X, Y and Z) have witnessed different stages of technological advancement, especially in India. The Indians of Generation X did not have the luxury of IT
and IT-enabled devices in childhood and adulthood. Even in professional organizations, they either worked manually or through simple manual machines like typewriters. They witnessed an IT revolution in the workplace only in their late-career with the bombardment of sophisticated and complex hardware and software. Through liberalization, privatization and globalization in 1991, Indian opened its doors for technology (Ravan, 2014). Thus, Generation Y encountered IT-enabled devices in late adulthood or at the early career stage. The Gen Yers are also the most technologically learned and well-educated cohorts (Cekada, 2012).

Generation Z is the most privileged cohort that understands and cherishes advanced technologies from their childhood. These post-millennials are much benefitted from technology because computers and the Internet have become a part of their educational environment whereby all students are taught how to use sophisticated tools of information technologies. Technology is an integral part of post-millenials' life (Pásztor and Bak, 2020). Pre-millennial and millennials are the ones who later adopted the technology (Doyle and Goldingay, 2012). Seemiller et al. (2019) reported that Gen Xers are not technological novices because many of them exhibit behavior similar to younger generations in their social media usage and smart phones. Both Gen Xers and Zers have different communication preferences as the latter are more interested in texting than writing emails. Thus, since pre-millennial are less tech-savvy, they are more likely to have rigid and dogmatic techno-ethical orientation in comparison to younger generation. Younger generation does not hesitate to deviate from established ethical standards (Martin and Roberts, 2021). Millennial ethical mindset fluctuates between self-gratification and societal benefits (Boyd, 2010). While pre-millennial emphasizes need fulfillment in ethical ways, the focus of post-millennial is on self-enrichment with little concern for ethical or unethical behavior (Boyd, 2010).

The use and gratification theory explains the relationship between psychological motives and technology use and behaviors. According to the theory, one selects and uses technology in a goal-directed manner to achieve gratifications and fulfill its needs. And researchers like Magsamen-Conrad et al. (2015) reported significant variances in the way different age cohorts use technology. Generational cohort influences usage and engagement with technology. Generation X generally chooses technology to perform works that are manually too complex or difficult. They do not use technology for entertainment of fun. Generation Yers are “looking for active, alive, open and informal workplaces that offer the latest technology” (Cushing, 2020). Like Generation Yers, Gen Z prefers using the Internet to communicate with others because of their interest in the new technology. Individuals of Gen Z can typically be located where the advantages of being hooked up to the Internet are available (Kirchmayer and Fratricova, 2020). Concerning the impact of technologies on the workplace networks, Lanier (2017) indicates that the inclusion of necessary online communication tools and technologically competent managers leads to a high level of satisfaction and motivation among Generation Z employees. They use technology for nearly everything. There life is incomplete without technology. Thus, different usage pattern is poised to bring different ethical orientation towards technology.

Although generation-based ethical positions are well researched, the studies to investigate techno-ethical orientation are scarce. The scarcity of such studies in the Indian context is evident from the fact that a validated and well-accepted scale to measure techno-ethical orientation is not available. Thus, the present study tends to develop a validated techno-ethical scale in the study’s first phase. And in the second phase, this scale is used to evaluate differences in the technology-oriented behavior of pre-millennial, millennial and post-millennial.

Research methodology
Scale development
Churchill (1979) suggested six steps of scale development, i.e. specification of the domain of the construct, generation and classification of items through experience survey, initial data
Step 1: Specification of the domain of the construct: The first step requires finalization of definition of the concept. The concept definition facilitates identification of measures of the construct. Accordingly, techno-ethical orientation is defined as relational orientation to technology and human activity concerned with all ethical aspects of technology within a society shaped by technology (adapted from Luppicini, 2009b).

Step 2: Generation and classification of items: Experience survey method was employed to gage which items to be included or excluded for the generation and classification of items. The experience survey was conducted among the employees of educational institutions and professional organizations for their opinion, beliefs and feelings about the usage of technology by various generations and how technology has shaped the ethical orientation. The sample items of the experience survey were “please indicate the extent to which you experience that technology has taken over the control of your life” (on a scale of 1 = strongly agree, to 5 = strongly disagree), and “technology seems user-friendly to me.” Based on this survey, 27 statements have been formulated that try to capture the techno-ethical orientation of the individuals.

Step 3: Initial data collection and purification: The 27 statements were subjected to a pilot study on a small sample of 33 respondents. Afterward, an expert committee consisting of research scholars working in ethics, human-technology interaction, corporate social responsibility and academicians from 3 colleges were presented with the draft questionnaire. Based on extensive discussions of the panel, seven statements that appeared irrelevant were omitted. After modifications, the final questionnaire consisted of 20 statements.

Step 4: Data collection: Now, data were collected using twenty-item modified questionnaire. The employees engaged in different industries were approached either through emails or through personal visits using convenience sampling. Employees engaged in any professional organization were presented with the questionnaire. As many as 425 people were approached, but only 350 respondents returned the questionnaire. Out of these 350 questionnaires, 48 were discarded for incomplete or negligently filled (Meade and Craig, 2012). Among the pool of 302 responses, 58 participants belong to the pre-millennial group, 111 participants from the millennial group and 133 respondents from the post-millennial group. Among the pre-millennial cohort, 36.8% were male, and 36.2% were female. From the millennial group, 40.5% were male; 57.7% were female, and 1.8% were the third gender.

Similarly, the post-millennial group consists of 56.4% males and 43.6% females. Based on industry-wise distribution, in the millennial cohort, 50% of the respondents belong to the education industry, followed by 11% from the information and technology industry. Similarly, 36% of pre-millennial were from education industry followed by 24% from manufacturing and 12% from information and technology sector. For post-millennial, almost half of the respondents, i.e. 59%, were from the education industry, followed by 25% from the finance and insurance sectors. The sample items of the questionnaire were “sharing confidential information with others on social media” and “using instant messaging apps during work hours,” rated on a five-point rating scale ranging from 1 (most unethical) to 5 (most ethical).

Step 5: EFA: EFA was employed using principal component analysis and varimax rotation using IBM SPSS 25. Prior to EFA, Kaiser-Meyer-Olkin (KMO) measure of
sampling adequacy and Bartlett’s test of sphericity were applied to assess the data’s suitability for factor analysis. Finally, 20 statements were subjected to factor analysis using principal component analysis. Application of principal component analysis is recommended because of its use when no prior theory or model exists (Gorsuch, 1997). Moreover, varimax rotation was applied because it makes interpretable clusters by maximizing the dispersion of loadings (Field, 2009) and provides consistent utility. Six statements were discarded for low factor loading. The remaining fourteen statements yielded four latent variables (see Table 1). The four factors have a cumulative value of 58.646% in explaining the total variance in the data. And these factors are described as four dimensions of technology-oriented ethical behavior. These four dimensions are as follows.

**F1: Infringement of the right of privacy:** This involves statements that encompass creating hindrance in the matter of confidential information and also interference into other’s privacy. Statements such as “Reading and forwarding emails of others without their consent,” “sending files with virus intentionally,” and “Not giving due credits to someone for providing assignment-related material” are included in this factor. The factor could explain the 30.161% variance.

**F2: Self-enrichment:** Statements that deal with using an organization’s material for personal benefits or gains were covered under this factor, with 11.962% of the variance. Examples include making a personal copy of a rented movie, copying software from the organization for personal use and using workplace organizations to play games online.

**F3: Defamation:** Statements intended to harm someone by criticizing them on the Internet were covered under this factor and explain 9.207% of the total variance. It involves labeling the organization or workplace.

**F4: Loafing during work hours:** This factor comprises four statements and constitutes 7.317% of the total variance in the EFA analysis. Loafing, i.e. using instant messaging apps during work hours, is evident in this factor extraction. It involves having fun during office work instead of doing productive work.

**Step 6: CFA:** CFA helps examine the link between observed and latent variables based on the underlying theoretical constructs (Hair et al., 2014). Statistics associated with the default model were discouraging and indicated poor model fit. Value of $\chi^2 (\chi^2 = 734.816)$ and other indexes such GFI, $p$-close and RMSEA showed that the default model does not fit well as the values of these parameters are not in line with the cut-off values suggested by Hu and Bentler (1999) and Ullman (2001). Since model did not fit well, it required certain modifications. The following steps are followed for model modifications (Harrington, 2009; Simon et al., 2010): (1) check the regression loadings of observed variables on unobserved variables, (2) look out for modification indices (MI) and (3) examine the standardized residual covariance. Based on the modification steps mentioned above, final model highlights RMSEA came out as 0.098, CMIN/df = 3.839, GFI has a value of 0.895, and other indexes such as

<table>
<thead>
<tr>
<th>Factors</th>
<th>Eigen values</th>
<th>% of variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1 – infringement of the right of privacy</td>
<td>6.032</td>
<td>30.161</td>
</tr>
<tr>
<td>F2 – self-enrichment</td>
<td>2.392</td>
<td>11.962</td>
</tr>
<tr>
<td>F3 – defamation</td>
<td>1.841</td>
<td>9.207</td>
</tr>
<tr>
<td>F4 – loafing during work hours</td>
<td>1.463</td>
<td>7.317</td>
</tr>
</tbody>
</table>

**Table 1.** Results of factor analysis

**Source(s):** Primary data
TLI = 0.790, CFI = 0.841 and $p$ close is 0.000. Now, all values show a good model fit except TLI, $p$-close, RMSEA. Figure 1 depicts a well-fitted theoretical model for measuring techno-ethical orientation in the Indian context. And this scale comprises 14 statements now. After CFA, reliability and validity testing was done.

The scale’s reliability was accessed using composite reliability estimates, whose values should be greater than 0.70 to support good reliability (Hair et al., 2010). Table 2 reports that all four dimensions of technology-oriented behavior are reliable. Now, convergent validity is calculated with the help of average variance extracted (AVE). As a rule of thumb, the AVE of 0.50 or higher was promising and indicated an adequate level of convergent validity (Fornell and Larcker, 1981). Table 2 reported AVE values of all four extracted factors. Also, the AVE values (highlighted in bold and placed diagonally in Table 3) are more significant than the squared inter-correlation of the constructs. It confirms the discriminant validity of the scale (Fornell and Larcker, 1981). These results suggest that four-dimensional techno-ethical scale is both reliable and valid.

**Figure 1.** Final CFA model

Source(s): Primary Data
Intergenerational differences in technology-oriented ethical behavior

Tables 4 and 5 describe intergenerational variations of four factors of the technology-oriented behavior of pre-millennial, millennial and post-millennial. Table 4 observes that except for self-enrichment; mean values progressively increase from pre-millennial to post-millennial. Even for the self-enrichment factor, the mean value (mean = 2.97) is maximum for post-millennial. Figure 2a–d graphically depicts the same. It indicates that younger generations are relatively more open to infringement of the right to privacy, self-enrichment, defamation and loafing during office hours. The younger generation considers these actions as more ethical than their previous generations. Table 5 reports statistically significant variations in four factors of technology-oriented behavior among pre-millennial, millennial and post-millennial (all p value < 0.05). These results suggest that there exist significant variation in technology-oriented ethical behavior among employees of different generations. It simple words, pre-millennial, millennial and post-millennial employees have different ethical orientation towards technology.

Discussion and conclusion

The present study offers two significant findings. First, the study provides four-dimensional techno-ethical scale in the context of the use of technology in the workplace. These dimensions are infringement of the right of privacy, self-enrichment, defamation and loafing during work hours. Second, the study suggests significantly different technology-oriented ethical behavior among generations X, Y and Z. The findings state that older generations consider these traditional organizational taboos more ethical than younger generations. It indicates a shift towards acceptance and tolerance of more liberal techno-ethical policies. For inference, loafing at the workplace is generally seen as unethical by the HR manager and management. But post-millennial perceive such workplace behavior as more ethical and acceptable than millennial and pre-millennial. These findings are in alignment with the concept of “weisure” time, which considers work and leisure as one and same (Meister and Willyerd, 2010). This indicates that for digital generations, the division between labor and leisure will increasingly blur in the quest for a work-life balance. Similarly, self-enrichment (use of organizational resources for personal gains) is seen more unethical by older

<table>
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<th>Factor</th>
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<th>AVE</th>
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<tr>
<td>Self-enrichment</td>
<td>0.760</td>
<td>0.615</td>
</tr>
<tr>
<td>Defamation</td>
<td>0.765</td>
<td>0.620</td>
</tr>
<tr>
<td>Loafing during work hours</td>
<td>0.709</td>
<td>0.584</td>
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Source(s): Primary data

<table>
<thead>
<tr>
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<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
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<tr>
<td>Infringement of the right of privacy</td>
<td>0.554</td>
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<td></td>
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<tr>
<td>Self-enrichment</td>
<td>0.064</td>
<td>0.615</td>
<td></td>
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</tr>
<tr>
<td>Defamation</td>
<td>0.150</td>
<td>0.087</td>
<td>0.620</td>
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<tr>
<td>Loafing during work hours</td>
<td>0.084</td>
<td>0.028</td>
<td>0.046</td>
<td>0.584</td>
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</table>

Source(s): Primary data
generation. Younger generation find it quite acceptable. And it is considered as a routine affair by younger employees.

This shifting ethical paradigm poses a new challenge for modern-day HR managers. They need to bring about necessary and desirable changes in organizational ethical philosophy and policies to accommodate the new ethical positioning of a new generation of employees. Although more research is required, there is a clear trend towards new normal techno-ethics in the workplace. The new normal paradigm of techno-ethics necessitates more liberal and generous ethical policies towards using technology at the office. The survival of an organization requires reshaping and redefining its policies and strategies accordingly. There seems to be a need of changing both organizational culture and activities to accommodate changing attitude and behavior of upcoming new generation workforce.

Although, to the best of our knowledge, no previous study has investigated the technology-related ethical behavior of three generations, inferences of generation-based technology usage variations are reported in earlier studies. The millennial cohort usually utilizes technologies for entertainment and hedonic purposes. And pre-millennials rely on technologies for utilitarian purposes and information search (Calvo-Porral and Pesqueira-Sanchez, 2019). Millennials or Generation Y is more inclined to adapt to the new cyber environment than Generation X (Gafni and Geri, 2013). Members of Gen Y are considered harbingers for changing technology (Abdullah et al., 2021). Peek et al. (2014) concluded that

<table>
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<th>Factors</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
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<tr>
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<td></td>
</tr>
<tr>
<td>Pre-millennial</td>
<td>58</td>
<td>1.39</td>
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<td>1.54</td>
<td>0.429</td>
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<tr>
<td>Post-millennial</td>
<td>131</td>
<td>1.88</td>
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<td>Self-enrichment</td>
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<td>Pre-millennial</td>
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<td>2.11</td>
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<td>2.97</td>
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<tr>
<td>Defamation</td>
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<tr>
<td>Loafing during work hours</td>
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<tr>
<td>Post-millennial</td>
<td>131</td>
<td>2.32</td>
<td>0.633</td>
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### Table 4. Descriptive statistics for each factor according to generations

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<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Between groups</td>
<td>14.7</td>
<td>2</td>
<td>7.355</td>
<td>20.87</td>
<td>0.000*</td>
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<tr>
<td>Within groups</td>
<td>104.2</td>
<td>296</td>
<td>0.352</td>
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</tr>
<tr>
<td>Total</td>
<td>119.0</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Self-enrichment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>40.5</td>
<td>2</td>
<td>20.29</td>
<td>25.11</td>
<td>0.000*</td>
</tr>
<tr>
<td>Within groups</td>
<td>239.2</td>
<td>296</td>
<td>0.808</td>
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<tr>
<td>Total</td>
<td>279.8</td>
<td>298</td>
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<td></td>
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<tr>
<td>Defamation</td>
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<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>9.15</td>
<td>2</td>
<td>4.577</td>
<td>5.165</td>
<td>0.006*</td>
</tr>
<tr>
<td>Within groups</td>
<td>262.3</td>
<td>296</td>
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<tr>
<td>Total</td>
<td>271.4</td>
<td>298</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Loafing during work hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>16.2</td>
<td>2</td>
<td>8.116</td>
<td>20.87</td>
<td>0.000*</td>
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<tr>
<td>Within groups</td>
<td>115.0</td>
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<td>0.389</td>
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<tr>
<td>Total</td>
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</table>

### Table 5. Results of one-way ANOVA

**Source(s):** Primary data, *Sig at 05, SS- Sum of Squares, MS- Mean Square, Df- Degree of freedom
Figure 2. Means plot for (a) "infringement of the right of privacy", (b) "self-enrichment", (c) "defamation", (d) "loafing during work hours".
limited usability, fear of technology and no control over activation and de-activation of technology are few reasons which restrict the use of technology for limited purposes by the older generation. Other researchers, including Purcell et al. (2012), van der Kaay and Young (2012), also claimed that the younger generation has a more liberal and positive attitude towards technology than the older population. The findings are also in line with the generational difference in emotional reactions to emerging technologies. Pre-millennials expect simple interfaces for technology use and experience anxiety while using Internet-enabled devices (Czaja, 2006; Rosenthal, 2008; Shedletsky, 2006), whereas the Generation X population likes sophisticated devices because of their exposure and adaptability with the Internet and Internet-enabled modern devices.

Theoretical implications

There are several significant theoretical contributions of the present study. First, the study offers a reliable and valid scale to measure the technology-oriented behavior of employees. The scale is posed to help future researchers to expand the knowledge horizon of ethical studies. Second, the study provides an insight into intergenerational variations of three generations, i.e. pre-millennials, millennials and post-millennials. The majority of previous studies are restricted to compare the ethical positioning of two generations only. Third, the present study inspires a way to look at the shifting of ethical positioning of younger generations. Instead of labeling post-millennials as unethical, the present study initiates a debate of ethical repositioning in the light of technology bombardment. Ethical values change with the time and this study proposes a discussion on ethical reorientation.

Fourth, the findings of this study made a significant contribution to existing theories in several ways. One of the prominent models referred to as “Igbaria’s model” posited that perceived fun and perceived usefulness influences behavior (computer usage) and attitude towards new technology acceptance or rejection (Igbaria et al., 1994). Consistent with this view, millennials and post-millennials of this study perceive technology as useful and fun compared to their counterparts. Therefore, their technology-oriented behavior is shaped by these motivators. The results presented in this study further strengthened the unified theory of acceptance and use of technology (UTAUT) (Venkatesh et al., 2003). According to UTAUT, age and experience moderate the impact of usage intention and behavior. With age, individuals require more assistance in operating new technology due to higher levels of computer anxiety and fear of change. The findings of this study also lend an indirect support through suggesting that older generation is relatively less flexible for ethical repositioning.

Lastly, the results of the study offer empirical evidence of generational theory in a non-western context. The majority of generational theories were developed in the western background. The findings of the current study provide empirical evidences to these theories in non-western context too, which leads to cross-cultural validation of these theories.

Practical implications

This study makes several practical implications for modern organizations that house employees of all three generations. It is being argued that existing organizational policies and HRM practices have been drafted by pre-millennials (Ng and Parry, 2016). And, thus the aspirations and concerns of younger generations are yet to be fully integrated into these policies and practices. The same is also true for the firm’s ethical policy regarding the use of technology in the workplace. The findings of the present study suggest that younger generation have relatively liberal view regarding ethical use of technology. The younger generations have already started to demand the freedom to use technology at the office. Thus, it is suggested that organizational techno-ethical policies may be revised in light of changing technology usage, norms and the associated attitude of the new generation workforce.
policy may keep zero tolerance approach towards universal unethical practices like infringement of right to privacy, defamation, etc. At the same, such a newly devised policy may adapt more open and liberal approach towards limited self-enrichment or social loafing. It will help achieve a delicate balance of ethical aspirations of different generations. Such policy revision also requires separate training program for older and younger generations to enhance their tolerance and acceptance towards each other’s ethical orientation.

The new generation employees will play a pivotal role in decision-making in the next five to ten years. Shortly Gen Z will represent almost 30% of the world population and 25% of the global workforce (Gomez et al., 2018). Acknowledging the future roles of today’s Generation Z, HR managers may have to use different innovative mechanisms to help them realize importance of techno-ethical orientation. Sensitive training, experience sharing sessions with victim of defamation, didactic decision-making, etc. may prove very helpful in attracting younger employees’ attention towards dark side of the unethical use of technology. In a nutshell, the present study offers two major practical suggestions. First, it recommends revision in ethical policies of the company to accommodate opinions and attitudes of younger generations. Second, it suggests training and learning sessions for younger employees to help them realize danger of too flexible ethical approach.

Limitations, direction for future researchers and conclusion
It is acknowledged that there are limitations in using a questionnaire as the sole method for data collection in this study. Study in one culture also limits the generalization of findings in other cultures. The sample size was not equal for each cohort because of the removal of many outliers. Future studies investigating the role of other relevant factors using interviews or longitudinal studies can provide a comprehensive idea of how technology use has changed over generations and what the future holds for the next generation. Face to Face interviews will provide immense information necessary for our understanding of factors influencing the digital divide or techno-ethical orientation with technology usage. Future studies might explore the social environment, experience, gender and ethical judgment that impact the techno-ethical orientation of people. The use of moral dilemmas or scenarios will examine the broader implication of technology and ethics interrelation.

References


Further reading


Latif, K.F. (2018), The Development and Validation of Stakeholder-Based Scale for Measuring University Social Responsibility (USR), Social Indicators Research.

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