IBM Software
Technical Whitepaper

Millennials' (lack of) attitude problem

An empirical examination of generational effects on work attitudes

Contents:

The popular press continues to bemoan the great generational divide at work, especially concerning Millennials. For example, the workplace has been described as a "psychological battlefield," wherein buttoned-down, self-centered Millennials clash with their stodgy, rule-abiding Baby Boomer bosses (Safer, 2007). Consultants warn us that we must take special precautions to retain Millennials (Trunk, 2007). Anecdotal and theoretical publications exhorting the drastic differences of Millennials at work abound. However, there is a dearth of empirical research to support (or refute) such stories (Giancola, 2006; Macky, Gardner, & Forsyth, 2008). In fact, recent empirical studies have challenged the conventional wisdom that drastic generational differences exist (cf. Deal, 2007). More empirical research on generational differences at work, especially controlling for age and time period is needed (Macky, Gardner, & Forsyth, 2008).

In the present study, we empirically examine generational differences in work attitudes across five generations, with an emphasis on the nature of the similarities and differences of Millennials when compared to prior generations. Additionally, we use a data analysis technique that controls for the confounding effects of age and time period, thereby enabling us to make more accurate inferences about generational effects. To our knowledge, no study has empirically examined differences in work attitudes across five generations while controlling for age and period effects. Therefore, our study stands to contribute substantially to the empirical literature on generational differences at work.

Generational theory

A generational cohort is a group of individuals similar in age who have experienced the same historical events in the same time period (Ryder, 1965). The term "generation" as it is used here should not be confused with familial generation (e.g., child, parent, grandparent). Generations are not elective groups; individuals do not choose to be a part of their generation, nor are they necessarily aware of their membership. Instead, generation membership is based on the shared position of an age-group in historical time (Mannheim, 1952). Generation members are born, start school, enter the workforce,
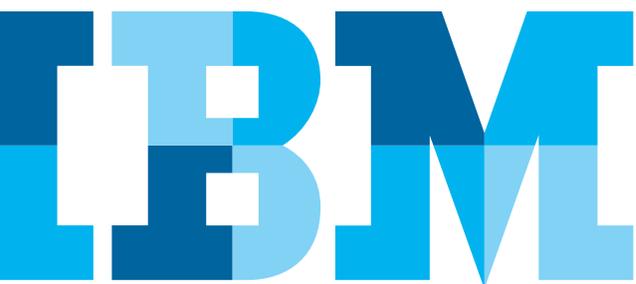
have children, and retire at about the same time and age. Further, generation members are the same age when wars are waged, technological advances are made, and other social changes occur.

The concept of generations is important because the ebb and flow of new and old generations coupled with historical and social events drive social change, a process Ryder (1965) described as "demographic metabolism." When a new generation is born, social forces or agents of socialization, such as laws, mores, schools and families, acquaint the newcomers with the society to which they now belong. Simultaneously, the newcomers form their own unique reactions to those socializing agents and the shared historical phenomena that occur at key developmental stages, especially young adulthood (Baltes, Reese, & Lipsitt, 1980). Empirical research supports this fact; people at different developmental stages interpret historical events differently, with young adulthood being a particularly impressionable developmental stage (Duncan & Agronick, 1995; Noble & Schewe, 2003). Shared experiences at key developmental points contribute to the unique characteristics (e.g., values, attitudes, personality) that define and differentiate one generation from another. These unique characteristics in turn impact conservative social forces and drive social change (Mannheim, 1952; Ryder, 1965).

Generation taxonomy

We needed to identify a generational taxonomy before we proceeded with our examination of generational effects. In addition, to accumulate findings across different studies, a common generational taxonomy was required. In the present study, we use the taxonomy developed by Strauss and Howe (1991; Howe & Strauss, 2000) who used rich historical data to define US generations back to the 16th century. This taxonomy is one of the most robust and ubiquitous generational taxonomy available.

Each generation represented in our data is briefly described in *Table 1*. Neither the G.I. nor the Silent generation represent a substantial portion of the current workforce when this article was published, as most of their members have retired. The Baby Boomer generation (Boomers) and Generation X (Gen Xers) represent a large portion of the current workforce, though the oldest Boomers are quickly approaching retirement.

Generation	Theoretical descriptors
GIs	Brave and fearless, dedicated to progress and innovation, optimists, rationalists, builders, doers, less spiritual, more concerned with outer life over inner, collegial, standardized, pre-packaged, bland, trusting in government and authority, civic-minded
Silents	Preferring job security over entrepreneurship, cautious, unimaginative, unadventurous, unoriginal, facilitators and help-mates, arbiters but not leaders, causeless, without outward turmoil, inward-focused, sandwiched in between the GI and Baby Boom generations
Boomers	Much heralded but failing to meet expectations, smug, self-absorbed, intellectually arrogant, socially mature, culturally wise, critical thinkers, spiritual, religious, having an inner fervor, radical, controversial, non-conformist, self-confident, self-indulgent
Gen Xers	Cynical, distrusting, bearing the weight of the world, fearful, lost, wasted, incorrigible, in-your-face, frenetic, shocking, uneducated, shallow, uncivil, mature for their age, pragmatic, apathetic and disengaged politically, independent, self-reliant, fatalistic, mocking, under-achieving
Millennials	Optimists, cooperative, team players, trusting, accepting of authority, rule-followers, smart, civic-minded, special, sheltered, confident, achieving, pressured, conventional

Table 1: Generation theoretical descriptions

The Millennial generation (Millennials) is the newest to enter the workforce. In fact, the youngest Millennials have yet to reach early adulthood and working age. Because research has indicated young adulthood as a critical time for generational identity formation (Mannheim, 1952; Ryder, 1965), the Millennial ideals and identity are the least solidified of the generations. Although historical events continue to interact with the identity of a generation in various adult developmental stages, Millennial's youngest members will continue to be markedly shaped by historical events in the next 10 years or so to come. In 2000, when the eldest of the Millennial generation was 18, Howe and Strauss described the Millennials as having seven distinguishing traits. Time will tell if Millennials' persona will evolve from the following:

- Millennials are special, vital, and full of promise, not only for themselves, but for the future of our society and world.
- They are sheltered, having been smothered with safety rules and devices.
- They are confident as a result of their trust and optimism.
- They are team-oriented, having been raised on sports teams and group learning.
- They are achieving, the result of higher school standards and an instilled sense of accountability.
- They are pressured and feel the need to excel and do well.
- They are conventional, rather than rebellious.

Howe and Strauss' description of Millennials acts as one reference point for the current study, although the empirical research, summarized below, addresses generational differences, topics more important to the context of work.

Empirical research on generational differences at work

A handful of studies, summarized below, have investigated generational effects in the context of work, including differences in values, personality traits, and work attitudes.

Generational differences in work-related values

With regard to work-related values, empirical research suggests generations are more similar than different, and the differences that do exist are inconsistent and tend to contradict generational stereotypes. A cross-sectional study comparing Boomers and Gen Xers found work-related value rankings to be mostly similar, though differences included two contradictory findings: Boomers value learning new things and freedom from conformity more than Gen Xers, but Gen Xers value freedom from supervision more than Boomers (Jurkiewicz, 2000). In a sample of hospitality workers, a cross-sectional study found that Boomers value personal growth more than Gen Xers and Millennials, and found that Millennials value the work environment more than Boomers and Gen Xers. However, another study found that all three generations valued comfort and security, and professional growth equally (Chen & Choi, 2007).

Smola and Sutton (2002), using cross-sectional samples surveyed in 1974 and 1999, compared Boomers and Gen Xers and again found somewhat contradictory similarities and differences in work values. Although, differences included Gen Xers valuing early promotion more than Boomers, as well as having more of a 'me' orientation and less loyalty to the organization, Gen Xers also valued working hard, and associated working hard with one's worth more so than Boomers. Overall, Smola and Sutton found a general decline in work values in 1999 when compared to 1974 data, despite Gen X's higher work ethic scores.

Generational differences in personality

Research suggests that generations differ in personality, which may have important ramifications for work attitudes and other important work-related outcomes (Barrick, Mount, & Judge, 2001). Using cross-temporal meta-analysis, Twenge and colleagues identified a number of trends; several traits have been steadily increasing in college students across generations. Neuroticism has increased from Silents to Gen Xers (Twenge, 2000); self-esteem (Twenge & Campbell, 2001), extraversion (Twenge, 2001) and external locus of control (Twenge, Zhang, & Im, 2004) have increased from Boomers to Gen Xers; and narcissism has increased from Gen Xers to Millennials (Twenge, Konrath, Foster, Campbell, & Bushman, 2008). However, not all traits have shown a linear change; the need for social approval dropped sharply from Silents to late Boomers, but then increased slowly from Boomers to early Millennials (Twenge & Im, 2007).

Generational differences in work attitudes

Popular press often discusses generational differences in attitudes (cf. Trunk, 2007); therefore, we expected empirical research to support that work attitudes vary by generation. Generally defined, work attitudes are evaluative (cognitive) or emotional (affective) reactions to various aspects of work (Hulin & Judge, 2003). Despite the popular press, empirical research on generation's work attitudes is sparse and mixed. Cross-sectional contributions have found that Boomers exhibit lower job involvement and normative commitment, or commitment due to feelings of obligation, but higher continuance commitment, or commitment due to high costs of leaving, than their Gen X counterparts (Davis, Pawlowski, & Houston, 2006). Millennials exhibit a higher voluntary turnover rate than Gen Xers and Boomers, but lower turnover intentions (Cassidy & Berube, 2009), and Millennials and Gen Xers reported higher turnover intention than Boomers (Dudley, Burnfield-Geimer and Erdheim, 2009). These contradictory findings, especially regarding turnover, suggest more research is needed.

In the present study, we examine several work attitudes, including overall company and job satisfaction, turnover intentions, and satisfaction with pay and benefits, recognition, career development and advancement, and job security. Job satisfaction, including facets such as satisfaction with pay and benefits, recognition, and career development, is an evaluative or emotional reaction to job characteristics and an important outcome at work, and it is also moderately related to other important outcomes such as job performance (Judge, Thoresen, Bono, & Patton, 2001), turnover intentions and actual turnover (Tett & Meyer, 1993). Perceptions of job security are evaluative reactions to uncertain employment conditions, and are positively related to job satisfaction and job performance, and negatively related to turnover intentions (Sverke, Hellgren, & Naswall, 2002). Turnover intentions are withdrawal cognitions that predict actual turnover (Tett & Meyer, 1993). This study will examine the similarities and differences found between the generations on these important work attitudes.

In sum, there is a dearth of empirical generational research in which results have been both complementary and contradictory. Further, Millennials are absent from about half of the studies reported, which is not surprising given that

Millennials just recently entered the workforce, though the present study and this special edition will help in this matter. Empirical research also suggests generations are more similar than different in work-related values and differences are largely inconsistent. Despite the inconsistencies found in values and attitudes, a number of generational linear trends in personality exist. The present study seeks to add to this body of literature by examining generational differences in work attitudes while controlling for age and time period effects.

Obstacles inherent in generational research

Despite offering an intuitively appealing mechanism for social change, the problem of generations in research has been lamented for decades (Mannheim, 1952). Primarily, research on generational differences has been plagued with the "identification problem," the linear relationship between age, period, and generation resulting in the variables being inherently intertwined (Yang & Land, 2006; 2008).

The relationship between age, period and generation makes isolating the effect of a single variable, such as generation, difficult. An age effect is variation due to physiological growth, progression through developmental stages, and accumulation of experience. A period effect is variation due to historical events that occur at a specific point in time (e.g., war, technological advances). A generational effect is variation due to the shared experiences of the same age-group at the same period. Isolating the effect of generation, or controlling the effects of age and period, requires specific design and sampling methods, such as the approach utilized in the present study.

Of the studies reviewed, two research designs have been utilized to investigate generational differences: cross-sectional designs and cross-temporal meta-analysis. Cross-sectional designs, wherein multiple generations are compared in a sample selected at one period in time, yield age/generation effects (Costa & McCrae, 1982). In other words, while the effect of period is essentially held constant, the effects of age and generation are still confounded; the observed effect could be due to either age or generation. Cross-temporal meta-analysis designs, whereby independent samples of individuals of a particular age are compared at different periods, yield a period/generation effect. Using this approach, while the

observed effects are not due to age, generation and period are still confounded. While empirical research contributes to the line of inquiry, researchers should use caution when interpreting generational effects found in empirical studies that do not control for both age and period effects.

A concerted effort has been made to control for age and period, particularly in sociology and developmental psychology, using age-period-cohort (APC) models (cf. Mason, Mason, Winsborough, & Poole, 1973). However, the identification problem arises in the estimation of unique regression coefficients due to the perfect linear dependency between period, age and generation when these three variables are the same length (Yang & Land, 2008). For example, if period and age are known, then generation is also known: if period is 2010 and age is 30, then generation must be 1980. One solution to the identification problem is to use a hierarchical age-period-cohort (HPAC) model using repeated cross-sectional individual level data, the approach we used in the present study, which enabled us to model generations of virtually any length. For example, if we model generations as 20 years in length (e.g., 1961-1981) then generation is no longer a perfect linear transformation of age and period, which rectifies the identification problem (Yang & Land, 2008).

However, the issue then becomes how to group individuals into generations; when should a generation begin and how long should a generation be? Luckily, many generational theorists have hypothesized generations longer than one year, which aids in answering these questions, though these researchers have also acknowledged that the boundaries of a generation can be imprecise (Straus & Howe, 1991).

The present study

The present study seeks to contribute to the empirical literature on generational differences at work by examining generational effects on work attitudes while controlling for age and period effects. To do this, a HAPC regression model using repeated cross-sectional data was employed.

Although recent research offers some indication of potential generational effect hypotheses, it is difficult to derive specific hypotheses about generational effects on work attitudes due to the mixed empirical results and the lack of studies that control for age and period. The complexity and multi-faceted nature of accepted generational descriptions also do not easily lend themselves to the translation of generational characteristics into work attitudes (Howe & Strauss, 2000; Strauss & Howe, 1991). Therefore, this study employed a more exploratory approach, and will address two research questions:

- **Research question 1:** Is variance in work attitudes attributable to generation, controlling for age and period? In other words, are there generational differences in work attitudes?
- **Research question 2:** If the answer to RQ1 is "yes," then how are Millennials' work attitudes different from prior generations?

Sample and survey

The data are from the WorkTrends™ survey, an employee opinion survey that has been administered annually or biannually since 1985 via written (1985-2006) or online (2007-2009) media.[1] Respondents to the WorkTrends survey are randomly sampled from a panel of volunteer respondents residing in the United States. When WorkTrends has been administered online, the survey vendor has built and maintained the panel through a process of online recruiting using website banner advertisements and links, enabling potential panelists to "opt-in." The panel vendor authenticates the individual's identity, name, and address through the country's postal service and checks to make sure they have not already registered. The panelists provide demographic information that enables the vendor to select individuals into a pool of qualified participants from which the random sample for this study is drawn. The vendor's US panel currently has more than 3.6 million participants. Respondents cannot take the survey more than once, and serial responders who answer surveys too quickly or consistently (i.e., "straightline," or answer questions the same) are removed from the study's data and from the panel.

For this study, respondents were screened for a) full-time employment (over 32 hours/week), and b) organization size (over 100 employees). The data are diverse in terms of gender (51.3 percent male), industries (manufacturing = 25.1 percent, electronics = 6.5 percent, healthcare services = 22.4 percent, retail = 14.7 percent, banking and financial services = 7.2 percent, government = 24.0 percent), and jobs (management = 23.3 percent, technical and professional = 30.1 percent, skilled trades = 5.4 percent, sales and service = 15.7 percent, clerical = 15.1 percent, laborers and operators = 10.5 percent). The age variable, which was semi-categorical in that "under 18" and "over 65" were defined as categories and the remaining age years were continuous, also demonstrated diversity (grouped into age ranges, frequencies were 18-25 = 5.5 percent, 26-35 = 23.2 percent, 36-45 = 29.0 percent, 46-55 = 28.2 percent, 56-65 = 12.9 percent, 65+ = 1.3 percent), enabling the dummy coding of generation as explained below. Limitations to this sampling methodology are addressed in the Limitations section.

Generations

As previously mentioned, we used the generational taxonomy of Strauss & Howe (1991; Howe & Strauss, 2000). We have data that span five generations' work careers: GIs, Silents, Boomers, Gen Xers and Millennials. To determine generation, we subtracted age from the period (year surveyed) to obtain the birth year. Then, we used the generation birth years provided by Strauss & Howe (1991; 2000) to assign each individual to a generation (*Table 2*). The majority of our data are Boomers and Gen Xers, which is not surprising given they represent the largest portion of the work force in the years surveyed (Giancola, 2006).

Where individual level sample size allowed, we divided generations into early, middle and late sub-groups to increase our group level generation sample size (from 5 to 12), which enabled us to use a random effects model instead of a fixed effects model. In a random effects model, the data are treated like a sample from the population of generations, and the generation effect is allowed to vary across periods. This enabled us to make broader inferences about the generation effect, not limited to the specific generations represented in our sample data (Yang & Land, 2008).

Generation name	Birth cohort years[a]	N	Percent
GI	1901-1924	513	0.5
Early silent	1925-1930	1,584	1.4
Middle silent	1931-1936	3,743	3.3
Late silent	1937-1942	8,068	7.1
Early boomers	1943-1948	14,940	13.1
Middle boomers	1949-1954	20,009	17.6
Late boomers	1955-1960	20,956	18.4
Early generation X	1961-1967	19,582	17.2
Middle generation X	1968-1974	12,163	10.7
Late generation X	1975-1981	7,651	6.7
Early millennials	1982-1986	3,408	3.0
Late millennials	1987-2003	1,087	1.0

Note: Total N = 113,704. [a]Adapted from Strauss and Howe (1991)

Table 2: Sample size by generation

Work attitudes

Items measuring work attitude variables that have been consistently measured across the repeated administrations of the WorkTrends survey were included in the present study in order to yield the optimium sample size and number of generations (reported in *Table 2*).

Criterion variables chosen for the present study are overall company and job satisfaction, turnover intentions, and satisfaction with pay and benefits, recognition, career development and advancement, the work itself, and job security. Criteria are measured by either one or two items on one of three response scales (*Table 3*). These items originated in 1985 for the utilitarian purpose of providing survey norms, and were selected to match items deemed important by the Mayflower group, a well-regarded organizational survey data and research consortium. These items were replicated each year by IBM in the WorkTrends survey. Internal consistency reliability for scales with more than one item is presented in *Table 4*.

Criterion	Item(s) (paraphrased/abbreviated)	Likert scale (5 pt.)
Overall company and job satisfaction	Rate your current, overall satisfaction in your company	Satisfaction
	Rate your satisfaction with your job	Satisfaction
Satisfaction with pay and benefits	Rate your total benefits program	Poor to Good
	Rate your amount of pay	Poor to Good
Satisfaction with recognition	Rate satisfaction with the recognition you get for your work	Satisfaction
Satisfaction with career development and advancement	Rate satisfaction with your opportunity for career development within your company	Satisfaction
	Rate satisfaction with your opportunity to get a better job within your company	Satisfaction
Satisfaction with the work itself	Job makes good use of skills and abilities	Agreement
	Work gives a feeling of personal accomplishment	Agreement
	Like the work	Agreement
Job security	Confidence in the future of the company	Agreement
	Rate the company in providing job security for people like you	Poor to Good
Turnover Intentions	Seriously considering leaving my company within the next 12 months (N/A designated for planned retirement or leave)	Agreement

Table 3: Worktrends items

	Mean	SD	1	2	3	4	5	6	7
Overall company and job satisfaction	3.58	1.01	*.88*						
Satisfaction with pay and benefits	3.57	.94	.48	*.68*					
Satisfaction with recognition	3.21	1.17	.70	.44	-				
Satisfied with career dev. and advancement	3.13	1.10	.61	.41	.57	*.92*			
Satisfied with work itself	3.97	.88	.59	.30	.45	.39	*.88*		
Job security	3.61	1.00	.64	.50	.54	.52	.41	*.73*	
Turnover intention	2.43	1.36	-.52	-.33	-.37	-.40	-.35	-.39	-

Table 4: Descriptive statistics and correlations for all criteria

Analysis

The data were analyzed using a cross-classified random effects hierarchical linear model (CCHLM), (Radudenbush & Bryk, 2002; Yang & Land, 2006; 2008) using HLM 6.04 software (Raudenbush, Bryk, & Congdon, 2007). This HLM design has been called a hierarchical age-period-cohort (HAPC) regression model, and has been recommended for the analysis of generational effects using repeated cross-sectional data (Yang & Land, 2006; 2008). HLM is used when individuals

are nested in some group level variable, such as employees nested in work groups. In the case of generational research however, more than one group level variable exists, and individuals are simultaneously nested in both group level variables: period and generation. In HAPC, we can classify individuals simultaneously, or cross-classify into independent period—generation groups, (Yang & Land, 2006) which must be done in, order, to properly estimate the separate effects of period and generation (Raudenbush & Bryk, 2002). *Table 5* defines and reports the sample sizes of the groups cross-classified by period and generation.

HLM is appropriate for these data because individuals in the same generation or period group are expected to be similar in their responses. If this similarity is not modeled, errors will be correlated, which leads to underestimated standard errors and potentially inaccurate statistical inferences. Further, and more importantly, this model enables us to estimate separate age, period and generational cohort variance components. In an HAPC regression model, age is an individual level variable.

For the purposes of the present study, we are primarily interested in estimating (as opposed to also explaining) the separate variance components for generation, period and age. Therefore, a relatively simple model with only age (grand mean centered) included, as an individual level predictor was fit to the data.

	GI	E. Silent	M. Silent	L. Silent	E. Boomer	M. Boomer	L. Boomer	E. Gen. X	M. Gen. X	L. Gen. X	E. Mill.	L. Mill.	Total
1984	75	148	138	129	191	236	173	32	0	0	0	0	1,122
1985	122	260	272	392	500	509	480	116	0	0	0	0	2,651
1986	91	227	269	379	443	508	407	128	2	0	0	0	2,454
1988	34	171	225	354	449	508	438	213	7	0	0	0	2,399
1990	32	188	452	635	797	853	845	692	32	0	0	0	4,526
1993	33	123	435	736	1,039	1,049	1,117	780	161	2	0	0	5,475
1994	33	108	395	781	1,171	1,207	1,284	1,161	257	5	0	0	6,402
1995	45	90	407	803	1,292	1,407	1,374	1,241	331	23	0	0	7,013
1996	18	68	350	725	1,130	1,297	1,287	1,444	504	45	0	0	6,868
1997	15	56	248	642	1,203	1,223	1,210	1,222	519	54	0	0	6,392
1999	8	31	162	544	963	1,167	1,090	1,068	554	99	0	0	5,686
2001	3	20	97	455	946	1,246	1,277	1,277	790	233	7	0	6,351
2002	4	22	106	414	957	1,245	1,245	1,197	832	310	34	0	6,366
2003	0	25	60	313	838	1,236	1,200	1,165	802	436	45	0	6,120
2004	0	18	59	257	810	1,252	1,342	1,235	1,005	490	93	0	6,561
2005	0	22	49	230	782	1,263	1,386	1,255	986	531	105	4	6,613
2007	0	0	0	136	627	1,399	1,732	1,939	1,877	1,702	750	111	10,273
2008	0	3	6	77	401	1,223	1,482	1,717	1,806	2,036	1,199	484	10,434
2009	0	4	13	66	401	1,181	1,587	1,700	1,698	1,685	1,175	488	9,998
Total	513	1,584	3,743	8,068	14,940	20,009	20,956	19,582	12,163	7,651	3,408	1,087	113,704

Note: E. = Early. M. = Middle. L. = Late. Gen. = Generation. Mill. = Millennial.

Table 5: Period by generation cross-classification

The level 1 model is: $\gamma_{ijk} = \beta_{ojk} + \beta_1 AGE + e_{ijk}$

The level 2 models are: $\beta_{ojk} = \gamma_o + u_{oj} + v_{ok}$

The combined model is: $\gamma_{ijk} = \gamma_o + \gamma_1 AGE + u_{oj} + v_{ok} + e_{ijk}$

For $i = 1,…, n_{jk}$ individuals in period j and generation k; $j = 1,…,18$ periods (survey years); and $k = 1,…,12$ generations; γ_{ijk} = the criterion score the ith individual in the jth period and k^{th} generation; n_{jk} = the cell mean criterion score (for each period – generation group); γ_o = grand mean criterion score (across periods and generations); u_{oj} = the residual random effect of period j, which is assumed normally distributed with mean 0 and variance τ_u; v_{ok} = the residual random effect of generation k, which is assumed normally distributed with mean 0 and variance τ_v; β_1 and γ_1 = fixed effect coefficient for age; and e_{ijk} = the random individual effect, which is assumed normally distributed with mean 0 and within-cell variance σ^2.

The HAPC regression model partitions the total criterion variance into within-cell (σ^2) and between-cell components (τ_u and τ_v). Variance accounted for by age is modeled at the individual level, and is subsumed under the within-cell variance component (σ^2). Therefore, the between-cell variance component represents variation in the criterion due to generation (τ_v) and period (τ_u), controlling for age. Using the between-cell variance components, three types of intraclass correlations can be computed:

- The total percent of predictable variance that lies between cells.
- The intra-period correlation, or the correlation between individuals who belong to the same period, but different generations.
- The intra-generation correlation, or the correlation between individuals who belong to the same generation, but different periods.

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The intra-generation correlation is the coefficient of most interest to the present study because it represents the percent of predictable variance attributable to generation alone, holding period and age effects constant (Raudenbush & Bryk, 2002).

Results

Means, standard deviations and correlations for all criteria are presented in *Table 4*. Age was a statistically significant predictor using t-tests ($p < 0.05$) of overall company and job satisfaction, turnover intentions, and satisfaction with pay and benefits, career development and advancement, the work itself, and job security, but not satisfaction with recognition. The individual, period and generation variance components and the intra-generation correlation for each criterion are presented in *Table 6*. A statistically significant generation variance component indicated that generation accounts for variance in work attitudes when controlling for age and period. All generation variance components for all criteria are statistically significant using a chi-square test ($p < .05$), which addresses RQ1. In other words, we found generational differences in work attitudes when controlling for age and period.

The magnitude of the generational effect was interpreted by inspecting the intra-generation correlations. Generation accounted for 1.9 percent of the variance in satisfaction with career development and advancement, 1.1 percent of the variance in overall company and job satisfaction, 1.5 percent of the variance in satisfaction with recognition, 1.4 percent of the variance in job security, 0.08 percent of the variance in turnover intentions 0.06 percent of the variance in satisfaction with the work itself, and 0.03 percent of the variance in satisfaction with pay and benefits. While no convenient rule of thumb (cf. Cohen, 1992) exists for HLM variance component effect sizes, it is reasonable to say these effect sizes are small.

We evaluated the relative contribution of generation as a predictor of work attitudes by examining the individual, period and generation variance components: the larger the generation variance component, the greater the contribution of generation. Note in *Table 6*, the individual variance components were substantially larger than both the period and generation variance components. This suggests that individual level variables are much stronger predictors of work attitudes than are period or generation.

Criterion	σ^2	τ_u	τ_v	ρ_g
Company and job satisfaction	1.00558	0.00632	0.01113	0.0109
Satisfaction with pay and benefits	0.87479	0.00634	0.00024	0.0003
Satisfaction with recognition	1.34683	0.00740	0.02018	0.0147
Satisfaction with career development and advancement	1.18930	0.00479	0.02253	0.0185
Satisfaction with the work itself	0.76193	0.00389	0.00049	0.0006
Job security	0.98389	0.01553	0.01396	0.0138
Turnover intentions	1.76995	0.01896	0.00139	0.0008

Note: σ^2 = individual variance component. τ_u = period variance component. τ_v = generation variance component. ρ_g = intra-generation correlation. Chi-square tests revealed variance components are statistically significant (p < .05).

Table 6: Variance components and intra-generation correlations

Furthermore, while all of the generation variance components were statistically significant, not all were practically significant. Specifically, the intra-generation correlations indicated that generation accounted for only 0.03 percent of the variance in satisfaction with pay and benefits, 0.06 percent of the variance in satisfaction with the work itself, and 0.08 percent of the variance in turnover intentions, all of which are arguably negligible. Examination of the intra-generation correlations suggests that the contribution of generation, in terms of variance accounted for, varies by work attitude. Generation clearly contributes least to turnover intentions, satisfaction with pay and benefits, and the work itself, while it contributes most to overall company and job satisfaction, and satisfaction with recognition, career development and advancement, and job security.

To address RQ2, we examined the residual random effects of generation for all work attitudes. Residual random effects of generation are the contributions of each separate generation, controlling for age and period. Trends across generations in turnover intentions, and satisfaction with pay and benefits and the work itself were not examined because generation accounts for negligible variance. The trends across generations in overall company and job satisfaction, satisfaction with recognition, career development and advancement, and job security are clearly visible in *Figures 1* through *4*. All trends examined were curvilinear, exhibiting a u-shape.

Figure 1 illustrates the trend across generations in overall company and job satisfaction, in which levels sharply decreased from GIs to late Boomers and then increased steadily from late Boomers to late Millennials, with Millennials' overall satisfaction higher than average. *Figure 2* illustrates the trend across generations in satisfaction with recognition, in which levels sharply decreased from GIs to early and middle Gen X and then increased to late Millennials; Millennials again scored above average. In the satisfaction with career development and advancement trend (*Figure 3*), GIs were slightly above average, and levels gradually decreased from GIs to late Boomers and then sharply increased from late Boomers to late Millennials.

Millennials were substantially higher than average in terms of satisfaction with career development and advancement compared to prior generations. *Figure 4* illustrates the trend across generations in job security, in which Millennials exhibited average to slightly above average satisfaction. Their score was higher than that of the Silents and Boomers, but lower than that of the GIs. Comparing Millennials' levels of satisfaction across *Figures 1-4*, the largest differential from the grand mean was seen in their satisfaction in career development and advancement, followed in decreasing order by recognition, overall company and job satisfaction, and job security.
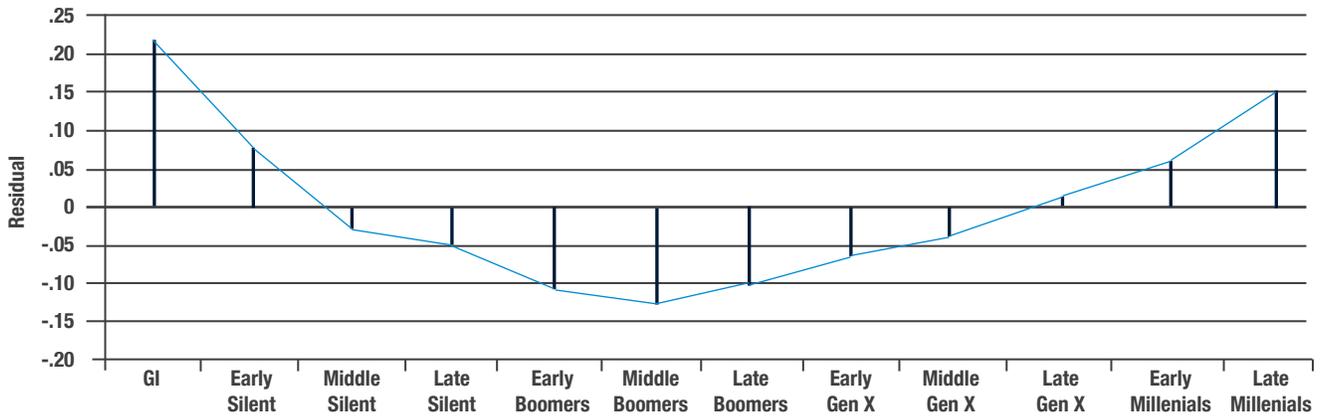
Figure 1: Generational differences in overall company and job satisfaction
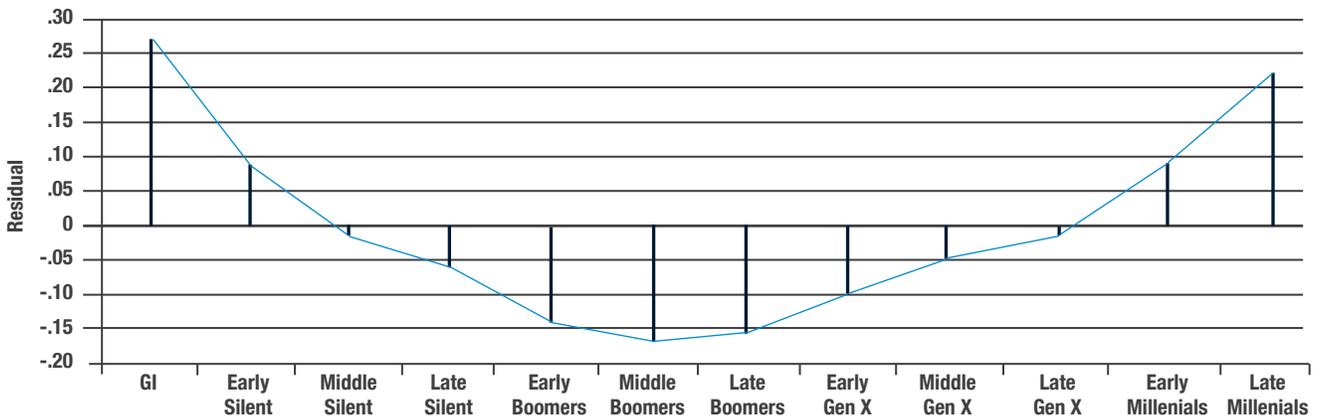
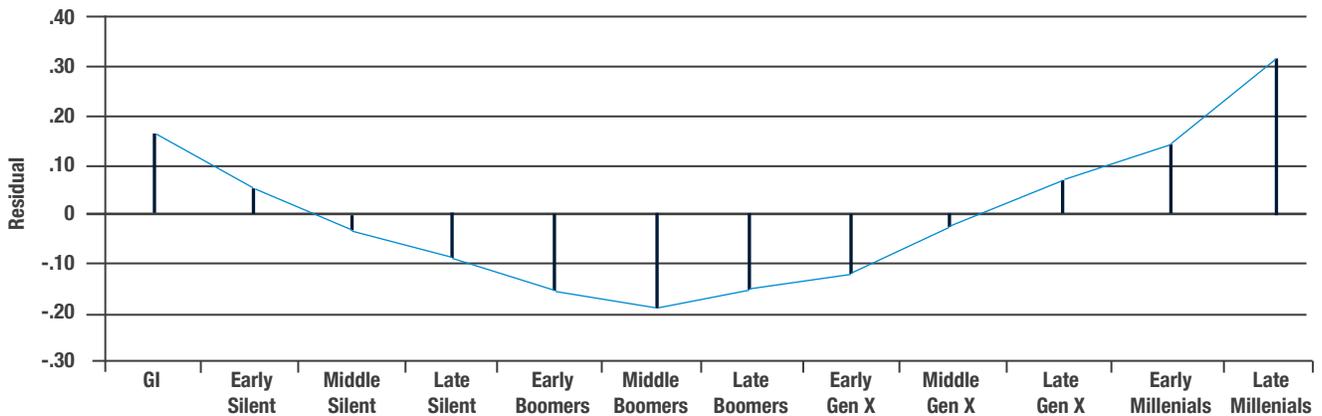*Figure 2*: Generational differences in satisfaction with recognition

10

Figure 3: Generational differences in satisfaction with career development and advancement
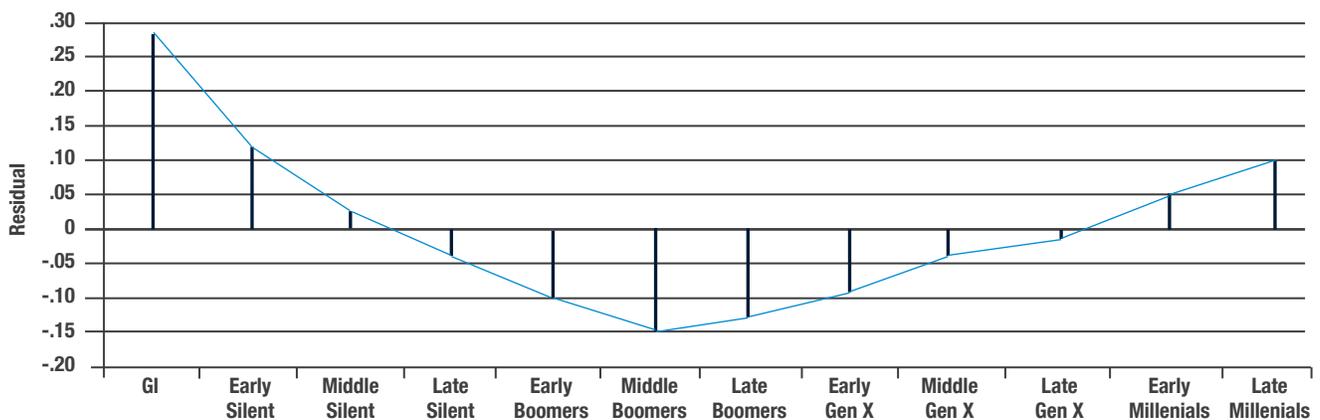

Figure 4: Generational differences in job security

Discussion

The consternation new generations' attitudes and behaviors cause for older generations and vice versa is cyclical and predictable. In 1965, The Who recorded "My Generation," lamenting; "People try to put us d-down, Just because we get around; Things they do look awful c-c-cold, I hope I die before I get old." (Townshend, 1965a): harsh words sung by Boomers, written when Pete Townshend was 20 years old. This song vocalizing the angst felt by young people was deemed the 11th greatest song of all time by *Rolling Stone* magazine (500 Greatest Songs, 2004), reflecting the salience of the topic. Green Day released a cover of the song in 1991 (Townshend, 1965b), and Hillary Duff covered it in 2004 (Townshend, 1965c). Boomers, Gen Xers, and Millennials alike: generations can not seem to understand each others' choices. This topic has been at the headwaters of social change throughout recent history, and continues to be a catalyst for dialogue, debate and disagreement today.

Despite the raw emotion of intergenerational conflict, previous research examining generational effects on work-related variables, such as work attitudes, work values and personality has largely been unable to distinguish generation from both age and period effects. Regarding RQ1, we demonstrated that small generational differences exist, at least with regard to certain work attitudes after controlling for age and period effects. The consensus from our review of the empirical literature is that generations are more similar than different at work. The present study concurs, given the statistically significant, but practically small amount of variance attributable to generation relative to individual level variables, though some interesting differences do exist.

After confirming the existence of generational differences, we turn to RQ2; when practically significant differences exist, how are Millennials different from prior generations in their work attitudes? Since this special edition is focused on Millennials, the discussion is tailored accordingly. Given the relative dearth of previous research done on generational differences in work attitudes, potential explanations for the findings are posed below, which are in need of substantiation as noted in the discussion of future research.

Similarities

The current study concurs with previous work purporting that generational differences might be re-named "generational similarities." Although statistically significant, differences were practically negligible for three work attitudes: satisfaction with the work itself, satisfaction with pay and turnover intentions.

Although many changes have happened in US industries that have fundamentally altered the nature of work since WorkTrends data collection began, such as the shift from production to the service sector, employees across generations are similarly satisfied with their jobs; they like their job, feel a sense of personal accomplishment, and report that their skills are being put to good use. A possible reason for this finding may be that the basic process of becoming employed and navigating a career has remained largely unchanged. People, independent of generation, feel similarly satisfied, perhaps indicating that they continue to select jobs according to what they like to do, and change jobs when they are dissatisfied.

Satisfaction with pay and benefits also demonstrates practical similarity among the generations. Given that this is the foundational agreement between employer and employee, it is likely that previous and future generations will continue to seek positions that either pay them according to their expectations, or change their expectations to meet their current compensation. Feelings of unjust pay certainly do occur, but despite the labor movement being a potential catalyst of generational differences, the work-for-pay contract has remained unchanged, potentially explaining the lack of differences in these results.

Due to the decrease in organizational tenure after controlling for age as found in a post hoc regression analysis of this dataset ($\beta = -0.12$, $p < 0.05$), we might expect that more recent generations have adjusted their tenure expectations and are more likely to be actively considering leaving their position. Not so, according to this study; the generations that have hardly ever known 20 year tenures, demonstrate the same level of turnover intention as elder generations, indicating that "job-hopping" is not a generational trait. It is likely that an employee's intention to leave the organization in the next 12 months has more to do with individual circumstances than global notions of likely tenure with an organization.

Differences

This study tentatively acknowledges that generational differences in fact, do exist in the work attitudes studied here. However, the four work attitude variables discussed below demonstrated that generational affiliation accounted for 1-2 percent of the variance, with the largest finding at 1.8 percent. Although these values are statistically significant and, together, constitute a different group of results reflecting values substantially larger than the variance accounted for by the attitudes we deemed practically similar, it could be argued that 1 percent variance is still a very small portion of the total variance in these work attitudes. The ensuing discussion of differences and corresponding interpretation should be tempered with this caveat in mind.

Overall company and job satisfaction

These data demonstrate a slight increase in the overall satisfaction of Millennials' when compared with Boomers' and Gen Xers' lower scores. Overall company and job satisfaction is more correlated with the other criteria in this study ($r > 0.6$), demonstrating positive manifold among work attitudes (Harrison, Newman, & Roth, 2006), which could explain the consistency of the curvilinear relationship between this more global construct and the criteria below.

Job security

Perceptions of job security declined from GIs to late Boomers and then slowly began to improve, with Millennials feeling as satisfied with job security as early Silents. Job security is another topic that has been hotly debated, some going so far as to insinuate that job security is dead (Kleinfield, 1996). One explanation is that Millennials do indeed feel more secure in their present position, but with reductions in force occurring with seemingly increased frequency (Neumark, Polsky, & Hanson, 1999), this explanation seems counter-intuitive.

In these data, we may be witnessing a fundamental shift in how job security is defined by generations, otherwise known as gamma change (Golemiewski, Billingsley, & Yeager, 1976). Although mass layoffs have happened throughout industrialized history, most notably during the Great Depression, more recent generations may be conceptualizing job security differently given the frequency and prevalence of layoff events in the last decade (US Bureau of Labor Statistics, 2009). If GIs and Silents conceptualized job security as "cradle-to-grave," Boomers and Gen Xers may have struggled to redefine their expectations as industry changed its practices, perhaps explaining their lower scores. Millennials may have entered the workforce with very few expectations, and, therefore, are satisfied with the job security they do enjoy even if it is more akin to confidence in keeping their position through the next round of downsizing than a 25-year tenure and a pension.

Career development and advancement

According to these results, Millennials are feeling more satisfied with their opportunity to get a better job and develop their career at their organization than all previous generations. We might be tempted to attribute the finding to their youth and the inherent increased opportunity in having a long career ahead as compared to being in the sunset of one's career, but we would be remiss; age was controlled at the individual level. We may be witnessing one of the effects of the increased levels of optimism attributed to Millennials by Strauss and Howe (2000).

Given our post hoc analysis mentioned above revealing that average organizational tenure has dropped, we may be witnessing Human Resources (HR's) attempts to improve retention by using tools such as career pathing: a tool more advanced than the linear management career ladders of earlier decades. The shift to flatter organization hierarchy structures may also act as impetus to mature the practice of career development conversations and might offer Millennials more lateral career options. Employees of a younger generation would experience this shift in industry structure and practice differently since they have their entire career span to plan and may be more flexible in their career direction at the beginning of their career path than more seasoned employees.

Recognition

In Millennials' satisfaction with recognition, Silents, Boomers and Gen Xers demonstrate a decrease in satisfaction in this area as compared to GIs and, to a slightly lesser extent, late Millennials. Recognition at work has been another area of media attention with claims that Millennials, being brought up by parents and teachers that celebrated mediocrity, now expect inordinate amounts of praise at work (Safer, 2007). If true, perhaps these data could be reflecting Millennials' demand for, and consequently receiving of more recognition. On the other hand, mass media could be influencing management styles, enabling Millennials to enjoy an increase in recognition for their work.

Alternatively, if we accept the premise that an increased expectation for recognition sets Millennials' standard for recognition higher, and if we believe that employees across generations receive the same level of recognition, these data would dispute the stereotype. We would expect to see a lower satisfaction rating for recognition for Millennials if their gap between actual and ideal recognition received is more disparate than other generations' perceptions.

Another explanation may reflect a change in organizational reward systems. As industry moves to "pay for performance," rewards are less contingent on attendance and meeting basic job requirements. If the generation employed during this shift experienced an increase in performance feedback and recognition of good performance, generations that are more recent would have witnessed an influx in feedback for exceptional work.

In sum, the principal finding of our study is that generational effect sizes are small, which suggests generations are more similar than different. When reviewing inter-generational trends, these results demonstrated a consistently curvilinear relationship in the work attitude variables in which generational differences accounted for more than 1 percent of the variance: higher overall company and job satisfaction, and satisfaction with job security, recognition, and advancement and development. There are many possible reasons as to why these trends exist, some of which have been posited here. Additional research is needed to truly understand generational dynamics at work.

Implications for practice

How to manage for generational differences has been a hot topic for a more than a decade, with significant popular press attention being devoted to the subject. Book titles include words like "collide" and "clash," giving readers the impression that generational differences causes conflict in need of management. This study disagrees, at least to the extent that the differences in work attitudes are dramatic. Given the small, sometimes-negligible percent of variance accounted for by generation, in the work attitudes studied, HR professionals, leaders and managers would be better served by identifying individual differences, including age, which might explain the discordance they are witnessing in their workforce.

However, this study did demonstrate that certain work attitudes are influenced, in some small part, by perspectives unique to generations, specifically overall company and job satisfaction, and satisfaction with recognition, job security, and career development and advancement. According to these results, Millennials are more satisfied in these areas than in previous generations, which is good news, but still may indicate that a paradigm shift is required. HR professionals, leaders and managers, faced with this happy predicament, might ask themselves, "How has a dissatisfied workforce shaped and influenced our policies and practices, and in what ways can we foresee the need to change to accommodate more positive and upbeat employees?" Additionally, we might explore why Millennials are more satisfied; for example, are they naturally optimistic, as Strauss and Howe (2000) contend, or are they more active agents in shaping their environment, more open about asking for what they need, or do they show more perseverance in getting their needs fulfilled? In these areas, it would behoove HR and management to investigate the generational differences in their own organization, coupling their organization-specific results with the results of this study and making changes to relevant policies or practices.

Of the four work attitudes examined for trends, Millennials perceptions' of job security may be an area for intervention given the relatively more positive scores of the other three attitudes. Independent of the definition of job security, whether it be the traditional "cradle-to-grave" mentality or just feeling confident about not being included in the next round of layoffs, organizational leaders would be well-served by offering employees some level of stability in their position. According to previous research, offering either short-term or longer-term security may bolster employees' commitment to the organization and dissuade workers from engaging in job seeking behaviors, as well as improve performance and motivation levels through job involvement (Sverke, Hellgren, & Naswall, 2002).

In sum, the conflict leaders, managers and HR feel in their organization is real, but attributing the conflict to generational differences may mask the true cause. Practitioners and leaders can be skeptical of reports that Millennials, as a generational group, are malcontents; this research demonstrates that the opposite is more likely to be

true. However, like virtually any group of workers, Millennials can be dissatisfied at work. In solving the riddle of their discontent, practitioners should consider looking past generational differences, investigating the intersection of organizational culture, structure, practices, and individual differences in their organization.

Limitations

There are four primary limitations to the present study. First, slightly less than half of the Millennial generation has turned 18 years old, are out of traditional secondary school, and are more likely to be eligible full-time employees at the close of our data collection in 2009. A lesser percentage has graduated with a four-year college degree. Therefore, it is currently unknown what historical events will come to pass that will shape the Millennial generation, and to what extent the Millennials at-large will influence the generation's unique perspective once they enter the workforce. The current study can only reflect the perspectives of Millennials who worked full-time in 2009 and prior. Similarly, the sample is limited by the age of the GI generation when data were collected, the eldest of which were not surveyed. This limitation is theoretically less of an issue if we accept the premise that a generation's collective identity is largely developed in their younger, more formative years (Baltes, Reese, & Lipsitt, 1980). If generational identity is formed before and during younger adulthood, then the working-age, but younger half of GIs would adequately represent the entire generation's attitudes.

Second, the WorkTrends survey randomly selects its sample by way of a volunteer panel of respondents. Since these survey participants are volunteering their inclusion, we should note the possible presence of volunteer bias. That said, the final, randomly selected WorkTrends sample is checked for population representativeness, and reflects a wide variety of industries, job types, ages and ethnicities, and equally represents men and women. WorkTrends' annual samples are large, starting at 1,122 in 1984 and growing to 9,998 in 2009 (see Total column in *Table 5*).

Third, the current study has limited generalizability due to its sample of US employees who worked full-time in organizations who employ more than 100 workers. Findings do not extend to other countries or cultures, which may have different generational delineations and definitions, as discussed in the future research section. Similarly, our review was focused on empirical studies that used samples from the US. While generation researchers have called for empirical studies that examine cross-cultural generation effects (Macky, Gardner, & Forsyth, 2008), it is beyond the scope of this study to examine the generalizability of generation effects across cultures. Results also cannot be applied to part-time workers, or to employees in smaller organizations.

Fourth, due to the necessity of using an historical dataset, the selection of criterion variables and their measurement was limited. Two variables are measured by a single item (satisfaction with recognition and turnover intentions) and may exhibit lower reliability.

Future research

The present study found small, but significant differences between the generations. A recommendation to pursue this line of inquiry is thus warranted. Given the methodological complexities presented by generational differences and its interdependence on age and period, future research should strive to work with data in which age and period can be controlled. Controlling for age by concentrating on similar ages in each generation, as Twenge's (2000) work has done, is one such approach. Working with data collected over time also presents opportunities for generational research, akin to the present study.

For research to be pursued in this area, either historical data sets need to be mined or purposefully, long-term data collection needs to be planned. Currently, topics are limited to those addressed in historical datasets, representing one reason that few variables have been examined academically. Similarly, the present study covers a select few work attitude variables.

Other variables, of interest to organizations, need further investigation, such as additional work on personality, turnover intentions, learning styles, or propensity to learn. Some of these variables are subsumed in the present study as individual variables and controlled for en masse. Future research could parse out individual variables of interest, such as age, job level or personality.

As addressed in the limitations discussion, research on Millennials in the workforce has an inherent age range limitation. Of course, this is a quandary; by the time we can research the entire generation in the workforce, the eldest of the Millennials will have invested 21 years into their career and will be managing their younger counterparts. In any case, future research should examine generational differences after more Millennials have entered the workforce. This requires consistent data collection over time, and simply waiting for years to pass and Millennials to age.

Future research could address the lack of cross-culture generalizability of this study. Generations are defined by historical events, and when these events are global and experienced across cultures similarly, such as world wars, the experience has the potential to define generations across cultures. However, each culture has unique events that affect generational characteristics. Therefore, generational differences research should be conducted in cultures around the world, and researchers should investigate the feasibility of adopting common generational delimiters across countries and cultures to enable more complex research models investigating the interaction between culture and generation.

The present study gave some indication that differences in levels of satisfaction exist in generation, characterized by the groups "early," "middle," and "late" in this study. Given the decades of employees' careers for which generation accounts, more research is needed to understand differences in generational designations.

Future research could investigate explanations for this study's small generational effect sizes. While this finding could be representative of real generational phenomena, an alternative explanation is, throughout time, HR, managers, and organizational leaders consciously or intuitively tailor interventions to meet the unique needs presented by each generation, separate from age-related needs, thus reducing differences in work attitudes. Exploring the extent, to which managerial and HR practices have evolved over time to meet the known needs of the generations at work, would be a useful addition to this line of inquiry.

Findings in this study need additional research conducted to prove or disprove the explanatory hypotheses and postulations suggested in the discussion section. For example, if data are available, future research could examine differences in generations' implicit definitions of job security, examining whether Gen Xers and Millennials define it differently, and if the concept, as GIs, Silents, and Boomers have defined it, is defunct. Going forward, research could examine the changing nature of the concept of job security with the Millennials and beyond, specifically with regard to its relationship to expected organizational tenure and the employer-employee psychological contract. Finally, replication would be advised for this research on work attitudes, specifically the one-item measures used in this study.

Summary

This study contributes to the sparse empirical literature on generational differences at work. Generational stereotypes are rampant, yet not much data exist to support or refute them. This study confirms past conclusions; generational differences at work are, overall, small, at least with regard to work attitudes. Where differences exist, we found a consistent curvilinear generational trend, with Millennials feeling more positively than the elder generation members still working today. This article also highlights important, yet neglected, issues in the study of generational differences at work, such as the identification problem. With age, period and generational effects appropriately modeled, we may see more convergence in the empirical literature on generational differences at work.
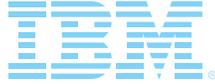
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1 Kenexa WorkTrends Survey. 2012. In its current form, WorkTrends is a multi-topic survey completed online by a sample of employees representative of a country's working population in terms of industry mix, job type, gender, age and other key organizational and demographic variables. In most countries, survey takers must be adults who work full-time for an organization of 100 employees or more; this threshold drops to 25 employees or more in countries with smaller economies or hard-to-reach populations. The survey has over 200 items that cover a wide range of workplace issues, including senior leader and direct manager effectiveness, recognition, growth and development, employee engagement, customer orientation, quality emphasis, innovation, corporate social responsibility, workplace safety, work stress and performance confidence. In 2012, over 33,000 employees were surveyed, representing 28 countries

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