Personality as a moderator of monitoring acceptance☆

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Abstract

Organizational efforts at monitoring employee activity must be perceived as respecting privacy and fairness. However, even when monitoring systems are designed to do so, employees might not be willing to accept and use monitoring technologies. This study examined whether personality moderated the relationship between workplace monitoring system characteristics, fairness, privacy and acceptance. Six hundred and twenty-two participants were asked to provide their assessment of an awareness monitoring system (that determines employee availability to interact with geographically distributed colleagues) and to complete a five-factor measure of personality (i.e. extraversion, agreeableness, emotional stability, openness to experience, and conscientiousness). Results indicated that emotional stability and extraversion altered the relationships between the paths in a model of monitoring acceptance. Specifically, people who scored lower in extraversion and emotional stability were less likely to endorse positive attitudes toward monitoring, even with privacy and fairness safeguards in place. Implications for the expansion of models of workplace monitoring and for the practice of monitoring in organizations are discussed.
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1. Introduction

Electronic monitoring of employee activities is becoming increasingly pervasive in organizations (Alge & Ballinger, 2001). Although numerous studies have examined the effects of electronic performance monitoring (EPM) on outcomes such as personal control (Stanton & Barnes-Farrell, 1996), productivity (Aiello & Kolb, 1995; Larson & Callahan, 1990), privacy (Alge, 1999), fairness (Ambrose & Alder, 2000), and performance (Ambrose & Kulik, 1994), very few studies have looked at individual differences in predicting monitoring outcomes. Instead, researchers have investigated the influence of the situation (being monitored) and resulting outcomes (attitudes and behaviors). What is missing is information on individual characteristics. Thus, the question addressed in this investigation is whether individual difference variables—specifically personality variables—moderate the relationships between monitoring system characteristics (e.g. the frequency of monitoring) and outcomes such as perceptions of privacy, fairness and acceptance. Addressing this question will add an important piece of information to our understanding of reactions to monitoring.

Although personality characteristics relate to important organizational outcomes (Funder, 2001), few studies have examined them in a monitoring context. One exception is a study by Douthitt and Aiello (2000): monitored individuals who were higher in negative affectivity reported lower levels of task satisfaction. Further, Robie and Ryan (1999) found that conscientiousness only predicted task performance when participants knew that they were being monitored. Finally, in a qualitative field study of video-based monitoring, Webster (1998) found that introverts were less likely to use these systems. Nevertheless, we still know very little about the moderating effects of individual difference variables on monitoring outcomes. Consequently, researchers such as McKnight and Webster (2001) and Stanton (2000) have called for further investigations into how personality variables might influence perceptions and attitudes toward monitoring. The present study seeks to examine these effects.

1.1. Personality and monitoring system acceptance

This investigation concerning the moderating effects of personality focuses on reactions to awareness monitoring systems. These new monitoring technologies are being designed to enhance communications between geographically distributed colleagues (Lee & Girgensohn, 2002), rather than to measure job performance as with EPM. These awareness technologies operate on the principle that if the employee is aware of when his/her geographically distributed colleague is available to interact, the employee can be more effective in communicating with that colleague. Thus, a typical awareness monitoring system might capture a video-based image of the distributed colleague and transmit this image to the co-worker interested in engaging in communication (e.g. Erickson & Kellogg, 2000).

Awareness systems have been implemented in organizations such as NYNEX and Xerox (Lee, Schlueter, & Girgensohn, 1997) and have been embraced by the

computing community as an integral aid to collaborative work (e.g. Abowd & Mynatt, 2000; Liechti & Sumi, 2002). Awareness continues to be designed into a variety of systems, including the Web, instant messaging, and wireless computing (Liechti & Sumi, 2002; Weiss & Craiger, 2002). Despite this enthusiasm, researchers are only now beginning to recognize the difficulty in getting employees to accept and use these systems. There is a growing recognition that employees' privacy concerns about being monitored for availability can have an impact on acceptance (e.g. Erickson, Halverson, Kellogg, Laff, & Wolf, 2002; Greenberg & Kuzuoka, 2000) and an acknowledgement that technologies that track presence and activity may lead to privacy concerns well beyond those elicited by performance monitoring (Weiss & Craiger, 2002). That is, despite the shift in purpose (i.e. from performance to non-performance tracking), the consequences of awareness monitoring for employees can be similar in nature to performance monitoring (Zweig & Webster, 2002).

   To examine the moderating role of personality, we drew on a base model developed by Zweig and Webster (2002) that examined whether system characteristics designed to enhance employee perceptions of privacy and fairness would result in more positive attitudes and greater intentions to use an awareness system (see Fig. 1). In their study of over 600 organizational employees, Zweig and Webster drew on research from EPM, fairness, privacy, and technology acceptance to justify the linkages among the constructs. For example, they drew on Leventhal's (1980) procedural justice rules to hypothesize that greater perceptions of fairness would result when: (1) images are captured and projected intermittently versus continuously, (2) images are blurred rather than clear, (3) the employee has control versus no control over who can access to awareness information and, (4) the employee is given knowledge of who is using the system to determine their availability versus no knowledge. Furthermore, they drew on theories around fairness (Ambrose & Alder, 2000), privacy (Eddy, Stone, & Stone-Romero, 1999), and technology acceptance (Davis, Bagozzi, & Warshaw, 1989; Fishbein & Azjen, 1975) to hypothesize that greater perceptions of privacy and fairness would result in more willingness to accept the awareness technology, greater perceptions of its usefulness, and greater intentions to use the technology. Their analysis revealed that employees were very concerned about privacy and fairness when video-based images were used. However,
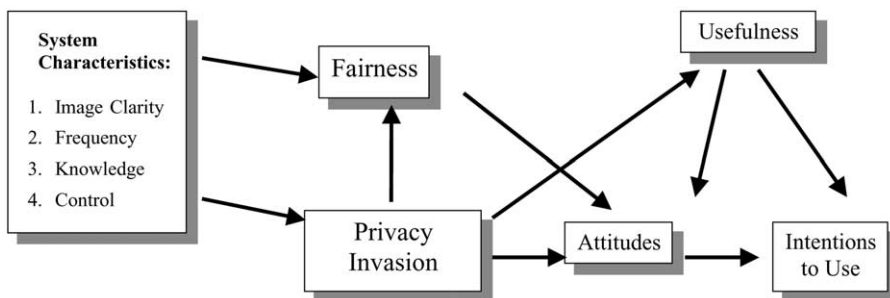

Fig. 1. Base model of awareness system acceptance (adapted from Zweig & Webster, 2002).

modifying the characteristics of the awareness system to enhance perceptions of privacy and fairness (according to guiding principles outlined in EPM research) did little to mitigate negative reactions to the monitoring system and still resulted in low levels of acceptance. Here, we replicate and extend Zweig and Webster (2002) by collecting data on each of the variables in the model presented in Fig. 1, as well as on personality.

Personality refers to internal factors such as dispositions and interpersonal strategies that explain individual behavior, and the unique and relatively stable patterns of behaviors, thoughts, and emotions shown by individuals (Hogan, Hogan, & Roberts, 1996). Although there has been considerable debate about whether personality represents a stable characteristic that can usefully predict behavior or whether behavior is primarily determined by the situation, many researchers would agree that both individual and situational factors are important to understanding behavior (for a review, see Funder, 2001). Personality is often conceptualized in terms of a five-factor model, including the dimensions of extraversion, emotional stability, agreeableness, openness to experience, and conscientiousness (Funder, 2001; Goldberg, 1990, 1992; McCrae & Costa, 1999). Thus, these five dimensions of personality were used to explore the moderating effects of personality in the base model.

As mentioned earlier, few monitoring studies have investigated the influence of individual differences on attitudes toward monitoring. However, it has been recognized that individual difference variables such as personality might moderate the relationship between the characteristics of monitoring systems and attitudes toward monitoring (Stanton, 2000; Webster, 1998). Next, we propose how personality might moderate the relationships diagrammed in Fig. 1.

High levels of extraversion are reflected in traits such as sociability, gregariousness, and assertion (Barrick & Mount, 1991). Webster (1998) suggested that extraversion might relate to awareness system acceptance because those scoring lower in extraversion tend to have greater concerns for personal privacy. Thus, it is reasonable to expect that extroversion would moderate links with privacy invasion in Fig. 1, such that the links with privacy invasion will be stronger for those who score lower in extraversion.

Although there is some specific evidence that extraversion might moderate some of the links in the base model, the other four elements of the five-factor model of personality also merit attention. For example, individuals with low levels of emotional stability tend to be defensive and guarded, have a negative view of themselves, worry about other's opinions of them, and tend to make stable, internal, global attributions about negative events (Clark & Watson, 1991). It is possible that for these people (as compared with those higher in emotional stability), being monitored would trigger concerns about how others view them resulting in stronger links between attitudes toward the technology and other variables.

On the other hand, people who score higher on measures of agreeableness (e.g. non-competitive, cooperative and hopeful) might be more favorably disposed toward monitoring technologies that purport to enhance communication and cooperation with colleagues; thus, the links between attitudes toward the technology and

other variables might differ as compared with their counterparts who score lower on agreeableness. As well, those who score higher on measures of openness to experience (e.g. imaginative, intellectual and curious) might be more willing to try out and use new technologies such as awareness systems; consequently, the links between attitudes toward the technology and other variables might differ as compared with those lower in openness to experience.

The relationship between conscientiousness and awareness system acceptance is more complicated. The characteristics that describe high levels of conscientiousness—being hardworking, achievement oriented and persevering on tasks (Barrick & Mount, 1991)—suggest that those scoring high on this personality variable would welcome a tool that claims to enhance communication and performance. Thus, high levels of conscientiousness should be related to more positive attitudes toward monitoring. However, the desire for achievement that is characteristic of high levels of conscientiousness might result in concern over being constantly monitored by others, while those scoring lower on conscientiousness might not be concerned with having their actions monitored.

To explore the relationships between personality and monitoring empirically, we examined whether differences in personality help to explain why some people respond negatively to monitoring technology, even when privacy and fairness are respected. To answer this question, and to address this lack of research, we chose to examine these relationships on an exploratory basis and offer the following research question:

Research Question 1: *Will personality moderate the relationship between the characteristics of a monitoring system, and perceptions of privacy invasion, fairness, attitudes and intentions to use the monitoring system?*

2. Method

2.1. Participants

Six hundred and sixty-four university students enrolled in two Introductory Psychology courses volunteered to participate and complete a questionnaire on attitudes toward awareness monitoring. Of the 664 participants, 622 also completed a measure of personality as part of a larger survey booklet distributed in the middle of the term that included scales from a number of different researchers. Average age for the participants was 19.42 years (S.D. = 2.11). Females comprised 65.8% of the sample. A majority of the sample was in their first year of university (85.8%, S.D. = 0.63) and 42.3% of the sample was enrolled in a co-operative education program in which students alternate full-time work terms with on-campus study terms.

2.2. Procedure

Each participant was handed a survey booklet, which contained a number of scales from other researchers, as well as a big-five personality measure, a two-page

description of a hypothetical position (as a customer service agent working from home), and the constructs identified in Fig. 1. The description emphasized the features of the awareness monitoring system, included images of the system, and explained how the technology could be used to aid in collaborative work. Completed booklets were collected in class one week after distribution.

2.3. Measures

Based on the procedures used by Zweig and Webster (2002), we manipulated the description of a video-based awareness system through the use of a scenario. Sixteen experimental conditions (descriptions) were created by controlling the description of the four system characteristics (high or low, coded as 1 or 0, respectively) that were each designed to respect or violate perceptions of fairness and privacy. Each participant randomly received one version of the description. For example, in the most respectful condition, participants were told that the system was designed to blur their image, capture it intermittently, give them control over who could access their image, and offer knowledge of who was using the system to determine their availability. Participants also responded to items designed to ensure that the manipulations were successful. For example, the item "To what extent do you feel that you would have an opportunity to control the awareness system?" ranging from "No Opportunity" (1) to "Full Opportunity" (7), captured the system characteristic of "Control".[1]

Measures to assess fairness, privacy invasion, usefulness of the system, attitudes, and intentions to use the awareness system were taken from Zweig and Webster (2002) and exhibited high internal consistency reliabilities. Specifically, Zweig and Webster adapted fairness and privacy invasion items from Alge (1999; $\alpha = 0.89$, $\alpha = 0.82$ for fairness and privacy, respectively), attitudes toward monitoring and usefulness of the monitoring system from Davis et al. (1989; $\alpha = 0.92$, $\alpha = 0.78$ for attitudes and usefulness, respectively), and created two items to assess intentions to use the monitoring system ($\alpha = 0.76$).

To assess personality, Goldberg's Unipolar Markers for the Big Five Factor Structure (1992) were used. This measure contains 100 adjectives (such as "unrest-

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[1] ANOVA's were performed to assess the effectiveness of the system characteristic manipulations on the entire sample of 664 participants. The results indicated that participants were able to distinguish differences in the frequency of image capture, $F(1, 662) = 12.36$, $P < 0.001$ and whether they had control over dissemination of monitoring images, $F(1, 660) = 7.66$, $P = 0.006$. A marginally significant difference was found for determining knowledge of who was using the monitoring system to determine availability, $F(1, 662) = 3.22$, $P = 0.07$. However, the image clarity manipulation was not successful. To examine the effectiveness of the manipulations further, we conducted an analysis on privacy and fairness perceptions, comparing the condition representing the least amount of respect for individuals across the four system characteristics (coded as "0") to the condition representing the greatest amount of respect across the four system characteristics (coded as "1"). Significant mean differences in perceptions of privacy invasion for the most respectful ($M = 4.84$) compared to the least respectful characteristics ($M = 5.42$, $t = 2.06$, $P = 0.04$) and fairness perceptions for the most respectful characteristics ($M = 4.05$) compared with the least respectful characteristics ($M = 3.10$, $t = 2.97$, $P = 0.004$) suggest that manipulating the characteristics resulted in differential perceptions of privacy and fairness.

rained'' for extraversion and ''efficient'' for conscientiousness) that target each of the five dimensions of personality measured on nine-point Likert scales ranging from 1 = Extremely Inaccurate to 9 = Extremely Accurate. Reliabilities for this measure tend to range from a low of 0.92 to a high of 0.97 (Smith & Snell, 1996).

2.4. Analytical strategy

Given that there were multiple relationships between the dependent, mediating, moderating, and independent variables, structural equation modeling (SEM) appeared to be the most appropriate method to address the research question. SEM examines the overall fit of the data to the hypothesized model and offers advantages over traditional regression techniques by taking measurement unreliability into account when estimating the relationships among variables (Maruyama & McGarvey, 1980).

The research question was tested with SEM using AMOS (Arbuckle & Wothke, 1999). Before conducting the moderation analysis, we followed procedures outlined in Aiken and West (1991) for splitting the personality variables into high and low scores. Specifically, we conducted a tertile split on the data, and retained all of the observations that fell one standard deviation above the mean and one standard deviation below the mean for each of the five personality variables.

To evaluate the fit of the models, chi-square, goodness of fit indices, and RMSEA (root mean square error of approximation), a measure of model adequacy based on the population discrepancy, were assessed (Arbuckle & Wothke, 1999). According to Hair, Anderson, Tatham, and Black (1995), goodness of fit indices greater than 0.90 and RMSEA indices of less than 0.08 indicate a good model fit. To assess the moderating effects of the five personality variables, the significance of the differences in individual parameter estimates was compared for high and low levels of each personality variable: critical ratios (CR) larger than 1.96 indicate a significant difference among the paths.

3. Results

Table 1 presents the descriptive statistics, reliabilities, and correlations among the study variables. Table 2 presents the reliabilities for five personality variables across the entire sample as well as the sample size, means, and standard deviations for the same variables split into high and low groups. The model of awareness system acceptance presented in Fig. 2 exhibited a very high degree of fit with the data, (χ^2 (19, $N = 664$) = 40.69, $P = 0.003$; GFI = 0.98, AGFI = 0.96, RMSEA = 0.04), and was consistent with results found in Zweig and Webster's (2002) employee sample.[2]

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[2] All but one of the path coefficients in our model (from privacy invasion to usefulness) were equivalent in direction and magnitude to those reported by Zweig and Webster (2002).

Table 1
Descriptive statistics, reliabilities, and zero-order correlations among base model variables

Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9
1. Image Clarity	0.50	0.50	–								
2. Frequency of Image Updating	0.43	0.50	−0.01	–							
3. Knowledge of Monitoring	0.56	0.50	0.02	0.01	–						
4. Control over Monitoring	0.57	0.50	0.04	0.02	−0.03	–					
5. Fairness	3.63	1.31	0.01	0.02	0.12**	0.15***	(0.89)				
6. Privacy Invasion	4.83	1.26	−0.02	−0.08*	−0.08*	−0.11**	−0.62***	(0.84)			
7. Attitude	3.10	1.38	0.05	0.08*	0.08*	0.05	0.75***	−0.60***	(0.91)		
8. Intent to Use	0.33	0.42	0.02	0.02	0.02	0.09*	0.53***	−0.41***	0.55***	(0.76)	
9. Usefulness	3.97	1.34	0.03	−0.15**	0.02	−0.02	0.58***	−0.31***	0.63***	0.51***	(0.77)

Numbers in parentheses are Cronbach's alpha estimates of internal consistency reliability. Means for independent variables (variables 1–4) represent the mean level for each independent variable (e.g. 1 for high, 0 for low).

* $P < 0.05$.
** $P < 0.01$.
*** $P < 0.001$ (two-tailed).

Using this model as a baseline, we then examined the moderating effects of personality on each of the paths in the model.[3] To do so, the SEM analysis was conducted twice for each of the Big Five personality variables—once with high levels of each personality variable and once again with low levels. This allowed for the calculation of overall fit statistics and the assessment of critical differences between

Table 2
Means, standard deviations and reliabilities for personality variables

Variable	Mean	S.D.	N	Alpha (overall N = 622)
Agreeableness				
High	7.7	0.38	215	0.89
Low	5.8	0.57	204	
Conscientiousness				
High	7.4	0.46	210	0.88
Low	5.1	0.57	213	
Extraversion				
High	6.8	0.52	211	0.89
Low	4.3	0.65	219	
Openness to Experience				
High	7.5	0.42	212	0.85
Low	5.4	0.54	205	
Emotional Stability				
High	6.0	0.57	214	0.86
Low	3.7	0.54	206	
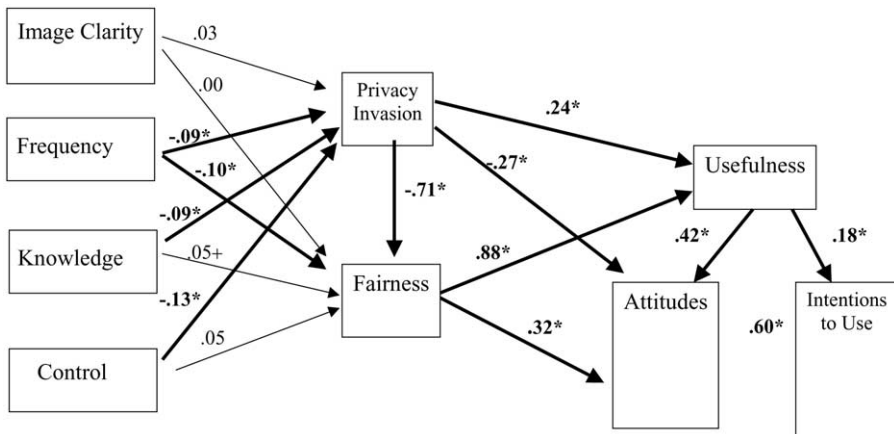
Fig. 2. Results from the analysis of the base model. Note: $^+ P < 0.10$, $^* P < 0.05$.

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[3] We did not include faculty or gender as control variables as neither correlated significantly with intentions to use the system.

the paths on the model for high and low levels of each personality variable (see Fig. 3). The fit statistics for the baseline and moderated models presented in Table 3 reveal that all of the models fit the data well. An examination of the critical ratios for differences among the paths for each of the personality characteristics is presented next.

3.1. Extraversion

An examination of the differences among the paths for participants high and low in extraversion revealed that those scoring lower in extraversion expressed more negative relationships between several characteristics of the awareness monitoring system and perceptions of privacy invasion and fairness (see Fig. 3). Specifically, there were significant differences in the critical ratios for knowledge (of who is
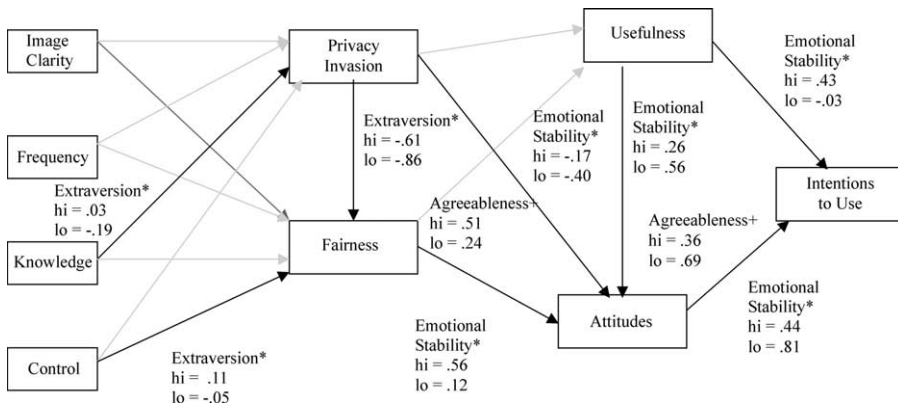

Fig. 3. Moderator analyses on the base model—significant effects for Extraversion, Agreeableness and Emotional Stability. $P < 0.05$ (one-tailed). $*P < 0.05$ (two-tailed) for difference tests.

Table 3
Fit statistics for baseline and moderated models

Fit measure	Baseline	Extraversion	Agreeableness	Conscientiousness	Openness	Emotional Stability
χ^2	40.69	73.45	76.20	44.25	56.31	51.69
P	0.003	0.001	0.001	0.225	0.028	0.068
df	19	38	38	38	38	38
χ^2/df	2.14	1.93	2.00	1.16	1.48	1.36
GFI	0.99	0.96	0.96	0.98	0.97	0.97
AGFI	0.97	0.92	0.92	0.95	0.93	0.94
RMSEA	0.04	0.05	0.05	0.02	0.03	0.03

monitoring) and perceptions of privacy invasion (CR = −2.10; β = 0.03, β = −0.19 for high and low extraversion, respectively). In other words, for those scoring higher in extraversion, knowledge of who is monitoring them does not matter. This is not the case for those lower in extraversion. For these people, knowledge of who is monitoring them was related to lower perceptions of privacy invasion.

An opposite pattern was observed when examining control over the dissemination of monitoring information to colleagues and perceptions of fairness. Control was positively related to perceptions of fairness for those higher in extraversion but unrelated to perceptions of fairness for those lower in extraversion (CR = −2.13; β = 0.11, β = −0.05 for high and low extraversion, respectively).

While both those high and low on extraversion expressed a strong negative relationship between perceptions of privacy invasion and fairness, this relationship was significantly stronger for those lower in extraversion (CR = −3.38, β = −61, β = −0.86 for high and low extraversion, respectively).

3.2. Conscientiousness, openness to experience and agreeableness

No significant differences were found among the paths in the models for conscientiousness and openness to experience. However, for agreeableness, two paths approached significance. Specifically, there was a weaker positive relationship between perceptions of fairness and attitudes toward monitoring for those lower in agreeableness (CR = −1.81; β = 0.51, β = 0.24 for high and low agreeableness, respectively). As well, attitudes toward monitoring were more strongly related to intentions to use the monitoring system for those scoring lower in agreeableness (CR = 1.92; β = 0.36, β = 0.69 for high and low agreeableness, respectively) compared with those scoring higher (see Fig. 3).

3.3. Emotional stability

For participants who rated themselves as higher in emotional stability, perceptions of the fairness of the monitoring system related more strongly to attitudes toward monitoring (CR = −2.91; β = 0.56, β = 0.12 for high and low emotional stability, respectively). In contrast, those scoring lower in emotional stability reported a stronger relationship between privacy invasion and attitudes toward monitoring than those scoring higher (CR = −1.91; β = −0.17, β = −0.40 for high and low emotional stability, respectively). As well, those lower in emotional stability expressed a stronger relationship between perceptions of the usefulness of the monitoring system and attitudes toward monitoring (CR = 2.06; β = 0.26, β = 0.52 for high and low emotional stability, respectively) and between attitudes toward monitoring and intentions to use the monitoring system (CR = 2.20; β = 0.44, β = 0.81 for high and low emotional stability, respectively). However, participants higher in emotional stability expressed a strong relationship between perceptions of usefulness and intentions to use the monitoring system (CR = −2.48; β = 0.43, β = −0.03 for high and low emotional stability, respectively) while the relationship was not significant for those lower in emotional stability (see Fig. 3).

4. Discussion

To address the increase in monitoring and surveillance in the workplace, researchers have developed guiding principles designed to assist in the implementation and practice of workplace monitoring (e.g. Ambrose & Alder 2000; Stone & Stone, 1990). When these principles, designed to enhance perceptions of fairness and privacy, are respected, they have been shown to lead to more positive outcomes when monitoring takes place (e.g. Alge & Ballinger, 2001). Nevertheless, in this and other investigations of monitoring acceptance (e.g. Webster, 1998; Zweig & Webster, 2002) limited acceptance for monitoring has been found, even when these guiding principles are implemented. The goal of this paper was to investigate whether individual differences play a role in moderating reactions to monitoring even when guidelines for respecting fairness and privacy are in place.

Our study results provide differential support for research suggesting that providing people with knowledge of who is monitoring them and giving them control over monitoring will lead to greater perceptions of both fairness and privacy (e.g. Ambrose & Alder, 2000; Grant & Higgins, 1991). Specifically, we found that participants lower in extraversion perceived having knowledge of who is monitoring them as less invasive (than those higher in extraversion). Further, those lower in extraversion perceived a stronger relationship between privacy invasion and fairness. However, participants higher in extraversion perceived having control over monitoring as more fair. Thus, privacy appeared to be of greater concern to those lower in extraversion whereas fairness was of greater concern to those higher in extraversion.

These findings might be a result of a difference in salience. For people who are lower in extraversion, the most salient aspect of the awareness monitoring system might be the threat to privacy. Consequently, knowing who is using the system to monitor someone's activity would be more strongly related to perceptions of privacy. Conversely, for those higher in extraversion, privacy might be less of a concern and attention is focused instead on fairness. Having control over monitoring then is more strongly related to perceptions of fairness.

Past research has examined the influence of monitoring characteristics on perceptions of privacy and fairness independently (e.g. Alge, 1999; Eddy et al., 1999). As such, these potential differences in salience have not been examined. Future research should further examine the salience of fairness and privacy in combination and assess how individual differences might influence attention to these variables.

We also discovered that emotional stability moderated many of the relationships in our model. For those lower (as compared with those higher) in emotional stability, fairness of the monitoring system related less positively to attitudes. Furthermore, perceptions of both privacy invasion and usefulness related more strongly to attitudes, and attitudes related more strongly to intentions to use the awareness monitoring system. Thus, unlike the moderating influence of extraversion, where attention seems to be focused on the characteristics of the monitoring system in relation to perceptions of privacy and fairness, emotional stability is more strongly associated with outcomes such as attitudes and intentions to use the monitoring system. This might suggest that future research should examine whether the

moderating effects of specific individual difference characteristics occur at different points in the relationships among variables.

While these findings have both theoretical and practical implications for the design and use of monitoring systems, they must be weighed against the limitations of the study. This was an exploratory analysis of personality differences found while using a scenario design examining a specific type of monitoring system. Although previous research has relied extensively on scenario designs (e.g. Eddy et al., 1999; Racicot & Williams, 1993), the generalizability of our findings are limited by the fact that participants were not exposed to a real-life awareness monitoring system. Furthermore, we used a student sample in this investigation who completed a battery of different questionnaires. Thus, we do not know what influence these other questionnaires might have had on our results. However, it should be noted that Zweig and Webster (2002) found similar results with employees for the base model presented in Fig. 1.

Despite these limitations, the present study suggests that individual differences can alter the relationships between characteristics of monitoring systems, perceptions of privacy and fairness, and attitudes toward monitoring. In fact, it was found that even across multiple system characteristics, personality variables altered the relationships in the model. This lends support to the argument that stable dispositional characteristics can influence behaviors across situations. Recognizing that individual differences such as personality might alter reactions to, or even vitiate efforts to design monitoring systems that respect privacy and fairness, adds an important consideration to future theoretical development. For example, Ambrose and Alder's (2000) justice-based model of electronic monitoring that examines situational influences on monitoring acceptance might need to be expanded to take individual differences into account when predicting employee reactions to performance monitoring.

As stated earlier, recent evidence suggests that achieving acceptance of awareness monitoring systems is difficult (e.g. Greenberg & Kuzuoka, 2000; Webster, 1998). For practice, acknowledging that acceptance of monitoring systems—even those that are designed to respect privacy and fairness—might be influenced by personality, should lead to a greater consideration of individual differences when implementing workplace monitoring. Managers must be aware that workplace monitoring, in any form, can trigger concerns that transcend the situation itself and can arise from individual differences in personality. Thus, managers must weigh the benefits of monitoring against the willingness of their employees to be monitored. This can have important implications for job satisfaction, task satisfaction and performance (Chalykoff & Kochan, 1989; Larson & Callahan, 1990; Stanton & Barnes-Farrell, 1996).

Future research needs to take individual differences into account when examining reactions to organizational monitoring systems. Our preliminary investigation of the five-factor model of personality characteristics suggests that differences in levels of extraversion and emotional stability are associated with differing relationships between system characteristics, privacy invasion, fairness, and acceptance of organizational monitoring. Other individual difference variables such as self-monitoring or disposition to trust might also be considered in the context of real-life monitoring systems to further our understanding of employee reactions to organizational monitoring practices.

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