Vlerick Leuven Gent Management School

Associated with Ghent University and with the Katholieke Universiteit Leuven

Vlerick Working Papers 2003/01

RESPONSE PREFERENCE IN ORGANIZATIONAL BEHAVIOR RESEARCH: DO RESPONDENTS TO CLASSICAL AND INTERNET SURVEYS POSSESS DIFFERENT PSYCHOLOGICAL CHARACTERISTICS?

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ABSTRACT

The Internet has become a widespread tool for conducting research in organizational behavior. Little is known, however, of the psychological characteristics of Internet users. In the present study, differences in motivation, satisfaction, behavioral patterns and work outcomes are examined among respondents who had the choice of either filling in an online or a traditional pen-and-paper version of a large-scale Flemish survey (N=5853). Participants in both groups were mostly professional workers. After controlling for demographic variables, our results suggest that those who responded over the Internet place higher importance on opportunities for self-development and on assuming responsibility than those who opted for the pen-and-paper version. Moreover, Internet respondents appeared to be less satisfied with the content of their jobs and with their bosses. They also reported a significantly higher intention to leave the organization. Finally, the Internet group reported less compulsive work addiction, fewer health complaints, and less work-to-family conflict. The results allow us to conclude that Internet respondents more closely represent the image of the modern professional workforce, as often characterized in terms of shifting psychological contracts, values and career expectations.

KEYWORDS: Internet Surveys; Organizational Behavior

RESPONSE PREFERENCE IN ORGANIZATIONAL BEHAVIOR RESEARCH: DO RESPONDENTS TO CLASSICAL AND INTERNET SURVEYS POSSESS DIFFERENT PSYCHOLOGICAL CHARACTERISTICS?

The Internet has become a tool that is widely used to conduct research in organizational behavior. Increasingly, both organizations and academic researchers consider the Internet as a viable resource for data collection (Simsek & Veiga, 2001; Stanton, 1998). Extending the well-established tradition of using stand-alone computers, many organizations now use the Internet to assess work attitudes, corporate culture, and perceptions of employees on an organizational level, while at the same time limiting time, cost, and effort. For large multinational organizations, the Internet seems to be an excellent means of gathering and comparing employee information from various units around the world. OB-researchers welcome the Internet as a convenient means of accessing large sample populations (Pettit, 1999; Schmidt, 1997). As an extra advantage, the Internet permits automatic transformation of raw data in an analyzable format, thereby eliminating both input time and data entry errors (Davis, 1999).

In order for research in management and organizational behavior to progress, it is nevertheless important for researchers to continuously assess the methods they employ (Scandura & Williams, 2000). As a result, many researchers have sought to determine whether data collected over the Internet are comparable with data collected via traditional methods, both from a psychometric as well as from a behavioral point of view. First, a large number of studies have addressed the question of measurement equivalence, investigating aspects such as reliability, internal validity, and generalizability of Web-based versus pen-and-paper questionnaires (Buchanan & Smith, 1999a, 1999b; Davis, 1999; Epstein, Klinkenberg, Wiley, & McKinley, 2001; Krantz, Ballard, & Scher, 1997; Pasveer & Ellard, 1998; Stanton, 1998). Indeed, as Buchanan & Smith (1999a) argue, one cannot simply assume that, when a pen-and-paper test is implemented through the Internet, conventional and online versions will be equivalent. Still, most of these studies concluded that both administration modes compare favorably, in a sense that they have similar psychometric qualities and measure the same psychological constructs. Second, there is some evidence that response behavior in virtual surveys significantly differs from that in pen-and-paper tests, and that biases might occur through so called 'disinhibited behavior' (Joinson, 1998, 1999). It appears that respondents on the Internet display less social desirability, have more self-

awareness, indulge in more extreme scoring, and leave fewer questions unanswered (Booth-Kewley, Edwards, & Rosenfeld, 1992; Joinson, 1998, 1999; Locke & Gilbert, 1995; Smith & Leigh, 1997; Stanton, 1998).

However, in most studies conducted so far, Internet and traditional questionnaires have been alternately designated to given sample groups, whereas in applied, more naturalistic settings, subjects are usually not artificially assigned to one mode of administration, but given the freedom to <u>choose</u> between filling in a pen-and-paper or an online version of the survey. The reason for providing this option is of course very straightforward: by offering people the opportunity to choose, researchers can ensure themselves of a higher response rate. The same applies for organizations conducting in-house employee surveys, because they mostly strive to involve every employee (Simsek & Veiga, 2001). Kraut (1996) concluded that technological innovations—such as the Internet—have made it possible to use any combination of survey methods in order to obtain the most information from survey research. Although encouraging on the one hand, such a development can raise concerns that might have been negligible in prior research, but which may become quite prominent in naturalistic settings where free choice of administration mode prevails. For example, although using multi-mode survey techniques might improve the representativeness of the total sample (Yun & Trumbo, 2000), it is conceivable that, given their self-selective nature, large psychological differences exist between both sub-groups. Moreover, such differences may affect both the quality and the generalizability of the conclusions that are drawn from the data. In other words, for online and traditional responses to be comparable within a survey, the two groups should not differ significantly with respect to the attitudes or perceptions that are measured. However, apart from widely available demographic information, still very little is known about the way the respondents who prefer the Internet and those who prefer traditional pen-and-paper forms differ with respect to relevant dimensions of organizational behavior.

In the present study, we therefore examine whether the preference to, respectively, respond via paper or online forms of a survey reflects differences in a number of commonly measured work attitudes and outcomes. Specifically, it is hypothesized that both groups would significantly differ in their levels of work motivation, satisfaction, turnover intention, health complaints, compulsive work addiction, and work-to-family conflict.

METHOD

PARTICIPANTS & DATA COLLECTION

Participants were 6644 respondents to a large-scale survey in a Flemish magazine that specializes in recruitment communication and job advertising, which was distributed as a supplement to four national newspapers and two popular magazines. The original purpose of the survey was to examine possible antecedents and consequences of excessive working hours. In this survey, entitled 'How hard do the Flemish work?' respondents were asked a total of 125 questions. Some questions dealt with the number of weekly hours spent working, doing leisure activities, sleeping, and being with the family; other questions probed work motivation and commitment, job and life satisfaction, health complaints, compulsive work addiction, work-to-family conflict, and intention to leave the job; 10 questions dealt with demographic data.

In order to compare various attitudinal variables, only answers from full-time workers were analyzed. A total of 5853 submissions could be retained for further processing. On the demographic level, this sample was essentially representative of the professional working population, with an overrepresentation of men (73%) and the greater part of the group having received some form of higher education (81%). Only 1% were blue-collar workers. Different age groups, sectors of employment, educational backgrounds, and management levels were well represented.

Of 5853 respondents, 4631 (79%) filled in the paper version of the survey, and 1222 people (21%) were Internet respondents. Demographics in relation to the respective data source revealed the following characteristics: Internet users in our sample group were predominantly male (78% of the online group were men, compared to only 65% in the paper group; $t = 7.08$; $p < .001$) and significantly younger (average age for Internet respondents = 28 years; paper respondents = 34 years; $t = 17.85$; $p < .001$). The groups did not significantly differ in their level of education. In most demographic studies, the Internet population is found to be predominantly male and younger, but also more highly educated (Kehoe & Pitkow, 1996, 1998). Therefore, our findings do not completely follow the commonly acknowledged trend. However, this is not surprising considering the high level of education of the professional audience that completed the current survey.

SCALE DEVELOPMENT

Publishing a survey in a well known, widespread magazine has the advantage of reaching a large number of respondents rapidly and conveniently, but there are also some constraints. Available space is highly limited, making it impossible to collect data via existing scales that are widely studied, but also rather lengthy. Therefore, we constructed a number of shorter 5-points Likert scales, based predominantly on existing scales.

MOTIVATION SCALES

A total of 20 questions dealt with work motivation and commitment. Based on factor analysis we constructed six motivational scales, each operationalizing different types of motivation: being motivated by salary ($\alpha = .77$) had five items, e.g., 'A high salary is important to me'; being motivated by opportunities for self-development ($\alpha = .68$) had three items, e.g., 'If I work hard, it is because I can develop myself completely in my job'; being motivated by responsibility ($\alpha = .78$) had four items, e.g., 'Assuming responsibility is important to me'; being motivated by respect for their own working rhythm ($\alpha = .68$) had four items, e.g., 'Respect for everyone's own work rhythm is important to me'; being motivated by loyalty ($\alpha = .66$) had two items, e.g., 'Being loyal to your company is important'; and finally, being motivated by good relations ($\alpha = .58$) had two items, such as 'Having good colleagues is important to me'. Reliabilities of the motivation scales were generally satisfactory, except for the 'being motivated by good relations' scale. Intercorrelations between the six motivator scales ranged from .05 to .39.

SATISFACTION SCALES

Five scales measured satisfaction, containing a total of 20 items: satisfaction with the content of the job ($\alpha = .87$) had six items, e.g., 'I have a stimulating job'; satisfaction with salary ($\alpha = .89$) consisted of four items, e.g., 'I am happy with my salary'; satisfaction with family ($\alpha = .77$) combined four items, e.g., 'I am satisfied with the relationship with my partner'; satisfaction with colleagues ($\alpha = .74$) had three items, e.g., 'I am content with the relationships with my colleagues'; and finally, satisfaction with one's boss ($\alpha = .80$)

comprised three items, e.g., 'I'm content with the relationship with my boss'. Intercorrelations between these scales varied from .16 to .37.

COMPULSIVE WORK ADDICTION

This variable was measured through seven items of the Work Addiction Risk Test (Robinson & Post, 1994). Example items include 'I easily get impatient when I have to wait for somebody or if something takes too long' and 'I get angry when people cannot reach my level of perfection' ($\alpha = .71$).

HEALTH COMPLAINTS

Under the heading of 'well-being', respondents were asked to indicate how frequently (scores ranging from 1 = 'not at all' to 4 = 'a lot') over the last year they experienced symptoms such as diminished energy, sleep disorders, oppressed mood, depression, and nervous exhaustion. Factor analysis revealed that these 10 items form a very homogeneous scale (Cronbach's $\alpha = .84$).

WORK-TO-FAMILY CONFLICT

Two items were included to measure work-to-family conflict, for example: 'I am satisfied how my partner and I attune work and family'. The reliability of this scale is $\alpha = .70$.

INTENTION TO LEAVE

Intention to leave the organization was also measured by two items, e.g., 'I am considering leaving my company and looking for another job'. The corresponding α-value was .83.

ANALYSES AND RESULTS

A series of linear regression analyses were completed to detect differences in work attitudes and outcomes between Internet and pen-and-paper users. The variables 'gender', 'age', and 'hierarchical level in the organization' were included as control variables. 'Data source' was the focal independent variable. Dependent variables were: different motivation and satisfaction scales, compulsive work addiction, work-to-family conflict, health complaints, and intention to leave. Means and standard deviations for all dependent variables are presented in table 1.

Insert Table 1 About Here

Two of the motivational scales revealed significant differences between Internet and pen-and-paper users. As shown in Table 2, the variables 'being motivated by opportunities for self-development' and 'being motivated by responsibility' both yielded positive and significant effects. Their respective standardized beta coefficients were 0.059 ($p < .01$) and 0.055 ($p < .01$). Internet respondents were more motivated by self-development and responsibility than pen-and-paper respondents. We could not detect any discernible influences from 'data source' preference on the variables 'being motivated by salary', 'being motivated by respect', 'being motivated by loyalty', and 'being motivated by good relationships'. Table 2 reveals that these variables, with the exception of 'loyalty', are more strongly affected by age and gender.

Insert Table 2 about here

With respect to satisfaction (see Table 3), the variable data-source was statistically significant on two of five dimensions. Internet respondents were found to be less satisfied with the content of their jobs (β = -0.052; p < .01). They are also less satisfied with their boss (β = -0.051; p < .01). 'Data source' did not, however, significantly contribute to the prediction of the variables 'satisfaction with salary', 'satisfaction with colleagues', and 'satisfaction with family'.

Insert Table 3 about here

Finally, as shown in Table 4, the results revealed a significant effect of data source on 'intention to leave' (β = 0.105; p < .01), 'health complaints' (β = -0.027; p < .05), 'compulsive work addiction' (β = -0.040; p < .01) and 'work-to-family conflict' (β = -0.042; p < .01). Therefore, our data indicate that Internet and pen-and paper users diverge on all measures of behavioral patterns and outcomes included in the current survey. Over and above the impact of demographic variables, Internet respondents report fewer health complaints, less work-to-family conflict, and displayed less compulsive work addiction. However, they are more inclined to leave the organization. In order to examine these results more closely, we also checked the number of hours spent working and sleeping for both groups. Although apparently less stressed, the Internet respondents reported having more working hours (β = 0.044; p < .01) and fewer hours of sleep (β = -0.075; p <. 01).

Insert Table 4 about here

DISCUSSION

In this study, we aimed to identify differences in work attitudes and outcomes between people who preferred to respond to a survey via the Internet and those who would rather use a pen-and-paper version. Internet respondents attached significantly higher importance to opportunities for self-development than pen-and-paper respondents. The Internet respondents were also more motivated by jobs in which they could assert responsibility. Further, Internet respondents were less satisfied with both their job content and their boss. Moreover, they reported a significantly higher intention to leave the organization.

These results allow us to make a number of possible inferences. First, the findings seem to show various aspects of a profile that has formed during the last decade, depicting the changing nature of the modern workforce. Modern workers, especially professionals or knowledge workers, are frequently described as adherents to a 'new psychological contract', who stick to so called 'new values' and who want their careers to be 'protean' (see Hall, 1996; Hiltrop, 1995; Rousseau, 1995). Basically, these related concepts refer to a work ethic where intrinsic values such as self-development, responsibility, and autonomy are considered more important than such extrinsic values as having a good salary. According to Brousseau and Driver (1996), these modern employees are not interested in spending their careers in one organization, but intend to leave as soon as they feel they are no longer challenged. They want to explore and do different kinds of work; they are constantly evaluating the contents of their job along with their goals and values, and want their work to have meaning. They are very critical of authority, and are unimpressed with the need to do specific tasks in specific ways merely because a superior so wishes. Considering these results—higher motivation for self-development and responsibility, lower satisfaction with the job and with the boss, and higher intention to leave—we are inclined to conclude that the Internet-respondents in our survey closely resemble this image, at least more so than the classical pen-and-paper respondents. However, the concepts of 'new psychological contracts', 'new values', and 'protean careers' are often thought to characterize a highly professional workforce as opposed to blue-collar and clerical workers. In this light, the particular differences we found between online and pen-and-paper respondents are rather surprising, since people in both groups are highly professional workers, with no significant difference in their level of education.

However, differences between the two groups in the intention to leave the organization may have an alternative explanation. Researchers have often reported more self-disclosure in computer and Web-based questionnaires than in traditional questionnaires or

face-to-face interviews (see Joinson, 1998). As Wallace (1999) notes, through an illusion of anonymity, respondents seem to be more forthcoming when asked for sensible information over the Internet. Following this reasoning, one might imagine that many employees are rather suspicious when asked about their intentions to leave a company, and are therefore reluctant to express their true feelings. Maybe the tendency to more accurately convey one's opinion over a Web-based questionnaire can account for the fact that we found higher intention to leave the organization in the Internet group.

Next, we detected significantly lower scores for Internet-users on compulsive work addiction, health complaints and work-to-family conflict. These findings are initially rather curious, since the same group of Internet respondents also reported having more working hours and fewer hours of sleep. Perhaps one can consider this group as being comprised of highly dedicated people, who are not troubled by working many hours, and who fill their jobs with enthusiasm. People who experience a high degree of 'flow' in their activities are often able to maintain high performance levels without falling prey to negative stress (Csikszentmihaly, 1990).

In general, it seems that a number of differences can be identified between employees who prefer answering to a survey over the Internet and those who would rather fill in a pen-and-paper questionnaire. Although previous research has demonstrated that both methods of administration display similar psychometric properties, the self-selection mechanisms that are likely to arise in the contemporary type of combined, multi-method survey research can easily lead to biases, with the examination of separate subgroups being unrepresentative of the whole. Biases are particularly likely to occur in organizations that use Internet surveys on satisfaction or other human resource issues and then extrapolate the results to the entire organization.

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TABLE 1

Means and standard deviations for pen-and-paper and online respondents

Variable	Pen-and-Paper Respondents		Online Respondents	
	M	*SD*	*M*	*SD*
Motivation Scales				
Salary	14,83	4,37	15,30	4,11
Respect	14,81	2,50	14,46	2,74
Self-Development	10,37	2,48	10,62	2,36
Responsibility	16,64	2,27	16,92	2,15
Loyalty	6,93	1,94	6,88	1,89
Relation	8,79	1,16	8,81	1,11
Satisfaction Scales				
Salary	11,61	4,02	11,49	3,81
Job	20,78	5,00	20,06	5,09
Colleagues	11,71	2,14	11,90	2,02
Family	13,58	3,40	13,69	3,29
Boss	11,13	2,70	11,90	2,02
Behavioral Pattern and Outcome Scales				
Compulsive Work Addiction	23,16	4,55	22,48	4,38
Health Complaints	17,14	5,11	16,53	4,97
Intention to Leave	4,44	2,27	5,29	2,28
Work-to-Family Conflict	3,58	1,39	3,40	1,34

TABLE 2

Summary of Regression Analysis for Data Source (Online or Pen-and-Paper)

and Control Variables on Motivation Scales (N = 5853)

	Salary		Respect		Self-Development		Responsibility		Loyalty		Relation	
	β	*p*	β	*p*	β	*p*	β	*p*	β	*p*	β	*p*
Data Source	.006	.666	-.022	.099	.059	.000 **	.055	.000 **	.009	.468	.000	.992
Gender	-.165	.000 **	.052	.000 **	.037	.006 **	.015	.272	-.008	.550	.117	.000 **
Age	-.128	.000 **	.165	.000 **	.032	.023 *	-.042	.002 **	.037	.005 **	-.051	.000 **
Hierarchical Level	.122	.000 **	-.196	.000 **	.241	.000 **	.344	.000 **	.360	.000 **	-.066	.000 **

* p < .05

** p < .01

TABLE 3

Summary of regression analysis for data source (online or pen-and-paper)

and control variables on satisfaction scales (n = 5853)

	Salary		Job		Colleagues		Family		Boss	
	β	*p*	β	*p*	β	*p*	β	*p*	β	*p*
Data Source	-.007	.599	-.052	.000 **	.015	.267	-.002	.873	-.051	.000 **
Gender	-.066	.000 **	-.005	.677	-.005	.728	-.056	.000 **	.000	.984
Age	-.008	.586	-.090	.000 **	-.092	.000 **	-.029	.045	-.116	.000 **
Hierarchical Level	.241	.000 **	.472	.000 **	.033	.018 **	-.093	.000 **	.083	.000 **

*   p < .05

** p < .01

TABLE 4

Summary of regression analysis for data source (online or pen-and-paper) and control variables on behavioral pattern and outcome scales (n = 5853)

	Compulsive Work Addiction		Health Complaints		Intention to leave		Work-to-Family Conflict	
	β	*p*	β	*p*	β	*p*	β	*p*
Data Source	-.040	.004 **	-.027	.042 *	.105	.000 **	-.042	.002 **
Gender	.089	.000*	.187	.000 **	.012	.381	.043	.002 **
Age	.041	.004 **	.032	.023 *	-.189	.000 **	.019	.187
Hierarchical Level	.012	.383	-.083	.000 **	-.087	.000 **	.095	.000 **

* p < .05

** p < .01