

Virtuality in Work Arrangements and Affective Organizational Commitment¹

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Abstract

In recent years, companies have set up new arrangements that allow work to be done via cyberspace and increase the level of virtuality. This article presents the results of an empirical study designed to test the relationship between the various components of the virtuality of work arrangements and the strength of workers' affective commitment to the organization. An online survey was carried out and data from management consultants was collected and analyzed using multiple linear models. Our results indicate that geographic and temporal factors negatively impact workers' affective commitment, while technology, work practices, organization and cultural factors have a positive impact.

Keywords: Virtuality, work arrangement, affective organizational commitment

1. Introduction

According to the IDC,² the world's virtual worker population will grow to nearly 1.2 billion people – more than a third of the world's workforce – by 2013. What characterizes virtual workers is that they relate to their colleagues, their superiors and their organizations through cyberspace (Brunelle, 2009). Cyberspace makes it possible for work to be done anywhere and at any time, which increases the level of virtuality of work arrangements (Barnatt, 1995; Gibson & Gibbs, 2006). This virtuality has a strong impact on the employee-employer relationship (Connelly & Gallagher, 2004). Among other things, it affects modes of communication by reducing physical contact, modifying the places and times of meetings, and intensifying technology-mediated exchanges (Salter, Green, Duncan, Berre, & Torti, 2010). From the perspective of theories of organizational commitment, we can assume that the level of virtuality of this type of work arrangement is likely to influence the strength of workers' affective organizational commitment (Meyer & Allen, 1991). Applying this approach, the aim of this article is to empirically test the relationship between virtuality and affective organizational commitment. The following sections present the article's conceptual framework, the methodology used to test our hypotheses, the results of our study and a final discussion.

2. CONCEPTUAL FRAMEWORK

2.1 Virtuality in work arrangements

The concept of virtuality in work arrangements refers to executing work through the intermediary of cyberspace (Shekhar, 2006). More specifically, it refers to a context in which work is done at a distance, generally outside conventional offices, regardless of when and where, and in which interactions are mediated by technology (Cascio & Shurygailo, 2003). It is possible to position the level of virtuality on a continuum: at one end, we find work that is done exclusively at a distance with interactions that are entirely electronic, and at the other end, there is work that is done exclusively in conventional offices and by means of face-to-face interactions (Brunelle, 2009). Between these two poles exist several hybrid forms with greater or lesser levels of virtuality (Gibson & Gibbs, 2006; Griffith, Sawyer, & Neale, 2003). The model proposed by Chudoba, Wynn, Lu, and Watson-Manheim (2005) offers a relevant and interesting framework for understanding the various components of virtuality in work arrangements. According to this model, six elements must be taken into consideration in evaluating the level of virtuality.

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² IDC#221309 – Worldwide Mobile Worker Population 2009-2013 at

<http://www.idc.com/getdoc.jsp?sessionId=&containerId=prUS22214110&sessionId=B477357B252DD6AF16C44DB293F3A02>

The first refers to geographic distance, that is to say, the physical distance that separates workers from their company, their colleagues and their superiors. This distance is caused by the delocalization of work and the dispersal of individuals (Kirkman & Mathieu, 2005; Siebdrat, Hoegl, & Ernst, 2009). The temporal dimension is the second element. This refers to the different time zones that separate individuals, making communications and logistics more complicated (e.g., scheduling meetings and organizing activities) (Towers, Duxbury, Higgins, & Thomas, 2006). The third element is technology. This refers to the complexity and diversity of the technologies used to maintain the relationship between the worker and the organization. For example, elements such as differences between the technologies used and their compatibility and the cost of learning certain complicated technologies tend to reduce the efforts individuals are willing to make to maintain their work relationships (Maznevski & Chudoba, 2000). The fourth element is related to work practices, referring to the concept of shared practices and the creation of a community of practice. Thus, when individuals have similar practices, discussions between members of the community are facilitated, as are identification processes (Orlikowski, 2002). The fifth element is related to the nature of the organization as such and refers to the diversity of actors (i.e., members of different teams, business units and/or organizations). This diversity has the effect of complicating communication and identification processes and thus the execution of work (Maznevski & Chudoba, 2000). Finally, since this type of work arrangement enables work to be done from anywhere around the world, the sixth element refers to cultural differences. Different cultures have different values and languages, which may influence behaviors, perceptions and attitudes and make it more complicated to get work done (Hofstede, 2001).

2.2 Affective organizational commitment

The concept of affective organizational commitment is an important one that has attracted considerable attention from members of the scientific community in recent years (Cooper-Hakim & Viswesvaran, 2005; Mathieu & Zajac, 1990; Meyer, Becker, & Vandenberghe, 2004). This concept refers to an employee's emotional attachment to an organization. An employee with strong affective organizational commitment wants to be a member of the organization and to represent its values and goals voluntarily and for emotional reasons (Coyle-Shapiro & Morrow, 2006; Meyer, Allen, & Smith, 1993). In light of various findings, it is easy to understand researchers' interest in this concept. Indeed, studies show that individuals who have a high level of affective organizational commitment are less likely to quit their jobs, have a lower rate of absenteeism, have a stronger desire to achieve the organization's goals, adopt organizational citizenship behaviors, uphold the organization's values, and ultimately perform better (Allen & Grisaffe, 2001; Brown, 1996; Luchak & Gellatly, 2007; Siegel, Post, Brockner, Fishman, & Garden, 2005; Wright & Bonett, 2002). What this means is that affective organizational commitment is a significant predictor of employees' performance.

Because affective organizational commitment develops through social exchanges and common experiences that lead employees to form an emotional attachment to the organization (Rhoades, Eisenberger, & Armeli, 2001) and because virtuality has a major influence on interpersonal relations and modes of communication (Meyer & Herscovitch, 2001), we believe that the level of virtuality in work arrangements impacts employees' affective organizational commitment. We explain this hypothesis as follows. Virtuality creates distance that reduces or even eliminates the informal interactions and "corridor meetings" that occur in conventional work organizations (Fisher & Fisher, 2001). These informal encounters play an important role in constructing individuals' emotional attachment (Meyer & Allen, 1997); on the other hand, distance makes identification and communication processes more complex (Wilson, O'Leary, Metiu, & Jett, 2008) and long-distance interactions reduce the emotional content of discussions and communications (Napier & Ferris, 1993). It is for this reason that research has shown that the use of technologies in interpersonal relationships creates emotional detachment in individuals (Hasty, Massey, & Brown, 2006; Shepherd & Martz, 2006).

The emotional detachment caused by virtual work arrangements may be explained by the fact that they are poor in terms of communication richness (Trevino, Webster, & Stein, 2000). Communication richness refers to the ability to convey certain types of information and is determined by the capacity for immediate feedback, multiple cues and senses involved, language variety, and personalization (Lengel & Daft, 1988). Thus, each dimension of virtuality, namely geographic dispersion, different time zones, the nature of electronic communication tools, differences in work practices, diversity of actors, and cultural diversity are important elements that limit the richness of interactions because they favor more asynchronous communications, with less immediacy and less possibility of feedback (Brunelle, 2009). Consequently, we formulated the following hypothesis:

Hypothesis : The level of virtuality of a work arrangement will negatively influence the level of employees' affective organizational commitment.

3. METHODOLOGY

3.1 Data collection and sample

Management consulting firms are businesses in which the deployment of work arrangements that create a significant level of virtuality is the norm (Marquez, 2008). For this reason, we collected our data from management consultants working in a large consulting firm. The data was collected with a web questionnaire. Participants were directly contacted by means of an e-mail that invited them to visit the questionnaire website. To increase the rate of response, participants were eligible for a draw for a prize valued at \$300 (iPod Touch). Of the 380 people solicited, 139 (29%) completed the questionnaire; 134 questionnaires (27.9%) were usable. Table 1 describes the study sample. As we can see, this sample is representative of management consultants, who tend to be highly educated (92.5% have a university degree), mainly aged between 30 and 59 (97%) and composed of more men than women (64.2% vs. 35.8%).

Table 1: Demographic Profile of Sample

		N	%
Age	18 to 29	2	1.5
	30 to 39	28	20.9
	40 to 49	76	56.7
	50 to 59	26	19.4
	60 and over	2	1.5
Education ³	College	10	7.5
	University (Undergraduate)	70	52.2
	University (Graduate)	54	40.3
Gender	Female	48	35.8
	Male	86	64.2
Total		134	100%

3.2 Measures

Measures were developed following the procedures proposed by Churchill (1979). Multi-item scales were generated based upon earlier measures. Thus, we searched the literature to identify measurement instruments and scales that had already been validated and used them to collect our data.

3.2.1 Affective organizational commitment ($\alpha = 0.75$). One of the most widely used measures of affective organizational commitment is the eight-item scale developed by Meyer and Allen [30]. We therefore used this measure with a 7-point Likert scale (1 = strongly disagree and 7 = strongly agree), as suggested

3.2.2 Virtuality in work arrangements. Chudoba et al. (2005) developed an 18-item measure that takes account of each of the six elements characterizing virtuality in work arrangements. We used this measure with a 6-point Likert scale (1 = never, 2 = yearly, 3 = quarterly, 4 = monthly, 5 = weekly, 6 = daily) to evaluate the geography dimension with 4 items ($\alpha = 0.70$), the temporal dimension with 2 items ($\alpha = 0.83$), the technology dimension with 4 items ($\alpha = 0.71$), the work practices dimension with 3 items ($\alpha = 0.66$), the organization dimension with 3 items ($\alpha = 0.66$), and the cultural dimension with 2 items ($\alpha = 0.69$).

3.2.3 Control variables. On the basis of prior research, we controlled for age, gender (1 = male, 2 = female), education level and tenure with the organization (in years) (Meyer, et al., 2004).

4. RESULTS

Table 2 presents the means, standard deviations, and correlations for each measure. Since many of the independent variables are significantly correlated, a variance inflation factor (VIF) diagnostic was used to test for multicollinearity. The most common cutoff threshold is a VIF above 10 (Hair, Anderson, Tatham, & Black, 1998). Our VIF ranged between 2.66 and 4.16; thus, multicollinearity is not an issue here.

³ In the province of Quebec, students must study for two or three years at the college level after leaving high school and before (or instead of) going to university.

Table 2: Means, standard deviations, and correlations

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Age	1										
2. Gender	-0.20*	1									
3. Educ. Level	0.08	-0.20*	1								
4. Tenure	0.71**	-0.14	-0.17	1							
5. Geography	-			-	1						
	0.32**	0.12	-0.08	0.27**							
6. Temporal	-0.14	-0.01	-0.09	-0.14	0.69**	1					
7. Technology	-			-	0.76**	0.54**	1				
	0.36**	0.01	-0.08	0.24**							
8. Work pract.	-0.13	0.02	-0.08	-0.09	0.75**	0.59**	0.69**	1			
9. Organization	-			-	0.68**	0.52**	0.57**	0.65**	1		
	0.22**	0.05	-0.01	0.24**							
10. Cultural	-				0.61**	0.77**	0.58**	0.58**	0.55**	1	
	0.27**	0.04	-0.08	-0.20*							
11. Commitment					-						
	-0.04	-0.11	0.01	-0.03	-0.12*	0.22**	0.22**	0.15*	0.11*	0.17*	1
<i>Mean</i>	2.99 (/5)	0.36 0=F; 1=M	3.32 (/5)	16.30 (month)	3.12 (/6)	3.45 (/6)	2.87 (/6)	3.05 (/6)	3.38 (/6)	3.00 (/6)	5.64 (/7)
<i>S.D.</i>	0.725	0.481	0.610	7.471	1.16	1.47	1.04	1.15	1.33	1.47	0.71

* $p < .05$. ** $p < .01$

Table 3: Results of regression analysis

Model	Variables	β	S.E.	Std. β	t	Sig.	VIF
1	(Constant)	5.561	.431		12.913	.000	
	Age	-.045	.128	-.046	-.351	.726	2.201
	Gender	.176	.135	.118	1.301	.196	1.082
	Education level	-.014	.110	-.012	-.123	.902	1.162
	Tenure	-.002	.012	-.018	-.134	.894	2.237
	Model $R^2 = 0.016$; Adj. $R^2 = 0.014$						
2	(constant)	5.158	.368		14.002	.000	
	Age	.151	.093	.153	1.619	.108	2.521
	Gender	.106	.094	.071	1.127	.262	1.134
	Education level	-.064	.076	-.054	-.838	.404	1.182
	Tenure	-.011	.009	-.116	-1.278	.204	2.323
	Geography	-.426	.078	-.689	-5.439	.000	4.524
	Temporal	-.406	.053	-.834	-7.648	.000	3.353
	Technology	.331	.069	.482	4.782	.000	2.862
	Work practices	.137	.065	.221	2.094	.038	3.133
	Organization	.230	.075	.305	3.080	.003	2.760
	Cultural	.328	.050	.676	6.620	.000	2.944
Model $R^2 = 0.549$; Adj. $R^2 = 0.527$							
Dependent variable = Affective organizational commitment							

As suggested by Hair et al. (1998), multiple linear regressions were carried out to test our hypothesis. The results of this analysis are presented in Table 3. As the table shows, the relations with the geography and temporal items are negative and significant and the relations with the technology, work practices, organization and cultural items are positive and significant. The results of this study partially support our hypothesis.

As anticipated, our results indicate that each dimension of virtuality in work arrangements significantly influences employees' affective organizational commitment. Nevertheless, contrary to our expectations, we observed a negative reaction only for the geography and temporal dimensions. Surprisingly, we observed significant but positive relations for the technology, work practices, organization and cultural dimensions.

5. DISCUSSION AND CONCLUSION

Despite results that indicate a significant relationship between the level of virtuality of work arrangements and employees' affective organizational commitment, the results of our study did not correspond to our expectations. Indeed, based on the results of previous studies and on the concept of media richness, we had expected to observe only negative relations in this study, which was not the case. We have attempted to better understand the results we obtained, and we believe that it is possible to explain them as follows. In our view, the difference in direction in these relationships is coherent with the theory of affective commitment. As Meyer and Allen (Meyer & Allen, 1997) indicate, "affective commitment develops as the result of experiences that satisfy employees' needs and/or are compatible with their values" (p. 70). Recall that the sample for this study was made up of management consultants. This group is characterized by a high level of education, strong intellectual curiosity, proficiency with technologies, a propensity for action, and a desire to develop and maintain high-quality interpersonal relationships (Kitay & Wright, 2007). From this perspective, we can better understand the results and the differences observed in the direction of the relations among certain elements. Thus, because geographic and temporal factors create distances that slow down the pace of work, reduce interpersonal contacts and isolate individuals (Fisher & Fisher, 2001), and this is inconsistent with management consultants' values and expectations, we can understand the negative impact of these elements on the consultants' job satisfaction, and consequently their emotional disengagement.

Conversely, when we consider the management consultants' profile, we gain a better understanding of why the technology, work practice, organization and cultural elements have a positive impact on their level of commitment. These elements enrich and diversify their job, give them more autonomy and flexibility, and offer more opportunities for intellectual stimulation, such as learning new technologies and engaging in cultural exchanges. One can believe that all of these circumstances enhance the quality of consultants' work experience, and thus their satisfaction and emotional attachment to their job. Ultimately, and in accordance with the theory of engagement, this leads to greater affective commitment.

Moreover, studies concerning workers' satisfaction with virtual work arrangements indicate that they generally view this kind of work positively (Golden, 2006). Although they may fear the feeling of isolation and career-related risk (Cooper & Kurland, 2002; Kirk & Belovics, 2006; Lim & Benbasat, 2000) – two factors that we can relate to the geography and temporal dimensions – workers tend to perceive these work arrangements as a good way of achieving a better work-life balance (Harris, 2003), less stress (Konradt, 2003) and more flexibility and autonomy in their work (Golden, 2006). Past research suggests that job satisfaction is an important factor in the development of affective commitment (Meyer, Irving, & Allen, 1998). Thus, based on the results obtained here, we believe that diversity related to the technology, work practice, organization and cultural dimensions could contribute to job satisfaction and thus to the development of an emotional attachment and, ultimately, of greater affective commitment. Although this interpretation would make it possible to better understand our results, future studies will need to be carried out to test this explanation and the mediating effect, as we did not evaluate employees' job satisfaction level in this study.

Overall, the results of this study are interesting for several reasons. First of all, they support the existence of a relationship between the level of virtuality in work arrangements and employees' affective organizational commitment. This result confirms that the trend for organizations to implement virtual work arrangements, virtual teams, and telecommuting practices is profoundly altering the nature of the employee-employer relationship (Connelly & Gallagher, 2004). Thus, in our view, it is imperative for the scientific community to work to develop our knowledge of the mechanisms underlying this transformation. As well, given the increasing adoption of such work arrangements, we believe it is crucial that efforts be made to better understand and identify the best practices that can be implemented to effectively and appropriately manage virtuality and to help managers make better decisions regarding their business practices. In light of the results of this study, it is indispensable not only to consider technological and organizational capacity but also to improve our understanding of different employees' values and desires when such business practices are put in place.

Of course, this study is affected by certain limitations. Among other things, it would be interesting to replicate the study with a sample coming from different work environments. That would make it possible to verify whether the positive and negative relations we observed are specific to the context of consulting or whether we can observe similar results in a larger population. As well, this study investigated only one of the dimensions of organizational commitment. In accordance with studies that claim that differences can be seen based on the various foci, forms and bases of commitment (Meyer, et al., 2004), it would also be relevant to examine the impact of virtuality on different types of commitment.

Nevertheless, the results we obtained open the door to a multitude of future studies that should enable us to better understand the impact of virtuality in the workplace and, we hope, will help researchers and managers in their work.

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