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Do high-performance work practices predict training culture?

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Abstract

Although most researchers agree that organizational culture matters, few have investigated this concept in relation to training. This study, using four years of data from over 3300 employers (n=3347), examined which high performance work practices are predictors of a high training culture. The findings show that being in a service industry, being unionized, and being large (in terms of sales and number of employees) all positively predict a high training culture. The use of several HPWP (use of variable compensation, problem solving teams, information sharing, employee suggestions and labour/management committees) were all positive predictors of training culture. The use of flexible job design negatively predicted training culture.

Importance of Training

- Training provides workers with basic skills, stimulates their motivation, nurtures their sense of responsibility, cultivates attitudes conducive to productivity at work and has a positive relationship with wage growth (e.g. Brown, 1989; Hashimoto, 1982).
- Approximately 30% of a newly hired employee's time is typically spent in on-the-job training activities during the first three months of employment (Barron, Black & Loewenstein, 1989).
- Over a decade ago, U.S. businesses were spending 210 billion dollars for on-the-job training and education (Offermann & Gowing, 1990). However, American firms do not train their employees as extensively as do employers in other countries (Osterman, 1995).
- In Canada, 14% of employees feel that they need more training for job-related or career reasons, while 30% wanted to receive more training, 13% felt that employer sponsored training is inadequate or somewhat adequate, and an astounding 28% report that their employer provided no training opportunities (Kapsalis, 1996).

Studying the amount of training an organization offers is of importance to organizations, employees, researchers and policymakers.

Organization-Level Determinants of Training

Several organizational-level factors have been examined as determinants of the amount of training an organization offers.

- **Service industry** (e.g. Elias & Healey, 1994; Frazis et al., 1995; Turcotte et al., 2002)
- **Size of the organization** (e.g. Barron et al., 1987; Holtmann & Idson, 1991; Elias & Healey, 1994; Alba-Ramirez, 1994; Greenhalgh & Movrotas, 1994; Frazis et al., 1995; Frazis et al., 2000; Turcotte et al., 2000)
- **High Performance Work Practices** (e.g. Frazis et al., 1995, 2000; Osterman, 1995)

While several organizational level determinants of training have been examined, what have yet to be examined are the determinants of a high training culture.

Training Culture

This study proposes that the organization-level predictors of training discussed thus far will predict training culture. An organization can be considered to have a high training culture if they persistently offer a high level of training. Therefore, an organization that offers a high level of training, persistently from year to year would be considered to have a higher training culture than an organization that offers a relatively high level of training that fluctuates from year to year. Training culture has yet to been examined, likely due to the lack of available longitudinal data. This study uses four years of workplace longitudinal data to compute a training culture variable.

Three training culture variables were created for each workplace, each calculated as the average of training expenditures, the number of different types of skills trained and the number of employees trained.

Subsequently, the mean and variance for each training culture variable were then calculated. Each workplace was then put into one of four categories (high mean/low variance, high mean/high variance, low mean/high variance and low mean/low variance) for each measure of training culture. For example, a workplace with a high mean and low variance with respect to expenditures for training was considered to have the highest training-culture-expenditures compared to a workplace with a low mean and low variance, which was considered to have a poor training culture.

Hypothesis

H1: Organizations that have a high training culture, operationalized as those who offer a persistently high level of training, are likely to be large (both in terms of number of employees and sales).

H2: Organizations that have a high training culture, operationalized as those who offer a persistently high level of training, are likely to be in the service industry.

H3: Organizations that have a high training culture, operationalized as those who offer a persistently high level of training, are likely to be unionized.

H4: Organizations that have a high training culture, operationalized as those who offer a persistently high level of training, are likely to employ high performance work practices.

Method

- Research on training has been severely limited by the scarcity of appropriate training data (Holtmann & Idson, 1991)
- This study addresses the limitations discussed by Westhead (1998), that most training studies:
 - only focus on individual employees, without taking into consideration information on the employer
 - try to generalize from small samples of employers
 - do not distinguish between different types of training
- Therefore, this study:
 - is longitudinal, which allows us to examine changes over time
 - is generalizable (and contains data on a variety of organizations and individuals)
 - includes different definitions of training (on-the-job vs. classroom etc.)

Method & Analyses

- Used the Canadian Workplace and Employee Survey (n=3347 workplaces)
 - Data collected by in-person interviewers
 - Response rate of 83% for workplaces
- Included 4 years of data (1999-2002)
 - Training variables were available for all four years which allowed us to compute the training culture variable using all four years of data
 - Questions on the use of HPWP were only asked every two years (1999 & 2001)
- Included only workplaces with 10 or more employees, and 3 or more responses

Method & Analyses

- Computed 3 training culture variables (each based on an average and variance of the 2 years of data on expenditures, number of employees trained and the number of different types of skills trained)
- Each workplace was put into one of four categories:
 - High average training, low variance (HIGHEST Training Culture)
 - High average training, high variance
 - Low average training, high variance
 - Low average training, low variance (LOWEST Training Culture)
- OLS regression was conducted to determine the predictors of all three measures of the level and persistence of training culture

Results

H1 through H3 were supported:

- Being in a service industry, being unionized, and being large (sales per employee), were positive, significant predictors (and consistent across all years and measures of training culture)

H4 was partially supported:

- The use of variable compensation and the use of problem solving teams were positive, significant predictors (and consistent across all years and measures of training culture)
- Other HPWP (use of information sharing, employee suggestions and labour management committees) were predictors of two of the training culture measures (skills and # of employees trained, but not expenditures)
- The use of a flexible job design was a negative predictor of training culture

Results

	Level and Persistence of Training (# Ees Trained) 1999					Level and Persistence of Training (# Ees Trained) 2001				
	Unstandardized		Stand.	t	Sig.	Unstandardized		Stand.	t	Sig.
	B	Std. Error	Beta			B	Std. Error	Beta		
(Constant)	0.741	0.109		6.799	0.000	0.596	0.162		3.675	0.000
weighted # of ees	0.000	0.000	-0.003	-0.101	0.920	0.000	0.000	0.054	1.282	0.200
industry	0.381	0.053	0.126	7.198	0.000	0.430	0.085	0.138	5.063	0.000
unionized workplace	0.194	0.060	0.061	3.221	0.001	0.233	0.150	0.040	1.552	0.121
sales per ee	0.000	0.000	0.059	3.493	0.000	0.000	0.000	0.060	2.352	0.019
uses ee suggestions	0.240	0.059	0.077	4.103	0.000	0.077	0.092	0.024	0.835	0.404
uses flexible job design	0.016	0.065	0.005	0.250	0.803	-0.110	0.116	-0.027	-0.950	0.342
uses information sharing with ees	0.254	0.060	0.084	4.200	0.000	0.454	0.095	0.151	4.786	0.000
uses problem solving teams	0.167	0.062	0.053	2.678	0.007	-0.002	0.098	-0.001	-0.017	0.986
uses labor-mgmnt committees	0.103	0.063	0.033	1.642	0.101	0.081	0.089	0.027	0.908	0.364
uses self-directed work groups	0.098	0.075	0.024	1.314	0.189	0.201	0.135	0.041	1.494	0.136
job rotation and multi skilling	0.047	0.062	0.014	0.755	0.450	-0.064	0.102	-0.018	-0.628	0.530
implementation of TQM	0.044	0.064	0.013	0.693	0.488	0.180	0.112	0.045	1.610	0.108
downsizing in last 12 months	- 0.063	0.064	-0.017	-0.989	0.323	0.043	0.098	0.012	0.434	0.664
re-engineering in last 12 months	0.036	0.058	0.012	0.612	0.541	0.217	0.093	0.071	2.333	0.020
flexible work hours	- 0.009	0.072	-0.002	-0.123	0.902	-0.075	0.143	-0.014	-0.521	0.602
variable compensation	0.165	0.094	0.031	1.745	0.081	0.025	0.145	0.005	0.170	0.865
innovation	- 0.062	0.034	-0.034	-1.825	0.068	-0.014	0.110	-0.004	-0.127	0.899
imp. of computer assisted tech	0.065	0.079	0.014	0.819	0.413	-0.070	0.142	-0.013	-0.490	0.624
amount spent on computer software	0.000	0.000	-0.023	-1.368	0.171	0.000	0.000	0.007	0.284	0.776
imp. of new computer software	0.150	0.052	0.049	2.907	0.004	0.078	0.095	0.021	0.822	0.411
number of employees using a computer	0.000	0.000	0.024	0.815	0.415	0.000	0.000	0.014	0.337	0.736

n=3347 (1999); n=1458 (2001)

Results

	Level and Persistence of Training (Skills) 1999					Level and Persistence of Training (Skills) 2001				
	Unstandardized		Stand.	t	Sig.	Unstandardized		Stand.	t	Sig.
	B	Std. Error	Beta			B	Std. Error	Beta		
(Constant)	0.873	0.082		10.623	0.000	1.043	0.114		9.181	0.000
weighted # of ees	0.001	0.000	0.140	5.116	0.000	0.001	0.000	0.185	4.775	0.000
industry	0.251	0.040	0.101	6.289	0.000	0.188	0.060	0.079	3.150	0.002
unionized workplace	0.199	0.045	0.077	4.393	0.000	-0.111	0.105	-0.025	-1.058	0.290
sales per ee	0.000	0.000	0.054	3.467	0.001	0.000	0.000	0.057	2.409	0.016
uses ee suggestions	0.143	0.044	0.055	3.244	0.001	0.074	0.065	0.031	1.147	0.251
uses flexible job design	-0.156	0.049	-0.055	-3.203	0.001	-0.161	0.081	-0.051	-1.982	0.048
uses information sharing with ees	0.280	0.046	0.113	6.150	0.000	0.301	0.066	0.132	4.528	0.000
uses problem solving teams	0.197	0.047	0.076	4.192	0.000	-0.010	0.069	-0.004	-0.143	0.886
uses labor-mgmt committees	0.272	0.047	0.105	5.749	0.000	0.269	0.062	0.118	4.308	0.000
uses self-directed work groups	0.029	0.056	0.009	0.506	0.613	0.059	0.094	0.016	0.623	0.534
job rotation and multi skilling	0.073	0.047	0.027	1.564	0.118	-0.018	0.071	-0.007	-0.256	0.798
implementation of TQM	0.005	0.048	0.002	0.100	0.920	-0.043	0.078	-0.014	-0.543	0.587
downsizing in last 12 months	0.046	0.048	0.015	0.944	0.345	0.201	0.069	0.074	2.912	0.004
re-engineering in last 12 months	0.164	0.044	0.066	3.740	0.000	0.262	0.065	0.112	4.009	0.000
flexible work hours	-0.075	0.055	-0.022	-1.375	0.169	0.009	0.100	0.002	0.087	0.931
variable compensation	0.620	0.071	0.143	8.702	0.000	0.488	0.101	0.123	4.815	0.000
innovation	-0.135	0.026	-0.088	-5.229	0.000	0.212	0.077	0.072	2.752	0.006
imp. of computer assisted tech	0.012	0.060	0.003	0.202	0.840	-0.132	0.100	-0.032	-1.330	0.184
amount spent on computer software	0.000	0.000	0.009	0.581	0.561	0.000	0.000	0.023	0.966	0.334
imp. of new computer software	0.157	0.039	0.063	4.034	0.000	0.098	0.067	0.035	1.470	0.142
number of employees using a computer	0.000	0.000	0.005	0.179	0.858	0.000	0.000	-0.007	-0.187	0.852

Results

	Level and Persistence of Training (Expenditures) 1999					Level and Persistence of Training (Expenditures) 2001				
	Unstandardized		Stand.	t	Sig.	Unstandardized		Stand.	t	Sig.
	B	Std. Error	Beta			B	Std. Error	Beta		
(Constant)	0.359	0.099		3.638	0.000	0.696	0.152		4.583	0.000
weighted # of ees	0.000	0.000	0.031	1.060	0.289	0.000	0.000	0.057	1.346	0.178
industry	0.152	0.048	0.055	3.166	0.002	0.035	0.080	0.012	0.436	0.663
unionized workplace	0.202	0.054	0.070	3.711	0.000	-0.041	0.140	-0.007	-0.288	0.773
sales per ee	0.000	0.000	0.142	8.492	0.000	0.000	0.000	0.088	3.429	0.001
uses ee suggestions	- 0.014	0.053	-0.005	-0.272	0.786	-0.124	0.086	-0.042	-1.442	0.150
uses flexible job design	- 0.032	0.059	-0.010	-0.552	0.581	-0.301	0.108	-0.077	-2.778	0.006
uses information sharing with ees	0.178	0.055	0.064	3.252	0.001	0.328	0.089	0.117	3.695	0.000
uses problem solving teams	0.230	0.056	0.080	4.070	0.000	-0.015	0.092	-0.005	-0.167	0.867
uses labor-mgmt committees	0.031	0.057	0.011	0.542	0.588	0.201	0.083	0.071	2.413	0.016
uses self-directed work groups	0.118	0.068	0.032	1.737	0.082	0.247	0.126	0.054	1.959	0.050
job rotation and multi skilling	0.071	0.056	0.024	1.272	0.203	-0.005	0.095	-0.001	-0.053	0.958
implementation of TQM	0.003	0.058	0.001	0.045	0.964	-0.195	0.105	-0.052	-1.866	0.062
downsizing in last 12 months	0.074	0.058	0.022	1.281	0.200	0.197	0.092	0.059	2.135	0.033
re-engineering in last 12 months	0.182	0.053	0.066	3.457	0.001	0.126	0.087	0.044	1.447	0.148
flexible work hours	- 0.145	0.065	-0.039	-2.219	0.027	0.086	0.134	0.017	0.640	0.522
variable compensation	0.207	0.085	0.043	2.427	0.015	0.166	0.135	0.034	1.224	0.221
innovation	- 0.016	0.031	-0.009	-0.504	0.614	0.014	0.103	0.004	0.132	0.895
imp. of computer assisted tech	0.041	0.072	0.010	0.575	0.565	0.058	0.133	0.011	0.434	0.665
amount spent on computer software	0.000	0.000	0.013	0.802	0.423	0.000	0.000	0.037	1.435	0.152
imp. of new computer software	0.074	0.047	0.026	1.576	0.115	-0.095	0.089	-0.028	-1.070	0.285
number of employees using a computer	0.001	0.000	0.088	3.056	0.002	0.001	0.000	0.110	2.630	0.009

Discussion and Future Research

This study examined the relationship between the use of HPWPs and a high training culture. Generally speaking, previous research on the determinants of training has used cross-sectional data and tended to focus on individual employees, without taking workplace variables into account (Westhead, 1998). This study has made a considerable contribution to the literature with the inclusion of a training culture variable, computed at the workplace level using longitudinal data.

As expected, several HPWPs positively predicted training culture. However, the use of flexible job design negatively predicted training culture. Organizations that use flexible job design may rely more on informal on-the-job training rather than formal classroom training.

Future research should examine whether HPWP are actually determinants of, or simply covariates of, training culture, specifically focusing on the direction and causality of this relationship.

Some inconsistencies were found across the two years of data that were examined. For example, the findings show that organizations that use job rotation are less likely to have a persistently high level of training in 1999, and more likely in 2001. Occurrences such as these cannot be explained from the present analysis. Further research is needed, with the analysis repeated for several years, to determine which year is the anomaly. The finding that is consistent with previous research may turn out to be the robust finding, however, future research is needed to make such a conclusion.