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Training and Competitiveness: A Survey of Practitioners

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Abstract

This study, which is conceptually based on the resource-based view of the company, asks human resource experts in small, medium and big firms about the influence of training on various aspects of the organisation's competitiveness. According to the results of an online poll of 111 human resource professionals, the majority of participants rate the influence of training on several metrics of their companies competitiveness as moderate, high or very high. Based on their interactions with colleagues and the management team, the human resource professionals polled assess the influence of training on several aspects of their firms competitiveness.

Key words: Training • Firm's competitiveness • Resource • Management

Introduction

Theoretical establishment in business strategy has elevated the role of human resources, both as a business function and as a labor, in creating sustained competitive advantage. The resource-based view of the firm proposes that firms can create and obtain sustained competitive advantage by creating value in a fashion that is rare and impossible for rivals to imitate. The resource-based view of the firm argues that conventional sources such as natural resources, technology, economies of scale, operational and manufacturing designs etc., can be utilized to generate sustained competitive advantage, yet these sources can be easily copied by competitors. In this case, any sources of sustained competitive advantage that cannot be easily imitated are especially important. The resource-based view of the firm establishes that people (human resources), a repository of knowledge and skills, can be leveraged to create value in a way that is difficult for competitors to imitate. People are the strategic assets meaning "the set of difficult to trade and imitate, scarce, appropriable and specialized resources and capabilities that bestow the firm's competitive advantage" [1].

Ultimately people, a repository of knowledge and skills, are the most valuable and necessary asset for any firm to compete and generate com-petitive advantage. Strategically speaking, a firm may have a great strategic plan in place, yet it means nothing if its people lack access to appropriate and relevant knowledge, skills and attitudes to successfully sup-port or carry out the strategic plan. Since people are the core driver of successful strategy implementation, it is vital for those, especially top management and executive teams, who plan and formulate business strategies to realize that having their employees equipped with appropriate knowledge and skills is a key element for successful strategy implementation. Porter stresses that firms operating in the knowledge-based economy become more and more dependent on the skills and knowledge of their workers. And training has traditionally been a conventional method utilized by virtually every firm, big and small, to prepare and arm both current and new employees with necessary and relevant knowledge and skills needed to perform day-to-day operational activities that ultimately determine organizational performance, success and competitiveness.

Research in strategic human resource management, organizational performance, performance improvement and organizational competitive advantage has conceptually and empirically linked training to organizational performance and sustained competitive advantage. In addition, Sum investigates if the integration of training in the firm's business strategies increases the impact of training on the firm's competitiveness and report a statistically significant positive regression coefficient, $b=0.554$, $t(97)=6.25$, $p<0.001$ implying that the impact of training is greater when training is integrated in the firm's business strategies. Another study by Sum examines if a portfolio of firms with the best training program consistently outperforms the market and finds that 9 out of the 10 years outperform the value-weighted CRSP index by as high as 100 basis points and as low as 11 basis points; 7 out of the 10 years outperform the S and P 500 index by as low as 7 basis points and as high as 80 basis points [2].

The objective of this study is to investigate perceptions of human resource professionals employed in the firms operating in knowledge-based economy regarding the impact of training on the firm's competitiveness. Although training, as one of the human resource practices, has been qualitatively and quantitatively established in literature to have a positive impact on organizational

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performance and competitiveness, the extent to which training is genuinely perceived and valued to be strategically important by the firm's top management is still questionable. The current study seeks to contribute to a greater understanding of the impact of training on the competitiveness of firms by conducting a survey of human resource professionals. The survey intends to answer the following research questions [3].

Materials and Methods

Research design

The design of the present study followed a non-experimental descriptive study using online survey method for data collection. The online survey method was utilized to collect necessary data to answer the questions posed in the present study because the online survey provided great convenience and efficiency in respect to data collection; it provides economies of scale to the investigator and saved time. Further-more, the variables in the current study are treated as characteristics instead of dependent or independent variables because it is not the objective of this study to make any predictions or identify any causal effects between the variables [4].

Population and sample size

The target population identified in the present study is human resource professionals who interact on the American Society for Training and Development (ASTD) discussion board and networked on Twitter, Facebook and Linkedin. The human resource professionals are identified as those whose jobs are related to human resource development and management. The present study utilizes a convenience sample due to the fact that human resource professionals who interacted on the American Society for Training and Development (ASTD) discussion board and networked on Twitter, Facebook and Linkedin were conveniently accessible and technologically savvy.

As of September 15, 2009 which is the date of the survey, the population parameter of human resource professionals who interacted on the ASTD discussion board and networked on Twitter, Facebook and Linkedin was estimated at 6,450 (ASTD discussion board=6,010; Twitter=24; Facebook=147; Linkedin=269). To estimate a minimum sample size (n) of the population (N) of 6450 human resource professionals, n=N/(1+N*(e)2) is adopted from Isreal using a 95% confidence level and ± 5% confidence interval (e). Thus, the minimum sample size was calculated to be 376 (n=6450/(1+6450*(0.05)^2)=376). To generate a higher response rate, a total number of 450 invitations soliciting participation in the survey were initiated on the ASTD discussion board located at Twitter, Facebook and Linkedin [5].

There are 111 responses in total. However, several responses contain some missing data. For instance, several responses contain missing data on some questionnaire items and had complete data on other items. Therefore, although several responses contain missing data, they are still included in the statistical analysis. The response rate is estimated at 29.52%-total number of valid responses (111) divided by total number of invitations (450) multiplied by 100-((111/376)*100=29.52%). While the response rate of 29.52% is considered acceptable since the average estimate of response rate for online surveys is between 20% and 30%, the results are also subject to non-response bias (due to lower response rate). As a result, the comparison of the mean rating of each item of the first 20 responses and the latest 20 responses is performed using the independent samples t-test to take care of the non-response bias [6].

$$t = \frac{\bar{X}_1 - \bar{X}_2}{S_{X_1X_2} \cdot \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

where

$\bar{X}1$ is mean rating of each item of the first 20 responses
$\bar{X}2$ is the mean rating of each item of the latest 20.

Responses are an estimator of the common standard deviation of the first and latest samples. In addition, N is the number of valid responses of the first 20 responses and n2 is the number of valid responses of the latest 20 responses. The mean ratings of each item of the first 20 responses and latest 20 responses were not statistically different at 0.05 level. This implied that the first 20 responses and latest 20 responses were similar and did not show any systematic differences that might cause any major concerns or red flags [7].

Research instrument

The online questionnaire is developed by the researcher. The questionnaire consists of six sections. The first section asks respondents to provide demographic data. The second section asks respondents to indicate types of training provided in their firms. The third section asks respondents to indicate training delivery formats adopted by their firms. The items found in the second and third sections are adopted from the 2008 industry report and exclusive analysis of the U.S. training industry. The fourth section asks respondents to provide general information related to their firms. The fifth section asks respondents to rate (5=very high, 4=high, 3=moderate, 2=low and 1=very low) their level of agreement of the impact of training on measures of the firm's competitiveness; the N/A option is also provided. In addition, respondents are asked how (on what basis) they determine the extent they perceive training to impact their firm's competitiveness. Finally, the sixth section provides respondents an optional comment text area should they have any comments or opinions to add to the ques-tionnaire [8].

Validity and reliability of the data collection instrument

The extensive review of literature, input from the panel of experts and feedback from participants in the pilot study are sufficient in establishing the data collection instrument validity. Using data obtained from the pilot survey, the Cronbach's α (alpha) is calculated to determine the reliability of the data collection instrument. The formula below is used to estimate the Cronbach's α (alpha):

$$\alpha = \frac{N}{N-1}\left(1 - \frac{\sum_{i=1}^{N}\sigma_{Y_i}^2}{\sigma_X^2}\right)$$

Where N is the number of the items, σ^2_{Yi} is the variance of the observed total rating scores and σ^2_X is the variance of item i. The

Cronbach's α (alpha) is only calculated for the fifth and sixth sections of the survey. Based on data obtained from the pilot survey, the Cronbach's α (alpha) was estimated at 0.909. Based on data obtained from the official survey, the calculation of the Cronbach's α (alpha) is 0.920; this value is much higher than the acceptable value of 0.700 [9].

Data collection process

A total number of 450 invitations soliciting participation in the survey were initiated at about 3:45 PM CST on September 15, 2009, on the ASTD discussion board located at Twitter, Facebook and Linkedin. Specifically, eight invitations were posted on the ASTD discussion board. Twenty-six invitations were posted on ASTD chapters twitter pages and 269 invitations were sent to human resource professionals on Linkedin. Finally, 147 invitations were sent to human resource professionals on Facebook. A reminder was initiated at around 6:30 AM CST on September 22, 2009. The invitation was a short message electronically posted in the ASTD's online forum and ASTD chapters and members Twitter pages and sent to ASTD chapters and members on Facebook and Linkedin soliciting participation in the study [10].

Data analysis

Data analysis took place immediately following the prespecified date for data collection cut off point which was on September 25, 2009, at 5:30 PM CST. Any and all responses that had not been entered into the analysis system were entered and the data were reviewed for accuracy and completeness. Random samples were pulled from the file of data collection instruments and the corresponding entries were audited to insure proper data input. The data are analyzed using central tendency and *chi square* (χ^2). The following is the formula used for *chi square* (χ^2) calculation,

$$\chi^2 = \sum_{i=1}^{R}\sum_{j=1}^{C}\frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

Where O_{ij} is the observed frequencies in a cell and E_{ij} is the expected frequencies in a cell. The Spearman's correlation coefficient (r_s) was calculated using the classic Pearson's correlation coefficient between ranks of the ratings [11].

Results and Discussion

Participants characteristics

Table 1 provides a description of participant characteristics expressed statistically in frequency and percentage. Among the 111 participants, 48 (43.2%) and 63 (56.8%) are male and female, respectively. The largest categories of participant age are 41-50 (34% or 30.6%) and 51-60 (30% or 27%). As for the American Society for Training and Development (ASTD) membership, 49 (44.1%) of the participants identified themselves as national members and 48 of the participants are members of the ASTD's local chapters in 20 different U.S. states; Idaho and Illinois have the highest numbers (9 and 7, respectively) of participants who are members of ASTD's local chapters. Regarding the job title, 28 (25.2%) of the participants are training managers. In respect to working experience, 45 (40.5%) of the participants indicated that they have worked for their current firms for more than 5 years. For education, 56 (50.5%) of the participants hold master's degrees; 13 (11.79%) hold doctoral degrees; and 36 (32.4%) of the participants have a major in education.

Characteristics	n	%
Gender		
Male	48	43.2
Female	63	56.8
Total	111	100
Age		
21-30	9	8.2
31-40	25	22.5
41-50	34	30.6
51-60	30	27
61-70	9	8.1
No response	4	3.6
Total	111	100
ASTD membership		
National member	49	44.1
Local member		
California	5	4.5
Florida	4	3.6
Georgia	1	0.9
Idaho	9	8.1
Illinois	7	6.3
Indiana	2	1.8

Louisiana	1	0.9
Massachusetts	1	0.9
Michigan	1	0.9
Minnesota	1	0.9
Missouri	2	0.8
Nebraska	1	0.9
New Jersey	2	1.8
New York	1	0.9
North Carolina	2	1.8
Ohio	1	0.9
Oklahoma	1	0.9
South Dakota	1	0.9
Texas	3	2.7
Washington	2	1.8
Total	48	43.2
Non-ASTD member	14	12.6
Total	111	100
Position/Job title		
Human resource managers	8	7.2
Instructional design managers	5	4.5
Trainer	12	10.8
Training consultant	19	17.1
Training director	17	15.3
Training manager	28	25.2
Training specialist	16	14.4
Others	6	5.4
Total	111	100
Tenure		
1-5 years	62	55.9
More than 5 years	45	40.5
No response	4	3.6
Total	111	100
Highest level of education		
High school diploma	4	3.6
Associate degree	1	0.9
Bachelorette	37	33.3
Master's	56	50.5
Doctorate	13	11.8
Total	111	100
Major		
Education	36	32.4
Business	17	15.3
HRD/ODS (Organizational Development Studies)	25	22.5
Majors related to liberal arts	20	18
High school diploma	4	3.6
Others	7	6.3
No response	2	1.8
Total	111	100

Table 1. Participant characteristics.

Types of training and training delivery formats in participants firms

Types of training and training delivery formats offered in participants respective firms are shown in Table 2. The professional/industry-specific training is the most frequently identified (k=89; 15.1%) as the type of training offered in participants firms. The virtual classroom is the least frequently (k=60; 24.2%) used format [12].

Types of training and training delivery formats	k	%
Types of training		
Profession/industry-specific training	89	15.1
Mandatory/compliance training	73	12.4
Sales training	50	8.5
Management/supervisory training	79	13.4
Interpersonal/soft skills training	80	13.6
IT/systems training	64	10.9
Customer service training	58	9.9
Executive development training	45	7.7
Desktop application training	46	7.8
Others	4	0.7
Total	588	100
Training delivery formats		
Instructor-led classroom	106	42.7
Online self-study	73	29.4
Virtual classroom	60	24.2
Others	9	3.6
Total	248	100

Table 2. Types of training and training delivery formats offered in participants firm.

Characteristics of participants firms

The characteristics of participants firms are exhibited in Table 3. The participants firms are grouped into three industries-service, retailing and manufacturing; 74 (66.7%) of the firms were service-based. In addition, a large number of participants are employed in large firms (61% or 55%). The firms are categorized into three groups: Small (100 or less employees), medium (101-1000 employees) and large (1001 or more employees). There are 26 (23.4%) small firms. In addition, 58 (52.3%) of the participants firms are engaged in global operations [13].

Characteristics of participants firms	n	%
Industry		
Service	74	66.7
Retailing	10	9
Manufacturing	25	22.5
No response	2	1.8
Total	111	100
Size		
Small (100 or less employees)	26	23.4
Medium (101-1000 employees)	20	18
Large (1001 or more employees)	61	55
No response	4	3.6
Total	111	100
Engagement in global operations		
Yes	58	52.3
No	51	45.9
No response	2	1.8
Total	111	100

Table 3. Characteristics of participants firms.

The first part of this research question asks participants to perceptually rate the impact of training on each measure of their firms competitiveness and the second part asks participants to provide the bases, on which they perceive the impact of training.

Table 4 shows the participants rating of the impact of training on each measure of their firms competitiveness. Forty-three (38.7%) of the participants indicate that training contributes very highly to the

improvement of their firms readiness for current and future business opportunities and threats and 42 (37.8%) participants report that training contributes very highly to their firms productivity. Thirty-four (34.3%) of the participants perceive that training contributes very highly to their firms efficiency. Only 6 (5.4%) of the participants perceive that training has a very low contribution to their firms differentiation in the marketplace. Likewise, 11 (9.9%) of the participants perceptually judge that training has a low contribution to the improvement of the design and development of their firms new products/services.

Nine (8.1%) of the participants identify that training has a very low contribution to the effective introduction of their firm's new products/services to the market. Moreover, 7 (6.3%) of the participants indicate that training has a very low contribution to the effective introduction of new business processes in their firms; 32 (28.8%) participants report that training highly contributes to the improvement of their firms current products/services. Based on their rating, 35 (31.5%) participants expressed that training contributes very highly to the improvement of current business processes in their firms. The participants mean ratings of the impact of training on measures of their firms are 3.68 (readiness for new opportunities and threats), 3.85 (productivity), 3.71 (efficiency), 3.18 (differentiation), 2.66 (new product/service design), 2.87 (introduction of new product/service to the market), 3.30 (introduction of new business processes), 3.45 (current product/service improvement) and 3.34 (current business process improvement) [14].

Bases of the impact	FC1 (n=108)		FC2 (n=107)		FC3 (n=108)		FC4 (n=108)		FC5 (n=107)		FC6 (n=107)		FC7 (n=107)		FC8 (n=107)		FC9 (n=107)	
	k	%	k	%	k	%	k	%	k	%	k	%	k	%	k	%	k	%
Training evaluation	66	21.4	65	22.9	53	18.1	38	15.8	31	15	36	16.7	49	19.4	51	19.2	49	18.8
Executive report	36	11.7	36	12.7	42	14.3	39	16.2	25	12.1	31	14.4	31	12.3	32	12.1	37	14.2
Communication*	82	26.6	77	27.1	83	28.3	68	28.3	61	29.6	61	28.4	76	30.2	79	29.8	73	28.1
Observation	77	25	72	25.4	80	27.3	63	26.2	60	29.1	56	26	62	24.6	70	26.4	63	24.2
Meeting	37	12	29	10.2	30	10.2	25	10.4	22	10.7	22	10.2	27	10.7	26	9.8	31	11.9
Other	10	3.2	5	1.8	5	1.7	7	2.9	7	3.4	9	4.2	7	2.8	7	2.6	7	2.7
Total	308	100	284	100	293	100	240	100	206	100	215	100	252	100	265	100	260	100

Note: Communication with colleagues and management team; FC1=Readiness for new opportunities and threats; FC2=Productivity; FC3=Efficiency; FC4=Differentiation; FC5a=New product/service design; FC5b=Introduction of new product/service to the market; FC5c=Introduction of new business processes; FC5d=Current product/service improvement; FC5e=Current business process improvement; k=Total number of bases identified by n participants for each measure of the firm's competitiveness

Table 4. The bases on which the participants perceived the impact of training on each measure of their firms competitiveness.

The bases on which the participants perceive the impact of training on each measure of their firms competitiveness are presented in Table 4. The participants are most frequently based on their communication with colleagues and management team (k=82; 26.6%) regarding their perception of the extent to which training contributes to the improvement of their firms readiness for current and future business opportunities and threats. In addition, communication with colleagues and management team is also the most frequently identified basis on which the participants base their perceptual judgment of the impact of training on productivity (k=77; 27.1%), efficiency (k=83; 28.3%), differentiation (k=68; 28.3%), new product/service design (k=61; 29.6%), introduction of new product/service to the market (k=61; 28.4%), introduction of new business processes (k=76; 30.2%), current product/service improvement (k=79; 29.8%) and current business process improvement (k=73; 28.1%) [15].

Conclusions

The current study surveys human resource professionals employed in small, medium and large firms regarding the impact of training on various measures of the firm's competitiveness. Based on the analysis of data obtained from the online survey of 111 human resource professionals, the majority of the participants rate the impact of training on various measures of their firms competitiveness moderate, high or very high. The human resource professionals surveyed evaluate the impact of training on various measures of their firms competitiveness based on their communication with colleagues and management team.

The following conclusions for practice are based on the findings and conclusions of this study:

- Training professionals need to improve their awareness of and involvement in the integration of training in various business strategies if they want to increase their strategic visibility, importance and credibility in their firms.
- Top management and executives need to genuinely realize the strategic importance of the training function and training professionals as a value-added source for sustained competitive advantage by increasing the level of training professionals involvement in the business strategies and having a structure that clearly aligns training activities with corporate objectives and goals.
- Training professionals need to focus and rely on more objective and scientific evaluations in assessing the impact of training on their firms competitiveness and business bottom lines if they

want to stay relevant strategically and emphasize their strategic role and credibility in their firms.

- Executives and top management teams need to integrate training and involve training professionals in every business strategy.

Recommendations

The following recommendations for future practice are based on the findings and recommendadtions of this study.

This study can be replicated using a sample drawn from a different population. For example, a sample of CEOs can be drawn to study their perception of the impact of training and its integration in the firm's business strategies on the firm's competitiveness.

- Another direction for future research is to examine the moderating and/or mediating effects of the integration of training in the firm's business strategies on the measures of the firm's competitiveness using quantitative data and more advanced statistical procedures. For instance, an Ordinary Least Squares (OLS) regression with interaction terms can be included to analyze quantitative data to determine if any moderating and/or mediating effects exist between variables-training, integration of training in the firm's business strategies and impact of training on the firm's competitiveness.
- A study can be designed to compare financial measures of the firm's performance in respect to the level of integration of training in the firm's business strategies. For example, a sample of firms with low, moderate and high integration of training in their business strategies can be identified and the current and previous financial statements of respective firms can be obtained to compare their financial positions and performance.
- Finally, it may be interesting to compare the perceived impact of training and its integration of the firm's business strategies on the firm's competitiveness among publicly traded and private firms. For example, it is feasible to survey training professionals or managers employed in publicly traded and private firms regarding their perceptions of the impact of training and its integration of their firms business strategies on various measures of the competitiveness of their firms.

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