
The impact of age and reading on the desire for training of managers in entrepreneurial ventures

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Abstract: The goal of this paper is to determine the effects of age and reading of popular business periodicals on an entrepreneur's view of training needs for their management staff. This paper uses a sampling of 107 entrepreneurs between the ages of 18 and 45 who completed a survey that used Likert scale questions. The results are analysed with a repeated measure ANOVA for evaluating the effect of age and a discriminant analysis for the effect of reading. The results show that age has an effect on entrepreneur's views on training needs, but does not on reading popular business periodicals. Determination of the extent of those needs is reserved for future papers.

Keywords: information; training needs; age and reading; business periodicals.

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1 Introduction

Media attention often focuses solely on the entrepreneur as a brash, forward thinking individual. However, behind each leader is usually a team of employees who work with and support the entrepreneurial venture, leading it to success. These employees, while rarely given the same level of attention as an entrepreneur, are vital to the continued operation and growth of the business. As such, many entrepreneurs encourage employee training to develop their employees into optimal workers. Employee development, and especially manager training, is such a popular topic that many business periodicals now discuss the benefits and costs of training, and advertisements in such media often include classes and seminars on a variety of management topics. Not surprisingly, the lack of skilled human resources along with employee training and development has been attributed to why American companies are losing market share in the global marketplace (Lichtenstein, 1992; Senge, 1994; Cross and Funk, 1997; Yochelson, 2000; Carnevale, 2005). *Winning the Skills Race*, a report issued by the Council on Competitiveness, states that there are severe skill shortages in every region of the USA that threatens the very foundation of American competitiveness (Yochelson, 2000). A National Federation of Independent Business Small Business Poll entitled *The Changing Search for Employees* indicates that 71% of small employers feel that qualified employees are 'hard' to find (Dennis, 2001). In addition, a 2004 Administristaff survey of small and medium firms found that the most significant problem facing these organisations was finding and retaining competent employees. Although respondents were somewhat optimistic about the future, they were still concerned about providing adequate training and motivation for employees (Administristaff, 2005). As a final point, the Bureau of Labour Statistics projects that during the next decade, 30% of new jobs will require some postsecondary education or vocational training (Carnevale, 2005).

Assuming current projections and research findings hold true, owners and managers of small and medium enterprises will have to rely on less qualified employees, requiring more training and development in order to be productive, as well as find ways to retain existing productive employees while continuing to train and develop them (Carnevale, 2005). As a result, these firms must consider employees as an investment much like new machines and apply the same effort to keep employees well maintained. Training and development of employees becomes an imperative.

1.1 To train or not

Employee training and development is provided by employers for numerous reasons. Initially, employers may wish to orient new hires to the organisation or teach them how to perform in their positions. Many organisations later wish to improve the performance of some employees or prepare other employees for pending promotions or revisions to their current positions in terms of design, processes, or technology (Fisher et al., 1999).

Since 1991, more than 21 million new jobs have been created, and the majority of these have been in small businesses (Dennis, 2001). Small employers have become increasingly sensitive to the need for flexible employees in their workplaces. Unfortunately, many small firms have learned the hard way that it is usually cheaper to retain and retrain workers than fire and rehire (Wells, 2001). Thus, there appears to be a renewed emphasis in ongoing training and development of employees in small and medium enterprises.

A recent study conducted by the American Society for Training and Development concluded that there is evidence of a direct relationship between how much a firm spends on employee training and the percentage of increase in organisational performance (Pangarkar and Kirkwood, 2002/2003). Thus, it is evident that organisations may be rewarded financially for investing in their employees through increased profits and low employee turnover. Yet small firms are not training their employees.

Tracey (2001) identifies reasons why owners and managers tend not to train and develop their employees. These include:

- knowing how to give employees the training they need
- not knowing what materials are relevant to necessitate proper training
- not knowing how to measure the effectiveness of training
- not knowing how to encourage employees to use the new skills learned or evaluating whether learning has actually occurred.

1.2 Training according to the experts

Seventy percent of all employers provide some type of formal training for employees (Noe, 1998). In one research study, 75% of respondents in firms with fewer than 500 employees received some training, compared with 82% in companies with more than 1000 workers (Schaaf, 1998).

Small and medium enterprises can raise organisational productivity by training and developing their employees. By conducting training, these firms can ensure that the right people learn the right things at the right time and in the right priority order (O'Connor et al., 1996). Due to the size and quality of the labour market that has been projected for the next decade, it is imperative that small and medium enterprises have a better understanding of and ability to conduct employee training and development. Interestingly, Dennis (2001) contends that 64% of small employers have elected to increase training in response to labour shortages.

There is a lack of research on employee training in small firms, particularly by firm size. There are many questions of interest. What are the areas of training owners seek for their managers? How do factors like age and amount of reading impact the perceived need for training? Our pilot study attempts to answer these questions.

2 Methodology

2.1 Research problem

This paper will examine whether the desire to train managers is moderated by two factors: the age of the entrepreneur and reading popular business periodicals. In the first case, we hypothesise that older entrepreneurs have a different view of manager training than their younger counterparts. The second hypothesis is that reading periodicals like the *Wall Street Journal* and *Entrepreneur* affects an entrepreneur's desire for employee training. The actual impact of both age and reading is beyond the scope of this paper. Rather, the goal is to determine if there *is* an impact, and as such, if these factors warrant further exploration.

2.2 Sample and data

The data for this paper comes from a small business training and internet questionnaire conducted by the CFEE at George Washington University. CFEE sent the survey to 300 entrepreneurs in the DC area. One hundred and thirty five surveys were completed and returned to the Centre. The survey used Likert scale questions where the entrepreneur noted how much he agreed with a statement or how useful a given item is to his or her business. Please see Appendix A for the exact text of the survey questions.

2.3 Methodology

This paper uses two methods to determine whether age or reading periodicals impacts perceived employee training needs. For testing differences across ages, we used a repeated measures ANOVA test to highlight the impact of age on training proclivities. One challenge in using this test was that the sample groups for each of the three age categories (18–25, 26–35 and 36–45) are different sizes. A Box's M test resulted in a χ^2 value of 368.95 and a p -value of less than 0.0001, which means the variance-covariance matrices are not equal. As such, to use a repeated measures ANOVA to evaluate the null hypothesis that the means of the three sample groups are the same across each of the training topics requires a Greenhouse-Geisser epsilon adjustment. This adjustment creates an approximate F -test for effects involving the repeated measures. It does so by reducing the numerator's and denominator's degrees of freedom by the following factor:

$$\epsilon = \frac{[tr(\Sigma - J\Sigma/p)]^2}{(p-1)tr(\Sigma - J\Sigma/p)^2}$$

where J is a $p \times p$ matrix comprised solely of 1's for all its elements.

To minimise the family-wise error in the model, we used Bonferroni's Method. Since we have nine groups, the α for each test was set equal to $0.5/9 = 0.00556$. In addition, an ANOVA test for differences between the mean vectors for each age group will show if any differences come from combining all of the training variables into one model.

For the effect of reading on an entrepreneur's view of training, the results of the survey were summarised into four variables (three dependent and one independent). The independent variable was called Literacy. Each respondent was asked to rate on a 5-point Likert scale how useful they found nine written sources of information (*Wall Street Journal*, *Entrepreneur*, *Newsweek*, *Business Week*, *Time*, *Inc.*, *Fast Company*, trade journals, and textbooks). The values were coded as 0 for 'Extremely Useful' to 4 for 'Not Useful' and summed for each respondent. The range of responses was 0–18. In order to preserve degrees of freedom, we established three ranges of Reading: High reader (0–6 points), Medium reader (7–12 points), and Low reader (13–18).

For the dependent variable, each entrepreneur was asked to "[i]ndicate which areas you believe your managers need additional *management* training" by selecting the corresponding answer in a 5-point Likert scale. We then created three dependent variables by combining the nine types of management training into three overarching categories and determined a category score by summing the scores of the subordinate types of training as follows:

<i>Personal development</i>	<i>Employee/subordinate development</i>	<i>Business processes</i>
Interpersonal communications	Listening and giving useful feedback	Business and financial basic skills
Conflict management and problem solving	Providing career development to employees	Quality management training
Time management	Training employees on the job	E-commerce

Since the three samples of reading levels are of different sizes, a Box's M test was again used to determine if the variance-covariance matrices are statistically similar to each other. The χ^2 value for the test is 18.91, which is less than the critical value of 23.99, given three variables and 12 degrees of freedom, which means that the hypothesis of equal variance-covariance matrices is not rejected. Since the samples have statistically equal variance-covariance matrices, we used a discriminant analysis to determine if there is a significant difference between the three groups' means. The discriminant analysis was followed by using Tukey's method on each of the three conglomerate dependent variables to verify any difference between the group means.

2.4 Interpretation of results

The repeated measures ANOVA test for age found statistically significant differences between at least one of the three age categories for each type of training (Table 1). In addition, the MANOVA tested and verified that at least one of the mean vectors for the three age categories is statistically different from the others. Thus, the age of an entrepreneur affects whether or not he believes that his employees require additional management training. The high test statistics for all of the training variables indicate that not only does a difference exist, but that the difference is strong across all of the data.

Table 1 Repeated measure ANOVA for age vs. demand for training statistically

<i>Type of training across age categories</i>	<i>F-value</i>	<i>Critical value*</i>	<i>Statistically different?</i>
Interpersonal communications	401.04	2.8344	Yes
Listening and giving useful feedback	471.70	2.8344	Yes
Conflict management and problem solving	341.08	2.8344	Yes
Providing career development to employees	240.76	2.8344	Yes
Time management	390.25	2.8344	Yes
Training employees on the job	439.69	2.8344	Yes
Business and financial basic skills	256.65	2.8344	Yes
Quality management training	291.60	2.8344	Yes
E-commerce	119.27	2.8344	Yes

*Calculated at $\alpha = 0.005556$.

<i>MANOVA for age vs. training types</i>	<i>Test statistic</i>	<i>P-value*</i>	<i>Statistically different?</i>
Uncorrected model	λ -value = 2.26	0.0297	Yes
With Greenhouse-Geisser epsilon**	F -value = 3.47	0.0006	Yes

*Calculated at $\alpha = 0.05$.

**Greenhouse-Geisser epsilon = 0.7537.

The discriminant analysis, on the other hand, found no such differences between the high, moderate, and low categories of reading across each of the conglomerate training variables (Table 2). While combining the training variables into three groups may mitigate some existing differences, the fact that the greatest difference between means across all of the groups is less than 0.43 casts serious doubt that a discriminant analysis of any individual training variable will yield significant differences (Table 3). The goal of using Tukey’s studentised range tests was to capture any possible variation that may have been suppressed or minimised by evaluating the model as a whole. However, the tests confirmed that the groups are similar and found no significant variances between the groups. The results indicate that an entrepreneur’s reading behaviour does not affect whether the entrepreneur believes his employees need management training.

Table 2 Discriminant analysis of reading vs. demand for training

<i>Eigenvalue</i>	<i>Eigenvector</i>	<i>F-value</i>	<i>p-value*</i>	<i>Statistically different?</i>
0.0200	(0.3346 0.4822 0.9758)	0.47	0.8309	No
0.0093	(0.8731 0.3040 0.1328)	0.45	0.6379	No

*Calculated at $\alpha = 0.05$.

Table 3 Tukey’s studentised range tests

<i>Literacy group comparison</i>	<i>Difference between means</i>	<i>Confidence limits*</i>		<i>Statistically different?</i>
<i>Personal development training</i>				
High–Moderate	0.0586	0.7809	0.8981	No
High–Low	–0.2414	–1.0392	0.5564	No
Moderate–Low	–0.3000	–1.2899	0.6899	No
<i>Employee development training</i>				
High–Moderate	–0.0914	–0.9025	0.7198	No
High–Low	–0.1979	–0.9687	0.5729	No
Moderate–Low	–0.1065	–1.0629	0.8499	No
<i>Business skills training</i>				
High–Moderate	–0.3534	–1.3991	0.6922	No
High–Low	–0.4295	–1.4232	0.5641	No
Moderate–Low	–0.0761	–1.3089	1.1568	No

*Calculated at the 98.33% level.

3 Conclusion and discussion

The results of the tests were surprising in two key ways. The first is that the repeated measures ANOVA of age resulted in such strong results. While some variation was expected, a strong rejection of similar means across all of the training variables greatly exceeded the anticipated results. Further exploration into the effects of age on entrepreneur’s views of training for management could yield fascinating generational differences in views of training. It would be interesting to see which of the age groups

differ and by how much that difference is. The repeated measures ANOVA does not indicate how persistent the different views are – that is, a follow-up study could explore if the differences are generational trends. Extending the survey to older entrepreneurs could provide more data points on which to develop a prediction of future trends in managerial training.

The second surprising conclusion was that reading business materials, including magazines, textbooks, and trade journals, has no effect on entrepreneurs' desire to seek training for their management. Many such documents discuss the importance of training and several include training references or advertisements. Two possible interpretations of the results indicate that entrepreneurs may ignore such material, or they instead have formed their views on training prior to reading and, as such, use such advertisements and articles to maintain those views. For example, if an entrepreneur thinks that training is too time consuming, reading advertisements for week-long training will do little to change that perception. Follow-up studies should examine if advertisements impact entrepreneurs' perceptions of training and whether or not such views are mutable at all.

We also faced several limitations when conducting this survey. All of the respondents were male. As such, we do not know if the lack of gender diversity influenced our results as women entrepreneurs may respond differently than men. In addition, we had fewer than three respondents for the 46–55, 56–65 and 66 and over age categories, and as a result, they were excluded from the analysis. While the results clearly indicate that age influences demand for management training for managers, in order to determine the presence of generational trends, we need more respondents from these categories. Finally, the sample size we worked with was small ($n = 102$) after we removed respondents who did not complete the necessary portions of the survey. We would like to conduct a survey with a larger response rate to see if the results are consistent. We believe that our results indicate the presence of a strong difference for age and the lack of such a difference in reading that will be born out in future studies.

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Appendix A: Survey questions and responses

Below is the text of the survey questions as they were presented to the entrepreneurs.

- 7 Indicate which areas you believe your managers need additional *management* training by circling the most appropriate response.

SA: Strongly Agree; A: Agree; NO: No Opinion; D: Disagree; SD: Strongly Disagree

Interpersonal communications	SA	A	NO	D	SD
Listening and giving useful feedback	SA	A	NO	D	SD
Conflict management and problem solving	SA	A	NO	D	SD
Providing career development to employees	SA	A	NO	D	SD
Time management	SA	A	NO	D	SD
Training employees on the job	SA	A	NO	D	SD
Business and financial basic skills	SA	A	NO	D	SD
Quality management training	SA	A	NO	D	SD
E-commerce	SA	A	NO	D	SD

- 9 How useful are the following publications in helping you deal with management and training issues facing your business? Circle the most appropriate answers.

EU: Extremely Useful; U: Useful; NO: No Opinion; SU: Somewhat Useful; NU: Not Useful

<i>Wall street journal</i>	EU	U	NO	SU	NU
<i>Entrepreneur</i>	EU	U	NO	SU	NU
<i>Newsweek</i>	EU	U	NO	SU	NU
<i>Business week</i>	EU	U	NO	SU	NU
Trade journals	EU	U	NO	SU	NU
Textbooks	EU	U	NO	SU	NU
Time	EU	U	NO	SU	NU
<i>Fast company</i>	EU	U	NO	SU	NU
<i>Inc.</i>	EU	U	NO	SU	NU

- 13 My age range is:

_____ 18–25

_____ 26–35

_____ 36–45

_____ 46–55

_____ 56–65

_____ 66 and over.