TRAIT ANXIETY AS A PREDICTOR OF ANXIETY TOWARD COMPUTERS

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INTRODUCTION

Since their introduction and rapid spread into all areas the use of computers has been accompanied by anxiety toward computers for many users, particularly employees, who have to use them at work. Man-computer interaction is hindered by it (Fariña, 1990), which has repercussions for organisations using computers, including banks. Finding its causes is, therefore, both necessary and urgent.

"Trait anxiety refers to the relatively stable individual differences in anxiety proneness, that is, the differences between people in a tendency to respond to situations perceived as threatening with elevations in state anxiety intensity... Trait anxiety ... indicates differences in the strength of a latent disposition to manifest a certain type of reaction" (Spielberger et al., 1970, p. 3). People having higher trait anxiety will be those who tend to show greater state anxiety, rather than those with low trait anxiety (Lamb, 1972).

Themes (1982), Betz (1978), and Rounds and Hendel (1980) have found trait anxiety correlates significantly with anxiety toward mathematics, and given that

"Much of the preliminary research that is presently underway on computer anxiety has its roots in the related phenomenon of math anxiety" (Howard, 1986, p. 20) it seemed its investigation would be important in determining the causes of anxiety toward computers. Little research has been done and the relation between anxiety toward computers and trait anxiety is not well established: Raub (1981) obtained a correlation of 0.32 (p < .001) between the two variables, and Fariña, Sobral, Arce and Caramés (in press), using regression and discriminant analyses, also found that this variable was significant in this respect, with a positive correlation coefficient. Howard (1986), however, obtained a correlation of 0.1135 (p = .118).

METHOD

Sample

The sample comprised 421 employees (123 women and 298 men) from the offices, throughout Galicia, of the Caixa Galicia bank. All grades of employees (directors, tellers, supervisors, etc.) completed the questionnaires.

Instruments and procedure

A booklet of questionnaires (only those pertaining to this study are detailed here) was given to the subjects that included Raub's (1981) ATC scales: 1) appreciation of computers and a desire to learn more about them; 2) computer usage anxiety; 3) fears about the computer's negative impact on society. For this study we were obviously interested in the second of these. The test-retest reliability coefficient for this scale, measured as Cronbach's alpha, was 0.90 (Howard, 1986). Spielberg, Gorsuch and Lushene's (1970) scale to measure trait anxiety was also included, which was of similarly high reliability (0.86 test-retest value).

We obtained the permission of the company for the test and each branch manager was informed of the strictly scientific nature of our study by Head Office. We proceeded office by office: once the task had been personally explained the booklets were handed out to be completed at work or home and were generally collected three days later.

RESULTS

First and fourth quarters of the trait anxiety distribution were compared on the basis of an analysis of variance (BMDP.P1V) with the dependent variable anxiety

toward computers. The correlation was significant, in the sense that persons with higher trait anxiety presented greater anxiety toward computers. ($F_{1,153}$ = 6.5411; MS = 277.3428; p = 0.0115).

DISCUSSION

Our results: that the employees with higher trait anxiety suffer greater anxiety toward computers than those scoring lower in trait anxiety, are in keeping with the results of Fariña, Sobral, Arce and Caramés (in press) who found in a sample of 162 university students that trait anxiety was significant in this respect with a positive coefficient in a discriminant analysis using first and fourth quarters, and with Raub's (1981) that show strong correlation between trait anxiety and anxiety toward computers for men but not for women. Howard (1986), and Weinberg and English (1983) did not obtain any significant correlation. These results indicate that trait anxiety should not be ignored when predicting or studying anxiety toward computers, although more study is required to be more conclusive. From our results we can say that to lessen the effects trait anxiety could have in determining anxiety toward computers this organisation should think about taking steps such as the inclusion of a test for trait anxiety, if not already done, when selecting staff for positions involving computers; this is the whole work force since all employees have to interact with computers to a greater or lesser extent.

Anxiety toward computers is an important problem facing organisations using computers. Weinberg (1980) states that 30% of employees working with computers suffer anxiety toward them, and that 5% of cases present nauseas, dizzy spells and shakyness, etc. All that is necessary should be done to eliminate this problem or, in the worst cases, reduce it as far as possible; the benefits are not just for the organisation (increased productivity, less alienation and absenteeism, etc.), but the employees too (more job satisfaction and self-realisation, etc.). We reiterate our advise to heads of personnel taking on staff to work with computers that they pay special attention to candidates scoring high, or relatively high, in trait anxiety, and to those employees already working or going to work with them, because of the effects this variable seems to have on anxiety toward computers.

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