Entrepreneurial Attitudes: What are Their Sources?

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ABSTRACT

The relationship between Entrepreneurial Attitude Orientations (Robinson, Stimpson, Huefner & Hunt, 1991) and different biographic/demographic, personality and work related variables were investigated. The sample consists of 375 professionals, 200 pharmacists and 175 accountants. The personality variables measured are Type A behaviour, Locus of Control Inventory, Career Orientations and Self-Concept. The work related variables are job satisfaction and job involvement. Some strong relationships were found between entrepreneurial attitudes and personality and work variables. Multiple Regression Analyses also identified strong predictors of the different entrepreneurial attitude dependent variables.

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Jackson and Rodkey (1994) indicated that experience in many countries has shown that successful entrepreneurial activity is very important for a healthy market economy and can, specifically, be a major source of job creation. In third world countries and in under developed economy societies, job creation is a high priority. This is true of many countries in sub-Saharan Africa. Entrepreneurship and the encouragement of this kind of activity are therefore important in these countries.

Schumpeter (1934) described entrepreneurship as the driving force behind the economy. Shapero (1985) saw entrepreneurship as a means of creating diversity, innovation, development and independence by individuals in society. In the light of this researchers have been trying for decades to identify the factors behind entrepreneurship.

Studies on the characteristics of entrepreneurs focussed for many years on, firstly, the biographical background and, secondly, the personality characteristics of such people. The studies carried out in these areas were criticised as

lacking a clear paradigm guiding the research (Bygrave, 1989) and as not yielding results of any consistency nor a clear picture of the characteristics of entrepreneurial individuals (Gartner, 1988). Robinson, Stimpson, Heufner & Hunt (1991) agreed with Gartner (1988) that new directions in entrepreneurial research had to be identified. The same view is taken by Carland, Hoy & Carland (1988) who argued that the study of entrepreneurs' characteristics should be continued, but that new approaches to do so were needed.

Robinson *et al.* (1991) accepted Ajzen and Fishbein's (1977) view that an attitude influences an individual's evaluation of the entity or subject in question. An attitude is, according to Robinson *et al.* (1991), a predetermined propensity to respond in a generally positive or negative way to the object of the attitude. These authors also emphasise that an attitude can change over time. Entrepreneurial attitudes can therefore be defined as predetermined but changeable thoughts, feelings and behavioural intentions covering organisational creation and operation.

Robinson *et al.* (1991) argue that using attitudes to predict entrepreneurial behaviour can be a more profitable approach than using personality traits as fore-runners of entrepreneurial actions. This view is justified by stating that attitudes are nearer to behaviour than personality traits are. Attitudes are also more domain specific than personality traits. When relationships between attitudes and entrepreneurial behaviour are studied, unexplained variance should therefore be less and the correlation between predictors (entrepreneurial attitudes) and dependent variables (entrepreneurial actions) should be stronger. Robinson *et al.* (1991) also indicate that attitudes do change more easily and more often than personality traits. Attitudes can therefore also be changed deliberately to be, for instance, more favourable towards entrepreneurship. It seems to be more viable to change an individual's attitudes than his/her other personality characteristics. More information on entrepreneurial attitudes could therefore be useful when entrepreneurship and the development thereof are important.

Biographic background of entrepreneurs, as a variable that could influence entrepreneurial behaviour of individuals, has been studied extensively (Lau, 1992). Further studies on the relationship between entrepreneurial endeavour and biographical background of subjects are urged by Hisrich and Peters (1998). These authors argue that biographic background and personality characteristics should be combined in studies on entrepreneurs.

AIM

Against the background of these arguments it is argued that a study of entrepreneurial attitudes, personality factors, work variables and biographic information of two groups of professional people (pharmacists and accountants) could make a contribution to the understanding of the entrepreneurial personality. Professional people were chosen as subjects of the study as such people can, from a demographer's viewpoint, be seen as potential entrepreneurs, especially in terms of employment creation (Sadie, 2000).

The specific research question to which an answer was sought was whether the levels of entrepreneurial attitudes could be predicted by means of biographic, personality and work-related variables. No studies in which these relationships had been investigated could be discerned in the literature.

Robinson, *et al.* (1991) developed an instrument to measure entrepreneurial attitudes. This instrument had acceptable psychometric properties and its authors could differentiate between entrepreneurs and non-entrepreneurs by means of the four attitudes measured by the instrument, which was also used in this study. The present study was aimed at the relationships between biographic, personality and work related variables and entrepreneurial attitudes. The biographic/demographic variables investigated in relation to entrepreneurial attitude were: age, gender, occupation, and number of years worked. Personality variables investigated in relation to entrepreneurial attitude, are Type A behaviour, locus of control, career orientations and self-concept. The relationships between job satisfaction and job involvement and entrepreneurial attitudes were also studied.

METHOD

Participants

The sample consisted of 375 professionals ($\underline{M}$ age 41.6 years, $\underline{SD}$ = 12.46, Range 22 to 84). There were 221 men ($\underline{M}$ age = 45.72 years, $\underline{SD}$ = 12.79 and Range 22 to 84) and 154 women ($\underline{M}$ age = 35.70 years, $\underline{SD}$ = 9.52 and Range = 22 to 72) in the sample. The two professional groups included in the study consisted of 200 Pharmacists ($\underline{M}$ age = 39.46, $\underline{SD}$ = 12.70, Range = 22 to 84) and 175 Accountants ($\underline{M}$ age = 44.05, $\underline{SD}$ = 11.95, Range = 24 to 82 years). Of the respondents 42,1 per cent were Afrikaans speakers and 56,3 per cent English speakers. Zulu, North Sotho and Venda was, the home language of two, two and one of the participants, respectively.

Employees of organisations formed 53,6 per cent (N = 201) of the sample while 169 (45.1 per cent) worked as private practitioners. The employment status of 5 participants was unknown. Up to the time of the study participants had held between one and eight jobs. During their career prior to the study, 93 per cent of the participants had held five or fewer jobs. The number of years worked by the subjects preceding the study varied between one and sixty, with the mean number of years worked being 18.7 (SD = 12.56). Participants had, prior to the study, worked for between one and eight different organisations (M = 2.83; SD = 1.56). The majority (N = 295; 78.7 per cent) of the participants were married, while 16.5 per cent (N = 62) were single and 10, 6 and 2 were respectively divorced, widowed or cohabiting (N = 18; 4,8 per cent). The majority of the participants (77.6 per cent) grew up in an urban environment. The largest number of participants grew up in the South African province of Gauteng (56,8 per cent), the province with the single highest contribution to the Gross Domestic Product in South Africa. The areas where other participants grew up were more or less evenly represented by the other eight provinces.

Procedure

Systematic random sampling was done from the professional registers of pharmacists and accountants residing in the two main areas of economic activity in South Africa, namely Gauteng and the Western Cape (Van Wyk & Boshoff, 1999). A total of 1200 questionnaires were distributed by mail in Gauteng (N = 1100) and the Western Cape (N = 100). In total 418 completed questionnaires were received back. Questionnaires in which one or more items had not been responded to in any of the psychometric instruments, were left out of further analysis. In total 375 questionnaires were used for the statistical analyses.

The study questionnaire consisted of various questions concerning biographic/demographic variables as well as seven psychometric instruments measuring entrepreneurial attitudes, personality characteristics, job satisfaction, and job involvement. A reminder letter was sent to individuals selected in the sampling process after one week. A second reminder letter was mailed one month after the original questionnaire had been posted.

Measuring instruments

The primary purpose of this study was to determine whether entrepreneurial attitudes correlated with biographic variables and personality characteristics of members of the sample.

The biographic/demographic variables included in the present study were: age, gender, occupation, home language, private practitioner/employee, number of

jobs, number of years worked, number of organisations worked for, marital status and urban or rural area and province of birth.

The construct validity of the instruments used to measure respondents' personality characteristics was investigated in order to minimize error variance, in the form of measurement error, as far as possible. Principal Factor Analysis with Direct Quartimin rotation was used for this. This was followed by Confirmatory Factor Analysis to assess the quality of fit between the measurement model and the data. Full information on the results of this process is contained in Van Wyk, Boshoff and Owen (2000). The obtained factor structures were used in the subsequent analyses.

The Entrepreneurial Attitude Orientation Scale developed by Robinson, *et al.* (1991) measures, according to the authors, four entrepreneurial attitudes, that is, towards achievement, self-esteem, personal control and economic innovation. These authors report test-retest reliabilities of the sub-scales of 0.76, 0.76, 0.71 and 0.85 respectively. The Cronbach Alpha coefficients of the four sub-scales are reported as 0.84, 0.73, 0.70 and 0.90 respectively. The responses of the participants in the present study were subjected to Principal Factor Analysis. The results indicated that 13 of the original items of the questionnaire did not load satisfactorily on any of the factors in the finally preferred three-factor solution. The respective Alpha coefficients of the three identified factors were: attitude towards Economic Innovation (0.90), Achievement/Personal Control (0.80) and Self-Esteem (0.77). The three factors contained 29, 21 and 12 items respectively.

The first characteristic assessed in relation to Entrepreneurial Attitude, was Type A behaviour. This was measured by means of a shortened version of the Jenkins Activity Survey, developed by Spence, Helmreich and Pred (1987). According to the authors of this instrument it consists of two factors namely: achievement striving and impatience/irritability with Cronbach Alphas of 0.79 and 0.65 respectively. A Principal Factor Analysis on the responses of the participants in the present study yielded three factors consisting of 5, 4 and 3 items respectively. These factors were named achievement, hard driving/competitive and speed/impatience with Alpha Coefficients of only 0.65, 0.52 and 0.49 respectively. These low Alpha Coefficients were possibly due to the brevity of the sub-scales, as Confirmatory Factor analysis carried out on the three-factor structure indicated a satisfactory fit (G.F.I. = .93) between the measurement model and the data, (Van Wyk, *et al.*, 2000).

The second characteristic assessed and related to entrepreneurial attitude was locus of control. This was assessed by means of a questionnaire developed by Schepers (1995) based on the responses of 1662 first year university students. Its

author indicated that the instrument measures three factors, namely belief in internal locus of control, the belief in external locus of control, and autonomy with Cronbach Alpha coefficients of 0.83, 0.84 and 0.87 respectively. In the present study, 23 of the items in the questionnaire were based on the Factor Analyses excluded. A three-factor solution was accepted with the factors respectively containing 38, 14 and 5 items. The factors were identified as internal locus of control, external locus of control and vicissitudes of life. These three factors yielded Cronbach Alphas of 0.91, 0.78 and 0.84 respectively.

The third personality characteristic measured was Career Orientation, a notion developed by Schein (1975). The Career Orientations Inventory (Schein, 1995) was used to measure this variable. According to the author of this instrument, it measures eight career orientations namely: managerial competence, technical/functional, entrepreneurship, security, lifestyle integration, pure challenge, service dedication and autonomy/independence. Internal reliability information was not available for this version of the instrument. The Factor Analyses carried out on the responses of the present sample yielded only four identifiable factors. These factors were distinguished as service dedication, job security, entrepreneurship and lifestyle integration consisting of 11, 5, 5 and 3 items respectively. The Cronbach Alpha coefficients for the four factors were 0.86, 0.81, 0.80 and 0.72 respectively.

A fourth personality characteristic, i.e. self-concept was measured in relation to entrepreneurial attitude by means of the Stake (1994) Six-factor Self-concept Scale. Stake reports this scale to measure six factors i.e. power, morality, likeability, task accomplishment, vulnerability and giftedness with test-retest reliabilities varying between 0.74 and 0.88. The analyses carried out on the responses of the participants in the present study yielded a three-factor structure with four of the original 36 items eliminated. The factors and their Cronbach Alpha coefficients were identified as power (0.85), task accomplishment (0.84) and likeability (0.84). These three factors contained 14, 12 and 6 items respectively.

Job involvement, a measure of how important an individual's current job is to the respondent, was measured by means of Kanungo's Job Involvement Inventory (1982). This author describes Job Involvement is a uni-dimensional construct yielding a Chronbach Alpha coefficient of 0.81. The Principal Factor Analyses carried out on the responses of the participants in the present study indicated a one-factor structure. All the items loaded >0.35 on the scale and the single factor had a Cronbach Alpha coefficient of 0.88. Similar results were reported by Boshoff and Hoole (1998).

The level of Job Satisfaction of participants was measured by means of the Minnesota Satisfaction Questionnaire (short form) (Weiss, Dawis, England & Lofquist, 1967). This instrument consists of 20 items. According to its authors this instrument measures two factors, namely intrinsic and extrinsic satisfaction with Cronbach Alpha coefficients of 0.86 and 0.80 respectively. Boshoff and Hoole (1998) and Kamfer, Venter & Boshoff, (1998) previously evaluated this scale for use on South African samples. The Factor Analyses done on the responses of the participants in the present study yielded three factors, namely general job satisfaction, intrinsic job satisfaction and satisfaction with supervision. The three sub-scales as used in the present study, had Cronbach Alpha coefficients of 0.82, 0.82 and 0.85 and consisted of 6, 6 and 2 items respectively.

After the psychometric investigation of the scales, correlation and multiple regression were used to determine possible relationships between scores on entrepreneurial attitudes and biographic, personality and work related variables included in the study.

RESULTS

With the determination of the relationship between entrepreneurial attitudes and the different psychometric instruments as the ultimate aim, the different factors identified as being measured by each instrument in this study are listed in Table 1.

Table 1 List of identified factors for each instrument

ENT1	Entrepreneurial attitude 1	Economic Innovation
ENT2	Entrepreneurial attitude 2	Achievement/Personal Control
ENT3	Entrepreneurial attitude 3	Self-esteem
JF1	Jenkins Factor 1	Achievement
JF2	Jenkins Factor 2	Hard driving/Competitive
JF3	Jenkins Factor 3	Speed and Impatience
JFG	Jenkins G	Jenkins Global
LC1	Locus of control 1	Internal
LC2	Locus of control 2	External
LC3	Locus of control 3	Vicissitudes of life
CO1	Career orientations 1	Service dedication
CO2	Career orientations 2	Job security
CO3	Career orientations 3	Entrepreneurial
CO4	Career orientations 4	Life style

Table 1 continued

SC1	Self-concept 1	Power
SC2	Self-concept 2	Task accomplishment/Moral
SC3	Self-concept 3	Likeable
JS1	Job satisfaction 1	General
JS2	Job satisfaction 2	Intrinsic
JS3	Job satisfaction 3	Supervision
JI	Job involvement	

In order to determine the relationship between the identified entrepreneurial attitude scales and the biographic/demographic variables measured on continuous scales, Spearman correlation coefficients were calculated. The results are shown in Table 2.

Table 2 Results from calculation of Spearman correlation coefficients between biographic/demographic variables and entrepreneurial attitude orientations for the total sample

Biographic variable	Ent. attitude total	Ent 1 innovation	Ent 2 ach/control	Ent 3 self-esteem
Age (N=375)	-0.08524 0.0993	0.00092 0.9858	-0.10066 0.0515	-0.12442 0.0159
No of jobs (N=371)	-0.01750 0.7370	0.07381 0.1560	-0.04022 0.4399	-0.14720 0.0045
No of years worked (N = 371)	-0.09212 0.0764	0.01897 0.7157	-0.10476 0.0437	-0.16606 0.0013
No of org (N = 369)	-0.06646 0.2027	-0.01296 0.8040	-0.05747 0.2709	-0.07307 0.1613

*Numbers in second line of each row indicate *p*-values.

At the 95 per cent confidence level only four of the 16 correlations showed significant (negative) relationships between the constructs embodied in the Entrepreneurial Attitude Orientation Scale and biographic/demographic variables. The common variances were rather low, varying between 1.01 per cent and 2.89 per cent.

The Spearman correlation coefficients between entrepreneurial attitude and biographic/demographic variables were also calculated separately for the two sub-samples of pharmacists and accountants as shown in tables 3 and 4.

Table 3 Results from calculation of Spearman correlation coefficients of biographic/demographic variables with entrepreneurial attitude orientations for pharmacists

Biographic variable	Ent. attitude Total	Ent 1 innovation	Ent 2 ach/control	Ent 3 self-esteem
Age (N=200)	0.02481 0.7273	0.11362 0.1092	-0.02732 0.7009	-0.12242 0.0842
No of jobs (N=198)	-0.07384 0.3012	-0.00165 0.9816	-0.00188 0.9790	-0.16765 0.0182
No of years worked (N =198)	-0.01000 0.8888	0.09498 0.1832	-0.04579 0.5218	-0.15556 0.0286
No of org (N = 196)	-0.16717 0.0192	-0.12190 0.0887	-0.08255 0.25000	-0.07753 0.2801

The Spearman correlation coefficients in Table 3 indicate that three out of sixteen significant negative correlations were obtained at the 95 per cent level of confidence. These significant correlations between the entrepreneurial orientations and the biographic variables indicated rather low common variances of between 2.56 per cent and 2.89 per cent.

Table 4 Results from calculation of Spearman correlation coefficients between biographic/demographic variables and entrepreneurial attitude orientations for accountants

Biographic variable	Ent. attitude total	Ent 1 innovation	Ent 2 ach/control	Ent 3 self-esteem
Age (N=175)	-0.26435 0.0004	-0.25131 0.0008	-0.15715 0.0378	-0.05946 0.4344
No of jobs (N=173)	0.01135 0.8822	0.09555 0.2111	-0.07990 0.2960	-0.07934 0.2995
No of years worked (N = 173)	-0.25077 0.0009	-0.21847 0.0039	-0.14022 0.0658	-0.09702 0.2041
No of org worked (N = 173)	0.03109 0.6847	0.09624 0.2078	-0.02465 0.7475	-0.05798 0.4486

Five out of sixteen correlations in Table 4 were significant at the 95 per cent level of confidence with the common variances ranging between 2.47 per cent and 6.29 per cent.

The relationships of the entrepreneurial attitude scale and sub-scales and the personality and the work variables for the total sample were further investigated by means of Spearman correlation coefficients. The results are shown in Table 5.

Table 5 Results from Pearson correlation coefficients of factor variables with entrepreneurial attitude for the total sample (N = 375)

Variable	Entrepre-neurial total	Entrepre-neurial 1 economic innov.	Entrepre-neurial 2 ach/control	Entrepre-neurial 3 self-esteem
Jenkins F1	.32970 .0001	.33628 .0001	.28855 .0001	-.11007 .0331
Jenkins F2	.23541 .0001	.35379 .0001	.20868 .0001	-.31775 .0001
Jenkins F3	.08128 .1161	.09594 .0635	.02185 .6732	.00163 .9749
Jenkins Total	.37343 .0001	.43749 .0001	.31203 .0001	-.22551 .0001
Locus of Control 1	.40458 .0001	.52780 .0001	.47761 .0001	-.51421 .0001
Locus of Control 2	.14717 .0043	-.00081 .9875	-.04025 .4371	.45595 .0001
Locus of Control 3	.07678 .1378	.00955 .8538	-.02025 .6959	.21631 .0001
Career Orient. 1	.55343 .0001	.54174 .0001	.40009 .0001	-.04205 .4169
Career Orient. 2	.12932 .0122	-.09794 .0581	.21130 .0001	.32312 .0001
Career Orient. 3	.29318 .0001	.35470 .0001	.10799 .0366	-.04516 .3832
Career Orient. 4	.15937 0020	.09090 .0788	.15083 .0034	.08280 .1094
Self Concept 1	.36977 .0001	.57770 .0001	.26951 .0001	-.47875 .0001
Self Concept 2	.26355 .0001	.21406 .0001	.44241 .0001	-.21418 .0001
Self Concept 3	.27583 .0001	.25303 .0001	.34477 .0001	-0.15041 .0035
Job Sat 1	.12376 .0165	.22797 .0001	.14437 .0051	-.29355 .0001

Table 5 continued

Variable	Entrepre-neurial total	Entrepre-neurial 1 economic innov.	Entrepre-neurial 2 ach/control	Entrepre-neurial 3 self-esteem
Job Sat 2	.18186 .0004	.23423 .0001	.23149 .0001	-.24389 .0001
Job Sat 3	-.03075 .5527	.01071 .8362	.00149 .9770	-.10933 .0343
Job Involvement	.22697 .0001	.29000 .0001	.12455 .0158	-.11336 .0282

The Pearson correlations between the entrepreneurial scale and other sub-scales and the sub-scale scores in Table 5 showed a high proportion (56 out of 76) of significant correlations at the 95 per cent confidence level. The significant correlations varied between .11 and .58, indicating common variances of between 1.21 per cent and 33.64 per cent between the scale and sub-scales of the EAOS and the other sub-scales.

In the case of the economic innovation sub-scale of the EAOS 12 of the 18 correlations between the sub-scale and other variables were significant at the 95 per cent confidence level. The significant correlations varied between .21 and .58 indicating common variances of between 4.41 per cent and 33.64 per cent.

The achievement/personal control sub-scale was significantly correlated with 14 out of the 18 other variables at the 95 per cent confidence level, with significant correlations varying between .11 and .48 and common variances between 1.21 and 23.04 per cent.

The self-esteem sub-scale showed 14 out of 18 significant calculated correlations. The negative correlations varied between -.11 and -.51 with common variances of between 1.21 per cent and 26.01 per cent. The significant positive correlations varied between .22 and .46 with common variances between 4.8 per cent and 21.2 per cent.

Stepwise Multiple Regression Analyses were done to further analyse the relationships of the Entrepreneurial Attitude Total and three sub-scale scores with the personality and work related sub-scales. The results of the Stepwise Multiple Regression Analysis for the total sample with the entrepreneurial attitude total and sub-scale scores as dependent variables are shown in tables 6 to 9.

Table 6 Dependent variable: Entrepreneurial attitude total (N = 375)

Independent variable	F(df)	*p*	R^2 (model)	C(p)
CO 1	164.69 (1;373)	0.0001	0.3063	47.7184
LC1	16.86 (2;372)	0.0001	0.3364	31.5591
LC2	15.15 (3;371)	0.0001	0.3624	17.8416
SC3	6.96 (4;370)	0.087	0.3742	12.7338
JF1	7.84 (5;369)	0.0054	0.3872	6.8787

Table 6 indicates that with the entrepreneurial attitude total score as dependent variable for the total sample, five of the personality sub-scales entered the prediction model with a prediction of variance in the dependent variable of 38.72 per cent. It should be noted that the first variable (career orientation service dedication) formed the largest part (30.63 per cent v. 38.72 per cent) of the predicted variance. Although individually significant the contributions of the other variables included in the model only formed only 8.09 per cent out of 38.72 per cent of the prediction.

Table 7 Dependent variable: Entrepreneurial attitude 1: Innovation (total sample N = 375)

Independent variable	F(df)	*p*	R^2 (model)	C(p)
SC1	186.84 (1;373)	0.0001	0.3337	121.6690
CO1	73.39 (2;372)	0.0001	0.4435	42.4896
LC1	13.97 (3;371)	0.0002	0.4637	29.5536
CO2	6.53 (4;370)	0.0110	0.4730	24.6785
LC2	9.38 (5;269)	0.0024	0.4861	17.0228
JS2	7.90 (6;268)	0.0052	0.4969	11.0393
CO3	5.42 (7;267)	0.0204	0.5042	7.6212

As can be seen from Table 7, six personality and one work related sub-scale entered the attitude towards innovation prediction with a common variance of 50.42 per cent between predictors and the dependent variable. The power sub-scale of the self-concept instrument and the service dedication sub-scale of the Career Orientations Inventory together predicted 44.35 per cent of the variance in the innovation attitude sub-scale.

Table 8 Dependent variable: Entrepreneurial attitude 2: achievement/personal control (total sample N = 375)

Independent variable	F(df)	*p*	R^2 (model)	C(p)
LC1	110.23 (1;373)	0.0001	0.2281	90.7394
SC2	41.31 (2;372)	0.0001	0.3053	46.5850
CO2	24.06 (3;371)	0.0001	0.3476	23.2734
CO1	13.62 (4;370)	0.0003	0.3707	11.4178
SC3	7.17 (5;269)	0.0078	0.3827	6.2449

Table 8 indicates that 38.27 per cent of the variance in the achievement/personal control sub-scale was predicted for the total sample by means of the five personality sub-scales included in the multiple regression model. Two variables, belief in internal locus of control and task accomplishment formed the greatest part of the prediction.

Table 9 Dependent variable: Entrepreneurial attitude 3: Self-esteem (total sample N = 375)

Independent variable	F(df)	*p*	R^2 (model)	C(p)
LC1	134.08 (1;373)	0.0001	0.2644	121.8289
LC2	52.42 (2;372)	0.0001	0.3553	62.9641
SC1	30.19 (3;371)	0.0001	0.4038	32.4537

Table 9 continued

Independent variable	F(df)	*p*	R^2 (model)	C(p)
CO1	17.30 (4;370)	0.0001	0.4304	16.6125
CO2	11.88 (5;269)	0.0006	0.4482	6.7125
JS2	4.06 (6;268)	0.0446	0.4542	4.6766

The self-esteem sub-scale scores could be predicted at the level of 45.42 per cent by means of five personality and one work-related sub-scales included in the multiple regression model. Locus of control seemed to be quite strongly related to the self-esteem attitude as internal and external locus of control beliefs together predicted 35.53 per cent of the variance in the responses to this attitude.

Separating the two sub-samples of pharmacists and accountants, in further Stepwise Multiple Regression Analyses, was a further attempt to refine the prediction of the dependent variables. The results of the Stepwise Multiple Regression Analyses with the entrepreneurial attitude total and sub-scale scores as dependent variables for pharmacists (N = 200) are reported in tables 10 to 13.

Table 10 Dependent variable: Entrepreneurial attitude total (pharmacists N = 200)

Independent variable	F(df)	*p*	R^2 (model)	C(p)
CO1	58.66 (1;198)	0.0001	0.2286	25.2442
SC1	9.18 (2;197)	0.0028	0.2629	17.3948
LC2	8.13 (3;196)	0.0048	0.2923	10.9725
SC2	7.32 (4;195)	0.0074	0.3179	5.6324
JS2	4.67 (5;194)	0.0320	0.3339	3.0372
JS3	4.69 (6;193)	0.0316	0.3497	0.5088

Table 10 indicates that four personality and two work related sub-scales entered into the prediction model for the scores of pharmacists on the total

entrepreneurial attitude scale, with a total prediction of 34.97 per cent of the variance in the dependent variable. The four personality variables taken together had 31.79 per cent of the common variance with the total score on entrepreneurial attitude.

Table 11 Dependent variable: Entrepreneurial attitude 1: Innovation (pharmacists N = 200)

Independent variable	F(df)	*p*	R^2 (model)	C(p)
SC1	94.10 (1;198)	0.0001	0.3222	50.1242
CO1	27.60 (2;197)	0.0001	0.4055	21.8766
JS2	10.44 (3;196)	0.0014	0.4355	12.9585
JS3	5.24 (4;195)	0.0232	0.4503	9.5976

Table 11 indicates that two personality and two work-related sub-scales entered the prediction of the scores of pharmacists on the innovation sub-scale with a total prediction of 45.03 per cent of the variance in the dependent variable. The two personality sub-scales represented 40,55 per cent of the total prediction.

Table 12 Dependent variable: Entrepreneurial attitude 2: Achievement/ personal control (pharmacists N = 200)

Independent variable	F(df)	*p*	R^2 (model)	C(p)
LC1	41.03 (1;198)	0.0001	0.1716	33.2000
SC2	18.57 (2;197)	0.0001	0.2430	15.4550
CO1	9.74 (3;196)	0.0021	0.2788	7.5360

Table 12 indicates that the achievement/personal control sub-scale's prediction model for pharmacists included three of the personality sub-scales with a total prediction of 27.88 per cent of the variance in the dependent variable.

Table 13 Dependent variable: Entrepreneurial attitude 3: Self-esteem (pharmacists N = 200)

Independent variable	F(df)	*p*	R^2 (model)	C(p)
LC1	84.12 (1;198)	0.0001	0.2982	61.6196
LC2	23.69 (2;197)	0.0001	0.3735	35.9704
SC1	15.81 (3;196)	0.0001	0.4202	20.8080
CO2	7.11 (4;195)	0.0083	0.4406	15.3257
JF3	5.72 (5;194)	0.0177	0.4567	11.4425
CO1	6.67 (6;193)	0.0106	0.4748	6.7845

The model for the prediction the pharmacists' scores on the self-esteem sub-scale included six of the personality sub-scales having a 47.48 per cent common variance with the dependent variable.

The results of the Stepwise Multiple Regression Analyses of the entrepreneurial attitude total and sub-scale scores as dependent variable for accountants (N=175) are reported in tables 14 to 17.

Table 14 Dependent variable: Entrepreneurial attitude total (accountants N=175)

Independent variable	F(df)	*p*	R^2 (model)	C(p)
CO1	114.04 (1;173)	0.0001	0.3973	28.3818
JF1	15.49 (2;172)	0.0001	0.4471	13.9068
SC3	13.90 (3;171)	0.0003	0.4887	2.1571

Three of the personality variables entered into the prediction of the entrepreneurial attitude scale score yielding a total prediction of 48.87 per cent

of the variance in the dependent variable. The career orientation (Service dedication) made the largest contribution to the prediction.

Table 15 Dependent variable: Entrepreneurial attitude 1: Innovation (accountants N=175)

Independent variable	F(df)	*p*	R^2 (model)	C(p)
CO1	100.53 (1;173)	0.0001	0.3675	50.6147
SC1	34.71 (2;172)	0.0001	0.4737	15.4061
LC1	11.41 (3;171)	0.0009	0.5066	5.8743
JF1	4.25 (4;170)	0.0407	0.5186	3.6554

The model for predicting innovation sub-scale scores of accountants showed a strong relationship (51.86 per cent common variance), between four of the personality sub-scales and the dependent variable. Service dedication and the power sub-scale of the self-concept taken together had 47.37 per cent common variance with the dependent variable.

Table 16 Dependent variable: Entrepreneurial attitude 2: Achievement/ personal control (accountants N=175)

Independent variable	F(df)	*p*	R^2 (model)	C(p)
LC1	83.94 (1;173)	0.0001	0.3267	63.9374
CO2	20.16 (2;172)	0.0001	0.3973	41.2922
SC2	16.07 (3;171)	0.0001	0.4491	25.2225
CO1	6.10 (4;170)	0.0145	0.4682	20.5609
SC1	5.83 (5;169)	0.0169	0.4859	16.3772
SC3	5.99 (6;168)	0.0154	0.5036	12.1971
JF1	5.77 (7;167)	0.0174	0.5202	8.4118

The model for the prediction of the achievement/personal control sub-scale scores for accountants yielded a total prediction of variance in the dependent variable of 52.02 per cent. Seven of the personality sub-scales entered into the model with internal locus of control and job security making the largest contribution to the prediction.

Table 17 Dependent variable: Entrepreneurial Attitude 3: Self-esteem (accountants N=175)

Independent variable	F(df)	*p*	R^2 (model)	C(p)
LC1	45.6248 (1;173)	0.0001	0.2087	55.8894
LC2	24.0376 (2;172)	0.0001	0.3057	30.0689
SC1	13.3350 (3;171)	0.0003	0.3559	17.6681
CO1	10.2059 (4;170)	0.0017	0.3924	9.2095
CO2	5.6333 (5;169)	0.0187	0.4120	5.5899

The model predicting the self-esteem sub-scale scores of accountants indicated 41.20 per cent common variance between the dependent variable and the four personality sub-scale scores included in the multiple regression model. The locus of control sub-scales (belief in internal and external control) and the power sub-scale of the self-concept scale contributed most to the prediction.

DISCUSSION

It seems as though some patterns of the relationships between different kinds of variables and the entrepreneurial attitudes measured in the present study can be discerned. These results must be interpreted with caution as some of the statistical procedures e.g. product-moment correlation are not robust for large samples. Mono method bias could also have inflated the findings.

Some of the biographic/demographic variables (age, number of jobs held, number of organizations worked for) correlated significantly (negatively) with some of the entrepreneurial attitudes, indicating that the levels of the entrepreneurial attitudes decreased with increases in age. These relationships were statistically significant but not strong. The proportion of common variance varied between as low as only 1.1 per cent and 6.76 per cent. It can be

concluded that the predictor variables in this group did not show strong relationships with entrepreneurial attitudes and cannot be regarded as an important sources of such attitudes.

The relationships between entrepreneurial attitude orientation and personality variables

The **Type A total as well as the achievement and hard driving/competitive** sub-scales showed positive correlations with economic innovation and achievement/personal control with common variances of between 4.41 per cent and 18.49 per cent. The Type A scale and the same sub-scales showed a significant but low negative correlation with the entrepreneurial self-esteem factor with common variances between 1.21 per cent and 10.24 per cent. These negative relationships suggests that the lower the entrepreneurial self-esteem, the higher the Type A total, achievement and hard driving/competitive factors and vice versa. It seems if the present study established that some common variance exists between the entrepreneurial attitudes and the different forms of Type A behaviour identified in the present study. The direction of the relationship cannot be determined from the present study.

The internal **locus of control** sub-scale correlated positively with economic innovation and achievement/personal control (common variances of 28.09 per cent and 23.04 per cent respectively) but negatively with self-esteem (26.01 per cent common variance). The negative correlation with self-esteem seems to indicate that the lower the entrepreneurial self-esteem, the higher the belief in internal locus of control. On the other hand a high entrepreneurial self-esteem seems to relate positively to external locus of control and vicissitudes of life. This result is not fully understood and difficult to interpret. Belief in internal locus of control is, on the other hand, possibly related to attitudes towards innovation and to achievement/personal control. It seems as if these results could possibly tell us something about the sources of entrepreneurial attitudes.

The **career orientation sub-scales** of service dedication and entrepreneurship showed positive correlations with the economic innovation sub-scale, with common variances of respectively 29.16 per cent and 12.25 per cent. All four the career orientation sub-scales showed a positive correlation with the achievement/personal control sub-scale with common variances between 1.21 per cent and 16.0 per cent. Only the job security sub-scale correlated positively with the self-esteem entrepreneurial sub-scale having a common variance of 10.24 per cent. This result is not fully understood. The positive relationship between the career orientation sub-scale of entrepreneurship and the attitude towards innovation sub-scale is in line with intuitive expectations. The nature of the service dedication career orientation i.e. a dedication to making the world a

better place to live in and the positive relationship between this sub-scale and attitude towards innovation as an entrepreneurial attitude presents the possibility of new thinking with regard to entrepreneurship at least as far as innovation is part of this social and business phenomenon. Further study in this regard seems warranted.

The **self-concept** sub-scales of power, task accomplishment and likeability correlated positively with the entrepreneurial attitudes of economic innovation, achievement/personal control (common variances of 4.41 per cent - 33.64 per cent), but negatively with the self-esteem sub-scale (common variances of 2.25 - 23.04 per cent). The negative correlation with self-esteem possibly indicates that lower levels of self-esteem are associated with higher levels of the self-concepts of power, task accomplishment and likeability. This result is again not understood and difficult to interpret. The obtained positive relationships between self-concept sub-scales and the entrepreneurial attitudes of achievement/personal control and of innovation seem to indicate that entrepreneurial attitudes are positively related to self-concept of respondents. A positive self-concept may, therefore contribute to entrepreneurial attitudes and behaviour. This can be surmised from the present results and seems to add something to our understanding of entrepreneurial orientations.

The relationships between entrepreneurial attitude orientation and work variables

The **job satisfaction** sub-scales of general and intrinsic job satisfaction correlated positively with the entrepreneurial attitude sub-scale of economic innovation (5.29 per cent common variances for both) and achievement/personal control (with common variances of 1.96 and 5.29 per cent respectively), but negatively with the self-esteem sub-scale (common variances of 8.41 per cent and 5.76 per cent respectively). The supervision job satisfaction sub-scale showed a low but significant negative correlation with only the self-esteem sub-scale with a low common variance of 1.21 per cent.

Job involvement had a positive correlation with economic innovation (12.25 per cent common variance) and achievement/personal control (with a low common variance of 1.44 per cent) and low significant negative correlation with the self-esteem scale (1.21 per cent common variance).

The relationships between the job satisfaction and job involvement scales and the entrepreneurial attitudes seem to be low, although significant. Conclusions in this regard seem to be risky.

The Multiple Regression models that were built, represent a first attempt of this nature with encouraging results. It is showed that scores on the entrepreneurial attitude total and the sub-scales could be predicted quite well (for the total sample as well as the pharmacist and accountant sub-samples) by means of scores on the sub-scales of the personality and work related instruments used in the present study. Common variances between the scales and the predictors included in the Multiple Regression models were higher for accountants (varying between 41.20 per cent and 52.02 per cent) than for the total sample (varying between 38.72 per cent and 50.42 per cent) and for pharmacists (27.88 per cent and 47.48 per cent). A definite relationship was established between Entrepreneurial Attitude Orientation and the variables included in the different models. The models also seem to be relatively stable for both occupational groups. The results seem to point to the possibility that entrepreneurs can be better understood by studying the personalities of such individuals.

Implications for management research

This study presents some new contributions to the understanding of entrepreneurial attitude orientations. The Multiple Regression Analyses models indicate strong predictions of entrepreneurial attitudes with common variances varying between 27.88 per cent and 52.02 per cent.

As far as could be determined, this study was the first to investigate the relationship between entrepreneurial attitude and the different personality and work variables.

The findings on the prediction of entrepreneurial attitude orientations can be applied by businesses to select individuals into positions requiring some entrepreneurial orientation by means of personality and/or work variables that are indicated as strong predictors of entrepreneurial attitudes. Certain personality sub-scales of Type A behaviour, locus of control, career orientations and self-concept were strong predictors of entrepreneurial attitude orientations in this study. Only the internal and supervision job satisfaction sub-scales entered multiple prediction models for entrepreneurial attitude orientation. Job involvement on the other hand did not enter any of the multiple prediction models.

LIMITATIONS OF THE STUDY

The metric equivalence of each of the instruments was revalidated in this South African sample (Van Wyk, *et al.*, 1999). With the exception of the job

involvement instrument, revalidation indicates some scepticism concerning the portability of the instruments used in this study.

The possibility of inflated findings due to the large sample sizes and the influence of mono method variance, suggests that results should be interpreted with caution.

The samples in this study consist of only two professional careers namely pharmacists and accountants. Findings can therefore not be generalised to other professional or non-professional groups.

A well established theory of entrepreneurship has not yet been established. This makes it difficult to build a model of the possible relationships between the entrepreneurial scales and the personality and work variables.

Directions for future research

Future research should be extended to other professional occupations. The study should be replicated in cultures and countries other than South Africa and research methods other than survey research should be used.

Future South African studies should revalidate instruments for a South African sample (with the exception of the job involvement instrument).

Research studies should be directed at extending the investigation into the relationships of other variables with entrepreneurial attitudes.

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