CHAPTER 4
RESULTS

4.1 INTRODUCTION

In this chapter the results of the empirical research are reported and discussed in the following order:

(1) Descriptive statistics of

- the sample;

- the extraneous variables;

- the independent variable (personality variables); and

- the dependent variable (performance).

(2) Correlations:

- Inter-correlations of the sub-measures of performance with each other.

- Inter-correlations of extraneous variables with each other and with the performance variable.

- Correlations of personality variables with the performance variable as well as partial correlations of personality variables with the performance

variable where the statistically significant extraneous variables are first partialled out in turn and then at the same time.

(3)   Regression analysis:

- Multiple regression analysis with personality variables as predictors and performance as the dependent variable.

- Multiple regression analyses with personality variables and statistically significant extraneous variables in turn as predictors and performance as the dependent variable.

- Multiple regression analysis with personality variables and statistically significant extraneous variables together as predictors and performance as the dependent variable.

- Integrated results.

4.2   DESCRIPTIVE STATISTICS

4.2.1 The sample

The sample was chosen on the basis of convenience as discussed in section 3.2.   In Table 4.1 the realised sample is compared to the population in terms of salient features, which are at the same time the extraneous variables that were identified in a focus group (see section 3.3.3).

TABLE 4.1: COMPARISON OF THE POPULATION AND THE SAMPLE

	Geographical location	Race	Gender	Average portfolio size	Average portfolio quality
Population (N = 155)	Urban N = 76 (49 %)	Black N = 34 (22 %)	Male N = 121 (78 %)	1678	534
	Rural N = 79 (51 %)	White N = 121 (78 %)	Female N = 34 (22 %)		
Sample (n = 89)	Urban n = 54 (61 %)	Black n = 18 (20 %)	Male n = 67 (75 %)	1614	534
	Rural n = 35 (39 %)	White n = 71 (80 %)	Female n = 22 (25 %)		

Table 4.1 shows that the composition of the sample closely resembles the composition of the population of credit controllers in the bank, with the exception of geographical location. The latter was limited by the distribution of credit controllers in rural areas, with as few as one credit controller per town.

The limited sample size has implications for statistical power of the present study and this will have to be taken into consideration when results are interpreted. Statistical power concerns the probability of correctly rejecting a false null hypothesis (finding a relationship that is there). Statistical power is the inverse of the probability of making a type II error which implies not rejecting a false null hypothesis (not finding a relationship that is there). The lower the statistical power, the higher the probability of a type II error. Other factors that affect statistical power alongside sample size are significance level, population effect size and the particular statistical test that is used (Tredoux & Durrheim, 2000).

The statistical power for the present study (n = 89, r = 0,2, alpha = 0,05) is 0,59 (http://calculators.stat.ucla.edu), which is somewhat low compared to best practice recommendation of 0,80 discussed in section 3.2. The sample size of the present study and resulting lack of power is thus a limitation that needs to be taken into account when interpreting the results.

4.2.2   Extraneous variables

The measurements of the five extraneous variables were of two types: the size of the portfolio and the quality of the portfolio were based on numerical measurements while geographical location, race and gender were based on nominal measurements. Table 4.2 contains the descriptive statistics of the size and the quality of the portfolio whereas the frequency distributions of geographical location, race and gender were reported in Table 4.1.

TABLE 4.2: DESCRIPTIVE STATISTICS OF EXTRANEOUS VARIABLES THAT WERE BASED ON A NUMERICAL MEASUREMENT

	N	Minimum	Maximum	Mean ($\bar{x}$)	SD ($\sqrt{s^2}$)
Size of the portfolio	89	725	3799	1614,32	501,45
Quality of the portfolio	89	500	568	534,34	16,21

The sizes of the portfolio of credit controllers in the sample vary considerably, while the quality of the portfolio doesn't vary that much.

4.2.3   The independent variable (personality variables)

In table 4.3 the descriptive statistics of the personality variables as obtained by means of the OPQ32i are reported and compared with that of the managerial and professional norm group.

TABLE 4.3:   DESCRIPTIVE STATISTICS OF PERSONALITY VARIABLES OBTAINED WITH THE OPQ32i COMPARED WITH THE MANAGERIAL AND PROFESSIONAL NORM GROUP

Personality variable[2]	n	Min	Max	Mean ($\bar{x}$)	SD ($\sqrt{s^2}$)	Norm[1] ($\bar{x}$)	Norm[1] SD	Effect size d
RP1: Persuasive	89	4	31	14,26	5,07	11,6	5,2	0,52
RP2: Controlling	89	1	25	12,96	5,21	13,0	5,8	-0,01
RP3: Outspoken	89	3	24	13,85	4,75	13,1	4,9	0,16
RP4: Independent Minded	89	4	24	12,79	4,21	13,5	4,3	-0,17
RP5: Outgoing	89	1	22	10,81	5,23	12,0	5,7	-0,22
RP6: Affiliative	89	3	25	12,98	5,02	14,9	4,6	-0,40
RP7: Socially Confident	89	1	23	11,97	5,01	12,5	5,2	-0,10
RP8: Modest	89	3	24	13,24	4,62	13,5	4,8	-0,06
RP9: Democratic	89	6	23	12,94	3,96	15,0	4,1	-0,51
RP10: Caring	89	2	24	14,79	4,68	16,2	4,4	-0,31
TS1: Data rational	89	1	25	12,85	5,29	10,2	5,8	0,48
TS2: Evaluative	89	5	25	14,12	3,97	14,0	4,0	0,03
TS3: Behavioural	89	3	23	13,10	4,47	15,0	5,5	-0,38
TS4: Conventional	89	2	22	12,30	3,95	10,1	4,3	0,53
TS5: Conceptual	89	2	22	11,11	3,88	12,3	5,3	-0,26
TS6: Innovative	89	2	21	11,11	3,96	12,8	5,8	-0,35
TS7: Variety Seeking	89	3	20	12,23	3,64	15,2	4,1	-0,77
TS8: Adaptable	89	4	25	12,58	5,46	15,0	4,7	-0,48

Personality variable	n	Min	Max	Mean ($\bar{x}$)	SD ($\sqrt{s^2}$)	Norm[1] ($\bar{x}$)	Norm[1] SD	Effect size d
TS9: Forward Thinking	89	4	22	12,57	4,67	12,9	4,3	-0,07
TS10: Detail Conscious	89	2	25	13,79	4,44	13,6	5,0	0,04
TS11: Conscientious	89	9	25	17,18	3,59	16,2	4,4	0,25
TS12: Rule following	89	0	24	12,99	5,68	9,7	4,8	0,63
FE1: Relaxed	89	3	23	12,18	4,51	10,3	5,4	0,38
FE2: Worrying	89	0	23	8,65	5,02	11,8	5,8	-0,58
FE3: Tough Minded	89	4	22	11,33	4,20	10,8	4,9	0,12
FE4: Optimistic	89	5	24	13,85	4,16	15,1	4,5	-0,29
FE5: Trusting	89	0	23	8,78	5,23	11,3	4,6	-0,51
FE6: Emotionally Controlled	89	2	25	12,29	5,24	11,2	4,9	0,21
FE7: Vigorous	89	5	22	14,55	3,69	15,4	4,0	-0,22
FE8: Competitive	89	5	26	15,76	5,14	11,3	6,1	0,79
FE9: Achieving	89	8	24	17,12	3,66	14,4	4,8	0,64
FE10: Decisive	89	2	24	14,08	5,29	12,2	4,9	0,37

[1] Based on the OPQ32i managerial and professional norm group (n = 329) (SHL, 1999, section 9, p. 18). Values reported up to one decimal only in the manual.

[2] Personality variables are referred to using the original attribute names from Table 2.3 to avoid distortion of meaning.

The large differences between the means of the norm group and the means of the sample confirms the suspicion of restriction of range discussed in section 3.4.2.3.

Cohen's (1992) interpretation of effect size in the case of comparison of means is that it is small if the effect size index d is approximately 0,20, it is medium if d is in the region of 0,50, and it is large if d is in the region of 0,80.

When considering the effect sizes for the differences between the means of the sample group and the means of the managerial and professional norm group, the following personality variables show the biggest differences:

(1) The large negative effect size of Variety Seeking (TS7), and the medium positive effect sizes of Conventional (TS4) and Rule Following (TS12) can possibly be explained by the fact that the work environment of the sample and population is very structured (office bound, subject to rules and regulations) and employees who choose to work in such an environment seek less variety and are more rule-bound than the norm group.

(2) The large positive effect size of Competitive (FE8) and the medium positive effect size of Achieving (FE9) can possibly be explained by the practice of public recognition of the top performing credit controllers. People who may be more competitive and goal-driven than a norm group of general managerial and professional people, may therefore be drawn to this kind of position.

(3) The medium positive effect size of Persuasive (RP1), the medium negative effect size on Affiliative (RP6) and the medium negative effect size on Democratic (RP9) can all possibly be explained by the kind of relationship credit controllers need to have with their customers. It is a relationship based on discipline and persuasion to give priority to the payment of the Bankfin account rather than democratic compromise or affiliation.

(4) The medium positive effect size of Data Rational (TS1) can possibly explained by the need for credit controllers to base their decisions on facts and figures rather than on opinions and feelings.

(5)   The medium negative effect of Worrying (FE2) can possibly be explained by the high-pressure nature of the work of a credit controller.   The organisation is placing pressure on the credit controller to collect arrears payments and at the same time the customers are placing pressure on the credit controller to be more lenient.   People who get too worked up when under pressure, will shy away from this kind of environment.

(6)   The medium negative effect size of Trusting (FE5) is possibly because the credit controller needs to be wary of customer's intentions to prevent accounts from falling to far into arrears.

Taking into account the relatively small sample and resulting limited statistical power of the study, even those personality variables with small effect sizes may be important: Outgoing (RP5), Caring (RP10), Behavioural (TS3), Conceptual (TS5), Innovative (TS6), Adaptable (TS8), Conscientious (TS11), Relaxed (FE1), Optimistic (FE4), Emotionally controlled (FE6), Vigorous (FE7), and Decisive (FE10).

4.2.4   The dependent variable (performance)

Performance in the area of credit control in Bankfin is measured by means of three sub-measures as explained in chapter three, section 3.3.2.   The three sub-measures (percentage of delinquent accounts, percentage of accounts in arrears for two or more months, and percentage of customer complaints) are weighted and then aggregated to arrive at a total performance rating as prescribed by the bank.   The descriptive statistics of

the weighted sub-measures as well as total performance are reported in Table 4.4.

The very low mean of "percentage of customer complaints" of 1.13 % can be explained by the fact that there were very few customer complaints with most credit controllers having no customer complaints and the credit controller with the highest customer complaints only having two complaints for the period in question. The frequency distribution of this sub-measure in its raw form (before conversion to percentage to allow for aggregation of the three sub-measures of performance) is reported in Table 4.5.

TABLE 4.4: DESCRIPTIVE STATISTICS OF THE MEASURES OF THE PERFORMANCE VARIABLE

	N	Minimum	Maximum	Mean ($\bar{x}$)	SD ($\sqrt{s^2}$)
Percentage of delinquent accounts	89	5,50	33,30	18,74	6,07
Percentage of accounts in arrears for two months or more	89	0,00	50,00	16,49	11,02
Percentage of customer complaints	89	0,00	16,70	1,13	3,13
Total performance	89	7,60	82,2	36,35	16,58

It may be argued that if customer complaints affect such a small number of the subjects, it doesn't make sense to include customer complaints as a sub-measure of performance. However, the bank views customer complaints in a very serious light due to the negative influence that these have on the bank's image. See the inter-correlations of the sub-measures

of performance (section 4.4.1) where the evaluation of the performance measure is continued.

TABLE 4.5: FREQUENCY DISTRIBUTION OF THE NUMBER OF CUSTOMER COMPLAINTS

Number of complaints	Frequency	%
0	78	87,64
1	10	11,24
2	1	1,12

4.3 CORRELATIONS

Firstly, the inter-correlations of the sub-measures of performance are reported, after which the performance measure is evaluated based on the inter-correlations and the descriptive statistics. Secondly, the correlations of extraneous variables with each other and with performance are reported. Thirdly, correlations of the personality variables with performance are reported in comparison with partial correlations of personality variables with performance.   The statistically significant extraneous variables were partialled out in turn.

4.3.1   Inter-correlations of the sub-measures of performance with each other

The inter-correlations between the three sub-measures of performance are reported in Table 4.6.

TABLE 4.6: INTER-CORRELATIONS OF THE THREE SUB-MEASURES OF PERFORMANCE (n = 89)

		% delinquent accounts	% accounts in arrears two months or more	% customer complaints
% delinquent accounts	Pearson *r*	1,00	0,81**	-0,18
	Sig. (2-tailed)		0,00	0,87
% accounts in arrears two months or more	Pearson *r*		1,00	-0,01
	Sig. (2-tailed)			0,95
% customer complaints	Pearson *r*			1,00
	Sig. (2-tailed)			

** Correlation is significant at the 0,01 level (2-tailed)

The effect size (*r* = 0,81) is large in the correlation of 'percentage of delinquent accounts' with 'percentage of accounts in arrears two months or more'. This result is also significant at the 0,01 level. This is to be expected because the accounts included in the "percentage of accounts in arrears for two months or more" are also included in the "percentage of delinquent accounts", so that performance on these accounts are considered twice in the final performance score.

It could be argued theoretically that 'percentage of delinquent accounts' could be used as criterion because it already contains the measure of 'accounts in arrears for two months or more'. However, in practice both of these measures are used because a credit controller who is able to prevent a delinquent account from moving further into arrears, will prevent the delinquent account resulting in bad debt (see chapter, one section 1.1 and chapter three, section 3.3.2.1). The second measure is therefore used to increase the weight of those accounts that become a higher risk for the

organisation. It has therefore been decided to retain both these sub-measures of performance in the study.

The effect size (r = -0,18) is small in the correlation of "percentage of delinquent accounts' with 'percentage of customer complaints'. The magnitude of the correlation does not pose a problem for including both these measures in the total performance score.

Customer complaints displays a very poor distribution in the sample with 78 subjects having no customer complaints during the period in question, ten subjects having one customer complaint during that period, and one subject having two customer complaints during that period. It may be reasoned that this sub-measure is weak because of the poor distribution. Practically, however, customer complaints give an indication of the negative influence of credit control actions on the image of the organisation. An organisation would typically strive to have no customer complaints at all, so even a single customer complaint is a very important measure of performance. It was therefore decided to also retain this sub-measure of performance and thus to work with the weighted performance score that is used by the bank (See section 3.3.2).

4.3.2 Correlations of the extraneous variables with each other and with performance

The inter-correlations of the extraneous variables with each other and their correlations with performance are reported in Table 4.7.

TABLE 4.7: INTER-CORRELATIONS OF THE EXTRANEOUS VARIABLES WITH EACH OTHER AND THEIR CORRELATIONS WITH PERFORMANCE (n = 89)

		Portfolio size	Portfolio quality	Geo location	Race	Gender	Performance
Portfolio size	Pearson r	1,00	-0,33**	-0,37**	-0,03	0,18	0,02
	Sig. (2-tailed)		0,002	0,000	0,82	0,10	0,87
Portfolio quality	Pearson r		1,00	0,40**	0,04	0,06	-0,74**
	Sig. (2-tailed)			0,000	0,74	0,60	0,000
Geo location	Pearson r			1,00	0,05	0,03	-0,32**
	Sig. (2-tailed)				0,66	0,77	0,003
Race	Pearson r				1,00	0,01	-0,02
	Sig. (2-tailed)					0,92	0,84
Gender	Pearson r					1,00	-0,17
	Sig. (2-tailed)						0,10
Performance	Pearson r						1,00
	Sig. (2-tailed)						

** Correlation is significant at the 0,01 level (2-tailed)

The important relationships are as follows:

(1) The statistically significant negative relationship at the 0,01 level of significance between 'quality of the portfolio' and 'portfolio size' can be explained by the credit control manager's discretion to balance quality of a portfolio with portfolio size so that the number of delinquent accounts that need to be followed up is manageable for the credit controller (C Cronjé, personal conversation, 20 March 2002). The credit control manager makes this decision subjectively and this practice may be contaminating the performance measure (see point 4 below). This correlation (r = -0,33) shows medium effect size.

(2) The statistically significant relationship at the 0,01 level of significance between 'geographical location' and 'portfolio size' can

be explained by the fact that in small rural towns the portfolio size is limited to the number of accounts that the Bankfin branch has in that town. This correlation ($r = -0,37$) shows medium effect size.

(3)   The statistically significant relationship at the 0,01 level of significance between 'geographical location' and 'portfolio quality' can be explained (C Cronjé, personal conversation, 20 November 2003) by the tendency of customers in rural areas to have a personal relationship with the employees of the bank. The social pressure of keeping up to date with payments is greater than in urban areas where customers have greater anonymity. This correlation ($r = 0,40$) shows medium to large effect size.

(4)   There is a statistically significant relationship at the 0,01 level of significance between 'portfolio quality' and performance. This correlation ($r = -0,74$) shows large effect size, which can be explained by a probable overlap in measurement. If an account falls into arrears, the behaviour scoring of the client is influenced negatively. The negative correlation between these two variables is due to the reversed scoring used for performance. The higher the behaviour score, the higher the performance (the lower the rating on the reversed performance rating system).

(5)   There is a statistically significant relationship at the 0,01 level of significance between 'geographical location' and performance which can be explained in the same way as the relationship mentioned in (3). Customers in rural areas tend to have a personal relationship with the employees of the bank and the social pressure of keeping up to date with payments is greater than in urban areas where customers have greater anonymity (C Cronjé, personal conversation,

20 November 2003). This correlation (r =-0,32) shows medium effect size.

The effect sizes of the two remaining correlations are small. These correlations are also not statistically significant.

The statistically significant correlations between performance and two of the extraneous variables, 'quality of portfolio' (see point 4 above) and 'geographical location' (see point 5 above) will be taken into account with the correlations of personality variables with performance.

4.3.3   Correlations   of   the   personality   variables   with performance

Correlations of the personality variables with performance are reported in Table 4.8 alongside partial correlations where the two extraneous variables that showed statistically significant relationships with performance are partialled out. Firstly, 'geographical location' was partialled out (kept constant), secondly, 'quality of the portfolio' was partialled out, and thirdly, both 'geographical location' and 'quality of the portfolio' were partialled out.

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TABLE 4.8: CORRELATIONS BETWEEN PERFORMANCE AND THE PERSONALITY VARIABLES (n = 89)

	Correlation		Partial correlation (geographical location constant)		Partial correlation (quality of portfolio constant)		Partial correlation (quality geographical location and quality of portfolio constant)	
	Pearson r	Sig. (2-tailed)	Pearson r	Sig. (2-tailed)	Pearson r	Sig. (2-tailed)	Pearson r	Sig. (2-tailed)
RP1: Persuasive	-0,070	0,514	-0,111	0,304	0,016	0,886	0.011	0,919
RP2: Controlling	0,075	0,482	-0,069	0,526	0,073	0,500	0,072	0,506
RP3: Outspoken	-0,099	0,356	-0,111	0,305	-0,018	0,869	-0,020	0,855
RP4: Independent Minded	-0,065	0,546	-0,064	0,554	-0,071	0,509	-0,071	0,512
RP5: Outgoing	0,166	0,120	0,146	0,175	0,164	0,127	0,163	0,133
RP6: Affiliative	-0,012	0,912	-0,008	0,940	0,069	0,524	0,068	0,530
RP7: Socially Confident	0,051	0,638	0,034	0,756	0,144	0,182	0,142	0,190
RP8: Modest	0,093	0,387	0,086	0,427	0,055	0,608	0,055	0,612
RP9: Democratic	-0,132	0,218	-0,145	0,178	-0,096	0,376	-0,097	0,370
RP10: Caring	0,102	0,340	0,099	0,360	-0,081	0,455	-0,079	0,466
TS1: Data rational	-0,083	0,440	-0,106	0,324	-0,089	0,408	-0,092	0,398

	Correlation		Partial correlation (geographical location constant)		Partial correlation (quality of portfolio constant)		Partial correlation (quality geographical location and quality of portfolio constant)	
	Pearson r	Sig. (2-tailed)	Pearson r	Sig. (2-tailed)	Pearson r	Sig. (2-tailed)	Pearson r	Sig. (2-tailed)
TS2: Evaluative	-0,022	0,840	-0,106	0,327	-0,022	0,840	-0,030	0,781
TS3: Behavioural	0,044	0,684	0,016	0,882	-0,029	0,786	-0,031	0,775
TS4: Conventional	-0,158	0,139	-0,152	0,157	-0,156	0,146	-0,156	0,150
TS5: Conceptual	0,158	0,138	0,202	0,060	0,281**	0,008	0,285**	0,007
TS6: Innovative	0,051	0,633	0,084	0,438	0,172	0,109	0,174	0,107
TS7: Variety seeking	0,188	0,078	0,183	0,087	0,197	0,066	0,197	0,068
TS8: Adaptable	-0,078	0,470	-0,105	0,329	-0,074	0,496	-0,076	0,482
TS9: Forward thinking	0,123	0,251	0,126	0,242	0,052	0,633	0,053	0,627
TS10: Detail conscious	-0,187	0,080	-0,191	0,075	-0,235*	0,028	-0,235*	0,028
TS11: Conscientious	-0,300**	0,004	-0,292**	0,006	-0,210*	0,050	-0,210	0,051
TS12: Rule following	-0,037	0,730	-0,039	0,722	-0,119	0,269	-0,118	0,275
FE1: Relaxed	-0,166	0,120	-0,124	0,249	-0,101	0,352	-0,098	0,366

	Correlation		Partial correlation (geographical location constant)		Partial correlation (quality of portfolio constant)		Partial correlation (quality geographical location and quality of portfolio constant)	
	Pearson r	Sig. (2-tailed)	Pearson r	Sig. (2-tailed)	Pearson r	Sig. (2-tailed)	Pearson r	Sig. (2-tailed)
FE2: Worrying	0,030	0,780	0,044	0,683	0,119	0,269	0,120	0,270
FE3: Tough minded	0,073	0,497	0,082	0,450	-0,042	0,700	-0,040	0,715
FE4: Optimistic	0,155	0,146	0,198	0,064	0,047	0,662	0,053	0,624
FE5: Trusting	0,058	0,591	0,087	0,419	0,092	0,396	0,094	0,386
FE6: Emotionally Controlled	-0,019	0,858	-0,019	0,859	-0,044	0,684	-0,044	0,688
FE7: Vigorous	-0,186	0,080	-0,162	0,131	-0,006	0,954	-0,006	0,956
FE8: Competitive	0,015	0,886	0,027	0,802	-0,133	0,218	-0,131	0,227
FE9: Achieving	-0,083	0,442	-0,069	0,523	-0,192	0,073	-0,191	0,077
FE10: Decisive	0,005	0,963	0,011	0,916	0,016	0,885	0,016	0,882

* Correlation is significant at the 0,05 level (2-tailed)

** Correlation is significant at the 0,01 level (2-tailed)

When considering the correlation coefficients between the independent variable (personality variables) and the dependent variable (performance), the larger the magnitude of the correlation coefficient, the stronger the linear association. This indicates the importance of each of the personality variables to predict performance on their own.

4.3.3.1 Correlation of personality variables with performance

There is a statistically significant correlation at the 0,01 level of significance between one of the personality variables, Conscientious (TS11) and performance (r = -0,300, p = 0,004). This means that the higher the score on conscientiousness, the higher the performance (negative score on a reversed measurement).

According to Prentice and Miller (1992) there is a growing realisation that conventional significance testing procedures are inadequate in portraying the importance of statistical effect and that effect size is at least as informative (see section *3.4.2.4.c*). Cohen's (1992) interpretation of effect size in the case of correlations is that it is small (difficult to observe with the naked eye, but not trivial) if r is approximately 0,10, it is medium (visible to the naked eye) if r is in the region of 0,30, and it is large (same distance above medium as small is below medium) if r is in the region of 0,50.

Eleven personality variables have small effect sizes. Considering the typical magnitude of correlations in personality research and the low statistical power of the present study, there is the risk of making a type II error (not rejecting the null hypothesis when in fact it is false) if only the significance test is used. The higher the score on Democratic (RP9), Conventional (TS4), Detail Conscious (TS10), Relaxed (FE1) and Vigorous (FE7), the higher the performance (lower performance score on a reversed scale).

The higher the score on Outgoing (RP5), Caring (RP10), Conceptual (TS5), Variety Seeking (TS7), Forward Thinking (TS9) and Optimistic (FE4), the lower the performance (higher performance score on a reversed scale).

4.3.3.2   Partial correlation of personality variables with performance when 'geographical location' is partialled out

The statistically significant correlation between Conscientious (TS11) and performance that was reported in section *4.4.3.1* changes slightly, but is still statistically significant at the 0,01 level (r = -0,292, p = 0,006).   No other statistically significant relationships are indicated when 'geographical location' is partialled out.

When 'geographical location' is partialled out, there are sixteen personality variables with small effect sizes.   Considering available information on personality research and the limited statistical power of the present study, there is a risk of making a type II error (not rejecting the null hypothesis when in fact it is false) if only the significance test is used.   Of the 11 personality variables with notable effect sizes mentioned with the correlation done in section *4.4.3.1,* only Caring (RP10) is not part of the list of personality variables with small effect sizes anymore, five personality variables are added to the list.   The higher the score on Persuasive (RP1), Outsppoken (RP3), Data rational (TS1) and Adaptable (TS8), the higher the performance (lower performance score on a reversed scale).

4.3.3.3   Partial correlation of personality variables with performance when 'quality of portfolio' is partialled out

The statistically significant correlation between Conscientious (TS11) and performance that was reported in section *4.4.3.1* changes to become

statistically significant only at the 0,05 level when 'quality of portfolio' is partialled out. This correlation shows small to medium effect size.

A new statistically significant correlation between Conceptual (TS5) and performance appears at the 0,01 level of significance ($r = 0,281$, $p = 0,008$) which indicates that the higher the score on conceptual tendency of the sample, the lower the performance (higher score on reversed performance rating scale). This correlations shows medium effect size.

Two correlations are statistically significant at the 0,05 level of significance:

(1)   Detail conscious (TS10): The statistically significant correlation ($r = -0,235$, $p = 0,028$) indicates that the higher the score on detail consciousness, the higher the performance.

(2)   Conscientious (TS11): The statistically significant correlation ($r = -0,210$, $p = 0,050$) indicates that the higher the score on conscientiousness, the higher the performance.

In terms of effect size, these correlations show small to medium effect.

When 'quality of portfolio' is partialled out, there are ten personality variables with effect sizes that are small. Considering the magnitude of correlations typically found in personality research and the limited statistical power of the present study, there is a risk of making a type II error (not rejecting the null hypothesis when in fact it is false) if only the significance test is used. The list of ten personality variables with small effect size is quite different when 'quality of portfolio' is partialled out compared to the lists found in the simple correlation between personality variables and

performance reported in section *4.4.3.1* and the partial correlation between personality variables and performance while 'geographical location' was partialled out as reported in section *4.4.3.*2: The higher the score on Conventional (TS4), Rule Following (TS12), Relaxed (FE1), Competitive (FE8) and Achieving (FE9), the higher the performance (lower performance score on a reversed scale). The higher the score on Outgoing (RP5), Socially Confident (RP7), Innovative (TS6), Variety Seeking (TS7) and Worrying (FE2), the lower the performance (higher performance score on a reversed scale).

4.3.3.4 *Partial correlation of personality variables with performance when both 'geographical location' and 'quality of portfolio' are partialled out*

The statistically significant correlation between Conscientious (TS10) and performance that was reported in section *4.4.3.1, 4.3.3.2* and *4.3.3.3* is no longer statistically significant at the 0,05 level when both the significant extraneous variables, 'geographical location' and 'quality of portfolio' are partialled out.

The statistically significant correlation between Conceptual (TS5) and performance at the 0,01 level of significance as reported in section *4.4.3.3* is still statistically significant at the 0,01 level of significance (r = 0,285, p = 0,007).

The only other statistically significant correlation (at the 0,05 level) is the correlation between Detail Conscious (TS10) and performance (r = -0,235, p = 0,028.

The partial correlation between Conscientious (TS11) and performance is no longer statistically significant at the 0,05 level when both 'geographical location' and 'quality of portfolio' are partialled out.

When 'quality of portfolio' was partialled out, there were ten personality variables reported in section *4.4.3.3* with small effect sizes. Considering the magnitude of relationships typically found in personality research and the lower statistical power of the present study, there is a risk of making a type II error (not rejecting the null hypothesis when in fact it is false) if only the significance test is used. When both 'geographical location' and 'quality of portfolio' are partialled out, only one of the list of 10 changes, namely the relationship between Relaxed (FE1) and performance which drops to below $r = -0,1$.

4.4 MULTIPLE REGRESSION ANALYSES

The correlation results of the previous section indicated the degree of importance of each of the personality variables to predict performance on their own. However, the practical question is to determine how important personality variables are when they are used together to predict performance. In a case where the nature of multiple co-linearity of independent variables (in this case including extraneous variables) is unknown (or unrevealed by a simple correlation matrix), Keller and Warrack (2000) suggest that the stepwise regression procedure should be used.

According to Hair, Anderson, Tatham and Black (1995) stepwise regression is a procedure that iteratively adds and deletes one independent variable at a time, based on the incremental explanatory power they can add to the regression model. Independent variables are added as long as their partial correlation coefficients are statistically significant. Independent variables

may also be dropped if their predictive power drops to a non-significant level as new variables are added. Eventually, only those independent variables that make a significant contribution to predicting the dependent variable are included in the model.

Although including a too large number of independent variables in a regression model is not a good strategy, it is at the same time important not to exclude potentially relevant independent variables. Despite the limitations of the present sample size, it was decided to proceed with the following stepwise multiple regression analyses:

(1)   Stepwise multiple regression with personality variables as predictors and performance as the dependent variable.

(2)   Stepwise multiple regression with personality variables and 'geographical location' as predictors and performance as the dependent variable.

(3)   Stepwise multiple regression with personality variables and 'quality of portfolio' as predictors and performance as the dependent variable.

(4)   Stepwise multiple regression with personality variables and both 'geographical location' and 'quality of the portfolio' as predictors and performance as the dependent variable.

4.4.1 Stepwise multiple regression with only personality variables as predictors of performance

The results of the multiple regression using the Stepwise method, with the 32 personality variables as the predictors and performance as the dependent variable, are summarised in Tables 4.9, 4.10 and 4.11.

TABLE 4.9: STEPWISE REGRESSION MODEL SUMMARY (PERSONALITY VARIABLES AS PREDICTORS OF PERFORMANCE)

Model	R	R square	Adjusted R square
1	0,300(a)	0,090	0,080
a Predictors: (Constant), TS11			

Only one model, which explains 8 percent of the variance in performance, was identified.

TABLE 4.10: ANOVA OF REGRESSION MODEL 1 (PERSONALITY VARIABLES AS PREDICTORS OF PERFORMANCE)

	Sum of squares	df	Mean square	F	Sig.
Regression	2175,558	1	2175,558	8,602	0,004(a)
Residual	22002,264	87	252,900		
Total	24177,822	88			
a Predictors: (Constant), TS11					

TABLE 4.11: STANDARDISED COEFFICIENTS FOR MODEL 1 (PERSONALITY VARIABLES AS PREDICTORS OF PERFORMANCE)

	Beta	T	Sig.
(Constant)		7,260	0.000
TS11	-0.300	-2.933	0.004

a Dependent variable: Performance

The stepwise regression analysis indicates that only one variable, Conscientious (TS11) has been identified as a significant predictor of work performance at the 0,01 level (p = 0,004) of significance.

4.4.2 Stepwise multiple regression with personality variables and 'geographical location' as predictors of performance

The results of the stepwise multiple regression with the 32 personality variables as well as 'geographical location' as the predictors and performance as the dependent variable, are summarised in Tables 4.12, 4.13 and 4.14.

As can be seen in Table 4.12, three models have been identified, with model three explaining 18,5 percent of the variance in performance.

TABLE 4.12: STEPWISE REGRESSION MODEL SUMMARY (PERSONALITY VARIABLES AND GEOGRAPHICAL LOCATION AS PREDICTORS OF PERFORMANCE)

Model	R	R square	Adjusted R square
1	0,315(a)	0,099	0,089
2	0,419(b)	0,176	0,157
3	0,461(c)	0,213	0,185

a Predictors: (Constant), Geographical location

b Predictors: (Constant), Geographical location, TS11

c Predictors: (Constant), Geographical location, TS11, TS5

TABLE 4.13: ANOVA OF REGRESSION MODEL 3 (PERSONALITY VARIABLES AND GEOGRAPHICAL LOCATION AS PREDICTORS OF PERFORMANCE)

	Sum of squares	df	Mean square	F	Sig.
Regression	5149,344	3	1716,448	7,667	0,000(c)
Residual	19028,478	85	223,864		
Total	24177,822	88			

c Predictors: (Constant), Geographical location, TS11, TS5

TABLE 4.14: STANDARDISED COEFFICIENTS FOR MODEL 3 (PERSONALITY VARIABLES AND GEOGRAPHICAL LOCATION AS PREDICTORS OF PERFORMANCE)

	Beta	T	Sig.
(Constant)		6,628	0.000
Geographical location	-0,314	-3,232	0.002
TS11	-0,279	-2,888	0.005
TS5	0,194	2,002	0,048

a Dependent variable: Performance

The stepwise regression analysis indicates that three variables have been identified as useful predictors of work performance:

1. Geographical location (p = 0,002) contributes 8,9 percent to the explanation of variance in performance. The negative correlation coefficient is not important because it depends on how the geographical location has been coded (urban first or rural first).

2. Conscientious (TS11) (p = 0,005) increases the explanation of variance in performance to 15,7 percent. This gives an improvement of 6,8 percent.

3. Conceptual (TS5) (p = 0,048) increases the explanation of variance in performance to 18,5 percent. This gives a further improvement of 2,8 percent.

4.4.3 Stepwise multiple regression with personality variables and 'quality of portfolio' as predictors of performance

The results of the stepwise multiple regression analysis with the 32 personality variables as well as 'quality of portfolio' as the predictors and performance as the dependent variable, are summarised in Tables 4.15, 4.16 and 4.17.

TABLE 4.15: STEPWISE REGRESSION MODEL SUMMARY (PERSONALITY VARIABLES AND 'QUALITY OF PORTFOLIO' AS PREDICTORS OF PERFORMANCE)

Model	R	R square	Adjusted R square
1	0,740(a)	0,548	0,542
2	0,764(b)	0,583	0,574
3	0,778(c)	0,605	0,591

a Predictors: (Constant), Quality of portfolio
b Predictors: (Constant), Quality of portfolio, TS5
c Predictors: (Constant), Quality of portfolio, TS5, TS10

Three models have been identified, with model three explaining 59,1 percent of the variance in performance.

This very high predictive power of 'quality of portfolio' provides further evidence for the suspicion that there is an overlap in measurement between these two variables (see section 4.4.2(4)). If an account falls into arrears, the behaviour scoring of the client is influenced negatively, which affects the 'quality of portfolio' score.

TABLE 4.16: ANOVA OF REGRESSION MODEL 3 (PERSONALITY VARIABLES AND 'QUALITY OF PORTFOLIO' AS PREDICTORS OF PERFORMANCE)

	Sum of squares	df	Mean square	F	Sig.
Regression	14623,802	3	4874,601	43,368	0.000(c)
Residual	9554,020	85	112,400		
Total	24177,822	88			

c Predictors: (Constant), Quality of portfolio, TS5, TS10

TABLE 4.17: STANDARDISED COEFFICIENTS FOR MODEL 3 (PERSONALITY VARIABLES AND 'QUALITY OF PORTFOLIO AS PREDICTORS OF PERFORMANCE)

	Beta	t	Sig.
(Constant)		11,789	0,000
Quality of portfolio	-0.742	-10,859	0,000
TS5	0,180	2,637	0,010
TS10	-0,147	-2,155	0,034
a Dependent variable: Performance			

The stepwise regression analysis indicates that three variables have been identified as useful predictors of work performance:

1. Quality of portfolio (p = 0,000) contributes 54,2 percent to the explanation of variance in performance. The negative correlation coefficient is not important because it depends on how 'quality of portfolio' was coded (good first or poor first).

2. Conceptual (TS5) (p = 0,048) increases the explanation of variance in performance to 57,4 percent.

3. Detail consciousness (TS10) (p = 0,034) increases the explanation of variance in performance to 59,1 %.

4.4.4 Stepwise multiple regression with personality variables, 'geographical location' and 'quality of portfolio' as predictors of performance

The results of the stepwise multiple regression analysis with the 32 personality variables, 'geographical location' and 'quality of portfolio' as the predictors and performance as the dependent variable, are summarised in Tables 4.18, 4.19 and 4.20.

TABLE 4.18: STEPWISE REGRESSION MODEL SUMMARY (PERSONALITY VARIABLES, 'GEOGRAPHICAL LOCATION' AND 'QUALITY OF PORTFOLIO' AS PREDICTORS OF PERFORMANCE)

Model	R	R square	Adjusted R square
1	0,740(a)	0,548	0,542
2	0,764(b)	0,583	0,574
3	0,778(c)	0,605	0,591

a Predictors: (Constant), Quality of portfolio
b Predictors: (Constant), Quality of portfolio, TS5
c Predictors: (Constant), Quality of portfolio, TS5, TS10

Three models have been identified, with model 3 explaining 59,1 percent of the variance in performance. It should be noted that model 3 is exactly the same as in Table 4.15. This means that the inclusion of 'geographical location' as an extra independent variable did not make a difference. The implication is that strong multi-colinearity exists between 'geographical location' and 'quality of portfolio'. With 'quality of portfolio' in the equation, geographical location does not make a unique contribution to the explanation of performance.

4.5 INTEGRATION OF RESULTS

4.5.1 Extraneous variables

Two of the five extraneous variables identified during the focus group (see section 3.3.3), 'geographical location' and 'quality of portfolio' had a statistically significant relationship with performance and were therefore considered in further analysis.

4.5.1.1 Geographical location

'Geographical location' had a very definite influence on the relationship between personality variables and performance:

(1) In the partial correlation of personality variables with performance while 'geographical location' was partialled out, the statistically significant relationship between Conscientiousness (TS10) and performance remained almost unchanged if compared to the simple correlation of personality variables with performance. The personality variables with small effect sizes, however, changed dramatically in the partial correlation of personality variables with performance while 'geographical location' was partialled out, with one falling out and six others being added to the list that was compiled when the simple correlation between personality variables and performance was done.

(2) In the stepwise multiple regression analysis where 'geographical location' was included alongside personality variables as a predictor of performance, 'geographical location' came out as the predictor with the strongest predictive power. Moreover, because of its inclusion as a predictor another personality variable, Conceptual

(TS5), was added as having a significant contribution to predicting performance if compared to the multiple regression analysis where none of the extraneous variables were included as predictors.

4.5.1.2   Quality of portfolio

'Quality of portfolio' proved to be a particularly problematic extraneous variable:

(a)   The correlation of the extraneous variable 'quality of portfolio' with performance (r = -0,74, p = 0,000) gave the impression that these measures may be overlapping. This suspicion was confirmed when 'quality of portfolio' was found to have a very high predictive value (54,2 per cent) in the stepwise multiple regression analyses where 'quality of portfolio' was used as predictor alongside personality variables and where both extraneous variables were used as predictors alongside personality variables.

        If an account falls into arrears the behaviour scoring of the specific client is negatively influenced and so the 'quality of portfolio' is negatively influenced. Poor performance may therefore be causing poor 'quality of portfolio' while at the same time poor 'quality of portfolio' may be causing poor performance.

(b)   'Quality of portfolio' also had a very definite influence on the relationship between personality variables and performance. In the partial correlation of personality variables with performance while 'quality of portfolio' was partialled out the following changes took place if compared to the simple correlation between personality variables and performance:

- The statistically significant correlation at the 0,01 level of significance between Conscientious (TS10) and performance changed to become statistically significant only at the 0,05 level.

- A statistically significant correlation between Conceptual (TS5) and performance appeared at the 0,01 level of significance.

- A statistically significant correlation between Detail conscious (TS10) and performance appeared at the 0,05 level of significance.

- If 'quality of portfolio' and 'geographical location' are both used with personality variables then 'geographical location' does not make a unique contribution to the explanation of performance.

- The list of eleven personality variables with small effect size changed totally. Two of these variables were statistically significant, the effect sizes of five of these variables diminished, and the effect sizes of another five variables increased and are now considered to be small, but large enough to not be considered trivial.

4.5.2 The independent variables

The independent (personality) variables have been shown to have a relationship with the dependent variable (performance). This relationship, however, is very difficult to pinpoint exactly because of the influence of the extraneous variables. Furthermore, the limited power of the present study also means that the probability of a Type II error (no relationship is found when there is one) increases. The latter should in particular be kept in

mind for variables where the effect size is small and where no statistically significant relationships are found.

Table 4.21 summarises the integrated findings with regards to the relationship between personality variables and performance, after which these findings are discussed.

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TABLE 4.19: SUMMARY OF RELATIONSHIPS OF PERSONALITY VARIABLES WITH PERFORMANCE <u>UNDER VARIOUS CONDITIONS</u>

	CORRELATIONS				STEPWISE MULTIPL		
Personality variable	Full correlation	'Geographical location' partialled out	'Quality of portfolio' partialled out	Both 'geographical location' and 'quality of portfolio' partialled out	Personality variables as predictors	Personality variables and 'geographical location' as predictors	P v a o a
RP1: Persuasive		✔					
RP3: Outspoken		✔					
RP5: Outgoing	✔	✔	✔	✔			
RP7: Socially confident			✔	✔			
RP9: Democratic	✔	✔					
RP10: Caring	✔						
TS1: Data rational		✔					
TS2: Evaluative		✔					
TS4: Conventional	✔	✔	✔	✔			
TS5: Conceptual	✔	**		**	*	*	

	CORRELATIONS				STEPWISE MULTIPL		
Personality variable	Full correlation	'Geographical location' partialled out	'Quality of portfolio' partialled out	Both 'geographical location' and 'quality of portfolio' partialled out	Personality variables only as predictors	Personality variables and 'geographical location' as predictors	P v a o a
TS6: Innovative			✔	✔			
TS7: Variety seeking	✔	✔	✔	✔			
TS8: Adaptable		✔					
TS9: Forward thinking	✔	✔					
TS10: Detail conscious	✔	✔	*	*		*	*
TS11: Conscientious	**	**	*	✔		**	
TS12: Rule following		✔	✔				
FE1: Relaxed	✔	✔	✔	✔			
FE2: Worrying		✔	✔				

Personality variable	CORRELATIONS				STEPWISE MULTIPL		
	Full correlation	'Geographical location' partialled out	'Quality of portfolio' partialled out	Both 'geographical location' and 'quality of portfolio' partialled out	Personality variables only as predictors	Personality variables and 'geographical location' as predictors	P v a o a
FE4: Optimistic	✔	✔					
FE7: Vigorous	✔	✔					
FE8: Competitive			✔	✔			
FE9: Achieving			✔	✔			

✔ Effect size is small, but large enough to not be considered trivial

* Statistically significant relationship at the 0,05 level of confidence

** Statistically significant relationship at the 0,01 level of confidence

Only those personality variables where relationships with performance were detected, are

shown in the table

Considering the limitations mentioned before, there were 23 of the 32 personality variables that were indicated to have a definite or possible relationship with performance:

(1)   Persuasive (RP1): The effect size in one of the correlation studies, the partial correlation of personality variables with performance while 'geographical location' was partialled out, is small, but large enough to not be considered trivial. The relationship indicates that the higher the score on Persuasive, the better the work performance of the credit controller.

(2)   Outspoken (RP3): The effect size in one of the correlation studies, the partial correlation of personality variables with performance while 'geographical location' was partialled out, is small, but large enough to not be considered trivial. The relationship indicates that the higher the score on Outspoken, the better the work performance of the credit controller.

(3)   Outgoing (RP5): The effect sizes in each of the four correlations are small, but large enough to not be considered trivial: in the simple correlation of personality variables with performance, in the partial correlation of personality variables with performance while 'geographical location' was partialled out, in the partial correlation of personality variables with performance while 'quality of portfolio' was partialled out, as well as in the partial correlation of personality variables with performance while both 'geographical location' and 'quality of portfolio' were partialled out. The relationships indicate that the higher the score on Outgoing, the poorer the work performance of the credit controller.

(4)   Socially confident (RP7): The effect sizes in two of the correlations are small, but large enough to not be considered trivial: in the partial correlation of personality variables with performance while 'quality of portfolio' was partialled out, as well as in the partial correlation of personality variables with performance while both 'geographical location' and 'quality of portfolio' were partialled out. The relationships indicate that the higher the score on Socially Confident, the poorer the work performance of the credit controller.

(5)   Democratic (RP9): The effect sizes in two of the correlations are small, but large enough to not be considered trivial: in the simple correlation of personality variables with performance and in the partial correlation of personality variables with performance while 'geographical location' was partialled out. The relationships indicate that the higher the score on Democratic, the better the work performance of the credit controller.

(6)   Caring (RP10):   The effect size in the simple correlation of personality variables with performance is small, but large enough to not be considered trivial. The relationship indicates that the higher the score on Caring, the poorer the work performance of the credit controller.

(7)   Data rational (TS1): The effect size in the partial correlation of personality variables with performance while 'geographical location' was partialled out, is small, but large enough to not be considered trivial. The relationship indicates that the higher the score on Data Rational, the better the work performance of the credit controller.

(8) Evaluative (TS2): The effect size in the partial correlation of personality variables with performance while 'geographical location' was partialled out is small, but large enough to not be considered trivial. The relationship indicates that the higher the score on Evaluative, the better the work performance of the credit controller.

(9) Conventional (TS4): The effect sizes in each of the four correlations are small, but large enough to not be considered trivial: in the simple correlation of personality variables with performance, in the partial correlation of personality variables with performance while 'geographical location' was partialled out, in the partial correlation of personality variables with performance while 'quality of portfolio' was partialled out, as well as in the partial correlation of personality variables with performance while both 'geographical location' and 'quality of portfolio' were partialled out. The relationships indicate that the higher the score on Conventional, the better the work performance of the credit controller.

(10) Conceptual (TS5): The effect size in the simple correlation of personality variables with performance was small, but large enough to not be considered trivial. In the partial correlation of personality variables with performance while 'geographical location' was partialled out, as well as in the partial correlation of personality variables with performance while both 'geographical location' and 'quality of portfolio' were partialled out, the correlations between this personality variable and performance was statistically significant at the 0,01 level of significance.

In the stepwise multiple regressions where firstly 'geographical location' was added to personality variables as a predictor of

performance, secondly 'quality of portfolio' was added to personality variables as a predictor of performance, and thirdly both 'geographical location' and 'quality of portfolio' were added to personality variables as predictors of performance, this personality variable came out as making a statistically significant contribution to the prediction of performance each time.

The relationships indicate that the higher the score on Conceptual, the poorer the work performance of the credit controller.

(11)   Innovative (TS6):   The effect sizes in two of the four correlations are small, but large enough to not be considered trivial: in the partial correlation of personality variables with performance while 'quality of portfolio' was partialled out and in the partial correlation of personality variables with performance while both 'geographical location' and 'quality of portfolio' were partialled out.   The relationships indicate that the higher the score on Innovative, the poorer the work performance of the credit controller.

(12)   Variety seeking (TS7):   The effect sizes in each of the four correlations are small, but large enough to not be considered trivial: in the simple correlation of personality variables with performance, in the partial correlation of personality variables with performance while 'geographical location' was partialled out, in the partial correlation of personality variables with performance while 'quality of portfolio' was partialled out, as well as in the partial correlation of personality variables with performance while both 'geographical location' and 'quality of portfolio' were partialled out.   The relationships indicate that the higher the score on Variety Seeking, the poorer the work performance of the credit controller.

(13) Adaptable (TS8): The effect size in the partial correlation of personality variables while 'geographical location' was partialled out was small, but large enough to not be considered trivial. The relationship indicates that the higher the score on Adaptable, the better the work performance of the credit controller.

(14) Forward thinking (TS9): The effect sizes in two of the correlations were small, but large enough to not be considered trivial: in the simple correlation of personality variables with performance and in the partial correlation of personality variables with performance while 'geographical location' was partialled out. The relationships indicate that the higher the score on Forward Thinking, the poorer the work performance of the credit controller.

(15) Detail conscious (TS10): The effect sizes in two of the correlations are small, but large enough to not be considered trivial: in the simple correlation of personality variables with performance and in the partial correlation of personality variables with personality while 'geographical location' was partialled out. In the partial correlation of personality variables with performance while 'geographical location' was partialled out, as well as in the partial correlation of personality variables with performance while both 'geographical location' and 'quality of portfolio' were partialled out, the correlations between this personality variable and performance were statistically significant at the 0,05 level of significance.

Moreover, in the stepwise multiple regression analysis where personality variables and 'quality of portfolio' were entered as predictors of performance and in the stepwise multiple regression analysis where personality variables and both 'geographical area'

and 'quality of portfolio' were entered as predictors of performance, Detail consciousness (TS10) came out as making a statistically significant contribution to the prediction of performance.

The relationships indicate that the higher the score on Detail Conscious, the better the work performance of the credit controller.

(16) Conscientious (TS11): In the simple correlation of the personality variables with personality and in the partial correlation of personality variables with personality while 'geographical location' was partialled out, the correlations between this variable and performance are statistically significant at the 0,01 level of significance. In the partial correlation of personality variables with personality while 'quality of portfolio' was partialled out, the correlation between this personality variable and performance is statistically significant at the 0,05 level of significance. In the partial correlation of personality variables with performance while both 'geographical location' and 'quality of portfolio' are partialled out, the correlation is no longer statistically significant. The effect size of this correlation is small, but large enough to not be considered trivial.

In the stepwise multiple regression analysis where personality variables and 'geographical location' were used as predictors of performance, Conscientious (TS11) came out as statistically significant in the model and adding meaningfully to the prediction of performance.

The relationships indicate that the higher the score on Conscientious, the better the work performance of the credit controller.

(17) Rule following (TS12): The effect sizes in two of the correlations are small, but large enough to not be considered trivial: in the partial correlation of personality variables with performance while 'quality of portfolio' was partialled out and in the partial correlation of personality variables with performance while both 'geographical location' and 'quality of portfolio' were partialled out. The relationships indicate that the higher the score on Rule Following, the better the work performance of the credit controller.

(18) Relaxed (FE1): The effect sizes in each of the four correlations are small, but large enough to not be considered trivial: in the simple correlation of personality variables with performance, in the partial correlation of personality variables with performance while 'geographical location' was partialled out, in the partial correlation of personality variables with performance while 'quality of portfolio' was partialled out, as well as in the partial correlation of personality variables with performance while both 'geographical location' and 'quality of portfolio' were partialled out. The relationships indicate that the higher the score on Relaxed, the better the work performance of the credit controller.

(19) Worrying (FE2): The effect sizes in two of the correlations were small, but large enough to not be considered trivial: in the partial correlation of personality variables with performance while 'quality of portfolio' was partialled out and in the partial correlation of personality variables with performance while both 'geographical location' and 'quality of portfolio' were partialled out. The relationships indicate that the higher the score on Worrying, the poorer the work performance of the credit controller.

(20) Optimistic (FE4): The effect sizes in two of the correlations are small, but large enough to not be considered trivial: in the simple correlation of personality variables with performance and in the partial correlation of personality variables with performance while 'geographical location' was partialled out. The relationships indicate that the higher the score on Optimistic, the poorer the work performance of the credit controller.

(21) Vigorous (FE7): The effect sizes in two of the correlations are small, but large enough to not be considered trivial: in the simple correlation of personality variables with performance and in the partial correlation of personality variables with performance while 'geographical location' was partialled out. The relationships indicate that the higher the score on Vigorous, the better the work performance of the credit controller.

(22) Competitive (FE8): The effect sizes in two of the correlations are small, but large enough to not be considered trivial: in the partial correlation of personality variables with performance while 'quality of portfolio' was partialled out and in the partial correlation of personality variables with performance while both 'geographical location' and 'quality of portfolio' were partialled out. The relationships indicate that the higher the score on Competitive, the better the work performance of the credit controller.

(23) Achieving (FE9): The effect sizes in two of the correlations are small, but large enough to not be considered trivial: in the partial correlation of personality variables with performance while 'quality of portfolio' was partialled out and in the partial correlation of

personality variables with performance while both 'geographical location' and 'quality of portfolio' were partialled out. The relationships indicate that the higher the score on Achieving, the better the work performance of the credit controller.

4.5.3 The dependent variable

The dependent variable, performance, is also somewhat problematic. Performance in the bank is measured by three sub-measures: percentage of delinquent accounts, percentage of accounts in arrears two or more months, and percentage of customer complaints.

There is a correlation of 0,81 between 'percentage of delinquent accounts' and 'percentage of accounts in arrears two or more months', which is caused by the fact that the latter sub-measure is included in the former sub-measure. This is done in the bank because those accounts that fall into arrears two or more months are particularly risky for the bank (see section 1.1) and therefore the double measure allows the bank to put an extra weighting to those accounts that have the most risk. After careful consideration it was decided to retain both these sub-measures for the study because it is practice in the bank.

The third sub-measure, percentage of customer complaints, is also somewhat problematic due to the low frequency of customer complaints in the bank (see Table 4.5, section 4.3). The bank views customer complaints in a very serious light due to the negative influence that these have on the bank's image and therefore it was decided to also retain this sub-measure of performance.

Finally, there is the matter of a possible overlap in measurement between the extraneous variable 'quality of portfolio' and performance as discussed in section 4.6.1(a). Poor performance may be causing poor 'quality of portfolio' while at the same time poor 'quality of portfolio' may be causing poor performance. It was decided to retain this third sub-measure of performance because it is practice in the bank.

4.6   CHAPTER SUMMARY

In this chapter the results of the empirical study were reported and discussed per statistical test (descriptive statistics, correlation analyses and regression analyses). The results were then integrated to enable a better understanding of the relationships between extraneous variables, the independent variables, and the dependent variable.