

## CHAPTER 3

### RESEARCH METHODOLOGY

Babbie (1998) suggests that surveys may be used for descriptive, explanatory, and exploratory purposes. He comments that they are chiefly used in studies that have individual people as the units of analysis. He describes survey research as the best method available to the social scientist interested in collecting data for describing a population too large to observe directly. Babbie (1998) notes that surveys are excellent vehicles for measuring attitudes and orientations in a large population (Babbie, 1998). It was obvious that survey research, specifically self-administered questionnaires, was the obvious choice for this study and the only practical method of conducting the research.

#### 3.1. SAMPLE AND PARTICIPANTS

Babbie (1998) notes that the norm of generalised understanding in social science should suggest that scientific findings are most valuable when they apply to all kinds of people. The units of analysis or units of observation in the study would be individuals, irrespective of their membership in social groupings. When this is true, the findings should be generalisable to most kinds of people.

Babbie (1998) notes that in some instances, one may wish to study a small subset of a larger population in which many members of the subset are easily identified, but the enumeration of all of them would be nearly impossible. In such circumstances, 'purposive' or 'judgmental' sampling would be the right approach to the sampling of subjects. Although there might be randomisation within this sampling, it is essentially a non-probability sampling method (Babbie, 1998).

In the present study, the population will be all working people, with the definition of "work" being "paid work" as discussed earlier in this document. The sample included in this study should ideally represent the total working population of the whole world.

As the intent of the present research is to study a smaller subset of the larger population of which the enumeration would be nearly impossible, it was decided that the "judgmental" sampling would be the right approach to the sampling of the study elements, or the research subjects. Six different organisations in South Africa were selected to provide the study population. The sampling frame was decided to be the individuals in the leadership levels within these organisations. These companies were selected to represent different industries and sectors within industries to try to enhance the representativeness of the sample. For practical reasons, only organisations in South Africa were selected. The following types of organisations were selected: a manufacturing company, a mining company, a marketing company, a refinery, an administrative oriented company and an engineering company.

Friedman and Havighurst (1954), Morse and Weiss (1955), and Orzack (1972) all concluded that work centrality and meaningful work seem to be more important for white-collar workers than for blue-collar workers. It was therefore decided to use only white-collar workers in the sample, represented by the managerial category in the selected organisations in the sample. The well-known Paterson (1972) grading system was used to discriminate between the managerial category and the remainder of the employees. Individuals in positions with a Paterson grading (Paterson, 1972) of D, E and F were seen as potential candidates.

Within the sampling units discussed above, all people in the leadership categories (Paterson grades D, E and F) (Paterson, 1972) were identified as part of the potential sample population. This provided a total sample population of approximately 2300 subjects. However, the statistical methods to be employed to analyse the data required only about 65 persons per organisation, or a total of about 400 respondents. The sampling procedure was therefore amended to reduce the sample population to about 400. Babbie (1998) comments that a response rate of 50% is adequate for analysis and reporting, a response of 60% is good, and a response rate of 70% is very good. It was therefore decided to assume a response rate of 60%. This meant that the initial sample had to consist of at least 600 subjects, or at least 100 subjects per organisation.

To obtain a significantly large group ( $N > 600$ ) to whom the questionnaires could be sent, the names of the potential subjects in the managerial categories were arranged alphabetically per organisation. Systematic sampling techniques were then used to select the final sample randomly according to the following procedure:

- Refinery - every third person: 127 subjects
- Marketing company - every second person: 100 subjects
- Manufacturing company - every 5th person: 133 subjects
- Mining company - every second person: 112 subjects
- Administrative oriented company - every second person: 112 subjects
- Engineering company - every fourth person: 121 subjects
- Total: 705 subjects

The sampling procedure is illustrated in Figure 17.

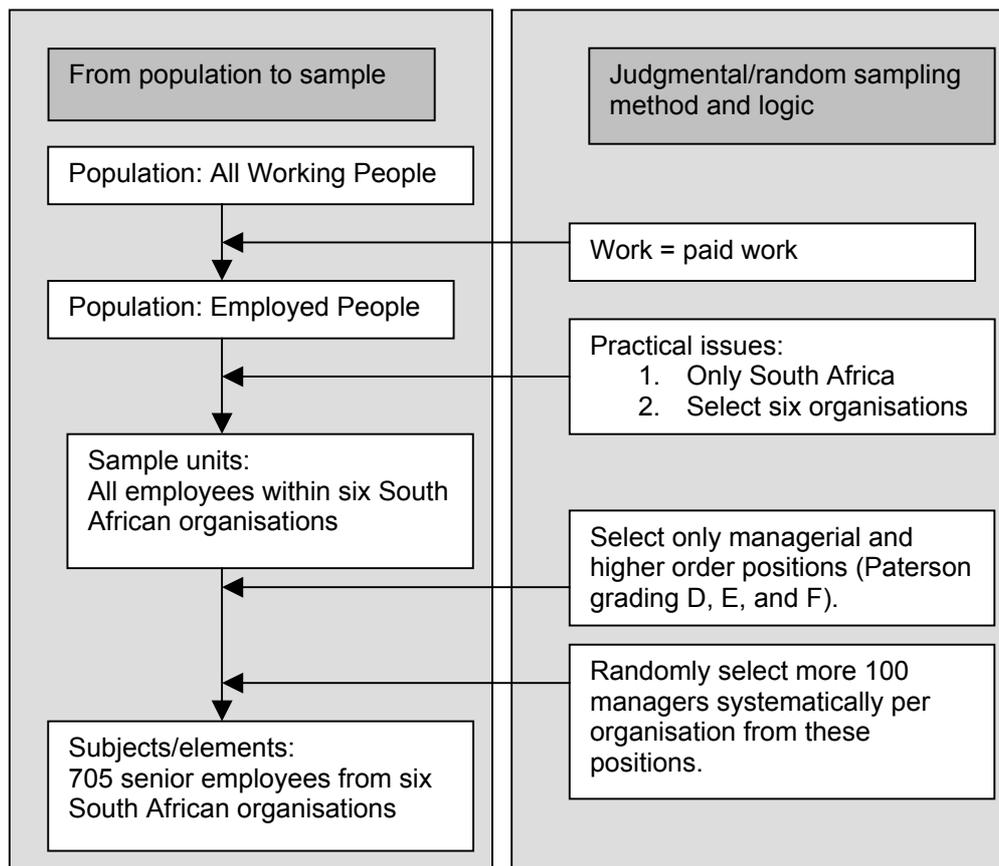


Figure 17. The logic followed in selecting the sample.

Bentler and Chou (1987) note that if the sample cannot be defined as coming from a relevant population, any obtained results may be uninformative about a theory.

Thus, it is important to know whether the theory one is evaluating should hold for males as well as females, only for a given ethnic group, or only with certain other groups (Bentler & Chou, 1987). The way this research is overcoming this limitation, was by ensuring that the sample came from a relevant population, and by investigating differences in the responses of the different groups.

The biographical and lifestyle characteristics of the sample and sub-samples are discussed in order to get a portrayal of the survey group. Information will be given on all the questions that were posed in the last part of the questionnaire that dealt with these aspects. All the information will be displayed in both table and graphical formats. Missing responses on a measure was considered low and insignificant if it was less than 1%.

The response rates of the total sample, and of the sub-samples from the six different organisations, are shown in Table 10 and illustrated in Figure 18.

Table 10  
Questionnaire response rates (N = 458)

Organisation	Questionnaires		Percentage	
	Sent out	Returned	Responses	Total sample
Refinery	127	107	84.25	23.36
Marketing	100	62	62.00	13.54
Manufacturing	133	84	63.16	18.34
Mining	112	71	63.39	15.50
Admin	112	55	49.11	12.01
Engineering	121	79	65.29	17.25
Total	705	458	64.96	100.00

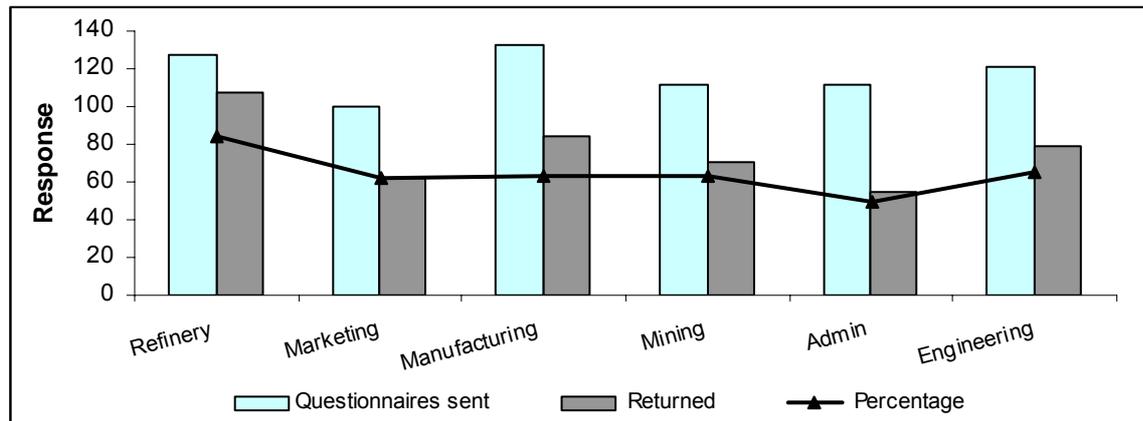


Figure 18. Response rates per participating organisation.

It can be seen that the overall response rate of 64.96% was very good (Babbie, 1998), as 458 of the initial 705 questionnaires were returned. Most of the response rates of the sub-samples were also good, with the best return rate (84.25%) from the organisation that operates as a Refinery. The response rates of all the other organisations were higher than 60%, which can be regarded as good according to Babbie (1998). In only one of the organisations, the administrative oriented organisation, was the response rate lower than 60%, namely 49.11%. However, Babbie (1998) still regards a response rate of 50% as adequate.

The age distribution of the respondents is shown in Table 11 and illustrated in Figure 19.

Table 11

Age distribution of the respondents (N = 458)

Age	Frequency	Percentage	Cumulative	
			Frequency	Percentage
27	1	0.22	1	0.22
28	6	1.31	7	1.53
29	8	1.75	15	3.28
30	20	4.37	35	7.64
31	18	3.93	53	11.57
32	15	3.28	68	14.85
33	4	0.87	72	15.72
34	10	2.18	82	17.90
35	12	2.62	94	20.52
36	15	3.28	109	23.80
37	18	3.93	127	27.73
38	16	3.49	143	31.22
39	22	4.80	165	36.03
40	15	3.28	180	39.30
41	19	4.15	199	43.45
42	29	6.33	228	49.78
43	25	5.46	253	55.24
44	13	2.84	266	58.08
45	15	3.28	281	61.35
46	25	5.46	306	66.81
47	13	2.84	319	69.65
48	14	3.06	333	72.71
49	14	3.06	347	75.76
50	10	2.18	357	77.95
51	13	2.84	370	80.79
52	13	2.84	383	83.62
53	15	3.28	398	86.90
54	14	3.06	412	89.96
55	12	2.62	424	92.58
56	7	1.53	431	94.10
57	4	0.87	435	94.98
58	7	1.53	442	96.51
59	12	2.62	454	99.13
60	2	0.44	456	99.56
62	1	0.22	457	99.78
Total	457	99.78	457	99.78
Missing	1	0.22	458	100.00

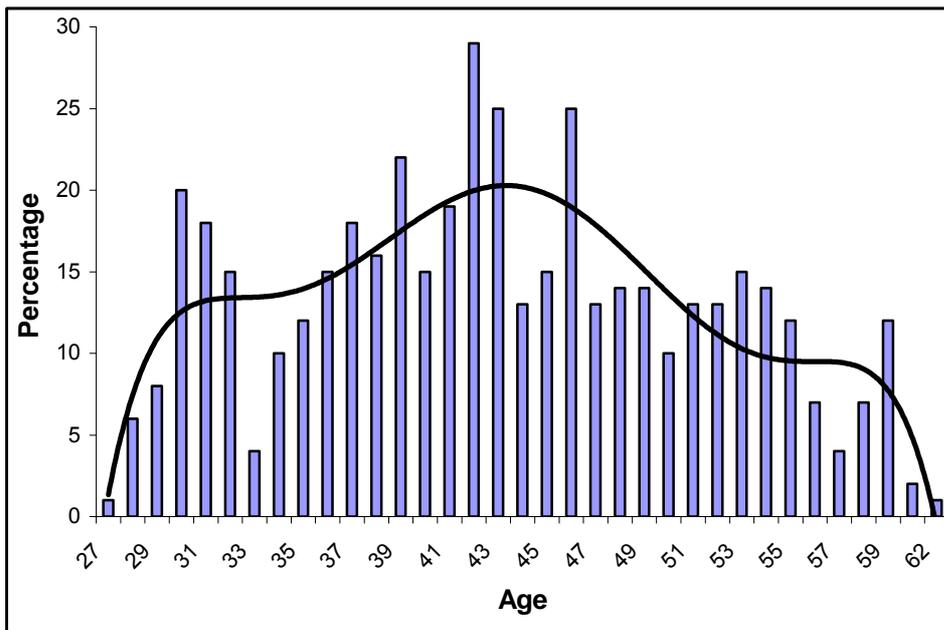


Figure 19. Age distribution of the respondents.

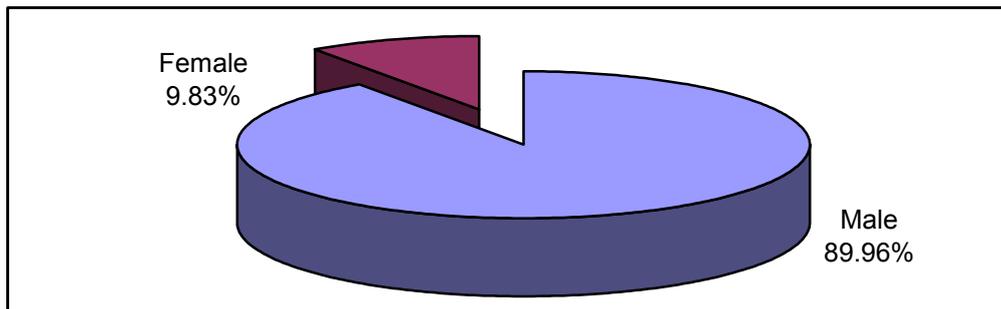
The mean age of the respondents ( $N = 457$ ) is 42.96 years ( $SD = 8.31$ ). The maximum age is 62, and the minimum age 27, with the largest single group of the respondents being 42 years of age. A polynomial trend line was added to the data in Figure 19 to improve the visualisation of the trend in the age distribution. Categorising the respondents who supplied their ages into age cohorts ( $\leq 29$ , 30 – 39, 40 – 49, 50 – 59,  $\geq 60$ ), it becomes clear that 3.28 % of the sample were classified as younger than 30, while fewer than 1% were 60 years or older. The 30 – 39 and 40 – 49 age years of age cohorts respectively contained 32.75% and 36.46% of the members of the sample, while the 50 – 59 years cohort represented 23.37% of the respondents. The respondents who were 40 years or older therefore formed 60.48% of the sample. It is obvious from the data and the graph that most of the respondents were forty years or older, typically at the ages when people have settled in their careers and came to terms with their occupational roles (Clark et al., 1996).

The gender distribution of the sample is shown in Table 12 and illustrated in Figure 20.

Table 12

Gender distribution (N = 458)

Gender	Frequency	Percentage	Cumulative	
			Frequency	Percentage
Male	412	89.96	412	89.96
Female	45	9.83	457	99.78
Total	457	99.78	457	99.78
Missing	1	0.22	458	100.00

Figure 20. Gender distribution.

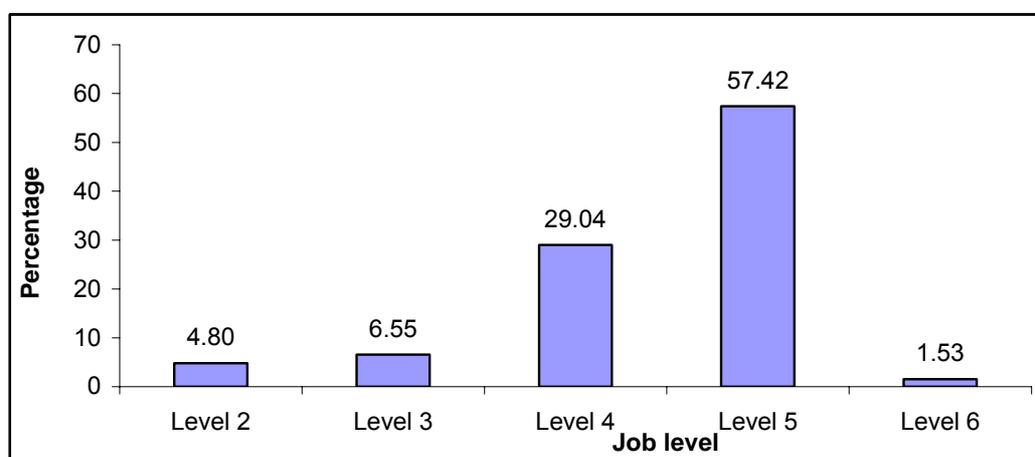
The respondents who provided information on their gender were predominantly male (N = 412), i.e., (89.96%) of the sample. The females respondents (N = 45) formed less than one tenth (9.83%) of the total sample.

Table 13 and Figure 21 indicate the distribution of the respondents over the hierarchical job levels recognised by the organisations.

Table 13

Hierarchical, seniority levels of the sample (N = 458)

Job level	Frequency	Percentage	Cumulative	
			Frequency	Percentage
Level 2	22	4.80	22	4.80
Level 3	30	6.55	52	11.35
Level 4	133	29.04	185	40.39
Level 5	263	57.42	448	97.82
Level 6	7	1.53	455	99.34
Total	455	99.34	455	99.34
Missing	3	0.66	458	100.00

Figure 21. Levels of job seniority of the subjects.

All of the job levels refer to Paterson's (1972) bands of job grading. Level 2 refers to Paterson's (1972) F band (top management), level 3 refers to Paterson's (1972) E bands (senior management), level 4 and 5 refer to Paterson's (1972) D2 to D4 bands (middle management), and level 6 refers to Paterson's (1972) D1 band (junior management). Most of the respondents (N = 133 and N = 263 respectively) came from level four (29.04%) and level five (57.42%), in other words from middle management. The distribution indicates that about 10% of the respondents came from senior and top management, 6.59% and 4.84% respectively. The low representation from junior management (N = 7), i.e., 1.53% was unexpected as members of this group were thought to make up a larger proportion of the population and therefore the sample. It is unclear whether this is a case of sampling error, or whether respondents in this job category behaved differently in returning, or not

returning, the questionnaires. Due to the high response rate of individuals in other categories, and because the intention of the sampling methodology was to reach the more senior people in the organisations, this is not regarded as a major problem.

The distribution of the highest qualifications of the respondents is indicated in Table 14 and Figure 22.

Table 14

Highest qualifications obtained by respondents (N = 458)

Qualifications	Frequency	Percentage	Cumulative	
			Frequency	Percentage
Secondary school	1	0.22	1	0.22
Standard 10	11	2.40	12	2.62
Certificate/diploma	13	2.84	25	5.46
National diploma	113	24.67	138	30.13
Bachelor's degree	111	24.24	249	54.37
Honours degree	83	18.12	332	72.49
Masters degree	114	24.89	446	97.38
Doctoral	12	2.62	458	100.00
Total	458			

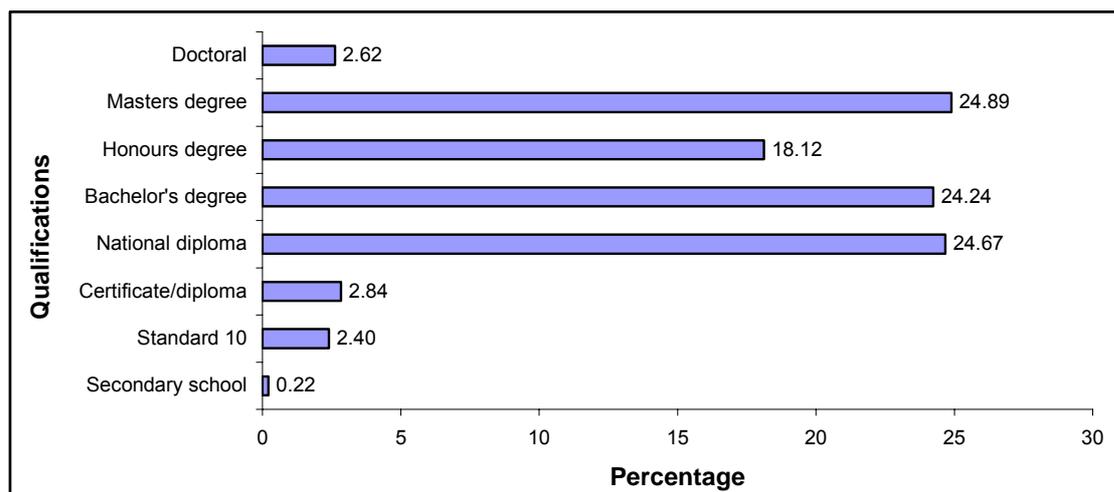


Figure 22. Highest qualifications obtained by the respondents.

Most of the sample, 95.54% (N = 433), have at least a National or Higher National Diploma as highest qualification, while large portions of the sample are in possession

of Bachelor degrees, (24.24%, N = 111), or Honours degrees, (18.12%, N = 83). Nearly a quarter of the sample, (24.89%, N = 114), is in possession of Masters degrees. As a generalisation, the sample can be seen as a highly educated group of people – knowledge workers.

One can conclude from the information on the highest qualifications of the respondents that the sample is truly a “white-collar” sample as was the intention of the sampling procedure. One should therefore be careful not to generalise any of the results to blue-collar workers or to any group who differs from the present sample on, for instance, qualifications.

Table 15 and Figure 23 indicate the changes in fields of study from the respondents’ initial post-school studies to their more recent studies. Similarly, Table 16 and Figure 24 indicate the respondents’ changes in career fields from their initial employment to their current employment.

Table 15

Changes in fields of study (change in interest) over years (N = 458)

Fields of study	Initial studies				Recent Studies			
			Cumulative				Cumulative	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Engineering	244	53.28	244	53.28	67	14.63	67	14.63
Human Resources	13	2.84	257	56.11	18	3.93	85	18.56
Econ and Finance	64	13.97	321	70.09	84	18.34	169	36.90
Management	9	1.97	330	72.05	175	38.21	344	75.11
Natural Sciences	56	12.23	386	84.28	22	4.80	366	79.91
Law	5	1.09	391	85.37	12	2.62	378	82.53
Education	9	1.97	400	87.34	0	0.00	378	82.53
Medicine	1	0.22	401	87.55	1	0.22	379	82.75
Other	33	7.21	434	94.76	24	5.24	403	87.99
Total	434	94.76	434	94.76	403	87.99	403	87.99
Missing	24	5.24	458	100.00	55	12.01	458	100.00

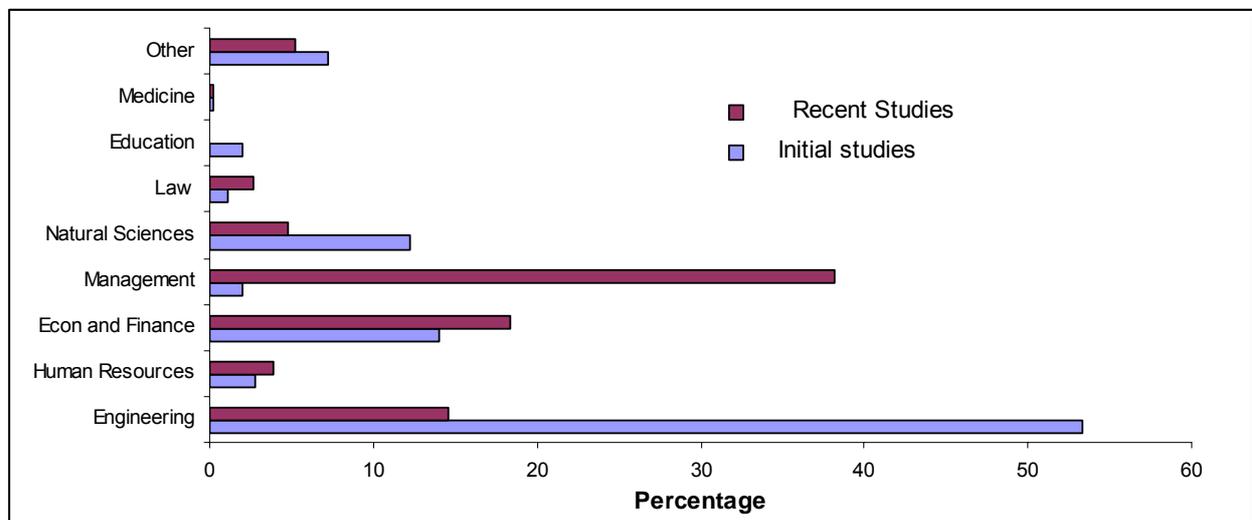
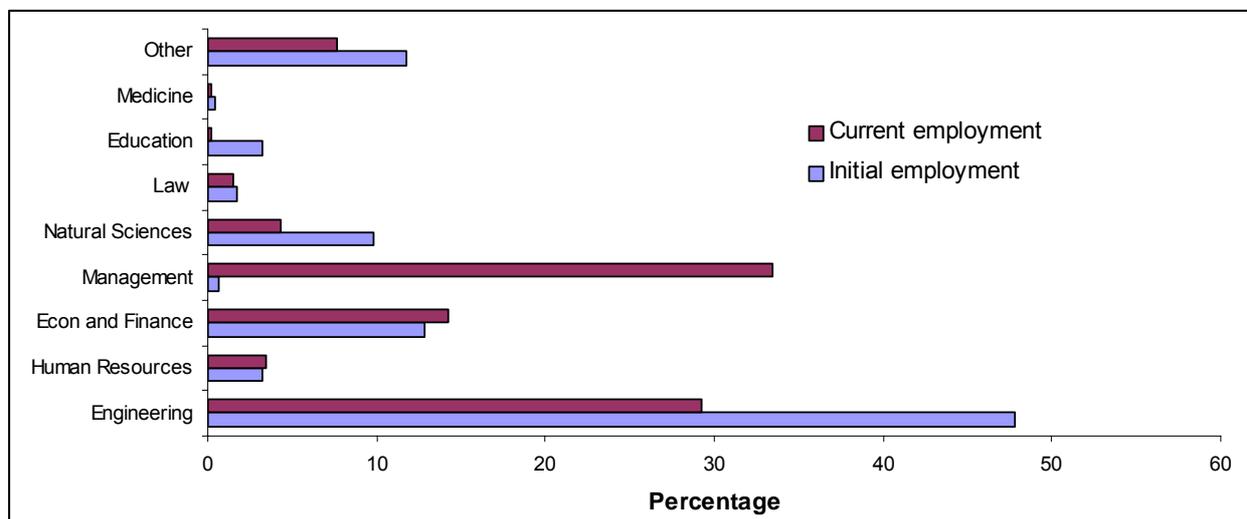


Figure 23. Changes in fields of study, from initial studies, to latest studies.

Table 16

Changes in fields of employment (careers) over years (N = 458)

Fields of Employment	Initial employment				Current employment			
			Cumulative				Cumulative	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Engineering	219	47.82	219	47.82	134	29.26	67	14.63
Human Resources	15	3.28	234	51.09	16	3.49	83	18.12
Econ and Finance	59	12.88	293	63.97	65	14.19	148	32.31
Management	3	0.66	296	64.63	153	33.41	301	65.72
Natural Sciences	45	9.83	341	74.45	20	4.37	321	70.09
Law	8	1.75	349	76.20	7	1.53	328	71.62
Education	15	3.28	364	79.48	1	0.22	329	71.83
Medicine	2	0.44	366	79.91	1	0.22	330	72.05
Other	54	11.79	420	91.70	35	7.64	365	79.69
Total	420	91.70	420	91.70	432	94.32	365	79.69
Missing	38	8.30	458	100.00	26	5.68	458	100.00

Figure 24. Changes in fields of employment, from initial employment to current.

It is obvious from these tables and graphs that the engineering profession is dominant in the sample, both for study field and employment. More than half of the respondents (53.28%, N = 244), initiated their studies in the engineering field, and

almost all of them (47.82%, N = 219), were subsequently employed in the engineering field. A shift toward managerial studies and employment seemed to have happened. A large proportion of the respondents (38.21%, N = 175), reported their more recent studies to be in the managerial field, whilst the largest single group of the respondents (33.41%, N = 153) reported to be currently employed as managers. There was thus a shift towards managerial employment, only 0.66% of the respondents were initially employed as managers, and 33.41% of the respondents are now employed as managers.

The high frequency of missing responses on fields of study and fields of employment is regarded as significant and a concern. In all four response categories were large portions of responses missing. Initial field of study was not answered by 5.24% of the sample. The corresponding figures for the other categories were: recent field of study 12.01%, initial field of employment 8.30%, and current field of employment 5.68%. It is speculated that some respondents were not sure into which category their initial and current jobs should be classified.

The questions were possibly not understood clearly, or were difficult to interpret. For instance, if someone is employed as a manager of engineering activities, should he respond that he is employed as an engineer, or as a manager? Similarly, if someone completed a course on financial management, were the studies in the field of finance, or in the field of management? Care should therefore be exercised in forming generalisations based on this set of information. This information should probably be used mainly for descriptive purposes.

Table 17 and Figure 25 indicate the number of years that the respondents have been employed by their current employer.

Table 17

Years with current employer (N = 458)

Years	Frequency	Percentage	Cumulative	
			Frequency	Percentage
1	13	2.84	13	2.84
2	15	3.28	28	6.11
3	16	3.49	44	9.61
4	18	3.93	62	13.54
5	22	4.80	84	18.34
6	20	4.37	104	22.71
7	15	3.28	119	25.98
8	15	3.28	134	29.26
9	13	2.84	147	32.10
10	25	5.46	172	37.55
11	16	3.49	188	41.05
12	16	3.49	204	44.54
13	26	5.68	230	50.22
14	15	3.28	245	53.49
15	24	5.24	269	58.73
16	8	1.75	277	60.48
17	16	3.49	293	63.97
18	18	3.93	311	67.90
19	18	3.93	329	71.83
20	34	7.42	363	79.26
21	19	4.15	382	83.41
22	10	2.18	392	85.59
23	7	1.53	399	87.12
24	7	1.53	406	88.65
25	6	1.31	412	89.96
26	4	0.87	416	90.83
27	8	1.75	424	92.58
28	6	1.31	430	93.89
29	2	0.44	432	94.32
30	7	1.53	439	95.85
31	2	0.44	441	96.29
32	2	0.44	443	96.72
33	6	1.31	449	98.03
34	2	0.44	451	98.47
35	2	0.44	453	98.91
37	1	0.22	454	99.13
40	1	0.22	455	99.34
Total	455	99.34	455	99.34
Missing	3	0.66	458	100.00

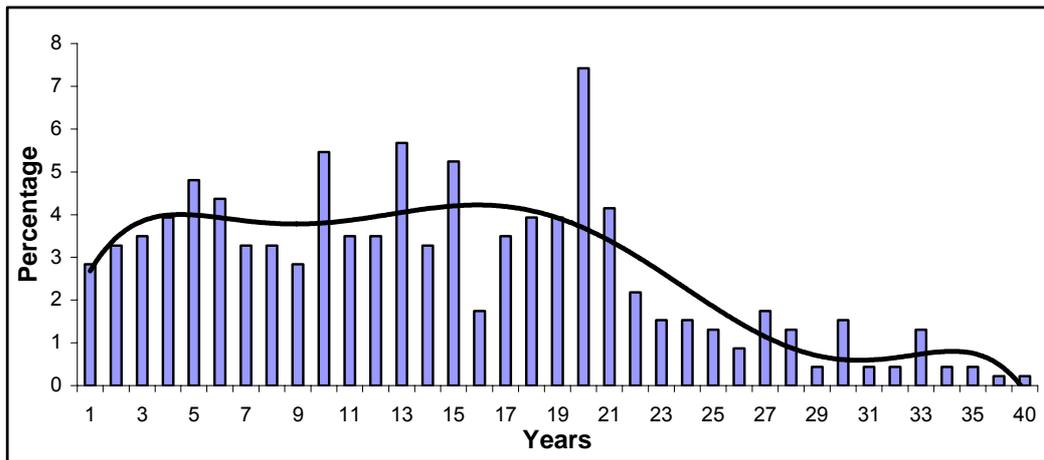


Figure 25. Number of years with current employer.

From Table 17 and Figure 25 and it is clear that the respondents tend to have long relationships with their current employer. Most of the respondents, (67.9%,  $N = 321$ ) have 10 years or longer service with their current employer, with a mean employment history of 14.01 years ( $SD = 8.23$ ) and a maximum employment history of 40 years. The largest single number of respondents (7.42%), is at 20 years of employment ( $N = 34$ ).

The polynomial trend fit line in Figure 25 indicates that the trend is skewed to the left, in other words, toward fewer years of service. However, the line flattens between 6 and 20 years of employment, confirming relatively long years of service. A substantial portion of the sample, 28.17%, has 20 years or longer service ( $N = 126$ ). What makes this even more noteworthy is the mean age of the population that is only 43 years (Table 10). One can speculate that a substantial proportion of the sample has spent their working lives up to the time of the present study with their current employer.

The number of participants indicating that they made substantial career changes and those who did not are shown in Table 18 and illustrated in Figure 26.

Table 18

Subjects that feel they made substantial career changes (N = 458)

	Frequency	Percentage	Cumulative	
			Frequency	Percentage
Yes	266	58.08	266	58.08
No	190	41.48	456	99.56
Total	456	99.56	456	99.56
Missing	2	0.44	458	100.00

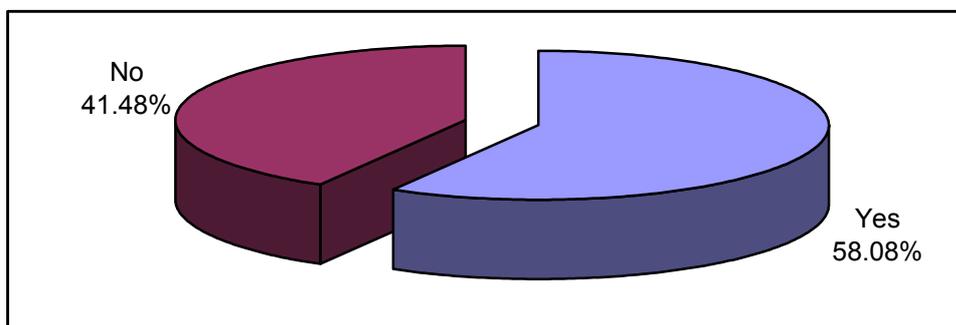


Figure 26. Subjects that feel they made substantial career changes or not.

A total of 266 of the participants, 58.08%, indicated that they made substantial career changes somewhere in their working life, forming a majority of the sample.

Table 19 and Figure 27 indicate the satisfaction of the respondents with their career progress.

Table 19

Satisfaction with career progress (N = 458)

Level of satisfaction	Frequency	Percentage	Cumulative	
			Frequency	Percentage
Completely satisfied	67	14.63	67	14.63
Satisfied	269	58.73	336	73.36
Not sure	29	6.33	365	79.69
Dissatisfied	82	17.90	447	97.60
Completely dissatisfied	7	1.53	454	99.13
Total	454	99.13	454	99.13
Missing	4	0.87	458	100.00

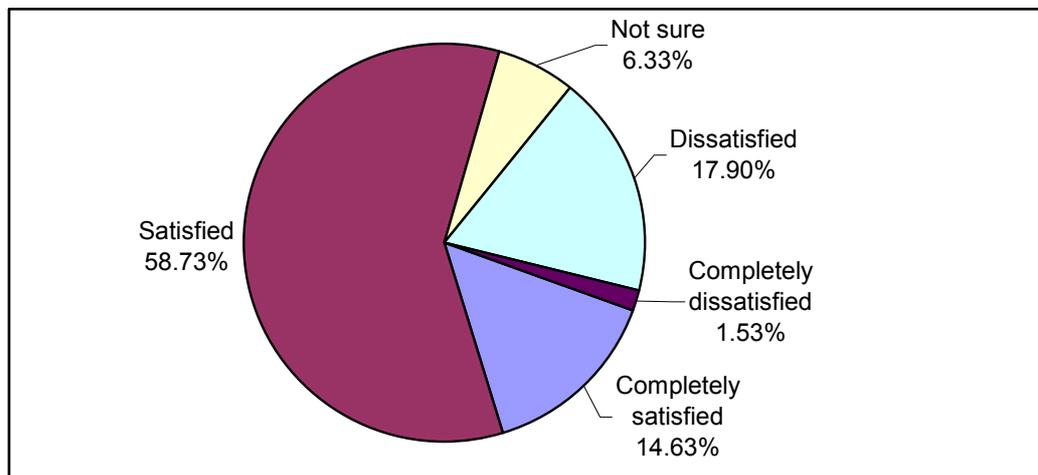


Figure 27. Satisfaction with career progress.

A clear majority of the respondents, 73.36% (N = 336), indicated that they are either completely satisfied, or satisfied with their career progress. Only 17.90% (N = 82) indicated that they are dissatisfied with their career progress, and a mere 1.53 percent (N = 7) indicated that they are completely dissatisfied with their career progress up-to-date. These responses appear to be congruent with a relatively young group of people who already are in very senior positions, i.e., who have made rapid progress.

Table 20 and Figure 28 indicate the responses on whether the respondents would continue working if they won enough money to be self-sufficient. Table 20 and

Figure 298 indicate the responses that would continue with their present job if they won the money.

Table 20

Responses to the lottery question (N = 458)

Would you continue working if you win R20 million in the lottery?				
	Frequency	Percentage	Cumulative	
			Frequency	Percentage
Yes	344	75.11	344	75.11
No	112	24.45	456	99.56
Total	456	99.56	456	99.56
Missing	2	0.44	458	100.00

Would you continue with your present job if you win R20 million in the lottery?

Would you continue with your present job if you win R20 million in the lottery?				
	Frequency	Percentage	Cumulative	
			Frequency	Percentage
Yes	196	42.79	196	42.79
No	255	55.68	451	98.47
Total	451	98.47	451	98.47
Missing	7	1.53	458	100.00

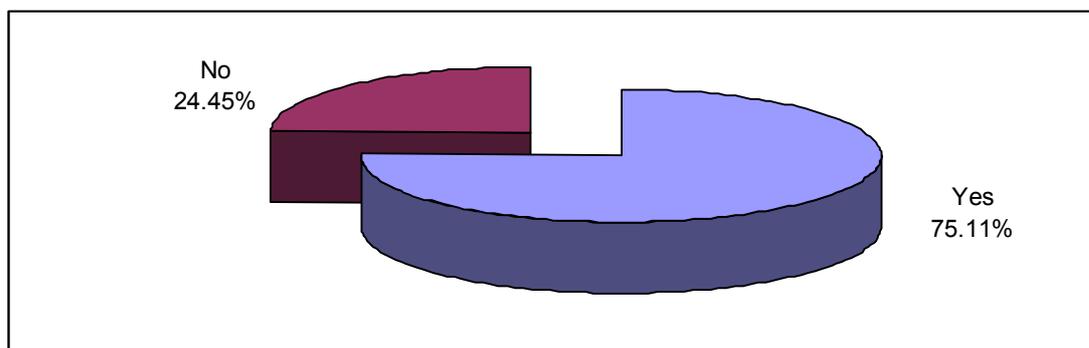


Figure 28. Respondents that will continue working if they won the lottery.

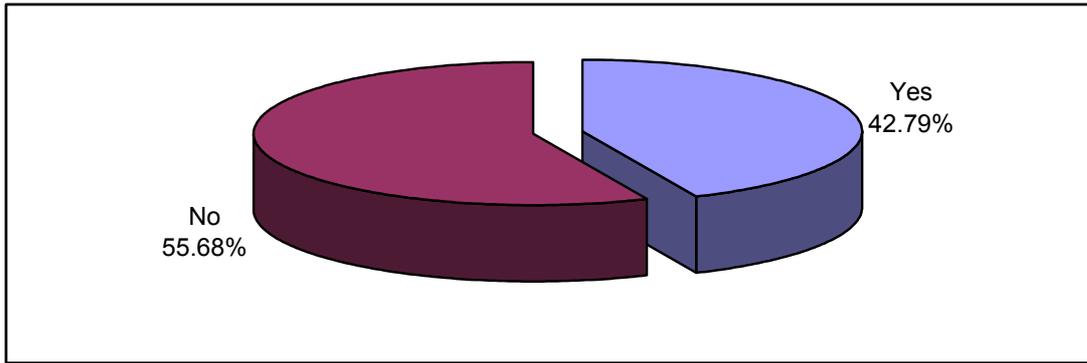


Figure 29. Respondents that will continue **with their present jobs** if they won the lottery.

Although more than three quarters of the respondents (75, 44%, N = 344), indicated that they would continue working if they won R20 million in the lottery, less than half (42.79%, N = 196) indicated that they would continue with their present jobs.

The results that indicate a willingness to continue working beyond the reason of economic utility working appears to correspond with Morse and Weiss' (1955) results of 80% for a similar sample. However, the large portion that indicated that they would not continue with their present jobs appears to be significant. This finding does not appear to correspond with Morse and Weiss' (1955) finding of 61% for a similar sample. It appears that most of the respondents would prefer to do something else, although they are apparently happy with their career progress, although they appear to be in senior positions relative to their ages.

Table 21 and Figure 30 indicate the responses regarding the average number of hours that the respondents actually work per week.

Table 21

Actual working hours per week (N = 458)

Hours	Frequency	Percentage	Cumulative	
			Frequency	Percentage
10	1	0.22	1	0.22
30	4	0.87	5	1.09
35	3	0.66	8	1.75
36	1	0.22	9	1.97
37	2	0.44	11	2.40
38	2	0.44	13	2.84
40	46	10.04	59	12.88
41	1	0.22	60	13.10
42	5	1.09	65	14.19
43	5	1.09	70	15.28
44	9	1.97	79	17.25
45	70	15.28	149	32.53
46	9	1.97	158	34.50
47	5	1.09	163	35.59
48	24	5.24	187	40.83
49	2	0.44	189	41.27
50	111	24.24	300	65.50
52	12	2.62	312	68.12
53	4	0.87	316	69.00
54	4	0.87	320	69.87
55	57	12.45	377	82.31
56	5	1.09	382	83.41
57	1	0.22	383	83.62
58	5	1.09	388	84.72
59	1	0.22	389	84.93
60	48	10.48	437	95.41
64	1	0.22	438	95.63
65	6	1.31	444	96.94
66	1	0.22	445	97.16
68	1	0.22	446	97.38
70	6	1.31	452	98.69
72	1	0.22	453	98.91
77	1	0.22	454	99.13
80	1	0.22	455	99.34
85	1	0.22	456	99.56
90	1	0.22	457	99.78
Total	457	99.78	457	99.78
Missing	1	0.22	458	100.00

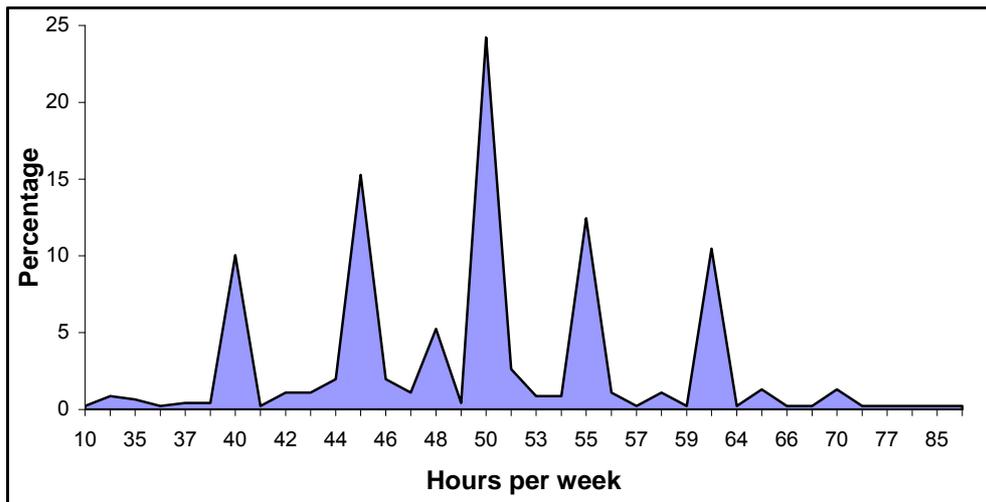


Figure 30. Actual working hours per week.

It is clear that most of the respondents tend to work long hours, with the mean reported working hours per week being 50.08 hours (SD = 7.94). The largest single group of the respondents, 24.24% (N = 111) indicated that they work around 50 hours per week. Approximately 12% of the sample reported working 55 hours per week (12.47%) and about 10% said that they work 60 hours per week (10.50%). The highest reported working hours per week was 90. Almost 90% (87.12%) of the sample reported that they work longer than the expected minimum of 40 hours per week.

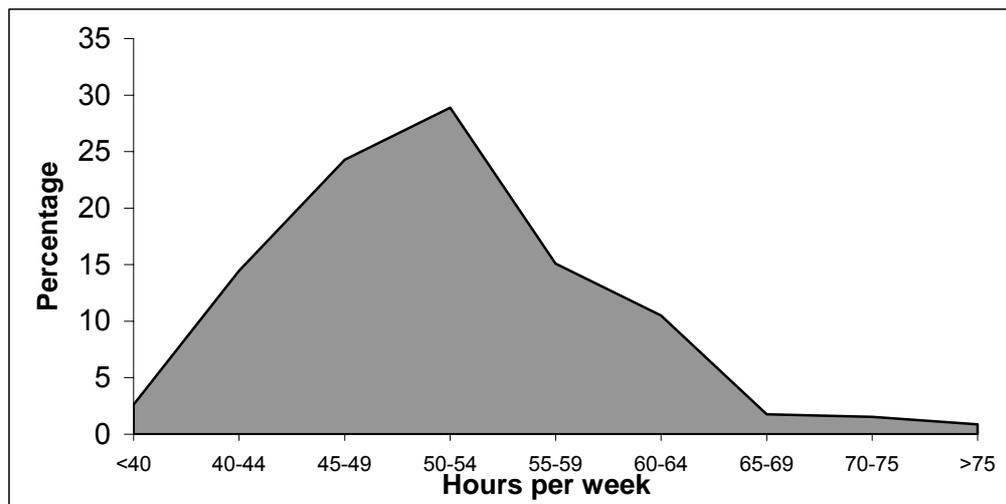
It appears from Figure 30 that respondents possibly rounded off the actual working hours per week to the nearest factor of five. This makes the actual working hours per week somewhat difficult to interpret.

In Table 22 and Figure 31, the actual working hours reported by the respondents were clustered in bandwidths of five hours.

Table 22

Actual working hours per week within bandwidths (N = 458)

Hours	Frequency	Percentage	Cumulative	
			Frequency	Percentage
<40	12	2.62	12	2.62
40-44	66	14.41	78	17.03
45-49	111	24.24	189	41.27
50-54	132	28.82	321	70.09
55-59	69	15.07	390	85.15
60-64	48	10.48	438	95.63
65-69	8	1.75	446	97.38
70-75	7	1.53	453	98.91
>75	4	0.87	457	99.78
Total	457	99.78	457	99.78
Missing	1	0.22	458	100.00

Figure 31. Working hours per week within bandwidths.

This information indicates clearly that most of the respondents actually work between 45 and 60 hours per week, with 14.66% (N = 67) of the respondents working 60 hours per week or more. In other words, they work 50% more than the officially expected hours per week.

Table 23 and Figure 32 indicate the number of hours officially required from the respondents, according to their self reports.

Table 23

Official working hours required per week (N = 458)

Hours	Frequency	Percentage	Cumulative	
			Frequency	Percentage
35	1	0.22	1	0.22
38	36	7.86	37	8.08
39	2	0.44	39	8.52
40	345	75.33	384	83.84
41	1	0.22	385	84.06
42	16	3.49	401	87.55
43	3	0.66	404	88.21
44	3	0.66	407	88.86
45	29	6.33	436	95.20
46	2	0.44	438	95.63
47	1	0.22	439	95.85
48	15	3.28	454	99.13
50	1	0.22	455	99.34
60	1	0.22	456	99.56
Total	456	99.56	456	99.56
Missing	2	0.44	458	100.00

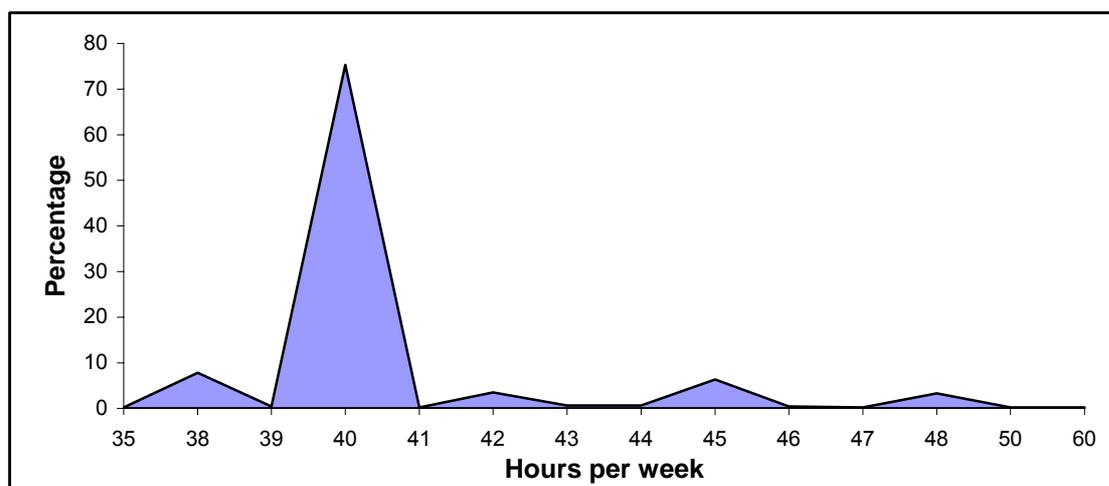
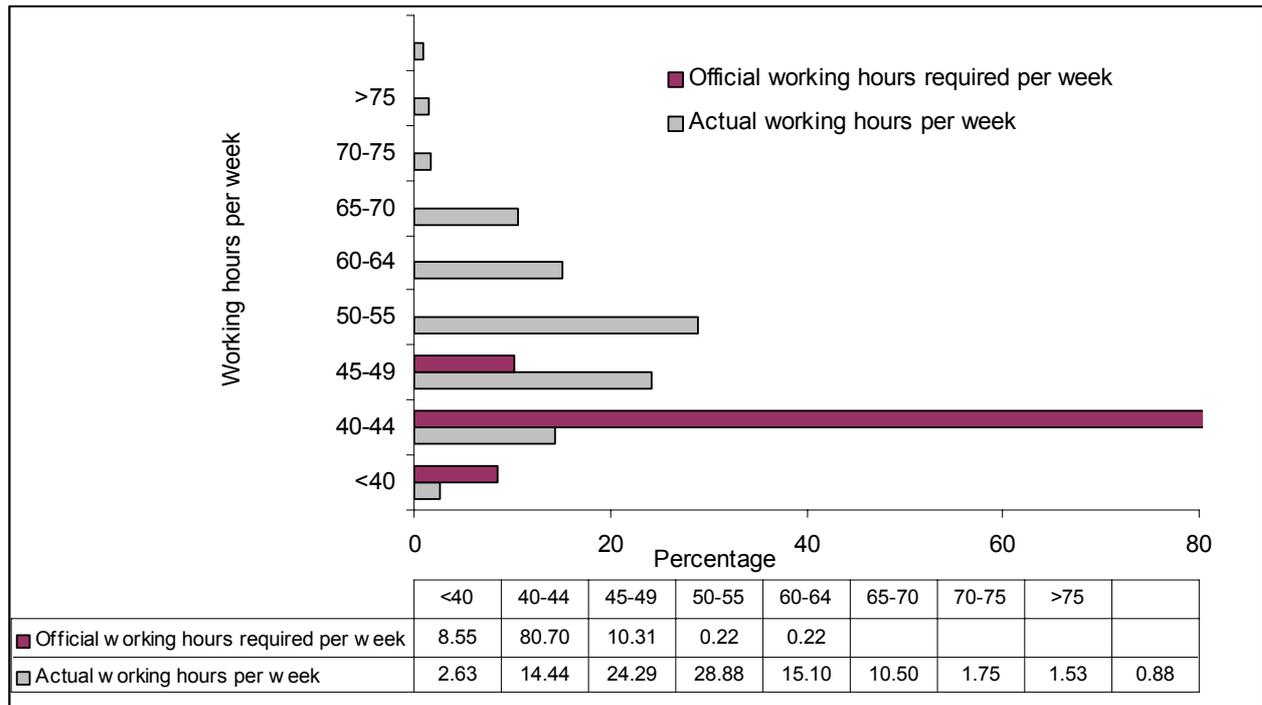


Figure 32. Official working hours required per week.

It is clear that the largest proportion of the respondents, 75.66% (N = 345), are required to work 40 hours per week (mean = 40.63, SD = 2.31). The longest official workweek that has been reported is 60. The frequency of missing responses (N = 2) on official working hours required per week is regarded as low and insignificant.

In Figure 33 the actual working hours of the respondents is compared with the official working hours required.



**Figure 33.** Actual working hours versus official working hours required per week.

The official working hours required was clustered in the same bandwidths than those in Table 22. More than 80% of the respondents (82.93%) work longer hours than what is officially required from them by their employing organisations. Possible explanations for this phenomenon can be that it has to do with the level of seniority of the respondents in the sample, or that it might be a case of PWE. The latter explanation would be congruent with the majority of the respondents being Protestants, and having strong religious orientations. Senior managers, according to previous findings (Mintzberg, 1973), usually work long hours. This seems to have been confirmed by the present findings.

Table 24 and Figure 34 indicate the number of respondents that regularly work over weekends or holidays.

Table 24

Respondents that regularly work over weekends or holidays (N = 458)

	Frequency	Percentage	Cumulative	
			Frequency	Percentage
Yes	205	44.76	205	44.76
No	251	54.80	456	99.56
Total	456	99.56	456	99.56
Missing	2	0.44	458	100.00

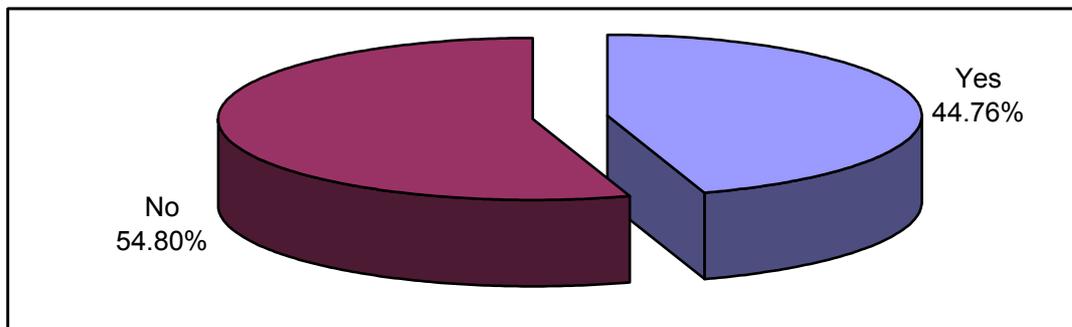


Figure 34. Respondents working regularly over weekends and holidays.

These results indicate that more than two fifths of the respondents (44.76%, N = 205), reported that they regularly work over weekends or during holidays.

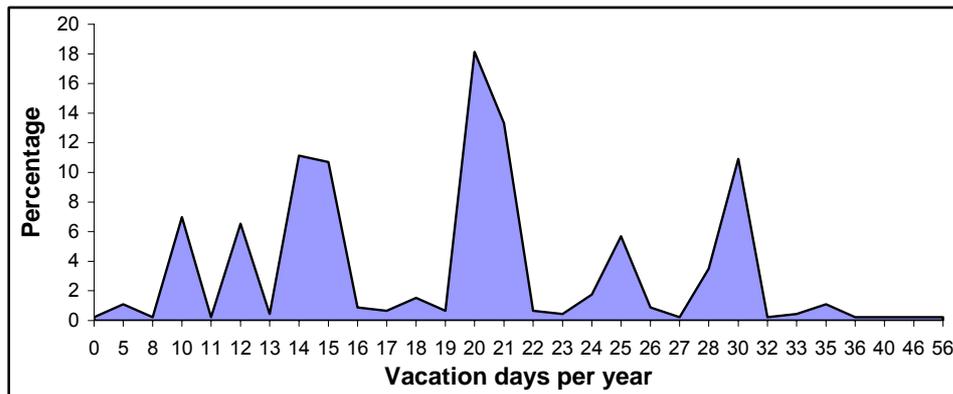
In Table 25 and Figure 35, the typical number of days per year that the respondents report taking vacation is indicated.

Table 25

Typical number of vacation days that respondents report taking per year (N = 458)

Days	Frequency	Percentage	Cumulative	
			Frequency	Percentage
0	1	0.22	1	0.22
5	5	1.09	6	1.31
8	1	0.22	7	1.53
10	32	6.99	39	8.52
11	1	0.22	40	8.73
12	30	6.55	70	15.28
13	2	0.44	72	15.72
14	51	11.14	123	26.86
15	49	10.70	172	37.55
16	4	0.87	176	38.43
17	3	0.66	179	39.08
18	7	1.53	186	40.61
19	3	0.66	189	41.27
20	83	18.12	272	59.39
21	61	13.32	333	72.71
22	3	0.66	336	73.36
23	2	0.44	338	73.80
24	8	1.75	346	75.55
25	26	5.68	372	81.22
26	4	0.87	376	82.10
27	1	0.22	377	82.31
28	16	3.49	393	85.81
30	50	10.92	443	96.72
32	1	0.22	444	96.94
33	2	0.44	446	97.38
35	5	1.09	451	98.47
36	1	0.22	452	98.69
40	1	0.22	453	98.91
46	1	0.22	454	99.13
56	1	0.22	455	99.34
Total	455	99.34	455	99.34
Missing	3	0.66	458	100.00

The results indicate that the largest individual groups (18.24%, N = 83 and 13.41%, N = 61) take either 20 or 21 days vacation during the course of the year. The mean number of days taken is 19.61 days (SD = 8.67). The official number of vacation days offered by the employing organisations, according to the HR managers, varies between 30 and 42 calendar days per year, depending on years of employment.



**Figure 35.** Typical number of vacation days that respondents take per year.

The peaks in Figure 35 suggest that the respondents possibly rounded their responses to a few numbers such as 14/15, 20/21 and 30. The results were reworked in Table 26 and Figure 36 to group the responses into bandwidths.

**Table 26**

Typical number of vacation days taken per year (frequencies clustered) (N = 458)

Days	Frequency	Percentage	Cumulative	
			Frequency	Percentage
10 or less	39	8.52	39	8.52
11 to 15	133	29.04	172	37.55
16 to 20	100	21.83	272	59.39
21 to 25	101	22.05	373	81.44
26 to 30	70	15.28	443	96.72
31 or more	12	2.62	455	99.34
Total	455	99.34	455	99.34
Missing	3	0.66	458	100.00

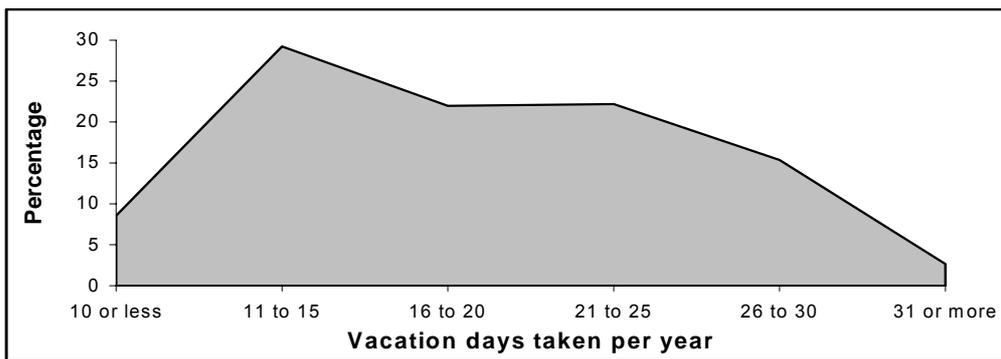


Figure 36. Typical number of vacation days taken per year (frequencies clustered)

It is clear that the largest proportion of days vacation reported by the respondents lies between 11 and 25, representing 73.41% of the responses (N = 334), with the majority of the responses being skewed to the left, i.e., to the lower end. More than two thirds of the respondents (37.80%) took fewer than 16 days leave per year.

Table 27 and Figure 37 indicate the responses to the question whether the respondents actively make time to be alone.

Table 27

Respondents that purposely make time to be alone (N = 458)

	Frequency	Percentage	Cummulative	
			Frequency	Percentage
Yes	275	60.04	275	60.04
No	181	39.52	456	99.56
Total	456	99.56	456	99.56
Missing	2	0.44	458	100.00

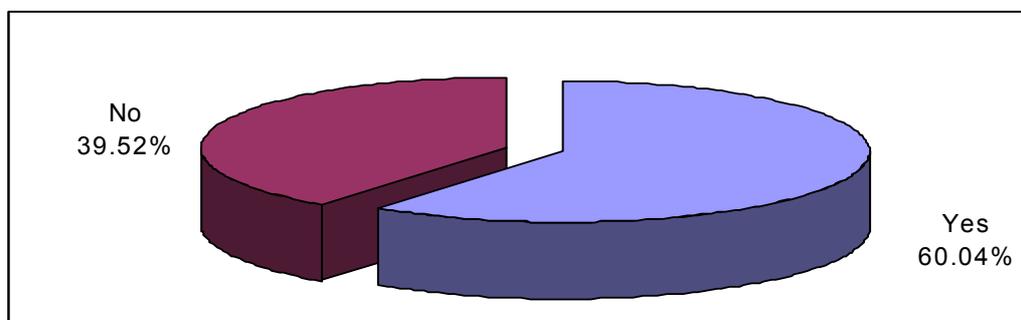


Figure 37. Respondents purposely making time to be alone.

The majority of the respondents, 60.04% (N = 275) indicated that they purposely make time to be alone. Similarly, the majority of respondents do not find it difficult not being engaged in specific activities.

The respondents' indication on whether they find it difficult not to be engaged in activities is shown in Table 28 and illustrated in Figure 38.

Table 28

Respondents finding it difficult not being engaged in specific activities (N = 458)

	Frequency	Percentage	Cumulative	
			Frequency	Percentage
Yes	92	20.09	92	20.09
No	365	79.69	457	99.78
Total	457	99.78	457	99.78
Missing	1	0.22	458	100.00

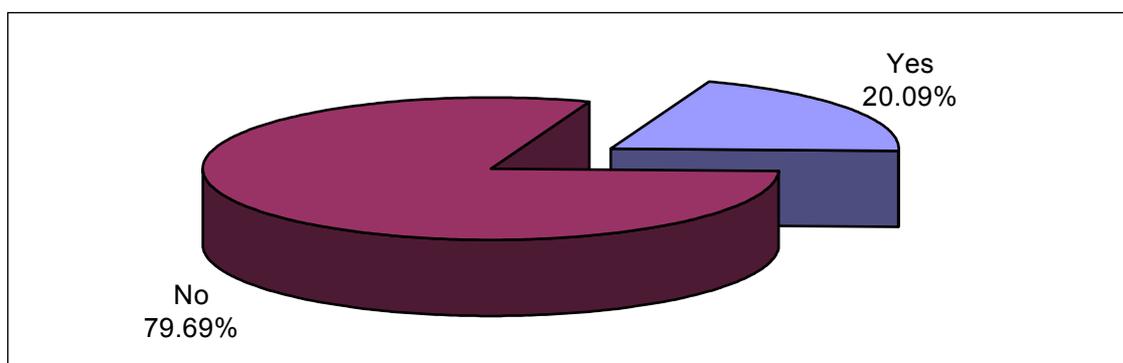


Figure 38. Respondents finding it difficult not being engaged in specific activities.

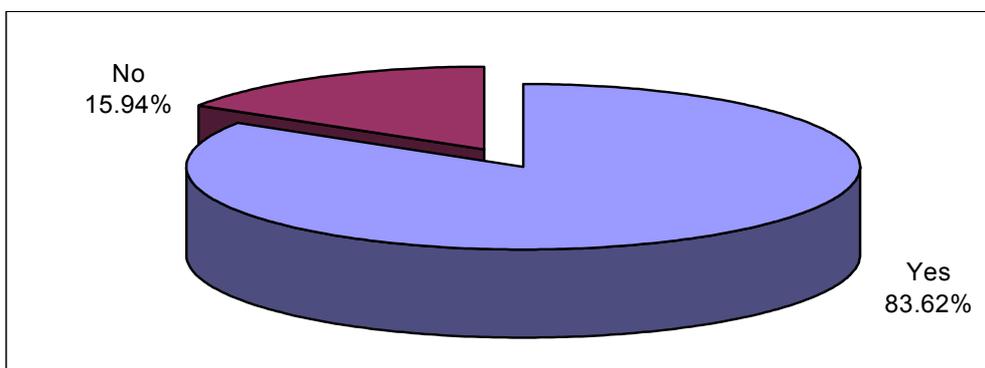
Almost 80% of the respondents (79.69%, N = 365) reported that they do not find it difficult if they are not engaged in specific activities.

The number of respondents that purposely make time for leisure is shown in Table 29 and illustrated in Figure 39.

Table 29

Respondents that purposely make time for leisure (N = 458)

	Frequency	Percentage	Cumulative	
			Frequency	Percentage
Yes	383	83.62	383	83.62
No	73	15.94	456	99.56
Total	456	99.56	456	99.56
Missing	2	0.44	458	100.00

Figure 39. Respondents purposely making time for leisure.

More than 80 % of the respondents (83.62%, N = 383) report that they actively make time for leisure.

Similarly does the large majority of respondents, with 91.25% (N = 417) indicating that they purposely make time to spend with a family or friends (Table 30 and Figure 40).

The respondents' indication whether they purposely make time to spend with family or friends is shown in Table 30 and illustrated in Figure 40.

Table 30

Respondents purposely making time to spend with their family (or friends) (N = 458)

	Frequency	Percentage	Cumulative	
			Frequency	Percentage
Yes	417	91.05	417	91.05
No	40	8.73	457	99.78
Total	457	99.78	457	99.78
Missing	1	0.22	458	100.00

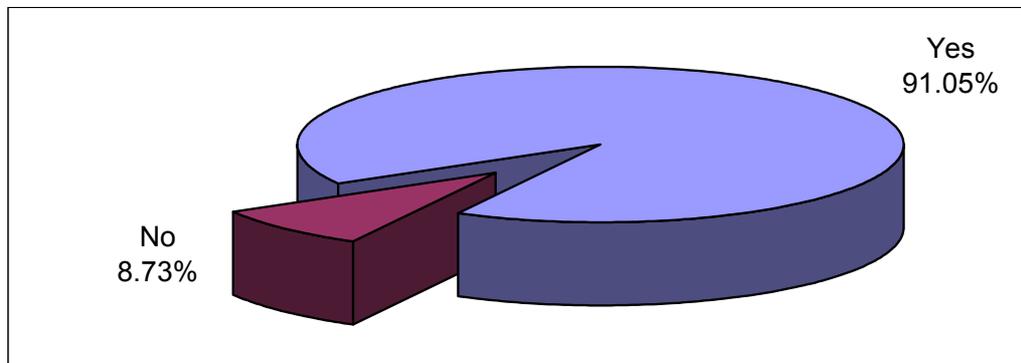


Figure 40. Respondents purposely making time to spend with their family (or friends).

The largest proportion of the respondents (91.05%, N = 417) indicated that they purposely make time to spend with family and friends.

The indication of respondents whether they actively take part in a sport or a hobby is shown in Table 31 and illustrated in Figure 41.

Table 31

Respondents actively taking part in a sport or a hobby (N = 458)

	Frequency	Percentage	Cumulative	
			Frequency	Percentage
Yes	335	73.14	335	73.14
No	120	26.20	455	99.34
Total	455	99.34	455	99.34
Missing	3	0.66	458	100.00

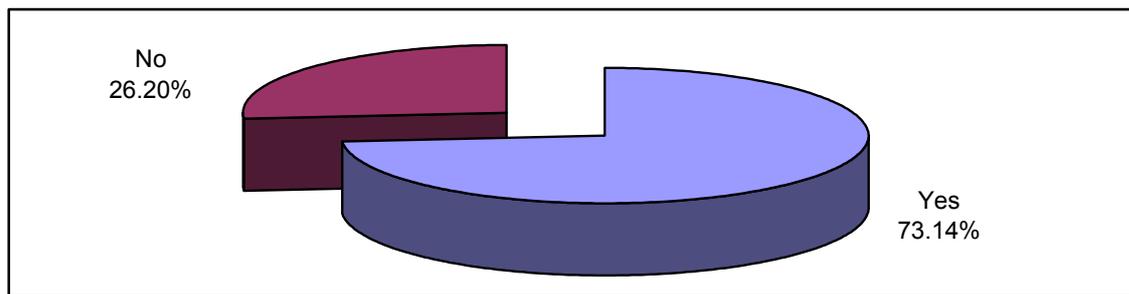


Figure 41. Respondents actively taking part in a sport or a hobby.

It is clear that almost three-quarters of the respondents (73.14%, N = 335) have a hobby or sport in which they actively take part.

Table 32 and Figure 42 indicate the respondents' active involvement, or non-involvement in community work. Table 33 and Figure 43 indicate the responses towards regular contribution to welfare or community work.

Table 32

Respondents being actively involved in community work or welfare work (N = 458)

	Frequency	Percentage	Cumulative	
			Frequency	Percentage
Yes	175	38.21	175	38.21
No	281	61.49	456	99.56
Total	456	99.56	456	99.56
Missing	2	0.44	458	100.00

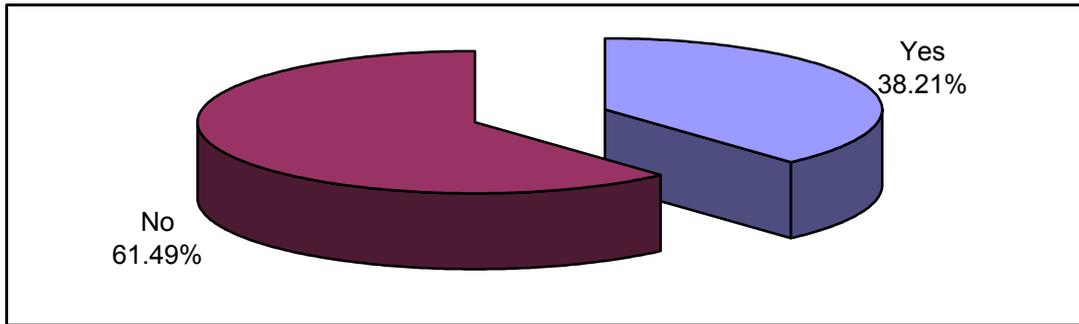


Figure 42. Respondents being actively involved in community work or welfare work.

Table 33

Respondents contributing financially to community work or welfare work (N = 458)

	Frequency	Percentage	Cumulative	
			Frequency	Percentage
Yes	307	67.03	307	67.03
No	147	32.17	761	166.16
Total	454	99.13	761	166.16
Missing	4	0.87	458	100.00

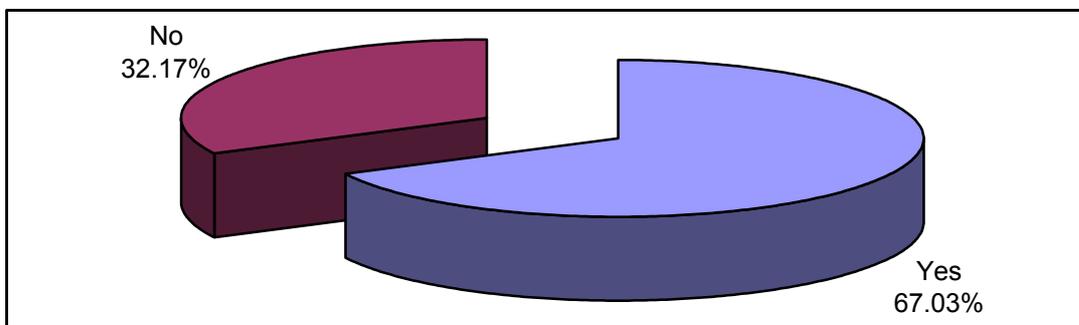


Figure 43. Respondents contributing financially in a regular fashion to community work or welfare work.

Less than two fifths (38.21%, N = 175) of the respondents indicated that they are actively involved in community work or welfare work. However, in contrast to being actively involved themselves in community work or welfare work, more than two thirds of the respondents (67.03%, N = 307) indicated that they contribute financially on a regular fashion to community work or welfare work.

The marital status of the respondents at the time of the survey is shown in Table 34 and illustrated in Figure 44.

Table 34

Marital status of the respondents (N = 458)

	Frequency	Percentage	Cumulative	
			Frequency	Percentage
Never married	26	5.68	26	5.68
Married	413	90.17	439	95.85
Widow(er)		0.00	439	95.85
Divorced	17	3.71	456	99.56
Estranged		0.00	456	99.56
Cohabiting	1	0.22	457	99.78
Total	457	99.78	457	99.78
Missing	1	0.22	458	100.00

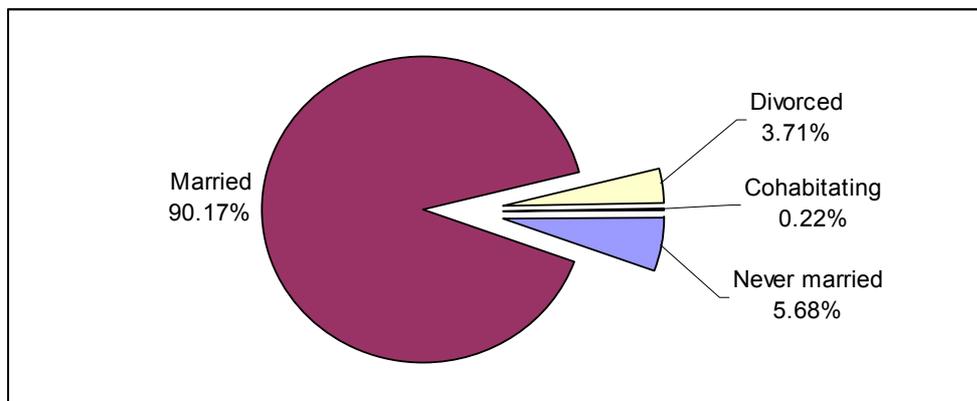


Figure 44. Marital status of the respondents.

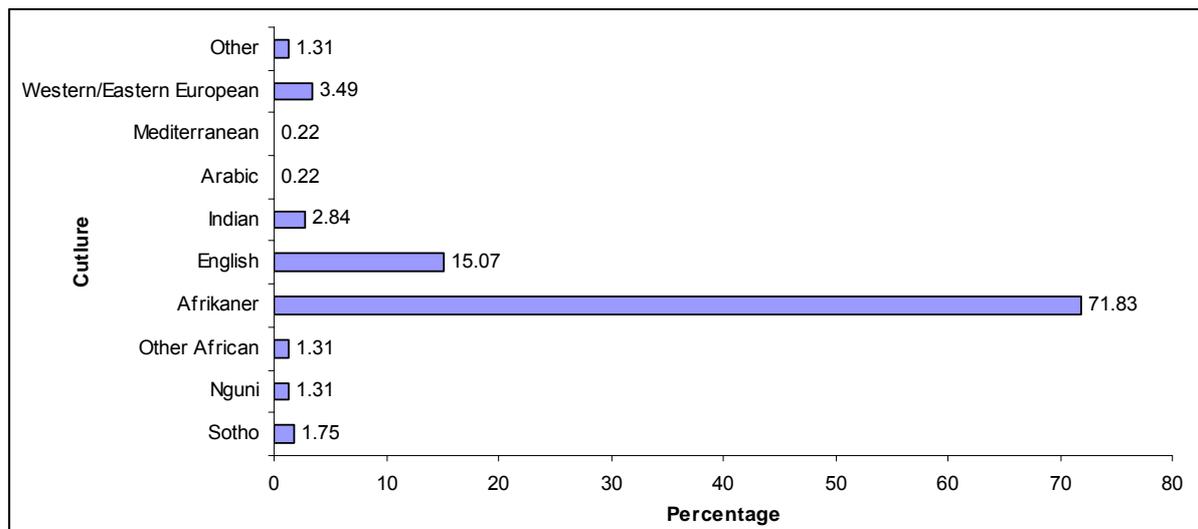
It is clear that the vast majority of the respondents (90.17%, N = 413) is married. It was found interesting that none of the respondents was widowed, nor did any of the respondents report to being estranged with their partners. Only one respondent indicated that he/she is cohabitating without being married to his/her partner.

The dominant social heritage, upbringing or culture of the respondents is shown in Table 35 and illustrated in Figure 45.

Table 35

Dominant source of social heritage, upbringing or culture (N = 458)

Culture	Frequency	Percentage	Cumulative	
			Frequency	Percentage
Sotho	8	1.75	8	1.75
Nguni	6	1.31	14	3.06
Other African	6	1.31	20	4.37
Afrikaner	329	71.83	349	76.20
English	69	15.07	418	91.27
Indian	13	2.84	431	94.10
Arabic	1	0.22	432	94.32
Mediterranean	1	0.22	433	94.54
Western/Eastern European	16	3.49	449	98.03
Other	6	1.31	455	99.34
Total	455	99.34	455	99.34
Missing	3	0.66	458	100.00

Figure 45. Dominant source of social heritage, upbringing or culture.

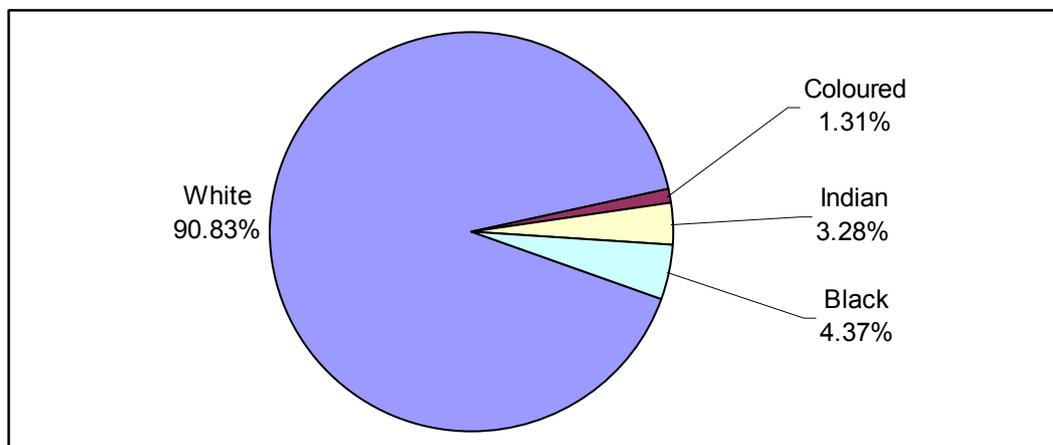
It is clear that almost three quarters of the respondents have an Afrikaner cultural background (71.83%, N = 329) of the total sample. This is followed a long way off by a background of English culture at 15.07% (N = 68).

The ethnical groupings of the respondents is shown in Table 36 and illustrated in Figure 46.

Table 36

Ethnical groupings (race) (N = 458)

Grouping	Frequency	Percentage	Cumulative	
			Frequency	Percentage
White	416	90.83	416	90.83
Coloured	6	1.31	422	92.14
Indian	15	3.28	437	95.41
Black	20	4.37	457	99.78
Total	457	99.78	457	99.78
Missing	1	0.22	458	100.00

Figure 46. Ethnical groupings (race).

It is clear that the largest proportion of the respondents is members of the white ethnic group (race). Whites represent more than 90% (90.83%, N = 416) of the respondents, with members of the black ethnic group representing less than 5% (4.38%, N = 20) of the respondents.

The information in Table 37, Figure 48, and Figure 47 illustrate the religious orientations of the respondents.

Table 37

Religious orientations (N = 458)

Religion	Frequency	Percentage	Cumulative	
			Frequency	Percentage
Christian	427	93.23	427	93.23
Jewish	1	0.22	428	93.45
Islamic or Muslim	2	0.44	430	93.89
African traditional	2	0.44	432	94.32
Hindu	11	2.40	443	96.72
Other	4	0.87	447	97.60
Agnostic/Atheist	9	1.97	456	99.56
Total	456	99.56	456	99.56
Missing	2	0.44	458	100.00

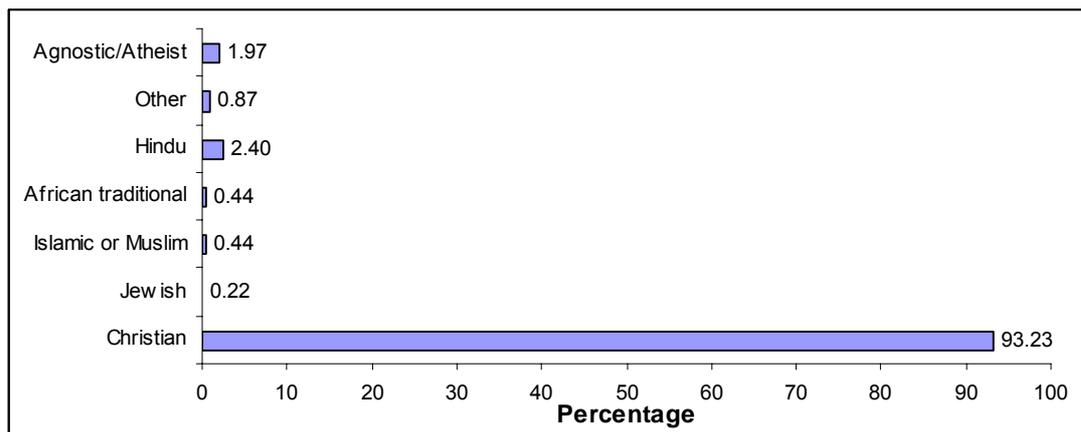


Figure 47. Religious orientations.

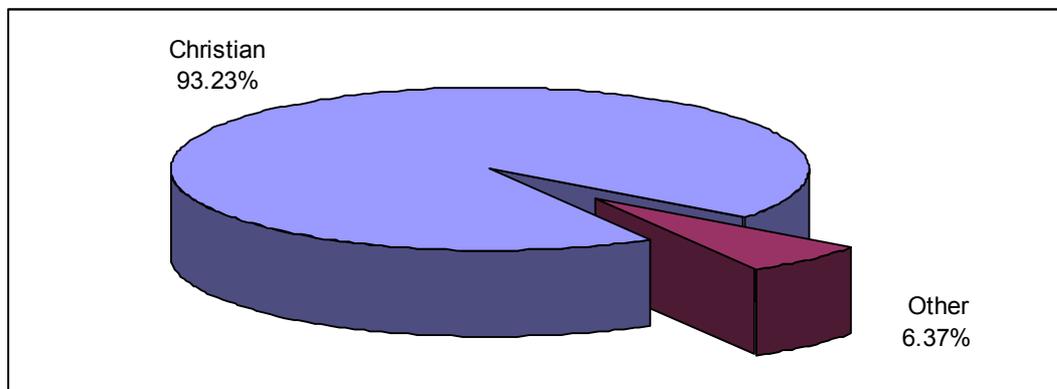


Figure 48. Religious orientations: Christianity versus other religions.

The largest proportion of the respondents' religious orientation is clearly towards Christianity, representing more than 90% (93.23%, N = 427) of the respondents. The other religions represent less than 10 % (6.37%, N = 29) of the respondents, with Hindu (2.40%) and Agnostic/Atheism (1.97%) the second and third most indicated religious orientations.

The ratio of Protestants versus Catholics among the Christian respondents is shown in Table 38 and illustrated in Figure 49.

Table 38

Orientation of Christians: Protestant versus Catholic (N = 427)

	Frequency	Percentage	Cumulative	
			Frequency	Percentage
Protestant	388	84.72	388	84.72
Catholic	28	6.11	416	90.83
Total	416	90.83	416	90.83
Missing	42	9.17	458	100.00

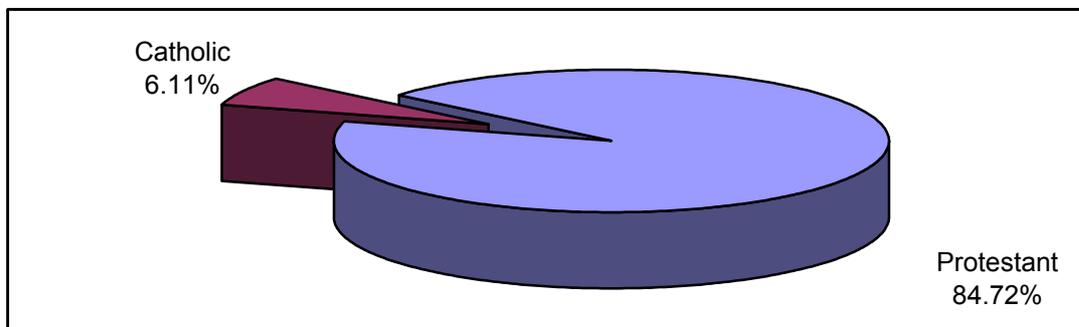


Figure 49. Orientation of Christians: Protestant versus Catholic.

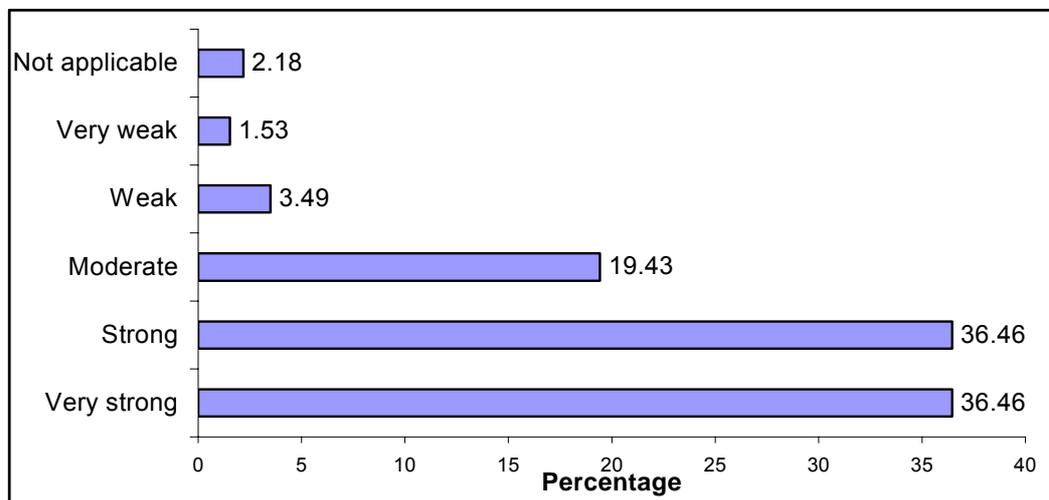
More than four fifths of the Christian respondents (84.72%, N = 388) indicated that they are Protestants. However, the relative high frequency of missing responses (9.17%, N = 42) suggests that one should be cautious in making conclusions or generalisations from this specific set of information.

Table 39 and Figure 50 indicate the strength of the religious orientations of the respondents.

Table 39

Strength of religious convictions (N = 458)

Strength	Frequency	Percentage	Cumulative	
			Frequency	Percentage
Very strong	167	36.46	167	36.46
Strong	167	36.46	334	72.93
Moderate	89	19.43	423	92.36
Weak	16	3.49	439	95.85
Very weak	7	1.53	446	97.38
Not applicable	10	2.18	456	99.56
Total	456	99.56	456	99.56
Missing	2	0.44	458	100.00

Figure 50. Strength of religious convictions.

The majority of the respondents appear to have strong religious convictions. Almost three quarters of the respondents (72.93%, N = 334), indicated the strength of their religious convictions as either “very strong”, or “strong”, with equal numbers of respondents choosing these options. Less than one fifth (19.43%, N = 89), indicated the strength of their conviction as moderately strong, with only 5.02% (N = 23) indicating “weak” or “very” weak religious orientations. A total of 10 respondents (2.18%) considered the question was to be not applicable to them.

## **3.2. MEASURING INSTRUMENTS**

### **3.2.1. General**

The nature of survey research requires that the levels of measurement of all the variables should be at least at the ordinal level (Babbie, 1998). Babbie (1998) comments that Likert scales have a greater rigour and structure than other response formats. All the standardised measuring instruments used in this research are well established and tested instruments, which use Likert-type ordinal scales.

The aim of the present study is to investigate the relationships between meaning and biographic and lifestyle variables, work involvement, work commitment and work motivation. The following instruments were used to measure the variables in the study:

- Personal meaning:
  - Battista and Almond's (1973) Life Regard Index
- Work involvement:
  - Kanungo's (1982) Work Involvement Questionnaire
- Work commitment:
  - Kanungo's (1982) Job Involvement Questionnaire
  - Carson and Bedeian's (1994) Career Commitment Scale
  - Ho and Lloyd's (1984) Australian Work Ethic Scale
- Work motivation:
  - Warr, Cook and Wall's (1979) Intrinsic Motivation Measure
  - Vandewalle's (1997) Goal Orientation Instrument

### **3.2.2. Battista and Almond's (1973) Life Regard Index (LRI)**

Initially, empirical studies of meaning and purpose in life have relied almost exclusively on the Purpose in Life (PIL) test. The PIL is a one-dimensional scale designed to measure the degree to which an individual experiences a sense of meaning and purpose in life (Reker et al., 1987). On the other hand, Debats (1999) reports that recent quantitative studies have increasingly employed the Life Regard Index (LRI) (Battista & Almond, 1973). Battista and Almond (1973) designed the LRI

as a value-independent operationalisation of the construct of positive life regard, a term used synonymously with the terms meaningful life and purpose in life (Debats, 1999).

Battista and Almond (1973) developed the Life Regard Index (LRI) to overcome some difficulties they identified in the PIL. Battista and Almond (1973) argue that Crumbaugh and Maholick's (1964), and Crumbaugh's (1968) PIL represents a satisfactory definition of meaning in life, but contained some serious flaws. Battista and Almond (1973) note that of the 20 items in the PIL, five items measure the individual's ability to see his life within some framework, nine items measure his satisfaction with his life, and one item considers both constructs simultaneously. Battista and Almond (1973) reason that difficulties arise from the unequal distribution of these items, the straightforward manner in which questions are presented in a seven point semantic differential type scale, and the failure to control for the effects of social desirability or denial in answering the questionnaire.

Battista and Almond (1973) add that the value of the PIL test is further lessened by the inclusion of five items which reflect certain value orientations presumed to be present in the person with positive life regard, thus making the test biased. Battista and Almond (1973) posit that it is not clear that the experience of one's life as meaningful is related to these beliefs. Other criticisms of the PIL include questioned validity (Battista & Almond, 1973; Ebersole & Quiring, 1989; Yalom, 1980), vulnerability to social desirability (Battista & Almond, 1973; Sargent, 1973) and for being confounded with Protestant ethics (Yalom, 1980).

The Life Regard Index, based on the concept of meaning in life as described by Victor Frankl, was developed by Battista and Almond (1973) in an attempt to provide a simple, non-biased measure of meaning in life. Battista and Almond (1973) state that a "positive life regard" refers individual's belief that he is fulfilling a meaningful life. The individual's highly valued life-framework or life-goals underlie this fulfilment.

The LRI measure of Battista and Almond (1973) is composed of 28 items, responded to on a five-point scale and divided into two sub-scales: Framework and Fulfilment. The Framework sub-scale (FR) measures the ability of an individual to see his life

within some perspective or context and to have derived a set of life-goals, purpose in life, or life-view from them. The Fulfilment sub-scale (FU) measures the degree to which an individual sees himself as having fulfilled or as being in the process of fulfilling his framework or life goals. Each scale is composed of 14 items, half phrased positively, half phrased negatively, to control for response set. The sum of these two scales comprises the Life Regard Index (LRI) scale (Battista & Almond, 1973).

Battista and Almond (1973) distributed the LRI to 350 medical students of the Stanford University, whilst 229 of the questionnaires were returned and analysed. The sub-scales of the Life Regard Index, as well as the sum of the scales, were found to have a normal distribution and can thus be used to differentiate groups according to standard statistical methods. The data show that the FR and FU sub-scales are highly correlated with the total LRI scale (0.94 and 0.93 respectively), implying that the LRI scale can be utilised as a good indicator of overall level of life regard (Battista & Almond, 1973). Battista and Almond (1973) do not indicate the statistical methods used in calculating the correlations.

Table 40 presents the minimum, maximum, mean and standard deviation for the Framework and Fulfilment scales and for their sum, the Life Regarded Index Scale as found by Battista and Almond (1973).

Table 40

Data for Framework and Fulfilment scales (Battista & Almond, 1973)

Scales	Score			Standard Deviation (SD)
	Minimum	Maximum	Mean	
FR	19	70	49.8	10.5
FU	15	70	48.8	9.5
LRI	36	137	96.8	18.8

Battista and Almond (1973) reason that the high correlation between FR and FU scales (0.76) suggests either that individuals find it very difficult to retain their beliefs in a life-framework that they are unable to fulfil, or that the development of a life-

framework is the limiting factor in developing meaning in life. Although the first of these ideas seems more likely, a longitudinal study is necessary to differentiate between these two propositions. Finally, Battista and Almond (1973) comment that the data reveal social desirability to be only mildly correlated with positive life regard, accounting for only 4% of the variation in the index. Battista and Almond (1973) conclude that the LRI can be utilised to differentiate the positive and negative life regard groups without a significant, confounding influence of social desirability.

In terms of the construct validity of the instrument, Battista and Almond (1973) report that the LRI correlated 0.62 with self-esteem as measured by the Rosenberg Self-Esteem Scale. Furthermore, the scores on the index related in predicted ways to a variety of criteria, including observer ratings of meaningfulness of an individual's life, openness and defensiveness, number and duration of psychiatric visits, family background and work measures, environmental fit and goals (Battista & Almond, 1973).

Battista and Almond (1973) also investigated the discriminant validity of the LRI. A structured interview was conducted with some of the study subjects: the 14 subjects with the highest total life regard scores, whose FR and FU scores were at least 1.5 standard deviations greater than the mean and whose social desirability scores were < 1.5 standard deviation from the mean were selected. Similarly, 16 subjects with the lowest total life regard scores were selected. A structured interview was then conducted with each of these subjects on his or her life-goals and satisfaction with life. The subjects did not know the reason they were interviewed and the interviewer did not know if they came from a positive or negative life regards group. Utilising this technique the interviewer was able to correctly identify 14/14 of the high meaning in life group, and 14/16 of the low meaning in life group ( $p < 0.001$ ) proving the discriminant validity of the LRI as well as the ability to discriminate between high and low scorers on purpose in life (Battista & Almond, 1973).

To evaluate the reliability of the Life Regard Index, Battista and Almond (1973) studied the test-retest reliability of the LRI. The test-retest reliability of the Life Regard Index was extremely high: 0.94 (Battista & Almond, 1973). Battista and

Almond (1973) do not specify the period between the two administrations in the test-retest investigation.

Several studies attest to the satisfactory psychometric properties of the LRI. Chamberlain and Zika (1988) evaluated the three main measures of meaning in life, namely the PIL, LRI, and SOC based on the responses of 194 subjects. The inter-correlation matrix between PIL, the LRI sub-scales and the SOC sub-scales, was subjected to principal factor analysis to determine the dimensionality of the sub-scale measures. A clear one-factor solution emerged, accounting for 64% of the variance. All the measures had high factor loadings, ranging from 0.68 to 0.90. This result suggests a general meaning in life dimension underlying all three measures (Chamberlain & Zika, 1988).

Chamberlain and Zika (1988) report that a principal components analysis of the LRI items produced six components with Eigenvalues  $> 1$ . Six factors, accounting for 47% of the total variance, were extracted with a principal factor analysis. The varimax and oblimin rotations led to selection of the oblique result, which improved both the hyperplane account (from 27 to 45%) and the variable complexity index (from 1.6 to 1.36). Chamberlain and Zika (1988) conclude that this analysis indicated that the factor structure reflects the rational construction of the scale reasonably well.

Chamberlain and Zika (1988) comment that meaning in life does appear to be a multidimensional construct (whilst the PIL can only measure one dimension). Chamberlain and Zika (1988) conclude that as the results from their study appear quite promising, it is unfortunate that the LRI has not been more widely used and evaluated.

Debats (1990) investigated the reliability and factorial validity of the LRI. He reports that a principal components factor analysis performed on the responses of 122 undergraduate psychology students yielded two factors: fulfilment and framework. This result confirmed the theoretical structure of the LRI. Cronbach Alpha estimates of internal consistency ranged from 0.86 (Index), 0.80 (Fulfilment), to 0.79 (Framework). Debats (1990) notes that a clear philosophy of life, education and psychological counselling correlated significantly with the degree of meaning in life

as measured by the LRI. Debats (1990) recommends the use of the LRI instrument in further research.

In a study by Debats et al. (1993) to investigate the reliability and validity of the LRI, a sample (N = 176) selected from the general population, Cronbach Alphas ranging from 0.84 (Framework) to 0.87 (Fulfilment) and 0.91 (Index) were found. Debats et al. (1993) report that the two sub-scales correlated moderately ( $r = 0.54$  to  $0.68$ ). They comment that this indicates that framework and fulfilment are not independent, but interrelated (Debats et al., 1993). Debats et al. (1993) recommend the LRI for research purposes, as it allows one to embark on research on the sparsely researched subject of meaning in life. They comment that the LRI's independence of any particular theory regarding the nature of meaningfulness of life and the absence of associations with specific values or belief systems, as confirmed in their study, make the LRI an adequate research instrument. Debats et al. (1993) also comment that the LRI enables further study of the conditions under which people will develop a positive life regard.

Debats and Drost (1995) found in their study (N = 122) that the LRI was strongly associated with the interpersonal dimension of well-being. The exchange of both positive and negative feelings was associated with positive life regard. Effective coping with stressful life events in the past was associated with a sense of meaningfulness as measured with the LRI ( $t(116) = 2.48$ ,  $p < 0.01$ ). Debats and Drost (1995) also tested the LRI in relation to their subjects' qualitative experiences of meaningfulness and meaninglessness as expressed in responses to open-ended questions. Their results indicated  $t$  values of between 2.59 ( $p < 0.05$ ) and 5.6 ( $p < 0.0001$ ) between the LRI results and the open-ended questionnaire results. Debats and Drost (1995) conclude that the findings support the clinical significance of the construct of meaning in life and add to the validity of the LRI. Debats and Drost (1995) conclude that, given its psychometric properties, the LRI can be regarded as a useful tool for the empirical study of the construct of meaning in life.

Several studies therefore attest to the satisfactory psychometric properties of the LRI as indicated (Battista & Almond, 1973; Chamberlain & Zika, 1988; Debats, 1990; Debats et al. 1993; Debats & Drost, 1995). All of these studies also recommend the

use of the LRI in further research on the subject of meaning in life. However, Debats and Drost (1999) comment that unfortunately few social scientists have further tested or developed the LRI. Furthermore, the scarce empirical literature on meaning in life that does exist shows that very little is known about the components of the experience of one's life as meaningful.

### **3.2.3. Kanungo's (1982) Work Involvement Questionnaire (WIQ)**

Kanungo (1982) makes a distinction between work involvement (work centrality) and job involvement. Work involvement is seen as a relatively enduring belief about the value of work in one's life, transcending a specific job (Kanungo, 1982), involving psychological identification and engagement with work in general. Job involvement is the worker's psychological identification with a specific job context (Blau, 1985a; Kanungo, 1982). Kanungo (1982) further argues that work involvement should be distinguished from the Protestant ethic. He states that although the belief in the centrality of work might have been the result of Protestant ethic type socialisation, the two are not identical.

According to Kanungo (1982), earlier studies failed to distinguish between a job and a general work context. He notes that due to conceptual confusion between work centrality and job involvement in the literature, instruments designed to measure these constructs suffer from construct validity problems. Later researchers also indicated that some instruments measure involvement with the present job, others involvement with work in general, but most measure both of these constructs without distinguishing between the two (Hoole, 1997).

Kanungo (1982) used three different measurement formats in the development of both his job and work involvement scales namely a questionnaire, semantic differential scale and a graphic technique. Questionnaire items that reflected a cognitive state of psychological identification with a job or with work were judged by 10 graduate students as to their suitability for the purpose of conceptualising the essence of work involvement. There was complete agreement on nine. After item analysis, three items were dropped based on item-total correlations. Six graduate

students identified eleven bipolar items (using available literature and dictionaries for synonyms and antonyms) on which there was total agreement (Kanungo, 1982). These items, with a 7-point response format, were used to construct a Work Involvement Semantic Differential (WISD) scale. Two graphic items representing psychological identification with work were selected for the graphic scale. The final questionnaire was administered to French and English-speaking employees enrolled at three different universities, 703 questionnaires were returned. A parallel study was performed, three weeks apart, at two of the universities to establish test-retest reliabilities of the measures (Kanungo, 1982).

Kanungo (1982) reports that the Alpha coefficients of the three measures of work involvement were 0.83 (semantic differential), 0.75 (questionnaire) and 0.68 (graphic items). The test-retest correlations on the three measures for work commitment were 0.78, 0.67 and 0.67 respectively (in the same order). Factor analysis revealed two separate factors for job and work involvement. Kanungo (1982) comments that evidence of the reliability of the work commitment scale was given by the intercorrelations among the six involvement scales (three scales from work and job involvement each). All the correlations were statistically significant suggesting convergent validity.

In order to assess the discriminant validity of the work involvement scale, Kanungo (1982) compared the monotrait-heteromethod values (agreement between different ways of measuring the same trait) with the heterotrait-heteromethod values (the first should exceed the latter). The results indicated that the monotrait-heteromethod values were higher than the heterotrait-heteromethod values. Another criterion for discriminant validity is when there is agreement between different traits measured the same way. The semantic differential format did not meet this criterion. This conclusion was reached because the correlations between the WISD, Work Involvement Questionnaire and the Work Involvement Graphic measure did not exceed the correlations between the WISD and the Job Involvement Semantic Differential Scale (Kanungo, 1982).

Kanungo (1982) concludes that his 6-item scale for measuring work involvement (WIQ) can be used in future research. Hoole (1997) concludes that evidence for the

distinction between job and work involvement was obtained when Kanungo (1982) found two clearly separate factors when the items in his job and work involvement scales were factor analysed together.

Morrow (1993) stated that Kanungo's (1982) WIQ measure did not receive sufficient support in the empirical literature. She could not evaluate Kanungo's (1982) contention that work involvement is distinct from the PWE due to the lack of empirical evidence. However, Morrow (1993) concluded that his measure seemed to have adequate reliability and that the measure demonstrated excellent isomorphy with its conceptual definition. Morrow (1993) recommended that the measure be used more frequently.

Paullay et al. (1994) investigated work centrality by using Kanungo's (1982) WIQ. They report that the results from Confirmatory Factor Analysis (CFA) (correlation = 0.80 in CFA) from the study (N = 313) confirmed that work centrality can be measured with Kanungo's (1982) WIQ (Paullay et al., 1994). Paullay et al. (1994) comment that Kanungo's (1982) WIQ capture the idea that involvement in the present job is quite different from involvement with work in general. As such, Paullay et al. (1994) conclude that Kanungo's (1982) WIQ appears to be the only instrument designed to measure work centrality.

#### **3.2.4. Kanungo's (1982) Job Involvement Questionnaire (JIQ)**

Kanungo (1982) proposed a ten-item measure of job involvement which he felt was representative of the conceptualisation of job involvement. Kanungo's (1982) scale built on Lodahl and Kejner's (1965) work, including four of the items of the original scale that appeared to tap the "psychological identification" dimension unambiguously. He developed the JIQ in the same study in which he developed the WIQ, using the methodology as described earlier. Kanungo (1982) reports the Alpha coefficients for the three job involvement measures (semantic differential, questionnaire and graphic items) used in the development of his scale to be 0.81, 0.87 and 0.70 respectively. Criterion validity was illustrated by significant correlations with job satisfaction (Kanungo, 1982). He reports test-retest coefficients of 0.74, 0.85

and 0.82 respectively for the three forms of the JIQ. Kanungo (1982) concludes that his factor analysis proved job involvement to be a uni-dimensional construct and states that his JIQ showed reasonably high levels of internal consistency, test-retest reliability, as well as convergent and discriminant validity.

Blau (1985a) investigated the psychometric properties of the JIQ and reports Cronbach Alphas ranging from 0.83 to 0.87 in four samples of university employees. He comments that these findings suggest the Kanungo (1982) scale exhibits acceptable internal and test-retest reliability. Blau (1985a) also concludes that the result of his study suggests that the Kanungo (1982) measure of job involvement is a slightly "purer" operationalisation of the psychological identification conceptualisation of job involvement than is the Lodahl and Kejner (1965) measure. In addition, Blau (1985a) also found that job involvement items and generalised work attitudes loaded on separate factors. He found distinctions between job involvement and intrinsic motivation.

Paterson and O'Driscoll (1990) investigated Kanungo's (1982) conceptualisation of job involvement and the usefulness of his 10-item JIQ, using a stratified sample of 157 New Zealand workers. They report Alpha coefficients of 0.81 and 0.83, and a test-retest correlation of 0.86, showing the scale to have reasonable reliability. Positive relationships between job involvement and the number of hours worked, amount of unpaid overtime and effort put into the job further demonstrated the criterion validity of the measure (Paterson & O'Driscoll, 1990). Overall, Paterson and O'Driscoll (1990) conclude that their findings provide evidence confirming the usefulness of Kanungo's (1982) cognitive conceptualisation of job involvement and the JIQ.

Kaplan (1990) concludes from his factor analytical study on a South African sample (N = 1791) of fourteen professional groups, that the Kanungo (1982) JIQ is a robust and uni-dimensional measure, seeing that all but one of the job involvement items loaded well above the 0.30 criterion on the single job involvement factor. He found that item number seven did not load statistically significant with the other items on the measurement. These results support Blau's (1985a) view that the factor structure

of the Kanungo (1982) JIQ is not only stable across samples but also across cultures (Kaplan, 1990).

Boshoff and Hoole (1998) report that a re-analysis of Kaplan's (1990) data based on a sample of 1791 white collar South African professionals, shows an acceptable internal consistency (Cronbach Alpha 0.83) of the Kanungo (1982) JIQ. One factor was measured accounting for 44.1% of the total variance. Only one item (no 7) was eliminated in this analysis. Boshoff and Hoole (1998) conclude that this scale is uni-dimensional. They further state that the JIQ could be used with a great deal of confidence in South African samples and regard the construct to be quite portable between the USA and South Africa.

Kamfer, Venter and Boshoff (1998) report from a sample of 237 employees of the South African Department of Correctional Services that eight of the original 10 items could be retained after factor analysis (discarding the two negatively phrased items numbers 2 and 7). These authors confirm that the Job Involvement single-factor solution has good internal consistency. Kamfer et al. (1998) suggest a one-factor solution for the Kanungo Job Involvement scale with a Cronbach Alpha of 0.86, which explains 47.95% of the total variance. The Confirmatory Factor Analysis done by these authors showed this to represent a good model-data fit. Kamfer et al. (1998) conclude that the scale could be considered highly applicable to non-native English speakers in South Africa.

Van Wyk, Boshoff and Owen (1999) describe that a Principal Factor Analysis followed by a Direct Quartimin rotation was carried out to determine the underlying dimensions of job involvement as manifested in the responses of the sample (N = 375). The analysis of the 10 items yielded one Eigenvalue > 1 of 5.03. Van Wyk et al. (1999) comment that a clear break existed between the first and second Eigenvalues, suggesting a one-factor solution (Cronbach Alpha = 0.88, total variance = 45.55%). All ten items loaded > 0.25 on the one factor. Van Wyk et al. (1999) comment that the indices showed a good fit between the data and the one-factor structure, and that based on these findings they conclude that the job involvement construct is uni-dimensional.

In summary it can be said that Kanungo (1982) reported that his 10-item JIQ had acceptable convergent and discriminant validity and indicated that job involvement proved to be a one-dimensional construct. This was supported by various studies (Blau, 1985a; Boshoff & Hoole, 1998; Kaplan, 1990; Kaplan, Boshoff & Kellerman, 1991; Paterson & O'Driscoll, 1990; Van Wyk et al., 1999). The reported internal reliabilities for the Kanungo (1982) scale are uniformly high, generally between 0.81 and 0.87. Kaplan (1990), and Van Wyk et al., (1999) further report that Kanungo's (1982) job involvement scale's factor structure seemed to be stable across samples and even cultures. Similar factor structures were obtained using French and English Canadian employees (Kanungo, 1982), American nurses and several categories of university employees (Blau, 1985b), New Zealand employees (Paterson & O'Driscoll, 1990), and English and Afrikaans South African professionals (Kaplan, 1990; Van Wyk et al., 1999). Hoole (1997) concludes that studies of Kanungo's (1982) scale have shown this instrument to be superior to other measures of job involvement.

### **3.2.5. Carson and Bedeian's (1994) Career Commitment Scale**

Carson and Bedeian (1994) attempted to develop a psychometrically sound career commitment measure. They conceptualised career commitment as a multi-dimensional construct and defined it as one's motivation to work in a chosen vocation. The development of their measure took place in three phases (Carson & Bedeian, 1994). As a first step, 87 items were generated to represent the full range of the career commitment domain. All items indicating some degree of overlap and concept redundancy with other work commitment constructs were eliminated. Four judges reviewed all the items and a total of 36 items were retained (Carson & Bedeian, 1994).

Two studies were conducted to investigate the factor structure and the reliabilities of the intended measure (Carson & Bedeian, 1994). A third study was performed to test the discriminant, convergent and construct validity of the measure. In the first phase, six factors were extracted of which factor four (three items with negative loadings) and factor six, which contained only one item, were dropped. Alpha

coefficients for the four remaining factor scales were all above 0.78 (Carson & Bedeian, 1994).

In the second phase, Carson and Bedeian (1994) examined the psychometric properties of the remaining 20 items. Principal Factor Analysis was carried out and all items not loading  $> 0.40$  were eliminated. Four factors were obtained but factor four was dropped because of its relatively low reliability (Cronbach Alpha coefficient = 0.69). The other three factors could be interpreted as career identity, career resilience and career planning. The Cronbach Alpha coefficients for the three factors were all above 0.81, and the scale now consisted of 12 items (Carson & Bedeian, 1994).

In the field test, Carson and Bedeian (1994) chose a three-factor solution and all the items, except one, loaded above 0.50. The three-factor solution explained approximately 64% of the total variance and coefficient Alpha reliabilities of the factors ranged from 0.79 to 0.85. No items had even moderate cross-loadings with the other factors (Carson & Bedeian, 1994). The three factors were described as career identity, career resilience and career planning.

Carson and Bedeian (1994) report that a correlation of 0.63 (corrected value = 0.75) between Blau's (1985b) measure and their new career commitment measure provided evidence for convergent validity. They comment that the results showed that the new career commitment measure was "clean" from overlapping problems with withdrawal cognitions. Carson and Bedeian (1994) note that all three of the included withdrawal items loaded with the seven items of Blau's (1985b) career commitment scale, where none of the items of the new scale loaded with the withdrawal items.

Carson and Bedeian (1994) comment that their career commitment measure was also able to detect differences in career commitment levels associated with varying degrees of professionalism across occupational groups. To assess the distinctiveness of the contents of the career commitment measure, Carson and Bedeian (1994) performed a factor analysis on the responses to the career commitment measure, responses to a measure of affective commitment, and a

measure of job involvement, to discern whether the constructs are distinguishable. They note that all items loaded cleanly on the factor they were intended to measure. Carson and Bedeian (1994) conclude that taken together the results indicated a valid and reliable measure of career commitment which seems promising for use in future research.

### **3.2.6. Ho and Lloyd's (1984) Australian Work Ethic Scale**

Ho and Lloyd (1984) developed a seven-item scale, which they called the "Australian Work Ethic Scale," to measure work values and work ethic in Australia. In designing the Australian work ethic scale, Ho and Lloyd (1984) generated a total of 60 work value statements and applied it to 175 participants to represent the full range of the work values domain. They scored these work value statements on a four-point Likert scale. The mean, mode, and standard deviation of each of the 60 items were examined and items with extreme means or modal values of zero and restricted variance were rejected. A total of 11 items were removed from the questionnaire, and the remaining 49 items were subjected to a principle-component analysis (Ho & Lloyd, 1984). After a Varimax Rotation, 27 items were retained through using the criteria of selecting statements with factor loadings  $\geq$  to 0.33, and no significant cross loading. Of the 27 statements, 19 loaded on one factor and eight loaded on another factor. On inspection of the statements representing the first factor, it was found that the statements reflected general attitudes towards unemployment (Ho & Lloyd, 1984). The eight statements representing the second factor appeared to measure adherence to a tightly integrated set of beliefs about the significance of work. Factor 1 was thus discarded and factor 2 was retained (Ho & Lloyd, 1984).

In order to maximise the internal consistency of the scale, Ho and Lloyd (1984) item analysed the statements representing the scale. On the basis of retaining only those statements which showed item-total correlations of more than 0.3, one statement was rejected. The final Australian Work Ethic Scale (AWES) consists of seven items (Ho & Lloyd, 1984). The scale has a Cronbach coefficient Alpha of 0.76, indicating satisfactory internal consistency for the scale as a whole (Ho & Lloyd, 1984).

Ho and Lloyd (1984) further note that validation of the scale found that it has convergent and concurrent validity. Specifically, it correlated highly with both the Mirrels and Garrett (1971) Protestant work ethic scale and Blood's (1969) pro-Protestant ethic scale (Ho & Lloyd, 1984). In examining the three work scales, Ho and Lloyd (1984) observe that the items representing Blood's (1969) pro-Protestant ethic scale were designed specifically to tap attitudes about the significance of work. They note that the AWES and the Mirels and Garrett (1971) Protestant work ethic scale, on the other hand, include items designed to measure not only attitudes about the significance of work, but also the belief that effort leads to success. Ho and Lloyd (1984) argue that as both these assumptions form part of an integrated work ethic belief system, it appears then that the AWES and the Mirels and Garrett (1971) Protestant Ethic Scale come closer to designing an ideology espoused by the work ethic than Blood's (1969) pro-Protestant Ethic Scale.

In order to test for convergent and concurrent validity, Ho and Lloyd (1984) carried out Pearson's product-moment correlations on the AWES, the Mirels and Garrett (1971) Protestant Work Ethic Scale, and the pro-Protestant Ethic Scale (Blood, 1969). They report that the correlation of the AWES with the Mirels and Garrett (1971) scale was 0.65 and 0.59 with Blood's (1969) scale. Ho and Lloyd (1984) argue that the highly significant intercorrelations between these work ethic scales demonstrate that AWES has convergent validity. They state that the overall intercorrelations also demonstrate that the AWES has concurrent validity.

Furnham (1990b) applied seven of the best-known PWE questionnaires to over 1000 subjects and factor analysed the responses to the total of 78 questions from all the questionnaires. He found that the factor analysis indicated that more than 30 percent of the items loaded larger than 0.30 on the first factor, which he considered to be the fundamental dimension underlying the PWE - respect for, admiration of, and willingness to take part in hard work. Furnham (1990b) reports that all seven items (100%) of the Ho and Lloyd (1984) scale loaded on this factor. He concludes that Ho and Lloyd's (1984) AWES has acceptable face validity. In terms of convergence validity, Furnham (1990b) found that the AWES correlates positively with other scales, 0.65 with Mirels and Garret's (1971) well-known PWE scale; and

0.59 with Blood's (1969) PWE scale. This is exactly the same correlations that were found by Ho and Lloyd (1984).

### **3.2.7. Warr, Cook and Wall's (1979) Intrinsic Motivation Measure**

Warr, Cook and Wall (1979) developed the Intrinsic Motivation Measure (IMM) to measure intrinsic motivation, along with seven other concepts, through two structured interview studies with blue-collar workers (N = 200 and N = 390). Warr, Cook and Wall (1979) drew the initial pool of items from literature. Individual structured interviews were carried out by trained interviewers. The interviewer read the instructions and items to the respondent, who selected his answer from a set of alternatives. Seven-point Likert-type responses (agree/disagree format) were sought. Each scale's score was the unweighted sum of the responses to the included items (Warr et al., 1979).

Warr et al. (1979) note that after study 1, the items were factor analysed and 6 factors emerged. The factors were then cleaned from items with lower loadings. Factor Analysis with Varimax-Rotated axes yielded a single factor for intrinsic motivation, with the Alpha coefficients loadings ranging between 0.48 and 0.76. The test-retest reliability of the intrinsic motivation measure (over a 6-month period) indicated a test-retest correlation coefficient of 0.65 (Warr et al., 1979). Warr et al. (1979) concluded that their measure of intrinsic motivation has proved to be acceptable and that its psychometric properties appear to be good.

### **3.2.8. Vandewalle's (1997) Goal Orientation Instrument**

Realising the potential value of making a conceptual distinction between different dimensions of a performance goal orientation, Vandewalle (1997) developed three dimensions and definitions of goal orientation:

- Learning goal orientation: a desire to develop the self by acquiring new skills, mastering new situations and improving one's competence.

- Prove (performance) goal orientation: the desire to prove one's competence and to gain favourable judgements about it.
- Avoid (performance) goal orientation: the desire to avoid the disproving of one's competence and to avoid negative judgements about it.

Vandewalle (1997) conducted a study to generate and select instrument items for the hypothesised three-factor measure of goal orientation and to examine the psychometric qualities of a resulting instrument. He collected and used data from four samples to develop and validate items for the goal orientation instrument. Sample A was composed of 66 university students enrolled in an undergraduate management course. Sample B was composed of 198 university students enrolled in sections of an undergraduate management courses. Sample C was composed of 239 students enrolled in business administration and psychology courses at two suburban community colleges. Sample D consisted of students enrolled in an introductory accounting course at an urban community college. At the beginning of the academic term, 58 participants of this sample completed the goal orientation instrument. Of the original participants, 53 completed the instrument again at the end of the semester, 3 months later.

Vandewalle (1997) comments that participants in the four samples were appropriate as a data source for examining goal orientation in the work domain as they were primarily non-traditional students with an average age of 26.2 years. Vandewalle (1997) compiled a pool of 50 items to reflect the dimensions of goal orientation, namely: learning, proving, and avoiding. This item pool was reviewed for face validity by a panel of management faculty and PhD students. After the review, a pilot instrument was developed and administered to the Sample A participants. Focus group comments and statistical analyses of the data (reliability analysis and exploratory factors analysis) were used to make judgements on revising the pilot instrument. This procedure produced a 16-item instrument.

Vandewalle (1997) conducted four forms of statistical analyses: (a) an Exploratory Factor Analysis of the Sample B data to examine the factor structure of the instrument, (b) a Confirmatory Factor Analysis to test the fit of the measurement

model to the Sample C data, (c) reliability analysis (internal consistency) on the Sample C data, and (d) reliability analysis (test-retest) on Sample D data.

The participants in Sample B completed the 16-item instrument, and the data was analysed through Exploratory Factor Analysis (Vandewalle, 1997). Vandewalle (1997) removed three items, increasing the Alpha values for the Learning Scale from 0.85 to 0.88, for the Avoid Scale from 0.80 to 0.83, whilst the Prove Scale, rendered no improvements beyond the Alpha value of 0.84. The factor structure for the 13 items retained after the analysis of the Sample B data was cross validated with the Sample C data with Confirmatory Factor Analysis. For each factor, all of the standardised estimates had values of 0.72 or higher and were statistically significant at the 0.01 level (Vandewalle, 1997). Cronbach Alpha values for the Sample C data were: Learning, Alpha = 0.89; Prove, Alpha = 0.85; and Avoid, Alpha = 0.88.

Vandewalle (1997) reports the following test-retest reliability correlation coefficients: Learning,  $r = 0.66$ ; Prove,  $r = 0.60$ ; and Avoid,  $r = 0.57$ . Vandewalle (1997) conclude that the results of the statistical analyses suggest that scores on the instrument and the proposed three-factor structure are valid for the measurement of the construct. Vandewalle (1997) describes the instrument as a useful tool to assess goal orientation in empirical research that seeks to explain such behaviours (Vandewalle, 1997).

For the purpose of the present study, the 'Prove' dimension of Vandewalle's (1997) Goal Orientation Scale was omitted in the final questionnaire as this dimension was regarded as not relevant to this particular study. The face validity of the items under these dimensions seems to be redundant with the intentions of the present study.

### 3.3. PROCEDURES

#### 3.3.1. Questionnaire administration

Babbie (1998) suggests beginning a self-administered questionnaire with basic instructions for completing it, telling potential respondents exactly what is wanted, and how they are to indicate the answers to questions. Babbie (1998) reasons that short introductions make the questionnaire seem less chaotic, especially when it asks a variety of data, and help to put the respondent in the proper frame of mind for answering the questions. In this study, a short introduction that covered a few general instructions on the completion of the questionnaire was given at the start of the instrument, followed by specific instructions at each instrument. Wherever possible, the exact instructions as in the original instrument were repeated ad verbatim. However, the original instructions were not available for all the instruments, and a very short introductory sentence and a general type instruction were then given.

Babbie (1998) and Bailey (1994) recommend beginning the questionnaire with the most interesting set of items that will stimulate the respondent to complete the questionnaire. Bailey (1994) also suggests that the first questions on the questionnaire should be relatively easy to answer. However, at the same time, Babbie (1998), and Bailey (1994) caution that the initial items should not pose a threat to the respondent in answering them. He suggest that one should place sensitive questions late in the questionnaire. Babbie (1998) also cautions against randomising questions from different instruments as it will strike respondents as chaotic and worthless. It will be difficult to answer since they must continually switch their attention from one topic to another (Babbie, 1998).

All of the instruments used in this research can potentially be experienced as threatening as they measure attitudes, beliefs and orientations that are deeply personal and intense. It was therefore decided to follow the advice of Babbie (1998) and Bailey (1994). Based on their advice it was decided to keep the instruments separate, beginning the final questionnaire with Ho and Lloyd's (1984) AWE scale which was considered the least threatening of all the instruments. This instrument

was followed by Kanungo's (1982) WIQ, Carson and Bedeian's (1994) CCS, Warr, Cook and Wall's (1979) IMM, Kanungo's (1982) JIQ, Vandewalle's (1997) Goal orientation instrument and lastly, the potentially very sensitive Battista and Almond's (1973) LRI. The questionnaire was concluded with questions on biographical information and lifestyle orientations. Even these questions can be experienced as threatening as they include, for instance, questions on religious orientations and racial classifications. See Appendix A for a copy of the final questionnaire.

Because of Babbie's (1998) comments on randomisation of items and the logic and the structure of questionnaires, it was decided to keep the different questionnaires separate. This approach should, according to Babbie (1998), lessen confusion in the questionnaire, and therefore improve the response rate and the quality of the responses. This approach was also essential as the different questionnaires use different response scales. Although all the questionnaires used Likert-type strongly agree/strongly disagree scales, they use different ranges of response categories, ranging between four and seven. The original ranges of the scales were honoured so as not to potentially jeopardise the validity and reliability of the scales. An advantage of the use of different scales a questionnaire is that it reduces the threat of mono-method variance (Rahim, 2001).

It was considered that an added advantage of following these suggestions was that the sequence described above also allowed for a logical flow of thought resulting from the items included in the various instruments. It started with questions about general attitudes and beliefs, relatively "outside" the spiritual dimension of the respondent, and progressively became more specific and moving closer to the inner and spiritual dimensions of the individual. It was thought that this sequence allowed a natural progression from one instrument to another.

Babbie (1998) cautions against establishing a response set, the tendency to reply to items in a particular way, regardless of the questions' content or the correct answer. He notes that social desirability, which is a potential danger in this specific research, is particularly promoted by response sets. Furthermore, as these instruments are all well-established instruments of which the psychometric properties have been tested, in some cases specifically to limit social desirable responses, and stood up to

acceptable criteria, response sets were generally not considered to be a particular threat. However, because Battista and Almond's (1973) LRI is ordered into four specific categories (see Appendix A) it is subject to the danger of response sets. It was thus decided to randomise the items within the LRI to avoid the probability of response sets. Randomisation was carried out through the use of a random numbers table included in Kerlinger and Lee (2000).

Bailey (1994) notes that reverse scored questions are often used to check reliability and to limit response sets. Most of the instruments also made use of reverse scored questions in line with Bailey's (1994) suggestions. Furthermore, according to Rahim (2001), the use of some reverse scored questions within instruments also reduce the threat of mono-method variance.

Babbie (1998) suggests that pre-testing a questionnaire helps to ensure that error is minimised. He notes that it is not usually essential that the pre-test subjects comprise a representative sample, although one should use subjects to whom the questionnaire is relevant. The questionnaire used in this research was pre-tested against a diverse group of five subjects (three white males, one black male, and one white woman) who were part of the sampling population, but not part of the final sample. Valuable comments and input were obtained from the pre-test-group which were used to finalise the questionnaire, especially on the general and specific instructions, as well as on the biographical and lifestyle questions.

The questionnaires were distributed as hard copies through the internal mail systems of the six different organisations, addressed personally to every subject in the sample. Babbie (1998) notes that control is particularly difficult and under threat in self-administered survey questionnaires. To enhance the control, the envelopes were marked "Personal Attention" to ensure that the envelopes were not to be opened by anyone else (e.g., secretaries) except the potential respondent. In the covering letter it was explained why the potential respondent should complete the questionnaire and why he should complete it personally. For control purposes, it was instructed that the subject should rather not return the questionnaire than to have it completed by someone else.

The purpose of the research was explained to the potential respondent in a covering letter (Appendix B) attached to the questionnaire, and the potential respondents were urged to complete the questionnaire as quickly as possible and to return it to the researcher in the pre-addressed envelopes that were provided with the questionnaires. These envelopes were marked "Confidential" to enhance confidentiality and control. The included envelopes were addressed to a centralised mailbox and returned through the internal mail systems of the organisations.

Babbie (1998) recommends that one should record the rates of return of questionnaires. He suggests that follow-up mailings should take place if potential respondents have not returned their questionnaires after two or three weeks. He also suggests that the questionnaires should be redistributed as the questionnaires probably have been lost or misplaced. Babbie (1998) notes that methodological literature on follow-up mailings strongly suggests that it is an effective method for increasing return rates in mail surveys.

Based on these recommendations of Babbie (1998), it was decided beforehand to distribute reminders and to redistribute questionnaires to increase the response rate. The following procedure was decided on, and followed: an introductory cover letter (Appendix B) was distributed with the questionnaire, explaining the reasons for the research and encouraging the potential respondents to fill in the questionnaire and to return it in a stamped and pre-addressed envelope that was provided with the questionnaire. A single page reminder letter (Appendix C) was distributed ten days later to remind respondents to fill in and return the questionnaire. A further ten days later, another reminder (Appendix D) was sent out to all potential respondents, together with a copy of the questionnaire and a pre-addressed envelope to cater for respondents that possibly mislaid their questionnaires or envelopes.

### **3.3.2. Handling of data and return questionnaires**

Babbie (1998) notes that the inferential statistics used in connection with survey analysis assumes that all members of the initial sample complete and return their questionnaires. Babbie (1998) posits that a low response rate is a danger signal,

because the “non-respondents” are likely to differ from the respondents in ways other than just their willingness to participate in the survey. Babbie (1998) suggests that a response rate of 50% is adequate for analysis and reporting, a response of 60% is good, and a response rate of 70% is very good. As the response rate was still only 54% a week after the second reminder (Appendix D), it was decided to issue another single page reminder (Appendix E) to all potential respondents. Again, the respondents were urged to complete the questionnaires and to return them in the envelopes previously provided.

The analysis of the responses was planned and directed by the present author in co-operation with the promoter and co-promoter, and the statistical analysis was carried out at the Department of Statistics of the University of Pretoria. The responses on the return questionnaires were coded to compensate for reverse score items, whereafter the data was entered into the computer. The BMDP and SAS programmes were used to carry out the statistical analysis.

The first step in the analysis was to Factor Analyse the responses to all the in the final questionnaire through the procedure of Principle Factor Analysis with Direct Quartimin Rotation. This step was to determine whether the constructs were related and on similar levels of abstraction. Eigenvalues were calculated to determine the factor structure of all the items combined.

The issue of cross-cultural measurement is of universal concern. The application of psychometric instruments to people from different cultural backgrounds has been questioned by Anastasi (1990). Anastasi (1990) argues that cultural differences may lead to group differences that affect responses to particular psychometric instruments, thus reducing the validity of a particular instrument for specific groups. She also argues that it would be futile to try to devise an instrument that is free from cultural influences, seeing that the behaviour of the individual is affected by the cultural milieu, which encourages and fosters certain abilities and forms of behaviour and discourages others. Van Wyk et al. (1999) infer that it is risky to apply a psychometric instrument developed in an American culture (such as most of the instruments used in this research) to a South African culture, without re-validating the instrument.

Of the seven instruments used in this study, only the portability of Kanungo's (1982) JIQ to South African samples has previously been investigated (Kamfer et al., 1998; Kaplan, 1990; Van Wyk et al., 1999). However, based on the demographic properties of the present sample (senior managerial employees with a strong Western and USA orientation and exposure) and the excellent portability of the JIQ to similar samples in South Africa, this shortcoming was not expected to be fatal. Nevertheless, the cultural portability of all the instruments used in this research was investigated through factor analysis.

The next step was therefore to subject every instrument individually to Principle Factor Analysis with Direct Quartimin Rotation of the axes. This was to determine the factor structure of each instrument to confirm whether the factor structure was similar to that described in the theory and by previous studies. Items that did not show acceptable loadings ( $\geq 0.25$ ), were removed after the first round of factor analysis, and the factor analysis was repeated until all the remaining items showed acceptable loadings.

Once the factor structures of the various instruments were confirmed, the next step was to investigate the relationships of the biographic/continuous variables with meaning, and the relationships of the dependent variables as measured by the other instruments with meaning. The procedure of Analysis Of Variance (ANOVA) was firstly considered as the correct statistical procedure for this investigation. However, in order to use ANOVA, one must assume that each of the samples is drawn from a normally distributed population and that each of these populations has the same variance (Levin, 1987). The next step was therefore to investigate the normality of the distributions of the continuous biographic/lifestyle variables and the distributions of the responses to the various instruments. For this analysis, the procedure of Univariate Analysis in SAS was used. This analysis confirmed that the distributions were not normal. It was therefore decided to use where possible non-parametric procedures in the remainder of the analyses.

The SAS statistical procedure of Non-parametric, One-Way Analysis of Variance (NPAR1WAY) was used to investigate the relationship between meaning and the

biographic/lifestyle variables measured on discrete scales. Significance of differences was determined by interpreting the results of Kruskal-Wallis tests. In order to investigate the relationship between meaning and the biographic/lifestyle variables measured on continuous scales the statistical procedure of Spearman's Rho was used as a non-parametrical statistical procedure. This procedure was also used to investigate the intercorrelations between the scores on the various instruments that represented the dependent and independent variables. Normality of distributions was assessed through the following statistical tests: Shapiro-Wilk, Kolmogorov-Smirnov, Cramer-Von Mises, and Anderson Darling.

Partial Correlation Analysis and Stepwise Multiple Regression were used to investigate the role of work involvement as a potential moderating variable. The final analysis was the application of Structural Equations Modelling (SEM) to test the hypothesised model of relationships.

The following abbreviations are used in the remainder of the study for the various variables:

- meaning in life – meaning
- career commitment – career
- career commitment factor 1 – Career1 (career identity)
- career commitment factor 2 – Career2 (career planning)
- career commitment factor 3 – Career3 (career resilience)
- goal orientation – Goal
- goal orientation factor 1 – Goal1 (goals to learn)
- goal orientation factor 2 – Goal2 (avoidance of difficult goals)
- work involvement – Workinv
- job involvement – Jobinv
- intrinsic motivation – Intrinsic
- work values – values

### 3.3.3. Factor structure of the total questionnaire

The first analysis investigated through Factor Analysis whether the independent variables and dependent variables measured and the items from these measures were related on similar levels of abstraction. The biographic/lifestyle items were not included in this analysis. Eigenvalues  $> 1.00$  were identified and “clear” breaks between the Eigenvalues  $> 1.00$  were identified by means of a Scree test. These identified breaks were taken as one of the indications of the number of possible factors. A Principal Factor Analysis with Direct Quartimin rotation was done according to the number of determined factors. The BMDP 4M programme was used for this purpose. If the Scree test identified that potentially three, four, five, etc. factors were present, then Principal Factor Analyses were done on the responses to all the items specifying three, four or five factor solutions respectively (Van Wyk et al., 1999).

The results of the Principal Factor Analysis were evaluated by considering the following: (a) items were identified which did not load  $\geq 0.25$  on any factor in any solution, as well as (b) items that loaded on more than one factor in any of the solutions (even if they loaded  $\geq 0.25$ ). These identified items were left out of the following round of Principal Factor Analysis. With the results of this subsequent round of Principal Factor Analysis, the same decision rules were followed as in the previous round: should an item not load  $\geq 0.25$  on any factor in any solution or load  $\geq 0.25$  on more than one factor in any solution, these factors were removed from further analysis (Van Wyk et al., 1999). The process was repeated until no “problematic” items remained in any factor according to the described evaluative procedure. In order to choose the best solution, Confirmatory Factor Analysis was done using SAS (Proc Callis) on the “clean” structures selected.

The results of the statistical analysis of the different instruments used for measuring the variables included in the study are presented next. The squared multiple correlations of each variable ( $N = 78$ ) from the standard instruments used, with all other variables, with that variable removed yielded a Cronbach Alpha of 0.9221. This high correlation suggests that all the variables are related. In other words, the

high correlation between all the variables suggests that one is dealing with a specific underlying construct, and that the items measuring this construct are on similar levels of abstraction.

Table 41 and Figure 51 indicate that the Eigenvalues suggest that the number of factors covered by all seven instruments could range between one and 17 (for Eigenvalues  $\geq 1.00$ ). A one-factor solution would yield an Eigenvalue of 13.92, with a 17-factor solution yielding an Eigenvalue on the last factor of 1.01. The histogram of the Eigenvalues is illustrated in Figure 51, and the factor loadings on the individual items are indicated in Table 41.

Table 41

Eigenvalues with all items included in Principal Factor Analysis (N = 458)

Number of Factors	Eigenvalue
1	13.920
2	7.236
3	3.338
4	2.739
5	2.446
6	2.337
7	1.915
8	1.813
9	1.638
10	1.455
11	1.393
12	1.313
13	1.251
14	1.214
15	1.149
16	1.061
17	1.010

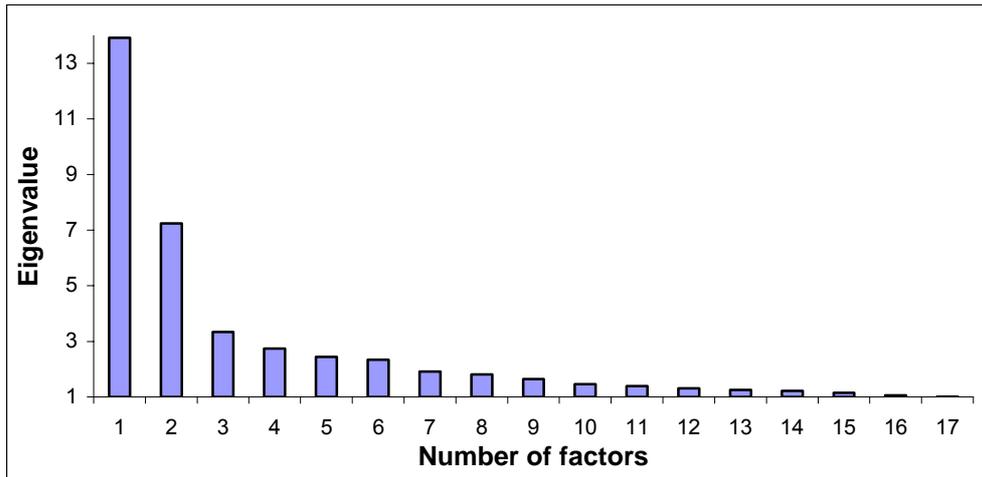


Figure 51. Eigenvalues higher than 1.00, all items included.

Table 42 indicates the Eigenvalues of the items that loaded  $\geq 0.25$  in the one factor solution, without statistically significant cross loadings. All references to item numbers refer to the item numbers (V numbers) in the final questionnaire, Appendix A.

Table 42

Rotated Factor Loading Pattern (correlation  $\geq 0.25$ ) for a one factor solution (first round) (N = 458)

<b>Item number</b>	<b>Loading</b>	<b>Construct</b>	<b>Item number</b>	<b>Loading</b>	<b>Construct</b>
V67	0.72	Meaning	V70	0.45	Meaning
V82	0.72	Meaning	V21	0.45	Career
V66	0.66	Meaning	V86	0.43	Meaning
V61	0.66	Meaning	V48	0.42	Goal orientation
V63	0.65	Meaning	V34	0.42	Intrinsic Motivation
V81	0.63	Meaning	V71	0.41	Meaning
V65	0.63	Meaning	V49	0.41	Goal orientation
V77	0.63	Meaning	V46	0.39	Goal orientation
V85	0.60	Meaning	V50	0.38	Goal orientation
V72	0.59	Meaning	V25	0.36	Career
V84	0.59	Meaning	V19	0.36	Career
V79	0.59	Meaning	V32	0.35	Intrinsic Motivation
V80	0.58	Meaning	V30	0.35	Intrinsic Motivation
V73	0.58	Meaning	V51	0.35	Goal orientation
V62	0.58	Meaning	V42	0.34	Job involvement
V59	0.58	Meaning	V78	0.32	Meaning
V76	0.57	Meaning	V28	0.31	Career
V64	0.55	Meaning	V38	0.30	Job involvement
V75	0.51	Meaning	V52	0.30	Goal orientation
V23	0.51	Career	V27	0.30	Career
V60	0.49	Meaning	V8	0.29	Work ethic
V22	0.49	Career	V45	0.28	Job involvement
V69	0.49	Meaning	V54	0.28	Goal orientation
V35	0.49	Intrinsic Motivation	V53	0.28	Goal orientation
V24	0.48	Career	V10	0.27	Work ethic
V47	0.45	Goal orientation	V29	0.25	Career
V68	0.45	Meaning	V7	0.25	Work ethic

This one-factor solution was not accepted as an acceptable solution. Firstly, because a large number of items (24) got “lost” in this solution. Secondly, the one-factor could not be interpreted easily or with confidence.

From Figure 51 it appeared that the last significant step (“clear break”) in correlations was at three factors, suggesting that three factors might produce the best solution for the data. A three-factor solution was selected based on the histogram in Figure 51, and also because this study is concerned with three main factors, meaning in life, work commitment and work motivation. A fourth factor, possibly work involvement as a separate construct, did not become obvious through the histogram.

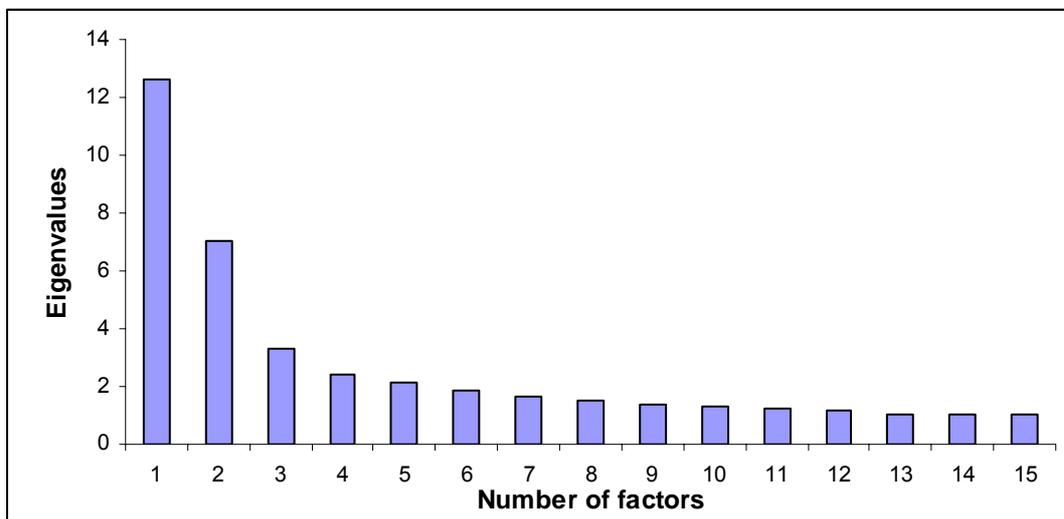
A series of Principal Factor Analyses with Direct Quartimin rotation of the axes with extraction of, respectively, three, four, and five factors was run in which items that showed loadings  $< 0.25$  were left out of further analyses. This was repeated until all the items loaded positively  $\geq 0.25$  on only one factor. A total of 12 items with loading  $\leq 0.25$  were eliminated (Appendix A: Final Questionnaire; V5, V 9, V 22, V23, V26, V29, V30, V31, V42, V74, V83, and V85). All references to item numbers refer to the item numbers (V numbers) in the final questionnaire, Appendix A.

The Cronbach Alpha of all the items in the finally accepted three-factor solution was 0.928. The Eigenvalues  $\geq 1.00$ , for a three-factor solution with all the items loading  $\geq 0.25$  on only one factor, are shown in Table 43 and illustrated in Figure 52.

Table 43

Eigenvalues with items loading < 0.25 omitted (N = 458)

Number of Factors	Eigenvalue
1	12.591
2	7.014
3	3.278
4	2.400
5	2.150
6	1.875
7	1.643
8	1.490
9	1.399
10	1.306
11	1.270
12	1.195
13	1.055
14	1.029
15	1.003

Figure 52. Three factor solution with Eigenvalues higher than 1.00.

The three-factor structure obtained is shown in Table 44.

Table 44

Rotated Factor Loading Pattern for the three-factor solution (N = 458)

Factor 1		Factor 2		Factor 3				
r	Construct	r	Construct	r	Construct			
V67	0.778	Meaning	V44	0.758	Job involvement	V48	0.847	Goal orientation
V77	0.702	Meaning	V43	0.753	Job involvement	V47	0.799	Goal orientation
V63	0.656	Meaning	V40	0.748	Job involvement	V46	0.762	Goal orientation
V82	0.670	Meaning	V39	0.726	Job involvement	V50	0.625	Goal orientation
V66	0.662	Meaning	V45	0.681	Job involvement	V49	0.526	Goal orientation
V76	0.652	Meaning	V16	0.625	Work involvement	V35	0.436	Intrinsic motivation
V80	0.643	Meaning	V36	0.622	Job involvement	V52	0.396	Goal orientation
V61	0.632	Meaning	V15	0.607	Work involvement	V34	0.370	Intrinsic motivation
V73	0.622	Meaning	V17	0.563	Work involvement	V32	0.316	Intrinsic motivation
V79	0.622	Meaning	V41	0.563	Job involvement	V53	0.310	Goal orientation
V65	0.610	Meaning	V38	0.537	Job involvement	V51	0.307	Goal orientation
V72	0.607	Meaning	V18	0.486	Career	V33	0.300	Intrinsic motivation
V70	0.604	Meaning	V37	0.484	Job involvement	V54	0.293	Goal orientation
V64	0.600	Meaning	V12	0.482	Work involvement	V25	0.273	Career
V84	0.599	Meaning	V13	0.468	Work involvement			
V59	0.583	Meaning	V19	0.438	Career			
V75	0.571	Meaning	V21	0.377	Career			
V81	0.509	Meaning	V14	0.338	Work involvement			
V69	0.485	Meaning	V8	0.306	Work ethic			
V62	0.450	Meaning	V20	0.306	Career			
V71	0.447	Meaning	V6	0.296	Work ethic			
V68	0.438	Meaning	V11	0.277	Work ethic			
V60	0.417	Meaning	V10	0.275	Work ethic			
V86	0.404	Meaning	V7	0.266	Work ethic			
V78	0.336	Meaning						
V28	0.297	Career						
V27	0.290	Career						
V24	0.267	Career						
Alpha	0.927		Alpha	0.896		Alpha	0.831	
Total variance explained	18.06%		Total variance explained	9.64%		Total variance explained	4.07%	
Common variance explained	56.84%		Common variance explained	30.35%		Common variance explained	12.81%	

The intercorrelations between the three factors are shown in Table 45.

Table 45

The intercorrelations of the factors for a three-factor solution (N = 458)

	Factor 1	Factor 2	Factor 3
Factor 1	1.000		
Factor 2	0.161	1.000	
Factor 3	0.413	0.188	1.000

The results support a three-factor solution with high Alphas on all three factors. Together, these three factors explain 31.77% of the total variance. Of the common variance, factor one explains 56.84%, factor two explains 30.35% and factor three explains 12.81%.

Although the measurements used in this research were expected to yield four factors as represented by the four different constructs measured, it was not the case. However, it is clear from Table 44 that the three factors that came out of the factor analyses can be seen as closely representing the three main constructs addressed in this study. They are meaning in life, work commitment and work motivation. It is however interesting to note that work involvement loaded with the work commitment items on factor two, rather as a separate factor. The results suggest that the items included in the questionnaire are related and on similar levels of abstraction. The results also suggest that one is dealing here with one construct, with at least three related, but different dimensions. The results provide a statistically sound basis for the analysis to answer the research question and to test the research propositions.

### **3.3.4. Factor structures of the individual instruments**

The responses to the items in all the instruments used in the study were factor analysed (by instrument) by means of Principal Factor Analysis with Direct Quartimin rotation of the axes. The main purpose of this was to establish whether the instruments that had been developed in other cultures (USA, Canada and Australia)

are portable to the South African sample. Van Wyk et al. (1999) cautioned that instruments are not generally or necessarily portable to different cultures. Each instrument was therefore individually subjected to a Principal Factor Analysis with Direct Quartimin rotation of the axes to confirm their factor structures when used on the present sample. The first solution asked for always contained the number of factors obtained by the developers. If this factor structure failed to yield a satisfactory solution, a structure that appeared from the data to be more appropriate was investigated. The items that did not load satisfactorily ( $r \geq 0.25$  with no significant cross loading) on a factor were removed and the factor analysis repeated until all items in the factor structure loaded satisfactorily.

Battista and Almond (1973) and Debats et al. (1993) describe the LRI as consisting of two dimensions: framework and fulfilment. A two-factor solution was therefore tried initially. However, the factor analysis failed to yield a satisfactory two-factor solution on the first run of the factor analysis. Of the 28 items in the LRI, only 22 items loaded positively  $\geq 0.25$ . Of these 22 items, 20 items loaded strongly on only one factor (Alpha = 0.91), with only two items loading moderately on the second factor (Alpha = 0.27). The Cronbach Alpha for all the items was high at 0.93. Consequently, a one-factor solution was investigated. This time 26 of the 28 items loaded satisfactorily (0.33 to 0.774), yielding a Cronbach Alpha of 0.9266. Two items failed to load satisfactorily (V74, loading 0.15 and V83, loading 0.19). The Factor Analysis with a one-factor solution specified was executed again, this time without the two items that did not have loadings  $\geq 0.25$ . All 26 items loaded satisfactorily. The one-factor structure is shown in Table 46.

Table 46

One-factor structure of LRI (Battista & Almond, 1973) (N = 458)

Item	Loading
V67	0.775
V82	0.730
V66	0.688
V77	0.683
V63	0.680
V61	0.669
V65	0.639
V79	0.628
V76	0.627
V80	0.621
V73	0.618
V72	0.618
V84	0.615
V59	0.613
V81	0.603
V64	0.599
V85	0.583
V75	0.558
V62	0.539
V70	0.527
V69	0.511
V68	0.469
V60	0.460
V71	0.447
V86	0.433
V78	0.331
Cronbach Alpha	0.932
Total variance explained	35.45%

All 26 items showed satisfactory loadings (0.33 to 0.76), improving the Cronbach Alpha slightly to 0.9319. One can conclude that Battista and Almond's (1973) LRI, with these two items removed, is portable to the South African sample used in the study. It is therefore an acceptable instrument for measuring the construct of

meaning in life as expressed through positive life regard. However, it should be used as a uni-dimensional instrument.

Factor Analysis of Kanungo's (1982) WIQ supported a one-factor solution as described in the theory on the first round of the Principal Factor Analysis with Direct Quartimin rotation of the axes. The outcome of the Factor Analysis is shown in Table 47.

Table 47

Factor Loading Pattern for the one-factor solution of Kanungo's (1982) WIQ (N=458)

Item	Loading
V16	0.734
V15	0.712
V17	0.701
V12	0.580
V13	0.527
V14	0.318
Cronbach Alpha	0.767
Total variance explained	37.55%

All six items indicated satisfactory loadings (0.32 to 0.73), with a resulting acceptable Cronbach Alpha of 0.77. One can conclude that Kanungo's (1982) WIQ is portable to the South African sample used in the study. It is therefore an acceptable instrument to measure the construct of work centrality as expressed through work involvement.

Principal Factor Analysis with Direct Quartimin rotation of the axes of Kanungo's (1982) JIQ supported a one factor solution as described by the author of the instrument with a Cronbach Alpha = 0.86. However, the seventh item showed a low loading (V42, loading 0.202), whilst nine of the items showed statistically satisfactory loadings (0.47 to 0.77). Item seven is the same item that was found by Kaplan (1990) not to load statistically significantly with the other items in the instrument. In contrast, Van Wyk et al. (1999) found this item to load significantly on a one-factor

solution. The factor analysis was executed again without this item. The result of the second factor analysis on the items in Kanungo's (1982) JIQ is shown in Table 48.

Table 48

Factor Loading Pattern for the one-factor structure of Kanungo's (1982) JIQ (N=458)

Item	Loading
V40	0.772
V39	0.770
V44	0.763
V43	0.748
V45	0.699
V36	0.608
V41	0.569
V38	0.555
V37	0.468
Cronbach Alpha	0.875
Total variance explained	40.84%

All nine of the remaining items showed high loadings (loading 0.47 to 0.77), with the Cronbach Alpha increasing slightly to 0.88. One can conclude that Kanungo's (1982) JIQ, with the seventh item removed, is portable to the South African sample used in the study. It is therefore an acceptable instrument for measuring the construct of job involvement.

Principal Factor Analysis with Direct Quartimin rotation of Carson and Bedeian's (1984) Career Commitment Scale supported the three-factor solution as described by Carson and Bedeian (1984) exactly in the first round. The outcomes of the factor analysis are shown in Table 49 and in Table 50.

Table 49

Rotated Factor Loading Pattern for the three-factor structure of Carson and Bedeian's (1984) Career Commitment Scale (N = 458)

Item	Factor 1 Career resilience (Career 1)	Factor 2 Career planning (Career 2)	Factor 3 Career identity (Career 3)
V28	0.902		
V27	0.722		
V29	0.693		
V24	0.476		
V23		0.767	
V22		0.753	
V25		0.647	
V19		0.589	
V18			0.742
V21			0.680
V20			0.662
V26			0.463
Cronbach Alpha	0.789	0.787	0.735
Total variance explained	23.06%	16.31%	8.52%
Common variance explained	48.32%	33.99%	17.87%

Table 50

Intercorrelations for rotated factors of Carson and Bedeian's (1984) Career Commitment Scale (N = 458)

	Factor 1	Factor 2	Factor 3
Factor 1	1.000		
Factor 2	0.242	1.000	
Factor 3	0.136	0.408	1.000

All 12 items showed satisfactory loadings (0.46 to 0.90) on the three-factor solution with a resulting overall Cronbach Alpha of 0.77. The three factors individually also had satisfactory Alphas, namely career resilience 0.79 (loadings 0.48 to 0.90), career

planning 0.79 (loadings 0.59 to 0.77), and career identity 0.73 (loadings 0.46 to 0.74) (see Table 49) (the terms in brackets (e.g., Career 1) are the abbreviations that will be used in further discussions for the particular dimension). One can conclude that Carson and Bedeian's (1984) Career Commitment Scale is portable to the South African sample used in the study. It is therefore an acceptable instrument for measuring the construct of career commitment and its three dimensions.

Principal Factor Analysis with Direct Quartimin rotation of the axes of Vandewalle's (1997) Goal Orientation measure supported the two-factor solution described in his theory after the first round in which this solution was specified. The factor structure of Vandewalle's (1997) Goal Orientation measure is shown in Table 51.

Table 51  
Factor Loading Pattern for the two-factor structure of Vandewalle's (1997) Goal Orientation Measure (N = 458)

Item	Factor 1 Learning orientation (Goal 1)	Factor 2 Avoid orientation (Goal 2)
V48	0.858	
V47	0.783	
V46	0.742	
V50	0.668	
V49	0.545	
V53		0.902
V54		0.840
V51		0.862
V52		0.498
Cronbach Alpha	0.844	0.811
Total variance explained	38.10%	15.63%
Common variance explained	70.91%	29.09%

All nine items showed satisfactory loadings (0.50 to 0.90) on one of the two factors with as overall Cronbach Alpha of 0.508. The Alphas of the two factors were substantially higher than that of the total measure, namely learning goal orientation

0.84 (loadings 0.55 to 0.86) and avoidance goal orientation 0.81 (loadings 0.50 to 0.90). This is a clear indication that the two dimensions measured by this instrument are independent from each other. The intercorrelation between the two factors was -0.42. The items included in the third factor, goal orientation to prove one's worth, were omitted from the final questionnaire as it was regarded as not relevant to this study. One can conclude that these two factors of Vandewalle's (1997) Goal Orientation measure is portable to the South African sample used in the study. It is therefore an acceptable instrument for measuring the construct of work motivation as expressed through goal orientation.

The results of the Principal Factor Analysis with Direct Quartimin rotation of the axes of Ho and Lloyds' (1984) AWES is shown in Table 52. All seven items loaded satisfactory on the first round of Factor Analysis.

Table 52

Factor Loading Pattern for the one-factor structure of Ho and Lloyds' (1984)

Australian Work Ethic Scale (N = 458)

Item	Loading
V8	0.788
V7	0.722
V6	0.635
V10	0.586
V11	0.530
V5	0.434
V9	0.339
Cronbach Alpha	0.776
Total variance explained	35.32%

The items in Ho and Lloyds' (1984) AWES had satisfactory loadings for all seven items (loadings 0.34 to 0.79) on the first round of factor analysis. The measure showed a Cronbach Alpha of 0.78. One can conclude that Ho and Lloyds' (1984) Australian Work Ethic Scale is portable to the South African sample used in the

study. It is therefore an acceptable instrument for measuring the construct of work values as expressed through work ethics.

Principal Factor Analysis with Direct Quartimin rotation on the items of Warr, Cook and Wall's (1979) Intrinsic Motivation Measure showed that most items loaded satisfactorily (loadings 0.45 to 0.67) in a one-factor solution, except for one item (V31, loading = 0.2). This analysis showed a Cronbach Alpha of 0.686. The factor analysis was executed again without the item that showed a weak loading. The results of this iteration of the factor analysis are shown in Table 53.

Table 53

Factor Loading Pattern for the one-factor structure of Warr, Cook and Wall's (1979) Intrinsic Motivation Measure (N = 458)

Item	Loading
V34	0.690
V35	0.631
V32	0.610
V30	0.534
V33	0.426
Cronbach Alpha	0.712
Total variance explained	34.23%

All the remaining items showed high satisfactory loadings (0.43 to 0.69) in a one-factor solution, and the Cronbach Alpha increased to 0.712. One can conclude that Warr, Cook and Wall's (1979) Intrinsic Motivation Measure, with this item removed, is portable to the South African sample used in the study. It is therefore an acceptable instrument for measuring the construct work motivation, expressed as intrinsic motivation.

### **3.3.5. Groupings of classes of biographical/lifestyle variables**

The respondents of the classes within certain discrete variables were amended in order to arrive at groupings of more significant proportions. Variables with the prefix “V” used further in this discussion and analysis indicate the variables with classes as initially defined in the questionnaire (see Appendix A: Final Questionnaire). Variables with the prefix “VV” indicate variables with new groupings of the respondents. The new grouping of classes within the variables supersedes the initial groupings. The new groupings of classes within variables are shown in Table 54.

Table 54

New groupings of classes within certain discrete variables (N = 458)

Variable	Grouping	Description	Frequency	%	Cummulative	
					Frequency	%
VV89	1	Level 2 (most senior)	22	4.80	22	4.80
	2	Level 3	30	6.55	52	11.35
	3	Level 4	133	29.04	185	40.39
	4-5	Levels 5 & 6	270	58.95	455	99.34
VV90	1-4	Up to Diploma	138	30.13	138	30.13
	5	Bachelors degree	111	24.24	249	54.37
	6	Hounours degree	83	18.12	332	72.49
	7-8	Masters and doctorate	126	27.51	458	100.00
VV97	1	Completely satisfied	67	14.63	67	14.63
	2	Satisfied (career progress)	269	58.73	336	73.36
	3	Not sure	29	6.33	365	79.69
	4-5	Dissatisfied	89	19.43	454	99.13
VV111	1, 4, 6	Not married	44	9.61	44	9.61
	2	Married	413	90.17	457	99.78
VV113	1	Christian	427	93.23	427	93.23
	2-9	Non-Christian	29	6.33	456	99.56
VV115	1	Very strong	167	36.46	167	36.46
	2	Strong (religious conviction)	167	36.46	334	72.93
	3	Moderate	89	19.43	423	92.36
	4-6	Weak or not applicable	33	7.21	456	99.56
VV116	1	White	416	90.83	416	90.83
	2-4	Non-white	41	8.95	457	99.78

### 3.3.6. Normality of distributions of the variables

In order to use ANOVA, one must assume that each of the samples is drawn from a normal population and that each of these samples has the same variance (Levin, 1987). The next step was to investigate the normality of the continuous distributions of the biographic/lifestyle variables, as well as the normality of the distribution of the measurement of meaning itself.

The Univariate procedure was carried out for the statistical testing of normality of the distributions of the continuous variables. The results of the Univariate analysis of the continuous biographic/lifestyle variables assessed whether these distributions conformed to the requirements of normal distributions. Normality was assessed through the following statistical tests: Shapiro-Wilk, Kolmogorov-Smirnov, Cramer-Von Mises, and Anderson Darling. Significance levels (p values) refer to the risk of error in drawing conclusions from data. Anastasi and Urbina (1997) suggest that most psychological research applies either the 0.01 or 0.05 levels. This study accepted significance at  $p \leq 0.05$ . In these tests, the p value indicates the probability that the distributions are not skewed. In other words, a low p value indicates that the probability is very small that the distribution is not skewed. A low p value therefore suggests that the distribution is probably skewed and therefore not normal.

None of the continuous biographic/lifestyle variables conformed to the requirements of normal distributions (all the p values were  $\leq 0.05$ ).

The same Univariate procedure was carried for the statistical testing of normality of the individual distributions of the responses of the independent variable (meaning), and the six dependent variables. The results of the Univariate analysis of the variables assessed whether these distributions conformed to the requirements of normal distributions. The results of the Univariate procedure of the distribution of responses on the measurement of meaning are shown in Table 55.

Table 55

Conformance of the distribution of sores on meaning to the requirements of normal distributions (N = 458)

Test	p value
Shapiro-Wilk	0.0013
Kolmogorov-Smirnof	<0.0100
Cramer-Von Mises	<0.0101
Anderson-Darling	<0.0085

It is obvious that the distribution of the responses on the measurement of meaning itself in general also did not conform to the requirements of a normal distribution ( $p > 0.05$ ). The conformance of the distributions to normality of the other variables as measured by the various instruments was also investigated, using Univariate analysis. The results of these analyses indicated that only work involvement, career commitment (but not its three factors individually), work values, Goal1 and Goal2 (the factors of goal commitment, but not goal commitment itself), conformed to the requirements of normal distributions. According to the Univariate analysis, the distributions of responses on job involvement, Career1, Career2, Career3, goal commitment and intrinsic motivation therefore did not conform to the conditions of normality.

It was clear from the results that neither the biographic/lifestyle variables, nor the variables measured by the various instruments generally displayed normal distributions. This observation is peculiar for the large sample size of  $N = 458$ . After all, Levin (1987) suggests that if sample sizes are large enough, one does not need the assumption of normality. As these distributions were not normal, it was decided that statistical procedures that assume normality could generally not be used further in the analysis. It was therefore decided to revert to non-parametric statistical methods as the preferred approach of analysis for the remainder of the analyses. Kerlinger and Lee (2000) state that non-parametric tests do not depend on any assumption as to the form of the sample population or the values of the population parameters.