

CHAPTER 4

RESULTS

4.1. THE LEVEL OF MEANING IN THE PRESENT SAMPLE

Before the results of the relationship between meaning and the dependent variables are presented or further analysed, it is necessary to assess the level of the scores of the respondents in the present sample on meaning. This is in order to assess the importance of the role that meaning plays in the lives of the respondents in the present sample relative to other samples. The mean, standard deviation, maximum and minimum scores of the responses on meaning of the present study are shown in Table 56, and compared to the results of Battista and Almond's (1973) study.

Table 56

Comparative data on levels of meaning scores in two samples

	N	<u>Mean</u>	<u>SD</u>	Minimum	Maximum	Items	Mean score per item
Present study (N = 458)	458	97.6	13.0	44	125	26	3.75
Battista and Almond (1973)	229	98.6	18.8	36	137	28	3.52

The data in table 56 seems to indicate that the responses of the two samples corresponded to a relatively high degree.

4.2. RELATIONSHIP OF MEANING WITH BIOGRAPHICAL/LIFESTYLE VARIABLES

This section presents the results of the analyses to find answers to the first two research questions.

The statistical procedure of Non-parametric, One-Way Analysis of Variance (NPAR1WAY) was used to investigate the relationship of meaning with the biographic/lifestyle variables measured on discrete scales. Significance of the relationship was calculated by carrying out Kruskal-Wallis tests, with $p \leq 0.05$ regarded as a statistically significant relationship. Kerlinger and Lee (2000) suggest that the Kruskal-Wallis method specifically is simple, effective and analogous to One-way Analysis of Variance. Wilcoxon Scores (rank sums) were used to establish the ranking of the strength of the relationship of meaning with the biographic/lifestyle variables for every item.

The discrete biographic/lifestyle variables that showed statistically significant relationships with meaning are shown in Table 57. Chi-square is indicated by the symbol χ^2 , degrees of freedom (df) are indicated in brackets after the variable description. Ranking was done according to the groupings' mean scores on the LRI. The groupings are shown in the order of their scores ranking on the LRI. The values of χ^2 are those obtained from Kruskal-Wallis calculations.

Table 57

Biographic/lifestyle variables showing significant relationship with meaning (N = 458)

Variable (df)	χ^2	p value	Classes description	Mean scores on meaning
Seniority (3)	17.18	0.0006	Level 3 (senior management)	312.17
			Level 2 (Top management)	269.43
			Level 4 (middle management)	228.80
			Level 5/6 (Junior management)	214.88
Career changes (1)*	7.45	0.0064	Did make sustantial changes	242.73
			Did not make subst. changes	208.58
Career progress (1)*	47.60	<0.0001	Completely satisfied	308.56
			Satisfied	231.72
			Dissatisfied	176.64
			Unsure	157.14
Continue working (1)*	4.05	0.044	In absence of financial necessity	235.59
			Not continue without fin necessity	206.74
Continue working (1)*	21.84	<0.0001	Continue with same job	258.70
			Not with same job	200.87
Time to be alone (1)*	10.98	<0.0001	Purposely make time	245.08
			Do not make time	203.30
Being alone (1)*	6.38	0.0115	OK in the absence of activities	236.83
			Difficult if no activities	197.93
Time for leisure (1)*	19.22	<0.0001	Purposely make time	240.31
			Do not make time	166.56
Family & friends (1)*	8.63	0.0033	Purposely make time	234.62
			Do not make time	170.43
Sport/hobby (1)*	14.36	0.0002	Active participation	241.97
			Not active participation	188.99
Community/welfare (1)*	15.78	<0.0001	Active involvement	259.55
			Not active involvement	209.76
Community/welfare (1)*	7.22	<0.0001	Regular financial contribution	238.94
			Not regular financial contribution	203.60
Religious conviction (1)*	43.27	<0.0001	Very strong	275.50
			Strong	219.85
			Moderate	186.87
			Weak/not applicable	148.86

The relationships of the variables which were regarded as lifestyle variables are indicated with asterisks.

All but one of the variables in this table of variables that show significant relationships with meaning, indicate people's orientations towards work and life. The only exception is seniority levels that might be described as a biographical type variable. It is therefore clear from this table that meaning in general showed statistically significant relationships with variables that indicate a certain orientation towards work and life. These results also appear to suggest a tendency for meaning to be associated with balanced lifestyle variables (e.g., time for self, family and friends, participation in sport/hobbies and reaching out into the community). The statistically significant relationship of strength of religious conviction with meaning supports Frankl's (1969, 1984a) postulation that meaning operates on the spiritual level.

The discrete biographic/lifestyle variables that failed to show significant variance with meaning are shown in Table 58. Chi-square is indicated by the symbol χ^2 , degrees of freedom (df) are indicated in brackets after the variable description. Mean scores are indicated, but no ranking of groups' scores was done, as the ranking was not statistically significant ($p \leq 0.05$).

Table 58

Discrete biographic/lifestyle variables that did not show significant variance with meaning (N = 458)

Variable (df)	χ^2	p value	Classes	Mean scores on meaning
Gender (1)	0.57	0.448	Male	230.6
			Female	214.8
Qualifications (3)	2.93	0.403	Up to National Diploma	223.7
			Bachelors Degree	216.2
			Honours Degree	236.8
			Masters/Doctoral Degree	242.8
Initial field of study (8)	6.77	0.562	Engineering	206.4
			Human Resources	241.2
			Economic and Financial	223.3
			Management	223.2
			Natural sciences	230.6
			Law	181.9
			Education	242.1
			Medicine	197.5
			Other	254.4
			Field of recent studies (8)	11.23
Human Resources	237.8			
Economic and Financial	193.4			
Management	211.2			
Natural sciences	193.1			
Law	224.5			
Education	NA			
Medicine	332.5			
Other	222.3			
Field of initial employment (8)	8.11	0.423		
			Human Resources	252.9
			Economic and Financial	207.8
			Management	314.0
			Natural sciences	220.9
			Law	227.3
			Education	230.5
			Medicine	269.3
			Other	224.2

Table 58 (continues)

Discrete biographic/lifestyle variables that did not show significant variance with meaning (N = 458)

Variable (d.o.f)	χ^2	p value	Classes	Mean scores on meaning
Field of current employment (8)	13.22	0.105	Engineering	189.3
			Human Resources	190.8
			Economic and Financial	224.0
			Management	234.8
			Natural sciences	227.4
			Law	190.6
			Education	298.5
			Medicine	359.0
			Other	230.9
Working holidays/weekends (1)*	0.15	0.703	Do work holidays/weekends	231.1
			Do not work holidays/weekends	226.4
Marital status (1)	0.92	0.338	Married	230.9
			Not married	210.9
Culture/social heritage (9)	14.01	0.112	Sotho	307.8
			Nguni	216.0
			Other African	334.7
			Afrikaner	229.7
			English	197.9
			Indian	283.1
			Arabic	121.5
			Mediterranean	264.0
			Western/Eastern European	217.7
Other	200.8			
Religious orientation (1)*	0.39	0.540	Christian	239.5
			Non-Christian	213.9
Christian orientation (1)*	1.70	0.190	Protestant	210.6
			Catholic	179.9
Ethnical grouping (Race) (1)	2.71	0.100	Non-White	261.4
			White	221.8

The relationships of the variables which were regarded as lifestyle variables are indicated with asterisks.

All the variables in this table can be described as biographical/demographic type variables, failing to show a statistical significant relationship with meaning. The results of this table therefore suggest that meaning is independent of biographical/demographic type variables.

In order to investigate the relationships between meaning and the continuous biographic/lifestyle variables Spearman's Rho was used as statistical procedure. The reason for the use of this non-parametric procedure was that the distributions were not normal (see section 3.3.6). Significant correlations are considered to be as $r \geq 0.25$, and $p \leq 0.05$. The results of the Spearman's Rho procedure are shown in Table 59.

Table 59

Relationships of continuous biographical/lifestyle variables with meaning (N = 458)

Variable	Correlation (Spearman's Rho)	p value	Common variance
Age	-0.005	0.92	0.00%
Years with current employer*	0.002	0.96	0.00%
Actual working hours*	0.127	0.006	1.61%
Actual days vacation*	0.133	0.004	1.77%

The relationships of the variables which were regarded as lifestyle variables are indicated with asterisks.

Age and years of employment with the present employer failed to show any statistically significant but very small correlations with meaning. Both these variables can be described as biographical/demographic type variables. Working hours and days vacation showed very small correlations with meaning ($r = 0.13$, $p = 0.006$ and $r = 0.13$, $p = 0.004$ respectively). However, the very small degrees of common variance (1.6% and 1.8% respectively) suggest that these variables also failed to show statistically or conceptually significant correlations with meaning. The latter two variables can be regarded as variables indicating certain orientations towards work and life.

4.3. SUMMARY: RELATIONSHIPS OF BIOGRAPHICAL/LIFESTYLE VARIABLES WITH MEANING

The biographic/lifestyle variables that showed statistically significant variance with meaning can be summarised as shown in Table 60.

Table 60

Biographical/lifestyle variables with statistically significant relationship with meaning
(N = 458)

Variable	χ^2	p value	Grouping with highest numerical score on meaning
Seniority	17.18	0.0006	Top and senior management
Career changes*	7.45	0.0064	Did make substantial changes
Career progress*	47.60	<0.0001	Completely satisfied
Continue working*	4.05	0.0440	In absence of financial necessity
Continue working*	21.84	<0.0001	Continue with same job
Time to be alone*	10.98	<0.0001	Purposely make time
Being alone*	6.38	0.0115	OK in the absence of activities
Time for leisure*	19.22	<0.0001	Purposely make time
Family & friends*	8.63	0.0033	Purposely make time
Sport/hobby*	14.36	0.0002	Active participation
Community/welfare*	15.78	<0.0001	Active involvement
Community/welfare*	7.22	<0.0001	Regular financial contribution
Religious conviction*	43.27	<0.0001	Very strong

The relationships of the variables which were regarded as lifestyle variables are indicated with asterisks. The biographic/lifestyle variables that failed to show statistically significant variance with meaning are summarised in Table 61.

Table 61

Biographical/lifestyle variables without statistically significant relationship with meaning (N = 458)

Variable	χ^2	p value		
Gender	0.57	0.448		
Qualifications	2.93	0.403		
Initial field of study	6.77	0.562		
Field of recent studies	11.23	0.129		
Field of initial employment	8.11	0.423		
Field of current employment	13.22	0.105		
Working holidays/weekends	0.15	0.703		
Marital status	0.92	0.338		
Culture/social heritage	14.01	0.112		
Religious orientation*	0.39	0.540		
Christian orientation*	1.70	0.190		
Ethnical grouping (Race)	2.71	0.100		
	Correlation (Spearman's Rho)	p value		
Age	-0.005	0.92		
Years with current employer*	0.002	0.96		
Actual working hours*	0.127	0.006		
Actual days vacation*	0.133	0.004		

The relationships of the variables which were regarded as lifestyle variables are indicated with asterisks.

The results presented in Tables 57, 58, 59, 60 and 61 can be summarised as follows:

1. Levels of seniority of the respondents showed a statistically significant relationship with meaning, with the ranking according to seniority.
2. Having made a substantial change in career during the respondents' working life showed a statistically significant relationship with meaning.
3. Respondents' satisfaction with career progress showed significant relationship with meaning.
4. Respondents' intention to continue working in the absence of financial necessity showed a statistically significant relationship with meaning. Similarly, respondents' intention to continue with their present job in the absence of financial necessity showed a statistically significant relationship with meaning.
5. Purposely making time to be alone by the respondents showed statistically significant relationship with meaning. Similarly, being comfortable to be alone in the absence of engagement in activities also showed a significant relationship with meaning.
6. Purposely making time for leisure, and spending time with family (or friends) both showed significant relationships with meaning.
7. Active participation in a sport or a hobby showed a statistically significant relationship with meaning.
8. Respondents' active involvement in welfare and community work, as well as their regular financial contribution to welfare or community work showed significant relationships with meaning.
9. Religious orientation of the respondents, both outside and inside of Christianity, failed to show a statistically significant relationship with meaning.
10. However, the strength of the respondent's religious conviction showed a statistically significant relationship with meaning, with the stronger convictions relation to higher scores on meaning.
11. The respondents' age failed to show a statistically significant correlation with meaning.
12. Years of employment of the respondents with their current employers failed to show significant correlations with meaning.

13. Both the initial fields of studying of the respondents, as well as their most recent fields of studying failed to show statistically significant relationships with meaning.
14. Similarly, fields of employment of the respondents, whether initial or current, failed to show statistically significant relationships with meaning.
15. Both actual working hours and days vacation taken by the respondents failed to show statistically significant correlations with meaning.
16. Differences in the respondents' sex did not vary significantly with meaning. Nor did the respondents' marital status show a statistically significant relationship with meaning.
17. The respondents' academic qualifications failed to show a statistically significant relationship with meaning.
18. The respondents' cultural heritage or social upbringing did not show significant variance with meaning. Similarly, their ethnical grouping (race) failed to show a significant relationship with meaning.

It appears from this summary that, in general, all biographical/demographical variables failed to show significant variance with meaning. The only exception was level of seniority, which did show significant variance with meaning. These results support the notion that meaning in life is a universal phenomenon that is independent of specific demographics (Debats, 1999; Debats et al., 1993). On the other hand, most of the lifestyle and work and life orientation variables in general appear to show significant variance with meaning. Only two out of 17 (11.8%) of the lifestyle, or life and work orientation variables failed to show a statistically significant relationship with meaning. These findings support the notion that meaning is inherent in the way one experience life and one's existence (Antonovsky, 1979; Reker & Wong, 1988; Thompson & Janigian, 1988).

4.4. THE RELATIONSHIP BETWEEN MEANING AND THE DEPENDENT VARIABLES

This section presents the results of research questions three, four and five. In other words, the relationship between meaning and work involvement, work commitment and work motivation.

In order to investigate the relationship between meaning (independent variable) and the work involvement, the variables of work commitment and work motivation (dependent variables), the following statistical procedures were used:

- Spearman's Rho (Spearman Intercorrelation Coefficients).

The results of the Spearman's Rho procedure are shown in Table 62. Correlations are considered to be significant where Spearman's Rho (r) ≥ 0.25 and $p \leq 0.05$.

Table 62
Results from Spearman's Rho Correlation Coefficients of factor variables (N = 458)

Variable		Meaning	Workinv	Career	Career1	Career2	Career3	Intrinsic	Jobinv	Values	Goal	Goal1	Goal2
Meaning	r	1.0000											
	p value												
Workinv	r	0.17047	1.00000										
	p value	0.0002											
Career	r	0.49405	0.26659	1.00000									
	p value	<0.0001	<0.001										
Career1	r	0.30507	0.04033	0.70994	1.00000								
	p value	<0.0001	0.3892	<0.0001									
Career2	r	0.45952	0.22247	0.71707	0.18653	1.00000							
	p value	<0.0001	<0.0001	<0.0001	<0.0001								
Career3	r	0.25161	0.34412	0.62837	0.11582	0.33929	1.00000						
	p value	<0.0001	<0.0001	<0.0001	0.0131	<0.0001							
Intrinsic	r	0.34829	0.20145	0.33232	0.10647	0.31342	0.30576	1.00000					
	p value	<0.0001	<0.0001	<0.0001	0.0227	<0.0001	<0.0001						
Jobinv	r	0.09854	0.62362	0.3107	-0.01421	0.24867	0.50139	0.26522	1.00000				
	p value	0.0350	<0.0001	<0.0001	0.7616	<0.0001	<0.0001	<0.0001					
Values	r	0.18176	0.36652	0.2536	0.07480	0.25977	0.21816	0.20135	0.27955	1.00000			
	p value	<0.0001	<0.0001	<0.0001	0.1099	<0.0001	<0.0001	<0.0001	<0.0001				
Goal	r	-0.04325	0.11704	0.06358	-0.03614	0.08000	0.11585	0.23557	0.19030	0.12485	1.00000		
	p value	0.3558	0.0122	0.1744	0.4404	0.0872	0.0131	<0.0001	<0.0001	0.0075			
Goal1	r	0.3749	0.12453	0.35558	0.15302	0.36299	0.23843	0.44494	0.15625	0.17576	0.39382	1.00000	
	p value	<0.0001	0.0076	<0.0001	0.0010	<0.0001	<0.0001	<0.0001	0.0008	0.0002	<0.0001		
Goal2	r	-0.33041	0.02330	-0.20749	-0.15358	-0.01965	-0.06499	-0.10166	0.07322	-0.00796	0.71143	-0.36579	1.00000
	p value	<0.0001	0.6189	<0.0001	0.0010	<0.0001	0.1650	-0.02960	0.1176	0.8651	<0.0001	<0.0001	

However, his study is not so much concerned about the relationships between the dependent variables. The focus of the study is rather on the interrelationships between the dependent variables with meaning as the independent variable. Table 63 is an abbreviated version of Table 62 showing only the relationships between meaning and the dependent variables. Significant correlations ($r \geq 0.25$, $p \leq 0.05$) are shown in bold.

Table 63

Result from Spearman's Rho Correlation Coefficients of meaning with the dependent variables (N = 458)

Variable		Meaning	100*R ²		
Workinv	r	0.17	2.91%		
	p value	0.0002			
Career	r	0.49	24.41%		
	p value	<0.0001			
Career 1	r	0.31	9.31%		
	p value	<0.0001			
Career 2	r	0.46	21.12%		
	p value	<0.0001			
Career 3	r	0.25	6.33%		
	p value	<0.0001			
Intrinsic	r	0.35	12.13%		
	p value	<0.0001			
Jobinv	r	0.10	0.97%		
	p value	0.0350			
Values	r	0.18	3.30%		
	p value	<0.0001			
Goal	r	-0.04	0.19%		
	p value	0.3558			
Goal 1	r	0.37	14.05%		
	p value	<0.0001			
Goal 2	r	-0.33	10.92%		
	p value	<0.0001			

From table 63 it can be seen that seven of the variables had significant relationships with meaning. No significant relationships existed between meaning and four variables.

4.5. WORK INVOLVEMENT AS A MODERATING VARIABLE

This section presents the results on the sixth research question: does work involvement act as a moderating variable of the relationship between meaning and work commitment and work motivation.

In order to investigate whether work involvement acts as a moderating variable between meaning and work commitment and work motivation, a Pearson Partial Correlation analysis was carried out. Through the Pearson Partial Correlation analysis, the effect of work involvement (WI) on the relationship between meaning and the dimensions of work commitment and work involvement were removed. The results are shown in Table 64. The column in Table 64 where effects of WI was not removed was extracted from Table 62, the Spearman's Rho Correlation Coefficients between meaning and the relevant variables. The column where the effect of WI was removed is the result of the Pearson Partial Correlation Coefficient analysis.

Table 64

Correlation Coefficients of meaning with dependent variables (N = 458)

Variable		Correlation with meaning		Common variance difference
		WI effect not removed	WI effect removed	
Career	r	0.49	0.47	2.10%
	p value	<0.0001	<0.0001	
Career 1	r	0.31	0.30	0.13%
	p value	<0.0001	<0.0001	
Career 2	r	0.46	0.44	1.86%
	p value	<0.0001	<0.0001	
Career 3	r	0.25	0.29	-1.83%
	p value	<0.0001	<0.0001	
Intrinsic	r	0.35	0.33	1.55%
	p value	<0.0001	<0.0001	
Jobinv	r	0.10	-0.01	0.96%
	p value	0.0350	0.83	
Values	r	0.18	0.13	1.61%
	p value	<0.0001	0.01	
Goal	r	-0.04	-0.06	-0.23%
	p value	0.3558	0.17	
Goal 1	r	0.37	0.36	0.97%
	p value	<0.0001	<0.0001	
Goal 2	r	-0.33	-0.34	-0.60%
	p value	<0.0001	<0.0001	

It appears from the results in Table 64 that work involvement does not have a significant moderating effect on the relationship between meaning and the dependent variables and their dimensions. Only one of the relationships of the dependent variables with meaning changed more than 2% when the effect of work involvement was removed.

The postulated moderating effect of work involvement on the relationship between meaning and work commitment and work motivation was further investigated through a Stepwise Multiple Regression Analysis. Multiple regression analysis is a method for studying the effect (and the magnitudes of the effect) of more than one

independent variable on one dependent variable, using principles of correlation and regression (Babbie, 1998; Hammond, 1995; Kerlinger & Lee, 2000). The principal advantage of multiple regression is that it allows utilisation of more than one independent variable to estimate the dependent variable (Hammond, 1995).

In the present study, the effects of two independent variables (meaning and work involvement) on two dependent variables (work commitment and work motivation with their eight dimensions) were studied. The effects of the independent variables (meaning and work involvement) were assessed individually on each of the dependent variables on their own. In the first round of regression analyses, work involvement was entered in as the first regression step as independent variable on every assessment, whilst meaning was allowed to enter on the second step. Through this methodology, work involvement was “forced” into the Stepwise Multiple Regression Analysis in order to “force” a resultant calculated contribution of the strength of work involvement to “predict” each dependent variable (Table 65). On the second round, the usual approach to Stepwise Multiple Regression Analysis was followed and neither of the two independent variables was “forced” into the regression model (Table 66).

The information in Tables 65 and 66 is interpreted as follows:

Variables: The second column lists the dependent variables entered at each stage to “predict” the dependent variables listed in the first column.

F (df): This F value indicates the ratio of the regression mean square to the error mean square. This value demonstrates the strength of the contributions of the independent variable as entered stepwise and the dimensions of the dependent variables (Kaplan, 1990). The symbol (df) presents the degrees of freedom used in the computation at each step.

p: This symbol is an indication of the significance of the relationship of the independent and dependent variables as calculated at each step (Kaplan, 1990). It is therefore an estimation of the probability of a larger F value occurring by chance.

R^2 : The R^2 value is an indicator of how well the model fits the data (e.g., an R^2 close to 1.0 indicates that one has accounted for almost all of the variability with the variables specified in the model) (Babbie, 1998). The partial R^2 demonstrates the strength of contribution of the “prediction” of a variable at each step. The model R^2 demonstrates the combined strength of the “prediction” of the independent variables up to that step (Kaplan, 1990). This is seen as the variation in the dependent variable that can be ascribed to variation in the model of the independent variables.

C_p : In the final column, the C_p value represents a good fit where the C_p value first approaches the number of variables in the model (Kaplan, 1990). This author verifies that a variable is only entered into the model providing that it significantly and independently relates to the dependent variable.

The results of the Stepwise Multiple Regression Analysis in which meaning and work involvement as independent variables were regressed on the dependent variables are shown in Table 65. The statistical program was configured in this analysis in a manner that only independent variables that contributed to the model at the $p \leq 0.15$ significance level remained. Cases where the contribution was not at the $p \leq 0.15$ significance level are indicated with “X”.

Table 65

Stepwise Multiple Regression Analysis with work involvement “forced” into the regression model (N = 458)

Dependent Variable	Independent Variable	F (df = 457)	p value	R ² (Partial)	R ² (Model)	C(p)
Career	Workinv	X	X	X	X	X
	Meaning	130.68	<0.0001	0.2073	0.2783	3.00
Career1	Workinv	X	X	X	X	X
	Meaning	45.95	<0.0001	0.0916	0.0932	3.00
Career2	Workinv	X	X	X	X	X
	Meaning	108.53	<0.0001	0.1831	0.2326	3.00
Career3	Workinv	X	X	X	X	X
	Meaning	20.69	<0.0001	0.0383	0.1568	3.00
Jobinv	Workinv	X	X	X	X	X
	Meaning	X	X	X	X	X
Intrinsic	Workinv	X	X	X	X	X
	Meaning	53.84	<0.0001	0.1015	0.1421	3.00
Goal	Workinv	X	X	X	X	X
	Meaning	X	X	X	X	X
Goal1	Workinv	X	X	X	X	X
	Meaning	68.5	<0.0001	0.1288	0.1443	3.00
Goal2	Workinv	X	X	X	X	X
	Meaning	59.25	<0.0001	0.1152	0.1157	3.00
Values	Workinv	X	X	X	X	X
	Meaning	7.83	0.0053	0.0147	0.1490	3.00

The results from the Stepwise Multiple Regression Analysis as shown in Table 65 indicate that work involvement as independent variable did not contribute significantly ($p \leq 0.15$) on its own to the “prediction” of any of the dependent variables. Meaning made significant contributions ($p \leq 0.0001$) to the strength of the “prediction” of all the dependent variables, except for goal orientation (Goal) and job involvement, when work involvement was forced into the regression models.

In terms of the weak contribution of meaning to “predict” goal orientation (Goal), the moderate “predictions” of meaning for Goal1 (goals to learn, 12.88%) and Goal2 (accepting difficult goals, 11.52%) suggest that it might be the combined effect of the positive correlation (Table 62) of meaning with Goal 1 and the negative correlation with Goal 2 that present this result.

The ability of meaning to “predict” some of the career commitment dimensions with work involvement “forced” into the regression model is moderate to strong (Career = 20.73%, Career1 (career identity) = 9.16%, Career2 (career planning) = 18.31%). The ability of meaning to “predict” intrinsic motivation also appears to be moderate (10.15%). The ability of meaning to “predict” Career 3 (career resilience) and work values with work involvement “forced” into the model is weak (3.83% and 1.47%) respectively. As the C(p) values are the same as the number of variables in all the models (3.00), the Stepwise Multiple Regression Analysis suggests a good fit for all of the models when work involvement was “forced” into the models.

In the next analysis work involvement was not “forced” into the regression models. The results of this analysis are shown in Table 66.

Table 66

Stepwise Multiple Regression Analysis with work involvement not “forced” into the regression model (N = 458)

Dependent Variable	Independent Variable	F (df = 457)	p value	R ² (Partial)	R ² (Model)	C(p)
Career	Meaning	147.24	<0.0001	0.2441	0.2441	22.60
	Workinv	21.6	<0.0001	0.0343	0.2783	3.00
Career1	Meaning	46.79	<0.0001	0.0931	0.0931	1.07
	Workinv	X	X	X	X	X
Career2	Meaning	122.06	<0.0001	0.2112	0.211	13.69
	Workinv	12.69	0.0004	0.0214	0.2326	3.00
Career3	Meaning	61.25	<0.0001	0.1184	0.1184	21.69
	Workinv	20.69	<0.0001	0.0383	0.1568	3.00
Jobinv	Workinv	290.2	<0.0001	0.3889	0.3889	1.05
	Meaning	X	X	X	X	X
Intrinsic	Meaning	62.95	<0.0001	0.1213	0.1213	12.03
	Workinv	11.03	0.001	0.0208	0.1421	3.00
Goal	Workinv	6.33	0.0122	0.0137	0.0137	2.91
	Meaning	X	X	X	X	X
Goal1	Meaning	74.57	<0.0001	0.1405	0.1405	3.01
	Workinv	X	X	X	X	X
Goal2	Meaning	55.88	<0.0001	0.1092	0.1092	4.36
	Workinv	3.36	0.0674	0.0065	0.1157	3.00
Values	Workinv	70.76	<0.0001	0.1343	0.1343	8.83
	Meaning	7.83	0.0053	0.0147	0.1490	3.00

The Stepwise Multiple Regression Analysis as shown in Table 66 indicates that meaning made significant contributions (at least $p \leq 0.0053$) to the strength of the “prediction” of all the dependent variables, except for goal orientation (Goal) and job involvement. Meaning made stronger contributions than work involvement to “predict” all the dependent variables, except for the “prediction” of job involvement (no statistically significant contribution), goal orientation (Goal1) and work values. Again, in terms of the weak contribution of meaning to “predict” goal orientation (Goal), the moderate “predictions” of meaning for Goal1 (goals to learn, 14.05%) and

Goal2 (accepting difficult goals, 10.92%) suggest that it might be the combined effect of the positive correlation (Table 62) of meaning with Goal 1 and the negative correlation with Goal 2 that present this result.

The ability of meaning to “predict” some of the career commitment dimensions is relatively strong in the case of Career = 24.41%, weak in the case of Career1 (career identity) = 9.31% and Career3 (career resilience) = 11.84% and moderate when Career2 (career planning) is the dependent variable (21.12%). The ability of meaning to “predict” intrinsic motivation also appears to be moderate (12.13%). The ability of meaning to “predict” work values is weak (1.47%).

The results of Table 65 and Table 66 are compared in Table 67 to assess the role of work involvement to act as a moderating variable between meaning and the dependent variables. The second column indicates the partial contribution of meaning to “predict” the dependent variables in the Stepwise Multiple Regression Analysis where work involvement (WI) was “forced” into the regression models. The second column in Table 67 indicates the partial contribution of meaning to “predict” the dependent variables in the Stepwise Multiple Regression Analysis without work involvement (WI) being “forced” into the regression models.

Table 67

Partial contribution of meaning to predict dependent variables (N = 458)

Dependent Variable	Partial contribution of meaning (R ²)		Common variance difference
	WI “forced” into model	WI not “forced” into model	
Career	0.2073	0.2441	-1.66%
Career1	0.0916	0.0931	-0.03%
Career2	0.1831	0.2112	-1.11%
Career3	0.0383	0.1184	-1.26%
Jobinv	X	X	X
Intrinsic	0.1015	0.1213	-0.44%
Goal	X	X	X
Goal1	0.1288	0.1405	-0.32%
Goal2	0.1152	0.1092	0.13%
Values	0.0147	0.0147	0.00%

It appears from Table 67 that work involvement does not act as a moderating variable between meaning and the dependent variables. On the contrary, the partial contribution of meaning to “predict” the dependent variables *increased*, but apparently only marginally, on all but one of the models when work involvement was not “forced” into the models.

4.6. A MODEL OF RELATIONSHIPS

This section presents the results on the seventh research question. In other words, whether the postulated model of relationships (Figure 1) between the dependent and independent variables does exist.

Andrews, Klem, O'Malley, Welch, and Davidson (1998) recommend that Structural Equation Modelling (SEM) is the correct statistical technique to be used in research where a distinction is made between dependent and independent variables, where relationships among the variables are to be treated as additives, and where the analysis include at least one intervening variable. Furthermore, Hoyle (1995)

describes SEM as a comprehensive statistical approach to testing hypotheses about relationships among observed and latent variables.

As the postulated model satisfies the recommendations of Andrews et al. (1998), SEM was viewed as the correct statistical technique to analyse the postulated relationships in the model. Figure 53 illustrates the postulated model of relationships (Figure 1) as a Structural Equations model.

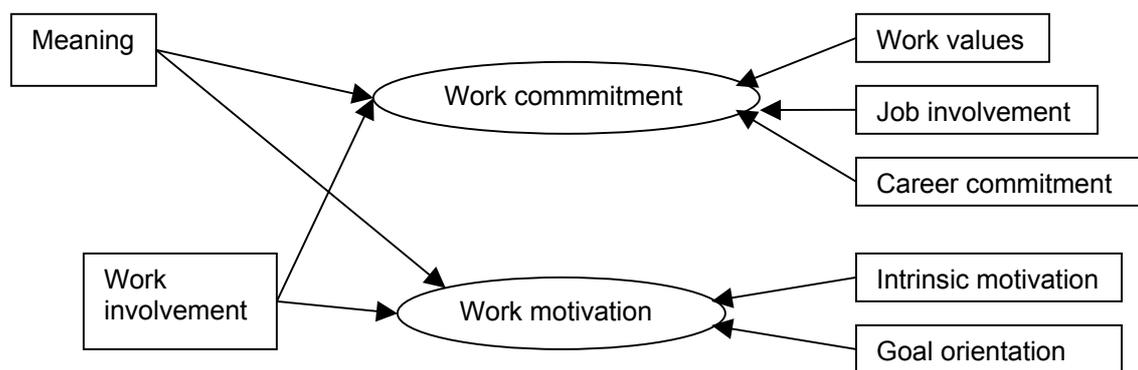


Figure 53. Theoretical Structural Equations model of the postulated relationships.

However, Bentler and Chou (1987) caution against “data snooping”, that is to capitalise on chance associations in the data. In other words, unless the model is based on well-established theory, one might capitalise on chance associations in the data with Structural Equations Analysis (Bentler & Chou, 1987). Bentler and Chou (1987) state that the statistical theory of SEM is based on the fundamental premise that the model itself has been specified completely prior to any analysis of data. That is, the model represents an a priori set of hypotheses, as was the case in the present study. Hair, Anderson, Tatham, and Black (1995) define theory in this regard as the systematic set of relationships providing a consistent and comprehensive explanation of a phenomenon.

With regard to the postulated model of relationships, the relationships amongst work involvement, work commitment and work motivation had previously been studied empirically (Cohen, 1999, 2000; Randall & Cote, 1991). However, the relationship

between meaning and these variables had not previously been studied empirically as far as could be determined, except for the attempt by Sargent (1973) who did not find concluding results. The postulated model is therefore not based on empirical theory, but rather on an inductive conceptualisation of existing theories. Furthermore, the Spearman's Correlation Coefficients (reported in section 4.4) indicated a lack of significant relationships between meaning and work commitment. The Spearman's Correlation Coefficients (reported in section 4.4) indicate that the postulated relationships between meaning and some of the dimensions of work involvement and work motivation are not statistically significant. These weak relationships suggest that the postulated model is not an adequate representation of the relationships. Furthermore, the results from the Stepwise Multiple Regression and Partial Correlations (reported in section 4.5) suggest that work involvement does not act as a moderating variable between meaning and the dependent variables.

Based on the caution of Bentler and Chou (1987) that models which are not theoretically sound should not be tested, it was decided not to subject the postulated relationship model to SEM. This is an explorative study, combined with the lack of statistically significant relationships between meaning and some of the dimensions of the dependent variables. Furthermore, work involvement does not act as an intervening variable. Combined, these findings gave rise to a concern that a good fit of the postulated model with the data could be a case of capitalising on chance associations in the data. The theoretically conceptualised Structural Equations Model (Figure 53) was therefore rejected.

A new model was developed to represent only the strongest empirical relationships found in the present study (the Spearman's Rho correlation coefficients as presented in Table 62) between meaning and dimensions of the dependent variables. This model was based on the same argumentative logic as the theoretically derived model in Figure 1. However, the dependent variables that showed weak Spearman's Rho correlations with the other variables were removed from the theoretical model in developing the empirical model. A slight adjustment to the theoretical derived model was also made in terms of the positioning of intrinsic motivation. This adjustment was based on the prevalence of moderately strong correlations between intrinsic motivation and some of the dependent variables. It was argued that intrinsic

motivation could form part of the path between meaning and dimensions of work commitment and work motivation that showed statistically significant relationships with intrinsic motivation. The empirically derived model is shown in Figure 55. The numbers next to the various paths are the Spearman's Rho correlation coefficients as shown in Table 62.

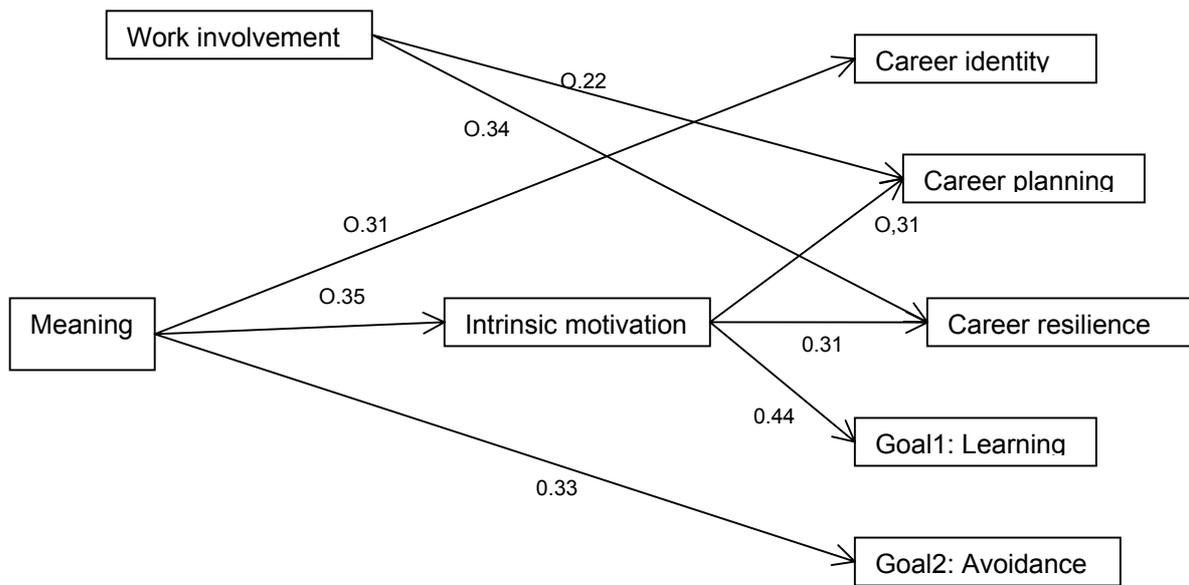


Figure 54. Empirically derived Structural Equations Model of relationships

This empirically derived model was subjected to SEM, and the results are shown in Table 68.

Table 68

Indices obtained from Structural Equations Analysis of the empirical derived relationship model (N = 458)

Indices	Value
Fit function	18.0692
Goodness of Fit Index (GFI)	0.3459
GFI Adjusted for Degrees of Freedom (AGFI)	0.2948
Root Mean Square Residual (RMR)	0.2062
Parsimonious GFI	0.3323
Chi-Square	8239.5674
Chi-Square (df = 26106, p > Chi-Square = 0.0001)	1533
Independence Model Chi-Square	11414
Independence Model Chi-Square DF	1596
RMSEA Estimate	0.0979
RMSEA 90% Lower Confidence Limit	0.0
RMSEA 90% Upper Confidence Limit	0.0
ECVI Estimate	18.6722
ECVI 90% Lower Confidence Limit	18.0192
ECVI 90% Upper Confidence Limit	19.3443
Probability of Close Fit	0.0
Bentler's Comparative Fit Index	0.3169
Normal Theory Reweighted LS Chi-Square	24570.5835
Akaike's Information Criterion	5173.5674
Bozdogan's (1987) CAIC	-2682.5722
Schwarz's Bayesian Criterion	-1149.5722
McDonald's (1989) Centrality	0.0007
Bentler and Bonnet's (1980) Non-normed Index	0.2889
Bentler and Bonnet's (1980) NFI	0.2781
James, Mulaik and Brett (1982) Parsimonious NFI	0.2672
Z-test of Wilson and Hilferty (1931)	62.4443
Bollen (1986) Normed Index Rho1	0.2485
Bollen (1988) Non-normed Index Delta2	0.3213
Hoelter's (1983) Critical N	91

Hoyle (1995) notes that the most common index of fit between the model and the data is the chi-square goodness-of-fit. He also notes that fit indices varying between 1.0 and 0.90 are widely accepted as values such indices must exceed before a model can be viewed as consistent with the data from which it was estimated. The indices in Table 68 therefore indicate a rather poor fit of the model with the data (the highest GFI index = 0.33). Explanation of this poor fit must essentially be sought in the difficulties of constructing a model of this nature – no previous study, as far as could be determined, has been done with all the variables which were included in the present study.

It was in terms of the theory of Structural Equations Analysis not deemed advisable to modify the model further based on empirical results on the same set of data. This line of analysis was in terms of the principles of SEM to not pursue derived models as they could lead to quite heavy capitalisation on chance (Hair et al., 1995). It is therefore accepted that in a future study a model could be built which would possibly represent a better fit with the data. It would be preferable that the underlying theory of the role of meaning in work and in the workplace should be strengthened before such a model could be built.