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FLOW AND QUALITY OF WORK LIFE IN A DIVERSE WORKFORCE

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OPSOMMING

Die hoofdoel van die studie was om die verhouding tussen psigologiese vloei (optimale ervaring) en gehalte van werklewe in 'n diverse werksmag vas te stel. Die steekproef het uit 307 bestuurders, middelbestuurders en junior amptenare van 'n privaatmaatskappy bestaan. Die steekproef is uit alle organisasiefunksies en kultuurgroepe binne die organisasie getrek. 'n Vraelys wat psigologiese vloei-ervarings meet, is ontwikkel. Die psigologiese vloei-faktore het statisties beduidend met gehalte van werklewe-faktore gekorreleer. Die implikasies van die bevindinge word bespreek.

ABSTRACT

The principal aim of the study was to determine the relationship between flow (optimal experience) and quality of work life in a diverse workforce. The sample comprised 307 managers, middle-managers and junior officials from a private company. The sample was drawn from all organisational functions and cultural groups within the organisation. A questionnaire was developed to measure flow experience. The flow factors correlated statistically significantly with the quality of work life factors. The implications of these findings are discussed.

It is common for people to experience a sense of meaninglessness in contemporary life. People experience this meaninglessness in the work place as alienation from their work. This occurs regardless of the fact that today they are healthier, life expectancy is higher and they possess material goods far superior to those of a few years ago. The challenge today is to bring meaning and job satisfaction back to the work place. Csikszentmihalyi (1975, 1988, 1990, 1993) did research on this issue particularly in the field of optimal experience. He discovered that certain people were able to experience a deep sense of enjoyment when their attention was concentrated on an activity where skills and challenges were balanced. These people involved in enjoyable activities reported common autotelic experiences. An autotelic experience is an experience that is rewarding in and of itself: people will partake in an activity for the sheer sake of the activity with no external rewards being offered; their participation, in other words, is solely the result of intrinsic motivation (Csikszentmihalyi & Csikszentmihalyi, 1988; Rathunde, 1988).

Csikszentmihalyi and Csikszentmihalyi (1988) discovered that autotelic experiences can be produced by diverse activities such as painting, playing chess, reading, rock climbing, dancing and composing music. People involved in these activities typically report feeling strong, alert, in effortless control and at the peak of their abilities. A sense of time and emotional problems seem to disappear (Csikszentmihalyi, 1990). There are even people who are involved in activities as monotonous as those of the production line that experience these feelings. This sensation or state is called "flow" since this was the term used by people to describe how it felt when their experiences were most enjoyable. People *make* this state of flow or optimal experience happen. Hume (1992) indicates that flow is what it feels like inside when an individual is producing at his or her very best. It is during these types of experiences that one learns more effectively.

People's daily experience rarely produces a balance between challenges (perceived in a given situation) and skills (that a person brings to it). This is attributed to the fact that there is either too much to do, which causes anxiety, or too little to do, which causes boredom. Optimal experience of flow requires a balance between challenges and skills. It is because of this balance that flow takes place in structured activities in which the level of challenges and skills can be varied and controlled (Csikszentmihalyi, 1990).

Csikszentmihalyi (1990, p. 74) states that flow activities "provided a sense of discovery, a creative feeling of transporting the person into new realities. ... it transformed the self by making it more complex." This may be explained by using a diagram. Assume that Figure 1 represents a specific activity – for example, operating a computer. Challenges and skills are represented on the two axes of the diagram. The letter "C" represents Christine who is learning how to operate a computer. On starting to learn how to use a computer (C1) Christine has almost no skills and the only challenges she faces is switching the computer on and typing on a simple word processing programme. At this point Christine would most probably be enjoying the activity because the difficulty fits her basic skills. As she keeps operating the computer, her skills are likely to improve and she will grow bored just switching the computer on and typing on a simple programme (C2). It may also happen that she is introduced to a more complex programme which leads her to realise that there are more difficult challenges. This leaves her feeling some anxiety (C3) because of her poor performance with the new programme.

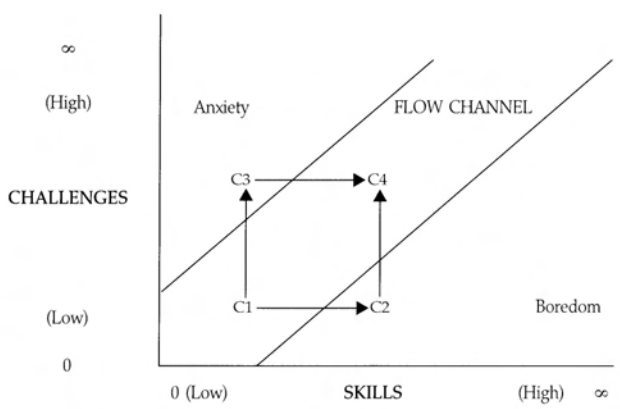

Figure 1: Why the complexity of consciousness increases as a result of flow experience. (Adapted from Csikszentmihalyi, 1990)

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Neither boredom nor anxiety are positive experiences which motivate Christine to return to the flow state. Thus, if Christine is anxious (C3) she needs to increase her skills to return to flow (C4). If she is bored (C2) and wants to return to the flow state, she has to increase the challenges facing her. This will lead her into flow (C4) again.

The two states of flow C1 and C4 are equally enjoyable but rather different as C4 is a more complex experience than C1, because it requires greater skills and challenges for the computer operator. It should be noted, though, that C4, although enjoyable and complex, does not represent a stable situation.

According to Csikszentmihalyi (1990), it is this dynamic characteristic that demonstrates why flow activities give rise to development and discovery. New skills and opportunities are sought after once people become bored and frustrated.

The structure of the activity alone does not determine if flow will take place or not. The person who recognises the challenges in a situation determines whether the activity produces flow rather than anxiety or boredom. Logan (1985) states that individuals have to go to unusually great lengths to create or find activities that are highly enjoyable. Certain individuals who cope successfully are usually able to create flow experiences. The ability to experience flow might be a result of individual personality differences, but this ability can be learned. It becomes easier to attain the needed balancing of challenges and skills once such skills are learned (Csikszentmihalyi, 1990). People who use opportunities in their environment to their advantage have a better developed quality of experience than those who resign themselves to their limitations (Csikszentmihalyi, 1990).

Eight characteristic dimensions are noted and mentioned by individuals when flow is experienced (Csikszentmihalyi, 1990; Csikszentmihalyi, 1993):

- Clear goals are set and immediate, unambiguous feedback is provided.
- Personal skills are well suited to given challenges.
- Action and awareness merge to ensure a single focus of the mind.
- Concentration on the task at hand.
- A sense of potential control.
- Concern for the self disappears, yet paradoxically the sense of self emerges stronger after the flow experiences is over.
- The sense of the duration of time is altered – it usually seems to pass faster.
- Experience becomes autotelic or worth doing for its own sake.

Flow states are similar to the passing moments of self-actualisation that Maslow (1968) called peak experiences (Kubey and Csikszentmihalyi, 1990). Privette (1983) states that flow is also comparable to peak performance. Present in flow experiences is the enjoyment of peak experience and the behaviour of peak performance. Flow experiences, however, do not necessarily suggest optimal performance or joy but may encompass either or both.

Because the greater part of most adults' life is spent at work, LeFevre (1988) proposed the idea that well-being on and off the job relates to the opportunities for self-actualisation and growth available at work. This again in the last instance is dependent on the nature of the job. Studies done by Csikszentmihalyi and Csikszentmihalyi (1988) indicate that in occupations that involve high levels of challenges and skills, well-being will be enhanced by increasing self-actualisation through flow. It is a fact that work can be either awful and boring, or enjoyable and exciting. Csikszentmihalyi (1975, 1990) states that, in theory, any job could be changed so as to make it more enjoyable by following the prescriptions of the flow model. The important point, then, is that, if workers really enjoyed their jobs they would not only benefit personally, but sooner or later they would almost certainly produce more efficiently.

It appears from previous research by Csikszentmihalyi and Csikszentmihalyi (1988) that there is a relationship between flow and well-being on and off the job. It has also already been established that flow correlates statistically significantly with life satisfaction and quality of experience (Carli, DelleFave & Massimini, 1988; Han, 1988) Furthermore, Csikszentmihalyi (1993) states that the directly measureable effets of flow include: creativity, peak performance, talent development, productivity, higher self-esteem, stress reduction and clinical applications such as psychotherapy. Findings by Csikszentmihalyi and Csikszentmihalyi (1988) however, indicate that increased flow experiences of employees in the workplace will lead to improved quality of experience. These findings further suggest that when jobs are restructured to increase flow in the workplace all employees will benefit. Therefore, the purpose of this study is to determine whether flow has a significant relationship with quality of work life.

The quality of work life (hereafter referred to as QWL) refers to a management philosophy that improves employee dignity, employee well-being and introduces organisational culture change (Ivancevich & Matteson, 1990). If the definition of Gray and Starke (1988, p. 643) is used, QWL is defined as "the degree to which members of a work organisation are able to satisfy important personal needs through their experiences in the organisation." Liversage (1991, p. 2) combines the philosophy and global outcome approaches to QWL as follows: "Quality of work life refers to an enhanced overall relationship between employees and other organisational sub-systems resulting from a set of beliefs that an organisation can improve individual and company outcomes by acknowledging the diversity of needs and legitimate desires of its employees, and by modifying sub-systems to accommodate them." Gray and Stark (1988) suggest that a poor QWL implies that no career fulfilment exists for employees and their work is likely to be tolerated only as a means to an economic end. The resultant of this phenomenon is absenteeism, alcohol and drug abuse, personal stress, boredom on the job and labour management conflict.

In the description of QWL interventions the following basic conceptual criteria are offered by Hase in Mandell (1989):

- Adequate and fair compensation.
- Safe and healthy working conditions.
- Immediate opportunity to use and develop human capacities.
- Future opportunity for continued growth and security.
- Social integration in the work organisation.
- Constitutionalism in the work organisation.
- Work and the total life space.
- Social relevance of work.

With these listings in mind certain basic assumptions underlie all QWL programmes. An important assumption is that job satisfaction and employee motivation will increase with the introduction of QWL activities such as job redesign and employee participation. Another important assumption is that higher job satisfaction will lead to increased productivity (Hian & Einstein, 1990; Mandell, 1989). Research has shown the difficulty of evaluating the validity of these assumptions because of the impossibility of establishing a correlation between attitudes and productivity. Lawler (1992) points out that QWL activities consistently improve employee well-being and satisfaction. However, he states that improved employee satisfaction does not necessarily lead to improved productivity in the short term but may yield some improved gains in productivity in the long term.

The discussion of flow has shown that flow experiences at work lead to improved productivity (Csikszentmihalyi & Csikszentmihalyi, 1988). From this it appears that the costs of poor QWL can be eliminated when optimal experience (flow) is achieved in the work place. A study to determine the relationship between flow and QWL should cast further light on the relation between these two variables.

It would appear that flow experience is universal. Csikszentmihalyi and Csikszentmihalyi (1988) indicate that the important dimensions of flow are identified in similar ways by people all over the world. They are not language or culture bound. If the social and work environment is conducive to flow, people with different cultural, gender, age, language or educational backgrounds will experience flow in similar forms. If this, however, is not the case then the social and work environment has to be changed to make them conducive to flow. People will also have to be educated to enable them to experience flow irrespective of their social or work environment (Csikszentmihalyi and Csikszentmihalyi, 1988).

The primary purpose of this study is to investigate the relationship between flow and quality of work life in a diverse workforce.

The problem of the study may be stated as follows:
- Do people in a diverse workforce who report more frequent flow experience also report greater quality of work life?

The following research hypotheses have been formulated for this study:

Hypothesis 1:
There will be statistically significant positive correlations between flow measurements on the one hand and quality of work life measurements on the other hand. The rationale for this hypothesis rests on the findings of Csikszentmihalyi and Csikszentmihalyi (1988), namely that increased flow experiences of employees in the workplace will lead to improved quality of experience.

Hypothesis 2:
There will be a statisically significant difference between the vectors of means of males and females in respect of the flow variables. The rationale for this hypothesis rests on the fact that males are still in an advantage position in organisations, even though this is probably occurring to a lesser extent today. Males and females will differ statistically significantly, such that males will report more frequent flow experiences than females.

Hypothesis 3:
There will be statistically significant differences between the vectors of means of the four cultural groups – White, Black, Coloured and Asian – in respect of the flow variables. The rationale for this hypothesis rests on the fact that South Africa has been characterised by an unbalanced society where the investment in human resources has been racially skewed. The four cultural groups will differ statistically significantly, such that the more privileged group will report more frequent flow experiences.

Hypothesis 4:
There will be statistically significant differences between the vectors of means of the three academic qualification groups – lower than matric, matric and tertiary qualification – in respect of the flow variables. The rationale for this hypothesis rests on the findings of Csikszentmihalyi and Csikszentmihalyi (1988), namely that individuals with a high academic qualification invest their time in tasks required to develop their intellectual potential in the work place. Individuals with lower academic qualifications tend to avoid anxiety by spending less time in productive and challenging situations. The three academic qualification groups will differ statistically significantly, such that employees with higher academic qualifications will report more frequent flow experiences.

METHOD

The organisation from which the sample was drawn is a private company. The organisation consists of an administrative head office and six regional offices throughout the country.

The test sample comprised 307 employees selected from a population of 3022. These employees were selected from line managers, middle-managers and junior officials. The sample was drawn from all organisational functions and cultural groups within the organisation. Table 1 sets out the distribution of employees with regard to certain demographic information.

TABLE 1
COMPOSITION OF POPULATION AND SAMPLE

	POPULATION		SAMPLE	
	NUMBER	PERCENTAGE	NUMBER	PERCENTAGE
JOB GRADE				
Managers	31	1,0	6	2,0
Middle-managers	237	7,9	70	22,8
Junior officials	2754	91,4	231	75,2
GENDER				
Male	2674	88,5	248	80,8
Female	348	11,5	59	19,2
CULTURAL GROUPS				
Whites	1596	52,8	225	73,3
Blacks	1053	34,8	38	12,4
Coloureds	304	10,1	30	9,8
Asians	69	2,3	14	4,5
ACADEMIC QUALIFICATIONS				
Lower than matric	700	23,2	106	34,5
Matric	184	6,1	119	38,8
Tertiary qualifications	2138	70,7	82	26,7

Measuring Instruments

-Organisation Diagnostic Questionnaire (ODQ)

The ODQ has been specifically constructed for the purpose of determining individual attitudes and perceptions towards the five different factors it measures: organisation climate, work group processes, task characteristics, supervisory leadership, satisfaction outputs. A number of subfactors in each of these categories are also measured.

Because the purpose of this study is to investigate the relationship between flow and QWL, a comprehensive measure of QWL is necessary. The ODQ yields measures of the abovementioned areas that ensure a reliable measure of QWL. A combined measure of all the factors in the questionnaire will be used. Previous researchers (Coetser, 1980; Coster, 1981; Van Pletsen, 1986) have confirmed the reliability and validity of the questionnaire.

Coster (1981) reports that the ODQ is primarily based on the Michigan Organization Assessment Questionnaire (Camman, Fickman, Jenkins & Klish, 1978) and the Survey of Organisations (Bowers & Franklin, 1976).

-Flow Experience Survey (FES)

Based on the research done by Csikszentmihalyi (1975, 1988, 1990, 1993), 56 items were designed to form the Flow Experience Survey. The questionnaire was designed to measure flow experience. Csikszentmihalyi's Flow Questionnaire (1993) was also used as a source during the compilation of the Flow Experience Survey. Each time the questionaire was presented in the form of a seven-point scale. This format is appropriate as it allows for a wide range of responses from very unfavourable to extremely favourable. All the questions and instructions were presented in both English and Afrikaans. In its complete form, the Flow Experience Survey consists of three sections: an instruction section, a biographical information section and the questionnaire with the 56 items.

Procedure

400 copies of each questionnaire were distributed among the six regional offices of the organisation, including the head office. A covering letter that explained the purpose of the survey was included in the questionnaires. A contact person at each regional office assisted with the distribution and collection of the questionnaires.

Statistical analysis

A factor analysis was carried out on the Flow Experience Survey to ascertain the dimensionality of the vector space of test items.

Differentially skew items that are subjected to a factor analysis tend to yield more factors than exist in the real vector space. A second-order factor analysis then becomes necessary. The first-order factor analysis produces multiple factors, some of which are artefactors (artificial factors).

According to Schepers (1992), the problem of artefactors may be addressed by determining subscores for each of the first-order factors. The subscores are then intercorrelated and a second-order factor analysis is done. Once the true factors have been identified by the second-order factor analysis, a separate item analysis is done for each second-order factor. The item analysis ensures that items with low indices of reliability ($r_{gs}s_g$) are excluded. The reliability of measures are also assessed by the item analysis, according to Cronbach's coefficient alpha. The item analysis is performed using the NP50 programme. Pearson product-moment correlations were computed to determine the direction and magnitude of the correlations between flow and QWL.

RESULTS

The 307 questionnaires that were returned were statistically analysed. The 56 items of the questionnaire were intercorrelated and subjected to a first-order factor analysis which yielded 15 factors rotated to simple structure by means of varimax rotation. Because the intercorrelation matrix is of magnitude 56 x 56, it is too large to reproduce in this paper.* According to Kaiser's (1961) criterion those factors with eigenvalues larger than unity should be extracted.

Subscores for each of the 15 factors were computed and these subscores were intercorrelated and subjected to a second-order factor analysis (Table 2). The factor matrix was obliquely rotated to simple structure using the Direct Oblimin procedure (Table 3). Three second-order factors were extracted by this process, but only two factors were considered meaningful (Table 4). The third factor, with only three items, was discarded.

TABLE 2
THE MATRIX OF INTERCORRELATIONS OF SUBSCORES IN RESPECT OF THE FLOW EXPERIENCE SURVEY

	Subscore 1	Subscore 2	Subscore 3	Subscore 4	Subscore 5	Subscore 6	Subscore 7	Subscore 8	Subscore 9	Subscore 10	Subscore 11	Subscore 12	Subscore 13	Subscore 14	Subscore 15
Subscore 1	1,0000														
Subscore 2	0,3496	1,0000													
Subscore 3	0,4456	0,3112	1,0000												
Subscore 4	0,5286	0,3271	0,4644	1,0000											
Subscore 5	0,5534	0,2740	0,5229	0,5212	1,0000										
Subscore 6	0,6712	0,1927	0,4021	0,4500	0,4805	1,0000									
Subscore 7	0,5654	0,3516	0,5268	0,5288	0,5542	0,4516	1,0000								
Subscore 8	0,6079	0,2076	0,4423	0,4350	0,5813	0,4911	0,5345	1,0000							
Subscore 9	0,3151	0,3345	0,4074	0,2347	0,3511	0,2677	0,3526	0,2759	1,0000						
Subscore 10	-0,3123	0,0894	-0,0871	-0,1870	-0,2416	-0,2831	-0,2307	-0,3491	0,0471	1,0000					
Subscore 11	0,2188	0,5646	0,2737	0,1462	0,1785	0,0865	0,3031	0,0929	0,2257	0,1463	1,0000				
Subscore 12	0,4981	0,3923	0,3782	0,4601	0,3382	0,3969	0,4080	0,3738	0,2113	-0,1841	0,3363	1,0000			
Subscore 13	-0,4295	-0,1344	-0,4043	-0,3414	-0,4251	-0,3425	-0,4182	-0,3596	-0,2506	0,3457	-0,1191	-0,3437	1,0000		
Subscore 14	0,1532	0,1906	0,3199	0,0880	0,2769	0,1027	0,2211	0,1048	0,1869	0,0062	0,1474	0,0834	-0,0683	1,0000	
Subscore 15	-0,2210	0,0368	0,0802	-0,1138	-0,0263	-0,1724	-0,0017	-0,1362	0,0915	0,2057	0,0636	-0,0147	0,0845	0,0984	1,0000

Using the NP50 programme, an item analysis was performed in respect of Factor I (Enjoyment) with 42 items (Table 5) and Factor II (Control of Consciousness) with 11 items (Table 6). During the iterative process, four items from Factor I (Enjoyment) were rejected – namely, items 1, 27, 30 and 48. This scale has an overall reliability of 0,946 according to Cronbach's coefficient alpha. All the items were kept during the iterative procedure of Factor II (Control of Consciousness). This scale has an overall reliability of 0,829 according to Cronbach's coefficient alpha.

*This information is available from the authors on request.

TABLE 3
ROTATED FACTOR MATRIX OF THE FLOW EXPERI-

	FACTOR I	FACTOR II	FACTOR III
Subscore 1	0,765	0,217	-0,192
Subscore 2	0,060	0,777	-0,006
Subscore 3	0,571	0,075	0,445
Subscore 4	0,599	0,164	-0,009
Subscore 5	0,728	-0,032	0,269
Subscore 6	0,691	0,043	-0,107
Subscore 7	0,645	0,163	0,173
Subscore 8	0,743	-0,037	0,008
Subscore 9	0,298	0,173	0,314
Subscore 10	-0,520	0,251	0,228
Subscore 11	-0,057	0,715	0,031
Subscore 12	0,425	0,391	-0,126
Subscore 13	-0,573	0,028	-0,040
Subscore 14	0,162	0,035	0,356
Subscore 15	-0,197	0,015	0,394

TABLE 4
MATRIX OF INTERCORRELATIONS OF ROTATED FACTORS

	FACTOR I	FACTOR II	FACTOR III
FACTOR I	1,000		
FACTOR II	0,305	1,000	
FACTOR III	0,046	0,330	1,000

TABLE 6
ITEM STATISTICS IN RESPECT OF THE SECOND FACTOR OF THE FLOW EXPERIENCE SURVEY

Item	$r_{gx}s_g$	r_{gx}	s_g
Q2	0,792	0,520	1,522
Q5	0,996	0,622	1,601
Q6	1,022	0,656	1,559
Q7	1,039	0,665	1,561
Q8	0,885	0,601	1,473
Q9	1,062	0,608	1,746
Q10	1,083	0,672	1,612
Q11	0,974	0,579	1,681
Q12	0,698	0,505	1,381
Q13	1,055	0,678	1,555
Q28	0,856	0,577	1,483

$r_{gx}s_g$ = Index of reliability of item g
r_{gx} = Correlation of item g with total score
s_g = Standard deviation of item g

TABLE 5
ITEM STATISTICS IN RESPECT OF THE FIRST FACTOR OF THE FLOW EXPERIENCE SURVEY

Item	$r_{gx}s_g$	r_{gx}	s_g
Q1*	0,261	0,201	1.298
Q3	0,585	0,441	1.328
Q4	0,815	0,563	1.448
Q14	0,603	0,468	1.289
Q15	0,806	0,549	1.469
Q16	0,770	0,519	1.484
Q17	0,639	0,584	1.093
Q18	0,521	0,452	1.154
Q19**	0,718	0,463	1.550
Q20	0,852	0,625	1.365
Q21	0,894	0,714	1.252
Q22	0,865	0,656	1.318
Q24	0,617	0,525	1.175
Q25	0,553	0,526	1.050
Q26	0,665	0,531	1.253
Q27*	-0,137	-0,078	1.770
Q29	0,886	0,566	1.564
Q30*	0,320	0,173	1.847
Q31	0,892	0,541	1.648
Q32	0,862	0,590	1.461
Q35	0,985	0,650	1.515
Q36	0,915	0,712	1.286
Q37	0,926	0,628	1.475
Q38	1,017	0,701	1.450
Q39	0,786	0,646	1.216
Q40	0,638	0,436	1.463
Q41	0,745	0,588	1.267
Q42	0,779	0,610	1.277
Q43	0,912	0,658	1.385
Q44	0,800	0,579	1.382
Q45	0,899	0,569	1.580
Q46**	0,763	0,458	1.665
Q47	0,773	0,666	1.161
Q48*	0,386	0,383	1.008
Q49	1,010	0,731	1.381
Q50	0,848	0,599	1.417
Q51	0,842	0,634	1.327
Q52	0,799	0,501	1.595
Q53	0,816	0,546	1.496
Q54	0,965	0,632	1.526
Q55	0,997	0,664	1.501
Q56	0,804	0,583	1.380

$r_{gx}s_g$ = Index of reliability of item g
r_{gx} = Correlation of item g with total score
s_g = Standard deviation of item g
* = Rejected items
** = Reflected items

The primary purpose of this study was te determine the relationship between flow and QWL. Pearson product-moment correlations were used to identify the direction and magnitude of the relationship between flow and QWL. The

two scales were correlated in respect of each of the sub-factors. Table 7 shows the coefficients. It is apparent from this table that the scores of flow correlate statistically significantly positively with the scores of QWL. In other words, positive correlations exists between these two scales. **Hypothesis 1** is therefore supported.

An ancillary objective of the study was to determine whether there are any gender differences in respect of flow experiences. For this purpose Hotelling T^2 was used. Furthermore, to determine whether the cultural groups differed from one another in respect of flow experiences, multivariate analysis of variance (MANOVA) and analysis of variance (ANOVA), followed by Scheffé's post hoc multiple comparison technique was used. Similarly, to see whether academic qualifications made a difference in respect of flow experiences, MANOVA and ANOVA were used followed by Scheffé's post hoc multiple comparison technique.

From the results of Table 8, the deduction can be made that there is no statistically significant difference (p=0,3419) between the vectors of means of males and females in respect of the flow factors X1 (Enjoyment) and X2 (Control of Consciousness). From the same table, there are no statistically significant differences between the mean test scores of males and females in respect of the flow variable X1 (Enjoyment) and X2 (Control of Consciousness) taken separately. In the light of these findings there is no support for **Hypothesis 2**.

The following deductions can be drawn from the results of Tables 9 and 10:

There is a statistically significant difference (p=0,0175) between the vectors of means of the four cultural groups (White, Black, Coloured and Asian) in respect of the flow factors X1 (Enjoyment) and X2 (Control of Consciousness). In particular there is a statistically significant difference (p=0,0027) between the means of the four cultural groups (White, Black, Coloured and Asians) in respect of the flow factor X1 (Enjoyment).

According to Scheffé's test there is a statistically significant difference between the mean scores in respect of the flow factor X1 (Enjoyment) between Whites and Coloureds; Blacks and Coloureds; Asians and Coloureds. Coloureds reported more frequent flow experiences than Whites, Blacks or Asians in respect of the flow factor X1 (Enjoyment). Blacks followed by Asians reported the least frequent flow experiences in respect of the flow factor X1 (Enjoyment). Whites reported the second most frequent flow experiences. In view of Scheffé's results with regard to Hypothesis 3, the overall hypothesis is supported but the directional hypothesis is not supported.

From Tables 11 and 12 the following deduction can be drawn:

There is a statistically significant difference (p=0,0159) between the vectors of means of the three academic qualification groups (lower than matric, matric and tertiary qualification) in respect of the flow factors X1 (Enjoyment) and X2 (Control of Consciousness). In particular there is a statistically significant difference (p=0,0244) between the means of the three academic qualification groups in respect of the flow factor X1 (Enjoyment).

According to Scheffé's test there is a statistically significant difference between the mean scores in respect of the flow factors X1 (Enjoyment) between people with less than matric and people with matric; people with less than matric and people with a tertiary education. People with educational qualifications less than matric reported more frequent flow experiences in respect of the flow factor X1 (Enjoyment) than those with matric or tertiary education. People with a tertiary education followed by people with matric, reported the least frequent flow experiences in respect of the flow factor X1 (Enjoyment). In view of Scheffé's results with regard to **Hypothesis 4,** the overall hypothesis is supported but the directional hypothesis is not supported.

TABLE 7
CORRELATION COEFFICIENTS OF THE FLOW EXPERIENCE SURVEY (X1, X2) WITH THE ORGANISATION DIAGNOSTIC QUESTIONNAIRE (Y1, Y2, Y3, Y4, Y5)

Organisation Diagnostic Questionnaire	Flow Experience Survey	
	X1	X2
Y1	0,4803**	0,1120*
Y2	0,4064**	0,1542**
Y3	0,7109**	0,2419**
Y4	0,4785**	0,1775**
Y5	0,4655**	0,1323*

* Statistically significant at 5%
** Statistically significant at 1%

TABLE 9
MULTIVARIATE ANALYSIS OF VARIANCE (MANOVA) AND ASSOCIATED ANALYSES OF VARIANCE (ANOVA) FOR CULTURAL GROUPS IN RESPECT OF THE FLOW FACTORS.

Wilks' Coefficient Lambda	F VALUE	DF	P VALUE
0,950487	2,59	6 and 604	0,0175*
X1	4,81	3 and 303	0,0027*
X2	1,29	3 and 303	0,2772

* Statistically significant

TABLE 8
HOTELLING'S T^2: SIGNIFICANCE OF THE DIFFERENCES BETWEEN THE MEANS OF THE MALES AND THE FEMALES IN RESPECT OF THE VARIABLES X1 (ENJOYMENT) AND X2 (CONTROL OF CONSCIOUSNESS).

	MALE			FEMALE								
Variable	$\bar{X}_1$	S_1	N_1	$\bar{X}_1$	S_2	N_2	Levene F	DF	p(F)	t-value	DF	p(t)
X1	194,3832	30,6748	248	194,2373	30,3323	59	0,04	1 and 305	0,8322	0,03	305	0,9738
X2	46,7782	10,4286	248	44,7119	10,5243	59	0,04	1 and 305	0,8332	1,37	305	0,1731

Hotelling T^2 = 2,1614 df = 2 and 304
F-value = 1,0772 P-value = 0,3419 (Not Significant)

TABLE 10
SCHEFFÉ TEST: PAIRWISE COMPARISONS BETWEEN CULTURAL GROUPS IN RESPECT OF THE TWO FLOW FACTORS.

VARIABLES	MEANS				GROUPS						
	A Whites N=225	B Blacks N=38	C Asians N=14	D Coloureds N=30	A-B	A-C	A-D	B-C	B-D	B-C	C-D
X1	193,26	188,03	188,57	213,27			*		*		*
X2	46,50	44,92	43,07	48,87							

* Statistically significant.

TABLE 11
MULTIVARIATE ANALYSIS OF VARIANCE (MANOVA) AND ASSOCIATED ANALYSES OF VARIANCE (ANOVA) FOR ACADEMIC QUALIFICATIONS IN RESPECT OF THE FLOW FACTORS.

Wilks' Coefficient Lambda	F VALUE	DF	P VALUE
0,930002	3,07	4 and 606	0,0159*
X1	3,76	2 and 304	0,0244*
X2	0,44	2 and 185	0,6469

* Statistically significant

TABLE 12
SCHEFFÉ TEST: PAIRWISE COMPARISONS BETWEEN ACADEMIC QUALIFICATION IN RESPECT OF THE TWO FLOW FACTORS.

VARIABLES	MEANS			GROUPS		
	A <ST 10 N=106	B ST 10 N=119	C Tertiary N-82	A-B	A-C	B-C
X1	200,83	191,55	190,06	*	*	
X2	45,64	46,61	47,00			

* Statistically significant.

CONCLUSION

The results of this study indicate that there is a relationship between flow and QWL in a diverse workforce. According to the results, there is a statistically significant positive correlation between flow and QWL regardless of gender, culture or academic qualification. This implies that people working in a diverse workforce who report more frequent flow experiences also report greater QWL. However, caution should be exercised in generalising from these results because the study was carried out in a single private company.

If jobs are thus designed with consideration of the enjoyment of the worker, individuals will be presented with challenges, and this will encourage them to do the job at great cost for the sheer sake of doing it. Benefits for the individual and the organisation will be high as a result of greater QWL. In designing these jobs it should be kept in mind that the objective structure alone does not determine if flow will take place; the individual personally has to make it happen.

Thus, for the organisation to achieve higher productivity, it would appear that QWL activities should be designed so as to produce flow experiences for the employee.

In order to do the study it was necessary to develop a questionnaire to measure flow experience at work. The Flow Experience Survey was constructed and yielded two factors, namely, Enjoyment with a reliability of 0,946 for 42 items and Control of Consciousness with a reliability of 0,829 for 11 items, both according to Cronbach's coefficient alpha.

The ancillary objectives of the study were to determine gender, culture and academic qualification differences with regard to their flow experiences. Males and females did not report statistically significant differences in flow experiences whereas the various cultural groups and people with varied academic qualifications reported statistically significant differences in flow experiences. From these findings it is clear that working women derive the same psychological rewards from interacting with their environment as working men. A strong sense of enjoyment is felt when their personal skills are well suited to given challenges, when they experience a sense of control over their decisions, and when clear goals are set that provide immediate, unambiguous feedback (Csikszentmihalyi & Csikszentmihalyi, 1988).

South Africa has not been a well-integrated society. Therefore the investment in its human resources has been divided along racial lines for a number of decades. This society did not provide a meaningful plan for the investment of psychic energy for all. It did not provide for investment to bring about enjoyment to every act of daily life, nor did it allow for the growth of complexity in consciousness for as many of its people as possible (Csikszentmihalyi & Csikszentmihalyi, 1988). These facts may be a reason for different flow experiences for the various cultural groups.

An interesting finding of the study, however, was that Coloureds reported more frequent flow experiences than Whites, Blacks or Asians in respect of the flow factor X1 (Enjoyment). Blacks followed by Asians reported the least frequent flow experiences in respect of the flow factor X1 (Enjoyment). Whites reported the second most frequent flow experiences. It was expected that Whites as the more privileged group would report more frequent flow experiences than any of the other cultural groups. One should, however, keep in mind that the study was done in times of great changes within the broader South Africa society. Changes such as affirmative action programmes that create greater job opportunities for people that were formally denied these opportunities may have contributed to the higher flow experiences of less privileged groups. Despite the fact that people were in less privileged positions, they rose above their situation to experience flow.

It has been established that the ability to structure experience in the work place to provide a balance between challenges and skills at a high level of complexity is the means towards achieving personal growth (Csikszentmihalyi and Csikszentmihalyi, 1988). Having stated this, a reason for different flow experiences between the various academic qualification groups may be that on the one hand employees with higher levels of academic qualifications seem to be mastering the strategies necessary to structure experience. On the other hand employees with lower levels of academic qualifications have not yet learned to do so.

An interesting finding, however, was that people with educational qualifications less than matric reported more frequent flow experiences in respect of the flow factor X1 (Enjoyment) than those with matric or tertiary education. People with a tertiary education followed by people with matric, reported the least frequent flow experiences in respect of the flow factor X1 (Enjoyment). One would have expected that people with higher academic qualifications would report more frequent flow experiences. A reason for this finding could be that the job demands is of such a nature that it does not provide enough challenges for the highly qualified employee. This employee may be over qualified for the job. The above mentioned findings may also be attributed to changes in the country as well as to the extensive restructuring of the organisation in which this study was conducted. Employee upliftment seemed to contribute to a greater sense of

belonging and achievement amongst the lower educated people in the organisation. Despite the fact that people were less academically qualified, they invested their energy in productive and challenging situations.

FOOTNOTE

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