JOB ATTITUDES OF SHIFTWORKERS

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Studies on workers' reactions to shiftwork are primarily concerned with the physiological and psychological adaptation of shiftworkers to the shiftwork systems they experience. More specifically the physiological approach has focussed on circadian rhythm adaptation, and on objective assessment both of the health and sleep experience of shiftworkers, as well as of their performance [Rutenfranz and Colquhoun 1979, Folkard 1979, Colquhoun 1975, 1972, 1971, Rutenfranz and Knauth 1972]. On the other hand, psychological studies, have considered the impact of shiftwork on the subjective experience of health, sleep, and the emotional and social life of the shiftworker [McCarthy 1981a, 1981b, Kundi et al 1978, Drenth et al 1976, Sergean 1971, Mott et al 1965]. The level of job satisfaction experienced by shiftworkers, and the factors which may be associated with the job attitudes of shiftworkers has received limited attention from researchers, apart from the studies of Kundi et al (1980), Drenth et al (1976), Nachreiner (1975). These latter researchers however, have not explored the job attitudes of shiftworkers, utilizing the job reactions – job design paradigms which have gained considerable acceptance in recent job attitude studies.

The research reported here, which formed part of a larger study of shiftworkers' attitudes towards their health, sleep, and social life, focusses on perceived job outcomes and job satisfaction of shiftworkers [McCarthy 1981, ibid.]. In particular, it is concerned with the way shiftworkers perceive the content of their jobs (job characteristics), the satisfaction they derive from different facets of their jobs (job facet satisfaction), and the association between these sets of perceptions and attitudes, and their overall response to the shiftwork experience itself (attitude towards shiftwork). In addition, their perception of the likelihood of receiving certain job outcomes or job rewards as a result of engaging in shiftwork was explored, as well as the desirability of each job outcome.

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Job Characteristics and Job Reactions

Many practitioners and academics concerned with the movement towards job enrichment have stressed the importance of intrinsic job factors [Paul and Robertson, 1970, Ford 1969, Emery 1966]. Numerous other researchers have also documented unintended and negative consequences of the trend towards work simplification, and argue that simple routine non-challenging work often leads to high employee dissatisfaction, to increased absenteeism and turnover, and to substantial difficulties in effectively managing employees who work on simplified jobs. [Blauner 1964, Herzberg et al 1959, Dawes 1957, Guest 1955, Walker and Guest 1952, Walker 1950]. Hackman and Lawler (1971), in evaluating such research, stress the need for improvements in job enlargement – job enrichment research and propose a conceptual framework for exploring the conditions under which jobs should facilitate the development of internal motivation for effective performance. These researchers, influenced by the earlier work of Turner and Lawrence (1965), developed firstly a measure of job characteristics describing four core job dimensions i.e. variety, autonomy, task identity, and feedback. Secondly, they measured employee reactions to the job along the three dimensions of job involvement, intrinsic motivation and job satisfaction. In addition they measured the desire for the satisfaction of higher order needs, such as 'personal growth' and attaining 'feelings of satisfaction'. They predicted and found that where jobs are high on the four core job dimensions, that employees who were desirous of higher order need satisfaction, tended to have a high intrinsic motivation and high job satisfaction and were rated by superiors as doing high quality work and as being absent infrequently.

Later studies [i.e. of Hackman and Oldham, 1975, Brief and Aldag 1975,] provide strong supports for the presence of a positive correlation between a worker's perception of job characteristics and his or her affective responses to the job or job satisfaction. Thus, the theory outlined by these researchers indicates that how a job is experienced or perceived by an individual should influence for the most part, the individuals reactions to it, more than the objective characteristics of the job itself.

Another group, the cognitive theorists [Lewin, 1938, Tolman 1932], hold that individuals have cognitive expectancies concerning the outcomes that are likely to occur as a result of what they do, and that people also have preferences among outcomes. Vroom (1964) took ideas expounded by Lewin and Tolman and developed a theory of

work motivation which attemps to predict choices among tasks or choice among effort levels within tasks. This model is made up of three basic constructs: valence, instrumentality and expectancy. Valence refers to the perceived positive or negative value ascribed by the individual to the possible outcome of action on the job. It is assumed that at any given time a person has a preference among job outcomes either for, against or neutral. Examples of job outcomes would be pay, promotion, recognition, feelings of accomplishment [Prichard and Sanders, 1973]. Instrumentality can be defined as the perceived contingency that one outcome has for another. In Vrooms model valence and instrumentality combine to determine the overall valence of a given performance level. The concepts of instrumentality and valence developed into cognitive – motivation theory were applied to shiftwork phenomena in the present study. The main question explored was to what extent engaging in shiftwork is instrumental for obtaining outcomes such as "more money", "more promotion", "more recognition". Secondly, the desirability of job outcomes was obtained by asking the shiftworkers how desirable each job outcome was for them. Further, a measure of the overall valence of shiftwork was obtained by multiplying the "instrumentality" of engaging in shiftwork (utilising seven job outcomes) by the desirability of seven job outcomes.

To sum up, in the present study a model which synthesises frameworks outlined by the theorists reviewed above is used to explore shiftworkers attitudes towards their work.

The Present Study – Objectives and Methodology.

The research reported here addresses the following three issues:

(1) The way shiftworkers perceive the content of their jobs (job characteristics) and the satisfaction they derive from their jobs (job facet satisfaction). It is predicted that the perception of job characteristics, as being high or low in motivation potential, will result in corresponding positive and negative job reactions or job attitudes.

(2) Relationships between attitudes toward shiftwork and job attitudes are established and it is hypothesised, that those workers who have a positive orientation towards shiftwork, will also exhibit a positive attitude towards their jobs.

(3) Finally, the perceptions of the effects of shiftwork on seven job outcomes are examined, the desirability of these six job outcomes are sought, and a measure of overall valence of shiftwork is established.

Methodology

The theory outlined above asserts a relationship between job characteristics and affective reactions to the job. The measuring instruments employed are set out in appendix 1.

Sample

This study was carried out with a sample of shiftworkers, in eight manufacturing companies in the Republic of Ireland, and contained four technological types – chemical, textile, tool machine/light engineering and electrical. The sample consisted of 143 (127 Male and 16 Female) shiftworkers, who were primarily engaged in semi-skilled work. The task demands ranged from simple machine paced jobs to more complex tool-making tasks, and included process operation jobs. Six shift cycles were represented in the eight companies. These included – 12 hour shift (day and night); 8 hour shift (day, evening and night); 10 hour permanent nightshift; an 8 hour and evening shift; an 8 hour day and night shift, and 7½ hour permanent evening shift.

Results

Job Characteristics

Table 1 contains percentage score responses, mean scores and standard deviations for this cale. A summary index or composite mean scores for the six items was also calculated. The composite mean score of 2.84, shows that respondents perceive their jobs as providing low motivation potential. The perceived "amount of variety in job" ($\bar{x}$ = 2.53), "freedom on the job" ($\bar{x}$ = 2.14) and "chance to find out about own progress on the job" ($\bar{x}$ = 2.56) indicate thar core job characteristics such as variety, autonomy and feedback about progress are perceived as deficient in the jobs occupied by respondents. The "people" dimension (item 2) exhibits the most positive response ($\bar{x}$ = 3.20). When controlling for technology, in the way the respondents perceived the intrinsic characteristics of their jobs, no significant differences emerged, which indicates that the semi-skilled jobs of the sample did not differ significantly in degree of motivation potential.

Intrinsic Work Motivation

The amount of intrinsic work motivation of the shiftworkers was measured by means of a three item scale. Table 2 contains the relevant data. It is clear that intrinsic work motivation for this group was high, i.e. composite mean score = 4.07.

Table 1: *Job Characteristics Scale: Percentages, Mean Scores and Standard Deviations for Six Job Characteristic Items (N = 137)*

Job Characteristics Scale (To what extent are the following present in your job?)	Percentage Scale Responses						
	Very much %	Quite a lot %	To some extent %	A little %	Not at all %	$\bar{x}$*	SD
1. Amount of variety in job.	6	15	26	32	21	2.53	1.16
2. Opportunity to get to know other people.	16	26	27	24	6	3.20	1.16
3. Freedom on the job.	3	11	21	27	37	2.14	1.13
4. Chance to find out own progress on the job.	11	12	26	21	30	2.56	1.33
5. Chance to complete work started.	19	19	26	23	11	2.88	1.27
6. Opportunity to give help to others in job.	9	24	36	19	11	2.99	1.13
Job Characteristics Index						2.84	0.82

*Mean score, range +5 (positive) to +1 (negative).
Alpha Reliability Coefficient for scale = 0.72.

Table 2: *Intrinsic Work Motivation Scale; Percentage Scores on a Five Point Scale, Mean Scores (+5 Positive to +1 Negative) and Standard Deviations (N = 88)*

Intrinsic Work Motivation (3 Items)	SA	A	U	D	SD	$\bar{X}$*	SD
1. When I do my work well, it gives me a feeling of achievement.	53	38	4	4	1	4.38	0.82
2. When I perform my job well it contributes to my personal growth and development.	21	41	19	15	4	3.62	1.09
3. I feel a great sense of personal satisfaction when I do my job well.	46	41	7	4	2	4.25	0.99
Intrinsic Work + Motivation Index						4.07	0.69

* = the higher the mean score the more positive the response.
Alpha Reliability Coefficient for Scale = 0.73.

Job Involvement

The job involved person can be defined as one for whom work is a very important aspect of life, while on the other hand for the non-job involved person, work is not an important part of his or her psychological life. Mean scores to the seven item job involvement scale are contained in Table 3. The overall or composite mean score for the seven items is 2.54. This score is below the mean score of 3.0 on a five point scale, and shows that the subjects do not perceive their jobs as the kind of work to which they are highly committed or involved in.

Job Satisfaction Results

Four facets of job satisfaction were measured by means of the Job Description Index Scales for job facets, work, pay, promotion, and people. Table 4a contains the mean scores for these job facets. Examination of this data reveals a high satisfaction score for J D I – people ($\bar{x}$ = 35.68), with the lowest satisfaction rating for promotional opportunities ($\bar{x}$ = 18.65). Satisfaction with J D I – work and pay were also relatively low [see Smith et al, 1969]. These results suggest that the sample are not satisfied with the pay premium they receive for doing shiftwork.

Job facet supervision was measured by a seven item scale and the mean score results are shown in table 4b. The composite mean score

Table 3: *Job Involvement Scale: Percentages Score Responses, Mean Scores and Standard Deviations for Seven Job Involvement Items*

Statements	SA	A	U	D	SD	$\bar{X}$	SD
The major satisfaction in my life comes from my job.	7	10	16	46	20	2.30	1.11
The most important things that happen to me involve my work.	4	8	11	54	23	2.15	0.99
I live, eat and breathe my job.	1	4	5	32	56	1.59	0.86
I would probably keep working even if I didn't need the money.	15	30	15	19	21	3.00	1.39
Quite often I feel like staying home from work instead of coming in.	4	36	7	34	18	3.25	1.24
To me, my work is only a small part of who I am.	20	46	12	17	3	2.40	1.12
I am very much involved personally in my work.	8	32	19	32	8	3.00	1.14
Job Involvement Index						2.54	0.69
Alpha Reliability Coefficient for Scale = 0.62.							

Table 4a: *Mean Scores for Five Job Satisfaction Scales*

Job Facet Satisfaction Scales	Total (N = 137) $\bar{X}$
JDI – Work	21.03
JDI – Pay	21.51
JDI – Promotion	18.65
JDI – People	35.68
Supervision	3.45*

* = mean score, 5 point scale range +5 (positive) to +1 (negative).

Table 4b: *Supervisory Scale: Percentage Responses, Mean Scores and Standard Deviations on Seven Items % (N = 132)*

Statements	SA	A	U	D	SD	$\bar{X}$	SD
1. My Supervisor is very helpful.	21	47	16	9	3	3.79	0.99
2. I know what my Supervisor wants me to do.	22	60	6	5	1	4.02	0.81
3. My Supervisor gives credit for good work.	10	35	19	22	10	3.13	1.19
4. When doing something which affects the staff, my Supervisor *consults* them.	9	36	23	23	4	3.25	1.07
5. My Supervisor plans and organises the work very well.	12	32	23	21	7	3.23	1.15
6. My Supervisor is able to influence his or her boss.	9	32	26	20	8	3.16	1.11
7. My Supervisor is very fair.	22	44	15	1	4	3.66	1.06
Supervisory Index						3.47	0.36

Alpha Reliability Coefficient for Scale = 0.81.

of 3.45 for satisfaction with supervision indicates that shiftworkers have a positive attitude towards supervision, and is clearly in accord with attitudes expressed by interviewees who indicated that supervision, particularly in the 'evenings' and on 'nights', is more relaxed and informal than it is during the normal day shift.

Job Satisfaction – Criterion Variables

Several job satisfaction criterion variables were included in the study and the results are shown in tables 5 and 6. The satisfaction scores for the intrinsic job satisfaction questions (table 5), indicated that 53% are

Table 5: *Intrinsic Job Satisfaction: Percentage Scores, Means and Standard Deviations for Five Variables (N = 134)*

Job Satisfaction Intrinsic Variables	Very Satisfied %	Satisfied %	Undecided %	Dissatisfied %	Very dissatisfied %	$\bar{X}$	SD
How satisfied are you with:							
1. Amount of challenge in your job.	6	31	24	27	9	2.96	1.11
2. Self-esteem	6	32	31	22	5	3.12	1.00
3. The chance you get to learn new things.	4	34	10	33	16	2.77	1.22
4. Feeling of doing something worthwhile in your job.	9	39	16	25	7	3.16	1.15
5. Using your own ideas and actions.	5	22	16	31	22	2.55	1.22
Job Satisfaction Intrinsic Index						2.90	1.00

Alpha Reliability Coefficient = 0.87.

Table 6: *Criterion Satisfaction Variables: Pay, Promotion, People, Supervision: Mean Scores and Standard Deviations (N = 137)*

Criterion Variables: How satisfied are you with . . .	$\bar{X}$*	SD
Pay	2.68	1.15
Promotion	2.60	1.08
People	3.95	0.78
Supervision	3.54	1.07

*Mean score on a five point scale varying from +5 (very satisfied) and +1 (very dissatisfied)

dissatisfied with the "extent to which they can use their own ideas", while 49% are dissatisfied with the opportunities they have "to learn new things". However, on a more positive note, it is worth observing that 48% feel that they are doing worthwhile work.

It is evident from the data in table 6, that satisfaction with "people" and "supervision" is positive, while satisfaction with "pay" and "promotion" is relatively negative. This pattern supports the job facet satisfaction scores, presented in tables 4a and 4b.

Correlation Matrix of Seven Job Variables and Intrinsic Job Satisfaction

The five items measuring intrinsic job satisfaction (see table 4a) were combined to yield a summary intrinsic job satisfaction index. This summary score was correlated with seven job variables and the results are presented in table 7. A strong positive correlation is evident between JDI-work and intrinsic job satisfaction ($r = 0.76$, $p < .001$), which suggests that JDI – work is a valid measure of satisfaction with intrinsic job elements. Job characteristics also yields a high positive correlation with intrinsic job satisfaction ($r = 0.70$; $p < .001$), which further suggests that those who perceive their jobs as providing motivation potential also experience their jobs as intrinsically satisfying. This pattern of correlation matches in with the theory of Hackman and Oldham (1975).

The Relationship Between Attitudes Towards Shiftwork and Job Variables

Overall attitudes towards shift work was obtained by asking subjects to indicate the extent to which they "liked" or "disliked" shiftwork. 43% responded positively, while 57% expressed a dislike for shiftwork. As reported elsewhere [McCarthy 1980 and 1981], no difference in shiftwork satisfaction emerged for independent variables such as age level, marital status, education level and length of time on shiftwork. Shift cycle did yield a significant difference showing in particular that workers on a permanent evening shift (females) and on a 12 hour 4 cycle shift (males), expressed the highest satisfaction.

It was decided to explore the extent to which "attitude towards shiftwork" was associated with job characteristics and with job satisfaction outcomes. Table 8 contains a summary of correlations between attitude towards shiftwork and seven job variables. The highest correlation ($r = 0.48$; $p < .001$) is between attitude toward shiftwork and

Table 7: *Correlation Matrix of Seven Job Variables and Intrinsic Job Satisfaction (N = 137)*

Job variables	Intrinsic job satisfaction r^o
1. JDI – work	0.76***
2. JDI – pay	0.31***
3. JDI – promotion	0.35***
4. JDI – people	0.15***
5. Supervision scale index	0.44***
6. Job involvement	0.45***
7. Job characteristics	0.70***

*** = $p < .001$; ** = $p < .01$; * = $p < .05$.
o = Pearsons Correlation Coefficient.

Table 8: *Pearson's Correlation Between Attitude Towards Shiftwork and Seven Job Variables*

Seven Job Variables	Attitude towards Shiftwork 'How satisfied are you with shiftwork'? r (Pearson's Correlation)	N
1. Job Involvement	0.22**	135
2. JDI – Work	0.48***	115
3. JDI – Pay	0.18*	122
4. JDI – Promotion	0.19**	121
5. Supervision	0.10 NS	130
6. Job Satisfaction Intrinsic	0.40***	131
7. Intrinsic Work Motivation	0.17*	132

*** = $p < .001$; ** = $p < .01$; * = $p < .05$.
NS = Not significant.

JDI work, suggesting a significant moderate association between satisfaction with shiftwork and satisfaction with job content. Conversely, it could be said that those that dislike shiftwork are dissatisfied with job content. Further, supporting this association, the correlation between attitude toward shiftwork and job satisfaction intrinsic is positive and significant ($r = 0.40$; $p < .001$).

Low correlations emerged between five additional job variables and shift work satisfaction. It is interesting that no significant association is evident between shiftwork satisfaction and satisfaction with supervision which indicates that satisfaction with supervision is independent of overall attitude towards shiftwork.

Analysis of Variance of Seven Job Variables by Attitude Towards Shiftwork

In order to probe further the relationship between "attitude toward shiftwork" and job outcome variables, an analysis of variance was computed with attitude toward shiftwork (the independent variable) dichotomised into two groups: (1) "like" shiftwork group and (2) "dislike" shiftwork group. Job attitude variables were utilised as dependent variables. The results of this analysis are shown in table 9.

These data exhibit many interesting differences between the two groups. The "like" shiftwork group express more positive attitudes for the job variables than do the "dislike" group. The latter are significantly less satisfied with their work – JDI-work ($F = 14.79$; $p < .001$) with job satisfaction intrinsic ($F = 21.63$, $p < .001$) and with job involvement ($F = 7.52$; $p < .01$) than are the "like" group. For the variables pay and promotion, both groups express a low level of satisfaction with no significant differences, while for the variables "people" and "super-

Table 9: *Analysis of Variance of Job Outcome Variables by Attitude Towards Shiftwork; mean scores and F-ratios (a) Like shift work and (b) dislike shiftwork*

Job Variables	(a) Like shift (N = 56) $\bar{X}$	(b) Dislike shift (N = 79) $\bar{X}$	F-Ratio
1. Job involvement index	2.73*	2.40*	7.52**
2. JDI – work	27.77	18.27	14.79***
3. JDI – pay	25.11	10.80	2.03 NS
4. JDI – promotion	19.63	17.66	0.31 NS
5. JDI – people	37.21	34.93	0.84 NS
6. Supervision	3.57	3.02	0.98 NS
7. Job satisfaction intrinsic	3.30	2.64	21.63***
8. Intrinsic work motivation	4.37	4.04	4.97*

*** = $p < .001$; ** = $p < .01$; * = $p < .05$.
NS = Not significant.

vision", both groups are satisfied with no significant difference evident for each dependent variable. The suggested trend which emerges is that those who like shiftwork are more positive than those who dislike shiftwork.

Perceived Effects of Shiftwork on Job Outcomes

Seven outcomes were selected to obtain a profile of the shiftworkers' estimate of the extent to which shiftwork would yield the selected outcomes. This data is contained in table 10a, and shows that while 86% of respondents perceived a high probability of "more money" resulting from shiftwork ($\bar{x} = 4.22$), there were considerably lower probabilities that engaging in shiftwork would result in other job outcomes. For example, 40% found it unlikely that "more purpose to the job" would result from engaging in shiftwork, while 62% regarded the "chance of being promoted" and 63% the "chance to do more responsible work" as unlikely outcomes. The likelihood of "recognition from the company" is low: 64% do not view recognition as a probable outcome of shiftwork. The "chance to do overtime" was perceived as highly likely/likely by 33%.

Desirability of Job Outcomes

Effort-reward probability theorists, such as Vroom (1964) and Campbell *et al* (1970) view money as a positive extrinsic job outcome and "more purpose to the job", "chance of being promoted" and "chance

Table 10a: *Perceptions of the Effects of Shiftwork on Seven Job Outcomes. Percentages, mean scores and standard deviations (N = 137)*

How likely is it that shiftwork will result in the following:
(1) More money; (2) More purpose to the job; (3) Chance to do overtime; (4) Chance of being promoted; (5) Chance to do more responsible work; (6) Receive thanks; (7) Get recognition from the company.

Scale	Statement – Job Outcomes						
	1	2	3	4	5	6	7
1. Very highly likely	44	6	14	3	3	1	2
2. Likely	42	27	19	19	19	12	14
3. Neither likely nor unlikely	7	24	8	16	14	18	18
4. Fairly unlikely	4	19	15	23	30	21	24
5. Unlikely	2	21	24	39	33	46	44
$\bar{X}$	4.22	2.70	3.04	2.22	2.29	1.98	2.03
SD	0.92	1.24	1.44	1.23	1.20	1.10	1.78

Table 10b: *Perception of Desirability of Seven Job Factors for Shiftwork. Percentages, mean scores and standard deviations (N = 132)*

To what extent are the following desired by you:
(1) More money; (2) More purpose to the job; (3) Chance to do overtime; (4) Chance of being promoted; (5) Chance to do more responsible work; (6) Receive thanks; (7) Get recognition from the company.

Scale	Statement – Job Outcomes						
	1	2	3	4	5	6	7
1. Very desirable	53	20	12	14	17	11	16
2. Desirable	31	39	36	34	35	26	29
3. Neither	6	24	26	22	21	31	24
4. Undesirable	5	6	12	14	11	14	16
5. Very undesirable	–	5	9	11	10	12	19
$\bar{X}^*$	4.40	3.65	3.34	3.30	3.39	3.11	3.28
SD	0.82	1.05	1.13	1.22	1.22	1.19	1.23

* = Scale range +5 (positive) to +1 (negative).

to do more responsible work" as intrinsic outcomes (positive); nevertheless, it was important to establish how the present group of shiftworkers rated the desirability of these outcomes for themselves. These data are presented in table 10b. These results demonstrate that the most desirable job outcome for shiftworkers is "more money" (84% agree, $\bar{X}$ = 4.40). The next most desirable job outcome is "more purpose to the job" (59% agree: $\bar{X}$ = 3.65), thus indicating that the shiftworkers value both extrinsic (money) and intrinsic (purpose to the job) job rewards.

Overall Valence Towards Shiftwork

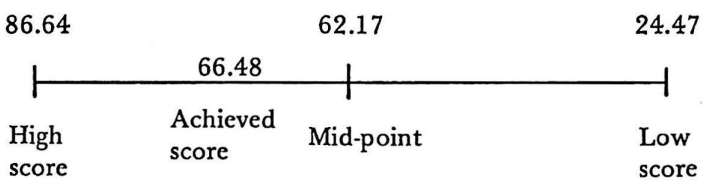
Overall valence towards shiftwork in relation to job outcomes was measured by multiplying the likelihood of obtaining each of the seven job outcomes (mean scores in table 10a) with the desirability of each outcome (mean scores in table 10b), (see column III, table 11). In addition the end points (extreme high, and extreme low) of a theoretical scale of overall valence towards shiftwork, were calculated by summing the squared desirability mean scores – to yield the positive end point of the scale (see column V, table 11), and by multiplying each desirability mean scores by the theoretical lowest possible likelihood mean score (+1), for each job outcome, and summing the result, which equals the sum of the desirability mean scores, (see column II, table 11). These data are shown below in table 11.

Table 11: *Overall Valence of Shiftwork for Job Outcomes; Mean Scores for "Likelihood" of Job Outcomes; Mean Scores for "Desirability" of Job Outcomes*

Seven Job Outcomes	I (a) Likelihood mean scores	II (b) Desirability mean scores	III (a) X (b)	IV (b) X (b)
1. More money.	4.22	4.40	18.57	19.36
2. More purpose to the job.	2.70	3.65	9.86	13.31
3. Chance to do overtime.	3.04	3.34	10.15	11.16
4. Chance of being promoted.	2.22	3.30	7.33	10.89
5. Chance to do more responsible work	2.29	3.39	7.79	11.49
6. Receive thanks.	1.98	3.11	6.11	9.67
7. Recognition from the company.	2.08	3.28	6.67	10.76
Sum of scores		24.47	66.48	86.64

As shown in table 11 the overall valence towards shiftwork score = Σ (likelihood mean scores X desirability mean scores) = 66.48. The scale below illustrates the extreme points (high and low) on a theoretical scale of overall valence towards shiftwork.

Figure 1. Overall Valence Towards Shiftwork Scale.



When the overall valence towards shiftwork is set against the theoretical scale (as shown in figure 1 above), it is evident that the achieved score of 66.48 lies above the theoretical mid-point of 62.17, which suggests that the valence for shiftwork, in relation to job outcomes for this sample is relatively positive.

Summary and Conclusions

Perceptions and attitudes of shiftworkers towards different aspects of their work, were examined, with a view to establish what association existed between job characteristics and job attitudes or outcomes. The shiftworkers studied described their jobs (which were primarily semi-skilled) to be relatively low in motivation potential (job characteristics) – in other words, as being low in variety, autonomy and the feedback which they received regarding their performance. It also emerged that they expressed a relatively low degree of involvement in their work. This suggests that their psychological commitment to work is low. The low level of job involvement contrasted with the high level of intrinsic motivation they derived from doing work well. These sets of data lead to a prediction derived from the theories of Hackman and Oldham (1975), that the shiftworkers would be relatively dissatisfied with job content or the intrinsic aspect of their jobs in particular. Results derived from job satisfaction measures e.g. JDI work, and intrinsic job satisfaction, support this prediction. Job satisfaction data demonstrates not only dissatisfaction with job content but also with pay and with promotion prospects. On the other hand the satisfaction of these shiftworkers with their fellow workers and peers ("people") and with supervision was positive and demonstrates that the interpersonal dimension of their work yielded a satisfying "human environment".

Analysis of the relationship between "attitude towards shiftwork" and satisfaction with the work demonstrated a significant positive association. It clearly emerged that the difference between those who "like shiftwork", and those who "dislike shiftwork", is evident primarily in relation to satisfaction with the job content (e.g. JDI-work, and intrinsic job satisfaction scores). It was further established that those workers who indicated a liking for shiftwork, exhibit a greater degree of job involvement than those who dislike shiftwork.

It is worth noting that no significant difference emerged between the two groups in their satisfaction with their fellow-workers (JDI people) and with supervision. In both cases the satisfaction expressed is substantially positive. In addition, no significant difference was evident between the two groups in the extent of their satisfaction with pay

(JDI pay) and with promotion (JDI promotion). The satisfaction reported for these two job facets was low, thus indicating that these are two areas of some dissatisfaction for the total sample.

Questions relating to the perceived effects of shiftwork on job outcomes showed that while the probability of receiving more "money" as a result of shiftwork was high, the probability of having a purposeful job, of having more responsible work and of being promoted is low. It also emerged that the "money" job outcome was desirable to a substantial percentage of shiftworkers.

Job outcomes such as "chance to do overtime", "chance to be promoted", "chance to do more responsible work", had in each case a medium degree of desirability for the respondents. The overall valence of shiftwork for job outcomes when calculated using an Instrumentality X Valence model (Vroom 1964), yielded a score, which indicated an overall positive level of valence for this sample.

In sum, the findings suggest that overall attitude towards shiftwork may be a key variable for management to identify, in understanding the reactions of shiftworkers to job content, and to intrinsic aspects of their work. The results also demonstrate a method of measuring the overall valence of shiftwork in relation to job outcomes for shiftworkers. Further development of this method could be tested by including additional outcomes of shiftwork other than job outcomes, for example health, sleep, social and emotional aspects of the shiftwork experience.

APPENDIX 1

Job Characteristics: This measure when used with job occupants is designed to produce an "individual perceptual" description of the core dimensions of a job, as distinct from an objective description. A five item scale was developed to measure job characteristics. Items were scored on a 5-point scale varying from "very much" (+5) to "not at all" (+1).

Intrinsic Work Motivation: Three items were developed to measure intrinsic work motivation. Item selection was influenced by the conceptual framework presented by Deci (1975), for understanding motivated behaviour. This approach states that the psychological basis of intrinsic motivation is in people's need to feel competent and self-determining. Each item was presented as a 5-point scale ranging from "strongly agree" (+5) to "strongly disagree" (+1).

Job Involvement: Job involvement was defined as the degree to which a person is identified psychologically with his or her job and the importance of work to his or her total self image. Seven statements relating to the psychological importance of work were selected from the Lodahl and Kejner's (1965) scale of job involvement. Items were scored on a 5-point scale ranging from "strongly agree" (+5) to "strongly disagree" (+1).

Job Facet Satisfaction: The job description index – JDI [Smith, Kendall and Hulin, 1969], was used to measure job facet satisfaction on four scales – work, pay, promotion, and people.

The advantages of the JDI scale as a measure of job satisfaction according to the designers is that it is directed towards specific areas of satisfaction rather than global or general satisfaction. The validity of these scales has been widely established [Robinson *et al*, 1969].

Job Satisfaction — Supervision: Satisfaction with supervision was measured by means of a seven item scale developed by McCarthy (1979). This measure included items which reflected both "consideration" and "initiating structure" behaviour (see Korman *et al* 1977). Reliability score (Cranback's alpha) on this measure reached 0.71 in McCarthy (1979). Items were scored on a 5-point scale varying from strongly agree (+5) to strongly disagree (+1).

Intrinsic Job Satisfaction: The theory which relates job characteristics and job satisfaction makes particular reference to growth satisfaction, consequently a measure of job satisfaction relating specifically to satisfaction with intrinsic rewards flowing from the job was developed. Intrinsic job satisfaction relating to self actualization was measured by a 5 item scale. Each item was scored from very satisfied (+5) to very dissatisfied (+1).

Attitude Towards Shiftwork: Attitude towards shiftwork was measured by a single item 4-point scale varying from "like very much" (+4) to "dislike very much" (+1). Responses to this scale yielded two dichotomous groups, i.e. those who "like" shiftwork, and those who "dislike" shiftwork.

The Relation between Shiftwork and Job Outcomes was sought by means of an adapted form of the Effort-Reward Probability Model delineated by Vroom (1964).

The perceived effects of shiftwork on job outcomes (rewards) was obtained by means of a 7 item scale, which included seven job outcomes which shiftworkers identified as important to them. For each job outcome the shiftworkers' perception of the extent to which it was a likely outcome of doing shiftwork was established. Each job outcome was scored on a 5-point scale varying from "very highly likely" (+5) to "very unlikely" (+1).

The desirability of the same set of seven job outcomes was obtained by responses to each item on a 5-point scale which ranged from very desirable (+5) to very undesirable (+1).

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