THE TAXONOMIC STRUCTURE OF REWARDS AS
WORK OUTCOMES

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ABSTRACT

Contemporary cognitive process theories of motivation, specifically expectancy/valence theory, use rewards as an important work outcome variable, to explain and predict the interaction processes between motivation and other variables. To date, relatively little attention has been given to define and describe work outcomes empirically. Use is currently made of a hierarchical extrinsic/intrinsic structure, representing outcomes grouped together with universal valence and related to each other. This investigation aims to investigate this taxonomy.

OPSOMMING

In kontemporêre kognitiewe prosesteorieë van motivering en veral verwagtingsteorie, word verwys na werksuitkomstes (vergoeding) as 'n belangrike veranderlike in die verklaring en voorspelling van die interaksieprosesse tussen ander motiveringsfaktore. Tot dusver is relatief min aandag bestee om werksuitkomstes empiries te ontleed en te beskryf en teoretici gebruik tans 'n hiërargiese struktuur om, uitkomstes wat oor universiële valensie beskik en onderling met mekaar verband hou, te groepeer in ekstrinsieke en intrinsieke uitkomstes of vergoedings. In hierdie ondersoek word gepoog om hierdie taksonomie empiries na te vors.

A basic tenet in contemporary motivational theory is that cognitive and/or affective processes are major determinants of conscious motivated behaviour at work. The notion that individuals consciously decide how to behave on the basis of their evaluations of the likely outcomes of their behavioural alternatives in work situations, occupies an important position in organizational psychology, and specifically so, in cognitive process theories of motivation.

One of the most prominent cognitive process theories of motivation, is expectancy/valence theory (Campbell, Dunnette, Lawler, and Weick, 1970; Lawler, 1973; Porter and Lawler, 1968; Vroom, 1964). Expectancy/valence theory, aims to provide a generalized explanation of the processes involved in choice behaviour, varying degrees of effort expenditure, and persistence of behaviour over time and to predict motivation, performance and satisfaction (Campbell et al. 1970; Campbell and Pritchard, 1976).

In the explanation of cognitive processes involved in motivation, the variables interacting with each other are described, and throughout this theory reference is made to rewards as typical work outcomes. In contrast to content theoretical approaches of motivation, where the substantive content of needs are described specifically, expectancy/valence theory does not use the term "need" as central to the theory. Instead, preference is given to the term rewards, as the outcomes individuals seek are ends in themselves. Rewards are thus seen to have value if they are relevant and if they satisfy and affect the attractiveness of more than one cluster of needs (Lawler, 1973, p. 30). Need clusters are seen as valued outcomes that have a strong empirical relationship to each other, representing common attractiveness to individuals (Campbell and Pritchard, 1976, p. 82).

Evidence of a basic taxonomy of rewards, is found in the early content motivation theoretical research by Herzberg, Mausner and Synderman (1959), where a distinction is drawn between rewards stemming from the organizational context (extrinsic). This basic taxonomy is also confirmed by Porter and Lawler

(1968). Campbell and Pritchard (1976) in reviewing the available factor analytic studies, conclude that the instrinsic and extrinsic dichotomy, is a consistent taxonomic classification of work outcomes.

This, however, is incongruent with Vroom's (1964) factor analytic work, in which seven factors consistently appear to underlie the structure of rewards. Also, Smith, Kendall and Hulin (in Campbell and Pritchard, 1976, p. 101) report the existence of five factors. Similarily, the ISR studies (Quinn and Cobb, in Campbell and Pritchard, 1976, p. 102) report the existence of five factors somewhat different to the previous studies. Some support, however, for a basic dichotomous grouping is found in the Minnesota studies on work adjustment (Campbell and Pritchard, 1976, p. 102) where a second, higher order factor structure emerges when 20 work outcomes are subjected to a second order factor analysis. These studies, however, indicate the limitations of empirical factor analytic procedures. If the work outcomes domain is not representatively sampled, different factor structures will continue to emerge.

Apart from the inconsistencies encountered in the hierarchical structuring of rewards as work outcomes, Dyer and Parker (in Billings and Cornelius, 1980, p. 152) observe that industrial/organizational psychologists do not agree on the labelling "extrinsic and intrinsic" rewards. These rewards tend to be defined in a variety of ways and, therefore, if they mean different things to different psychologists, it is a poor basis for understanding rewards as typical work outcomes. This largely contributes to the current controversy surrounding the additive (independent) or interactive (dependent) nature of rewards (Staw, 1979).

Lawler (1973, p. 112), using control of rewards as a basis for a taxonomic distinction between extrinsic and intrinsic rewards, lists pay, promotion and peer influences as important extrinsic rewards. Szilagyi and Wallace (1983, p. 404) also refer to extrinsic rewards as those that are not associated with work itself and which accrue from external sources, i.e. co-workers, informal groups and the formal organization. Extrinsic rewards also include financial rewards, benefits, incentive plans, professional and peer recognition, promotions, supervision, and friendships.

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Internally mediated rewards, associated with the job itself, include feelings of competence and self-determination (Deci, 1975) experienced meaningfulness, responsibility for the outcome of the task, knowledge of the actual results of the task (Hackman and Lawler, 1971), self-esteem and competence (Lawler, 1973).

From these descriptions it would seem that a basic taxonomy can be illustrated to exist by using one basic theoretical criterion which evaluates work outcomes as rewards and by determining the extent to which the reward is externally or internally mediated.

The present investigation aims at exploring the classification of rewards (which are described as work outcomes) into two taxonomic classes.

METHOD

Sample

Data were gathered from a sample of 106 White males and females and Asiatic and Black males in a large textile organization in Natal. This sample represented the total salaried staff of one division of the organization and included line, staff, managerial/supervisory and non-supervisory employees.

Details of the sample appear in Table 1.

The Questionnaire

The Organization Diagnostic Questionnaire (ODQ) (Coetsee, 1981) was used, as part of a survey guided development project implemented in this organization. The diagnostic value of the ODQ for this purpose has already been investigated by Coster (1981).

Since the focus of the present investigation was determined by a different micro-level theory than that used by Coster (1981), only those questionnaire items relevant to the present investigation were selected and therefore did not represent the original factor structure of the ODQ.

Description and selection of the extrinsic and intrinsic variables

Guided by the findings referred to in the preceeding discussion, items were selected from the ODQ to represent the extrinsic and intrinsic reward variables. The items thus fell into two broad taxonomic work outcome groups, in terms of source of reward.

Twenty one ODQ evaluative and descriptive items, pertaining to extrinsic rewards and 21 pertaining to intrinsic rewards were extracted.

The final selection of items were made following an item analysis. Items showing optimal internal consistency were retained.

RESULTS AND DISCUSSION

The results of the exploratory statistical analyses are provided in the following tables and summaries.

Extrinsic Reward: Item Analysis

An iterative item analysis procedure was used. Item–total correlations and reliability coefficients were computed. The item with the lowest item-total correlation was then excluded and the item analysis repeated. This process was continued until no further increase in reliability could be established.

Only the 12 ODQ items shown in Table 2 contributed sufficiently to the extrinsic reward construct and were retained.

TABLE 1
SAMPLE DESCRIPTION
(n = 106)

GROUP	WHITE	WHITE	ASIATIC	BLACK
SEX	MALES	FEMALES	MALES	MALES
NUMBER	56	17	21	12

	$\overline{X}$	s
AGE	37,1	10,0
NUMBER OF DEPENDENTS	2,1	1,8
LENGTH OF SERVICE (yrs)	8,6	8,0

TABLE 2
EXTRINSIC REWARD ITEM ANALYSIS RESULTS

ODQ ITEM	RXSJ	RX	RX/SJ
3	0,570	0,581	0,592
12	0,615	0,737	0,884
29	0,775	0,819	0,865
30	0,684	0,620	0,562
116	0,793	0,801	0,810
117	0,609	0,627	0,646
118	0,867	0,880	0,893
119	0,536	0,620	0,717
120	0,625	0,697	0,776
121	0,719	0,761	0,805
122	0,719	0,784	0,857
123	0,818	0,829	0,840

RX : Item-total correlation
RXSJ : Item-total correlation multiplied by the standard deviation (Gulliksen's discrimination index)

RX/SJ : Item-total correlation devided by the standard deviation.

TABLE 3
INTRINSIC REWARD ITEM ANALYSIS RESULTS

ODQ ITEM	RXSJ	RX	RX/SJ
25	0,598	0,651	0,710
26	0,565	0,616	0,672
27	0,531	0,555	0,581
28	0,599	0,593	0,587
38	0,623	0,665	0,711
39	0,757	0,699	0,644
40	0,521	0,546	0,573
41	0,755	0,753	0,751
42	0,484	0,743	1,140
43	0,351	0,609	1,057
46	0,455	0,509	0,569
50	0,493	0,569	0,657
52	0,426	0,528	0,654
53	0,445	0,454	0,462
61	0,361	0,522	0,755
62	0,623	0,585	0,549

INTRINSIC REWARD: ITEM ANALYSIS

Only 16 ODQ items with an acceptable internal consistency were retained after the iterations (Table 3).

A next step was to investigate the underlying structure of the items. A principle component analysis, yielded the communalities reported in Table 4.

On the whole, the values of the communalities are relatively high. If it is taken into account that each item shows a relatively substantial loading on at least one of the two factors, it can be accepted that the items correlate well with at least a subset of the other items.

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The underlying factor structure of the items in terms of the two broad taxonomic classes, extrinsic and rewards, can be inferred from Table 5. It also provides further evidence of the complex factorial structure underlying rewards as work outcomes.

Utilizing a "scree test" and accepting only items with a factor loading $> 0,4$, the factors were further sorted and rotated to investigate each item's common variance distribution within the hierarchial grouping.

TABLE 4
PRINCIPAL COMPONENT ANALYSIS RESULTS

ODQ ITEM	SQUARED MULTIPLE CORRELATION	COMMUNALITY OBTAINED
8	0,54567	0,6640
12	0,71847	0,7149
29	0,74579	0,7735
30	0,54501	0,5928
116	0,79905	0,7431
117	0,66644	0,6637
118	0,81686	0,8096
119	0,56387	0,5880
120	0,63268	0,6091
121	0,72206	0,7159
122	0,71345	0,6798
123	0,76811	0,7720
25	0,74134	0,7531
26	0,71155	0,7217
27	0,50944	0,6251
28	0,51707	0,5696
38	0,55706	0,5826
39	0,64610	0,6978
40	0,57399	0,6497
41	0,64461	0,931
42	0,68356	0,7308
43	0,61128	0,5999
46	0,45852	0,6383
50	0,39613	0,3525
52	0,46387	0,6883
53	0,44909	0,6125
61	0,57708	0,6616
62	0,46149	0,6354

TABLE 5
EIGEN VALUES AND CUMULATIVE PROPORTION OF TOTAL VARIANCE OBTAINED

FACTOR	EIGEN VALUES	CUMMULATIVE PROPORTION OF TOTAL VARIANCE
1	8,175907	0,291997
2	4,800955	0,453459
3	1,553864	0,518954
4	1,452972	0,570846
5	1,247453	0,615398
6	1,1800622	0,657563
7	0,938372	0,691077

8	0,845219	0,721263
9	0,811695	0,750252
10	0,716190	0,775830
11	0,686723	0,800356
12	0,642009	0,823285
13	0,619603	0,845414
14	0,562725	0,865511
15	0,484379	0,882810
16	0,479206	0,899603
17	0,411833	0,914312
18	0,364079	0,927315
19	0,352060	0,939888
20	0,286319	0,950114
21	0,253375	0,959163
22	0,219815	0,966692
23	0,205902	0,974046
24	0,180011	0,980475
25	0,167143	0,986444
26	0,164822	0,992330

TABLE 6
SORTED AND ROTATED LOADINGS WITHIN THE EXTRINSIC AND INTRINSIC
REWARD FACTOR GROUPING

ODQ ITEM	FACTOR I EXTRINSIC REWARDS	FACTOR II INTRINSIC REWARDS
118	0,900	0,0
123	0,831	0,0
122	0,798	0,0
29	0,795	0,0
116	0,789	0,0
12	0,733	0,0
121	0,707	0,0
120	0,634	0,0
117	− 0,627	0,0
119	0,590	0,0
30	0,523	0,0
42	0,0	0,784
41	0,0	0,745
39	0,0	0,692
43	0,0	0,654
38	0,0	0,572
62	0,0	0,554
61	0,0	0,553
50	0,0	0,516
46	0,0	0,512
26	0,0	0,511
27	0,264	0,420
25	0,408	0,487
40	0,325	0,418
52	0,0	0,455

53	0,0	0,436
8	0,465	0,259
28	0,0	0,487

The factor loadings remain congruent with the earlier reported evidence by Campbell and Pritchard (1976). Though the majority of ODQ items load on their respective factors, four items, load on both factors indicating that elements of both rewards are represented.

CONCLUSIONS

The description of variables used to explain the interaction processes in expectancy/valence theory, have not been of major interest in spite of wide scale applications and testing of the theory. Noticeable, this is the case of rewards as work outcomes.

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Accepting the possibility of an inadequate work outcome domain, sampled by the existing ODQ items, the general finding is that a basic two-factor outcome cluster exists, and that the popular taxonomy in terms of extrinsic and instrinsic rewards, as work outcomes, can be supported.

The results of this investigation can, however, be extended further. Billings and Cornelius (1980) suggest the use of a multi-dimensional scaling approach to describe work outcomes on continuous dimensions, with each outcome having a specific value of each dimension. Thus, outcomes can be categorized as either similar or dissimilar to others, depending upon the dimension used, and could then have the advantage of more fully specifying the relationships among outcomes.

One dimension, source of reward, as used in this investigation, could be considered as a starting point, for such an investigation.

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