TEACHER INTERACTION NETWORKS AND SYSTEM MAINTENANCE

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Theoretical Considerations

Since the study of Hoppock in 1935 a great deal of attention has been
shown in the analysis of job satisfaction of workers and personnel in a
variety of situations within organisations. This concern has important
theoretical and pragmatic considerations.

Theoretically, satisfaction is linked to the more general problem of
explaining social system persistence and existence. The sociologist in
interested to address himself to at least two questions: what were the
conditions under which the social system emerged; and under what conditions
is it maintained as a viable system? It is the latter question which has
particularly concerned the functionalist tradition for the last century.
The functionalists - from Durkheim to Parsons - applied the analogy of
biological organisations to their explanation of social phenomena. They
maintained that even as the biological system has a certain degree of
functional interdependence and responsiveness to the external environment
so too the social system can be seen as generating structure in response to
certain functional problems. They argued, at least implicitly, that the
social system was more or less functionally analogous to a biological organism.
However there are severe limitations to this argument.   Nagel (1961)
has argued that any functional analysis must satisfy five criteria: system
boundaries are to be specified; the embedding environment must be isolated;
the system elements must be specified; the necessary conditions or the
system requirements must be understood; and finally a goal state or criterion
needs to be established. In biological organisms these conditions are

relatively easily met. The organism is clearly specifiable. Organisms for
the most part have clearly clearly designated states which either are or are
not maintained. In most cases therefore it is possible to specify with a
high degree of accuracy certain components of the organism and its various
states. "In consequence. since the system and the state can be clearly
defined in biology, it is intelligible to ask, and seek an answer by way of
experimental enquiry,. whether and by what mechanisms, System S is maintained
in State G".

These comments raise the question that has been with sociology since
Durkheim and anthropology since Malinowski and Radcliffe-Browne. Is the
biological model appropriate to sociological analysis? The answer is in the
negative. The reasons include the ex post facto nature of much functional
analysis where the existence of an item is taken to indicate its functional
necessity; insocial systems it is very much more difficult to establish
functional requirements; criteria for system maintenance are also evasive
(although this is a problem more for societal than organisational analysis).
The latter problem also contributes to the inappropriateness of concepts such
as equilibrium and homeostasis when applied to social systems. Both of these
concepts are based on the assumption that a social system cannot change its
structure. Biological organisms have a set genetic code which sets certain limits
on the activity of the organism and hence rigidly restricts the possibilities
of adaptation. The maintenance of such a system is fixed so that any
disturbance will be sufficient to mobilise certain aspects of the organism to
return it to its previous state of well being. This is clearly not applicable
to social systems. In the first place it makes little sense to think of a
dynamic changing system such as a social system returning to a particular state

even if it could. In the second place, social systems can change both their criterion states and functions (within certain broad limits). In this respect the social system can be highly adaptive, is usually negentropic and there is no rigid prescription of structural limitations.

These comments are intimately related to a further limitation of the biological model - a limitation central to the theoretical focus of the present study. The social scientist, unlike his biologist colleague, cannot take the maintenance of the system for granted. One major difference between biological and social systems as that the latter depends on the voilitions of the actors (or elements) within the system. It cannot be assumed that the system will function adequately and will automatically satisfy certain requisites. There is no social instinct system. Failure to recognise the latter inevitably leads a theorist like Durkheim into the fallacy of the teleology of the system. One great failure then of the biological model has been to distract the theorist away from asking why actors behave as they do. A satisfactory theory must not only give consideration to emergent properties of the system, but to the reason why the actors in the system act in such a way that the system is maintained.

When this theoretical observation is related to the school or any other organisation it can be seen that a theory of the persistence of the organisation is not only contingent on the adequate functioning of intra-organisational subsystems but on the teleology of the actors within them. It is with respect to this problem which prompted Homan's famous critique of functionalism. Despite many weaknesses in his argument, Homans does argue that at base a theory of any social system is contingent on an adequate theory of actor motivation. It is not only necessary to know why the system (or organisation 'acts' as it does), but is also necessary (though not sufficient) to know why the actors act as

they do.

Job satisfaction is integrally related to the explanation of motivation for it can be argued that satisfaction both results from and is a form of motivation strategic to continued actor involvement in the social system. It is therefore maintained that a good theory of a social system depends on a satisfactory theory of worker motivation. If it can be shown that worker satisfaction depends on a particular set of conditions being satisfied, then it may be partially evident why an actor is motivated to continue in or withdraw from an organisation. Theoretically, then, job satisfaction (and the organisational conditions which contribute to it) is concerned with one of the most fundamental matters in organisation theory in particular and social theory in general.

By the same token it may be also evident why studies of job satisfaction are of pragmatic interest. The conditions which lead to the understanding of why individuals are motivated to stay or withdraw from an activity (such as teaching) are also sufficient to enable the executive or the employer to know why and under what conditions he can retain staff and maintain a viable organisation. Indeed he can also gauge how well the present system is providing sufficient motivation for the continued (active) participation of its members.

Teacher Satisfaction in an Organisational Context.

Despite the above argument very little attention has been given to the school as an organisation and those conditions which might contribute or detract from system persistence. Banks(1968) has maintained that the sociological analysis of the school is in its infancy and Bidwell(1965) asserted that no theories of the school as an organisation had been developed. Yet it cannot be assumed that the school functions in an identical manner

to other organisations where theoretical and empirical study is more advanced. Hornstein, Callahan, Fisch and Benedict(1968) follow Miles by arguing that a school is different in at least three ways to non-people processing organisations. Firstly, it does not appear to have any clear goals by which its performance may be evaluated. It is not known whether its success should be gauged by the number of its graduates who enter university, who are satisfied, or who get the jobs they want. Secondly, teachers perform their tasks by and large out of the vision of their peers and supervisors. Moreover evaluation of their teaching and organisational ability is infrequent. Thirdly, teachers have a good deal of autonomy and freedom in the pursuance of their duties. They are able to exercise a good deal of discretion in the subject matter they teach and in the means they choose to teach it. One other important difference between the school and other organisations relates to research activities. The field of organisational research in general is vast but the majority of such studies have either focussed on clients outside the organisation or the staff within it. The school on the other hand not only has staff within it, but part of its clientele is also contained in the organisation. Sociological analysis of the social system of the school therefore can be concerned not only with staff but with pupils. Indeed inspection of Figure I:I indicates that analyses of schools and the interactive behaviour within them can focus on nine possible areas.

The cells off the diagonal represent the possibility of giving attention to interactive relations between the major groups in the school - the staff, the ancillary staff, and the pupils. But there are also researchpossibilities on the nature of interactive relationships within the groupings (those cells on the diagonal). However the focus of attention in earlier research has not been spread evenly throughout these areas. Of all the nine possible areas of focus

MAJOR SOCIAL GROUPS WITHIN THE SCHOOL

	Teaching staff	Ancillary staff	Pupils
Teaching staff			
Ancillary staff			
Pupils			

Figure 1:1 Potential Areas of Sociological Focus in the School

the bulk of attention has been paid to pupil relations (Coleman,1961; Stinchcombe,1958), and teacher-pupil relations. Greenberger and Sorenson (1970) state that "among many studies of the school as a social system, investigations of the student group and the values that characterise it are abundant". They concur with Bidwell(1965) in his statement that "researchers have concentrated on the student society ignoring the teacher colleague group and the modes of integration of these two components of the school's small society . We need to know what form the teacher society may take and how well integrated it tends to be..." [1]

In respect to the preceding argument it is maintained that we cannot necessarily assume that organisations which are people processing will have the same internal structural characteristics as those which are product processing. Secondly, it is obvious that careful analytic and empirical attention is required with respect to school staff behaviour. It is necessary to know what features of the staff behaviour in the organisation contribute to the maintenance of the system as a whole.

These comments raise a series of questions. For example, it might be asked what groupings or networks characterise a school (or other organisation staff for that matter), and how such groupings are stratified. Who are the staff who are central in one or other of the nets and to what extent does

centrality in one imply centrality in another? Moreover, what are the
implications of being central or marginal in one or another net? This
study focusses on these questions by giving particular attention to the
nature of staff interactive relations and their implications. It does
so within the context of a wider goal of building an empirical model of
system maintenance using the indicators of job satisfaction and staff
retention. In so doing it is intended to contribute both to our
understanding of the role of staff relations in organisations and their
effects on the persistence of those organisatons.

While teacher satisfaction studies are to be reviewed in the following
chapter, attention is drawn here to four major limitations of such studies
which have stimulated the form of the present study. Firstly, studies in
this field have concentrated either on the structure of job satisfaction per
se (Coughlan, 1970), or on the endeavour to identify personal or positional
attributes related to satisfaction or lack of it (Trusty and Sergiovanni, 1966).
The studies reviewed did not attempt to develop the constellation of related
variables into a theory or theoretical model, although they did perform a
valuable function by pointing out variables which could be part of such a
theory. A second limitation has been the mode of statistical analysis used
in earlier research. While Coughlan (1970) and the Purdue Questionnaire(1969)
form important exceptions, most research has either used a unitary one question
measure, and/or has followed that with a series of cross-tabular analyses.
However it has become clear that job satisfaction has a multi-factorial structure.
And while the crosstabular analyses are valuable in the initial working of the
data they do suffer from the the disadvantages of most non-parametric statistics -
they cannot handle many variables simultaneously (without a very large sample),
they give no indication of the amount of variance accounted for in the

dependent variables, or a measure of error. In addition they often fail to use
ordinal and interval level data characteristics that add to the strength of
the prediction. A third disadvantage of the current literature is the absence
of attention to the structural effects of the organisation on the satisfaction
and retentionof teachers.   Although there is at least one exception to this
assertion[3] no linkage has been made between the theoretical demands of
understanding system persistence and the practical research activities of
scholars in this field. Yet it has been argued that a satisfactory theory of
an organisation such as the school is contingent on the interaction of the
structural effects of the institution and the volitions of the actors in it. A
failure therefore to account for various organisational effects on teacher
satisfaction is a failure to present some empirical evidence to supplement
a wider theoretical perspective . Furthermore, neglect of attention to the
satisfaction and retention effects of organisational characteristics has at
least implied that job satisfaction is an education system characteristic
contingent on such things as personal and professional attributes and operates
despite particular institutional attributes. Finally, the bulk of job
satisfaction studies have been carried out in North America. However, even
as it cannot be assumed that satisfaction does not vary from one organisation
to another, it cannot be assumed that North American findings hold in New
Zealand. There appears, for instance, to be an important difference in the
social class systems inthe U.S.A. and New Zealand, and inasmuch as job
satisfaction is contingent on class, it will be subject to varying national
class structures. Moreover the promotion and administrative features of
U.S. secondary education systems also vary from their New Zealand counterparts
and it might be expected that these too will have an effect on the satisfaction
structures of teachers.

In summary, this section has developed the thesis that there are important deficiencies in our understanding of staff interactive relations in organisations (and the school in particular), in our understanding of job satisfaction, and in our awareness of what implications these features of organisational theory have for the viability of this form of social system.

The Scope of the Present Research

Within the theoretical context outlined in the first section this study simultaneously addresses the issue of teacher staff interaction networks and their place in a wider theoretical model of teacher satisfaction and retention. The study has the following general characteristics.

Firstly, it develops a multi-factorial job satisfaction scale on the basis of social exchange and role set theoretical considerations, with particular note to the satisfactions a teacher derives from the members of his role set. Secondly, it analyses five staff interaction nets on the basis of information provided by staff members on their usual staff contacts on various pretexts. Together with a number of other professional and organisational attributes of teachers, the interaction nets are then built into an empirical model which endeavours to explain prestige satisfaction and job retention. In so doing the study takes advantage of recent statistical advances in the field of path analysis. Techniques which enable nominal and and ordinal data to be incorporated into such models enable a very powerful technique to be made available for use with variables which are usually considered inappropriate for parametric analyses. The careful use of path analysis enables one at once to analyse who are in the centre of what nets, but also to gauge the effects of the latter while holding a number of other variables constant. Although it does have the disadvantages of any linear additive

kind statistic, it does enable an empirical test of a theoretical model
together with the tracing of direct and indirect effects of any independent
variable in the model.

The study has a number of limitations. Firstly, it is making use of
a relatively small and homogeneous sample of secondary teachers. Considerable
caution must therefore be exercised in the generalisability of the findings.
A second limitation of the study is concerned with the nature of the job
satisfaction measure. The latter concentrates almost exclusively on extrinsic
and sociological elements of satisfaction and ignores intrinsic and more
psychologically oriented variables. Again however the factorial similarity
of this measure to recent measures reported in the literature (Coughlan, 1970)
gives some confidence in the validity of the instrument if the purposefully
biased nature of the content is kept in mind. A third limitation concerns the
interaction networks. For reasons noted in Chapter IV, the analysis of these
networks does not go beyond the least squares based analysis of staff members
who are at the centre of nets. Fourthly, this study concerns itself only with
the most powerful of the five job satisfaction factors - prestige satisfaction.
It does so on the grounds that it was considered more theoretically and empirically
fruitful to perform a detailed analysis on one job satisfaction criterion, than
to do a superficial analysis of all five criteria by merely noting significant
correlations between variables. This form of analysis (Rosenberg, 1968) which
is characteristic of many studies inthis and other areas may be very misleading,
as at least one finding in this study indicates. Accordingly, the more intensive
analysis of one criterion variable is preferred to the more superficial analysis
of several. A final limitation has to do with the statistical treatment. Path
analysis is a very powerful means of testing an empirical theoretical model when
the causal ordering of the variables has preceded the quantification of the

model. It is not to be taken as a means for deciding on the ordering of variables. In addition it does not handle interaction effects, and the models developed in this study are recursive.

In summary, this study is concerned with: firstly, the conditions under which actors in social systems such as an organisation are satisfied and retained; secondly, it focusses on the structure of teacher interaction networks and their implications for system maintenance; and thirdly, it relates these and other variables into a theoretical model, which is in turn the basis for a mathematical model for the explanation of centrality and system maintenance. This study is therefore submitted as a theoretical contribution to the persistence of organisational social systems, and as a pragmatic contribution to the problem of staff retention.

Footnotes

1. C. Bidwell, 'The School as an Organisation', in Handbook of Organisations J.G.March (ed), Rand McNally, 1965

2. 'System maintenance' is used to refer principally to the education and the school as an organisation. Both job satisfaction and job retention (ie. within teaching) will have implications for the system and the school.

3. G.S.Fraser, 'Organisational Properties and Teacher Reactions', Unpublished Ph.D. dissertation, University of Missouri at Columbia, 1967

THE REVIEW OF RELATED LITERATURE

This review is in two forms. The first major section looks specifically at job satisfaction and its implications. The second section turns to the study of interaction networks in organisations. Both sections are intended to give a theoretical background to the theory developed in the following chapter.

A. JOB SATISFACTION

Job satisfaction has attracted a substantial research interest following Hoppock's monograph on the topic in 1935. The attention givensatisfaction and related concepts such as morale and employee attitudes has more than theoretical interest. By and large the literature has a pragmatic focus with the intention of establishing those conditions that contribute to satisfaction and its attendant effects. This section discusses those aspects of the extensive literature on this topic which are considered relevant to satisfactions in teaching. Three topics are considered: 1) the literature onjob satisfaction in organisations in general; 2) the literature on the job satisfaction of teachers; and 3) the implications of job satisfaction in an organisation.

I. Studies on Job Satisfaction in General

Job satisfaction may be defined in its most general sense as the response of individuals to the activities and events which comprise the job and its environment (Katzell,1964). This definition implies that the concept itself is multi-faceted and that there may be any number of variables subsumed under it. For example, the individual may be satisfied with his salary, not satisfied with working conditions, and he may find fringe benefits irrelevant. For another person the position may be quite the inverse. The most obvious point at the outset is that the concept is multi-dimensional and for any generalised

use it must be comprehensive enough to include those factors which may be relevant to most individuals in question. The question then becomes - what factors are relevant?

There has been a vast response to such a question. An excellent summary of this literature has been provided by Vroom(1964).

Specific factors which have been isolated as relevant to job satisfaction include: attitudes towards the company and its management (Wherry,1954; Ash,1954; Dabas,1958; Roach,1958; Twery, Schmidt and Wrigley,1958; Kahn,1960; Harrison,1961), promotional opportunities (Harrison,1961; Kendall, Smith, Hulin and Locke, 1963), supervision (Baehr,1954; Ash,1954; Dabas,1958; Roach,1958; Twery, SChmidt and Wrigley,1958; Kahn,1960; Harrison,1961; Kendall, Smith, Hulin and Locke, 1963), financial rewards (Wherry,1954; Ash,1954; Dabas,1958; Roach,1958, Kahn,1960, Harrison,1961; Kendall, Smith Hulin and Locke, 1963), working conditions (Wherry,1954; Dabas, 1958; Harrison, 1961), and co-workers (Roach,1958; Twery, SChmidt and Wrigley,1958; Kendall, Smith, Hulin and Locke, 1963).

Vroom isolates five of the most frequent variables related to job satisfaction as: a) supervision; b) the work group; c) job content; d) wages; e) promotional opportunities; and f) hours of work. These are treated in turn.

a) Supervision. The findings on the importance of supervision on worker satisfaction vary from those who see it as the single most important determinant of worker attitudes (Putnam,1930) to those like Herzberg, Mausner and Snyderman (1959) who consider that it has been over-rated. Indeed the latter authors go on to state that in their studies inter-personal relations play a negligible role inthe determination of morale. Herzberg, Mausner, Peterson and Capwell(1957) compiled data from fifteen studies on worker satisfactions and dissatisfactions. They found that supervision was considered a more

important source of satisfaction than security, job content, company management, working conditions, advancement and wages. Relationships with other workers was the only variable that rated higher. They concluded that the ranking of factors salient to job satisfaction from the fifteen studies would take the following form (from the most to least important): security, opportunity for advancement, company and management, wages, intrinsic aspects of jobs, superivision, social aspects of jobs, communications, working conditions and benefits. Findings on the importance of supervision are only clear insomuch as they appear to rank higher than lower on inventories of job satisfaction.

b) The Work Group. Workers opportunity for interaction has been researched in three studies which show that isolated workers disliked their jobs (Walker and Guest, 1952), and that restrictions on interaction greatly lowered worker morale (Richards and Dobryns, 1957).

c) Job Content. A series of related issues have been shown to affect satisfaction. These include job level (Uhrbrock, 1934; Hoppock, 1935; Mann, 1953; Morse, 1953; Gurin, Veroff and Feld, 1960; and Kornhauser, 1964), degree of specialisation (Walker and Guest, 1952; Walker, 1950, 1954; Guest, 1957; Elliott, 1953; Mann and Hoffman, 1960), control over work methods (Viteles, 1932), control over work pace (Walker and Guest, 1952; Walker and Marriott, 1951; Marriott and Denerby, 1955), success and failure in work performance, and interruption of work on tasks.

d) Wages. The place of wages as a source of satisfaction is a source of controversy. Evidence exists to show that they are significant in worker satisfaction (Marriott and Denerley, 1955; Centers and Cantril, 1946; Terman and Oden, 1959; Lawler and Porter, 1963; and Smith and Kendall, 1963), and that they are not (Hoppock, 1935; Patchen, 1961). Patchen has argued that the

absolute wage received by the worker Is not as Important as his wage relative to some personal criterion he has for himself. If workers perceived others of similar occupation to be getting more or less Income then they were less or more satisfied. Similarly, satisfaction with salary depends in part on the level of salary preceding the rise, and the prospects the Individual thought he had. Adams(1963) considers the relationship of an employee and employer Is one of exchange. The employee Invests his education, Intelligence, experience, seniority and skills and in return gains certain rewards such as pay, fringe benefits, and status symbols. The employee considers the exchange equitable, when in his opinion, rewards are commensurate with Input relative to the Input and rewards of others. (Homans, 1964)

e) Promotional Opportunities. The results on promotion and job satisfaction are difficult to interpret. Morse(1953) found a positive relationship between a persons statements concerning their promotional opportunities and their satisfaction with those opportunities. Patchen's(1960) study in an oil refinery showed that there was a greater degree of absence among those persons who felt they should have been promoted. But whereas Morse(1953) and Sirota(1959) found a positive correlation between promotional opportunities and satisfaction, Spector(1956) reports that there is higher morale among those with low promotional expectations. Vroom attempts to resolve this dissonance by showing that Spector did not administer his satisfaction measure until after the subjects had been told about the results of their expectations – when they discovered whether or not they were to be promoted. It may be concluded that there is a positive relation between expectation of promotion and satisfaction.

f) Hours of Work. This may not only refer to the length of the working day, but the kind of work schedule at various of the day, and on

various days of the week. There seems to be little doubt that by and large, the fewer hours of work the more satisfied the workers will be. But the daily and weekly schedule of work may also be important (Mann and Hoffman, 1960; Blakelock, 1959).

2. Job Satisfaction in Teaching

The preceding section has discussed some of the research findings on the response of individuals to "activities, events and conditions which comprise the job and its environment". This section turns to studies which have concentrated on the job satisfaction of teachers, and in particular the content of teacher satisfaction, and the variables hypothesised to relate to it.

An early study in the field was conducted by Chase(1951) who obtained responses from 1800 teachers in 43 states in U.S.A. TEachers were asked to outline those satisfactions they regarded as most important. Their responses may be summarised by seven generalisations:

a) teachers want the freedom to plan their own work

b) teachers want good salaries, facilities and supplies

c) teachers want stimulating professional leadership on the part of their principal, recognition of good work and achievements, the opportunity to share in determining salary schedules, and the opportunity to share in curriculum making.

d) teachers want to be members of well prepared, professionally minded school staffs

e) teachers want community support and recognition for the school programme

f) teachers want an improved status both within the school and within the community

g) teachers waot to assist student development and to be appreciated

by students for their efforts.

In short, teacher satisfactions is this study are derived from salaries,
facilities and supplies, the principal, the curriculum, the school staff, the
community, job status, and the students. A number of more recent studies have
confirmed the salience of some of these findings. These are summarised below:

a) Curriculum. These may be a source of satisfaction in two ways. Firstly,
if teachers perceive it to be appropriate in their circumstances, and secondly,
if the teachers themselves have some opportunity to participate in
curriculum planning. (Campbell, 1959)

b) School Facilities. These vary from and within schools. Chase(1951)
reports that they are sources of satisfaction when they are considered
adequate and the means for obtaining them are efficient.

c) Salary. Harap(1959), Miller(1959) and Thorndike and Hagan(1965) all
found that salary contributes to teacher satisfaction when teachers perceive
their own salaries to be comparable to other teachers and to other individuals
in other occupations.

d) The Principal. Moyer(1954) has shown that where the characteristics
and behaviour of the principal approximate those of the teacher then he will
be more satisfied. Principals who provide support for teachers, who are
skilled in human relationships and show interest in teachers and their work
are also sources of satisfaction (Silverman,1957). Congreve (1959) draws
attention to the sources of satisfaction teachers found in a principal whom they
regarded as professionally and intellectually competent, who encouraged and
assisted teachers to advance their qualifications and standards of performance,
and who were competent evaluators of them and their work.

e) The Staff. Satisfaction is also derived from the teaching staff. As
with the principal, teachers are more satisfied with their colleagues

when their characteristics and behaviour approximate teacher's preferences
(Hills,1960). The survey of the American Association of School Administrators
(1955) found that these preferences were for colleagues who were co-operative,
academically competent, competent in their job behaviour and in their
professional conduct with others.

f) The Community. As might be expected, teachers are more satisfied
when they regard the community as giving support to the programme of the
school. (Hunter,1955)

g) Status. The Community may also contribute to teacher status.
Hunter(1955) found that where the teacher occupies a position of status and
prestige which is recognised the the community, then his satisfacton will be
increased.

A recent study by Coughlan(1970) provides further corroboration of
the variables just reviewed. Although Coughlan's study is on teacher morale,
his definition of morale is such that it is virtually indistinguishable from
job satisfaction. "Morale is the extent to which an individual's needs are
satisfied and the extent to which the individual perceives that satisfaction as
stemming from his total job situation". Despite the psychological introduction
to the study many of Coughlan's findings are of direct sociological significance.
He administered an instrument to 1199 teachers and analysed the results using
a factor analytic method. Thirteen factors emerged and these were grouped
into four categories.

a) Administrative Operations. FActors that discriminated were board
functioning, system administration, work load, materials, equipment, buildings
and facilities.

b) Working Relationships. Principal, Colleague and community relations
were all considered important.

c) School Effectiveness. Teachers perceptions of the effectiveness of the school programme, and the teachers assessment of the provisions for student evaluation anddevelopment were isolated.

d) Career Fulfilment. Three factors are subsumed under this category: performance appraisal (which assesses 'the teachers attitudes toward the procedures used to evaluate his work performance and stimulate hisprofessional growth'); financial incentives, and professional autonomy.

These results are not dissimilar to those obtained by Remple and Bentley(1967) in their Purdue Teacher Opinionnaire. Five factors are roughly equivalent: work load-teacher load, principal relations-teacher rapporte with principal, colleague relations-rapporte among teachers, instructional programme-curriculum issues, and financial incentives-teacher salary. There is resemblance between: community relations and professional autonomy -- teacher status, community support of education and community pressure; student development, materials and equipment, buildings and facilities -- satisfaction with teaching and school facilities and service.

It becomes clear that not only is there a good deal of common ground between general organisational studies of job satisfaction and those of teaching, but within teaching itself there are a number of recurrent dimensions of job satisfaction.

In the preceding section the concept of job satisfaction and the dimensions which comprise it have been reviewed. HOwever there have been a number of demographic or personal variables that have been noted to influence teacher satisfactions. These include teacher age, sex, qualifications, the level at which he teaches, and the length of time he has spent in the school. Trusty and Sergiovanni(1966) undertook a psychologically oriented study on differences in teachers perceptions of actual and desired needs. Age, sex and experience were discriminating variables. Young and less experienced

teachers were significantly more concerned about the ability of a position to provide high prestige. Male teachers were significantly more concerned about the high prestige of a position. A further study on teacher satisfaction was undertaken by Mitchell, Warren and Clarke(1968) in Alberta. They conceptualised job satisfaction in three ways: personal-professional satisfaction, work satisfacton and career satisfaction. They concluded that the degree of satisfaction on each of these dimensions was significantly related to the personal characteristics of a teacher. Young and inexperienced teachers were more dissatisfied with existing opportunities for career and work satisfactions than older and experienced teachers, while young inexperienced females were less concerned than males. The level taught was also a factor influencing satisfaction. Male teachers of elementary grades were more satisfied with their work and career satisfactions than teachers of other grades. Qualifications was found to be significant in that male teachers with degrees were more dissatisfied with career and personal-professional prospects than males without a degree. Females with a degree were more dissatisfied than females without a degree. In sum, teachers who were female, older, without a degree and were teaching elementary grades tended to be satisfied with all three elements of satisfaction. Young male teachers without a degree and teaching at junior or senior levels tended to be least satisfied with all three aspects.

These two sections permit conclusions both on the nature of the dependent variables, and the significant independent variables that appear to be related to job satisfaction. Following from the dicussion of job satisfaction instruments we may conclude that any sociological perspective on this concept must give recognition to the following distinctions. Firstly, it is clear that teacher satisfactions are concerned with every aspect of their role set.

Satisfactions are derived from associations with pupils, other staff, senior staff, parents and the community. Moreover a distinction also appears between those members of the role set that are within the context of the school and those which are beyond it. A second distinction is called for between those activities which are affectively based, those that concern respect and prestige, and those more concerned with material factors like facilities and equipment. Hence there is a clear difference between inter-personal based satisfactions, and those based on physical conditions.

The second section indicated that the predictors of job satisfaction can be categorised into two principal sets of variables: those that are personal and those that are professional. Under the former are included age and sex, and under the latter are experience, qualifications, level taught, and position of responsibility.

Finally, it should be noted that the teacher satisfaction literature does not indicate that there may be any reason for relating job satisfaction to structural conditions within the organisation. With the exception of Fraser(1970) it appears that the effects of particular organisations and the social structures within those organisations are entirely neglected.

3. Implications of Job Satisfaction

The constant attention to job satisfaction in organisations implies that it must affect the behaviour of staff within the organisation. This section considers four kinds of behavioural implications of satisfaction - staff turnover, absenteeism, accidents, and job performance. As there is no literature relating these issues to teaching the wider organisation literature is the basis for the following discussion.

It might be expected that dissatisfaction with the job would increase

the likelihood of withdrawal from the job. This expectation is confirmed in a number of studies. An analysis of insurance agents by Weitz and Nuckols (1953) found that a direct measure of satisfaction demonstrated a highly significant relation between dissatisfaction and withdrawal. Low morale also accounted for withdrawal in the studies of Webb and Hollander(1956) with air cadets, Sagi, Olmstead and Atelsek(1955) with college students,(Fleishman, Harris and Burtt,1955; and Kerr, Koppelmeir and Sullivan,1951) .

Vroom(1964) has suggested that staff absence will be greater if the staff member is dissatisfied, because he is more likely to find staying away from work more attractive than going and hence will more readily find an excuse not to go. Fleishman, Harris and Burtt(1955) found a correlation of -.25 between the morale of workers at International Harvester and their absence rate. A correlation of .31 between job satisfaction and the favourableness of their reported absences was found by Van Zelst and Kerr(1953) in a study of fourteen firms, and Harding and Bottenberg(1961) found a multiple correlation of -.38 between a number of satisfaction measures and the absences in a group of 376 airman. Other studies are not so clear. Vroom(1962), Bemberg(1952) and Mann, Indik and Vroom(1963) all found relatively insignificant relations ranging from .06 to -.32 correlations between satisfaction and absence. However studies by Kerr, Kopplemeir and Sullivan(1951) and Metzner and Mann(1953) indicate that the nature of the absence measure greatly affects the size and direction of the relation between satisfaction and absenteeism. Consequently, there is a slight overall negative relationship between satisfaction and absenteeism but the results are not always consistent.

General studies of job satisfaction and accidents and job performance are less relevant to teaching than the above variables because the teaching situation does not lend itself so readily to accidents, and job performance

is a notoriously difficult concept to measure. Suffice it to say therefore
that there is a slight negative relation between job satisfaction and
accidents in the few studies that have been done; and there appears no clear
relationship in the wider literature between satisfaction and performance.
The most significant finding for the purpose of this study is that of the relation
between satisfaction and job withdrawal. However it must be noted that any
review of studies such as these is confounded by the lack of knowledge as
to the sample N, the nature of the dependent variable, and the independent
variables used. Furthermore, it should not be assumed that because job
satisfaction may be related to the retention of staff, that the latter is only
contingent on job satisfaction. Obviously an individual may be very satisfied
but may leave for travel, family reasons, parenthood and so on.

B. ORGANISATIONS AND STAFF INTERACTION NETWORKS

This section turns attention to the interactive behaviour of staff
in organisations. Firstly, it considers early studies in the field. Secondly,
it turns to the literature on cybernetics and communications in organisations.
And thirdly, it notes possible antecedents and consequents of staff interaction
centrality.

I. Staff Behaviour in Organisations: Early Studies

The field of organisation theory is one of the most theoretically
and empirically developed areas in sociology. The seminal theoretical work
in the field is that of Max Weber on bureaucracy. Using an ideal type
methodological approach, Weber indicated that the analysis of an organisation
could be effectively achieved by using five criteria as arbitrary bases for
analysis. The characteristics of this ideal type were: a high degree of
specialisation; a hierachical authority structure with limited areas of command

and responsibility; the impersonality of relations between organisation
members; the recruitment of officials on the basis of ability and technical
knowledge; and the differentiation of private and official incomes or fortunes.
Mouzelis(1968) maintains that a constant element in all of these characteristics
is the motif of rationality - rational rules which regulate the structure
of the organisation in such a way as to provide maximum efficiency. What most
clearly distinguishes the bureaucracy is that the rules are based on rationality
and technical knowledge.

A reaction against the Weberian typology and its empirical application
came with the various studies which constitute the human relations approach.
Within this perspective Mouzelis distinguishes four schools of thought. Each
approached the organisation from a different perspective and therefore
contributed to a series of insights which have received subsequent elaboration.
The first approach was demonstrated in the now famous series of studies
undertaken at Western Electric's Hawthorne plant. These studies began with
the earlier Taylor time and motion studies and their focus on physical and
physiological factors as they relate to worker productivity. _ wever Mayo
found that these factors were not adequate to account for worker behaviour
and output and hence he turned more to social psychological factors and the
social organisation of the group. The Roethlisberger and Dickson study in
the bank wiring room found that there was a clear network of informal relations
and these resulted in distinct patterns of interaction. Two cliques formed
and they were regulated by normative rules such as not working too slow or
fast, and not reporting individuals to the foreman. There were also informal
sanctions. All of this, according to Blau and Scott(1962), was functional
in that the norms allowed workers to have more control over their environments,
it increased job security, and group solidarity was strengthened by a reduction
in group conflict.

Mayo developed a conceptual framework to study the values and patterns of behaviour of the workers within the organisation and he tended to ignore those characteristics that arose from outside it. In giving close attention to the interdependence of individuals within the work group he developed the concept of informal organisation and then reviewed in some detail the implications of informal group behaviour for motivation of workers, morale, group cohesion, and the implications of these for productivity. They also reviewed the implications of friendship cliques and informal normative structures for worker satisfaction, turnover and absenteeism. However, as Anderson argues, the Weberian model tend to neglect the informal structure of the organisation this is more an artifact of the nature of the ideal type than his own naivete. Blau(1963) has maintained that Weber was not unaware that actual organisational behaviour deviated from formal specifications, but he did not examine in detail de facto methods of operation. He rather attempted to demonstrate that the ideal type bureaucratic organisation represented a rational solution for complex problems. Accordingly, he focussed his attention on formal organisation regulations and procedures and their relevance for administrative efficiency. As Anderson(1970) concludes, "for Weber's purposes, this focus is acceptable, but his model of organisations is undeniably incomplete owing to its omission of the informal organisation". The Mayo study therefore triggered a new approach to organisation theory. Bennis(1959) has stated that "the type of work exemplified by Weber's model amounted to studying organisations without people, while that which emerged from the Hawthorne studies led to studying people without organisations".

However, whereas Mayo tended to concentrate on the intra-organisational behaviour, Warner and the Chicago school turned their attention to the background characteristics of the workers. They looked at community and social stratification problems, and Warner's students turned their attention to the

effects of social class and race. It also gave credence to the centality of the union in the social system of the organisation. A later wave of researchers including Chapple, Arensberg, Whyte, Homans and Sayles adapted a more interactionist approach. They were particularly concerned with basic matters such as exactly who interacted with whom and how. They were concerned withthe identification of the interactants, the order of the interactional events, the persons who initiated and received interaction and the duration and frequency of such interactional episodes. On this basis the structure of process of interaction could be established.

As a consequence of the above research an extensive literature has developed on informal structures. This literature includes attention to the industrial factory (Gouldner,1954), the civil service(Crozier,1964), the government employment agency (Blau,1963), and the military (Janowitz,1965). The impact of informal staff groupings on performance has been indicated in studies by Babchuk and Goode(1951) and Roy(1952). Babchuk and Goode found that even when management established a commission system to increase competition between salesmen, the staff developed a quota system that equalised sales volumes for each staff member. This resulted in less competition among salesmen, higher morale, and greater total sales. Roy found that machine shop workers often deliberately slowed down their work output although they engaged in friendly rivalry. The informal work group may also affect worker satisfaction, lower absenteeism and staff turnover.

With the development of group norms and sanctions it also became apparent that both informal and formal groups developed a system of differentiation - a status hierachy. Moreover, individuals high or low in this hierechy were in turn characterised by differing behavioural patterns. In his government employment agency study Blau found that a popular worker became increasingly drawn to his colleagues as a reference group as time passed, whereas the

the unpopular worker gave up hope or interest in being highly evaluated by his colleagues. Accordingly worker status in the interactional network has a direct effect on the identification of the worker with that group. Status in the formal group is also related to informal interactional patterns. Caudill's study of a hospital indicated that participation in meetings varied according to the formal status of the doctor concerned - the higher the status the more the participation, and the more ready other members of the group were prepared to listen. There are indications that high status in the formal structure of the organisation will also be accompanied by high informal status.

To this point this historical overview has demonstrated two propositions. Firstly, a translation of Weber's ideal type of bureaucracy into empirical terms demonstrates important inadequacies. Secondly, beginning with the Hawthorne studies the various sectors of the human relations school have emphasised the integral role of informal groupings in explanations of organisational behaviour. These groupings not only develop a social structure of their own (which in turn is influenced by background and formal structural characteristics), but they have implications for the effective maintenance of the organisation. Inthis respect therefore, the effectiveness of the organisation is contingent on two complementary intra-organisational structures and the degree to which they are mutually supportive.

2. Staff Behaviour in Organisations: Cybernetics

The development of interest in informal groupings in organisations has been supplemented and extended by the advent of decisionmaking and cybernetic approaches. In the first case, Herbert Simon endeavoured to simultaneously account for both rational and non-rational aspects of organisational behaviour. He used a model which combined rational choice, realism and analytic

rigour in such a way as to do justice to the "actual properties of human
beings and at the same time retain some of the formal clarity of the economic
model". Accordingly the approach of the decisionmaking oriented theorist
entailed the study of decisions that had been made with the intention of
building empirical models to account for the organisational processes which
generated the decisions. Attention was therefore directed to how and why the
individual became a member of the organisation and why he continues in it, the
implications of the division of labour, the nature of the authority system,
the communication system and the process of training. Simon stated(1957:108),
"The question to be asked of any administrative process is: How does it
influence the decisions of these individuals? Without communication, the answer
must always be: It does not influence them at all".

A closely aligned theoretical approach is that of systems theory.
Bertalannfy(1962) maintains that one of the reasons for the development of
this theoretical approach is that earlier scientific explanation was a nomothetic
endeavour, emphasising rather stable patterns of relations which were causally
explicated in terms of only one or two independent variables. The development
of systems theory in response to this problem was accompanied by the
development of cybernetics. Wiener, the originator of the cybernetic concept,
argued that to understand a social group one has to understand the communication
nets and messages which occur within the group. Information, the content of
communication, may work in a feedback process to enable the system to maintain
itself. Cybernetics emphasised how an output illustrated the discrepancy
of a position of a system vis-a-vis a criterion or goal state. This
information was fed back into the system and the system adapted by adjusting
its functioning to minimise its discrepancy between present position and
criterion. While this approach has many advantages in the explanation of

of a social system, as Buckley(1969) has asserted, its significance for the present research lies in the focus it gives to communication in organisations. Like the Simon approach, cybernetics lays emphasis on the importance of establishing what communication networks exist in social systems, and then tracing out the implications of information flows, and the structures that they generate or reflect.

The study of communication networks per se is not new. Barnard(1938:91) stated that "In an exhaustive theory of organisations, communication would occupy a central place, because the structure, extensiveness, and scope of the organisation are almost entirely determined by communication techniques".

Guetzhow(1965:534) begins his important essay on the topic by stating:

"Communications are central phenomena in organisations. When one conceives of the organisation as an ever changing system of interactions, one notes that communications and in the development and maintenence of organisational purposes, as its members motivate and inspire each other towards goal accomplishments. Structures are differentiated within the organisation - and then redifferentiated again and again; these subunits, each specialising in its own activities use communications in co-ordinating their output. The employment of hierachies with organisations for the exercise of control, so that purposes may be achieved with some efficiency, involves communcation nets; such exercise of influence may be informal (as in persuasion) or more formal (as in authority). The messages involved inthe origin and evolution of the internal stratification system within an organisation are multitudinous, as conditions of esteem and status wax and wane. In addition to serving as the matrix which links members together in organisations in all these varieties of ways, the communication system serves as the vehicle by which organisations are embedded in their environments".

Guetzhow goes on to review a number of studies in organisaton theory that have been concerned with the analysis of communicative and interactive nets. He observes that spatial characteristics of a setting have an important influence on the nature of the interaction in that setting. Miller(1951) has maintained for instance, that the frequency of messages and interaction between

between individuals depends on the distance between them - the greater the

distance, the less the communication. This finding has also been

substantiated by Barnlund and Harland(1963), Festinger, Schacter and Back(1963),

and Merton(1948). Gullahorn found that "distance was the most important

factor indetermining the rate of interaction between any two employees"(1952:134).

Communication flow is also contingent on the status of the individuals

concerned, and whether the messages are transmitted in formal or informal nets.

Zajonc(1963) noted that staff employers have wider formal interactional contacts

than line employees, while within the staff networks, higher status staff

have wider formal contacts than lower status staff. However Guetzhow maintains

that communication is not only conducted on a single net. He makes an

analytic distinction which conceives of five distinct nets: authority,

information exchanges, task-expertise, friendship, and status nets. Because

of the insights these have for the nature of staff interactional patterns they

are reviewed in turn.

Authority networks are based on the formal hierachical internal

structure of the organisation and as conceived by Weber, high status members

of the organisation give commands to lower status members. The communication

flow is vertical. On the other hand the directionality of the information

nets are often conceived to be the inverse of authority nets. The content

of the messages concerns information relevant to the functioning of the

group, and the messages are generated both from within and without the

organisation. Moreover information nets tend to be as much horizontal as

vertical, and analytically speaking, may operate simultaneously in informal

and formal structures. However, it is not always clear that these two nets

are empirically distinct. A study by Burns(1954) indicates that workers

frequently were unsure about whether they were being given orders or were

receiving information and advice, and of course the effectiveness of the dissemination of both sets of messages depended on the structural arrangements extant in the organisation. The task expertise net is more concerned with the bringing of technical information to task performance. Guetzhow characterises it by segmentation because the organisation has isolated groups of experts communicating with one another and providing specialised information to non-experts. While each of these three nets appear to overlap and replicate one another, Guetzhow asserts that they should be distinguished as they may have quite different characteristics. He states "the direction of flow of messages would seem to be more one way and vertical in the authority and information chains, while in the expertise chains, the flow would seem to be two-way and lateral".

The two remaining nets are the friendship and status nets. Friendship nets are concerned with the interaction of friends although they may be in any part of the organisation. However the friendship interaction may also be a part of authority, information or task expertise nets. The final net – that of status – has been demonstrated to be highly important. Status communications are frequent between all members of the organisation and may be transmitted as much by certain symbols as verbal interaction. Borgatta(1954) demonstrated that perceived net centrality in the status system influenced the extent to which a person utilized the communication channels. Individuals at the centre transmitted more messages. Barnlund and Harland(1963:468) summarised the small group experimental studies of Hurwitz,Zander and Hymovitch(1960), Kelley(1957), and Thibaut(1950) with the statement that "in general, the larger the status differential, the more restricted the channels of communication, the greater the tendency for information to flow from low to high status persons, and the more distorted the content of the messages".

However, field studies have not always led to the same conclusion. Davis(1953) found in a study of a group of management executives, that executives of higher status communicated more frequently than lower level staff, and so the pattern of communication was dominantly downward and horizontal. This research, maintains Guetzhow, confirms the speculation of Simon, Smithberg and Thompson(1950) that contact between individuals of differing status will result in more ready communication from the senior to the junior than vice versa.

Despite the analytic distinctiveness of the Guetzhow conceptualisation of nets, it is clear that they are not necessarily discrete and indeed are characteristically widely varied in the degree to which they are structurally differentiated. Insome organisations such as the army nets may be embodied in particular structures such as intelligence sections. In other settings which have a smaller number of personnel, nets will overlap and interweave. Consequently information nets can be used to pass friendship or status messages.

This review has briefly summarised the most salient literature on staff interactive behaviour. It permits the following conclusions. In the first place it has been argued that the Weberian concept of bureaucracy as a highly rational effectively integrated organisation, must be modified to take into account non-rational 'non-legitimate' staff activities. In this respect each organisation develops an informal network which has a social structure of its own, although it is strongly influenced by the physical and sociological characteristics of the embedding environments. This informal grouping must be considered as part of any organisation theory as it has been demonstrated to be able to enhance or retard the goals of the organisation. A second conclusion follows from more contemporary studies of the organisation which employ more dynamic theoretical models. The work of Simon, the systems

theorists, and the students of communication nets, have re-iterated the importance of staff interaction for organisational maintenance. But they have also gone further and demonstrated that the simple formal-informal distinction does not account for the complexity of staff interaction and its importance. Therefore Guetzhow has proposed that at least five different kinds of communicative or interactive networks must be considered. The operation these nets will in turn affect the process of co-ordination and integration of the organisation. Despite these conclusions the review indicates that there has not been any comprehensive, theoretically linked attempt to map the various interaction networks in the staff of an organisation. The examples reviewed: firstly, usually only deal with one or other of the nets in any particular study; secondly, the Guetzhow analysis is not empirically based and there does not appear to be any systematic theoretical basis for the isolation of the nets he describes. In this respect they are ad hoc. Both of these criticisms imply the need for a systematically developed conceptualisation of staff interaction networks, and their subsequent empirical analysis.

3. Antecedents and Consequents of Network Centrality

Germane to the purposes of this study are two further questions. Firstly, who are the personnel who are members of these various groups; and secondly, what are the organisational implications of group membership and net centrality or marginality?[**] The evidence on both these questions is limited. As Golemieski(1965:101) has stated, "there is no surplus of studies of small groups in organisational contexts...Sociologists have been more

[**]Centrality in this context refers to staff members who are overchosen by other staff members as being central in various organisational activities.

aggressive and successful in studying formal organisations; psychologists have led the assault on the small group and seem to be widening their lead: and the two meet too seldom". Accordingly, the focus in most reviews of the literature in this area has been on group leadership, atmosphere, cohesiveness and normative structure. Attention has not been focussed on either the nature of personnel in high or low status positions in organisations, or the implications of this status for measures of satisfaction.

Trends in the determinants of high or low status positions in various groupings can be suggested on the basis of the preceding analysis of communication nets. Individuals who are at the centre of the authority networks would most usually be personnel with positions of responsibility. The higher authority personnel will more likely be more highly qualified, older, males, and probably married. Centrality in the task expertise nets, however, would more likely be associated with individuals who are highly qualified in their respective areas, and while they may be somewhat higher in the formal status hierachy, there is no necessary relation between age, sex, or marital status and expert net centrality. Hypothesising about friendship andnet centrality is more speculative. Yet in the case of affective of informal group behaviour there is an extensive literature, although it is mostly based on small group studies outside the constraints of the organisation. Such studies indicate that free choice of friendship groups is related to similarities in age, personality, sex, interests and physical proximity. (Hare,1962) When the constraints of an organisation are taken into account it is no longer clear to what extent these factors hold. Inevitably organisational characteristics such as physical location, arrangements for tea and lunch breaks, and staff extra-curricular activities will strongly influence the ability of the staff members to form informal associations.

It is also likely that the formal authority structure will influence what
individuals will be more likely to be chosen than others. There is evidence
that individuals high in the formal hierachy of the organisation will be
accorded a high status in the informal group(Lindzey and Byrne, 1969). On the
other hand it is quite possible for individuals without such formal positions
to be overchosen or represented in informal groups. In summary, membership
in small groups in organisations will be influenced   by personal factors
independent of the organisation. But membership and group status will also be
contingent on professional qualifications and experience, as well as the position
of the individual in the formal prestige hierachy.

What then are the implications of high or low status in the various
intra-organisational groupings? Given the very incomplete state of the
literature in this field it is not surprising that there is little direct
evidence. However of related concern is the developing literature on
bureaucracy and alienation. A recent summary of this literature is found in
Anderson(1970). It is immediately apparent that the literature on alienation
is at once vast and confusing. One of the more important attempts to bring
order to the field was that of Seeman(1959). Seeman argued that the literature
could be logically (though not necessarily empirically) classified into
five distinct meanings given to alienation: powerlessness , meaninglessness,
isolation, normlessness, and self estrangement. The first three of these may
be applied to group participation and status with bureaucracies. For instance,
powerlessness is concerned with the inability of a worker to exercise any
control over his destiny or that of the organisation. Blauner(1964) sees such
a person as "an object controlled and manipulated by other persons or by an
impersonal system (such as technology), and who cannot assert himself as a
subject to change or modify this domination". To Seeman, powerlessness connotes

"the expectancy or probability held by the individual that his behaviour cannot determine the occurrence of the outcomes, or reinforcements that he seeks". The case of meaninglessness may also be applicable to a worker in an organisation for it refers to an individuals inability to understand the events in which he is involved. This comes about, according to Mannheim(1940), because social organisation implies that any one individual can only play a very limited role. Presumably the more peripheral his involvement, the more likely he will be affected by alienation. Finally, alienation has to do with isolation. It can be defined either as actual isolation from social contacts or perceived isolation. In the latter case the individual himself may feel cut off from the group or society. Again it appears most likely for such alienation to characterise individuals who are on the periphery of social groups or interaction networks.

In a wider social context Merton(1948) has argued that one of the causes of alienation is lower social class, as individuals with less status are less likely to have the means to enable them to have success in their environment. This statement has subsequently been supported by Srole(1956), Bell(1957), Powell(1958), Tumin and Collins(1959), Thompson and Horton(1960) and Mizruchi(1960), all of whom found an inverse relation between their measures of alienation and social class. Middleton(1963) has also found an inverse relation between education and alienation. Obviously such findings must be treated with caution in applying them to organisations, but they serve to suggest that intra-organisational alienation (powerlessness, isolation and meaninglessness) may be related to low qualifications and formal status.

Relatedly, there have been a number of studies directly concerned with alienation and bureaucracies and these act to confirm the preceding argument.

An extensive study of organisational bureaucratisation and alienation was
carried out by Argyris(1957). He found that increased bureaucratisation was
characterised by such implications as job withdrawal, various defensive reactions
such as daydreaming and aggression, apathy and disinterest, output slowdown
and reactive informal group solidarity. Argyris(1959) undertook a further
study comparing skilled craftsmen who had influence in the formal structure
of the organisation, and low skilled tradesmen who didn't have such power.
He found that in general the highly skilled staff were high on: aspiration
for high quality work; expressed job interest; expressed low emphasis on
income (provided it was equitable); an expressed sense of self worth related
to their technical competence; low spoilage of work; development of strong
lasting friendships; and participation in creative activities outside the plant.
In most cases low skilled workers had an inverse relationship. Pearlin(1962)
has done an important study of organisational bureaucratisation and alienation
using nursing subjects. Using 'subjectively felt powerlessness' as an indicator
of alienation he found that there was a positive relation between alienation
and perceived inability of inferiors to influence their superiors. He also
found that personnel who were less successful and dissatisfied with the rewards
system were more alienated than other nurses. Pearlin also found that isolation
was related to powerlessness, a finding corroborated by Neal and Seeman(1964).

Despite these findings it should not be assumed that the only reason a
person is alienated stems from his net marginality, or vice versa. It is
known that centrality in nets may be due to the volition of the actor concerned,
and if his career orientation makes attempts to achieve net centrality superfluous,
then the above arguments would not hold. For individuals who want to be at
the centre of nets, failure to gain such centrality could result in alienation
and dissatisfaction. For those individuals who are not interested in a central

position, failure to gain it is of little concern. Hence alienation is not an inevitable concomitant of net marginality.

4. Summary

This section has given attention to three theoretical areas in organisation theory: the occurrence of staff groupings of various sorts in organisations; the characteristics of individuals who form the various nets and who occupy ranks within them; and the implications of group membership, and in particular, marginality and centrality in the interactive networks. This review permits the following conclusions:

a) every organisation has patterns of association and groupings that are other than those prescribed by the formal authority structure. These alternate structures are variously expressed as informal groups, friendship and communication networks;

b) the relationship of these alternate structures with the formal structure has far reaching implications for the goal attainment of the organisation;

c) there is no systematic attempt in the organisation theory literature to systematically identify the interaction nets in an organisation and to empirically analyse them;

d) there is little evidence to indicate what variables predict to high and low status in various staff groupings although it can be supposed that high and low status is determined by particular personal and positional variables;

e) there is little evidence on the degree to which high status in one net carries over into another, and what organisational implications high or low status may have. However literature on organisational alienation indicates that marginal members of nets are more likely to be more alienated, and by implication more dissatisfied.

On this basis it is argued that a potentially significant area of organisation theory has been neglected. It remains in this study to turn attention to some of these issues and to empirically examine staff networks in an organisation, with the primary goal of advancing our understanding of the conditions which contribute to system maintenance in organisatbns.

C. SCHOOL STAFF INTERACTION

It has already been asserted the teacher subsystem is among the most sociologically neglected areas of the school. This section reviews the more general studies in this area, and then turns to consider the principal research pieces of more related concern to staff interaction patterns.

One principal area of research interest has focussed on administrative style of teachers and administrators and effects on variables such as teacher performance. A series of studies have originated out of the Midwest Administration Center at the University of Chicago. Halpin(1956) focussed on administrative style and isolated two dimensions of administrative behaviour: initiation of structure and consideration. He maintained that the nature of emphases on one or the other yields a profile of administrative style. He then endeavoured to study role conceptions of administration by asking both board members and staff about their conceptions - but there was no consensus. An extension of this study by Halpin and Croft(1963) endeavoured to empirically measure the organisational climate of schools. Usingthe two dimensions of administrative behaviour, initiation of structure and consideration, Halpin and Croft generated six climates varying from Open (where there is high consideration of principals for staff) to Closed (where the principals were aloof and were low in consideration of staff). Guba and Bidwell(1957) also used this perspective in their study of administrative style. They found that it was not

clear that the behaviour of principals was a determinant of teacher lack of confidence and job satisfaction.

A not dissimilar study is that conducted by Hornstein, Callahan, Fisch and Benedict(1968). They replicated studies in industrial, sales and voluntary organisations that have indicated that an employee's satisfaction is related to the extent to which he can influence certain aspects of organisational decisionmaking,as well as to the basis of his superior's social power. They were also concerned with studies that have indicated that the relation between influence, productivity and satisfaction is essentially phenomenological. (Blau,1960) Whether persons actually have influence or not is less important than whether they perceive they have influence — those who perceive themselves as being more influential will tend to be more satisfied and productive. Hornstein et al found that teachers reported greater satisfaction with their principal and the school system when they perceive that they and their principals are mutually influential, especially when their principal's power to influence emanates from their perceiving him as an expert. Concomitantly, this teacher-principal relationship is associated with a perception of higher student satisfaction. Hornstein et al concluded that "our data suggest that student performance, insofar as it is affected by the classroom performance of teachers, will be improved when teachers perceive themselves as sharing in the process of organisational decisionmaking".

Associated studies have been carried out on school principals by Gross and Herriott(1965). They were interested in the relationship between administrative style and teacher performance and satisfaction. Their conclusion was that "both teachers professional performance and morale may serve as links in a causal chain between the Executive Professional Leadership (EPL) style and the performance of their pupils".

All of the above studies suggest that at the very least, relations

between a principal or administrator and his staff may affect not only the 'climate' of the school and the morale of the teachers, but the achievement of the children.

When then of relations between the staff in the school? Banks(1968:198) comments on teacher informal relationships and states that "curiously enough very little attempt has been made to study informal colleague relationships". There have been a number of speculations. Brookover and Gottlieb(1964) state that clique formation may be contingent on such factors as age, sex, experience, and the values and interests of staff both in and out of school. Corwin(1965) comments that staff groupings may reflect sex segregation and he points to the importance of physical arrangements in group formation and interaction. Banks suggests that informal groupings may not only provide a power basis in staff negotiations but will also function to socialise new staff into the activities of the school.

More recently, Sorensen(1970) has suggested that the age grade structure of the school may affect staff relations. Sorensen maintains that students at different levels of the school are differentiated horizontally (when they have different curricula) and vertically (when they are grouped in terms of ability). While this has an effect on student performance, it also has status differentiation implications among the staff. "It seems safe to assume that teaching bright children universally commands higher prestige than teaching the less bright. Except where specific counteracting mechanisms are introduced, bright children, therefore get more experienced and more competent teachers" (1970:372). A further study which implies stratification within the staff subsystem was undertaken by Humphreys(1970) in Ontario. He found that when teachers were asked to rank 75 teaching positions on a prestige scale, academic subject teachers were accorded highest prestige followed by commercial and then technical teachers.

Such rankings were predicated on considerations of distributive justice. "Those subjects perceived as having the greatest training investment, responsibility, difficulty in teaching, and forgone opportunities would be awarded the highest prestige status".

Two other recent studies have concentrated explicitly on teacher interaction. Greenberger and Sorensen(1970) undertook a study of how individuals make choices to consult, respect or like their colleagues,by employing concepts from Blau(1962). In his research on interpersonal choices in a public welfare agency, Blau discussed choice in terms of the attributes of the individuals involved (such as seniority, competence and popularity) , in respect to the criterion for making choices. The criteria were, firstly, in reference to instrumental and task oriented activities, and secondly, in reference to sociable or personal gratification oriented activities. Blau considered that individual attributes might affect the distribution of choices in two ways: "attributes could have a segregating effect on choices, as shown when individuals with attribute A tend to overchoose others with the same attribute, while non-A individuals underchoose those with A. Or an attribute might have a differentiating effect as shown when everybody overchooses individuals with that attribute" (1962:199). Using the Blau perspective and the criteria of consultation, respect and liking, Greenberger and Sorensen found that age, sex, organisational status and departmental affiliation affected interpersonal choices. More specifically:

a) Sex has a differentiating effect on choices under theinstrumental criterion, male and female respondents both greatly overchoose men for consultation, and men overchoose men for respect; each sex prefers members of the same sex on sociable choices;

b) <u>Age</u> mainly influences the choices for respect and liking where mixed segregating and differentiating effects were observed;

c) <u>Departmental affiliation</u> had a segregating effect on choices in all three categories, but differentiation effects also occur because administrative personnel are overchosen for consultation and teachers in the major academic departments are overchosen for respect;

d) <u>Formal organisational status</u> demonstrated a differentiating effect on respect. Moreover, they conclude that "insofar as membership in a major academic department can also be taken as an indicator of high organisational status, it appears that status has its strongest impact on interpersonal respect." The Greenberger and Sorensen study thus comes closest to dealing with staff interaction nets and the explanation of status in them of any study in the sociology of education to this point.

One final study which basically reinforces the informal/formal distinction from a more theoretically sophisticated perspective is that conducted by Warren(1970) on a number of Detroit secondary schools. Warren developed a typology of school staffs on the basis of Cooley's definition of primary groups. He considered that there was a qualitative difference between various colleague groups. Consensual peer groups were most characterised by solidarity ("we feeling") and membership stability; diffuse groups were most clearly characterised by off the job socialising; and job specific groups involved the "inevitable daily interaction with peers of equal status in the work context". He saw consensual groups as most closely approximating the ideal type of primary groups and the practical affectively oriented teacher informal group; job specific groups were more closely approximated to the ideal type secondary group and the everyday teacher formal group.

This section has considered a number of recent studies on sociological

aspects of teacher behaviour within the school. The central focus of many
of these studies has been on the relation of the teacher with the principal
and there are strong indications that the nature of this relationship can not
only affect the teacher's behaviour, but it may have positive or otherwise
effects on the achievement of the children. Contemporary research is also
indicating that the school, like other organisations, has an internal
stratification system, which in turn is based on personal characteristics of
staff such as age and sex, and on their formal position within the system.
But it is argued that while the studies deal peripherally with aspects of
interaction networks on the staff, they, like studies on organisations in general,
skirt around an empirical analysis of actual interactive relations. They do
not distinguish between different forms of sociable or task oriented groupings
although they do give some preliminary indications of the types of groupings on
a staff, the membership in those groupings, and the consequences attendant
on the status held within the grouping.

CHAPTER III   THE THEORETICAL MODEL

Chapter 2 reviewed in detail research findings in the areas of job satisfaction and retention, staff interaction in organisations in general, and staff interaction in the school. On the basis of both the contributions and weaknesses of that research, the present chapter develops a theoretical model for the explanation of centrality in staff networks. It then builds that model into a broader model of system maintenance using the indicators of prestige satisfaction and job retention.

A. STAFF INTERACTION NETWORKS: TOWARDS A THEORETICAL MODEL

This section is divided into two further sections. The first is devoted to a conceptualisation of school interaction networks, and the second develops a theoretical model to account for centrality in these networks.

I. A Conceptualisation of Staff Interaction Networks

The reviewed studies on staff behaviour in organisations have consistently drawn a distinction between those behaviours which were directly associated with the formal goals of the organisation, and those staff activities which are supplementary to its central task foci. (Mouzelis,1968; Warren,1970; Guetzhow,1965) The initial distinction is therefore made on the basis of Task Orientation. Activities among the staff in any organisation can be analytically distinguished between those that are task oriented and have to do with explicit goals of the organisation such as teaching and administration; and those activities which are non-task oriented and have to do with interaction on friendship and interest grounds over and above the requirements of the organisation.

A second distinction is made on the basis of contextual location.
Organisation related behaviours occur in settings actually within the organisation
during the official hours of operation. But the literature does not indicate
that in many organisations such as the school, the informal or non-task oriented
organisation activities between staff outside the school will have implications
for within staff morale and satisfaction. It has been shown that a highly
cohesive group of staff whose patterns of association include close contact
outside of official time, may be a major factor in retaining them in the
organisation because of the satisfactions they derive from the closeness of the
primary group. (Warren,1970) It is for this reason that the contextual location
criterion is useful for distinguishing between different behaviour settings of
the school staff. It distinguishes between those activities which are
intra-organisational, and those which are extra-organisational. The former
designates those activities which take place during official hours and within
the physical boundaries of the organisation. The latter designates behaviour
which occurs outside of official time and the boundaries of the organisation.
Theoretically, an important distinctionis therefore effected between staff
behaviours which are limited and constrained by organisational strictures –
both physical and sociological; and those behaviours which exist beyond
organisational constraint (although not completely removed from its influence).

By combining these two criteria four distinct types of organisation
related behaviours are proposed (Figure 3:1). These are respectively: in
intra-organisational settings, task and non-task oriented behaviour; and
similarly in the extra-organisational setting, task and non-task oriented
behaviour. This typology is applicable to any organisation but the particular
content of these cells is organisationally specific. The present conceptual–

CONTEXT

		Intra-Organisational	Extra-Organisational
TASK ORIENTATION	Task Oriented	1. Subject 2. Administration	3. Extra-curricular
	Non-task Oriented	4. Informal Inschool	5. Informal Out of School

Figure 3:1   A Typology of Teacher Interaction Networks

Isation is applied to the school in the following way:

1. Intra-organisational Task Oriented Nets: There are two principal activities characteristic of teacher staffs. The first concerns the primary goal of the institution -- the imparting of knowledge and skills - and hence is focussed around teaching per se. This set of behaviours which accompany teaching is denoted as subject nets. The second form of activities are those which are required to expedite teaching. Such interaction nets are concerned with administration and are denoted here as administration nets.

a. Subject Nets. The school staff is stratified both horizontally and vertically. Subject nets are particularly characterised by horizontal stratification, as all teachers are subdivided into sections of the staff according to their subject concentration or specialisation. (Humphreys,1970; Greenberger and Sorensen,1970). It is a feature of school staffs that a great deal of interaction in the task oriented setting concerns questions such as the content of teaching and the methods to be used. Subject interaction nets are therefore the most pervasive of all task oriented networks.

b. Administration Nets. While teaching certain subjects probably constitutes the central activity of most of the staff, it is supported by administration in a number of ways in relation to teaching and to a host of wider activities such as supervision of pupil activities, distribution of books, arrangements for school cultural and sporting events, as well as a host of other trivial events that appear unavoidable in any organisation (like who switches on the hot water cistern for morning tea). Consequently, there are formal groupings of staff who interact regularly as part of their shared responsibility for out of classroom non-teaching events. That this net is empirically as well as analytically distinct from subject nets is reflected in the frequent maneuvrings of staff to avoid administrative activities on the grounds that they are 'extra' to their primary concern - teaching.

2. Intra-Organisational Non-task Oriented Nets: These nets correspond to the informal groups and friendship communication nets noted in the review of literature. On a school staff there is a good deal of interaction between teachers in relation to topics other than teaching and administration. This is most obviously illustrated in staffroom behaviour where regular groupings of teachers become stable over time. But it is also demonstrated in a number of other places and times in a school where teaching and adminstrative demands do not predominate to the extent that they restrict voluntary association. In this respect informal nets are voluntary, although they are not entirely removed from the influence of physical and task oriented features of the organisation.

3. Extra-Organisational Task Oriented Nets: Schools, unlike a number of other organisations, have certain activities which are both out of school in time and/or place but are yet subject to some of the constraints of the organisation in that they originate from it and are ultimately accountable to it. These

behaviour patterns are designated as extra-curricular. They involve groups of staff who devote time   to cultural, sporting and social activities after school, in the evening or the weekends. While these responsibilities are strictly   voluntary de jure in that they are not formally part of the teaching position, they are often involuntary de facto because of the pressure which is often brought to bear on them to take part. Like the administrative duties therefore, they are classified as task oriented. Such duties bring staff together, often despite other group membership, because they have an ability in music, drama, or sport.

4. Extra-Organisational Non-Task Oriented Nets: The final network which it is proposed is characteristic of the school as an organisation occurs outside the school. This network consists of those staff who continue or extend their non-task associations within the school into out of school life. It is to be expected that like non-task groups within the school, these groupings will be formed of individuals with similar personal and positional characteristics.

It has been maintained that these nets are analytically and empirically distinct. However experience indicates that such networks are not necessarily able to be pointed out within a school staff. Of course, in many cases they can be isolated. It is possible to point to extra-curricular associations, informal associations, and task oriented associations within the school with a high degree of reliability. BUt it is not uncommon for task oriented behaviour to be a feature of certain staffroom associations, and for non-task oriented interaction to occur in otherwise formal settings. For this reason, therefore, it should be expected that there will be overlap in these associations. That overlap should not however, be too great or the validity of the distinctions stands in doubt. Consequently, while the reliability and validity of the distinctions and their measurement is discussed in the following chapter, it may be noted that there is common variance among the nets, but empirically they

are clearly distinct.

2. Towards a Theory of Net Centrality

Given the network distinctions made in the previous section attention is
now given to the explanation of centrality and marginality in those nets. The
theory which is developed is premissed on three sets of variables: personal (age
and sex); professional (experience and qualifications); and positional (level
at which the teacher teaches, and position of responsibility). These three
sets of variables are related to the concept of organisation press. It is
argued that groupings which occur within the organisation are constrained by
the press of that organisation in such a way that the predominant activities
will consistently be dominated by the organisation related variables - especially
the positional variables. Further, it is expected that this predominance will
be extended to all groupings despite the task orientation. Consequently, in
any group within the organisation it can be expected that the constraint or
press of the intra-organisational formal structure will be such that the
individuals most likely to be at the centre of nets will be those who occupy
the higher formal positions in the school.   Conversely, when the constraint
or press of the organisation is largely removed, as in extra-organisational
groupings, then the predominant explanatory variables of net centrality will
be personal. Professional variables will be most associated with centrality
in within school groupings as it is there that experience and qualifications
have most legitimate salience. Both of the latter, despite position of
responsibility, will act to increase individual status within the organisation.
These theoretical propositions are elaborated in discussion of the particular
variables hypothesised to be associated with centrality in the various nets.

a) Intra-organisational Task Oriented Nets: The Subject Net. Individuals at
the centre of subjects nets are hypothesised to be staff with specific
subject expertise and with superior qualifications in that they are the staff
most likely to be given responsibility in this particular area, and are also
very probably highly consulted by their colleagues on teaching matters. However
expertise per se is not an adequate criterion as many of the younger teachers
will also have high qualifications. Accordingly, two further variables are
introduced - those of experience and position of responsibility. It is likely
that not only will staff at the centre of subject nets be higher on qualifications,
but they will also be more likely to have more experience and in turn have
a position of responsibility (although the latter is also contingent on teaching
ability). It is expected that correlatively associated with centrality are
age and sex as they indirectly affect qualifications and position of responsibility
Teachers with high qualifications tend to be men, and as there are many more
men in positionsof responsibility, men will be more likely to be in the
centre of the subject net than women. Subject net centrality is thus a
function of the direct effects of qualifications and position of responsibility,
and of the indirect effects of age, sex, and experience.

b) Intra-Organisational Task Oriented Nets: Administration Nets. Net centrality
in administrative nets is a function of the same set of variables hypothesised
to be linked to subject net centrality. The major difference is that in this
case it is expected that the variables will have different salience. Of most
importance in school administration will be the position of responsibility as
individuals more senior in the hierachy of the organisation will be more
strategic, will consult and be consulted more, and will generally dominate the
organisational activities in the school. The other variables will principally
have indirect effects.. For instance, both qualifications and experience will
be related to centrality but through their association with position of

responsibility. In a similar way the average level in the school at which the teacher teaches may also be related to net centrality as high status teachers are over-represented in the higher forms. Individuals at the centre of the net are more likely to be older men as positions of responsibility are most usually filled by such candidates. Accordingly, age and sex both have a direct effect on experience and to a lesser extent on qualifications; these in turn largely determine positions of responsibility and the latter has a direct effect on administrative centrality.

c) Intra-Organisational Non-Task Oriented Nets: Informal Inschool. The review of literature indicated two major influences on sociometric status. Small group research tends to indicate that informal group formation is contingent on personal variables such as similarities in age, sex, personality and interests. However, it was argued that informal net centrality in an organisation is inseparable from what have been designated as professional and positional variables. Hence there are indications that while there is a press towards similarities on personal criteria, this is overwhelmed by environmental press. It has been found that there is a tendency for individuals high on intra-organisational task status to be overchosen in non-task oriented groups. The value of the path model is that again direct and indirect effects of different level variables can be traced out with all other variables in the model held constant. Consistent with the theory that structural or positional variables will be dominant determinants of net centrality it is hypothesised that even in informal inschool groupings a direct causal variable will be position of responsibility, although again the latter variable will mediate the effects of the personal and professional variables. This desire of individuals to be associated with others of high status may also be reflected

In a strong direct relation between qualifications, level and net centrality.
Both qualifications and level are indicators of status within the organisation
although neither has any official structural position. Experience, without
such other professional and personal status, may in fact mitigate against
desired association. Experience with no other status may indicate an individual
who has failed in the system because he has not advanced in it. Therefore it
is hypothesised that centrality in this net is a function of the direct
influence of qualifications (professional status), and level and position of
responsibility, with personal variables having an indirect effect.

d) Extra-Organisational Task Oriented Nets: Extra-curricular Nets.

In some respects extra-curricular dominance is related to organisational
centrality as the individuals who organise school events in general are likely
to be over-represented in extra-curricular organisation. But there will also
be important differences. Extra-curricular activities are dominated by
sporting and cultural events and at least in the case of the former, staff will
tend to be younger, and thus less likely to have a position of responsibility.
It is also observed that extra-curricular staff are more likely to be men.
This may be due to a number of factors. Men are more likely to plan a career
in teaching and willingness to operate and assist in extra-curricular
activities may assist promotion within the system. Similarly, such activities
provide opportunities for the aspirant teacher to demonstrate organisational
ability and initiative in addition to leadership skills. These activities
may also be a means of 'appealing' to a wider public to confirm an individual's
skills. Unlike most 'successful' performances within the organisation, extra-
curricular work is very often demonstrated in public and success of the event
in terms of favourable public response is likely to rebound to the favour of
the staff member concerned. All these reasons then, may be support for the
conception of extra-curricular activities being performed by younger men.

Centrality in this net is the function of the direct influence of age and sex
and to a lesser extent of title. Both age and sex may also have indirect
effects through experience, level and title. Qualifications does not seem to
be relevant to extra-curricular participation.

e) Extra-Organisational Non-Task Oriented Nets: Informal Out of School.
It would be tempting to regard out of school informal behaviour and grouping
as a microcosm of informal inschool net centrality. However, such an
expectation would be to ignore the organisational press and its influences.
In accordance with the press thesis it has been maintained that intra-organisationa
activities are directly and overwhelmingly influenced by the formal structural
characteristics of that organisation, and that this influence also pervades
informal inschool nets. Personal and professional variables are salient only
insofar as they operate indirectly through positional roles. Non-task oriented
activities outside the school have the significant difference that actual
physical and sociological structural elements of school life are largely
removed. However, while the teacher has less constraints on him in this
respect, he has more limited options in associating with other staff from his
school. Whereas common membership of the organisation, physical proximity,
and overlapping general interests may suffice to bring together staff within the
school with widely divergent professional and positional characteristics,
removal of the structure also removes some of the perquisites, such as the
ability to sit by a senior staff member in the staff room than to call on him
at home. For this reason it is hypothesised that removal of the environmental
press of the organisation will also remove the theoretical salience of
professional and positional characteristics as predictors of informal out of
school net centrality. Association outside school will be predicated on

on personal variables. Two tentative hypotheses are advanced. The first maintains that younger staff members will associate together, and such staff will be predominantly men. The former hypothesis is based on the recognition that younger staff members are more transient and therefore will have a reduced possible field of friendship eligibles outside the school. Combined with the common interests of teachers, and the not too distant university experience, younger teachers are more likely to associate with one another than are staff members who are more settled into the local community and its institutions. The second hypothesis is very much more speculative but it is premissed on the indications that sex is a criterion for discriminating amongst membership in groups (Greenberger and Sorensen,1970), and that for married persons women will tend to follow the informal associations of their husbands. Therefore, it is expected that males from the school will group together out of school, but women will not do so to the same extent. Centrality in this net then is a direct function of personal but not positional or professional variables.

This section has provided the elements of a theory of staff interaction patterns. It has argued that any group membership involving staff of the organisation, will be a function of several personal, professional and positional or social structural variables. In this respect it introduces the concept of organisational press. It maintains that within an organisation the organisational press will make professional andpositional variables more salient despite the orientation of the group in question. On the other hand, removal of the activities from the organisation will act to lessen the influence of organisational press and heighten the importance of personal variables.

B. A THEORY OF JOB SATISFACTION AND STAFF RETENTION

The first chapter of this study presented the thesis that one of the primary goals of the systems theorist is to establish what conditions must be satisfied to ensure the maintenance of a social system. The study of conditions which are necessary and/or sufficient for such an exercise may be pursued in a number of ways. It may be effected by the study of systems that indicate they are functioning satisfactorally. Or such studies may focus on systems that have broken down in order to identify the variables that appear crucial to system viability, or conditions that seem necessary to meet. Or again, such research may focus on ongoing systems and particular conditions within them which might indicate potential system vulnerability. The present study uses the last expedient. On the basis of the research reviewed in the previous chapter it uses the variables of job satisfaction and job retention as indicators of system maintenance. (Bates,1971) It does so in the grounds that lack of teacher satisfaction with the job may be a potential source of disruption within the system, and may lead in turn to the withdrawal of the staff member. Job retention is an obvious indicator of system maintenance and is analogous to dissolution in such systems in the family, where a criterion for the adequacy of the system includes the ability of the system to hold its contracting members in the relationship. Similarly, job retention may be an indicator of the viability of the school as an organisation. Withdrawal from the school or the education system has the effects of disturbing the conditions of the system by demanding the recruitment of new members, their subsequent socialisation, and by possibly dissaffecting the remaining members. At the least a high turnover of staff may contribute to considerable instability within the education system as a whole, and the particular organisation.

This section addresses itself to the questions: what are the conditions

which detract from system maintence; and what is the relationship between the two indicators of system maintenance? Attention is given firstly, to a theory of prestige satisfaction; and secondly, to the explanation of job retention.

I.   A Theory of Prestige Satisfaction

The theoretical basis for the theory of prestige satisfaction is developed from an earlier study by Halliday(1972a).Halliday argued that a potentially valuable approach to theories of job satisfaction (and motivational theory in general) is found in the elements of social exchange theory. While there is a long history of the prevalence of such theory in political thought (Sabine,1951; Gough,1957), more recent theory in sociology has placed considerable emphasis on the exchange paradigm at the microsociological level(Homans,1960;1964; Blau, 1964) and at the macrosociological level (Parsons and Smelser,1956). The approaches of Homans and Blau have a number of deficiencies(Halliday,1972b,1972c). In particular, the work of Homans is not only unfalsifiable, but it sees all human behaviour as utilitarian. The work of Blau is very much more careful and he avoids both of the above fallacies, but his basic paradigm has the limitation of conceiving of rewards for mutual exchanges as only being endogamous to the interactive dyad(Halliday,1972c).

The present study does not conceive all human behaviour to be motivated on a utilitarian basis, and does recognise that rewards for stable patterns of interaction may be both endogamous and exogenous to the interactants. But with these theoretical provisos in mind it operates from a relatively narrow exchange model (which inevitably will require subsequent extension).

The model maintains that the continued activity of an actor in any particular situation is dependent on the actual rewards the actor gets in proportion to his expected rewards. Reward expectations are in turn based on

the extent of investment the actor has made in the activity. Satisfaction
with actual rewards is contingent on the perceived distributive justice of
the system as the actor compares himself to other actors, their investments
and their rewards (Humphreys, 1970). If the actor perceives that he is
receiving less than he expects he should receive, and less than others with
equivalent investments and costs, he will be dissatisfied. Halliday made use
of three sets of concepts: investments, actual and expected rewards, and job
satisfaction. Satisfaction is contingent on the difference between actual
and expected rewards, and the latter is determined by investments. The analysis
then generated two propositions on which the specific hypotheses are based.

      Proposition 1   The greater the investments and costs, the greater the
                            expected reward
      Proposition 2   The greater the expected rewards exceed the actual rewards
                            the less the job satisfaction

It was hypothesised that individuals whose investment is high and have
no dissonance between actual and expected rewards will be satisfied. Individuals
with high investment, but with low actual rewards will be dissatisfied. Finally,
individuals with low investments, low expected rewards, but high actual rewards
will be strongly satisfied. (Figure 3:2)

	Investment	Reward		Satisfaction
		Expected	Actual	
Type 1	High	High	High	High
Type 2	High	High	Low	Low
Type 3	Low	Low	High	High

Figure 3:2 A Partial Typology of the Relations of Investments, Rewards, and

Satisfactions

It was found that Type1 teachers were significantly more satisfied than those teachers with Type 2 patterns of investments and rewards. Most satisfied were those Type 3 teachers who had made a relatively low investment to teaching, expected relatively low rewards, but in fact were rewarded well. A series of test variables were then introduced into the zero order relationship which indicated that teachers with higher qualifications were more dissatisfied with prestige satisfaction especially if they had not been compensated for their investment by promotion to a position of responsibility , or given higher levels of classes to teach. Accordingly, teachers with high qualifications and high position or level were very much more satisfied than teachers with high qualifications but low formal status or level taught at. It was concluded that staff with high qualifications (investments) but low rewards were suffering from a perseived sense of distributeve injustice.However, when staff with such investments received other rewards from within the system, such rewards acted to compensate or redress the sense of grievance over perceived inadequate rewards.

This study also found that teachers with higher experience were more satisfied with the prestige they receive, but that there is a wide between school variation in satisfaction with prestige received. The latter finding indicated that satisfaction should be explained not only by the characteristics of teachers despite the specific organisation in which they teach, but that it should give specific attention to structural effects internal to organisations which may affect satisfaction. In sum, it was concluded that there is support for the exchange theory of job satisfaction within the limited parameters of the Halliday study. Explanation of satisfaction therefore must give attention to variables such as qualifications, experience, position of responsibility, and level at which the staff member teaches. But the explanation can do so within

the wider exchange framework.

The present study also uses the concepts of investments and rewards. Indicators of the former are taken to be qualifications and experience. Indicators of the latter are taken to be level, position of responsibility, and network centrality. Each of the reward variables are hypothesised to be means of gaining prestige within the organisation, and in some cases outside of it. The theory maintains that those staff who have made considerable investments in experience and qualifications will expected to receive greater prestige rewards. If considerable experience and qualification investment has been made, however, and the actual rewards are low, then dissatisfaction will result. If this hypothesis is correct then it would be expected that any rewards which act to redress the distributive injustice will raise the satisfaction level. Therefore it is hypothesised that an individual who is very dissatisfied because his investments have not earned him the prestige that he expects, will be very much more satisfied if he is accorded the prestige of a high level teaching position, a position of responsibility, or is central in any particular net. In other words, while the direct effects of qualifications or experience on prestige satisfaction will be negative, the mediated effect of these variables through level, title, position of responsibility will be positive. Interaction nets therefore function to give prestige to certain members of a staff. In so doing they act to increase the satisfaction of the individual with the prestige he perceives he receives. Net centrality is at once a means of increasing prestige within the system, and of compensating for investments made with respect to a career in teaching.

2. Centrality, Satisfaction and Retention

While the studies of Vroom and others have shown that there is often a relationship between lack of satisfaction and withdrawal from the job, the assumption that satisfaction inevitably avoids the latter, or vice versa, is not necessarily warranted. A teacher may well be dissatisfied but he has no alternative occupation. Expression of dissatisfaction within the staff informal groups may almost be a matter of principle. Accordingly, one of the weaknesses in many studies of teacher satisfaction has been the neglect of the implications of satisfaction on staff retention and organisational effectiveness. This study addresses itself to this problem by endeavouring to discover whether or not dissatisfaction does lead to job withdrawal.

The theoretical perspective is an elaboration of that presented in the previous section. If a teacher has invested a good deal in the system – by gaining high qualifications and acccumulating considerbale experience – and yet he does not appear to gain the actual recompense he anticipated, then not only will he be dissatisfied, but it is more likely that he will consider withdrawing from teaching. Similarly, if he has invested much and has been rewarded by a high status position in the organisation, then it is less likely that he will consider himself a victim of distributive injustice. It is also hypothesised that the highest form of tangible reward the system offers, that of promotion and its attendent economic and status benefits, will be by far the strongest predictor of likelihood to remain in the organisation. Both a high position in the authority system and to a lesser extent a high teaching level and net centrality are indicators of success in the system and it is expected that such success will be a stimulant to remain. In this way the maintenance of the social system of the school is partiaily assured by adequate

reward for clear investment.

Despite the above argument, retention is not just a function of rewards and investments. It has also been argued that an organisation like the school exercises constraint on the behaviour of its members. Consequently while members of an organisation may express their dissatisfaction strongly they may not be able to leave with ease. The constraint is exercised in two ways: firstly, by the organisation itself, and secondly, by the education system. The organisation most obviously exercises constraint on its members to stay by rewarding or promising to reward them. Therefore, a position of responsibility and net centrality are not only rewards but positive inducements and constraints to stay in the system and this organisation in particular. Both inducements may act to reduce the flexibility of a staff member for neither position is readily transferrable to another extra-educational setting, or even perhaps another school. There is no guarantee that a new position outside education would carry the particular level or authority that the teacher has received in the system. The second form of constraint is implied by the two personal variables of age and sex. The greater the age of the individual the less he is able to change a career in midpath. He finds it more difficult to retrain and ideed to readily adapt to a new situation. Similarly, sex also implies a commitment to an occupation. Initial commitment of a man to teaching as a career greatly restricts his later adaptability, and he in particular cannot choose a legitimate alternate career such as mother! The stress of the education system on continued membership is reinforced by such restrictions as superannuation benefits, the lure of better paid and more responsible positions, and the promise of greater power and prestige. All of these act to bind the male to the system much more than the female.

On these grounds it is hypothesised that 'maleness', greater age,

higher position of responsibility and teaching level, and to a lesser extent net centrality will all be positively related to job retention.

Retention in the system is therefore a function of two processes: firstly, the investment-reward process and its effect on satisfaction; and secondly, the press of organisation and career constraints to remain in the system. The relationship between satisfaction and retention may not be particularly strong. Whereas staff who have perceived inequities may well be dissatisfied they may be so constrained by the career and system commitments that they will not be so likely to leave. In this sense dissatisfaction may be a luxury for it requires no particular commitment to action. Anticipated withdrawal however, is a potentially very serious step, especially as an individual's investment in the system increases. Therefore, a positive but strong relation is expected between job satisfaction and retention.

In sum, this theoretical orientation has developed two main theses:

Firstly, job satisfaction is contingent on the balance of investments and rewards. Investments (such as experience and qualifications) which have not been rewarded will result in less job satisfaction; such investments which have been rewarded by gaining compensatory prestige in position of responsibility or in net centrality will result in greater prestige satisfaction.

Secondly, it has been hypothesised that there is no necessary relation between job satisfaction and job retention although a slight positive effect might emanate. However, indicators of success in the system such as position and net centrality are likely to produce positive direct effects on both satisfaction and retention. Indicators of commitment to the system are hypothesised to have a varying effect. While age, sex, experience and qualifications may have a negative effect on job satisfaction, the very commitment to education which they imply is that basis for hypothesising that they will have a more positive effect on retention.

CHAPTER IV   METHODOLOGY

The present chapter reviews in detail the methodology of this research.
Specifically it deals with: 1) the instrumentation of the job satisfaction
and interaction network measures; 2) the sample; 3) the data collection; and
4) the statistical analyses.

A.   INSTRUMENTATION: THE JOB SATISFACTION SCALE

This section turns firstly, to the theoretical basis of the scale;
secondly, to its operationalisation; thirdly, to the factor analysis of the
scale, the findings, and questions of validity and reliability.

1. The Theoretical Basis

The previous two chapters have drawn attention to the utility of
regarding social behaviour in terms of a process of exchange. Homans states
that, "the greater the amount an individual gets, the greater his satisfaction
and, at the same time, the more the individual still desires, the less his
satisfaction". This proposition contains two assertions about absolute rewards
and relative rewards. The former is expressed by Homans as the situation when
two men would be satiated with the same amount of reward and one gets a larger
amount than the other, the one that gets more is more satisfied. The second
proposition concerns relative rewards. When two men would be satiated with
different amounts of reward and one gets the amount as the other, the one who
is nearer satiation is the more satisfied. Homans draws attention here to two
matters frequently confused in the literature. Job satisfaction is not just
contingent on the absolute reward received in terms of salary or promotion
but it is contingent on these absolute rewards as they relate to the individual's
expectations as to the rewards he should get. Consequently, while any

measure of job satisfaction _may_ concern itself with actual rewards, it must also control for the expectations of the individuals concerned. It is the latter measure which might be expected to be the more accurate indicator of satisfaction.

A further theoretical question concerns the 'content' or 'commodities' of social exchanges. Adams(1972) has argued that social exchange may be analysed in terms of three commodities. The commodities are grossly categorised as status, affect and utility and are manifested as behaviour in any social system. Every social system, Adams argues, has accepted procedures by which status is given and denied,and by which affect and utility are given and denied. Adams briefly categorises the commodities in the following way:

Status: Individuals engage in status behaviour when they engage in pecking order practices. That is, they allocate or deny rank and recognition. Ingratiation, deference, respect, insult and contempt are terms characteristically associated with statusing behaviours.

Affect: Individuals engage in affect behaviour when they give or deny love or hate to others. Affection, care, friendliness, warmth, dislike, and hate are terms characteristically with statusing behaviours.

Utility: Individuals engage in utility behaviour when they give or deny goods or services to each other. Such 'commodities' include barter goods, money and services such as work at any kind of job.

It may be noted that this aspect of the Adam's categorisation does not claim to be a radical departure from any of the other exchange theories. With various degrees of explicitness, status, affect and utilities are referred to in the studies of Homans(1961), Blau(1964), Adams(1963) and Parsons and Smelser(1956). However, while each of these commodities may not be equally dominant in any given social system, all three elements are to be found to a greater or lesser extent in all systems. This categorisation of types of exchange may be applied to any social system, including the staff subsystem of the school. Staff behaviour may be analysed in terms of utility, status and affect given and received by individuals on the staff. Teachers both give and get a wide range

of utilities such as income and teaching services. Similarly they are both
the benefactors and recipients of affective and statusing behaviour. When seen
in these terms it is possible for the rewards and consequent satisfactions
from these rewards to be analysed in terms of the utilities, status and affect
received by each teacher relative to his expectations. In this way an
exchange paradigm is applied to the case of the satisfactions of the teacher
with the Adams distinctions providing the content of the exchange.

A third theoretical distinction is concerned to make explicit the other
members in the exchange relationship with the teacher. This formulation draws
attention to the actual complementary roles of the teacher - those others with
whom he exchanges status, affect and utility. This formulation follows
Merton's discussion of the role set. Merton shows that in a system, every
position has a complement of other positions with whom interaction is regular
and/or salient. For example, the medical student role set comprises a series
of complementary roles such as teachers, doctors, and nurses. What then
comprises the role set of the teacher? It may be expressed in Figure 4:1.

Intra-organisational   a) staff
                                   b) pupils

Extra-organisational   a) Education system personnel
                                   b) professional association personnel
                                   c) the school related community
                                   d) the non-school related community

A basic distinction is made between those complementary roles within the school
and outside the school. Within school roles are dichotomised clearly between
pupils and staff, but further distinctions between senior, junior and ancillary
staff might also be made. Outside school sectors of the role set are divided
between those that are part of the education system and the teaching profession,
and those which are part of the local community in which the school is located

The administrative structure of the education system itself consists of supporting educational groups as the psychological service, allied educational organisations such as primary and tertiary institutions, and system administrators such as the Education Department Officials and the inspectorate. Teachers also have affiliations with professional associations. The local community consists of two broad groups which are designated as school related, and non-school related. The former category includes all those individuals who have a direct contact with school in their role as parents or as participants in local school bodies such as Boards of Governors and Parent Teacher Associations. The non-school related community consists of those diffuse others that have no direct relationship with the school but none theless are sometimes perceived by teachers as dispensing status and affect.

These three sets of distinctions are synthesised by considering job satisfaction as contingent on the utilities, status and affect the teacher gets from the members of his role set relative to his expectations.

2. The Research Instrument

An initial problem in the development of the scale was that of accounting for relative satisfaction. This was effected by asking each individual what his level of satisfaction was with any reward he gets no matter what it is. Thus each item asked for a response of satisfaction with current reward (without reference to the absolute reward). Each individual is therefore being asked for an evaluation of the reward he gets with what he thinks he should get. In each case the satisfaction response should reflect the difference between the two.

It is also clear from earlier studies that a teacher or worker is not just satisfied or dissatisifed. Satisfaction will vary by degrees from those who are highly satisfied (that is, actual and expected rewards are near to equivalent) to those who are quite dissatisfied(that is, there is a large

difference between actual and expected rewards). There will also be staff

for whom any particular response may be irrelevant, or on which they may not

feel able to make a directional response. It is therefore necessary to use a

scale for each item which has a midpoint which is 'neutral'. Finally, while

It is unlikely that satisfactions come in 'units', it is desirable that the

range of responses available in each item should be as close to interval data

as possible. Each of the conditions discussed in this paragraph are best met

by a Likert scale, which allows for a range of agreement on any item, has a

neutral midpoint, and is suitable for interval level analysis. A five point

scale was employed.

The items in the scale were generated by relating together the teacher

role set and the commodities the teacher receives in the system. Therefore,

three subscales are developed concerned with utilities, status and affect

respectively. The items used in the scale are developed by Koopman(1972),

who is working concurrently with job satisfaction of primary teachers in New

Zealand using a similar theoretical perspective developed independently of the

present study. The items used are:

Utilities: salary, superannuation, physical conditions, provision of equipment,
provision of ancillary staff, co-operation given by staff colleagues,
inservice training, running of theschool, assistance given by
departmental advisors, assistance given by related service
organisations, holidays, reasonableness of the demands made on your
time; prospects for promotion, and prospects for financial
advancement.

Status: amount of responsibility you are given, respect you are given by
pupils, the general public, staff colleagues, people who benefit
indirectly from your work, the freedom you are given to choose what
you will teach, the freedom to use what teaching methods you will
use, opportunities you have to participate in the affairs of the
teaching profession.

Affect: your personal relations with pupils at the school, people who benefit
indirectly, colleagues, ancillary staff, general public in your role
as a teacher, the school's senior staff, and system administrators,
personal relations with personnel in other service organisations,
with training organisations that serve your occupation, and with
personnel in similar organisations.

The scale was then statistically analysed to empirically test the theoretical assumptions underlying. Factor analysis has two principal advantages in scale construction. Firstly, it deals with the problem of measurement error (and thus reliability), by operating on the basis that each item is an indicator of a more general property which underlies the various individual indicators or items. Those items will include responses that contain random error, punching errors, and other forms of response error. The factor analysis, however, loads individual items on underlying factors in such a way that the error responses are selected out. Thus the loading of any item on any factor represents the degree to which that item is accounted for by the underlying factor to which it is related, and error is hence controlled by the process of factoring. A second advantage of the technique is that it provides a statistical test of the degree to which the theoretical basis for the scale is substantiated. Accordingly, it would be expected that the factor analysis of this scale would yield three factors corresponding to status, affect and utility sub-scales respectively.

A series of three factor analyses were performed on the data. The first analysis specifically called for three factors, the second for six, and the third without stipulation as to the number of factors. As the latter is the most statistically justifiable procedure in that statistical criteria are used for the selection of factors, it is the process reported here. In this analysis a principal components analysis was performed. "The first principal axis is defined as that linear combination of variables which explains the most variance. That is, the weights for the first factor are selected so that the average squared factor loading (V_1) is a maximum" (Nunnally, 1967) The remaining factors constitute the condensation of the residual after each successive factor is obtained. Consequently the principal components analysis is useful

as a means of condensing variables so that the majority of the variance is
accounted for by the first one or two factors. Table 4:1 indicates that the
analysis as a whole accounts for approximately 50% of the variance of the items
(found by dividing the sum of the communalities by the number of items in the
scale). The first factor accounts for approximately 24% of the variance
generated by the items, and a little less than half of the variance accounted
for by the five factors. It can be seen that most variables load at the .4
or higher level on Factor I, with the items in the status and affect subscales
loading most highly (items 15 through 32). A number of the items on the utility
subscale have less than 10% of their variance accounted for by the factor.

The second step in the factor analysis was the rotation of the principal
components analysis.. Rotation has the advantages that it spreads the variance
accounted for within the factor matrix among the various factors in such a way
that interpretation of the analysis is more readily achieved. It should be
noted that the rotation does not account for any more of the variance than that
accounted for in the principal components analysis, and consequently the
communality (h^2 - the sum of squared loadings on any row) remains the same.
However a usual effect of a rotation of the principal components analysis is that
the total variance accounted by the factors is 'spread' among them more evenly.
The process is succinctly summed by Nunnally(1967). "The first step serves
its purpose in condensing the common variance, and the second step (rotation)
serves its purpose in 'slicing up' that common variance in a manner which is
more easily interpreted".

The statistical criteria for the number of factors to be included in
either the principal components or the rotated matrices were: that there should
be not more than eight factors; the minimum latent root should be equal to
1.0; and the minimum percent of communality should be equal

PRINCIPAL COMPONENTS FACTOR LOADINGS

VARIABLE DESCRIPTION	VAR NO.		1	2	3	4	5	COMMUNALITY
ITEM	1	VAR 1	.223	.337	-.242	-.224	-.364	.404
ITEM	2	VAR 2	.141	.153	-.424	.116	.014	.236
ITEM	3	VAR 3	.456	.396	.361	.194	.045	.535
ITEM	4	VAR 4	.403	.313	.415	.383	-.121	.594
ITEM	5	VAR 5	.399	.268	.357	.360	-.154	.505
ITEM	6	VAR 6	.464	.085	.332	-.373	.397	.630
ITEM	7	VAR 7	.338	.436	-.116	.051	.403	.479
ITEM	8	VAR 8	.404	.346	.155	-.012	.096	.317
ITEM	9	VAR 9	.399	.322	.009	-.128	.021	.280
ITEM	10	VAR 10	.297	.145	-.063	.021	-.142	.134
ITEM	11	VAR 11	.427	.424	-.017	.139	.304	.474
ITEM	12	VAR 12	.382	.155	-.027	.220	.335	.525
ITEM	13	VAR 13	.280	.471	-.180	-.379	-.194	.517
ITEM	14	VAR 14	.325	.551	-.353	-.359	-.331	.772
ITEM	15	VAR 15	.369	.111	.022	-.155	-.084	.368
ITEM	16	VAR 16	.511	-.189	-.062	.104	-.130	.328
ITEM	17	VAR 17	.558	-.137	.290	-.391	.121	.582
ITEM	18	VAR 18	.564	.043	.163	.109	-.162	.385
ITEM	19	VAR 19	.671	-.127	-.082	.018	-.268	.545
ITEM	20	VAR 20	.549	-.162	.244	.140	-.371	.544
ITEM	21	VAR 21	.569	-.178	.180	.089	-.245	.456
ITEM	22	VAR 22	.566	-.012	-.103	-.088	-.238	.395
ITEM	23	VAR 23	.492	-.288	-.263	.183	.002	.435
ITEM	24	VAR 24	.677	-.261	-.135	.094	-.192	.591
ITEM	25	VAR 25	.648	-.288	.369	-.365	.160	.667
ITEM	26	VAR 26	.604	-.326	.056	-.280	.108	.564
ITEM	27	VAR 27	.714	-.220	.031	.137	-.121	.593
ITEM	28	VAR 28	.644	-.254	.138	-.316	.145	.619
ITEM	29	VAR 29	.701	-.133	-.078	-.084	.075	.528
ITEM	30	VAR 30	.675	-.019	-.224	.313	.234	.659
ITEM	31	VAR 31	.554	-.046	-.402	.207	.264	.589
ITEM	32	VAR 32	.515	-.130	-.436	.195	.139	.530
			8.593	2.267	1.726	1.668	1.524	15.778

Table 3:1   Principal Components Analysis of Job Satisfaction Items

ROTATION NO. 1   ROTATED FACTOR LOADINGS   ORTHOGONAL VARIMAX   ROTATION BY VARIABLE

VARIABLE DESCRIPTION	VAR	NO.	1	2	3	4	5	COMMUNALITY
ITEM	1	VAR	1	.140	.017	-.618	.154	.004	.404
ITEM	2	VAR	2	.025	-.046	-.229	.161	.394	.236
ITEM	3	VAR	3	.134	.695	-.106	-.142	.055	.535
ITEM	4	VAR	4	.275	.717	-.001	.051	-.028	.594
ITEM	5	VAR	5	.300	.640	-.017	.067	-.023	.505
ITEM	6	VAR	6	-.039	.293	-.051	-.733	.052	.630
ITEM	7	VAR	7	-.218	.362	-.225	-.226	-.446	.479
ITEM	8	VAR	8	.046	.448	-.219	-.224	.124	.317
ITEM	9	VAR	9	.068	.293	-.346	-.223	.141	.280
ITEM	10	VAR	10	.207	.154	-.237	-.014	.105	.134
ITEM	11	VAR	11	-.067	.492	-.177	-.165	.412	.474
ITEM	12	VAR	12	.157	.418	-.001	-.248	.513	.525
ITEM	13	VAR	13	-.009	.107	-.694	-.149	.030	.517
ITEM	14	VAR	14	.056	.066	-.868	-.022	.100	.772
ITEM	15	VAR	15	.330	.213	-.310	-.318	.129	.368
ITEM	16	VAR	16	.511	.068	-.036	-.132	.210	.328
ITEM	17	VAR	17	.278	.134	-.079	-.692	-.042	.582
ITEM	18	VAR	18	.462	.353	-.118	-.162	.078	.385
ITEM	19	VAR	19	.644	.102	-.222	-.182	-.191	.545
ITEM	20	VAR	20	.673	.261	-.031	-.102	-.089	.544
ITEM	21	VAR	21	.612	.214	-.021	-.188	.008	.456
ITEM	22	VAR	22	.484	.080	-.313	-.187	.147	.395
ITEM	23	VAR	23	.485	-.063	.044	-.094	.430	.435
ITEM	24	VAR	24	.682	.034	-.092	-.181	.288	.591
ITEM	25	VAR	25	.383	-.034	-.052	-.699	.165	.667
ITEM	26	VAR	26	.420	-.050	-.014	-.600	.156	.564
ITEM	27	VAR	27	.660	.191	-.012	-.245	.246	.593
ITEM	28	VAR	28	.386	.043	-.039	-.671	.128	.619
ITEM	29	VAR	29	.450	.105	-.128	-.425	.344	.528
ITEM	30	VAR	30	.369	.265	.011	-.159	.653	.659
ITEM	31	VAR	31	.263	.064	-.050	-.139	.703	.589
ITEM	32	VAR	32	.341	-.040	-.059	-.074	.635	.530
			4.507	2.827	2.294	3.225	2.824	15.778

Table 3:2 Orthogonal Varimax Rotation of Job Satisfaction Items

to 10.0. An orthogonal varimax rotation was called. This form of rotation generates uncorrelated factors, while the varimax method of rotation maximises the sum of variances of squared loadings in the columns (rather than the rows) of the factor matrix. This latter method tends to produce simple structure more readily by producing some high loadings and some loadings near zero in each column of the matrix.

Table 4:2 gives the varimax orthogonal rotation of the principal components factorial analysis of the 32 job satisfaction items. Two criteria were used for the inclusion of an item with a particular factor. Firstly, the loading of the item on the factor should be at least .5 (that is, the factor accounts for 25% of the variance of that item). And secondly, where an item had its variance accounted for more or less equally by more than one factor, or the loading was less than .5, the inclusion was based on theoretical judgments as to the relevance of that item to the others in the factor.

The five factors are presented below.

Factor I

Var 24	.682	personal relations with people who benefit indirectly from your work (eg, parents)
Var 20	.676	the freedom you are given to choose what you will teach
Var 19	.644	respect you are given by people who benefit indirectly from your work (eg. parents)
Var 27	.660	your personal relations with the general public in your role as a teacher
Var 21	.612	the freedom to choose what teaching methods you will use
Var 16	.511	respect you are given by pupils
Var 23	.485	personal relations with the pupils at your school
Var 22	.484	opportunities you have to participate in the affairs of the teaching profession
Var 18	.462	status you are given by the general public
Var 29	.450	personal relations with system administrators.

This factor includes a number of items that have been derived from the status and affect sections of the original scale. However, the factor does not appear to distinguish between these dimensions. Instead the above factor appears most concerned with autonomy, status and personal relations. Accordingly this

factor is designated as Teacher prestige, status and autonomy. It is the

criterion used as the indicator of job satisfaction in the remainder of the

study.

Factor 2.

Var 4	.717	provision of equipment
Var 3	.696	physical conditions (eg, general environment, facilities,etc)
Var 5	.640	provision of ancillary staff
Var 8	.448	the running of the school

These four items all are derived from the utilities subscale of the original

measure. They clearly indicate in school working conditions.

Factor 3.

Var 14	.868	prospects for financial advancement
Var 13	.694	prospects for promotion
Var 1	.618	salary
Var 9	.346	the reasonableness of the demands made on your time
Var 22	.313	opportunities you have to participate in the affairs of the teaching profession
Var 15	.310	amount of responsibility you are given

This factor was taken to represent personal-professional expectations concerning

advancement.

Factor 4.

Var 6	.733	co-operation you are given by staff colleagues
Var 25	.699	your personal relations with colleagues
Var 17	.692	respect you are given by staff colleagues
Var 26	.600	your personal relations with ancillary staff
Var 28	.671	your personal relations with the school's senior staff

This factor is strongly associated with the nature of teacher staff relationships.

The variables come from the status and affect subscales. It should be noted

that here again no distinction is made between status and affect items.

Factor 5.

Var 31	.703	your personal relations with personnel in training organisations that serve your occupation
Var 30	.653	your personal relations with personnel in other service organisations
Var 32	.635	your personal relations with personnel in similar organisations
Var 12	.513	assistance given by related service organisations
Var 7	.446	in-service training
Var 11	.413	assistance given by departmental advisors

This factor again does not distinguish between affect and status items and refers to relations of teachers with service aspects of the education system.

Several broad trends are apparent as a result of this analysis. Firstly, the distinction between items characterised by affect and status was not maintained, although a clear distinction is apparent between utilities and affect and status. In the second place, there is confirmation of the distinctions made on the basis of the teacher's role set. In school staff relations are differentiated from those with parents and the non-school related community, which are in turn distinct from educational service organisations. However, there was an obvious blurring of the distinction between pupils, their parents and the public. These three groups were perceived to have very similar characteristics by the teachers in this population. If the pupils respected the teacher then so too was the parent and the public perceived in that way. This may indicate that the teachers perception of the reaction of parents and public to him is mediated through his perception of his relationship with the children. If he perceives them as respectful, he also perceives the parents in that way. Finally, it may be noted that the factors fall into two broad groups. One set of factors is school bound and relates to in school conditions and staff relations, and the other three factors have to do with teachers' relations outside the school, and his anticipated career.

Finally, this section on the job satisfaction instrument turns to questions of reliability and validity. Reliability of the measure has already been discussed in part. It was argued that factor analysis is a means of dealing with reponse and measurement error, and thus the factors should be quite highly reliable. A second source of reliability error comes from sampling error. However, this study is based on a population and therefore the latter is not a relevant problem.

Three forms of validity are relevant for the consideration of this instrument: concurrent validity, content validity, and predictive validity. Concurrent validity is most usually established by comparing the most recent instruments with others in the field. This practice is to be treated with caution in that too close an approximation of the new measure with the old might indicate that the new measure had not advanced onthe old and had included the deficiencies.Nevertheless radical differences inthe findings of different job satisfaction instruments would necessarily require careful attention. However, the present instrument is sufficiently similar to that of both Remple and Bentley(1967) and Coughlan(1970) to give a certain amount of confidence. Except for school effectiveness, which was not theoretically relevant to this study, the present instrument has factors broadly equivalent to the four areas found by Coughlan: administrative operations; working relationships; school effectiveness; and career fulfillment. The content validity of the measure must be determined with reference to the theoretical basis for that measure. In this case the development of the measure was based on two important and accepted forms of current theory, and as much as they are acceptable, the content validity of the measure must also be acceptable.

The final criterion, predictive validity, refers to the explanatory significance of the variable in the empirical model. It will be demonstrated that prestige satisfaction meets this criterion as a dependent and independent variable inthe empirical model.

In sum, the similarity of the job satisfaction measure to recent well known indices, the viability of the theoretical grounds on which it is based, and the demonstrated research utility of the instrument provide some evidence for the acceptance of the validity of the scale.

B.   INSTRUMENTATION: INTERACTION NETS

This section reviews, firstly, the form of the instrument used; secondly, the mode of analysis employed; and thirdly, turns to questions of reliability and validity.

I. The Measure

The previous chapter has argued that five analytically distinct interaction nets are characteristic of school staffs. There are two methods which may be used to empirically measure those nets. The first is by direct observation where the researcher either directly observes staff behaviour, or uses an indirect means of recording behaviour such as videotape. Both of these methods have a number of shortcomings. Firstly, it is not physically possible for one or any series of researchers to cover all of the interactions among staff members in all possible behaviour settings. In the second place, the presence of the researcher may unduly contaminate the interactional configurations in any settings and so systematically bias his findings. Thirdly, there is ample documentation in microsociological analysis of the great difficulty in adequately coding even the smallest of groups. It is not without significance that the vast majority of small group researchers do not give inter-coder reliability co-efficients. Finally, the symbolic interactionists and others have indicated that the analysis of behaviour from the point of view of the observer may be quite irrelevant. In that 'reality' is socially constructed, and that the salience of a situation is contingent on the actor's definition of it, it has been maintained that actor perceived relationships may be more accurate representations of his reality than those actions observed by the observer.   It is on these methodological and theoretical bases that the present research measures interaction as it is perceived by the actors themselves. In certain respects therefore, this method is similar to sociometric analysis. The

sociometric measure is contingent on self reporting of associations on the basis of some criterion and it enables a mapping of responses insuch a way that under and overchosen subjects are readily identified. (Lindzey and Byrne,1969) However, while sociometric principles are taken into consideration in the present study a most important departure from sociometric methods is the focus on actual interaction rather than anticipated or speculated interaction. (Cf Greenberger and Sorensen,1970). In so doing staff members are asked to record their interactional relations with other staff as they view them.

The actual form of the instrument is determined by four questions: 1) what criteria for interaction choices shall be used; 2) how many choices will each individual be permitted; 3) will the choices be weighted in intensity; and 4) will rejections be permitted?

In this case the criterion for choice is derived from the conceptualisation of the five networks. The format of this section began with an introduction to justify the nature of the research, and was followed by five questions of the form (See Appendix 2 for the questionnaire used in this study):

1) In your main teaching fields with what other staff do you have contact on matters pertaining to teaching your subjects?
2) With what other staff members do you have contact in various aspects of school organisation? This relates to organisation to do with such things as the school library, organising sport, assemblies, book distribution etc.

The limiting of the number of choices is problematical. Moreno(1934) originally argued that choices should be unlimited, but Lindzey and Byrne(1969) note that later research has evidenced many investigators limiting the choices of subjects to one, two or three (Cf Fishbein,1965; Haythorn,1953; Izard,1960b; Venable,1954). However it can be argued that limiting choices may well aid simple analyses, but it also artificially constricts the representation of actual interpersonal relations. Moreover, more extensive network analysis on patterns of flow, isolation of members, and comparisons of self and other ratings, is

contingent on unlimited choices. There are several objections to the latter: that it takes more of the respondents time, that it may thus lower the response rate, and that it renders statistical analysis more difficult. Nevertheless each of these objections may be met. The length of time taken is contingent on the size of the group, the ease of reporting, and the number of different ratings requested. While the staffs in this study were from 40-50 members in size the ease of reporting was increased by giving each staff member a numberand it was the latter which was recorded. In addition there were only five criteria for response and of these five it was anticipated that only two would elicit extensive responses. Therefore, given the fact that the questionnaire took less than 30 minutes to complete, was of considerable interest to most respondents, and the means taken to accomodate to objections, it was considered that the theoretical value of unlimited choice far out-weighed the objections.

It is intuitively clear that interaction with other individuals is not just a matter of liking or disliking, but attraction and contacts may be qualitatively and quantitatively different from individual to individual. Consequently it has become standard practice to rate the degree of attractive-ness of one individual to another on ordinal scales. Lindzey and Byrne indicate that the length of such scales has varied from a two point scale (Keislar,1961) to a 100 point scale (Newcomb,1961). Despite the range of possibilities a fivepoint scale is the most common as it has a mid-point, is easily meaningful to respondents , and yet it is useful in more powerful statistical analyses. Accordingly, this study uses a five point scale ranging from 'extremely close contact' to 'minimal contact'.

Finally, rejections were not permitted. In the first place, the concept of rejection is not so relevant to interaction network analysis - a person

with whom one has little or no contact can be simply left out. Secondly,
the use of rejection is likely to be a particularly sensitive issue
already hesitant about the personal implications of their responses. On
theoretic and pragmatic grounds they are excluded.

In sum, the respondents were permitted an open number of choices
(but not rejections) on five criteria using a five point scale in each
case. The form of the questions was as follows:

1. With what other members of staff do you have contact in your main
   teaching fields?

		Especially close contact	Very close contact	Close contact	Some contact	Minimal ontact
Specify up to	1st					
3 major subject	2nd					
fields	3rd					

Specification of the basis of the contact (as represented in the left hand
column) was to enable subsequent more detailed mapping of staff interaction
than the first level analysis used in this thesis.

2. Interaction Net Analysis

The procedure of sociometric analysis raises two methodological issues.
The first is concerned with the nature and meaning of weighted responses. There
has been some concern that the effects of weighted responses, both theoretically
and statistically, have not been very fully explored (Foa,1950).Gronlund,
1955) found that weighting made little difference to the stability of choices
over time. However it can be maintained that the theoretical grounds for
weighting appear to be more appealing for the reasons outlined above. The
actual weights to be used raise yet another problem: should the weights given

by the respondents be accepted or should they be grouped? Two weighting
procedures were statistically analysed in this study. The first procedure
excluded the lowest rating and gave the other weightings those assigned by
the respondents (that is, 5,4,3, and 2 respectively). However it was
considered that the distinctions between categories 5 and 4, and 3 and 2 may
be too fine and thus over emphasise idiosyncratic or random error response
patterns. On the basis that the robustness of the weightings would be
increased and error would be reduced, categories 5 and 4, and 3 and 2, were
collapsed and given weightings of 4 and 2 respectively. To test the stability
of centrality ratings when different weightings were used, a correlation
co-efficient was computed for each of the nets using different weightings. Table
4:3 indicates that while there is some difference between nets where no
weights are given (ie. Net I), and the weighted nets (Net II and Net III),
the difference between weighting using 4 values (Net II) and that using 2
values (Net III) is negligible) On theoretical grounds therefore preference
is given the 2 value weighting procedures.

The second methodological issue related to network analysis is that of
the legitimacy of merely summing weighted choices received by an individual
while making the assumption that every choice is of equivalent 'value' as
every other choice. It has been argued that merely summing the responses gives
equal value to a choice from a high status individual as to a very low status
individual. All things being equal it is so argued that choices from
individuals of different status mean different things, and this should be noted.
The major method of doing this is through the use of matrix mupliplication
(Luce and Perry,1949; Festinger,1949). By raising the matrix to higher powers
it is possible to control for the relative sociometric significance of
choosers, to identify clique formation and so on (Harary and Ross,1957).

	Net 1	Net 2	Net 3	Net 4	Net 5	Net 11	Net 22	Net 33	Net 44	Net 55	Net 111	Net 222	Net 333	Net 444	Net 555
Net 1															
Net 2	.37														
Net 3	.22	.59													
Net 4	.29	.38	.50												
Net 5	.30	.35	.50	.48											
Net 11	.94	.39	.25	.30	.37										
Net 22	.34	.96	.51	.29	.34	.40									
Net 33	.18	.56	.94	.44	.48	.25	.53								
Net 44	.32	.35	.44	.94	.57	.37	.31	.47							
Net 55	.30	.31	.48	.50	.97	.38	.31	.47	.60						
Net 111	.92	.39	.26	.30	.37	.99	.40	.27	.38	.38					
Net 222	.33	.95	.51	.29	.34	.39	.99	.53	.31	.31	.38				
Net 333	.17	.55	.91	.44	.48	.25	.53	.99	.43	.47	.26	.53			
Net 444	.32	.32	.41	.88	.56	.38	.30	.43	.98	.60	.38	.30	.43		
Net 5555	.30	.32	.50	.50	.96	.37	.32	.48	.60	.99	.38	.31	.47	.61	

Table 3:4   Pearson Correlation Co-efficients of the Interaction

Networks using Three Weighting Procedures

However, the major current limitation of this approach is that it cannot handle weighted choices (Lindzey and Byrne, 1968), and it requires laborious punching and programming procedures. While the author has such a programme, the limitation on weighting procedures of matrix multiplication was judged to be sufficiently limiting that the usual summing of weighted choices is used in this first level analysis.

3. Reliability and Validity

The reliability of an instrument is concerned with the consistency and accuracy of the measurements (Nunnally, 1967) Of the several forms of reliability (inter-judge, test form reliability, internal consistency, and time stability), only the last is relevant for the instrument in this study. While temporal consistency of sociometric measures is the most frequently reported form of reliability in the literature it is nonetheless problematical in a number of respects. Measures which purport to represent behaviour which changes over time are caught in the double bind of the difficulty of deciding whether lower test-retest co-efficients are a function of the inadequacy of the instrument or an artifact of the behaviour which has changed from Time 1 to Time 2. Moreover, adequacy of the instrument is also partially contingent on its ability to record change in the observed behaviours. This tension is usually resolved by use of a test-retest method where the second measure is made in a very short period from the first. If the co-efficient is high there are stronger grounds for believing the instrument is reliable.

There is considerable evidence, according to an extensive literature review by Mouton, Blake and Fruchter(1955a), that group members can make quite stable responses. The consistency is rated to be higher when certain specifiable conditions of are satisfied. (Lindzey and Borgatta, 1954). A number of studies have indicated that test-retest reliability increases with the

age of the subjects, and hence responses of adults are the most stable.
(Davis and Warnath, 1957; Gardner, 1956; Horowitz, 1962; McCandless, Casteneda
and Palermo, 1956). In addition, the greater saliency or intensity of responses
the greater the likelihood they will be stable over time. (Moreno, 1934;
Venable, 1954). A further source of stability comes with the 'passage of time
during which a group has been in existence'. (Hunt and Solomon, 1942). Change
in sociometric choices will be much greater if a group is in early stages of
formation, or is shortlived, than if it has existed for an extensive period.
(Newcomb, 1963). In sum, if each of these conditions are met it is very much
more likely that an instrument following usual sociometric form will be more
strongly reliable.

The reliability of the instrument used to measure networks may be given
more confidence to the degree it satisfies the above conditions. It is argued
that on those criteria there are some grounds for accepting the instrument
as reliable. All of the respondents were adults and all had been on the staffs
of the schools concerned for at least seven months. In some cases a
relatively large proportion of the staff had been teaching together for a
number of years. It is therefore highly probable that the patterns of interaction
characterising each staff were largely stabilised by June - the month in which
the instrument was administered. However a number of secondary schools have
increasingly employed numbers of part-time staff who may have been only
recently appointed or who have minimal contact with the staff at large.
Because of the possible instability such staff might represent in interaction
patterns, these staff were excluded from the present study.

This study also takes the position of more recent sociometric research
that care in the time of administration, the choice of sample, the construction
of the instrument and the analysis of findings, obviates the need for the
re-administration of the instrument to a population. Moreover, it is sometimes

overlooked that the re-administration of an instrument to a busy sample may serve to increase their resistance to the time and effort demands of such research, and may increase the inaccuracy of their second responses, as well as prejudice them against further research demands. In this case, the expedient of administering a test-retest to a different population which is more readily accessible is rejected onthe grounds that the validity of such findings for the main study are dependent on the similarity of the two groups being tested. The latter condition is not usually met to a degree even approaching acceptability, and is therefore rejected.

The two forms of validity which are appropriate criteria are those of content validity, and the research utility of the measure. Satisfying the content validity criterion can be partly established by considering the degree to which the analytic distinctions among the nets are empirically concerned. The method applied here is to use the inter-corellations of the five nets. According to the problem of multi-collinearity a very high correlation between the nets (of the order or .7or higher) would indicate that the nets probably have more variance in common than what is unique - that the nets are not particularly empirically distinct. At the other extreme are correlations that are very low (Of the order of .2 or less) which would indicate a surprising inadequacy of the theoretical conceptualisation, particularly in that certain variables are likely to be strongly related to all of the nets. Inter-correlations of the .3-.5 range would constitute a limited confirmation of the validity of the distinction between nets. Table 4:3 gives some empirical support to this validity of the analytic distinctions.

The second criterion for validity is research utility. Lindzey and Byrne(1968) state,

"If one views the main purpose of scientific endeavour as the building of stable, significant relationships that are empirically inter-related, the empirical value or usefulness of a response measure can be roughly equated to its capacity to relate significantly to independently measured variables. To the extent that empirical relationships are established and theoretical formulations are generated in connection with a response variable, one's measure is worthwhile" (1968:483)

The empirical relationships established in the following chapter satisfy this criterion and again give confidence in the validity of the mesaure. In summary, the above review has indicated that there are grounds for some confidence in the reliability and the validity of the network measure.

C. POPULATION

The subjects selected for this study were based on four criteria. Firstly, there should be sufficient cases for the statistical analysis required. For example, Nunnally(1967) argues that sampling error in factor analysis can only be satisfactorialy reduced by using the rule of thumb of having at least ten times as many subjects as items in the scale, and certainly no less than five. Similarly the problem of error greatly increases in regression analyses when the sapple is too small. However, tempering the desire for large samples are the practical exigencies of administration, cost and analysis. To ensure a reduction of error as the result of administration variability it is preferable for the researcher to administer the instrument unless they are completely self explanatory. A third criterion was the need for responses from complete school staffs for the sociometric or interactional analyses to be possible. Accordingly close attention was given to getting as near to 100% response from a few schools rather than a lower response rate from many schools. Finally, several broad controls were introduced to effect some homogeneity in the sample so as to reduce the likelihood of spuriousness. The schools were all co-educational,

they were in urban areas in the central North Island, and had approximately
the same number of staff. With one exception (– the principal declined to
assist–) these schools constituted the population of such schools in that
region. Accordingly, it is probably more accurate to refer to the research
population than the research sample. Considerable care is taken in the
reporting of findings to make only generalisations about this population.
While many of the findings may hold true for similar schools in other
parts of New Zealand, no attempt is made to generalise to them, and in part-
icular generalisation of findings should not be made to other kinds of schools.
Single sex, rural and boarding schools will very probably have quite
different interactional nets and job satisfaction factorial structures.

The total population was 215 based on the responses of staff from five
schools. In no case was there a 100% response rate elicited although
response varied from 93% to 98%. There does not appear to be any bias in the
pattern of respondents or non-respondents. On the basis of information available
to the researcher the analysis of the non-respondents indicated that they were
random on the basis of the variables held to be salient to this study.

The population had the following general characteristics: just over
half the staff were men(55.3%), with an average respondent age of 37 years,
and teaching experience of twelve years. Arts teachers constituted just
under a half of the population (45%), with 21% science teachers and 19%
technical teachers. Approximately three quarters of the staff were assistant
teachers, one third had a bachelors degree or higher, and on third taught
predominantly in the third, fourth and fifth or higher forms respectively.
One third of the respondents said it was very likely that they would stay
in teaching, another third thought it was likely, while a little less than
a third were ambivalent or thought it likely they would leave.

D. DATA COLLECTION

The data collection proceeded in two stages. The questionnaire was pretested on a school staff comparable to the other staffs in the population. Procedures adopted in this and the other schools to ensure maximum response were as follows. Firstly, it was necessary to confront the problem of being able to identify who was chosen and who chose without the researcher being able to identify the individuals concerned. This was especially the case in view of the reluctance of staff to respond if their responses could be seen by senior staff. Accordingly a method was adopted where a list of staff was typed out and alongside each name the clerical assistant allotted a number. Each staff member was then handed one of these sheets and all choices of staff were made in terms of the numbers alongside the names. The questionnaire was then sealed in an enveloped without the numbered list, and returned to the clerical assistant who signed off the various respondents' names. In this way no individual's name and questionnaire were associated at any stage of the research by any other person. The questionnaire was completed in three days. To ensure that outside school conditions which might indluence satisfaction responses were minimised, all the questionnaires were adminst ered within ten days. Finally, it should be noted that the study was done while a major restructuring of the secondary salary levels was in progress. At the point at which the data was collected it was widely believed that teachers would get a substantial raise in salary (which they subsequently got). This should be taken into account in interpretation of the job satisfaction scale.

The pretest instrument was largely unmodified, except for some changes in format. As the alteration in the instrument was negligible, and the pretest school was comparable to the other selected schools, it was subsequently included in the analyses.

E. ANALYSES

Subsequent to the collection of data, the questionnaires were coded, punched and run on the IBM 370 at the Computer Centre of the University of Toronto, and the IBM 360 of the Educational Data Processing Department of the Government of Ontario. All analyses were done using the Statistical Package for the Social Sciences (SPSS) computer programmes. Two . forms of statistical analysis were used - parametric correlation co-efficients and multiple regression analysis, and factor analysis.

The analyses reported in this thesis were preceded by extensive cross-tabular study. This was necessary for two reasons. Firstly, multiple regression techniques make assumptions regarding the monotonicity of the variables in the equations and cross tabular analysis is an important means of testing for this. Moreover, multiple regression also assume that a causal ordering of the variables has been established before the construction of the empirical model. (Heise,1969; Davis,1971) The second value of crosstabular analysis is the theoretical need to look at certain constellations of variables in a way that parametric analyses usually do not permit. Accordingly, the social exchange theory of job satisfaction advanced in this dissertation requires comparison of arts teachers with high qualifications teaching high levels. This can be done most efficiently by use of non-parametric analysis. In addition, the folklore of survey methodology stresses the ability to get a 'feel for the data' as a precondition for its effective utilization. (Cf Rosenberg, 1968) Consequently, the use of crosstabular analysis is used both as a useful method in its own right, and as a necessary condition for path analytic procedures. (Cf Sewell and Shah,1964 for a regression analysis following crosstabular study).

Despite the great value of crosstabular methods they suffer from significant limitations. Firstly, they are usually based on very gross

categorisations of the data and therefore lose a certain amount of precision.
Secondly, they give no adequate indication of the total amount of variance
accounted for by more than one independent variable. (There are non-parametric
analogues such as weighted net percentages, but even the latter have important
limitations.)(Spady,1971; Coleman,1964)

Subsequent analysis uses multiple regression techniques in path analytic
form. Regression has a number of advantages. Firstly, like all statistics
based on equal point data it is very much more powerful than most non-
parametric statistics. Secondly, it gives precise measures of the linear
additive predictive power of any series of variables in the equation, along
with a measure of dispersion from the least squares line and the amount of
variance unexplained. Thirdly, sociologists in the last few years have
discovered that the method is more robust than has hitherto been accepted,
in that the technique is able to handle suitably treated nominal and or inal
data (Bohrnstedt and Carter,1971), and variants of the method can make
powerful contributions to areas of sociological enquiry. (Duncan, Haller, and
Portes,1968.)

The most widely used form of regression currently used by sociologists
is that of path analysis. Path analysis is seen by Land(1969) as a linear
causal model which is a valuable means of "bridging the gap between sociological
theory on the one hand and the results of classical statistical analysis on
the other".(1969:3) The intent of the causal model is to construct a
simplified model of reality on the basis of previous research and theory. This
model is then represented as a set of structural equations which purport to
represent the relations among the variables. The model is given mathematical
content and this in turn enables the adequacy of the theory to be either
confirmed or modified. There are several advantages to path analysis. Blalock

(1968) notes that it offers a valuable strategy for increasing the interaction between theory and research. Spady and Greenwood(1971) argue that it "compels the researcher to be explicit about the presumed causal relationships among the variables in his model", and further, it enables the researcher, by use of the standard path theorem to decompose the original zero order correlation between any two variables into precise direct and indirect effects. In this respect it is a form of elaboration which tests the possibility of spurious relationships between variables in the model. Finally, the representation of the model in visual form more readily aids interpretation of the theoretical implications of the relationships.

A number of careful expositions of path analysis have brought attention to the assumptions underlying the process. (Land,1969; Heise,1969; Davis,1971; Bohrnstedt and Carter,1971; and Lyons,1971). While care in meeting the assumptions has been observed in the present study, comment is drawn to the present use of non-parametric data with parametric statistics. The first problem concerns the use of ordinal data in regression analysis. Ever since Boyle(1971) demonstrated that use of ordinal data does not seriously violate the effects of certain parametric statistics, there has been increased research on their use, and thus readiness to use them. In respect to errors of measurement, Bohrnstedt and Carter(1971) maintain that, "the statistical power of parametric statistics over non-parametric statistics is well known, and the above findings suggest that, even though some errors in inference may occasionally be made by using ordinal data with parametric techniques, the increase in power makes the risk seem small". In conclusion they state "when one has a variable which is at least at the ordinal level, parametric statistics not only can be, but should be applied". (1971:132). Moreover, there is increasing acceptance of the use of parametric statistics on nominal variables where the latter are

expressed in dummy form. (Boyle,1970; Lyons and Carter,1971; Cohen,1968).
On this basis it appears safe to proceed with path analysis where sex is
treated in dummy form, and qualifications, and teaching level are treated as
interval data.

CHAPTER V   FINDINGS

The findings are presented in three sections. The first section briefly
notes the zero order correlation co-efficients between the variables in the
models. The second section turns to a review of the path models of network
centrality in the various nets. The final section builds the net models into
the models predicting to job satisfaction and job retention, and reviews the
findings in those models.

A. ZERO ORDER ASSOCIATIONS

Table5:I presents the zero order correlation co-efficients between
the variables hypothesised to be determinants of net centrality, job satisfaction,
and job retention.

The strongest predictor to centrality in Net I (the subject net) is
teaching level and this is followed in turn by qualifications, and to a
weaker extent by position of responsibility and sex. Experience also contributes
a weak relationship and that of age is negligible. Centrality in the
administrative net (Net 2), is strongly related to the position of responsibility
held by the staff member (.715), followed by a strong effect of teaching
level. Correlations in the .20 and .30 range include those of sex and
experience. Qualifications and age exert a less significant effect. These
correlations indicate the importance of position in gaining centrality in the
administrative affairs of the school, and not surprisingly variables associated
with position such as experience, level and 'maleness' are also quite
strongly correlated with centrality. The over-riding influence of position is
again reflected in the correlations between the independent variables and
centrality in the extra-curricular net (Net 3) where only sex is .

at the .20 level. Activity in extra-curricular nets is also correlated with the teaching level, but has no apparent relationship with experience or qualifications, although it has a slight negative relationship with age. The importance of level as a consistently high correlate with net centrality is again demonstrated in a fairly strong relationship with Net 4 (informal inschool). Teachers at the centre of this net also appear to be more highly qualified, have a higher position and be males. The final net is that to do with informal out of school activities (Net 5). Again the strongest variable in relation to this net is teaching level, with qualifications and sex also exerting strong relationships. There is a relatively important negative relationship of age to centrality in this net, and experience also expresses this trend more weakly. The variables which appear to exert the strongest effects across the nets are those of position of responsibility, teaching level, and sex.

The correlations of the independent variables in the model with prestige satisfaction are not as strong as many of those in the previous discussion. The strongest effects are those of the negative relationship of qualifications to prestige satisfaction, but the positive effect of age. There is also a less powerful relationship between experience and satisfaction with prestige, while level and sex display smaller negative effects.

The correlations between the independent variables and job retention are considerably stronger. The two strongest relationship are those of sex and age. But individuals who have greater experience are also more likely to be retained along with staff who hold a position of responsibility. On the other hand, the correlation with qualifications is non-significant. Inspection of the correlations between net centrality and job retention show that the former all have relatively strong correlations with job retention.

	Sex	Age	Title	Exper	Quals	Level	Net 1	Net 2	Net 3	Net 4	Net 5	J.S.	J.R.
Sex		.203	.203	.102	.139		.237	.190	.241	.121	.199		
Age	.203		.321	.500	.028		.072	.146	-.106	.046	-.179		
Title	.222	.322		.234	.300		.221	.715	.242	.141	.089		
Exper	.133	.500	.275		-.072		.009	.129	-.076	.022	-.111		
Quals	.139	-.061	.275	-.098			.377	.216	.108	.154	.179		
Level	-.032	.195	.210	.038	.210								
Net 1	-.239	.030	.222	.006	.378	.049							
Net 2	-.204	.147	.715	.106	.175	.166	.384						
Net 3	-.247	-.104	-.242	-.058	.071	-.017	.269	.533					
Net 4	-.121	-.053	.143	-.078	.153	-.047	.383	.301	.433				
Net 5	-.200	-.186	.088	-.113	.193	-.001	.375	.313	.473	.607			
J.S.	.060	.144	.061	.129	-.194	-.091	-.025	.161	.034	.082	-.073		
J.R.	.415	.392	.233	.321	.040	.131	.178	.213	.188	.155	.137	.118	

Table 5:1   Zero Order Correlation Co-efficients (lower half), and

Regenerated Co-efficients (upper half)

This is interesting when it is noted that only centrality in Net 2 has a correlation above .10 with prestige satisfaction.

Table 5:1 also demonstrates the inter-correlations among the interaction networks. It can be seen that the strongest relationship is between Nets 4 and 5 (.607) indicating that they share a considerable amount of common variance

and are not particularly empirically distinct. Net 3 is quite strongly
correlated with both Net 2 and Nets 4 and 5. The nets least strongly related
are Nets 1 and 3.

B. EMPIRICAL MODELS OF INTERACTION NETS.

The Interaction net analysis proceeded in two stages. The first stage
was concerned with the fully identified path models to each of the five
nets where all of the relationships in causal sequence in the models were
empirically quantified. (For the sake of reducing the complexity of this
section the fully identified models are presented in Appendix I). It is
apparent that the structural variable 'level taught', did not have a
significant direct effect on net centrality as had been hypothesised, and as
the correlations tended to indicate. Its high correlation co-efficient with
centrality is thus spurious and a function of the association of level with
position of responsibility and qualifications. When all of these variables
were included in the same linear equation the effects of level are negligible.
Inspection of the fully defined models demonstrates that level had beta
weights of -.047, .039, -.031, .015, and -.008 in predicting Nets 1 to 5
respectively. Consequently the analysis proceeds with level omitted from
the model.

This section represents the second stage of net analysis - the
discussion of the partially defined models of centrality. As the path
models are graphic representations of a series of regression equations, it
is standard practice to omit those variables from the equations (or paths
from the model) that do not meet a statistical criterion of significance.
The purpose of such an omission is to present the most parsimonious prediction
of any given dependent variable while maximising the extent of the variance

accounted for on those variables. The criterion for the omission of a variable

varies. In a random sample it is common to use the F ratio of the variables

in the equation as the basis for exclusion. Spady and Greenwood(1971),

recommend that a useful rule of thumb is to exclude beta weights which are

less than twice the standard error. However, the present study is based on

a population, the random sample assumptions are not met and therefore tests

of significance and measures of standard error are inapplicable. Accordingly,

an arbitrary criterion for exclusion is used - that beta weights of less

than .10 indicate that the variable might be omitted from the model without

unduly affecting the mathematical adequacy of the model. Where a variable

does not meet this criterion but is of theoretical importance, it is maintained

in the equation if the beta weight is approaching .10. Whenever a variable

is excluded from the equation the assumption is made that the omission will not

significantly affect the reconstruction of the original zero order correlations.

This assumption is tested by the process of regenerating those co-efficients.

These are presented in Table 5:1 (upper half). Comparison of the original

zero order co-efficients with the regenerated co-efficients will give an

indication of the mathematical effects of variable exclusion. The matrix

indicates that the vast majority of co-efficients are regenerated within

.05 of the zero order correlation. Spady and Greenwood(1971) argue that the

.05 criterion represents a useful indication of the adequacy of the model in

regenerating any particular correlation. They maintain that "in general,

discrepancies above .050 are undesirable, and the number of such discrepancies

in a regenerated correlation matrix must be kept small".(1971:8) On this basis

it is concluded that the models appear to be adequate mathematical represent-

ations of the original data matrix.

The findings presented in the partially defined models of net centrality

are presented below.

I. Subject Net: Net I

It was hypothesised that networks within the school - both task and non-task oriented - would be most subject to organisational press and hence network centrality would be a function of the direct effects of positional and professional variables, and of the indirect effects of personal variables. On this basis it was argued that subject nets were essentially based on task expertise and the individuals most likely to be central would be those with high qualifications, and to a lesser extent, with higher positions of responsibility . It was hypothesised that age, sex and experience would have indirect effects - especially in that age is positively correlated with responsibility and men are more likely to be in those positions than women.

The model indicates the hypothesised relations are largely maintained. By far the most significant predictor is qualifications (P_{nq} = .329)[**]. Indirect effects are also apparent from sex (P_{ns} =.172), and position of responsibility (P_{np} = .093). The latter in particular mediates all of the preceding variables in the model. It is obvious that individuals in positions of responsibility in the school are more highly qualified, are older, have more experience, and tend to be males. In this respect age and experience are only significant predictors of centrality indirectly through position. Qualifications not only exerts an important direct influence, but also has an important indirect effect through position. However the direct effect is very much stronger than the indirect path. A less strongly expected relationship is that of sex. The model indicates that not only does it have the second strongest direct impact on net centrality, but it has important indirect effects through qualifications

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[**]Notation for the presentation of beta weights follows the form: P_{ji}
where: P = the path from i to j
    j = the dependent variable
    i = the independent variable

and position. Highly qualified staff are more likely to be men, and even
when experience, age, and qualifications are held constant, sex still has an
important effect. There may be a number of reasons for this male dominance.
In the first place, men have traditionally taken positions of leadership in
education almost without exception, and when such positions become available
there may be still a tendency to look almost instinctively to men first.
Secondly, men are more likely to be committed to an uninterrupted career in
teaching and hence are more dependable, and more likely to get preference
because it is recognised that they need experience for their prfcsssional
advancement. Thirdly, and following from the earlier point, men are more likely
to actively seek positions of responsibility to enhance their career
opportunities, and while subject nets are highly contingent on qualification
expertise they may press for, and get recognition, for teaching expertise
in certain areas.

In sum, it may be concluded that the hypothesised model was largely
confirmed with the direct dominance of the predicted structural and
professional variables, and the indirect influence of the others. However,
the direct and indirect strength of sex indicates that not only does it
strongly influence professional and positional variables, but it has greater
than anticipated influence on staff interaction in the intra-organisational
task oriented setting.

**The curved line between age and sex, is the simple zero order correlation of
those two variables - that is, of the exogenous variables in the model.
The curved line between the residuals of experience and qualifications represents
the correlation of the residual of those two variables.
The incoming arrows represent the residual (Q) of variance not explained of
that variable by those in the model.
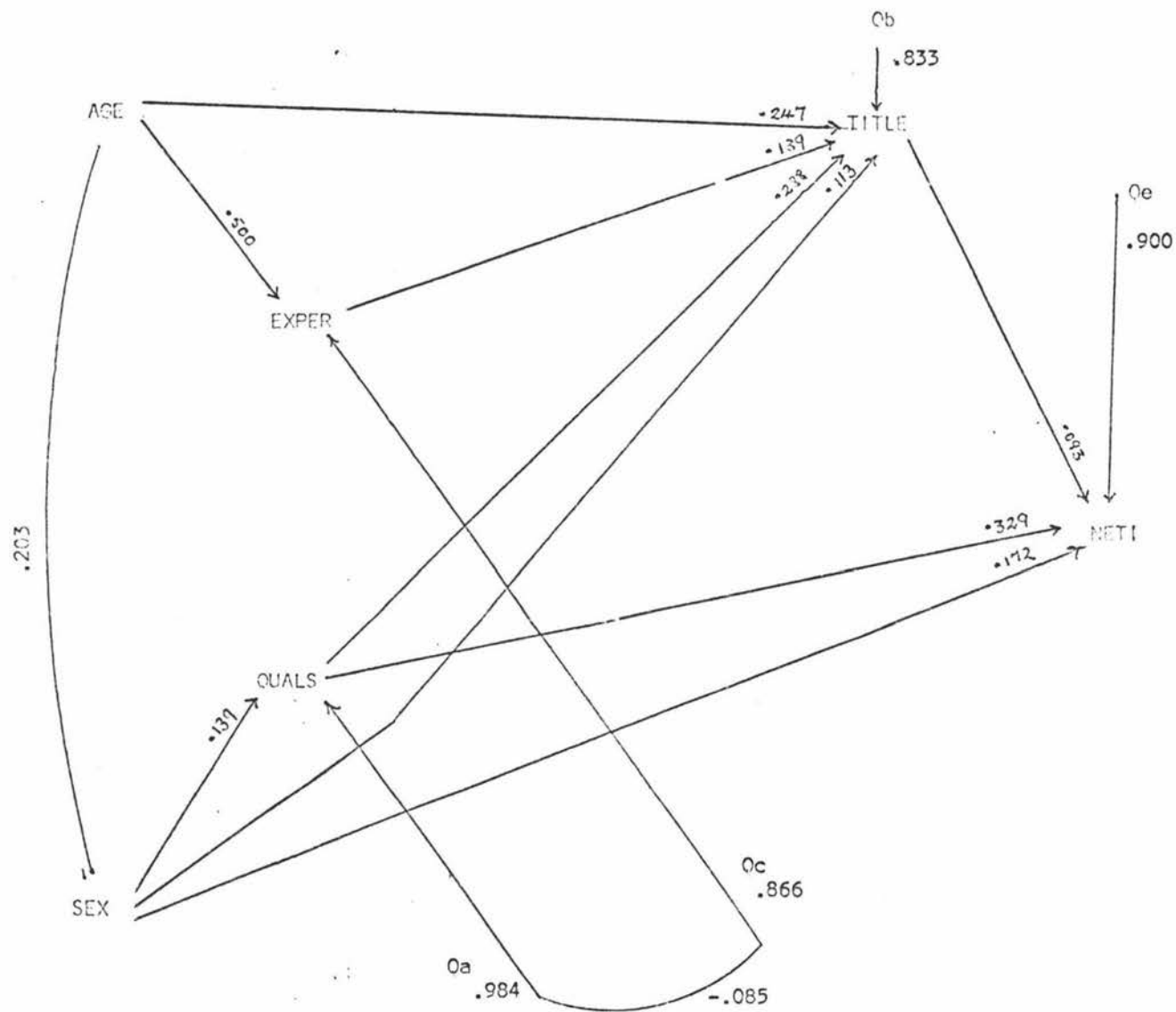
$$Q = \sqrt{1 - r^2}$$

Figure 5:2   Path Model of Net Centrality: Subject Net — Intra-organisational Task Oriented

2. Administration Net: Net 2

Administration nets are the second form of intra-organisational task
oriented nets. Consequently the general theoretical assertions about subject
nets were also hypothesised for administration nets. It was maintained that
the organisational press of structural and professional variables will
determine centrality in these nets. It is expected in this particular case
that the major salient variable will be position of responsibility, and this
in turn will be determined by the other personal and professional variables
in the model.

Figure5:3 tends to support this expectation. Of the three direct
effects, position is by far the strongest. Age actually has a significant
negative direct effect indicating that this personal variable taken alone
might actually detract from gaining a position in this network. One possible
explanation is that individuals who are old but do not have positions of
responsibility, may be either administratively inadequate or at least be
categorised in that way. However, the model demonstrates that age is
positively directly associated with position(P_{ta} = .247), and with its indirect
effect through experience and position, exerts a strong indirect positive
effect on administrative net centrality. While sex has a slight direct
relationship to net centrality (P_{ns} =.061), its most important influence is
through its association with qualifications (P_{qs} = .139), and position (P_{ts} =.113)
Men not only tend to be better qualified, but be in higher positions of
responsibility. This may be due to the traditional role of men in positions
of leadership, but is also certainly related to their greater degree of
career orientation. As opposed to Net I, therefore, the mere fact of being a
man does not assure a person of centrality in this net. Finally, it should be
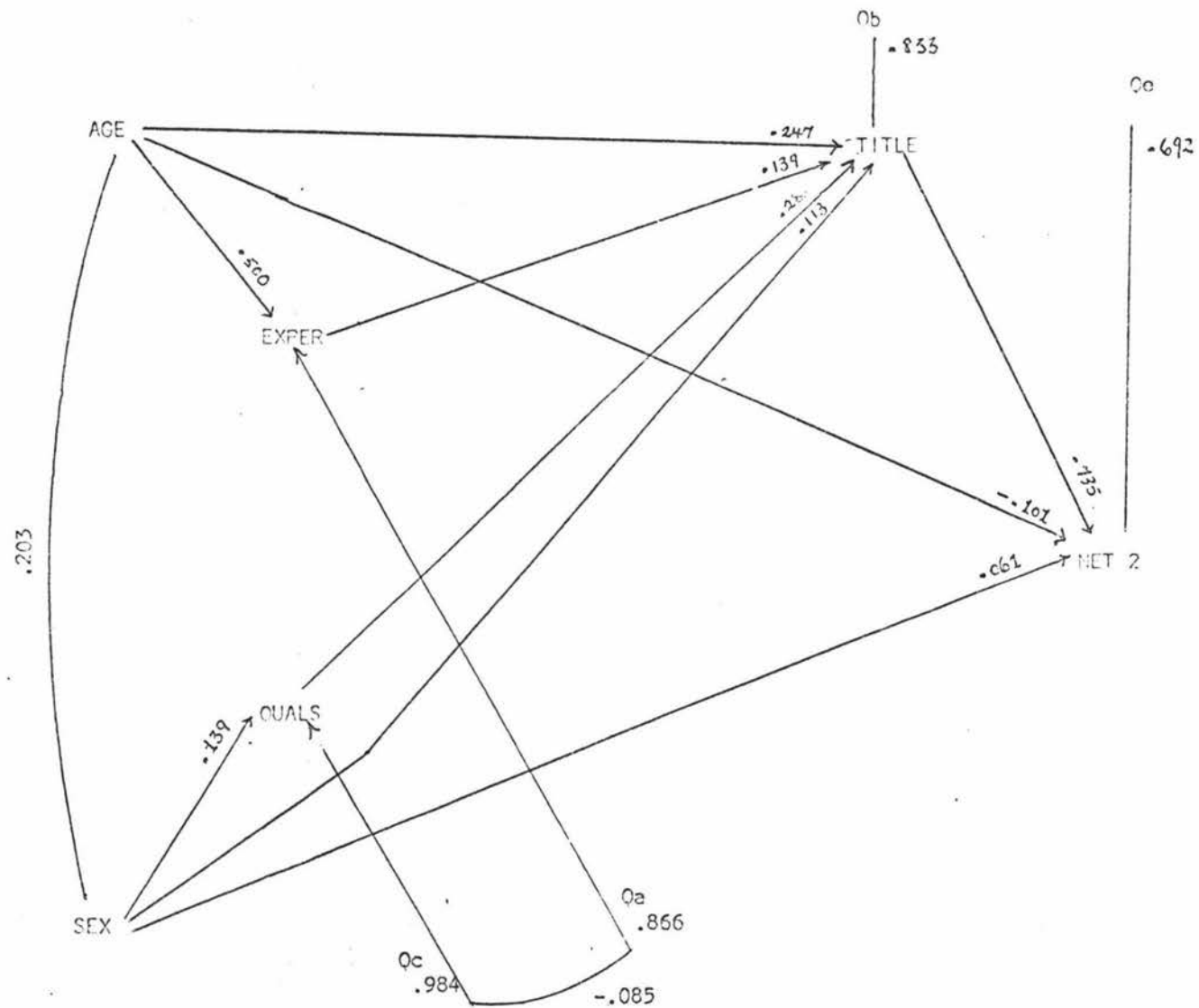noted that this model accounts for a great deal more of the variance of the

Figure 5:3 Path Model of Net Centrality: Administration Net — Intra-organisational Task Oriented

dependent variable than the first net. This is mostly attributable to the predictive power of position of responsibility.

Again there are grounds for asserting that the hypothesised model receives empirical support with the overwhelming importance of a structural or position variable, and the less directly significant effects of personal and professional variables. Administration nets, as predicted, have almost half the total explainable variance accounted for by position of responsibility.

3. Extra-Curricular Nets: Net 3

Extra-curricular nets vary from subject and administrative nets in that while they are all task oriented, extra-curricular activities are extra-organisational. It was theorised that two kinds of forces would be operating to account for net centrality in this net. The one set of forces result from the association of extra-curricular activities with those of administration, and hence it was thought that administrative status in the school might also carry over into extra-curricular activities. The second set of forces were the personal variables. Effective extra-curricular performance is a means of gaining responsibility and exercising it as a means of upward mobility. For these and allied reasons it was predicted that centrality in these nets would be determined more by age and sex than professional or positional variables.

Inspection of Figure5:4 indicates that three variables are important direct determinants of centrality. As expected, position (P_{nt} =.266) and the indirect effects of other variables through it, is a strong factor. But unlike the previous nets, both age (P_{na} = -.288) and sex (P_{ns} =.236) have strong direct effects while qualifications and experience do not. It becomes clear that the staff members most probably taking part in these activities are typically younger men. Again the latter follows from the expectation that such staff
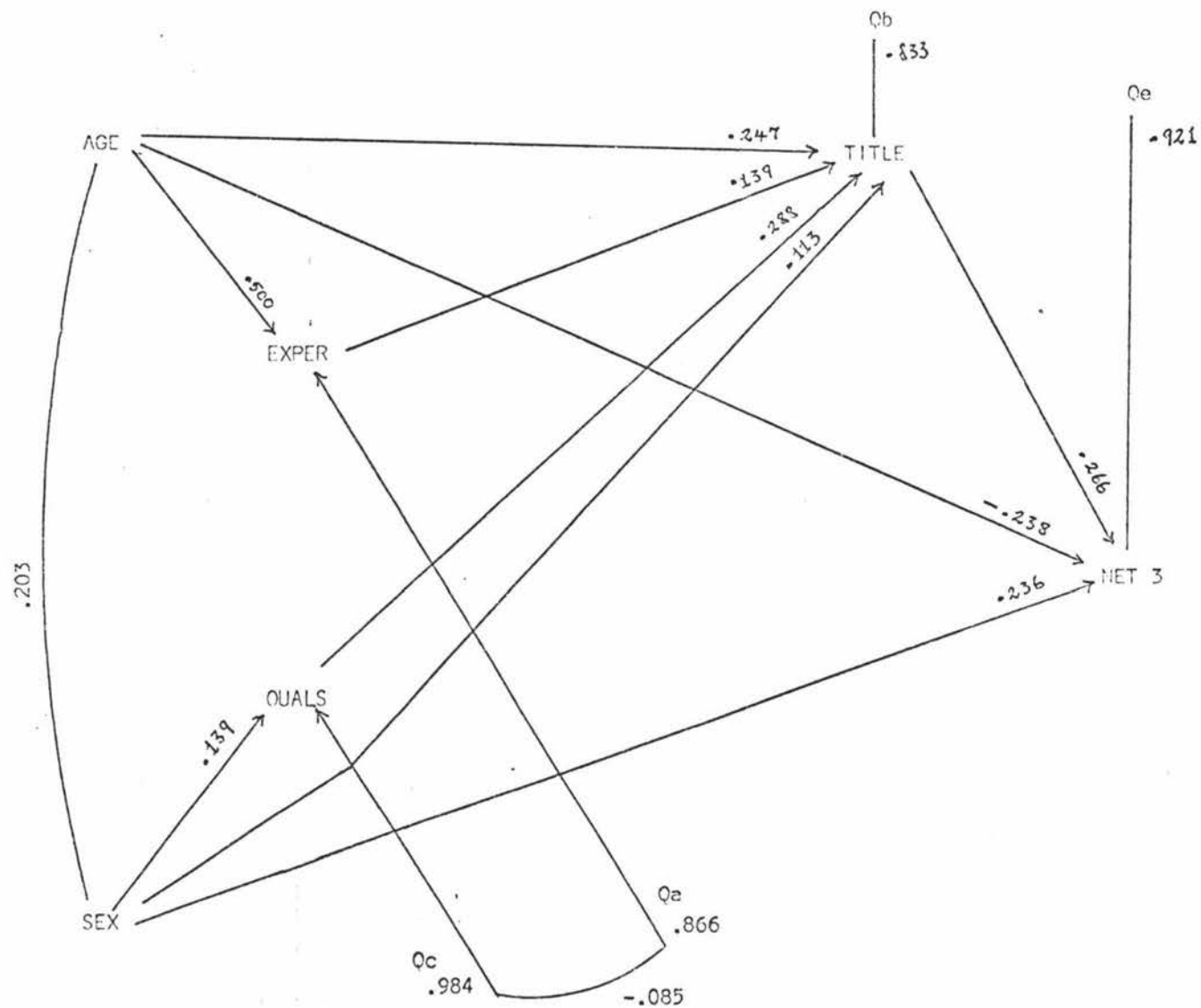
Figure 5:4   Path Model of Net Centrality: Extra-curricular Net - Extra-Organisational Task Oriented

tend to be more career oriented and their relative youth indicates that they may be using these activities as a means of promotion. But there are other related factors. Younger staff are usually more able to take sporting activities, older staff either have promotion and don't need to take extra-curricular activities or they deliberately avoid them. Hence it is often standard practice for younger staff members to be pressured into taking out of school activities if they wish to remain in favour. Women, on the other hand, tend to be less career oriented and so have little gain (other than intrinsic rewards) by being involved, and little to lose by not being involved. It is also interesting to note that experience and qualifications do not have direct effects.

In sum, centrality in this net is a direct function of the formal position of responsibility and of the age and sex of the staff members. Not only do age and sex have a strong direct effect, but they also have a strong indirect effect through title, as do experience and qualifications.

4. Informal Inschool Nets: Net 4

The final two nets that were hypothesised to be characteristic of a school staff are non-task oriented. The first operates within the school and the second outside it. Intra-organisational non-task oriented nets are voluntary associations within the school, but they do not escape the organisational press of the school on their structures. It was argued therefore, that even though such groups are characteristically associated with various personal variables as a basis for asssociation, there is a press for staff to be associated with other staff who have higher status within the organisation, and that the effect of personal variables will be indirect.
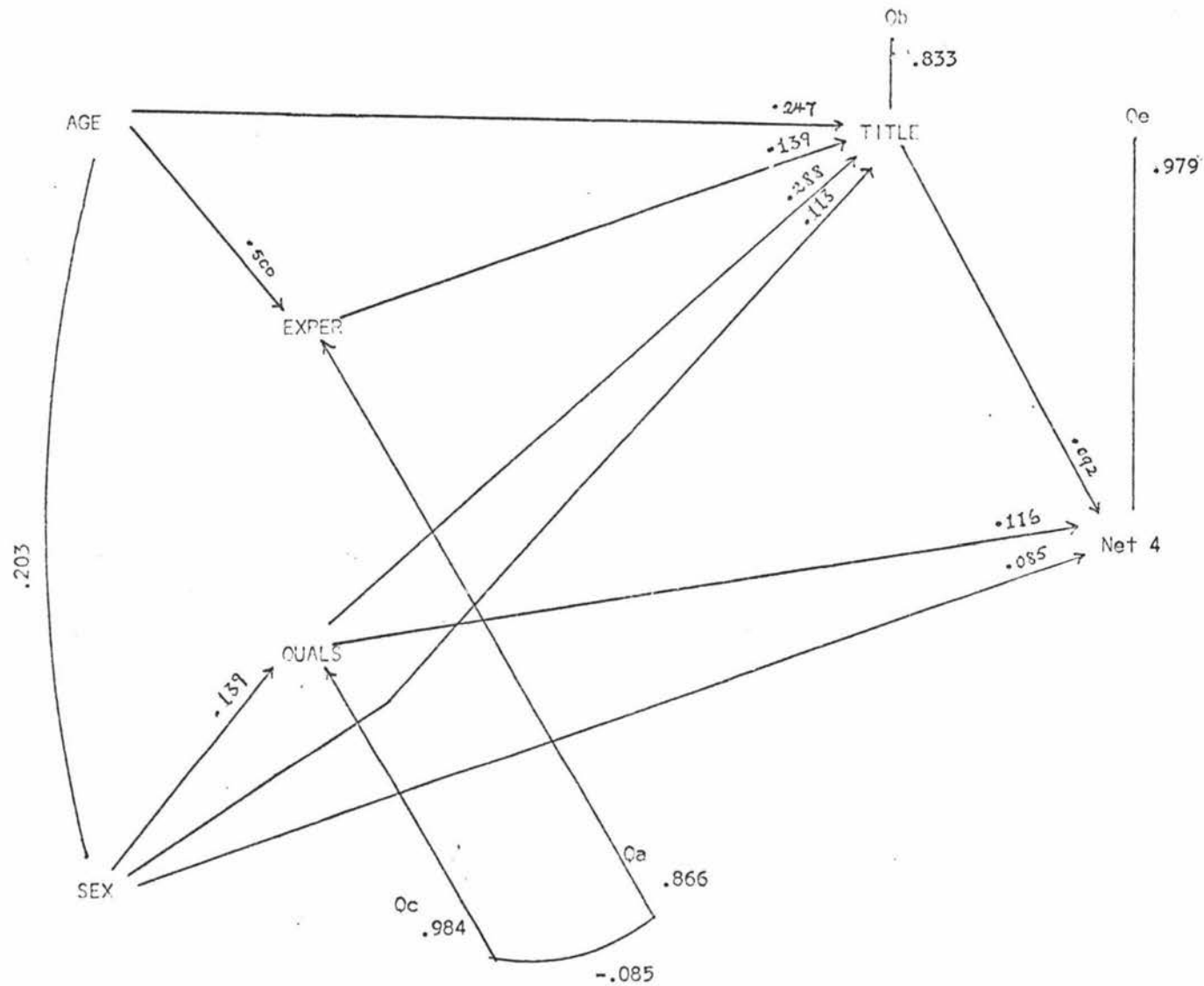
Figure 5:5 Path Model of Net Centrality: Informal Inschool — Intra-Organisational Non-Task Oriented

Figure   5:5 indicates that this expectation is not entirely confirmed.
Indeed the strongest predictor of net centrality is qualifications (P_{nq}=.116)
with weaker direct effects from position of responsibility (P_{nt}=.092) and
sex (P_{ns}=.085).   The reason for the dominance of qualifications is not clear.
Is it because highly qualified staff either have more prestige and so are
desirable associates, or is it because they have other accompanying character-
istics that draw staff towards them?   In respect to the latter it may be the
case that highly qualified staff may gain their net centrality here because
they are also more likely to be at the centre of subject nets, and the latter
may be an important basis for informal association.   This argument would
lead to the conclusion that of all the pressures the school as an organisation
exerts on staff interaction patterns, the most dominant constraint might be
that of subject area similarity.   This would also follow from the assertion
by Halliday(1972a) that various subjects are accompanied by a range of
other related variables.   Different subject areas require differing levels of
and types of qualifications, different degrees of training, have different
career opportunites, and may even have different personalities.   This
argument for subject net influence is also supported by the influence of sex
on informal groupings as men tend to be more qualified and at the centre of
subject nets.   Comparison of the Models for Nets I and 4 indicate that the
models have the same structure although there is a change in the weightings
of the direct effects of qualifications and sex.   As might be expected, the
effects of these two variables are stronger in Net I.

Finally, it should be noted that the absolute amount of variance in
the dependent variable (Net 4) that is accounted for by the model is very
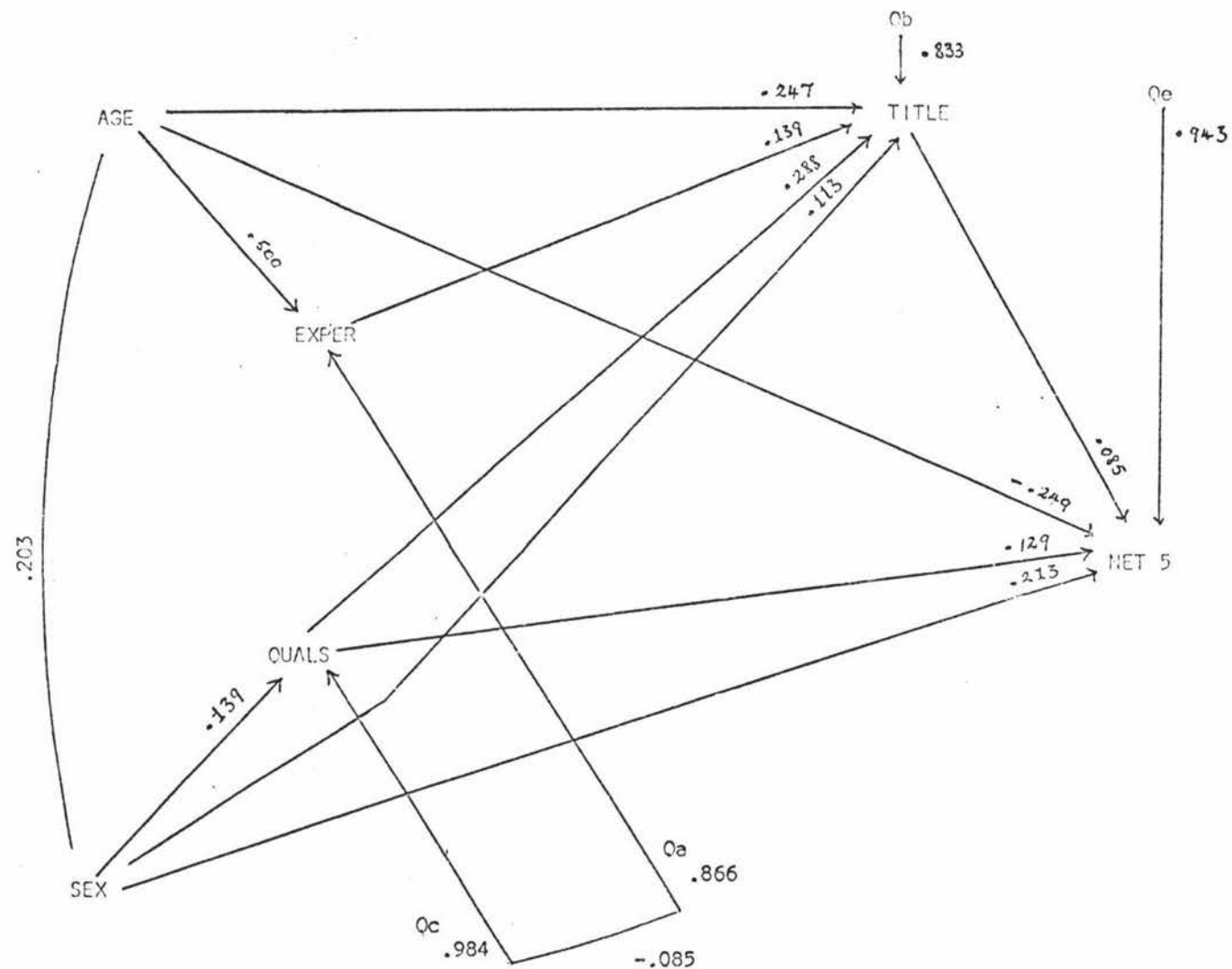low with a multiple correlation co-efficient of .203 and a variance of .041.

Figure 5:6 Path Model of Net Centrality: Informal Out of School - Extra- Organisational

Non-Task Oriented

Therefore, while the constraints of the organisation can be shown to exert an influence on the informal association patterns, further personal, professional and structural variables must be considered. Such variables might include the influence of associations in other nets such as extra-curricular activities. (There is a simple correlation of .433 between the two nets.) Attention might also be given to the place of interests, career orientations, in addition to physical conditions within the school as a whole, and places for informal association in particular.

5. Informal Out of School Nets: Net 5

Net 5 refers to extra-organisational associations which are non-task oriented. Unlike the four preceding nets, informal out of school associations are removed from the immediate influence of the school. However, it was argued that removal of interaction from the school would have the effect of reducing the imporance of structural and professional variables, and increasing those of age and sex.

The importance of age and sex is clearly indicated in Figure 5:6 THere is a strong inverse effect of age on Net 5 (-.249) indicating that outside associations are dominated by younger staff (although it should also be noted that there are proportionately more younger than older staff). The model also implies the importance of sex, as indicated by the predominance of men in these nets. While the strong direct effects of the personal variables were anticipated, the relatively strong effects of qualifications $(P_{nq}=.129)$ and position of responsibility $(P_{nt}=.085)$ were not. In part the strength of qualifications is due to the higher assocation of qualifications with men. Similarly, the effect of position may be due to the strong indirect effects of age and sex as they in turn directly and indirectly (through

experience and qualifications) affect the position of responsibility.
It is therefore possible to conclude that activities outside the organisation
of this kind are strongly influenced by personal variables and that the
effects of qualifications and title are very likely accounted for by their
association with age and sex.

The model accounts for 12% of the variance of the dependent variable
(with a multiple correlation of .349). Again it should be necessary to review
the influence of subject area background, in school influences such as
associations in other nets, and further professional and personal variables
to account more extensively for net centrality outside the school.

Summary

The findings in this section may be summarised as follows:

a) Centrality in Net I was a direct function of the qualifications
level of staff, and the position of responsiblity, and the indirect effect
of the other variables in the model. An unanticipated finding was the direct
and indirect strength of sex.

b) Centrality in Net 2 (administration) is very much a function of the
structural variable of position of responsibility, and the indirect effects
of age, experience, qualifications and sex. There was a negative relation
between age and net centrality.

c) Centrality in the extra-curricular net (Net 3) is a direct function
of the personal and structural variables. Position and sex have a strong
positive effect, and age has a strong negative effect.

d) The predictive power of the model is very much weaker in Net 4
(informal inschool). The only variables which had relatively strong direct
effects were qualifications, followed position and sex.

e) Net 5 (informal out of school) is predicted by a strong

negative beta weight from age, a strong positive effect from sex, and weaker positive effects from qualifications and position.

In summary it can be concluded that the structural variable, position of repponsibility, has a consistently strong effect on task oriented activities, but has a weaker effect of the out of school informal groupings. The predominance of qualifications within the school would also suggest that net centrality is very much a function of the press of the organisation, and that any group within it will be most strongly constrained by the structural differentation within the organisation. However it is to be noted that age and sex do have direct effects within the organisation, and position has direct effects outside of it - but both these findings are empirically weaker than those outlined earlier.

B. EMPIRICAL MODELS OF SYSTEM MAINTENANCE: JOB SATISFACTION AND JOB RETENTION

This section elaborates the models of net centrality by building them into larger models predicting to system maintenance. Two indicators are used for system maintenance: prestige satisfaction, and job retention. The former is the most powerful factor in the factor analysis of the job satisfaction scale. The latter is indicated by the perceived likelihood of still being in the education system in five years' time.

The job satisfaction of the teacher was hypothesised to be a function of the extent to which he had been rewarded for various investments in teaching. If he had made a strong investment by high qualifications or extensive experience, and these were not recompensed, then it was hypothesised that he would be suffering from a sense of perceived distributive injustice, and hence would be more dissatisfied. If on the other hand he was compensated for his investment by gaining centrality in a net, or getting a position of responsibility then it was expected that he would be more satisfied.

Retention on the other hand, was argued to be a function of two
processes; the investment-reward process, and the press of organisation and
career constraints, While an individual might be dissatisfied, high investment
of qualifications, age, experience or sex would all act to constrain
him to remain in the system despite his lack of satisfaction.

Presentation of each path model to job satisfaction and job retention
is taken in turn. Attention is firstly given to the explanation of job
satisfaction, and the to staff retention. A final model presents the impact
of overall staff net centrality on the indicators of system maintenance.

I. Job Satisfaction and Retention: Net I

Figure 5:7 indicates that the model is not particubrly successful in
predicting to prestige satisfaction. The residual on satisfaction is .967
and the variance accounted for within the model is only 6.5%. Job satisfaction
was hypothesised to be the result of the extent to which investments in the
system such as qualifications and experience were adequately compensated for
by rewards such as being given a position of responsibility, or gaining
a centre position in the network. In general this hypothesis is confirmed.
It was predicted, for instance, that the direct effects of investments
sycg as experience and qualifications on job satisfaction would be negative.
This is partially the case with experience where the direct effect is -.034,
but it is much more the case with qualifications. Whereas experience is
gained merely by being in the system, and requires little more special effort
than longsuffering, qualifications demand hard work, financial sacrifice, in
addition to other forms of sacrifice. The strong negative effect (P_{jq} =-.208)
confirms this expectation. It may be inferred, as Halliday(1972a) found,
that teachers with high qualifications and no recompense are very much more
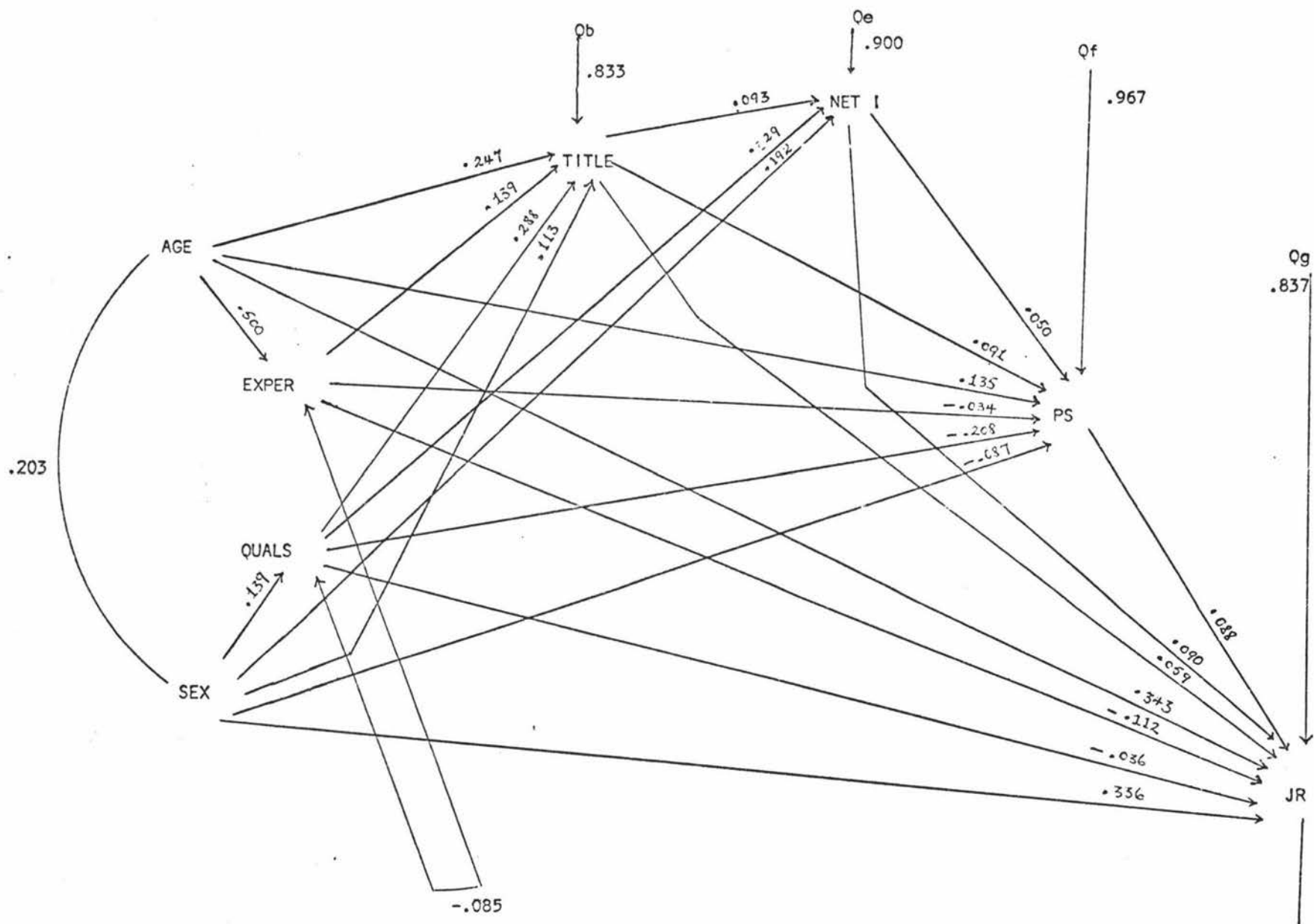dissatisfied with their prestige satisfaction. To a lesser extent this is

Figure5:7 Path Model of Job Satisfaction and Job Retention. Net I - Subject Net.

characteristic of experience. However the theory also maintained that compensation in the form of a higher position or centrality in a net, would act to produce a positive effect on satisfaction. This is more clearly the case with position (P_{jt} = .091), than centrality in the subject net. The beta weight of the latter indicates that centrality in this net is not as important an predictor of job satisfaction as having a high position in the organisation. However, this may well be due to the fact that a givenposition in the organisation has legitimate status and prestige in the organisation, whereas net centrality is not necessarily recognised as having such importance. In sum then, it can be stated that positional or reward kind variables have an expected positive effect on the likelihood of satisfaction with perceived prestige received. On the other hand, the professional or invest-ment variables tend to have a negative effect in that high qualifications and greater experience staff, without corresponding positions of responsibility and net centrality are more dissatisfied. When qualifications and experience are mediated by the positional variables a positive effect emerges. Finally, it should be noted that the indirect effects of qualifications and experience through title and the subject net are almost as strong as their direct effects.

Attention may now be turned to age and sex. It was maintained that both of these variables are indicators of constraint to remain in the system - being old or being male may greatly reduce flexibility in changing positions and occupations. However, age and sex were not incorporated into the social exchange theory of satisfaction. They cannot be strictly viewed as investment kind variables although they clearly have a direct influence on investment variables (P_{ea} = .5; P_{qs} = .139). But while they are obviously not investment variables they are bases for satisfaction because they are not only indicators of certain constraints, but they carry with them certain statuses and

expectations. Age is not only strongly influencing experience and position,
it also carries with it a status independent of these two, and perhaps, the
expectation that their age be given a certain respect. While age has a direct
effect of .135 on prestige satisfaction, sex has a negative effect of -.087.
Accordingly, men are more likely to be dissatisfied withthe prestige they get
than women, although it may be noted that the combined indirect effects of
sex through qualifications, position and net are stronger than the direct
effect of sex on satisfaction. The explanation for the negative relationship
is not entirely clear. It is known for instance, that women have less
invested inthe system and henc e may ahve lower expectations of it. Men on
the other hand have a career invested in their occupation and the latter
serves not only to provide an index of their status in the community, but is
a basis for the income they earn and consequently the symbols of status they
are able to acquire. in each of these categories, they may feel the have not
received adequate recognition, particular in comparison with other professions
who have equivalent level qualifications but very much more prestige and
higher economic rewards. This thesis is at least partly substantiated by
the strong negative effect of sex through qualifications on satisfaction, in
comparison with sex through position and net on satisfaction. Where sex is
combined with igh qualification investment, the latter may just serve to
exacerbate prestige dissatisfaction. When the investment is compensated with
internal organisational status, and the community status that this brings, then
satisfaction levels are raised. The role of age and sex in this model
indicates that while they cannot be considered as investments per se, they
do have prestige implications related to investments and rewards. Accordingly,
the model makes clear that any explanation of job satisfaction must take
both variables into account for their direct as well as indirect effects.

Focus is now turned to the explanation of job retention. The model indicates that there is considerably more success in predicting to this indicator than job satisfaction, with approximately 30% of the variance accounted for by the variables in the model. The model indicates that by far the strongest predictors to continued retention in the system are the variables age (a direct effect of .343) and sex (P_{rs} = .336), thus confirming the extent of commitment that greater age and 'maleness' implies, if only in the greatly reduced occupational flexibility that older teachers experience. It was also expected that the greater the investments in epxerience and qualifications, the more likely an individual might be to stay. The model does not confirm this expectation. To the contrary, experience has a substantial negative effect (P_{re} = -.112) and qualifications has a slight negative effect (P_{rq} = -.036). This indicates that the lower the experience the more likely an individual is to expect to remain in the system.

The two reward or success indicators in the model do not have very strong positive effects (P_{rt} = .059; P_{rn} = .090). The greater strength of net centrality is somewhat surprising as it might be expected that having a high position of responsibility would carry more prestige than being in the centre of the subject net. Yet clearly the latter has the stronger effect - partly perhaps, because staff in high positions may be older and therefore more likely to be leaving for retirement reasons. However, the number of staff in this capacity were very few. And given the success in the system that position implies it is in fact surprising that the beta weight is not more than .059. On the other hand, net centrality maybe a more salient means of prestige to the individual within the organisation. However a more careful analysis of the finding is warranted. It would be most significant if it was consistently found that net centrality is not only necessarily due to high position, but

that the former is a consistently stronger predictor of job satisfaction than the latter. Finally, the model shows that prestige satisfaction does have an independent effect $(P_{rj} = .088)$ on retention, thus indicating that job satisfaction may be a legitimate partial cause of retention.

In summary, it appears significant that both net centrality and job satisfaction predict positively to job retention and that both these variables have a stronger effect on retention than even position of responsibility. Such a finding gives a strong indication that structural characteristics of an organisation such as interaction networks may have important effects on job satisfaction, and that both may be directly related to job retention. This significant relation between network centrality and system maintenance is explored further in reference to the remaining nets.

2. Job Satisfaction and Retention: Nets 2, 3, 4 and 5

Inspection of the four remaining nets is more succinct. Particular attention will be paid to the extent to which different networks have differing effects on the indicators of system maintenance.

Figure 5:8 indicates that centrality in the administrative net is strongly predicted by position $(P_{np} = .735)$, and that net in turn is a strong predictor of prestige satisfaction $(P_{jn} = .265)$. Again however, the trend noted in the previous model is evident. The effect of centrality in the administrative net, and prestige satisfaction, are stronger predictors of job retention that formal position with in the organisation. Both position and net also have a relatively strong indirect effect through satisfaction. Moreover, this model accounts for a greater degree of variance (30%) than the earlier model.

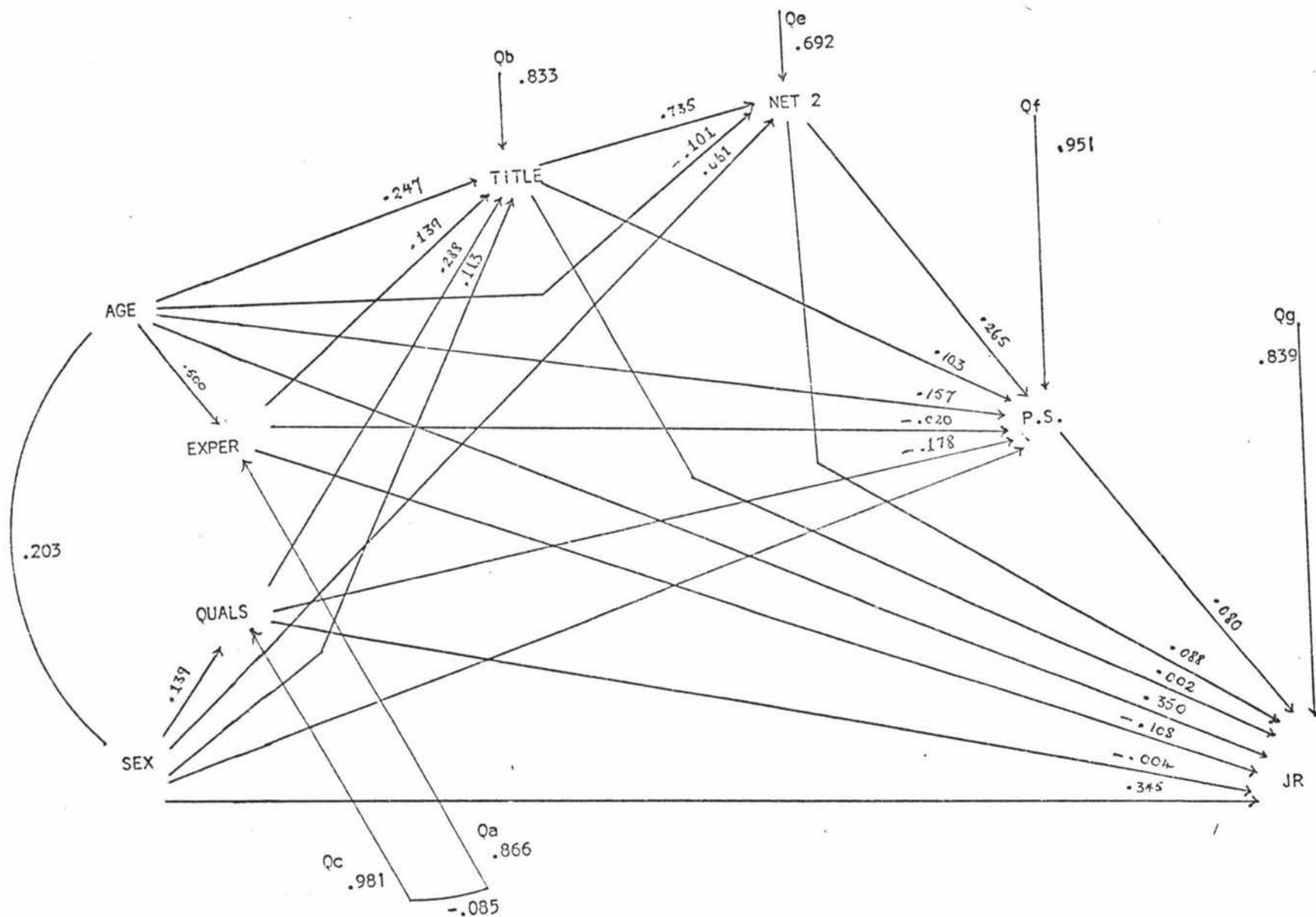Centrality in the interaction net concerned with extra-curricular

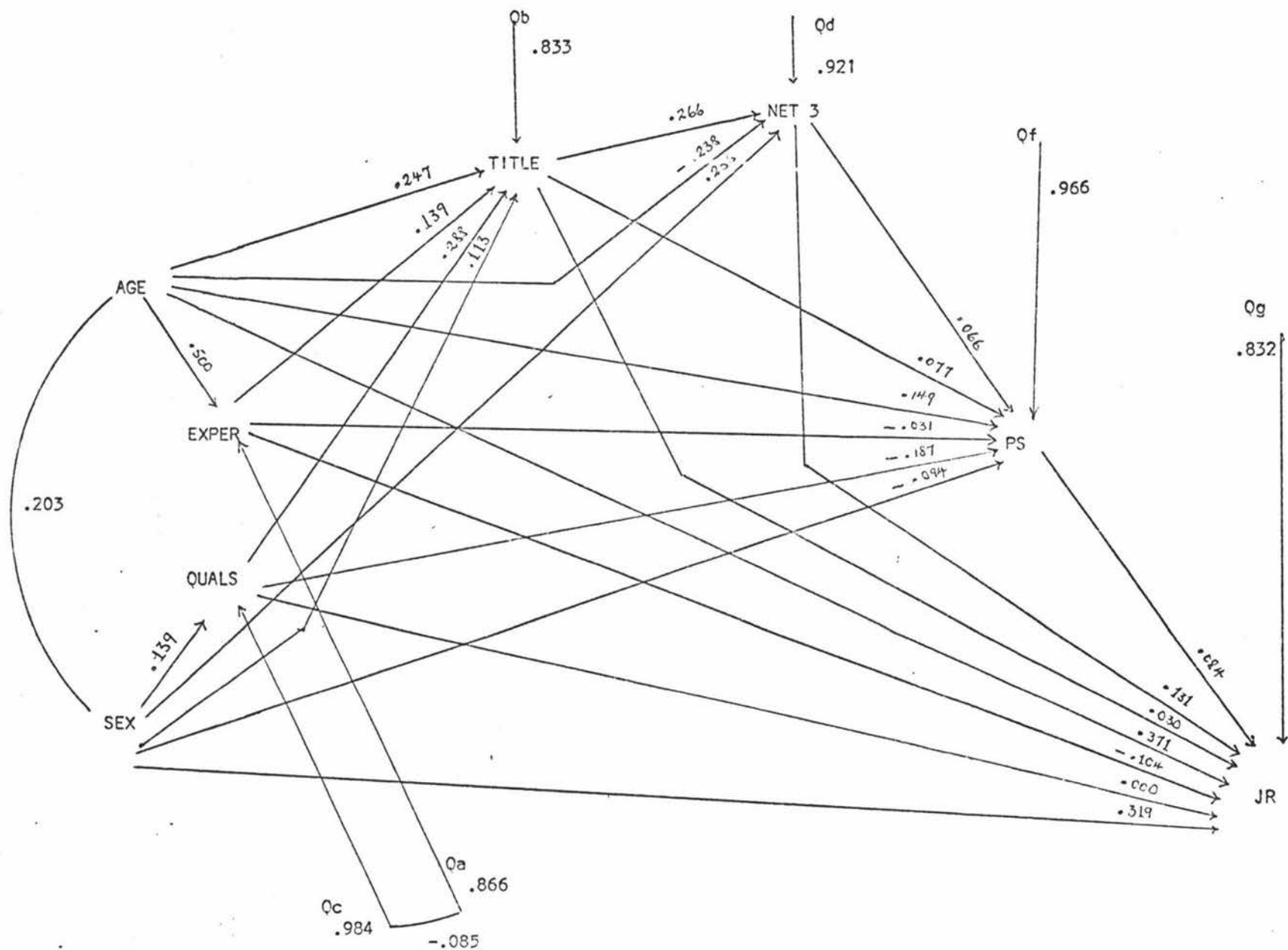Figure 5:8 Path Model of Job Satisfaction and Job Retention: Net 2 - Administrative Net

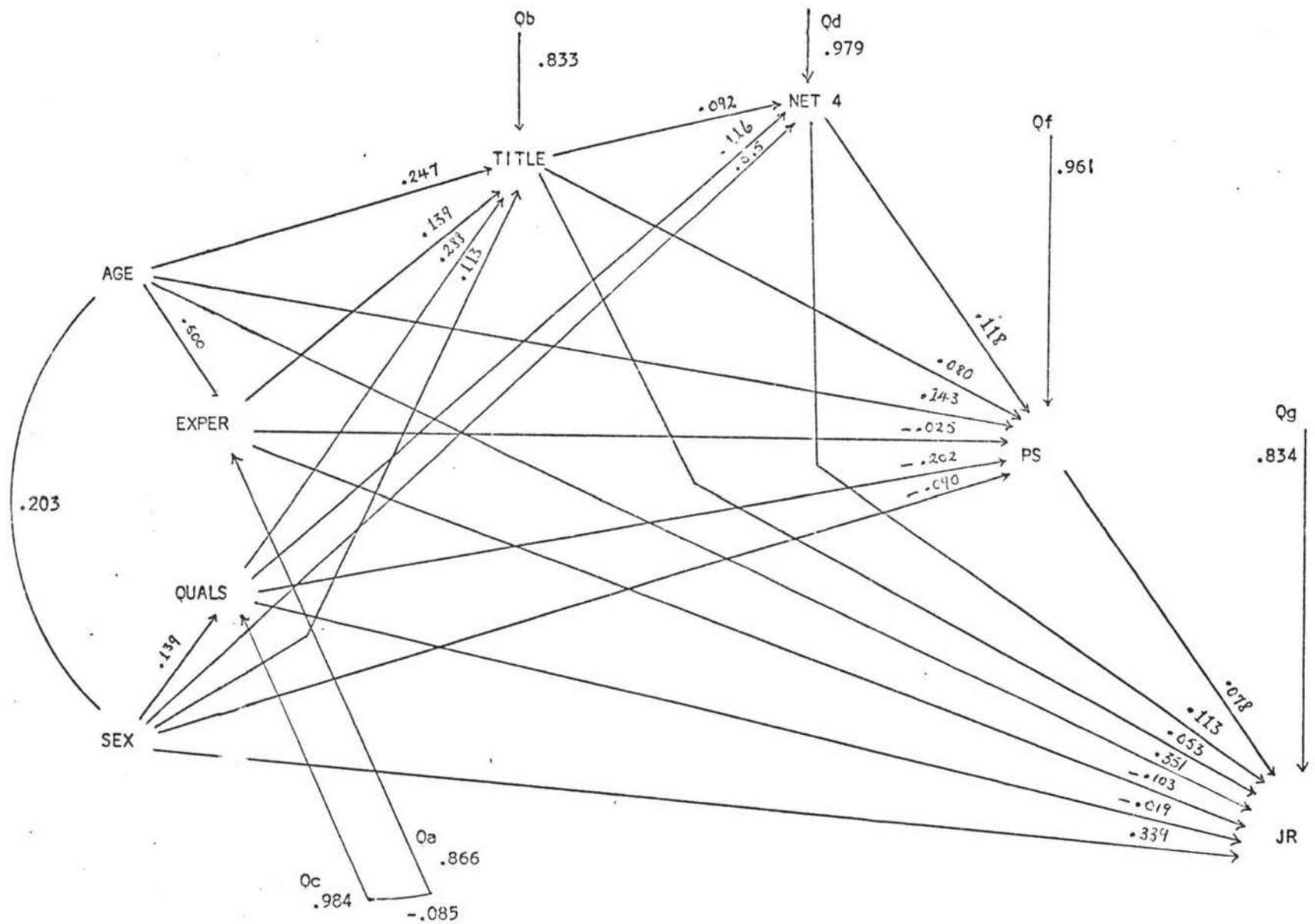Figure 5:9 Path Model of Job Satisfaction and Job Retention: Net 3 — Extra-organisational Task

Figure5:10.Path Model of Job Satisfaction and Job Retention: Net 4 — Intra-organisatbnal Non-task

activities has only a slight effect on job satisfaction, but its effect
on job retention is very much more powerful(Figure 5:9). P_{rn} (.131)
is significantly stronger than any other direct path with the exceptions
of age and sex. Two questions may be raised. Firstly, why is the effect
so strong on retention, and secondly, why it is so weak on satisfaction?
One possible explanation is that the teacher at the centre of the net is not
only less likely to have the prestige that may accompany age, but extra-
curricular activities may not be accorded very much prestige in the school
as a whole, and the teacher may perceive the situation in this way. Often
such activities demand a lot of sacrifice of time and energy, and many teachers
may feel they get inadequate recognition for this. However, involvement
in these activities may be based on the desire to succeed in the system.
Effective performance may heighten the possibility of promotion. Consequently,
teachers who are strongly committed to a career in teaching may be more likely
to be involved in extra-curricular activities, and the strong correlation
between centrality and retention may be a reflection of this.

Nets 4 and 5 deal with the informal interactive relations among the
staff of the schools. Centrality in the inschool informal net (Net 4)
has important positive implications both for prestige satisfaction and job
retention (Figure 5:10). Clearly, being recognised as central in informal
relationships is of considerable impact on the maintenance of the organisation
and the wider education system. Such recognition appears to be an important
basis for an individual wishing to stay in the system. This finding tends
to support the role of informal behaviour in other organisations. It indicates
that the school is similar in this respect to such organisations, and that the
patterns of non-task oriented activities in the school have a strong impact
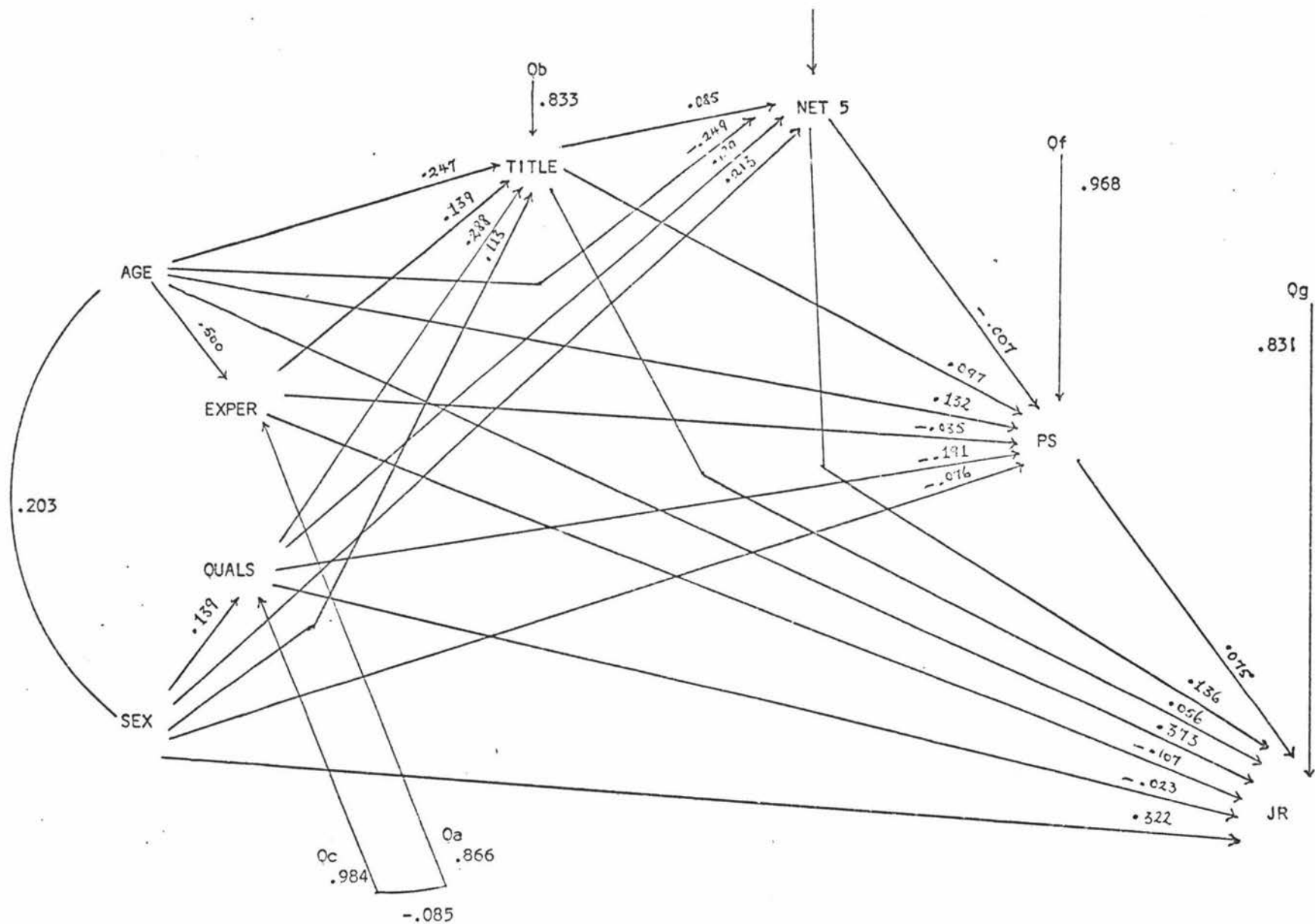on organisational persistence and the ability of the system to keep staff.

Figure 5:11   Path Model of Job Satisfaction and Job Retention: Net 5 – Extra-Organisational Non-Task

The final net (Net 5) is that of informal out of school behaviour. The staff in the centre of this net tend to be young highly qualified males. But while centrality in this net has no effect on prestige satisfaction it does have a strong effect on job retention. The latter may be explained by the likelihood that staff at the centre of this net appear more probably to be career oriented. They are young, have invested a lot of time, energy and money in qualifications, and are men. These are the staff most usually committed to teaching as a career, and their centrality in this net may reflect this common interest. It is also not so surprising that women, older staff, and senior staff are not so prominent in this net. It was argued by Halliday(1972b) that all of these groups may be less constrained to associate together. Women may tend to pursue socialpatterns based on their husbands' contacts, whereas older and more senior staff are likely to be less mobile and therefore may have more diverse friendship bases in the community. Consequently, they are less dependent on their staff associations for informal out of school associations. Conversely, the relatively highly geographically mobile young person is much less able, and perhaps less inclined to seek associations outside school. Other individuals with a similar level of education may not be so available, while the school staff provides a ready field of 'friendship eligibles'.

3. Job Satisfaction and Retention: Overall Net Centrality

The final model presented in this review of findings is that which takes the total scores of individuals on all the five nets and sums them into one gross overall measure of centrality. This is done for two reasons. Firstly, while the nets appear to be distinct, they are also likely to be overlapping to various degrees. Consequently, combination of centrality in all nets should
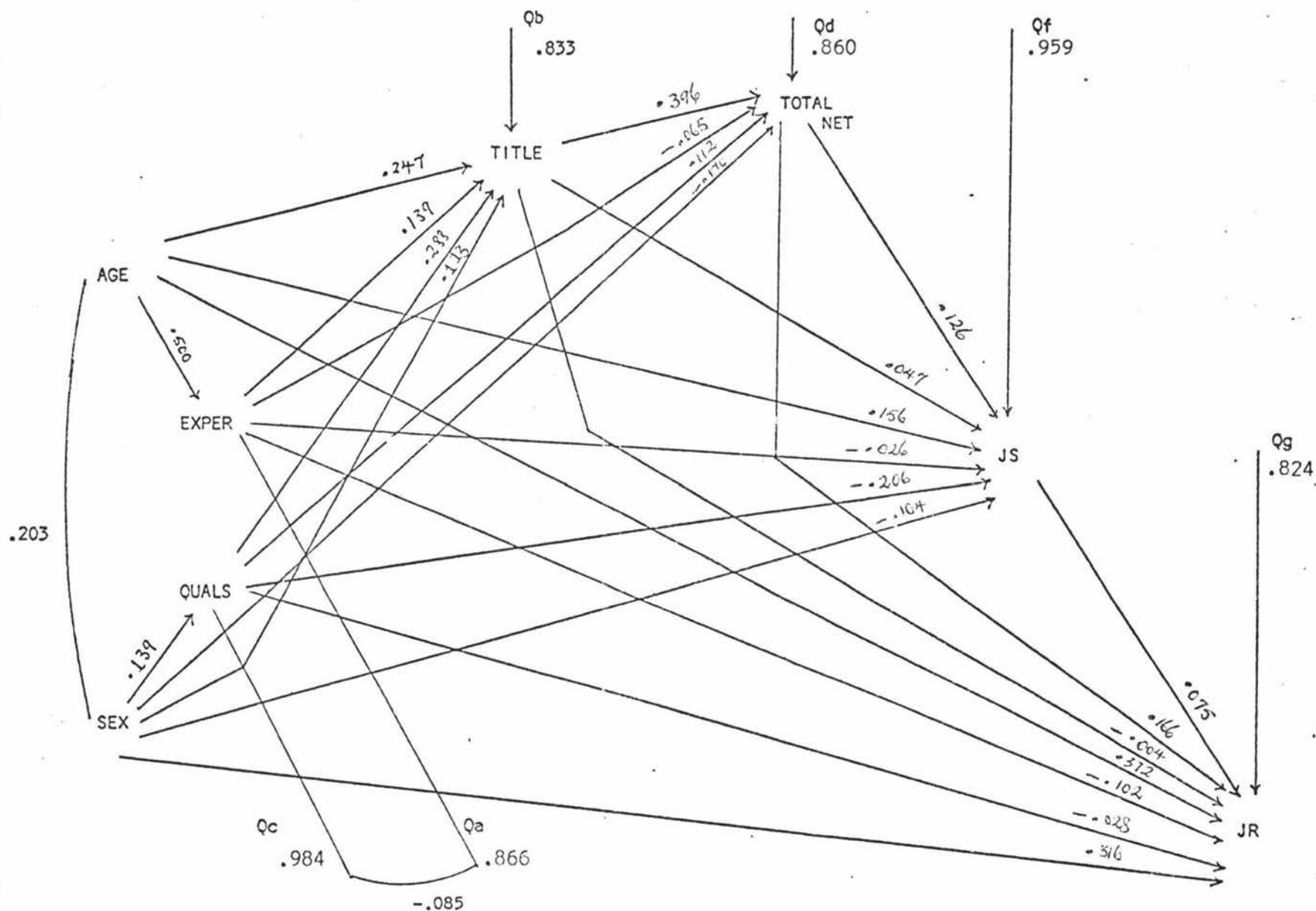
Figure 5:12   Path Model of Job Satisfaction and Job Retention — Overall Net Centrality

Increase the co-efficient weight predicting to job satisfaction and job
retention. Secondly, there is always some concern with the problem of
multi-collinearity. To thispoint it has been assumed, and suggested, that
the nets do not significantly share common variance. If this is the case,
entry of all the five nets into the same equation should produce an effect
a little less than the simple addition of the beta weights of the paths
in the five nets. Entry of the variables simultaneously constitutes a
partial test of multi-collinearity.

Inspection of Figure5:12   indicates that overall net centrality does
become a stronger determinant of both job satisfaction and job retention.
In the latter case, the path $(P_{rn} = .166)$ is very much stronger than any
other effect but age and sex. Again this confirms the theoretical and
pragmatic salience to organisational theory of the analysis of staff networks.
And again it is important that this structural effect is very much stronger
than formal position within the organisation, and the investments of experience
and qualifications. The beta weight of .166 from overall net centrality to
retention provides an indication that there is considerable multi-collinearity
between the network measures. Of course, it is to be expected that there
should be some overlap between the nets, especially as they are all within
the same organisation and the same people tend to regularly be in the centre of
different kinds of nets. However, . some care should be exercised when
attributing weight to the particular influence of any one net, although their
relative magnitude would be expected to stay reasonably constant. Finally,
for this reason it is invalid to include all the nets together in the one
equation. The effect of such a procedure would be for the statistical procedure
to parcel out the variance which is shared by the nets, among the nets, yet
without the researcher knowing how much variance has gone to any particular

variable in the equation. The distortion which would result would be impossible to interpret, and the procedure is statistically invalid (Davis,1971)

4. Summary

The findings in this section are summarised below:

a) Job satisfaction is consistently a function of the positive effects of age, position and net centrality, and the negative effects of sex, qualifications, and to a lesser extent,experience.

b) In three of the five models, net centrality has a greater causal influence on job satisfaction than position of responsibility

c) In all models the amount of variance accounted for on job satisfaction is less than 12%.

d) Job retention is strongly a functionof the positive effects of age and sex, followed by weaker effects from net centrality, prestige satisfaction, and position. Experience exerts a stronger negative effect, and that of qualifications is negligible.

e) The model accounts for approximately 30% of the variance of job retention - a most satisfactory predictive model.

f) Prediction of job satisfaction and net centrality by combining the nets into one overall net is increased. However, the relative increase in the combined beta weight over the individual beta weights indicates a degree of multicollinearity. This in turn indicates an expected certain commonality among the nets

This investigation has been concerned with a focal problem in the explanation of social systems - to what conditions within the system can system maintenance be attributed? The history of social theory has demonstrated a basic tension in response to this question. The early functionalists, including Durkheim, placed the basis of system persistence in the emergent properties of the system. The Durkheim of the Rules conceived of a social system which modified and constrained the actors in it in such a way that the system was inevitably maintained. However, another wing in the sociological tradition has turned more to question the bases of the biological model of a social system which takes the persistence of the elements of the system for granted. It has maintained that self regulation of the system cannot be taken for granted and that the continued active involvement of the actors in the system is problematic. Both of these perspectives therefore focus attention on central issues in the explanation of a social system: firstly, the extent to which the emergent properties of the system structure and constrain the behaviour of the actors in it; and secondly, the extent to which the actors affect the operation of the system. This study has concentrated on an empirical problem which reflects these tensions. The study was concerned with the structural elements of a particular form of social system and the constraint of those elements on the behaviour of the actors in it. It was also concerned with the motivation of the actors to remain in the system.

This wider theoretical basis of enquiry was allied with specific problems in substantive field theory. While the theorist is concerned with the persistence of any social system, the organisation theorist is

concerned with a particular form of system. The study of formal organisations has largely given attention to the staff subsystem and the extent to which the structural characteristics of that system affect the performance of the organisation as a whole. Accordingly, there is considerable research to indicate that various characteristics of staff interaction in organisations are concerned both with the specific matters for which the organisation is operating, and more informal matters. This formal/informal distinction has been extended by more elaborate speculations as to the various nets within organisations, again with the goal of providing a basis for the explanation of the effectiveness of that organisation. There are indications that individuals who tend to be on the periphery of groups in the organisation may well be more likely to leave it because they are more dissatisfied with it. But despite the concern with some aspects of staff interaction in organisations, it has been shown that to date there has been no theoretically related empirical study which actually maps the interaction networks on a staff and then traces their implications for the maintenance of the system. Such an omission is important in two respects. Firstly, such interaction nets form an aspect of the social structure of the organisation, and themselves exercise constraint on actors, as the nets in turn are constrained by other aspects of the organisation. But secondly, such networks may not only constrain the individual, but they may motivate him to either stay or leave the system. Focus on interaction networks is intimately related with three theoretical concerns: certain structural elements of the organisation and the ways in which they influence its actors; the motivation of the actors in the system and the way they influence the system; and the specific conditions which lead to the persistence of formal organisations in particular.

If these issues are of significance to social theory and the explanation of organisations, they are no less important for the understanding of the school as an organisation. The latter have a number of characteristics which differ from the bulk of 'product processing' institutions, but they have received a relatively scant research focus - particularly on the social structures of the staff subsystem.

This study has therefore addressed several of these theoretic and pragmatic issues simultaneously: the nature of staff interaction nets in organisations and in the school in particular; and the implications of these groupings for the maintenance of the organisation. It has endeavoured to pursue this intermediate goal within a more inclusive theoretical context. The attempt has then been made to use a powerful statistical technique to build some preliminary mathematical models which explain net centrality, actor motivation, and the effects of both.

A first component of the model was net centrality.

Centrality was based on a conceptualisation of organisation staff interaction patterns which was implied from the review of literature. A distinction was then drawn between those activities which were task oriented and those which were non-task oriented. However, a constant, though often implicit finding in the literature, is that the organisation exercises a certain constraint on the behaviours of its members so as to constrain them to act in ways which they might not were the pressures removed. Hence it was considered theoretically justifiable to distinguish between teacher behaviours which occur inside the school, and thus within its direct structural influence; and those activities which occur outside it. When these two sets of distinctions are integrated they provide four basic types of staff interaction: Intra-organisational, task and non-task oriented;

and extra-organisational task and non-task oriented. While these four
categories are universal features of organisations they have specific
content within certain organisations. The particular form of institution
studied was the school. It was maintained that there were five analytically
and empirically distinct nets characterising it. These were designated as
subject and administration nets, extra-curricular nets, informal inschool
and informal out of school nets. These analytic distinctions formed the
basis for an empirical analysis of the extent to which the nets were distinct,
on the explanation of centrality and marginality in the nets, and on the
consequences that net status has for the persistence of the organisation.

The second component of the empirical model was the two indicators
of system maintenance: job satisfaction and job retention.

It was argued that not only does job satisfaction appear to
deleterious effects on the workers, and hence the system, but dissatisfaction
is more likely to result in worker withdrawal from it. Consequently, both
are held to be useful indicators of system maintenance. Job satisfaction
measures were based on the development of an instrument which reflected the
synthesis of several theoretical perspectives. Following Merton, it was
maintained that the behaviour of any role incumbent is involved in a series
of complementary relations with other role incumbents, namely the role set
of the teacher. Consequently it was expected that the satisfaction of the
teacher is partly contingent on the relations he has with the members of his
role set. (Bates,1971) A further theoretical perspective took a social
exchange approach to job satisfaction and presented the position that
satisfaction results from perceived equity of rewards relative to investments.
In this respect it was considered that rewards may be received arising
out of three basic forms of social exchange - those of status giving and

receiving, affect giving and receiving, and utility giving and receiving.
When these two perspectives were synthesised a job satisfaction measure
was created which conceived of satisfactions being derived from a series of
exchanges of various commodities with other members of the role set.

The final components in the model were a series of variables that
were designated as personal (age and sex), professional (experience and
qualifications), and positional (level taught and position of responsibility).
The relationships hypothesised between these variables were specified in
Chapter III.

PRINCIPAL FINDINGS

This section reviews the findings of the study as they relate to
the hypothesised theoretical and empirical relationships among the variables.

I. Job Satisfaction Measure

Analysis of the scale of 32 items generated from the basic distinctions
indicated earlier, demonstrated that the conceptualisation of job
satisfaction might need to be modified in a number of respects. It was
found that five principal sets of empirical clustering of the items emerged,
and in part these acted to confirm theoretical expectations. For instance,
it was found that factors distinguished clearly between members of the
role set inside inside the school, as opposed to those members outside the
school. It was also found that the factors dichotomised between those that
were primarily concerned with affectual and status exchanges, and those
that were primarily concerned with utilities. In some respects however, the
analysis indicates that either the instrument is not sufficiently sensitive to
differences in status and affect, or that the latter differences are
analytically but not empirically distinct. In the second case there are

Indications that the role set of the teacher is not so clearly delineated and indeed the very similar weightings of satisfactions with pupils, parents and public suggest that the differences between these groups are not empirically distinct. Again this may be due to the inadequacy of the instrument to record such differences, or they may be perceived as the same by the members of the role set.

2. Network Centrality

Measurement of different nets was effected by giving a series of questions to staff members on which basis they indicated with which staff they had the most frequent contact. It was then possible to map the staff who were members in any particular net, and then to designate those staff at the centre or periphery of that net. In response to the 'constraint' of the sociological theory outlined earlier, a theory of network centrality was developed which maintained that the organisational press was such that centrality in any net within the organisation (despite task orientation) would tend to be dominated by those individuals who were dominant in the organisation in other respects. Accordingly, it was hypothesised that individuals with higher professional and positional characteristics would be more likely to be found in the centre of the nets. Following logically from this position, it was hypothesised that activities outside the school would be more inclined to be removed from the influence of the press of the organisation, and hence positional and professional variables would not be so dominant.

The theory was partially confirmed. It was clear that all nets within the organisation were strongly influenced by those individuals who had higher qualifications and position of responsibility. On the other hand, there was a tendency for those individuals who were at the centre of the

Informal net outside the organisation, to be more similar in terms of age, sex and qualifications. The distinction was not so clearly confirmed however, in that age and sex exercised strong direct and indirect effects in some of the groups in the school, while in some cases the position of responsibility exercised some constraint outside the school. But in a general sense the model was confirmed in such a way as to indicate that close attention might fruitfully be given to further aspects of system constraints as they affect teacher staff interaction patterns.

3. System Maintenance

All of the foregoing variables were then built into an empirical model of job satisfaction and job retention. The general theoretical perspective took a social exchange approach and argued that the satisfaction of the teacher would be contingent on his actual rewards in relation to the rewards he expected given his investments in the system. It was suggested that where an individual had invested considerable effort, time and money on qualifications and to a lesser extent, experience, he would be most dissatisfied if he was not rewarded with a position of responsibility, or centrality in the interaction network, then he would be more satisfied with the prestige that he received. This principal of compensation received confirmation in the model. The direct effect of qualifications and experience on satisfaction tended to be negative, but the indirect effect through position and net centrality was positive. It should also be noted that interaction networks in some of the nets indicate a strong direct effect on satisfaction, and in some cases this effect is stronger than that of position of responsibility.

The theory of job retention was developed from the theory of

motivation with an important difference. Whereas the theory of job
satisfaction reflected the motivation of the actor more or less despite
other behavioural outcomes, the theory of job retention considers his
satisfaction both in respect to behavioural outcomes and within the perspective
of the constraints of a career and the system on the nature of those outcomes.
Accordingly, it was argued that while an individual may be very dissatisfied,
the more he has invested in the system the more he is constrained by it.
Hence individuals who had invested many years, specialised qualifications,
and even a career in teaching, were very much more likely to stay even
if they were dissatisfied. Paradoxically, therefore, the very investments
that might lead to the dissatisfaction of staff, may lead to the increased
likelihood of the staff member remaining in the education system.

The empirical model confirms this expectation. A consistently strong
effect on retention were the variables of age and sex, and it is apparent that
older men are most likely to stay. Qualifications did not have a very strong
effect on retention and indeed tended to be negative. Of considerable
theoretical interest in the explanation of retention was the strength of
the co-efficients from net centrality. In every case these nets predicted
more strongly to retention in the system, than did formal positions within
the system. This finding alone indicates that the interaction networks of
staff in organisations may be very important to the maintenance of that
organisation and should begiven close future attention. Finally, job
satisfaction has a consistent but not particularly strong influence on
retention, indicating that it is an intervening variable to a certain degree,
but that the strongest effects are not mediated by satisfaction but come direct
from the respective variables.

THEORETICAL AND EMPIRICAL IMPLICATIONS

These findings raise a number of theoretical and empirical questions
which are briefly considered below.

To some extent the study of interaction networks in this investigation
is the most theoretically interesting aspect of the study. The net analyses
have shown, firstly, that the organisation exercises very considerable
constraint on many aspects of the interaction of the staff; and secondly,
that the position that the individual holds within the various networks
may be strategically related to the probability of his remaining in the
organisation or the education system. This finding confirms those which
have in other respects been concerned with alienation and the effects of
bureaucratisation on the staff of the organisation. The present analysis
has suggested that this relationship between net centrality and retention
is contingent on prestige satisfaction, and on the sense of well being that
follows from being at the other end of the continuum from alienation. But
clearly these observations are speculative, and it will be necessary to more
carefully explore the reasons why centrality implies retention - particularly
when position of responsibility does not.

Analysis of net centrality must also be made in terms of those
individuals who desire centrality, and for those for whom it is irrelevant.
It was suggested that individuals with certain career interests would be
likely to seek out responsibility that centrality in most of the nets implies.
On the other hand, there are staff who are not career oriented and
therefore who do not seek such positions. On this basis it would be
expected that the latter might be satisfied despite their position in the
nets, and as far as they are concerned, net centrality is not an adequate

explanation of their motivation to remain in the system. A basic
distinction can therefore be made between individuals who are willing to
pursue net centrality, and those that are not. But a further difference
between staff members will occur according to the extent to which any
individual is able to take such a position. There will be a number of
staff who aspire to positions of centrality, but they have insufficient
experience (according to the canons of the profession) to take such a
position. These staff therefore do not expect such a position because they
are not able to take it. They may be high investors with low returns, but
remain satisfied because they consider that if they were eligible then they
would be rewarded - and this will come in time.

The distinctions between being willing and not willing, and able
and not able, may be combined into a typology which represents certain
career or aspiration orientations of different sectors of the staff.
(Figure 6:1)

	Willing	Not Willing	
Able			Eligible
Not Able			Not eligible.
	Career Oriented	Non-career Oriented	

Figure 6:1. Hypothetical Typology of Teacher Career Orientations

This typology might well form the basis for an extended analysis of teacher
satisfaction and retention takinginto account the differential operation of
the expectations of teachers concerning rewards in the system as a function

of this orientation.

In sum, while this study has been moderately successful in isolating a set of variables that appear to have significant direct effects on the indicators of system maintenance, much more extensive analysis remains to be undertaken. This analysis might take in account the career orientations of staff, and attempt to build a more powerful explanatory model of not only what individuals are at the centre of nets, but what other organisational consequences these may have.

The two dependent variables were job satisfaction and job retention. The study indicated that the latter was much more powerfully explained in the model than the former. In particular, it is apparent that prestige within the organisation, of the kinds measured in this study, are not the most salient antecedents of prestige satisfaction. Attention to the accurate prediction of satisfaction will therefore depend on a more extensive analysis of conditions both within and without the organisation. For theoretical reasons a useful extension of the present study would be to find the extent to which prestige is determined by the characteristics of the organisation. Cross tabular analysis of prestige satisfacton by school indicates that there is wide variability between schools on the perceived satisfaction with prestige. This may indicate that the prestige of the teacher is not just contingent on the view of the community, but that his prestige is determined to a large degree by structural effects within the organisation - but not necessarily to effects studied here. In this respect it is important to recall that the prestige satisfaction factor is not only concerned with prestige, but also with teacher autonomy, the ability to be able to choose what and how to teach. It is not inconceivable that this will depend a great deal on organisationally specific matters such as the

flexibility and adaptability of the senior staff. At this point the focus of research becomes similar to the study of administrative style and school climate.(Halpin,1957; Halpin and Croft,1963)

The model was particularly successful in explaining job retention, accounting for approximately 32% of the variance. Of considerable potential theoretical interest were the strong effects of age and sex, which, it was argued, represent indicators of the constraints which the system exerts over staff. While they may wish to leave, they maynot be able to go. Here again a useful extension of the study would be to consider the typology in Figure 6:1 to compare the effects on retention of four groups of staff: those who are willing to leave and can; those who are willing but can't; those who are able but not willing; and those who are able and willing. An important reason for the difference between explanation of job satisfaction and job retention, is that there may be many willing to leave, but they cannot. But in any event, this differential response to satisfaction and retention warrants closer investigation, especially as this finding appears to deviate somewhat from those reported in the literature.

Despite the findings presented above, care should be taken in generalising from these results. In the first place, they deal with only one job satisfaction factor, and any comprehensive statements about the satisfaction of staff members must also be made in relation to the other factors. Secondly, both of the instruments, while being moderately reliable, have limitations. The job satisfaction scale is measured on a minimum number of subjects (Nunnally,1967), and its reliability would be greatly increased with a correspondingly larger population or sample. It has also been shown that while the nets appear to be empirically distinct, the final path model indicated that there is a significant amount of multi-collinearity and

some caution should be exercised in the interpretation of each net by itself. Finally, it appears that the job satisfaction measure is not particularly strongly explained, and while the model predicting to retention is very much stronger, the variable itself deals with anticipated and not actual withdrawal. Consequently the analysis must be extended not only in terms of the explanation of the two dependent variables, but a further extension of this research could be concerned with building actual withdrawal into the model. Such a procedure would then enable one to evaluate more confidently the effect of anticipated retention or withdrawal, and thus significantly aid our understanding of organisations such as the school.

CONCLUSION

The study began with the theoretical focus on concern with the conditions which contribute to the maintenance of a social system. Stress was laid on two aspects of that explanation - the constraint of structural effects of the system, and the volition of the actor. This study has subsequently endeavoured to contribute to this theoretical perspective by partially demonstrating the nature of teacher motivation and satisfaction in the system, while building into the model the indicators of system constraint. In so doing it has given particular attention to certain structural aspects of the staff of an organisation and has shown that these contribute to the maintenance of that organisation. It will be of theoretical and pragmatic interest to extend the parameters of the present study in order that we might be able to more confidently specify the conditions which are necessary to maintain this form of social system. Such a step would be a logical outcome of this current research.

APPENDIX I

THE QUESTIONNAIRE

While there is a continuing concern among those connected with education about the conditions which attract and retain staff in schools, very little is known about the 'facts of teaching life'. This study is designed to provide some of these facts by seeking objective evidence from teachers themselves on those aspects of the education system which satisfy or dissatisfy them. It is part of a larger series of studies on teacher role being conducted by the Education Department at Massey University.

The questionnaire that follows is divided into three sections. The first and longest section asks you to indicate where your greatest satisfactions are to be found in teaching. The second, consistent with research in other professional organisations, seeks to map communication structures and contacts in your school which may contribute to such satisfactions. The third section asks for some details that may distinguish staff responses more accurately from one another. However, to undertake this research it is necessary for respondents (but not the researcher) to be able to identify other staff members by numbers. For this reason a numbered list of staff has been included with this questionnaire, but that list has been constructed in such a way that no one person, including the researcher , can identify the respondents names. In fact the project depends on ensuring that the respondents remain anonymous.

May we make two further points. The statistical analysis associated with the research requires a response from all members of staff. A lack of even one response may mean that all the data from that particular school will have to be discarded. Because of the nature of our sample, such a situation may seriously impede our study. We would therefore greatly appreciate your assistance. If you feel that the occasional question is not phrased precisely to your liking, you may care to make a qualification to make a qualification alongside. However, would you be kind enough to respond

to the question as it is phrased in the questionnaire. This standardises procedure from teacher to teacher and school to school.

It is expected that the questionnaire will not take longer than 15-20 minutes to fill in. When you have completed it, would you please place it in the brown envelope, seal it, and put it in the box provided in the School Office. No names should appear on the envelope. Would you also please fill in the name slip accompanying this questionnaire and drop it in the box separately. This latter procedure does not in any way associate respondents with their completed questionnaire, but it enables the researchers to identify those members of staff who may need a reminder to complete it.

It is planned to collect the questionnaires in two days time. It would be appreciated if you could deposit yours in the Office box before then.

Thank you for your consideration and assistance.

Terence C. Halliday
Psychology Department
Massey University.

SECTION I

The questions on this page deal with the satisfactions that teachers obtain from teaching. Please answer each item by placing a tick in <u>one</u> of the spaces opposite that item. Would you please make your judgments on the basis of your most recent experiences.

How would you rate your usual level of satisfactions with these aspects of your present job:

	very satisfact.	satisfact.	neither sat. nor dissat.	unsatisf.	very unsatisf.
1. Salary					
2. Superannuation					
3. Physical conditions (eg. general environment, facilities, etc)					
4. Provision of equipment					
5. provision of ancillary staff (secretaries and aides)					
6. co-operation yourare given by staff colleagues					
7. In service training					
8. The running of the school					
9. The rea onableness of the demands made on your time. (eg. extra-curricular activities)					
10. Holidays					
11. Assistance given by departmental advisors (eg. reading advisors)					
12. Assistance given by related service organisations (eg Child welfare, Psychological Service)					
13. Prospects for promotion					
14. Prospects for financial advancement					
15. Amount of responsibility you are given.					

SECTION I contd

		Very satisfied	Satisfied	Neither satisfied or dissatisfied	Dissatisfied	Very dissatisfied
16.	respect you are given by the pupils					
17.	respect you are given by staff colleagues					
18.	status you are given by the general public					
19.	respect you are given by people who benefit indirectly from your work					
20.	the freedom you are given to choose what you will teach					
21.	the freedom to choose what teaching methods you will use					
22.	opportunities you have to participate in the affairs of the teaching profession.					
23.	your personal relations with the pupils in your school					
24.	your personal relations with the general public in your role as a teacher.					
25.	your personal relations with ancillary staff (eg. secretary, caretaker)					
26.	your personal relations with colleagues					
27.	your personal relations with people who benefit indirectly from your work (eg. parents)					
28.	your personal relations with the schools senior staff.					
29.	your personal relations with system administrators (inspectorate)					
30.	your personal relations with personnel in other service organisations (eg Child Welfare)					
31.	your personal relations with personnel in training organisations that serve your occupation (eg teachers college)					

The next few questions describe more general situations, in which we ask you to give a general assessment of your feelings about teaching. We realise the generality of these questions, but we would like you to respond to the items in terms of the overall feelings you have.

33. To what extent do you consider that <u>teachers in general</u> are satisfied with teaching as an <u>occupation</u>?

very satisfied	more satisfied than dissatisfied	about half in half	more dissatisfied than satisfied	very dissatisfi

34. Compared with how you think most other teachers feel about their present job, do you see yourself as:

considerably more satisfied	more satisfied	about the same	less satisfied	considerably less satisfied

35. What do you consider is the likelihood that you will remain in the teaching profession for the next five years, or until retirement (whichever is the sooner?)

very likely	likely	neither likely nor unlikely	unlikely	very unlikely

36. If you anticipate leaving the teaching profession, would you please indicate the reasons?

_____

37. If you have any further comments on the kinds of things which make teachers more or less satisfied, please note them below.

SECTION II

Research in other large organisations has indicated that staff communication networks and groups may be very significant in the maintenance of the organisation at an interpersonal level. This research intends to discover the extent and kinds of such groups in schools and what effects these may have on the organisation and on teachers themselves. Five different types of groupings have been isolated - those to do with subject teaching fields, school organisation, extra-curricular eactivities, and informal groups in and out of the school. In each of these different groupings it seeks to distinguish between staff with whom one has very close contact, through to those with whom one has only minimal contact. Please note that this section does not require you to make any judgments of any kind on other people. It merely asks you to describe what is the case - what is obvious to other staff members and to any observer who could spend time in your school. By asking you in this way it is possible to gain hundreds of responses and thus to make general conclusions more valid.

The nature of the different groupings is outlined below:

1. Subject groups refer to those staff with whom you have contact in your main teaching fields on matters concerned with that teaching.

2. School organisation groups has to do with things such as the school library, organising sport, assemblies, book distribution, etc.

3. Extra-curricular activities are those activities outside of class and school time, but which involve staff and pupils working together. (eg. weekend sport, evening drama and music practices for school productions, etc).

4. Informal groupings within the school are those occasions when you get together with other staff at morning tea, lunch, afternoon tea, at study periods, and in other informal settings within the school.

5. Informal associations outside school involve contacts that you might have with other staff whom you visit, or they visit you. These are people you invite around, drop in on, have for meals, go out with etc).

Accompanying this questionnaire is the staff list with random numbers alongside each name. In describing groups please use only numbers. No names must appear.

In each of the five different situations below is a grid: the activity is described down the side; the closeness of the contact is described along the top.

1. In you main teaching fields, with what staff do you have contact?

	Especially close contact	Very close contact	Close contact	Some contact	Minimal contact
Specify Major Subject Fields					

SECTION II contd

2. With what other members of staff do you have contact in various aspects of school organisation?

	Especially clse contact	Very close contact	Close contact	Some contact	Minimal contact
Specify aspects of organisation					

3. With whom do you have contact in extra-curricular activities of the school?

Specify extra-curricular activities					

4. With whom do you have contact at informal situationswithin school time?

5. With what members of staff do you have contact in informal ituations outside the school?

SECTION III

Finally, would you be kind enough to provide us with some general information on your background and experience. This enables us to study whether different sectors of the profession have different kinds of satisfactions or dissatisfactions and communication network contacts.

1. What are your full qualifications? (eg. T.T.C., Dip.T., B.A., M.A. Trade Certificates. If you have an incomplete degree please specify the number of units you have)

   _____

2. Please list your years of full time experience anywhere in the teaching profession, but excluding your training college experience, including your P.A. year if you were primary trained, and excluding this year.)

   _____

3. Please list the formal position you hold in this school, as exactly as possible. (eg. assistant master, PRA maths etc)

   _____

4. Please list below the subjects you teach this year in order of concentration, the periods involved, the form taken, and the particular class within that form.

Subject	Form	Class	No. of Periods

5. What is your age?   _____

6. What is your sex?   _____

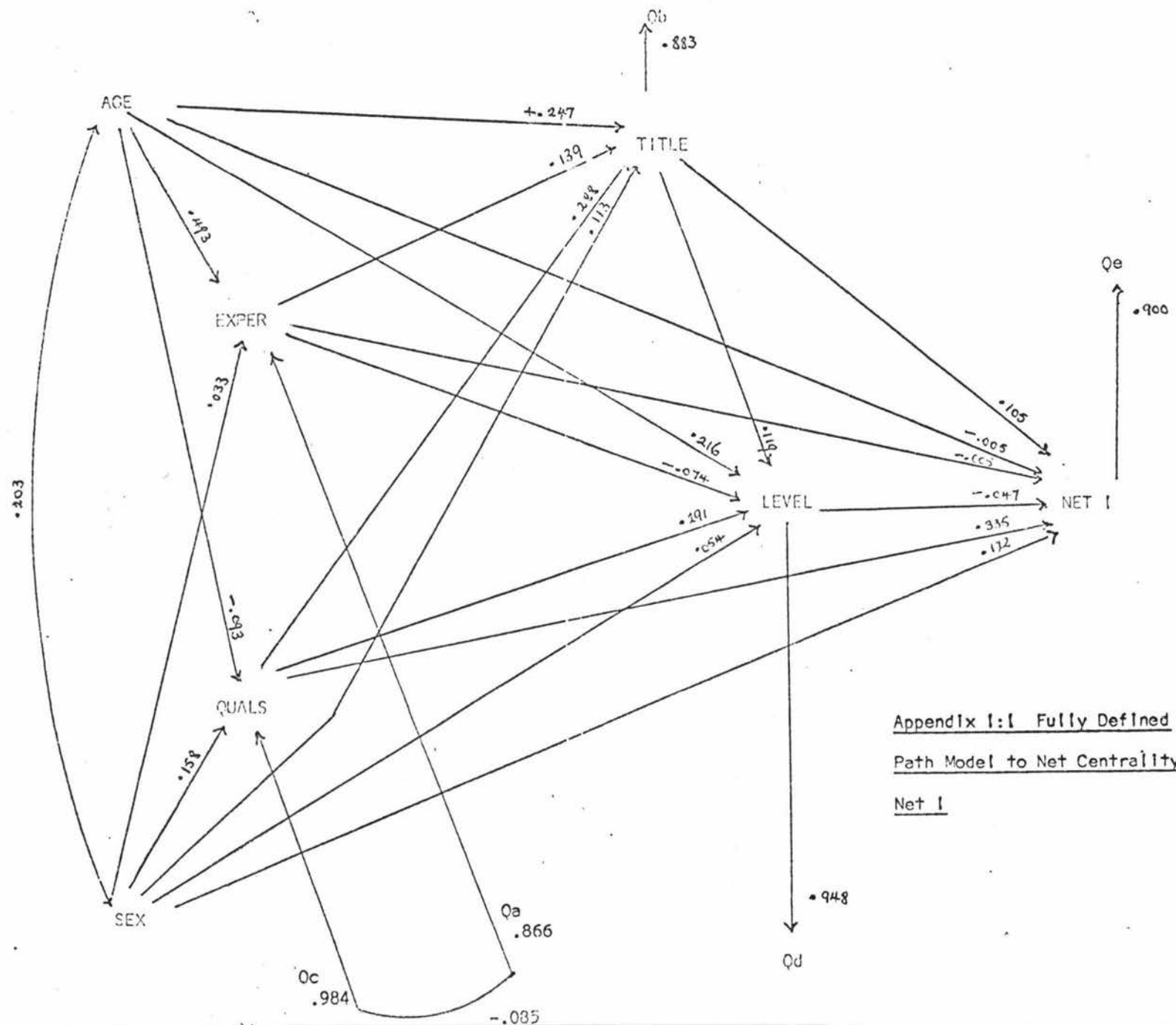7. What is your marital status?   _____

8. What is the code number alongside you name in the numbered list of staff?

   ☐

THANK   YOU

APPENDIX 2

FULLY DEFINED PATH MODELS TO NET CENTRALITY

AGE

TITLE

Qb
.883

+.247

.139

.483

.248
.113

EXPER

Qe
.900

.033

.216
.611

-.074

.105
-.005
-.005

.203

.291
.054

LEVEL

-.047

NET 1

.335
.132

-.093

QUALS

Appendix 1:1 Fully Defined

Path Model to Net Centrality:
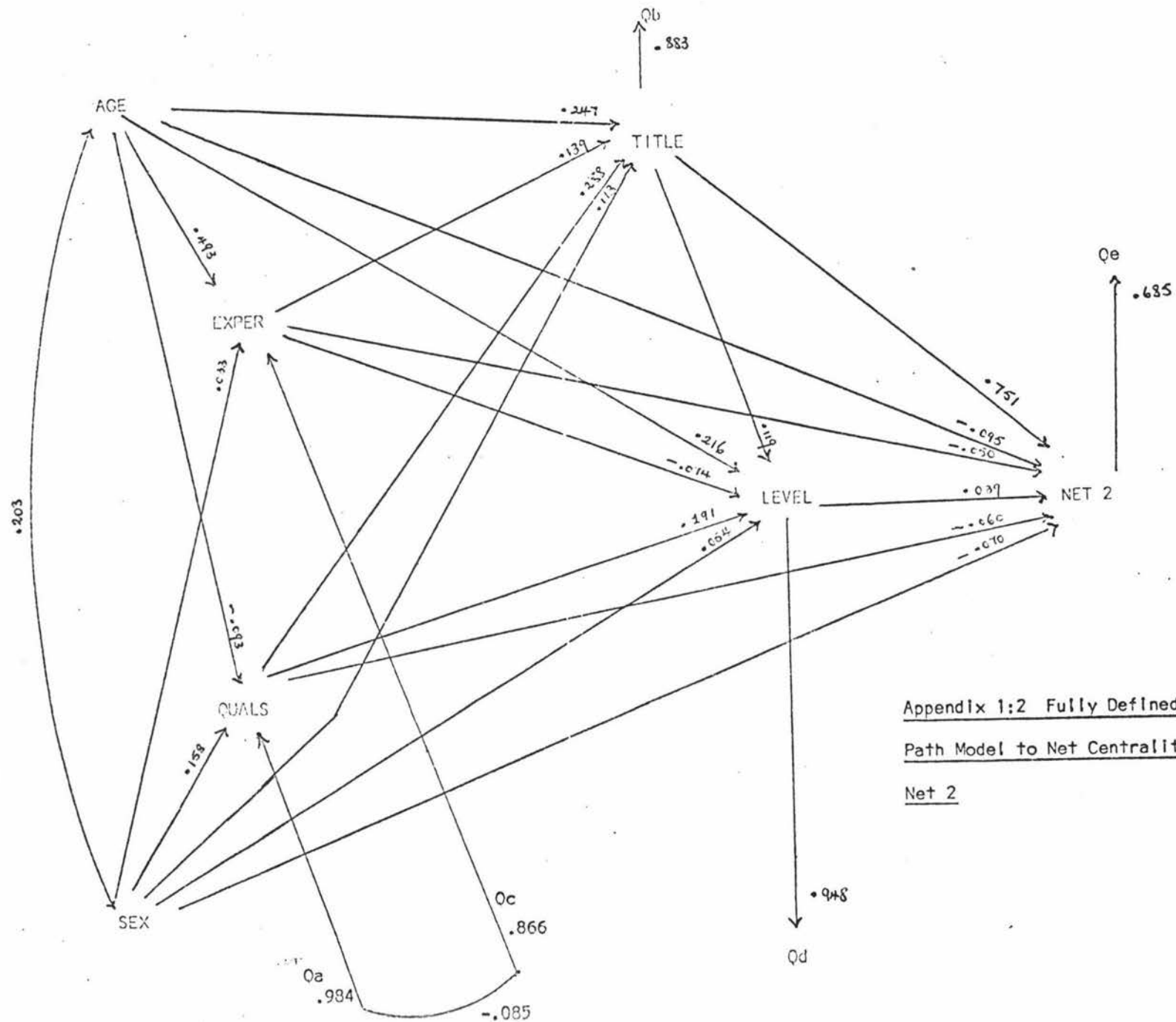
Net 1

.158

SEX

Qa
.866

Oc
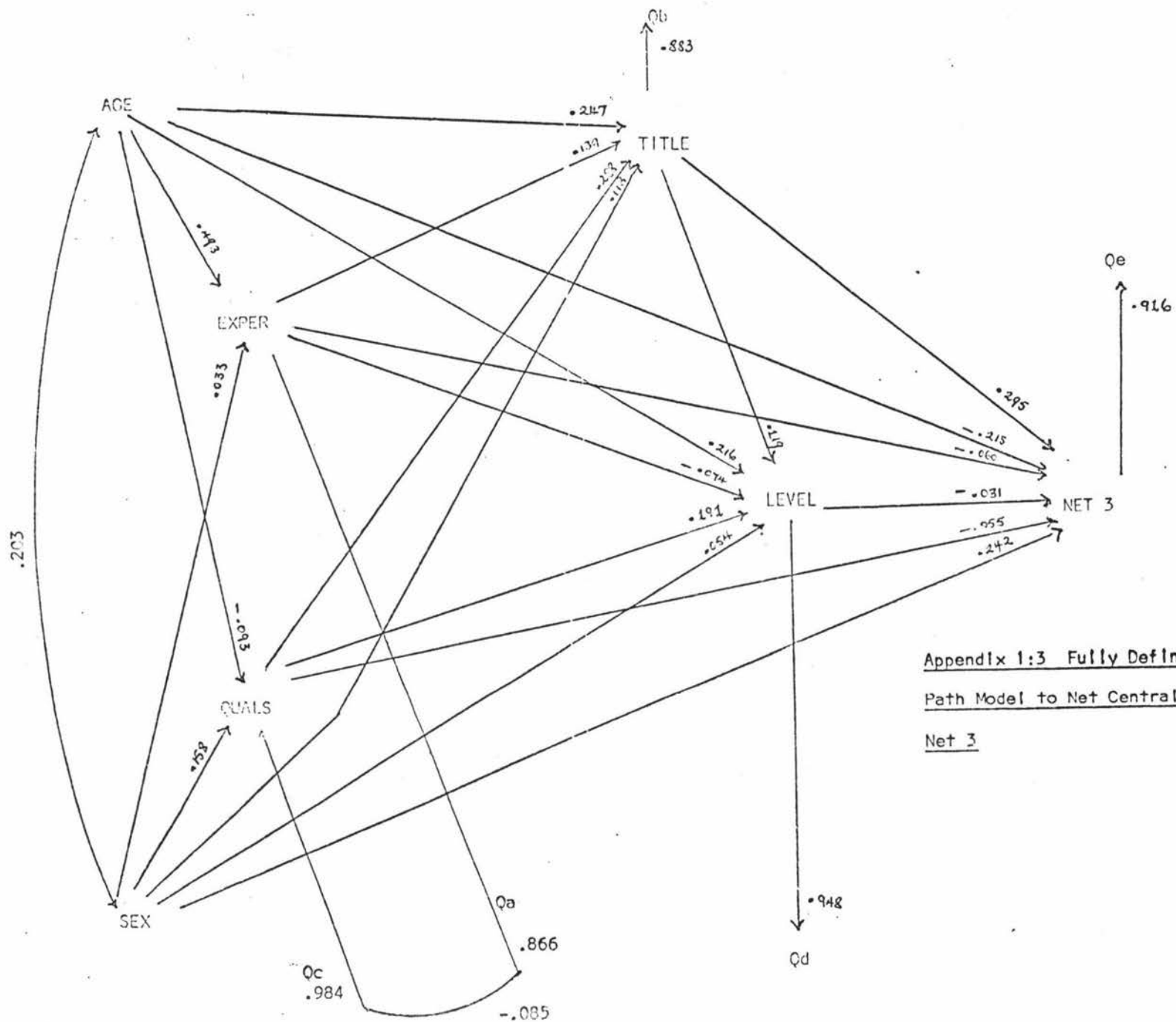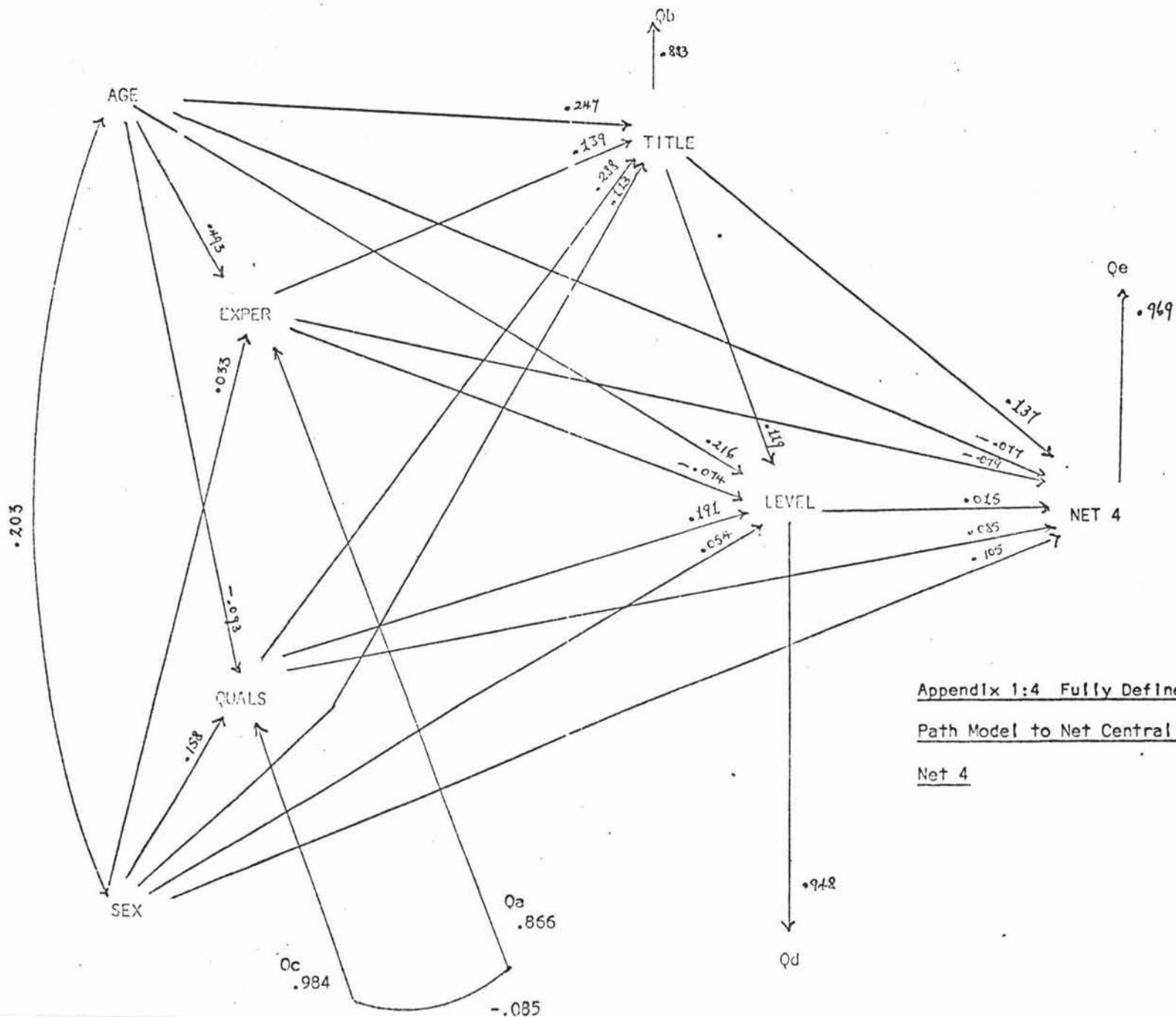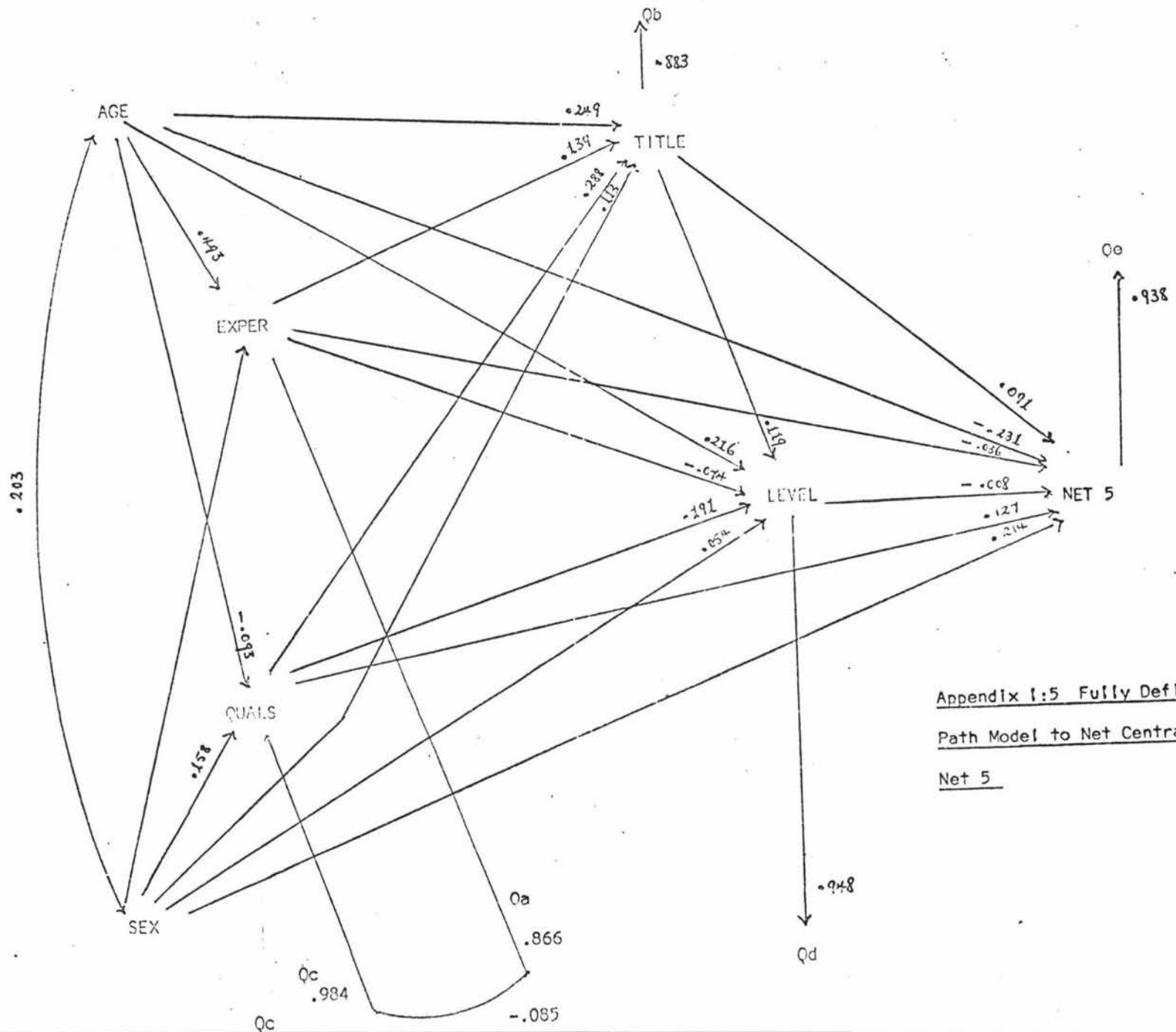.984

-.085

.948

Qd

Appendix 1:2 Fully Defined

Path Model to Net Centrality:

Net 2

Appendix 1:3 Fully Defined
Path Model to Net Centrality:
Net 3

Appendix 1:4 Fully Defined
Path Model to Net Centrality:
Net 4

Appendix 1:5 Fully Defined
Path Model to Net Centrality:
Net 5

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