NEED FULFILLMENT IN WORK AND NON-WORK
AS RELATED TO MENTAL HEALTH

by

MUHAMMAD JAMAL

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M.A. (University of the Punjab) 1967
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Department of Commerce & Business Administration

The University of British Columbia
2075 Wesbrook Place
Vancouver, Canada
V6T 1W5

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dedicated to

Ammi and Abbu

(whose prayers made this possible)

Abstract

A theoretical model was developed in order to predict an individual's level of mental health on the basis of factors in his work and non-work environments. The model predicted that the individual's level of mental health is related to the degree of his psychological need fulfillment both in work and non-work environments. It was argued that the nature of the relationship between need fulfillment in work and need fulfillment in non-work in an individual's life determines his level of mental health.

Four types of relationships between the two need areas were proposed: (1) High need fulfillment in work might be coupled with high need fulfillment in non-work. This type of relationship was called a complementary relationship. (2) High need fulfillment in work might be coupled with low need fulfillment in non-work. This type of relationship was called an expressive relationship. (3) Low need fulfillment in work might be coupled with a high need fulfillment in non-work. This type of relationship was called a compensatory relationship. (4) Low need fulfillment in work might be coupled with low need fulfillment in non-work. This type of relationship was called a spill-over relationship.

It was hypothesized that the level of mental health will be high when there is a complementary relationship between need fulfillment in the two areas; moderately high when there is an expressive relationship; moderate when there is a compensatory relationship; and low when there is

a spill-over relationship.

The model also predicted that various technological, organizational and management factors are related to need fulfillment in work. Five hypotheses (hypotheses 5 to 9) were formulated showing the relationships between technological, organizational and management factors, and need fulfillment.

Data on individual variables were collected through a structured questionnaire from 403 employees (response rate 45 percent), working in six industrial organizations in Western Canada. Data on organizational variables were obtained through personal interviews with at least one senior manager in each of the six participating companies. Hypotheses were tested using one-way-analysis of variance and Spearman rank order correlations.

The results on need fulfillment as predictors of mental health showed that the mean scores on mental health were highest for the complementary relationship; second for the expressive relationship; third for the compensatory relationship; and lowest for the spill-over relationship. Differences between means across the four types of relationships were significant $(P>.01)$ according to the t-test and the Duncan Sign Test. The partial correlation $(r=.48)$ between need fulfillment in work and mental health, controlling for need fulfillment in non-work, was far greater than the partial correlation $(r=.20)$ between need fulfillment in non-work and mental health, controlling for need fulfillment in work.

The results on need fulfillment in work as a dependent variable showed that (1) Both task specialization and technical constraints in task performance were inversely related to need fulfillment. (2) Need fulfillment was slightly higher under a democratic supervisor than under an authoritarian supervisor. (3) Need fulfillment was slightly higher in flat organization structures than in tall organization structures. (4) Need fulfillment was higher in small organizations and sub-units than in large organizations and sub-units for the blue-collar workers but not for the white-collar workers.

It was concluded that it is important that future research must include both work and non-work environment factors in predicting employees' mental health and that serious attention must also be paid to technological variables along with organizational, management and psychological variables in understanding employees' job attitudes.

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Acknowledgement

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CHAPTER I: Introduction

One area of concern which has not been well researched in organi-
zational behavior is the relationship between work and non-work
activities.   Questions such as to what extent, if any, do the activities
which individuals do in their jobs affect their activities in off-job
situations have remained virtually unanswered by scholars in organi-
zational behavior.   The chief reason for this neglect may be that invest-
igators in organizational behavior so far have been preoccupied with
research on job satisfaction, motivation and leadership.   It has been
estimated that over five thousand research articles have been published
on job satisfaction alone since the Brayfield and Crockett review in
1955.

Until very recently, research in the area of work and non-work was
left to industrial sociologists whose major focus was the relationship
between structural variables in the work environment (such as shift-time,
physical isolation at the job, and technical constraints in job perform-
ance) and various kinds of off-job activities.   In off-job activities
their emphasis was limited to such variables as participation in volun-
tary organizations, time budget of individuals' off-job activities and
the like.   Industrial sociologists did not consider it fruitful to
examine the impact of workers' subjective feelings in job activities on
their subjective feelings in off-job activities.   For this reason, it
was felt that there is a need for research in this area.   The following
research study attempted to examine the relationship between a worker's
psychological need fulfillment in job and off-job activities.   Specif-

ically, the research question addressed was as follows: Is need ful-
fillment in work related to need fulfillment in non-work, and is this,
in turn, related to an individual's mental health?

1.1 Relationship between Work and Non-Work

Industrial sociologists have long agreed that in any society the
life space of the adult members (especially those who are engaged in
gainful economic pursuits) may be divided into two kinds of life roles;
work role and non-work role. By work role, they mean the role which an
individual plays as an occupant of a paid job and the activities which
he undertakes during the hours when he is engaged in paid-work. The
term non-work role refers to the role which an individual plays outside
his job and which could include the activities he undertakes in his
home, with his friends, neighbors and the like.

Speculation and theorizing concerning the inter-play between work
role activities and non-work role activities have been put forth by
writers from Adam Smith and Engels to C.W. Mills and from de Tocqueville
to Reisman (Meissner, 1971). But the credit must go to Wilensky (1960)
for empirically demonstrating two alternative propositions concerning
the relationship between work and non-work -- compensatory and spill-
over. The compensatory proposition of work and non-work suggests that
workers attempt to compensate in non-work activities for things they can-
not achieve at work. In contrast, the spill-over proposition suggests
that things which are not achievable at work are also not achievable in

non-work activities.

These propositions, and others related to them, have been used as theoretical guidelines in several empirical studies concerning the relationship between work and non-work. It may, therefore, be useful to review the literature on work and non-work from the perspective of the two propositions.

A review of the literature on work and non-work suggests three main streams of research. The first stream, dominated chiefly by industrial sociologists, focuses on the issue of how specific job related factors affect the off-job behavior of workers (Wilensky, 1960; Mott, Mann, McLoughlin and Warwick, 1965; Hagedorn and Labovitz, 1968; Meissner, 1971; Dulz, 1973). A brief examination of this literature is presented below.

Wilensky (1960) attempted to test the relationship between work and non-work using a sample from the Detroit middle class. The aim of his study was "...to link specific attributes of work situation and career to styles of life and more broadly to variations in the strength and kinds of ties that bind persons and groups to community and society." He observed a spill-over relationship operating between work and non-work in his sample and concluded that, "To the extent that men are exposed to disciplined work routines yielding little gratification and have careers which do not necessitate wide community participation, their retreat from work will be accompanied by a withdrawal from the

larger communal life."

Both Bast (1960) and Mott et al. (1965) observed that workers working on morning shifts were more active in participating in voluntary organizations than workers who were on other shifts. If it can be assumed that working on a day shift is a socially accepted norm for the majority of the' people, then the findings of Bast and Mott et al. may be interpreted as supporting a spill-over relationship. Hagedorn and Labovitz (1968) observed that the more isolated the individual was on his job the more he would join and participate in community associations. However, if the individual considered formal and informal contact to be unimportant, he was less likely to participate in such activities. This latter finding tends to support a spill-over relationship while the former suggests a compensatory relationship.

Meissner (1971) observed that both technical constraints and social isolation at jobs were negatively related to workers' participation in voluntary organizations. He concluded on the basis of these findings that "The extent to which a man is used, as a resource in the organization of work, is a burden -- light or heavy not easily dropped at the mill gate." In a recent study, Dulz (1973) observed a positive but weak relationship between the extent of social interaction at jobs and participation in voluntary organizations. Her sample consisted of automobile workers from four nations: USA, Italy, Argentina and India. Again, both the Meissner and Dulz's studies tend to support the existence of a

spill-over relationship between work and non-work.

In summary, the empirical studies in the first stream of research on work and non-work clearly support a spill-over relationship between work related factors and the off-job behavior of industrial workers. Workers who were deprived of certain things in work were unable to compensate for them in non-work activities.

The second stream of research in work and non-work, dominated chiefly by social psychologists, focuses on the interrelationships between job attitudes and overall life satisfaction (Wesley, 1939; Watson, 1942; Weitz, 1952; Friesen, 1952; Brayfield and Wells, 1957; Holmes, 1963; Kornhauser, 1965; Hulin, 1969; Iris and Barrett, 1972). A brief review of this literature follows.

The earliest reported study dealing with the relationship between job satisfaction and life satisfaction is one by Wesley (1939) wherein the relationship between job satisfaction and general morale of former University of Minnesota students was examined. In two separate invest-igations he found significant positive relationships between attitudes towards one's job and attitudes towards one's life in general. Simi-larly, Watson (1947) observed a correlation of .25 between occupational morale and a life satisfaction index with 538 unemployed males. Friesen (1952), using the incomplete sentence technique with a sample of female workers, compared attitudes towards life at work with attitudes towards life away from work and found a small positive correlation

between the two. Weitz (1952) also found a positive correlation of .39 between job dissatisfaction and life dissatisfaction among a sample of insurance agents.

Brayfield and Wells (1957) observed a significant positive relationship between job satisfaction and general life satisfaction among males but no significant relationship was found with females. Kornhauser (1965), in a sample of Detroit automobile workers, found a positive relationship between job satisfaction and life satisfaction. He also found job satisfaction to be positively related to family and home satisfaction, leisure satisfaction and community satisfaction. Hulin (1969), using a sample of 469 workers in two company towns, found that the five dimensions of JDI as well as the variables of management response to complaints and working conditions showed significant positive relationships with general life satisfaction in the male sample only. With females, only one dimension of JDI (co-workers) was found to be positively related to general life satisfaction. Iris and Barrett (1972) also observed several positive relationships between satisfaction with JDI factors and life satisfaction in their sample of first line supervisors. In their study, importance of work, supervision and promotion were also found to be related to life satisfaction.

In summary, the results of studies falling into the second stream of research on work and non-work are consistent with the interpretation that favourable or unfavourable feelings at work carry over to produce similar feelings in non-work activities. In general, it has been found

that attitudes towards one's job are positively related to attitudes towards one's life.

The third and the final stream of research in work and non-work focuses on the relative importance of need fulfillment in areas such as work, home and family, leisure and others. One of the earliest studies which attempted to measure need satisfaction in work and non-work is the study by Papanestor (1959). He observed a positive relationship between need fulfillment in work and need fulfillment in non-work activities in a sample of evening class students at the University of Cincinnati. Burke (1973) used a sample of managers to examine need satisfaction in five life areas: work, family, friends, leisure, and organizational activities. He found that managers who spent more time in a work role tended to spend less time in the four other non-work roles. In a sample of business managers and civil servants, Anderson (1974) examined need fulfillment in three life areas: job, family and home, and other activities. Although his results are mixed, he reported the existence of a compensatory relationship in the lower needs level (physiological) in work and non-work. In upper level needs (social, esteem and self-actualization) it appears that a spill-over relationship is in operation.

Mansfield (1972) collected data on need satisfaction and importance from 58 managers who were participating in a week-long course in the 'Behavioral Sciences at Work' offered by the London Business School. Using Maslow's need hierarchy, he found no differences in need satisfaction in work and non-work in four of the five need areas. The one

area where a significant difference was noted was social needs for which
a greater dissatisfaction was experienced in non-work activities.
However, it was found that respondents placed greater importance on need
satisfaction in work than non-work in the need areas of self-actual-
ization, autonomy and security.

In summary, empirical evidence examining the relative importance of
need fulfillment in different life areas appears to suggest the existence
of a spill-over relationship; there seems to be a tendency for higher
need fulfillment in work to be related to higher need fulfillment in non-
work.

In conclusion, all three streams of research in the area of work
and non-work tend to support the spill-over relationship. However, two
studies (Mansfield, 1972; and Anderson, 1974) dealing with need satis-
faction in work and non-work did not clearly support the above conclusion
although their data did suggest a spill-over relationship. In not a
single study was a compensatory relationship fully documented between
work and non-work activities.

1.2 The Concept of Mental Health

Although the concept of mental health has been subjected to
empirical research by sociologists, psychologists, psychiatrists,
occupational therapists and many others, there is, as yet, little
consensus as to its meaning. Not only is it difficult to agree on the

general application of the term mental health, but in a single context it may be used in many different ways. Yet one conclusion can be reached about mental health as a concept: "It is not a precise term but an intuitively apprehended idea that is striving for scientific status" (Schwartz and Schwartz, 1968).

Investigators have defined mental health in different ways. As early as 1937, Menninger defined mental health as "The adjustment of human beings to the world and to each other with a maximum of effectiveness and happiness." He saw it as the ability to maintain an even temper, an alert intelligence, socially considerate behavior and a happy disposition. Tollman (1944) conceived good mental health as the ability to live with one's fellow men in reasonable comfort without self-deception and despite recognized shortcomings. Sullivan (1954) identifies a person's drive towards mental health as those "Processes which tend to improve his efficiency as a human being, his satisfaction, and his success in living." To Fromm (1955), "The mentally healthy person is the productive and unalienated person; the person who relates himself to the world lovingly, and who uses his reason to grasp reality objectively, who experiences himself as a unique individual entity and at the same time feels one with his fellow man..." Solley and Munden (1962) attempted to operationally define mental health by interviewing fourteen psychiatrists and psychologists who were associated with the Menninger foundation. Their results indicated that people who are considered to be mentally healthy exhibited the following attributes: (1) having a

variety of sources of gratification in their relations with others, in
their work and in their ideas; (2) recognizing and accepting their
personal strengths and weaknesses; (3) treating others as individuals
and being sensitive to individual differences among people; (4) spon-
taneously and naturally using their capacities to fulfill personal needs
and in the service of others; (5) flexibility under stress. In a similar
vein, Himler (1964) suggested three indicators of poor mental health:
(1) "Change in employees' productivity; (2) alterations in employees'
adaptive capacity to co-operate with others in a work group; (3) mani-
fest evidences of emotional ill health, for example, anxiety, agression,
depression or alcoholism."

This brief review of the concept of mental health gives a good
indication of the multiplicity of measures used in assessing the term.
An excellent comprehensive attempt was made by Jahoda (1958) to summa-
rize the multiplicity of criteria used in defining mental health. She
labelled certain criteria of mental health as unsuitable because they
were unsatisfactory for research purposes. "Absence of disease" is
rejected as a criterion, not only because of the difficulty surrounding
the term 'disease' but also because the common usage of the term "mental
health" now includes more than the mere absence of a negative value.
Jahoda summarized what to her are acceptable sets of positive mental
health. These include: (1) attitudes toward the self, which include
accessibility of the self to consciousness, correctness of the self
concept, feelings about the self concept (self-acceptance) and a sense

of identity; (2) growth development and self-actualization, which

includes conceptions of self motivational processes, and investment in

living; (3) integration, which refers to the balance of psychic forces

in the individual, a unifying outlook on life, and resistance to stress;

(4) autonomy, which refers to the decision making process, regulation

from within and independent action; (5) undistorted perception of real-

ity, including empathy or social sensitivity; (6) environmental mastery,

including the ability to love, adequacy in interpersonal relations,

efficiency in meeting situation requirements, capacity for adaptation

and adjustment, efficiency in problem solving and adequacy in love, work

and play.

Although Jahoda's work represents one of the finest summaries of

the difficulties encountered in defining mental health, it does have

numerous problems, many of which are recognized and discussed by her.

The primary problem is that the criteria are overlapping and no resul-

tant attempt has been made to spell out the relationship between criteria

-- e.g. the degree to which the criteria are independent. Secondly, she

does not offer a method or methods for identifying satisfactory indexes

of the criteria. This makes it impossible to measure the degree of a

particular criterion or even to discover its presence or absence.

Thirdly, no attempt is made to empirically test the criteria which she

perceives to be acceptable ones for the concept of mental health.

In a similar fashion, Scott (1958) analyzed the criteria used in

various studies for assessing mental health. He discussed in detail the

relative advantages and disadvantages of the following six criteria:
(1) exposure to psychiatric treatment; (2) social adjustment; (3) psy-
chiatric diagnosis (of the whole community); (4) subjective unhappiness;
(5) objective psychological symptoms and (6) failure of positive
adaptation. Like Jahoda, he does not present any data of his own to
confirm or reject the relative superiority of some criteria over others
nor does he offer any method or methods for identifying satisfactory
indexes of these criteria. However, Scott does present summary findings
discussing the interrelationships he noted between various criteria used
in studies which employed more than two criteria. He concluded that,
"The different categories of criteria have tended to yield moderate, but
not impressive interrelations."

An excellent attempt was made by Kornhauser (1965) in the mid-
sixties to conceptualize the concept of mental health and to arrive at
an operational definition of mental health with the help of empirical
data. Kornhauser was also interested in validating his definition of
mental health with expert opinion. He conceptualized mental health as
"A loose descriptive designation for an overall level of success,
personal satisfaction, effectiveness, and excellence of the individual's
functioning as a person. It refers to a combination of psychological
and behavioral attributes some of which the person must possess above a
required minimum and others of which signify better mental health the
more they are present." Like Jahoda and Scott, Kornhauser (1965)
conceived mental health as a multidimensional concept. On an a priori

basis, he set forth to extract statements from the literature which would specify the conditions and behaviors which were considered to be indicative of good or poor mental health (e.g. high self-esteem or self-derogation, degree of freedom from anxiety, general trust or distrust of people). He then proceeded to collect information on the selected statements from a sample of 407 automobile workers in Detroit by means of personal interview. The purpose of the interview was to secure information about the respondent's usual feelings, attitudes, and behavior which he felt would indicate how the worker was "getting along psychologically." On the average, each interview lasted three and a half to four hours and was divided into two equal sessions.

From the interview responses obtained, on the basis of face validity, six component indexes were combined from the large number of items in order to provide a general measure of mental health. Each index was considered to be a partial indicator of mental health. Taken together the six indexes comprised the operational definition of mental health in the Kornhauser (1965) study. Each index in turn was defined by the content of items on which it was based. The six component indexes were as follows:

(1) Index of manifest anxiety and emotional tension.

(2) Index of self-esteem, favourable versus negative feelings.

(3) Index of hostility - versus trust in and acceptance of people.

(4) Index of sociability and friendship versus withdrawal.

(5) Index of overall satisfaction with life.

(6)   Index of <u>personal morale</u> - versus anomie, social alienation,

despair.

Kornhauser found high internal consistency reliabilities for the

above indexes. However, he did find positive correlations between

various items in different indexes as well as those between items in the

same index. Agreement between an item of the same index was found to be

greater than for a sample of items taken at random from different

indexes. He found a median inter-item tetrachoric correlation of .35

for items within the indexes as compared to a median tetrachoric

correlation of .17 between items across indexes.

Kornhauser validated his six indexes of mental health against the

judgment of several highly qualified clinical psychologists. He

selected forty respondents from his entire sample of 407 for this

purpose. For each respondent, clinical experts were asked to read

through the entire case folder (a forty-four page interview schedule,

two check response inventories, and a six page interview with the res-

pondent's wife) and to record on a five point scale, an overall estimate

of "How good or satisfactory you consider the mental health of the indi-

vidual rated." Each case was rated by three different experts. Inter-

rater agreement was found to be reasonably high: the median inter-rater

agreement was observed to be .52 (tau). When the composite ratings by

clinicians were correlated with the overall index of mental health

(derived by combining the scores on six sub-indexes of mental health), a

very high correlation was found between the two. The Pearson correlation

was .76 and the tetrachoric correlation .84. Only 1 out of 14 persons who were high on the index received a rating below the average; 14 out of 17 persons having low scores received such a rating. These findings suggested that the meaning of mental health as measured by quantitative indexes closely corresponded to what the clinicians also conceived to be good or poor mental health.

Additional support for the validity of mental health measures was received by comparing scores obtained on the indexes with testimony given by the wives of the respondents. The wife's estimate was based on her own observations of her spouse over long periods of time and over a wide variety of life situations. Two questions in the interviews with the wives were compared with the husband's responses: (1) her opinion regarding her spouse's overall satisfaction with life; (2) her opinion about whether or not he is "ever nervous or irritable." Wives' responses to both questions were found to correlate well with the husband's own reports. For example, ratings of the man's life satisfaction by himself and by his wife had a correlation of .79 for the younger workers and .51 for the middle-aged workers. Similarly, estimates of "nervousness" correlated .48 and .66 for younger and older workers respectively. When the wives' estimates are compared with the more general indexes of their husbands' mental health, the relationships still tend to be strongly positive. For example, the correlation between a wife's estimate of her husband's life satisfaction and the husband's mental health score was found to be .50 for younger workers and .53 for middle-aged workers.

The correlation between the wife's estimate of her husband's nervousness and the husband's mental health was found to be .26 for younger workers and .44 for middle-aged workers. Similarly the wife's estimate of her husband's nervousness and the husband's "anxiety" scores were found to be correlated significantly for both younger workers (r=.65) and middle-aged workers (r=.66).

After documenting the reliabilities and validities of measures of mental health, Kornhauser correlated the scores on the overall index of mental health with the six sub-indexes of mental health and arrived at the following empirical definition of mental health: "Good mental health means that the persons so labelled have high probability of feeling well satisfied with their lives, definitely positive and favourable in their self feelings, relatively free of nervousness and anxiety. With probabilities slightly lower, they also tend to have high morale (trust in people and society, freedom from "anomie" or social alienation) and little manifestation of strong hostility. They are likewise somewhat less socially withdrawn. Mental health that is "not good" or "low" implies the opposite of these characteristics."

As already indicated, the meanings of the six sub-indexes were defined by the specific responses on which they were based. Inspection of the response figures under each index led to the following summary characteristics which distinguish a man having high mental health. Anxiety: Those in good mental health tend to be free of excessive worry, reports of nervousness, insomnia, psychosomatic ailments, heavy

drinking and concern about health.

Self-Esteem: They are free from excessive discouragement and lack of
confidence in their own judgment; they have positive feelings of accom-
plishment and control of their future; they are infrequently over-
sensitive or given to self blame.

Hostility: People do not antagonize them ("get on your nerves so that
you want to do the opposite...," "often have to tell the people to mind
their own business"); they less frequently report "boiling inside,"
feeling "like smashing things for no good reason;" they less often
volunteer bad qualities as the "things you have learned about the people."

Sociability (versus withdrawal): Persons of high mental health reject
the view that one does not know whom he can count on; they do not prefer
being by themselves; they consider it important to have friends and are
more likely to have good friends, to belong to voluntary organizations
and to see friends more often.

Life Satisfaction: Mental health is associated with fewer feelings of
restlessness ("wanting to be doing something but not knowing what");
with predominantly favourable comments covering their life situation,
self ratings of being well satisfied, in good spirits, optimistic about
their own futures with belief that they have "as much chance to enjoy
life as (they) should have."

Personal Morale: Those in good mental health believe that most people
can be trusted and that people are not "out for themselves" alone; they
are relatively free from generalized pessimism and despair represented

by such thoughts as "the lot of the average man is getting worse," "it is hardly fair to bring children into the world," "getting ahead is mostly a matter of luck and pull" and that "a person has to live pretty much for today and let tomorrow take care of itself."

In summary, the literature on mental health suggests that the concept has different meanings to different writers. However, no other writer has attempted to spell out the meaning of this concept as clearly as Kornhauser. Since it was beyond the scope of the present research to develop its own measures of mental health, the Kornhauser formulation was adopted in the present research study. This decision was based on two considerations. First, the reliabilities and validities of Kornhauser's measures have been well documented and are high enough, according to the criterion set by Nunnally (1967), to justify their use in further research. Secondly, to the best of our knowledge, no study has been reported in the literature which attempts to retest the relative reliabilities and validities of Kornhauser's measures. By using the Kornhauser measures, it was hoped that some meaningful light might be shed on this issue.

1.3 Research on Mental Health

Mental health as a dependent variable has been the subject of empirical research for a long time. Since no universal definition of mental health existed, a large number of overlapping and interrelated variables were conceived by different investigators to be measures of

mental health. Notwithstanding these differences, some social and work environment factors have been suggested to be related to mental health. It has been consistently observed in a large number of studies that people in lower classes tend to be mentally ill more frequently than people in higher classes. A brief review of the studies on social class and mental health and illness follows.

The largest body of evidence suggesting relationship between socio-economic status (social class) and mental health comes from a number of studies dealing with the social aspects of mental illness. One of the earliest studies on this topic was by Faris and Dunham (1939), who found, among other things, a negative association between the socio-economic characteristics of Chicago's census tracts and the first admission rates of schizophrenia. Both Clark (1948) and Odegard (1956) confirmed the above ecological finding by observing an inverse assoc- iation between occupation or income and admission rates for psychoses, especially schizophrenia. Hollingshead and Redlich (1958), in their sutdy of social class and mental illness in New Haven, observed that the lower classes have much greater incidence of psychiatric illness, and particularly the psychotic disorders. Other evidence collected by Hollingshead and Redlich indicated that diagnosis and treatment favour the higher social classes, the consequence being that members of the lower social classes tend to be diagnosed more readily as psychotics, to receive less individually oriented treatment, and to remain in custodial care for much longer periods of time. The results of the mid-town

Manhattan study (Srole, Langer, Michael, Opler and Rennie, 1962; Langer and Michael, 1963), based on a large probability sample of adults, are especially informative in that a consistent inverse relationship was observed between socio-economic status and poor mental health and a direct relationship between status and absence of significant symptoms of mental pathology. Of all the variables tested, socio-economic status was the one most clearly related to mental health. Moreover, this relationship held whether parental socio-economic status or the person's own socio-economic status was taken as the status measure. The relationship also held when age and sex factors were controlled.

Although the impact of social class on mental health has been very well documented, little systematic research has been undertaken to examine the impact of work environment factors on an individual's mental health. The scanty empirical evidence which is available tends to suggest a relationship between job satisfaction and mental health. Kahn and his associates' (Kahn, Wolf, Quinn, Snoek and Rosenthal, 1964) research suggested a positive relationship between job satisfaction and mental health. Three recent studies by Quinn (1972), Burke (1973) and Gechman and Wiener (1975) also investigated the relationship between job satisfaction and mental health. Both the Quinn (1972) and the Gechman and Wiener (1975) studies reported a moderate positive relationship between job satisfaction and mental health but Burke's study (1973) failed to find any relationship between need fulfillment in job and psychological well-being and mental health.

Although the above studies generally suggest a positive relation
between job satisfaction and mental health, the amount of relationship
found in these studies is not very impressive. In a recent review of
mental health, Kasl (1974) concluded that the "Correlation between job
satisfaction and mental health is fairly low. The best guess is that
the correlation is very seldom going to be over .30." It is argued by
the present author, that the low correlation between job satisfaction
and mental health may be due to the omission of some crucial variable(s)
in the past studies. The present research suggested a theoretical model
concerning the relationship between various work and non-work environ-
mental factors and an individual's mental health.

1.4 Theoretical Model

The basic assumption of the present research is that to the extent
that workers are psychologically unhappy and exhibit signs of poor
mental health, the sources of this poor mental health may be found in
both the work and non-work environments. It is believed that the notion
that the work environment is solely responsible for poor mental health is
one which is naive. However, at the same time, it has been accepted that
the activities undertaken by individuals in the work environment do
affect their activities in non-work environments. The present research
therefore accepted the possibility of an interaction between work and
non-work environments. It is argued that the nature of the interaction
between work and non-work environments tends to determine the state of

an individual's mental health. Before we explicate the "nature" of the
interaction between work and non-work environments and its implication
for mental health, we would like to present our theoretical model.

The theoretical model is presented on the next page. In discussing
the linkages of the model, we will proceed in the following order.
First, the relationship between need fulfillment and mental health will
be discussed. Second, the impact of technolgical factors on need ful-
fillment in work will be delineated. Third, the relationship between
organizational factors and need fulfillment in work will be illuminated.
Finally, the relationship between management factors and need fulfill-
ment in work will be examined.

1.4.1 Need Fulfillment and Mental Health

The concept of need is basic to Maslow's (1954) theory of human
motivation. Maslow argues that needs are innate and universal, inherent
in human nature: "What I have called the basic needs are probably
common to all mankind and are therefore shared values." He contends
that needs relate to each other in a hierarchical fashion and form a
hierarchy of prepotency. The prepotent need is strongest in the sense
that it has to be satisfied first. As soon as it is satisfied to some
extent, the next category of needs in the hierarchy of prepotency
emerges, and needs from that category will now be the strongest, i.e.
have the stronger influence on the motivated behavior of the individual.
Maslow has identified five sets of needs: physiological, safety, social,

Figure 1: Theoretical model for the relationship between work and non-work environment factors and mental health


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                    ┌────────────────────────┐
                    │ Management Factors      │
                    │ (1) Leadership style    │
                    └────────────────────────┘
                                │
┌────────────────────────┐     │      ┌──────────────┐ ┌──────────────┐ ┌──────────┐
│ Technological Factors   │     ↓      │ Need fulfill-│ │ Need fulfill-│ │ Mental   │
│ (1) Task specialization │─────────→  │ ment in work │→│ ment in non- │→│ Health   │
│ (2) Technical constraints│    ↑      │              │ │ work         │ │          │
└────────────────────────┘     │      └──────────────┘ └──────────────┘ └──────────┘
                                │
                    ┌────────────────────────┐
                    │ Organizational Factors  │
                    │ (1) Size                │
                    │ (2) Structure           │
                    └────────────────────────┘
```
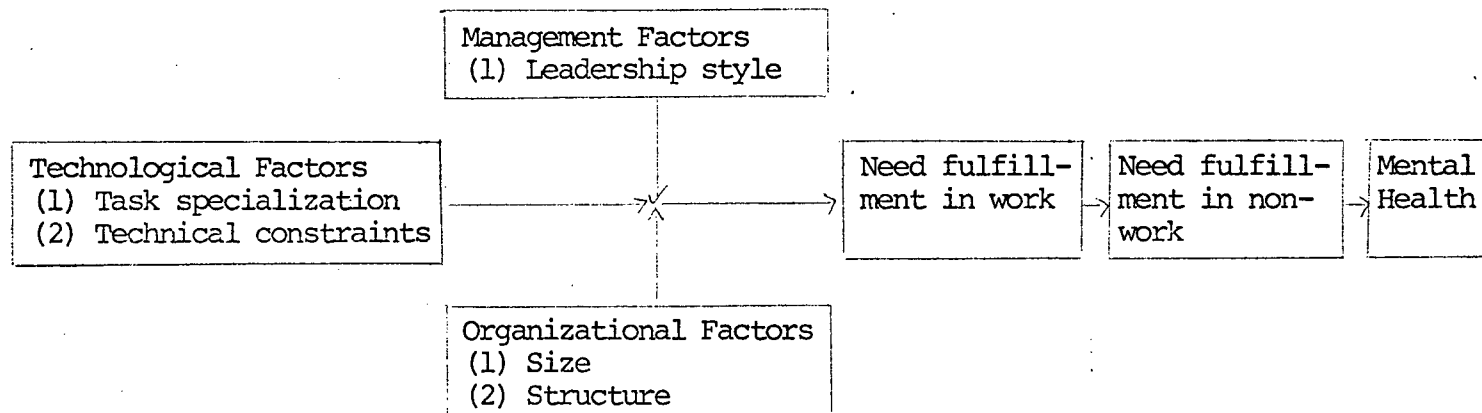
esteem and self-actualization. It may be useful at this point to give a description of these needs as identified by Maslow.

Physiological Needs: In this category falls those needs, the fulfillment of which serves to sustain the organisms; the needs for food, water, sleep, shelter, etc. Maslow argues that undoubtedly these physiological needs are the most prepotent of all needs. What this means specially is that, in a human being who is missing everything in life in an extreme fashion, it is most likely that the major motivation would be towards meeting physiological needs rather than any others. A person who is lacking food, safety, love and esteem all at the same time would most probably feel hunger for food more strongly than anything else.

Safety Needs: "If the physiological needs are relatively well satisfied, then there emerges a new set of needs which may be categorized roughly as the safety needs." These needs include those for an understandable, well ordered, predictable situation, for certainty about the future, satisfaction of the physiological needs, for personal safety, and the like. In industrialized societies, most of these safety needs are believed to be very well satisfied for a large number of people.

However, as Maslow states, we can perceive the expressions of safety needs in western societies only in such phenomena as, for instance, the common preference for a job with tenure and protection, the desire for a savings account, and for insurance of various kinds (medical, dental, unemployment, disability, old age). Other broader aspects of the attempt to seek safety and stability in the world are seen in the

very common preference for familiar rather than unfamiliar things, or for the known rather than the unknown.

The safety needs are very often referred to in the literature as security needs.

Social Needs: When both the physiological and the safety needs are fairly well satisfied, there will emerge the needs of love and affection and belonging. The individual will feel keenly, as never before, the absence of friends, or a sweetheart, or a spouse or children. He will hunger for affectionate relations with people in general, for a place in his group, and he will strive with great intensity to achieve this goal.

Esteem Needs: This need category becomes dominant when the above three needs are relatively well satisfied. Maslow argues that all people in our society (with a few pathological exceptions) have a need or desire for a stable, firmly based, usually high evaluation of themselves for self-respect, or self-esteem and for the esteem of others." Thus this category of need includes both a need for personal feelings of achievement or self-esteem as well as a need for recognition or respect from others.

Self-Actualization Needs: Maslow calls this category of needs growth needs and refers to it as the "Desire to become more and more what one is, to become everything that one is capable of becoming." The needs for self-actualization seldom manifest themselves to their full extent in the average person. Most individuals never progress through the above four needs but function primarily at the level of social and the

esteem needs. However, since the more prepotent needs do not have to be fulfilled completely or permanently for a less prepotent need to emerge, the needs for self-actualization may be seen to operate in most individuals to a certain extent in such forms as the desire to do a good job, to be creative in doing things or to use whatever capacities one has.

It has been argued by the present author that need fulfillment in an individual's life is related to his state of mental health. Since mental health has been defined as an overall level of success, personal satisfaction, effectiveness, and excellence of the individual's functioning as a person, it can be said that an individual whose psychological needs are gratified, tends to appear to be a satisfied and effective person in his daily life. Maslow himself attempted to relate his theory of need hierarchy to the mental health of the individual. He states that,

> "It is clear that, other things being equal, a man
> who is safe and belongs and is loved will be
> healthier (by any reasonable definition) than a man
> who is safe and belongs, but who is rejected and
> unloved. And if in addition, he wins respect and
> admiration, and because of this, develops his self-
> respect, then he is still more healthy, self-
> actualizing or fully human."

Maslow also attempted to delineate the negative consequences of the

ungratification of basic needs. He states that,

> "A man who is thwarted in any of his basic needs may
>
> fairly be envisaged simply as a sick man. This is
>
> a fair parallel to our designation as sick of the
>
> man who lacks vitamins or minerals. Who will say
>
> that a lack of love is less important than a lack
>
> of vitamins?"

Thus the theory of the hierarchy of needs seems to clearly suggest

that the ultimately complete gratification of basic needs is synonymous

with ideal mental health. As Maslow expresses it, "It would seem that

the degree of need gratification is positively correlated with the degree

of psychological health."

Maslow's theory of need hierarchy has enjoyed wide acceptance in

the literature of organizational behavior. It has been used to explain

such diverse issues as deficiencies in need fulfillment among managers

and military personnel (Porter, 1961; Porter & Mitchell, 1967), why pay

can become unimportant, and why self-actualization seems to be so imp-

ortant to the people of today. However, so far as we know, the theory

has never been used to explain differences in psychological and mental

health. In the present research study, an attempt has been made to use

need hierarchy theory to predict individuals' mental health in order to

furnish evidence upon which one can accept or reject the proposition

suggested by Maslow concerning the relationship between need gratification

and mental health.

As stated previously, industrial sociologists tend to divide the life space of adult members in a society into two kinds of life role activities; work role activities and non-work role activities. Empirical evidence, as reviewed earlier, indicated that there exists a spill-over relationship between work activities and non-work activities. For example, individuals who were satisfied with their work activities also tended to be satisfied with their non-work activities and individuals who were not satisfied with their work activities also tended to be dissatisfied with their non-work activities.

Although Maslow did not suggest explicitly where to measure need gratification in an individual's life in order to predict his mental health, it was considered reasonable, given the presence of empirical evidence, to measure need gratification in both work and non-work activities. In splitting an individual's life space into work and non-work activities, it is assumed that in both work and non-work activities, an individual can potentially satisfy his psychological needs. It is argued that the nature of the relationship between need fulfillment in work and need fulfillment in non-work activities can determine the state of psychological and mental health of the individual.

It is proposed that four kinds of possible relationships may exist between need fulfillment in work activities and need fulfillment in non-work activities: (1) High need fulfillment in work activities may be coupled with high need fulfillment in non-work activities. This type of

relationship is called a complementary relationship. (2) High need fulfillment in work activities may be coupled with low need fulfillment in non-work activities. This relationship is referred to as an expressive relationship. (3) Low need fulfillment in work activities may be coupled with high need fulfillment in non-work activities. This kind of relationship is called a compensatory[1] relationship. (4) Finally, low need fulfillment in work activities may be coupled with low need fulfillment in non-work activities. This relationship is referred to as a spill-over relationship.

It is argued by the author that the four kinds of relationship between need fulfillment in work and need fulfillment in non-work activities lead to four different kinds of predictions about the mental health of the individuals. When the relationship between need fulfillment in work and need fulfillment in non-work activities is complementary, mental health tends to be highest. The rationale for the above prediction is as follows. Mental health refers to an overall state of excellence, satisfaction, and effectiveness of the individual. It is generally believed that an individual's functioning as an effective human being in a given area of life depends to a large extent on the

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[1] In the previous studies "compensatory relationship" generally refers to an individual's tendency to achieve something in one life area which was not attainable in the other life area without any mention of the direction of the relationship. In the present study, "compensatory relationship" refers to the situation in which an individual unable to achieve something in work activities does achieve the same thing in non-work activities.

degree to which his basic needs are fulfilled in that particular area of
life. Therefore when an individual has high need fulfillment in both
work and non-work activities, it is expected that his overall effective-
ness as an individual in both kinds of activities is enhanced and he
thus exhibits a high level of mental health.

It is argued that when the relationship between need fulfillment in
work and need fulfillment in non-work activities is expressive, mental
health tends to be somewhat high, but is lower in comparison to the
situation in which the relationship was complementary between two life
areas. The reason for a somewhat high mental health associated with an
expressive relationship may be due to the importance of paid work in an
individual's life. Work alone is the only single activity in which a
majority of adults in industrialized societies spend more time than in
any other activity, except sleeping. Since an individual spends most of
his wakeful time in doing paid work and since paid work is usually the
only activity where failure and success tend to be important for the
individual, it may be the case that an individual who experiences high
need fulfillment in work activities alone may still exhibit a
relatively high level of overall effectiveness and satisfaction (mental
health).

It is argued that when the relationship between need fulfillment in
work activities and need fulfillment in non-work activities is compen-
satory, mental health tends to be moderate. Although there is very
little support available in the literature for a compensatory relation-

ship between work and non-work activities, this relationship tends to be theoretically valid in our model. Moreover, scholars such as Dubin (1956) and Taveggia (1971) have argued that for the majority of industrial workers, the relationships in non-work activities are more satisfactory than in any other kind of activities. Thus, higher need fulfillment in non-work activities alone may appear important enough to give an individual some feelings of overall effectiveness and satisfaction. The individual may, therefore, exhibit a moderate degree of mental health.

It is argued that when the relationship between need fulfillment in work activities and need fulfillment in non-work activities is spill-over, mental health tends to be at its lowest. As stated earlier, for an individual to be effective in a given area of his life, it is crucial that his basic needs be relatively fulfilled in that particular area of life. When the individual, for some reason, cannot fulfill his basic needs in different areas of life, he is likely to become highly frustrated and may thus exhibit poor mental health.

1.4.2 Need Fulfillment in Work as Dependent Variable

Previous research has indicated that several factors in the work environment affect various kinds of job attitudes such as job satisfaction, organizational commitment, work alienation, work attachment and company satisfaction. If need fulfillment in work may be considered as one kind of job attitude, then it could be argued that some of the work environment factors may also be related to need fulfillment in work.

Our model proposes that certain technological, management and organizational factors differentially affect the extent of need fulfillment in work.

1.4.2 (A) Technological Factors and Need Fulfillment

Technological factors included in our model are 'task specialization' in job and 'technical constraints' in job performance. It is argued that both task specialization and technical constraints negatively affect the degree of need fulfillment in work. Task specialization refers to the condition in which the components of a work process are divided into minute tasks and only limited number of tasks are assigned to an individual job (Jamal, 1972). It is generally agreed that this process has three typical components; task simplification, task repetition and task fragmentation. It is argued that the three components of task specialization inversely affect the degree of need fulfillment in work. For example, task simplification results in reducing the learning time of a job to a great extent. In most cases task simplification makes the job so simple that it can be learned in a matter of hours or even minutes (Dubin, 1958). This excessive simplification in job makes the worker an easily replaceable commodity and thus incurs in him the feeling of insecurity about his job. In the same way, task repetition requires a worker to perform one or a few small operations over and over again in a short cycle of time with little or no change. This makes the worker so busy on the job that he cannot possibly free

himself to talk to his fellow workers who may physically be very close to his work station. Thus, task repetition may restrict his opportunities of socializing at the work place. Similarly, task fragmentation requires a worker to work only on a small and tiny portion of the total work process and thereby restricts his knowledge about the final product. This may limit the worker's chances to take initiative and show originality in work activities and thus may affect his feelings of esteem and self-actualization.

Technical constraints in task performance refer to those factors which stem from the production technology employed in getting the work done and which restrict the area of discretion of the worker at the work place. Previous research (Hedley, 1971; Kornhauser, 1965) has identified the following technical constraints which workers may face in task performance: (1) pacing at the job; (2) lack of variety on the job; (3) attention required to perform the job; (4) lack of opportunity to talk with fellow workers on the job; (5) lack of opportunity to think about other things while working; (6) unavailability of slack periods on the job; (7) lack of opportunity to get relief for personal emergencies on the job; (8) lack of opportunity to move freely on the job.

It is argued that the degree of technical constraint an individual experiences in work activities is negatively related to the degree of need fulfillment in those activities. Technical constraints in work activities restrict an individual's freedom to act according to his own

judgment and make him a slave of the technical demands of the work processes or some other impersonal objects. The individual is treated as an infant in Argyris' terminology (1957) and his basic needs as a human being are threatened. Thus, individuals who experience a high degree of technical constraint in their job, may tend to be individuals whose basic needs are least fulfilled.

Empirical evidence also tends to be supportive of the negative consequences of a high degree of technical constraint in jobs. Walker and Guest (1952) in their study of automobile workers observed that "pacing" on the job was one of the most disliked features of work for the majority of workers in their sample. Both Walker and Marriott (1951) and Chinoy's (1955) studies indicated that technical constraints in jobs were negatively related to workers' job satisfaction. Turner (1955) found that a large number of workers in his sample did not like "pacing" on the job, and that "pacing" was negatively related to attitudes toward the company. Crompton and Wedderburn (1970) observed that variety in tasks, freedom of movement in the work place and the possibilities of social interaction with fellow workers at the job were among the main sources of workers' satisfaction/dissatisfaction with their jobs. Hedley (1971) in a study of over 5,000 British factory workers found a negative relationship between technical constraint and job satisfaction. In a recent study, Jamal (1976) also observed that technical constraints were negatively related to organizational commitment and job satisfaction in a sample of 377 blue-collar workers.

1.4.2 (B)   Organizational Factors and Need Fulfillment

Our model suggests that two organizational factors - size and structure of the organization - may affect the degree of need fulfillment in work activities. It is argued that the size of the organization inversely affects need fulfillment in work. Small size organization represents a relatively more simple social system than does the large size organization. There are few people, fewer levels in the organization hierarchy, and a less minute subdivision of labor (Worthy, 1950). The organization operates primarily through the face-to-face relationships of its members and only secondarily through impersonal, institutionalized relationships. However, as size increases, there tends to be a decrease in the amount of the interpersonal control method used at lower levels by top management, which, in turn, at lower levels of the organization, places more reliance upon impersonal (bureaucratic, inflexible) forms of control (Indik, 1963). The reliance on bureaucratic, inflexible controls over workers' behavior creates a work environment in which it is difficult for workers to satisfy their basic needs.

The contention that organization size affects workers' attitudes is by no means a new one. Durkheim in his book Division of Labor (1953) stated that, "...small scale industry (organization) where work is less divided displays a relative harmony between worker and employer. It is only in a large scale industry that these relations are in a sickly

state." However, it wasn't until the fifties that investigators started
to systematically examine the relationship between organizational size
and workers' attitudes. In most of the empirical studies available on
this subject to date, investigators have made comparisons across differ-
ent sized sub-units of larger organizations rather than across
independent total organizations. Irrespective of whether total organ-
ization size or sub-unit size were measured, there is a remarkable
consistency in the findings of these studies. In general, workers in
larger organizations or sub-units appeared to be less satisfied than
workers in smaller organizations or sub-units (Kerr, Koppelmeir and
Sullivan, 1951; Barrett and Parker, 1961; Porter, 1963; Cummings and
ElSlami, 1970). Thus, in conclusion, the empirical evidence tends to
support the negative consequences of increased organization size on
workers' job attitudes. This adds weight to our argument concerning
organization size and need fulfillment in work.

Organization structure refers to the relatively fixed relation-
ships that exist among the employees of an organization (Gibson,
Ivancevich and Donnelly, 1973). Two kinds of organization structure have
been identified in the literature - tall and flat. Tallness and flat-
ness of organization structures are generally distinguished on the basis
of the number of levels in the organization relative to the total size of
the organization. A flat organization structure is one in which there
are few levels relative to the total size of the organization and a tall
organization structure is one in which there are many levels relative to

the total size of the organization. Another way of stating this is to say that the degree to which a structure is tall or flat is determined by the average span of control within the organization.

It has been argued that need fulfillment in work tends to be greater in flat organization structures than it is in tall organization structures. Since flat organizations have a large average span of control, subordinates usually enjoy greater freedom and autonomy to make decisions about work activities. Chances of making decisions in work activities enhance subordinates' feelings of responsibility and they in turn receive greater need fulfillment in work activities.

Although the empirical evidence does not support equivocally the superiority of flat organization structures, it does tend to suggest the relationship between organization structure and workers' attitudes. Worthy's (1950) study is the oldest empirical study to suggest that flat organization structures may be related to higher morale among employees. Meltzer and Salter (1962) published a study that reported the job attitudes of 704 physiologists in relation to the type of organization structure in which they worked. They found little support in their data to indicate that flat organization structures were superior to tall structures in terms of employee attitudes. Porter and Siegel (1965) studied about 3,000 middle and top level managers in a wide variety of sizes and types of organizations in thirteen countries. They found that in organizations of 5,000 employees, flat structures were correlated with greater satisfaction; in organizations of 5,000

employees and over, there was no difference between managers' satisfaction in tall and flat structures. Carpenter (1971) compared tall, medium and flat structures in six public school systems in relation to the level of job satisfaction of 120 teachers. He found that teachers in flat organizations perceived higher job satisfaction than teachers in medium and tall organizations. Lawler, Hall and Oldham (1974) studied the impact of organization structure and process on organizational climate in order to predict organization performance and employee job satisfaction in research and development organizations. Their results showed little difference in organizational climate variables under flat and tall structures. Ivancevich and Donnelly (1975) investigated the relationship between organization structures and job satisfaction among 295 trade salesmen in three insurance companies. They found that salesmen in flat structures were more satisfied with respect to self-actualization and autonomy needs than salesmen in tall structures. However, they also found that organization structure was not related to satisfactions with pay, security needs, social interaction and innovativeness.

The above review of the empirical studies on organization structure and workers' attitudes, though inconclusive, yet suggests the relationship between the two. By investigating the relationship between organization structure and need fulfillment, it is hoped that the present study may help in clarifying the relationship between them.

1.4.2 (C) Management Factors and Need Fulfillment

The only management factor included in our model which may affect need fulfillment in work is that of leadership style. Behavioral scientists have long recognized the importance of leadership styles in explaining human behavior. Puttman (1930) in discussing the results of the program of interviewing in the Hawthorne works of the Western Electric Company concluded that,

> "The comments from employees have convinced us that
>
> the relationship between first line supervisors and
>
> the individual workman is of more importance in
>
> determining the attitude, morale, general happiness
>
> and efficiency of that employee than any other
>
> single factor."

Due to the impact of Hawthorne's studies, a large number of research studies have been conducted to examine the relationship between leadership styles and employees' attitudes and behavior. Investigators who have studied leadership styles have sought to classify and categorize different approaches to leadership and different ways of exercising the leadership role. In studies of this kind, the two leadership styles which have most often been identified and compared are those usually described as employee-oriented or considerate to employees on the one hand and production centered or initiating structure on the other hand (Likert, 1961; Fleishman, 1957).

The employee oriented leader is generally more sensitive to the needs and feelings of his people. He is supportive of his subordinates, helpful to them and concerned for their well-being. In contrast, the production oriented leader is inclined to perceive his subordinates as more hands to get the work out. He is noted for having neither concern for their welfare nor consideration for their feelings and needs. In his view, technical work factors take precedence over human work factors. The supervisory styles of these two types of leaders are quite different from each other. The employee-centered leader tends to state what is to be done and why it has to be done and then allows employees a certain amount of discretion in doing the job as they think best, as long as it meets organizational requirements. On the other hand, the production centered leader more often than not gives detailed orders and demands strict adherence to specified procedures. The employee-oriented leader engages in general supervision whereas the production-oriented leader hangs over the shoulders of his subordinates.

Empirical evidence is unequivocal in showing the negative consequences of certain kinds of leadership styles on employees' attitudes and behavior (Vroom, 1964; Beer, 1966; Sales, 1966). In general, leader's consideration or employee-orientation tends to be positively related to employees' satisfaction. In a study of 742 clerical workers, Morse (1953) found that general supervision was positively related to employees' satisfaction. Fleishman, Harris and Burtt (1955) observed a positive relationship between the consideration of foremen and the morale

of their subordinates. In a study of 29 aircraft commanders, Halpin and Winer (1957) found a strong positive correlation between leader's consideration and crew member satisfaction with their commander. Seeman (1957) found a positive relationship between the consideration of school superintendents and the job satisfaction of elementary school teachers. Likert's (1961) research indicated that job satisfaction was higher among employees who perceived their supervisors as showing employee-oriented behaviors than among those who did not perceive their supervisors as employee-oriented persons. Parker (1962) found a positive relationship between leader's consideration and worker attitudes. Sadler (1970), in a study of over 15,000 employees, found that job satisfaction was higher under consultive (employee-oriented) leadership than among authoritarian leadership. In a recent study, Green (1973) also found leader's consideration to be related positively to employee satisfaction.

However, there is a definite lack of research studies which have investigated the relationship between leadership style and need fulfillment in Maslow's sense. Only two studies have been found which attempted to examine the relationship between leader's consideration or employee-orientation and employee need satisfaction in jobs. The first study was conducted by Beer (1966) using a sample of 129 clerical workers. He found some support for the relationship between leader's consideration and employee need satisfaction. Leader's consideration appeared to be significantly related to security, social, esteem and self-actualization

needs.

The second study was conducted by Hill and Hunt (1973) among employees of a county hospital. They also found some support for the relationship between leader's consideration and employee need satisfaction. In their study, leader's consideration was found to be related to autonomy and self-actualization.

Since both studies dealing with need satisfaction were conducted among non-industrial samples, it was felt that there is a need to test the relation between leader's employee-orientation and employee need fulfillment among industrial workers. Keeping in mind the available empirical evidence on the subject, it is argued that a leader's employee-orientation or consideration towards employee is positively related to employee need fulfillment in work. Employee-centered leaders allow subordinates to contribute to and participate in decision making practices in work activities. Participation in decision making provides subordinates the opportunities to know their fellow workers, to make use of their creative abilities, and to perceive themselves as important elements in the total organization. These in turn give them high need fulfillment in work activities.

In summarizing the discussion on the linkages of our theoretical model, it has been shown that the model generates various predictions regarding the relationship between need fulfillment and mental health and about the relationships between technolgoical, management and

organization factors and need fulfillment in work. These predictions have been accepted as research hypotheses in the present study and are presented in the next section.

1.5 Research Hypotheses

It may be recalled that our model postulated four types of relationships between need fulfillment in work and need fulfillment in non-work activities. These four types of relationships lead to four different kinds of predictions about the state of workers' mental health and, thus, become the first four hypotheses of the present study. These hypotheses are listed below:

(H_1) When the relationship between need fulfillment in work and need fulfillment in non-work activities is complementary, mental health tends to be highest.

(H_2) When the relationship between need fulfillment in work and need fulfillment in non-work activities is expressive, mental health tends to be somewhat high.

(H_3) When the relationship between need fulfillment in work and need fulfillment in non-work activities is compensatory, mental health tends to be moderate.

(H_4) When the relationship between need fulfillment in work and need fulfillment in non-work activites is spill-over, mental health tends to be low.

When need fulfillment in work was taken as a dependent variable, the model suggested the following hypotheses:

(H_5) Task specialization in work tends to be negatively related to need fulfillment in work.

(H_6) Perceived technical constraints in task performance tend to be inversely related to need fulfillment in work.

(H_7) Need fulfillment in work tends to be higher under employee-centered supervisors than under production-centered supervisors.

(H_8) Need fulfillment in work tends to be higher in flat organization structures than in tall organization structures.

(H_9) There is an inverse relationship between organization size and need fulfillment in work.

CHAPTER II: Methods and Procedures

On the basis of the theoretical model described previously, a questionnaire was developed to assess need fulfillment in work and non-work, individuals' quality of mental health, task specialization and technical constraints in task performance, supervisory style and perceived department/unit size. The responses to this questionnaire, and an analysis of organization size and structure of the participating companies based on interview data, provided the basis for this study.

2.1 Setting and Subjects

The sample for the present study was drawn from manufacturing companies in Greater Vancouver, British Columbia. Of the 30 companies initially contacted by telephone, 17 companies engaged in further personal discussion, and 9 tentatively agreed to participate. Initial data were obtained from many of these companies, but extenuating circumstances reduced the final sample for which complete data were available to six companies. The companies range in size from 100 employees to 300 employees. These companies represent cement products, manufacturers of electrical equipment, wood work manufacturers and advertising industry. All the rank-and-file employees in the six companies were included in the sample of this study.

2.2 Data Collection

Data were collected in two ways. A structured questionnaire was

used to obtain information regarding individual variables, and personal interviews were used to obtain information regarding organizational variables. The individual questionnaires were administered personally by the researcher in all six companies. Approximately one week before the administration of questionnaires, the management in the participating companies informed the employees through department heads that a doctoral student from the University of British Columbia would be conducting a survey in their plants. A notice describing the nature and purposes of the research and mentioning the approval of both management and union for the survey was also posted on several bulletin boards in each company. The questionnaires were distributed in sealable envelopes on company premises during working hours. Employees were asked to take the questionnaires home and return the filled-in questionnaires directly to the researcher in the self-addressed stamped envelopes. Out of a total of 895 employees in six companies who were given questionnaires, 403 employees (45%) returned usable questionnaires. Response rate varied from 35 percent to 68 percent across companies.

There were 299 male and 100 female respondents in the final sample: 250 blue-collar employees and 150 white-collar employees. One hundred and twenty-four of these employees had up to grade 10 education; 184 had grade 11 or 12 education and 90 had some college education. One hundred and two of these employees were between the ages of 18 to 25 years; 168 were between 26 to 35 years and 127 were over 35 years of age. One hundred and forty-three of the employees had been with their companies for

less than 2 years; 132 between 2 to 5 years and 125 over 5 years. The
majority (68%) of them were married, were working on morning shift (77%)
and had been raised in large cities (50%). More details on the char-
acteristics of the sample can be found in Table 1.

At least one representative of the top management in the
participating companies was interviewed to obtain information concerning
the number and size of work departments and the size and structure of the
organization. These interviews were carried out shortly after the
questionnaires were administered in the company and varied in length from
15 minutes to an hour. In all cases, the administration of the question-
naire and the interviews with the management personnel were carried out
within a one week period.

2.3 The Measuring Devices

This section describes in detail the measures that were used in
tapping various constructs. Copies of these measures may be found in
Appendix A.

2.3.1 Mental Health

Mental health was assessed by using the measures developed by
Kornhauser (1965). As noted previously, Kornhauser discovered the
following six dimensions of mental health: (1) manifest anxiety and
emotional tension; (2) self esteem (3) hostility; (4) sociability;
(5) overall life satisfaction; and (6) personal morale. Kornhauser used

TABLE 1: Distribution of the sample on demographic
and background variables

Variables		Frequency	Percentage
Colour of Collar			
Blue -		250	63%
White -		150	37%
	(Total)	(400)	(100%)
Age			
18 - 25 years		102	26%
26 - 35		168	42%
36 +		127	32%
	(Total)	(397)	(100%)
Sex			
Male		299	75%
Female		100	25%
	(Total)	(399)	(100%)
Education			
Up to 10 Grade		124	31%
11 - 12 Grade		184	46%
13 and more		90	23%
	(Total)	(398)	(100%)
Marital Status			
Single		97	24%
Married		270	68%
Others[1]		32	8%
	(Total	(399)	(100%)
Income per month			
Under $ 800		123	32%
$800 -$1000		131	34%
$1000 +		136	35%
	(Total)	(391)	(101%)

(TABLE 1: Continued)

Variables		Frequency	Percentage
Place of Socialization			
Farm		51	13%
Town		66	16%
Small City		83	21%
Large City		200	50%
	(Total)	(400)	(100%)
Length of Service			
Less than 2 years		143	36%
2 - 5 years		132	33%
Over 5 years		125	31%
	(Total)	(400)	(100%)
Skill - Level			
Unskilled		101	25%
Semi-skilled		148	37%
Skilled		150	38%
	(Total)	(399)	(100%)
Shift-time			
Morning		304	77%
Afternoon		23	6%
Night		6	2%
Rotating Shift		63	16%
	(Total)	(396)	(101%)
Union Membership			
Member		213	53%
Non-member		186	47%
	(Total)	(399)	(100%)
Type of Job			
Line Job		144	69%
Staff Job		47	23%
Line/Staff Job		17	8%
	(Total)	(208)	(100%)

1. Others include separated, widowed and divorced.

semi-structured interviews to collect information from his subjects. Since the present research was designed as a questionnaire study, it was necessary to modify Kornhauser's measures in almost all six sub-indexes of mental health in order to make them suitable for a questionnaire type study. However, the number of items in each index corresponded to Kornhauser's original study.[1] Moreover, no attempt was made to change the wording of items which were considered to be suitable for the present study. Response indicators were shown for each group of questions.

The following eight items were used to measure the dimension of self esteem:

    (1) I feel that I am accomplishing the sorts of things I would like to in my life.

(1)	(2)	(3)	(4)	(5)
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

    (2) I feel that I can do much to make my future what I want it to be.

    (3) I often blame myself and feel bad over things I have done.

    (4) I often have a hard time to make up my mind.

    (5) Sometimes I get so discouraged that I wonder whether anything is worthwhile.

---

[1] In Kornhauser's study (1965), some items on mental health were used in more than one dimension. Therefore, readers may find some items repeated across six dimensions of mental health.

(6) People often hurt my feelings.

(7) How do you feel about your chances for getting ahead?

(1)	(2)	(3)	(4)	(5)
Very good	Good	Don't Know	Not Good	Not Too Good

(8) In general, how do you feel about your life? Would you say you

are

(1)	(2)	(3)	(4)	(5)
Completely Satisfied	Well Satisfied	Neither Satisfied Nor Dissatisfied	A Little Dissatisfied	Very Dissatisfied

The dimension of <u>hostility</u> was assessed with the following seven

items:

(1) I sometimes boil inside without letting people know about it.

(1)	(2)	(3)	(4)	(5)
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

(2) I think that most people can be trusted.

(3) I find that many people are so unreasonable that it is hard to

talk to them.

(4) Sometimes I feel like smashing things for no good reason.

(5) I find that I often have to tell people to mind their own

business.

(6) People often get on my nerves so that I do just the opposite of

what they want me to do.

(7) Over the years there are a lot of things a person comes to learn

about people.

(a) What are some of the main things you have learned about people?

(1) _____

(2) _____

(b) What would you say most people want out of life?

(1) _____

(2) _____

The dimension of <u>personal morale</u> was measured with the following

nine items:

(1) Getting ahead in this world is mostly a matter of luck and pull.

(1)	(2)	(3)	(4)	(5)
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

(2) In spite of what some people say, the lot of the average man is

getting worse, not better.

(3) These days a person does not really know who he can count on.

(4) Most people are out for themselves and don't care what happens

to others.

(5) It's hardly fair to bring children into the world with the way

things look for the future.

(6) Nowadays a person has to live pretty much for today and let

tomorrow take care of itself.

(7) There is little use in writing to public officials because often

they are not really interested in the problems of the average

man.

(8) I think that most people can be trusted.

(9) Sometimes I get so blue and discouraged that I wonder whether anything is worthwhile?

The dimension of overall <u>life satisfaction</u> was assessed with the following nine items:

(1) I feel that I am accomplishing the sorts of things I would like to in my life.

(1)	(2)	(3)	(4)	(5)
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

(2) I often feel restless, wanting to be on the move doing something but not knowing what.

(3) I feel in good spirits almost all the time.

(4) I often blame myself and feel bad over things I have done.

(5) Sometimes I get so blue and discouraged that I wonder whether anything is worthwhile.

(6) I have as much chance to enjoy life as I <u>should</u> have.

(7) How do you expect things to turn out for you in the future?

(1)	(2)	(3)	(4)	(5)
Very Good	Good	Don't Know	Not Good	Not Too Good

(8) Overall, how do you feel about the way you spend your time when you are not working?

(1)	(2)	(3)	(4)	(5)
Completely Satisfied	Well Satisfied	Neither Satisfied Nor Dissatisfied	A Little Dissatisfied	Very Dissatisfied

(9) Overall, how do you feel about your life in general?

The following thirteen items were used to measure the dimension of anxiety and emotional tension:

(1) How often do you go to a doctor or clergyman or anyone like that about your personal problems, or nervousness or such things?

(1)	(2)	(3)	(4)	(5)
Never	Hardly Ever	Some of the Time	Most of the Time	All the Time

(2) How often do you use any special foods or tonics or anything like that to help keep you in good condition?

(3) How often do you take something for slight illness like headaches, upset stomach, or things like that?

(4) How often do you go to watch sports events?

(5) I am often worried and upset.

(1)	(2)	(3)	(4)	(5)
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

(6) I often have trouble getting to sleep or staying asleep.

(7) I worry much about things that might happen to me.

(8) Sometimes I am bothered by nervousness.

(9) There are things about my health that bother me.

(10) I wake up rested most mornings.

(11) Do you have any particular physical or health problems?

(1)   (2)

Yes   No

(12) So far as you know, did you ever have a nervous breakdown?

(13) Are you ever bothered with headaches, indigestion, or any of the common ailments. Please put a mark against those which ever bother you.

_____ Headaches   _____ Neuralgia

_____ Indigestion or stomach upset   _____ Hemorrhoids or piles

_____ Constipation or diarrhea   _____ Nose, throat, or sinus trouble

_____ Sleeplessness   _____ Many colds or coughs

_____ Tiredness without knowing why   _____ Other (please specify)

_____ Heartburn   _____

_____ Backaches   _____

_____ High blood pressure

The dimension of <u>sociability</u> was assessed with the following fifteen items:

(1) How often do you get together with your friends (very best ones) as a group?

(1)   (2)   (3)   (4)   (5)

Never   Hardly   Some of the   Most of the   All the
               Ever   Time   Time   Time

(2) How often do you get together with just one or two of your friends?

(3) How often do you get together with your relatives?

(4) These days a person does not really know who he can count on.

(1)	(2)	(3)	(4)	(5)
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

(5) When things go wrong, I am usually willing to leave it to others to work matters out.

(6) People often hurt my feelings.

(7) On the whole, I usually like to be by myself rather than with other people.

(8) How important is it to you to have friends?

(1)	(2)	(3)	(4)	(5)
Very Important	Pretty Important	Important	Not Important	Not very Important

(9) How many specially good friends do you have?

(10) Do you have other friends (other than specially good friends) whom you see often?

(1)	(2)
Yes	No

(11) How many organizations such as church and ethnic groups, labour unions or social and civic clubs do you belong to?

(12) In how many such organizations did you hold in the past or are presently holding any kind of executive position (i.e. president, secretary, vice president, treasurer)?

(13) Overall, how many meetings of the various organizations did you

attend <u>in the last two months?</u> ·

(14) In the <u>last four weeks</u>, approximately <u>how many hours</u> did you

spend in attending the meetings of various organizations?

(15) Over the years there are a lot of things a person comes to learn

about people.

(a) What are some of the main things you have learned about

people?

(1) _____

(2) _____

(b) What would you say most people want out of life?

(1) _____

(2) _____

2.3.2 <u>Need Fulfillment</u>

Need fulfillment in work was assessed by using the scale developed

by Mitchell and Moudgill (1976). This scale consists of 10 Likert-type

items and, according to Mitchell and Moudgill (1976), the scale "...tends

to establish the descriptive validity of Maslow's need classification

scheme." The ten items of their need fulfillment in work scale are

presented below.

(1) The threat of change which could make one's present skills or

knowledge obsolete (security).

    (1)   (2)   (3)   (4)   (5)

Minimum   Maximum

(2) The feeling of insecurity with one's position (security).

(3) The opportunity to give help to other people (social).

(4) The opportunity for conversation and exchange of ideas with colleagues and co-workers (social).

(5) The feeling of self-esteem a person gets in one's position (esteem).

(6) Prestige inside the organization, i.e. regard received from others within the organization (esteem).

(7) The opportunity for participating in the determination of methods and procedures (autonomy).

(8) The opportunity for participating in the setting of goals (autonomy).

(9) The feelings of worthwhile accomplishment associated with one's position (self-actualization).

(10) The feelings of self-fulfillment a person gets in one's position (self-actualization).

Need fulfillment in non-work was assessed with a modified version of Mitchell and Moudgill's scale of need fulfillment in work. This modification was necessary because all the items in the need fulfillment in work scale were oriented toward work and work related phenomena. The ten items in the need fulfillment in non-work scale are presented on the next page.

(1) The threat of change which could make my present knowledge and skills in off-job activities obsolete (security).

(1)	(2)	(3)	(4)	(5)

Minimum   Maximum

(2) The feeling of insecurity in my off-job activities (security).

(3) The opportunity to give help to other people in my off-job activities (social).

(4) The opportunity for conversation and exchange of ideas with people in my off-job activities (social).

(5) The feeling of self esteem I get in my off-job activities (self esteem).

(6) Prestige I receive from people with whom I undertake my off-job activities (self esteem).

(7) The opportunity for participating in the determination of methods and procedures of my off-job activities (autonomy).

(8) The opportunity I receive for participation in the setting of goals of my off-job activities (autonomy).

(9) The feelings of worthwhile accomplishment I receive from performing my off-job activities (self-actualization).

(10) The feelings of self fulfillment I receive from my off-job activities (self-actualization).

2.3.3 Technological Variables

Technological variables measured in this research were task special-
ization in jobs and technical constraints in task performance. Task
specialization in jobs was assessed by using three measures of task
fragmentation, simplification and repetition. The task fragmentation and
repetition measures were developed by Lawler (1974) but were modified to
suit the present research. The task simplification measure was developed
by the author. The three measures are listed below:

(1) How much task repetition is there in your job? (Please put a circle

around the number which most appropriately describes your job.)

(1)	(2)	(3)	(4)	(5)
Very much; I do pretty much the same things over and over, using the same equipment and proced- ures all the time.		Moderate degree of repetition.		Very little; I do many things, using a variety of equip- ment and procedures.

(2) How much does your job involve your producing an entire product or an

entire service? (Please put a circle around the number which most

appropriately describes your job.)

(1)	(2)	(3)	(4)	(5)
My job involves doing only a small part of the entire pro- duct or service.		My job involves doing a moderate 'chunk' of the work.		My job involves producing the entire product or service from start to finish.

(3) How long does a person have <u>to spend in training or experience</u> to be able to handle a job like yours? (Please put a circle around the number which <u>most</u> appropriately describes your job).

(1)	(2)	(3)	(4)	(5)

Not very long;   Moderately   Fairly long. My
my job can be   long; it can   job can take years
learned in a   be learned   to be learned.
matter of hours   in a couple
or even minutes.   of months.

Technical constraints in task performance were measured with eight items. These items were developed by Dubin (1968) and were reported by Hedley (1971). These items are as follows:

(1) Can you talk to people around you when you are working?

(1)	(2)	(3)	(4)	(5)

Never   Hardly   Some of   Most of the   All the Time
           Ever   the Time   Time

(2) Does your job require you to work at a certain speed?

(3) Can you think about things other than your job when you are working?

(4) In your job, can you stop working for personal emergencies without waiting for a relief man?

(5) In your job, are there slack periods when you can do what you want?

(6) Can you move around the factory while doing your job?

(7) Does your job require you to do the same things over and over again?

(8) Does your job require that you watch your machine or whatever you are doing?

2.3.4 Supervisory Style

Supervisory style was assessed with a thirteen item scale developed by Bowers and Seashore (1966). Taylor and Bowers (1972) have recently observed a high degree of reliability and validity of this scale. The thirteen items of the scale are presented below:

To what extent is (does) your immediate supervisor

(1)....friendly and very easy to approach?

(1)	(2)	(3)	(4)	(5)
To a Very Little Extent	To a Little Extent	To Some Extent	To a Great Extent	To a Very Great Extent

(2)....attentive to what you say?

(3)....willing to listen to your problem?

(4)....encourage people to give their best effort?

(5)....maintain high standards of performance?

(6)....set an example by working hard himself?

(7)....show you how to improve your performance?

(8)....offer new ideas for solving job related problems?

(9)....encourage subordinates to take action without waiting for detailed review and approval from him?

(10)....provide the help you need so that you can schedule work ahead of him?

(11)....encourage persons who work for him to work as a team?

(12)....encourage people who work for him to exchange opinions and ideas?

(13) How often does your immediate supervisor hold group meetings where he and the people who work for him can really discuss things together?

(1)	(2)	(3)	(4)	(5)
Never	Once or Twice per Year	Three to Six Times per Year	About Once per Month	More often than once per Month

2.3.5 Organization Structure

Organization structure was assessed by obtaining information from management about the size of the organization and the number of supervisory levels within the organization. This information allowed the classification of respondents according to the ratio of the number of levels of supervision in their organization to the total size of the organization. In accordance with Porter and Lawler's research (1964), the following three categories of structure were adopted; flat, intermediate and tall. The categories were formulated as follows:

Flat: Companies having the fewest levels relative to their size were classified as flat organizations. Approximately one-third (134) of the respondents in this study were employed in flat organizations.

Intermediate: Companies having a medium number of levels relative to their size were classified as intermediate organizations. Approximately one-half (192) of the sample of this study fell into this category.

Tall: Companies having the greatest number of levels relative to

their size were classified as tall organizations.

Approximately one-fifth (76) of the sample of the present

research were employed in tall organizations.

2.3.6 Size

As stated previously, in most of the empirical studies in the area

of organization size and workers' attitudes, investigators have made

comparisons between different sized sub-units (or departments) of larger

organizations rather than between independent total organizations. For

this reason, the present research used multiple measures of organization

size; one measure pertaining to the size of the total organization and

two measures pertaining to sub-units' size within the organization.

Total organization size was measured by the number of full-time management

and non-management employees in the company during the week the survey

was conducted in the company. Three size categories were adopted: large,

250 employees or more; medium, 151-250; and small, less than 150 employees.

Sub-unit size was assessed in two ways. First, employees were asked

to give an estimate of how many persons were working in their departments.

The following question was used to obtain an idea of the employees'

perception of sub-unit size:

"Approximately how many persons work in your department or section."

Second, the actual number of persons working in each sub-unit was deter-

mined from management records. Three sub-unit categories were used:

large, 21 employees or more; medium, 10-20; and small, less than 10
employees. A correlation of .80 was observed between the two measures of
sub-unit size.

2.4 Decisions about Analysis

It is mandatory for every researcher to make certain arbitrary
decisions about analysis. In the present research, two decisions were
made with regard to data analysis. The first decision concerned the
interaction between need fulfillment in work and need fulfillment in
non-work. It was argued previously that the interaction between the two
need areas tends to determine the state of an individual's mental health.
In order to assess the nature of the interaction between the two need
areas, in each need area respondents were divided into high and low need
fulfillment groups from the median. Respondents whose need fulfillment
in a need area of life was greater than the median need fulfillment in
that particular area, were considered as having high need fulfillment in
that need area. Respondents whose need fulfillment in a given need
area (i.e. work activities) was lower than the median need fulfillment
in that particular area were classified as having low need fulfillment
in that need area. Thus, in both need areas (work and non-work), res-
pondents were either high or low depending upon whether their need fulfill-
ment scores were greater or less than the median scores in the need area
concerned.

The second decision concerned the construct of mental health. It

may be recalled that mental health is composed of six sub-indexes. In
each sub-index scores were assigned to the items of the sub-index in such
a way that a high score on the sub-index indicated a high level of mental
health. Scores on all negatively worded items were reversed. Following
Kornhauser, a composite index of mental health was constructed combining
the scores on six sub-indexes of mental health. Table 2 presents the
inter-correlations[1] among sub-indexes and the composite index of mental
health. All sub-indexes are highly correlated with the composite index
with an average rank order correlation of .84. These findings are
comparable with Kornhauser's findings which showed a mean tetrachoric
correlation of .68 for younger workers and .70 for older workers in his
sample.

Another measure of mental health was available in the present
research. This measure was developed by researchers at the University of
Michigan (Quinn, 1972) and consists of 21 Likert-type items. All sub-
indexes of mental health tend to be moderately correlated with Quinn's
scale of mental health, with an average correlation of .56. Composite
Quinn and Kornhauser's indexes were also correlated moderately (r=.68).

2.5 Reliability and Validity of the Measures

Since most of the measures used in this study were not standard

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[1] Throughout this study, correlations will mean the Spearman rank order
correlations.

TABLE 2: Interrelations among component and composite
indexes of mental health

<u>INDEXES</u>

	Anx- iety	Hostil- ity	Esteem	Socia- bility	Mo- rale	Life Sat.	Index MH	Quinn MH
Anxiety	1.0							
Hostility	.64*	1.0						
Esteem	.71	.66	1.0					
Sociability	.68	.72	.68	1.0				
Morale	.67	.73	.67	.69	1.0			
Life Sat.	.60	.61	.83	.61	.61	1.0		
Index MH	.83	.85	.85	.88	.83	.78	1.0	
Quinn MH	.58	.57	.61	.57	.47	.57	.68	1.0

* All correlations are significant at .001 level
or better.

measures, it was deemed necessary to examine the reliability of the measures. Table 3 presents the internal consistency reliability estimates (Cronbach's alpha) of the major independent and dependent variables. With the exception of two variables, life satisfaction and self esteem, all variables showed high reliability. Reliability estimates for life satisfaction and self esttem were .60 and .75, respectively, which are acceptable for survey research, according to the criteria set by Nunnally (1967).

Since Kornhauser's measures of mental health were substantially modified to suit the present questionnaire study, it became necessary to validate the measures of mental health. This was done in two ways. First, several experienced, highly qualified clinical psychologists and psychiatrists were asked to read the questionnaire responses on the measures of mental health for 32 respondents and give their overall evaluation of each individual's mental health. Global ratings of clinicians were correlated with the composite index of mental health. Second, the Quinn measure of mental health was attached to fifty percent of the questionnaires. The correlation between the Quinn measure of mental health and the modified Kornhauser composite index of mental health was sought as further indication of validity.

The first method of validation proceeded as follows: a subsample of 32 cases was selected from our total sample of 403 cases. A minimum of four and a maximum of seven cases were selected from each partici-

TABLE 3: Internal consistency reliability estimates of
the major independent and dependent variables

Variables	(N)	# of Items	Cronbach's Alpha
Need Fulfillment (Work)	(378)	10	.93
Need Fulfillment (NonWork)	(378)	10	.90
Index of Mental Health	(360)	64	.96
Life Satisfaction	(380)	9	.60
Morale	(381)	9	.83
Hostility	(380)	8	.84
Anxiety	(380)	14	.89
Esteem	(368)	8	.75
Social	(370)	16	.92
Quinn's Mental Health Scale	(176)	21	.91
Technical Constraints Scale	(379)	8	.82
Task Specialization Scale	(380)	3	.80
Leadership Style Scale	(379)	13	.97

pating company according to the number of questionnaire returns from each company. Three clinical psychologists, three psychiatrists and one social psychologist furnished estimates on the 32 cases, providing seven ratings for each case. For each of the 32 cases, a six-page file was prepared from the questionnaire responses on the measures of mental health. The clinicians were asked to read through the entire case file and to record, on a seven-point scale, an overall estimate of "How good or satisfactory you consider the mental health of the individual rated." A short descriptive statement was given the raters to indicate the meaning attached to mental health for the present research and in addition a briefing session was held to explain and clarify the whole procedure. The descriptive statement consisted of the following definition of mental health: "An overall level of success, personal satisfaction, effectiveness and excellence of the individual's functioning as a human being."

The raters agreed reasonably well with one another. Table 4 presents inter-rater agreement (rank order correlation) on clinicians' estimates of mental health based on the questionnaire records. Twenty-one measures of inter-rater agreement were available and all of them were significantly correlated with one another. The twenty-one coefficients ranged from .64 to .91; the mean and median of all twenty-one were .74 and .78, respectively. The median inter-rater agreement of .78 in this study was much higher than the median agreement of .52 observed by Kornhauser. Kornhauser did not report the mean inter-rater

TABLE 4: Agreement among clinicians' estimates of mental health based on the questionnaire records

Clinicians	1	2	3	4	5	6	7
1	1.0	.83	.78	.64	.69	.82	.88*
2		1.0	.72	.76	.83	.79	.89
3			1.0	.72	.69	.78	.87
4				1.0	.66	.71	.80
5					1.0	.77	.86
6						1.0	.91
7							1.0

* All correlations are significant at the .001 level or better

agreement for his study, nor did he report the individual inter-rater correlations, therefore no comparison was possible in terms of mean inter-rater agreement in the two studies.

In order to derive a composite assessment for each of the 32 cases, ratings by all seven raters were combined for each case. These composite ratings were then correlated with the composite index of mental health. The results, presented in Table 5, showed close agreement between composite ratings by clinicians and the composite index of mental health. The rank order correlation between the two composite indexes was .87 which is comparable with the .84 tetrachoric correlation between the two indexes obtained in Kornhauser's study. In addition, Table 5 showed substantial agreement between the ratings of individual clinicians and the composite index of mental health. The seven rank order correlations ranged from .68 to .85: the median of all seven was .79.

The second method of validation involved the collection of data from fifty percent of the sample, employing a separate measure of mental health. There were 192 respondents in the final sample who furnished information on Kornhauser's measures of mental health as well as on Quinn's measures of mental health. The rank order correlation between the two measures was .68 (P>.ool) which suggested a moderate degree of convergent validity between the two measures.

Thus, it may be said that the measures of mental health used in this study were reliable and also appeared to be reasonably valid.

TABLE 5: Relationship between clinicans' estimates of mental
health based on the questionnaire records and the
index of mental health

Clinicians	(N)	Rank-order Correlation
1	(32)	.85*
2	(32)	.79
3	(32)	.79
4	(32)	.68
5	(32)	.70
6	(32)	.79
7	(32)	.82
Composite Ratings	(32)	.87

* All correlations are significant at the .001
level or better

2.6 Description of the Statistical Procedures

Several different types of analyses were performed in order to explore the hypotheses. Hypotheses 1 to 4 involved interaction between need fulfillment in work and need fulfillment in non-work and thus were tested together. Two types of analyses were performed to test hypotheses 1 to 4. The first type of analysis made use of one-way analysis of variance. Differences between means, on the variable of mental health, under different types of work and non-work relationships, were tested for significance using the t-test and the Duncan Sign Test (Blalock, 1972). The second type of analysis to test hypotheses 1 to 4 involved assigning a rank order to different types of relationships between need fulfillment in work and need fulfillment in non-work. A rank of '4' was assigned for a complementary relationship between the two need areas. A rank of '3' was assigned for an expressive relationship. A rank of '2' was assigned for a compensatory relationship. A rank of '1' was assigned for a spill-over relationship between the two need areas. A rank order correlation was computed between the rank order on need fulfillment and the composite index of mental health.

Hypotheses 5 to 7 had continuous independent and dependent variables. Rank order correlations were computed to test hypotheses 5 to 7. The significance level was set at .01.

Hypotheses 8 and 9 had categorical independent variables and continuous dependent variables. Blalock (1972) has recommended the use of

analysis of variance in such situations. Therefore, one-way analysis of
variance was the statistical technique to test hypotheses 8 and 9.
Differences between means on the variable of need fulfillment in work
were tested using the t-test and the Duncan Sign Test.

CHAPTER III: Results

In this chapter, we will examine the data relevant to the nine

hypotheses of this study. The chapter has been divided into three

sections. Section one deals with hypotheses 1 to 4, which are concerned

with the relationship between need fulfillment in work and non-work and

the quality of mental health. Section two examines hypotheses 5 to 7,

which are concerned with the relationship between need fulfillment in

work and the technological and management factors. Section three deals

with hypotheses 8 and 9, which are concerned with the relationship

between organizational variables and need fulfillment in work.

3.1 Need Fulfillment and Mental Health

Hypotheses 1 to 4 are concerned with the relationship between need

fulfillment and mental health. It was suggested previously that the

nature of the interaction between need fulfillment in work and need

fulfillment in non-work determines the relationship between overall need

fulfillment in life and mental health. Hypothesis 1 (H1) suggests that

if the relationship between the two need areas is complementary, there

will be a high level of mental health. Hypothesis 2 (H2) suggests that

if the relationship between the two need areas is expressive, there will

be a moderately high level of mental health. Hypothesis 3 (H3) suggests

that if the relationship between the two need areas is compensatory,

there will be a moderate level of mental health. Hypothesis 4 (H4)

suggests that if the relationship between the two need areas is spill-over,

there will be a low level of mental health.

The first type of analysis performed to test hypotheses 1 to 4 was one-way analysis of variance. Scores on need fulfillment in work and non-work were divided into those of high and low variation from the median. The division of the scores delineates the different types of relationship between the two need areas. It may be of some interest to present, at this point, the median and mean scores on need fulfillment in work and non-work. The median scores on need fulfillment in work and non-work were 32.5 and 36.2, respectively. The mean scores on need fulfillment in work and non-work were 30.7 and 34.2, respectively. Scores on both need fulfillment in work and non-work could theoretically vary from a minimum of 10 to a maximum of 40. Results obtained through one-way analysis of variance are presented in Table 6. It is clear from Table 6 that the mean scores on mental health are highest for the complementary relationship, second for the expressive relationship, third for the compensatory relationship and lowest for the spill-over relationship. Differences between means across the four types of relationships are statistically significant[1] according to the t-test as well as according to the Duncan Sign Test. Thus, hypotheses 1 to 4 are supported by the first type of analysis.

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[1] Throughout this study, a significance level of .01 has been used in hypothesis testing.

TABLE 6: Types of relationship between need fulfillment
in work and non-work and the quality of mental
health according to Kornhausser's measures (median)

Types of Relationship	(N)	Mean Score on Mental Health	Standard Deviation	t-value	F-val
Complementary	(108)	231.65	40.18		
Expressive	(87)	216.83	23.60	3.21*	
Compensatory	(83)	186.61	43.06	5.64**	74.55*
Spillover	(119)	168.44	26.40	3.37**	
(Total)	(397)	200.04	43.05		

* Significant at the .01 level

** Significant at the .001 level

The second type of analysis performed to test hypotheses 1 to 4 involved computing a rank order correlation between the assigned rank on four types of work and non-work relationships (see 2.6) and the composite index of mental health. A correlation of .61 (P>.001) was found between the two rank orders which indicated a substantial agreement between the two. Thus hypotheses 1 to 4 are also supported by the second analysis.

In order to determine if the decision of dividing need fulfillment in work and non-work from the median may have influenced the above results, the same two types of analyses were again performed to test hypotheses 1 to 4 after dividing the scores from the mean. Results obtained from the analysis of variance are presented in Table 7. Again, all hypothesized relationships are in the predicted direction and are statistically significant. The rank order correlation between the assigned rank on four types of work and non-work relationships and the composite index of mental health was .62 (P>.001). Thus, hypotheses 1 to 4 are again supported by the data.

3.2 Technological Variables, Leadership Styles and Need Fulfillment in Work

Hypothesis 5 (H5) predicted that there will be a negative relation-ship between task specialization in jobs and need fulfillment in work. It may be recalled that three measures were used to assess task special-ization in this study. A composite index of task specialization was constructed by combining the scores on three measures in such a way that

TABLE 7: Types of relationship between need fulfillment in work and non-work and the quality of mental health according to Kornhauser's measures (mean)

Types of Relationship	(N)	Mean Score on Mental Health	Standard Deviation	t-value	F-value
Complementary	(134)	227.83	37.72		
Expressive	(81)	214.82	24.79	3.05*	
Compensatory	(90)	184.82	42.11	5.74**	80.36**
Spillover	(92)	161.44	25.42	4.52**	
(Total)	(397)	200.04	43.05		

  * Significant at the .01 level

  ** Significant at the .001 level

a high score on the index meant a high degree of task specialization in the job. Rank order correlation was computed between the index of task specialization and need fulfillment in work. The correlation was -.52 (see Table 8) which shows that there is a moderate negative relationship between task specialization and need fulfillment in work in this study. Thus hypothesis 5 is supported.

Hypothesis 6 predicted that the amount of technical constraint an individual experiences in task performance will be negatively related to his need fulfillment in work. A composite index of technical constraint was constructed by combining an individual's scores on the eight measures of technical constraint in such a way that a high score on the index meant a greater amount of technical constraint in task performance. Scores on negatively worded items were reversed. Rank order correlation was computed between the index of technical constraint and need fulfillment in work. The correlation was -.56 (see Table 8) which suggests that technical constraint in jobs and need fulfillment in work are moderately related. Thus, hypothesis 6 is supported.

It may be argued that the measures of task specialization and technical constraint that have been used are concerned with different facets of task specialization and technical constraint, and that, therefore, it was not legitimate to combine them into composite indexes. For this reason, a separate analysis was performed between need fulfillment in work and the measures of task specialization and technical constraints. Table 9 presents the rank order correlations between need fulfillment in

TABLE 8: Spearman rank-order correlations of task specialization technical constraint and leadership style with need fulfillment in work

Independent Variables	(N)	Spearman Correlation	Level of Significance*
Task Specialization	(402)	-.52	.001
Technical Constraint	(402)	-.56	.001
Leadership Style	(402)	.32	.001

* Two tailed test

work and the measures of task specialization and technical constraint. All the three measures of task specialization are moderately correlated with need fulfillment in work. The average correlation between the measures of task specialization and need fulfillment in work is -.44 (P>.001) which is comparable to the correlation of -.52 found between the index of task specialization and need fulfillment in work.

The correlations between need fulfillment and the measures of technical constraint vary from -.21 to-.51. The average correlation between the measures of technical constraint and need fulfillment in work is -.38 (P>.001) which is somewhat lower than the correlation of -.56 found between the index of technical constraint and need fulfillment in work. However, all correlations between the measures of technical constraint and need fulfillment in work are in the predicted direction (negative) and are statistically significant.

Hypothesis 7 (H7) predicted that need fulfillment in work will be greater under the democratic supervisor than under the authoritarian supervisor. A scale of 13 Likert-type items was used to assess supervisory style in this study. A higher score on each item was an indication of democratic supervision whereas a lower score was an indication of authoritarian supervision. An index of supervisory style was constructed by combining scores on thirteen items. Rank order correlation was computed between the index of supervisory style and need fulfillment in work. The correlation is .32 (P>.001) which shows that need fulfillment in work is slightly higher under a democratic supervisor than under an

TABLE 9: Relationship between need fulfillment in work and the measures of task specialization and technical constraint in task performance.

Measures	(N)	Correlation	Level of Significance[1]
Task Specialization			
(1) Fragmentation	(400)	-.38	.001
(2) Repetition	(399)	-.45	.001
(3) Simplification	(401)	-.50	.001
Technical Constraint			
(1) Talk	(402)	-.51	.001
(2) Think	(401)	-.28	.001
(3) Pacing	(402)	-.32	.001
(4) Relief	(402)	-.47	.001
(5) Slack	(402)	-.30	.001
(6) Move	(398)	-.46	.001
(7) Attention	(398)	-.21	.001
(8) Variety	(402)	-.50	.001

[1] Two tailed test

authoritarian supervisor. Although the correlation is in the predicted direction and statistically significant, yet it accounts for only 10 percent variance in the dependent variable. Therefore, hypothesis 7 must be considered as only weakly supported.

3.3 Organizational Variables and Need Fulfillment in Work

Hypothesis 8 (H8) predicted that the steepness of organizational structure will be negatively related to the employee need fulfillment in work. Employees were classified according to the structure of the organization in which they worked, i.e. in flat, intermediate or tall organization structures. It may be recalled that the determination of organization structure involved taking a ratio of the number of levels of supervision in the organization to the total size of the organization. One-way analysis of variance was performed to explore the relationship between organization structure and need fulfillment in work. Results are presented in the upper part of Table 10. It is clear from the analysis that need fulfillment is highest under flat structures, moderate under intermediate structures, and lowest under tall structures. Differences between means across the three types of organization structures are statistically significant according to the t-test of significance as well as according to the Duncan Sign Test. Thus, hypothesis 8 is supported.

Hypothesis 9 (H9) predicted that organization size will be negatively related to need fulfillment in work. Three different measures were used to assess organization size. The first measure related to total organ-

TABLE 10: Relationship between need fulfillment in work
           and four organizational variables

Organizational Variables	(N)	Mean Score on Need Fulfillment	Standard Deviation	t-value[1]	F-val
Organization Structure					
Flat	(134)	34.55	9.36		
Intermediate	(192)	29.52	11.03	4.43**	
Tall	(76)	25.83	9.07	2.82*	19.60'
Organization Size					
100 - 150 persons	(171)	32.63	9.86		
151 - 250	(139)	29.83	10.66	3.25**	
251 - 300	(92)	29.07	11.26	0.16	6.16*
Perceived Dept. Size					
1 - 10 persons	(138)	31.65	10.42		
11 - 20	(136)	30.05	10.19	1.29	
21 and over	(118)	29.34	11.37	0.52	1.61
Actual Dept. Size					
1 - 10 persons	(115)	31.18	10.80		
11 - 20	(150)	30.34	10.16	0.65	
21 and over	(125)	29.77	11.18	0.44	0.53

[1] Two tailed test

 * Significant at the .01 level

** Significant at the .001 level

zation size and the other two related to sub-unit size. One-way analysis
of variance was performed to explore the relationship between the three
measures of organization size and need fulfillment in work. Results
obtained are presented in Table 10. It is clear from Table 10 that there
is a weak relationship between the total organization size and need ful-
fillment in work. Need fulfillment is higher for people working in small
organizations than for people working in medium-size organizations. The
difference between means in small and medium-size organizations is
significant according to the t-test and the Duncan Sign Test. However,
there is no difference in need fulfillment for people working in large or
medium-size organizations. Surprisingly, mean need fulfillment is slightly
higher for people working in large organizations than in medium-size
organizations, which is contrary to the prediction of H9.

One-way analysis of variance was performed to examine the relation-
ship between the two measures of sub-unit size and need fulfillment in
work. Results are again presented in Table 10. It is clear from the
analyses that both the measures of sub-unit size exhibit negligible
relationships with need fulfillment in work. However, all the relation-
ships between the measures of sub-unit size and need fulfillment in work
are in the hypothesized direction. In both cases, there is a tendency
towards achieving a higher level of need fulfillment in smaller sub-units.

Initially it was planned to include only blue-collar workers in the
present study. However, because of practical considerations, all the
rank-and-file workers in the participating companies were included, which

increased the heterogeneity of the sample. Porter and Lawler (1965) stated that most of the studies which found negative relationships between organization size variables and job satisfaction were conducted among blue-collar workers and no such relationships have been documented among white-collar workers. In recent years, two studies by ElSalmi and Cummings (1968) and Cummings and ElSalmi (1970) also failed to find any appreciable relation between organization size and need satisfaction among managers.

In order to examine whether or not the heterogeneity of the sample in this study has restricted the strength of relationships between organization size variables and need fulfillment, separate analyses were performed for blue-collar and white-collar samples. Results for the blue-collar sample are presented in Table 11 and for the white-collar sample in Table 12. It is clear from Table 11 that the three measures of organization and sub-unit size are significantly related to need fulfillment among blue-collar workers. An examination of the analyses presented in Table 12 suggests that none of the three measures of organization and sub-unit size are significantly related to need fulfillment among white-collar workers.

It may be concluded that the three measures of organization size show a moderate relationship to need fulfillment for blue-collar workers and show no relationship for white-collar workers. Thus, hypothesis 9 must be considered as weakly supported for the blue-collar sample and not at all supported for the white-collar sample.

TABLE 11: Relationship between need fulfillment in work and four organizational variables for blue-collar sample.

Organizational Variables	(N)	Mean Score on Need Fulfillment	Standard Deviation	t-value[1]	F-value
Organization structure					
Flat	(90)	32.71	9.77		
Intermediate	(117)	26.42	10.50	4.45**	
Tall	(42)	22.67	7.51	2.48*	18.16*;
Total	(249)	28.06	10.45		
Organization Size					
100 - 150 persons	(117)	30.57	10.06		
151 - 250	(80)	25.60	10.40	3.34**	
251 - 300	(52)	26.19	10.28	-0.32	6.72*
Total	(249)	28.06	10.45		
Perceived Dept. Size					
1 - 10 persons	(77)	29.32	10.65		
11 - 20	(106)	29.17	10.16	0.10	
21 and over	(61)	24.15	10.03	3.10*	5.60*
Total	(244)	27.96	10.48		
Actual Dept. Size					
1 - 10 persons	(65)	28.83	10.81		
11 - 20	(114)	29.22	10.26	-0.24	
21 and over	(63)	24.41	9.98	3.04*	4.77*
Total	(242)	27.86	10.50		

[1]Two tailed test

* Significant at the .01 level

** Significant at the .001 level

TABLE 12: Relationship between need fulfillment in work and four organizational variables for white-collar sample.

Organizational Variables	(N)	Mean Score on Need Fulfillment	Standard Deviation	t-value[1]	F-value
Organization structure					
Flat	(44)	28.29	7.21		
Intermediate	(73)	34.42	10.10	2.41*	
Tall	(33)	29.42	9.37	2.48*	8.80**
Total	(150)	34.46	9.65		
Organization Size					
100 - 150 persons	(54)	37.07	7.79		
151 - 250	(58)	33.09	9.48	2.44*	
251 - 300	(38)	32.84	11.58	0.11	3.19
Total	(150)	34.46	9.65		
Perceived Dept. Size					
1 - 10 persons	(61)	34.59	9.41		
11 - 20	(30)	33.17	9.81	0.66	
21 and over	(57)	34.90	10.08	-0.77	0.32
Total	(148)	34.42	9.71		
Actual Dept. Size					
1 - 10 persons	(50)	34.24	10.08		
11 - 20	(36)	33.89	9.06	0.17	
21 and over	(62)	35.21	9.67	-0.68	0.25
Total	(148)	34.56	9.62		

[1] Two tailed test

 * Significant at the .01 level

** Significant at the .001 level

CHAPTER IV: Discussion and Conclusions

In this chapter the main findings of this study are discussed in
relation to the empirical evidence in the relevant areas. The chapter
has been divided into five sections dealing with (1) the validity of the
mental health measures, (2) the relationship between need fulfillment and
mental health, (3) the relationships between need fulfillment in work,
and task specialization, technical constraint and supervisory style,
(4) the relationship between organizational variables and need fulfill-
ment in work, and (5) the conclusions and implications of this study.

4.1 Validity of mental health measures

Levinson and Weinbaum in 1970 stated (McLean, 1970) that, "...no one
has yet arrived at a universally accepted definition of mental health,
although many have tried. Some would argue that there is no such thing,
and others that there is nothing to be done." Although five years have
passed since Levinson and Weinbaum made this statement, unfortunately it
still holds true. In the last five years, only four studies in organi-
zation behavior (Quinn, 1972; Burke, 1973; Caplan et al., 1975; Gechman
and Weiner, 1975) have used the construct of mental health as an indepen-
dent or dependent variable. None of these four studies has explicitly
defined mental health. Three of the four studies (Quinn, 1973; Burke,
1973; Caplan, 1975) employed Quinn's or similar measures of mental health
whereas one study (Gechman and Weiner, 1975) made use of Kornhauser's
measures of mental health. Only two studies (Quinn, 1972; Caplan et al.,

1975) reported the reliability of their mental health measures and in no study was the validity of the mental health measures reported. As a result of this regrettable omission in the research to date, one main objective of this study has been to test the validity of the available measures of mental health.

As mentioned previously, no other investigator attempted to spell out the meaning of mental health as clearly as did Kornhauser (1965). Kornhauser not only formulated an empirical definition of mental health, but also systematically checked the reliability and validity of his measures. It should be mentioned at this point that to the best of our knowledge, Kornhauser's measures of mental health are the only measures which were subjected to internal as well as external validation. Kornhauser's reliability and validity coefficients are remarkable, but there was a severe problem with his procedure of data collection. It may be recalled that he used unstructured interviews lasting between one and one-half hours to two hours in each case in order to obtain information about the mental health of the respondents. This made Kornhauser's measures expensive in terms of time and money, and hence undesirable in survey-research. Moreover, the necessity to content analyze and to code data obtained from unstructured interviews inevitably detracts from reliability and validity. These considerations may explain why only one study so far has used Kornhauser's measures.

The need to have valid measures of mental health which could be readily available to researchers in survey-type research was the chief

impetus behind the validation of the mental health measures in this study. The results presented in Section 2.4 suggest that we have been fairly successful in achieving this goal. Our measures of mental health not only show a high degree of internal consistency reliability but they also show a reasonable degree of convergent validity. Thus it may be said that this study has achieved three things regarding the construct of mental health. First, the unstructured interview measures of mental health have been translated into the structured questionnaire measures. Second, the relative reliability and validity of the structured measures have been documented with the hope that it may be a first step toward the development of a standard measure of mental health corresponding to the standard measures of job satisfaction and supervisory style. Third, the reliability and validity of the modified version of Kornhauser's measures of mental health have been re-examined in a different cultural milieu.

4.2 Mental Health Predicted through Need Fulfillment

Our theoretical model made the prediction that the interaction between need fulfillment in work and need fulfillment in non-work determines the quality of an individual's mental health. Results presented in Section 3.1 supported the above prediction. It was found that the individuals who had a high level of need fulfillment both in work and non-work showed the highest level of mental health. Individuals who had a high level of need fulfillment in work but had a low level of need fulfillment in non-work showed a moderately high level

of mental health. Individuals who had a low level of need fulfillment in work but had a high level of need fulfillment in non-work showed a moderate level of mental health. Individuals who had a low level of need fulfillment both in work and non-work showed the lowest level of mental health.

The above findings may be interpreted in the light of Maslow's theoretical model (1954) on need gratification and psychological health. Maslow's theory postulated a positive relationship between need gratification and psychological health. Our interactional analysis of need fulfillment in work and non-work, and the quality of mental health shows a positive relationship between the two and thus lends support to Maslow's theory. Maslow, however, did not indicate clearly in what area of an individual's life need gratification was to be assessed in order to predict his mental health. In the present study, therefore, separate correlations were computed between need fulfillment in different life areas and mental health. The rank order correlation between need fulfillment in work and mental health was +.53 (P>.001) and between need fulfillment in non-work and mental health was +.34 (P>.001). The correlation between the overall need fulfillment in life (work + non-work) and mental health was +.57 (P>.001). All the above correlations are positive and lend additional support to Maslow's theory. Thus it may be said that individuals who have most of their psychological needs satisfied in life, tend to be the ones who experience a high level of mental health.

The positive correlation between need fulfillment in work and

mental health is consistent with the empirical evidence on job satisfaction and mental health. The research of Kahn and his associates (1964) suggested a positive relationship between job satisfaction and mental health. Kornhauser (1965) in his study of Detroit automobile workers observed that workers who were satisfied with their jobs had a higher level of mental health than workers who were not satisfied with their jobs. This finding was confirmed at each separate occupational level. Quinn (1972) observed a strong positive association between job satisfaction and mental health in a nationally-based probability sample of 1533 American workers. In addition, he found that the association between job satisfaction and mental health was greater among workers who were locked into their jobs than among those not locked into them. In a recent study, Gechman and Weiner (1975) found a positive relationship of .48 between job satisfaction and mental health in a sample of 53 elementary school teachers. Thus it may be said that the result of this study on need fulfillment in work and mental health has added to the growing body of evidence supporting a positive relationship between job satisfaction and the quality of mental health.

The results from the interactional analysis of need fulfillment in work and non-work and mental health cast doubt upon the notion of the relative superiority of the non-work environment over the work environment in making workers psychologically happy. In the early sixties, Gurin et al. (1960) stated:

"With the alienation from the job that occurs

with industrialization and increasing automation,

with the shortening of the work day and

concomitant expanding opportunity for a life out-

side the job that this allows, the job tends to

lose its central position in a man's life.

More energy is channelled into life outside the

work, and the possibility arises for non-job areas

of life to provide the meaning and identity

anchors that the job once provided."

Many more such statements can be found in the literature which have popularized the notion that what happens to individuals in the work environment may not be as important to the achievement of satisfaction and happiness in life as what happens to them in the non-work environment. Our results contradict this notion and suggest that individuals who cannot fully satisfy their psychological needs in the work environment show either a low or at best a moderate level of mental health. On the other hand, individuals who can fully satisfy their psychological needs in the work environment show either a high or moderately high level of mental health.

Additional evidence against the notion that the non-work environment may be more important than the work environment in an individual's life was obtained from the partial correlations between need fulfillment in

work and non-work and mental health. The partial correlation between need fulfillment in work and mental health controlling for need fulfillment in non-work was +.48 (P>.001). The partial correlation between need fulfillment in non-work and mental health controlling for need fulfillment in work was +.20 (P>.001). These results suggest that the independent relationship of need fulfillment in work to mental health is stronger than the independent relationship of need fulfillment in non-work to mental health.

If the above results are valid, and we believe they are, then it may be high time, as stated by Weiner, Akabas and Sommer (1973), "...to use the work setting or work-related variables as a vehicle through which to find the worker in trouble and to help that worker stay on the job."

4.3 Need Fulfillment in Work Predicted through Technological Variables and Supervisory Style

Our theoretical model made the prediction that the technological variables of task specialization and technical constraint are negatively related to need fulfillment in work. Results presented in Section 3.2 confirmed the above prediction. It was found that workers who experienced a high degree of task specialization in jobs had a low degree of need fulfillment in work and the workers who experienced a low degree of task specialization in jobs had a high degree of need fulfillment in work. Similarly, workers who experienced a high degree of technical constraint in task performance had a low degree of need fulfillment in work and the workers who experienced a low degree of technical constraint had a high

degree of need fulfillment in work. These findings are consistent with the empirical evidence in the area of technological variables and job attitudes, which in general, suggests a negative relationship between the two types of variables.

As early as 1930, Fairchild (1930) found a significant negative relationship between task simplification and job satisfaction. Turner's research (1955) indicated that task repetition was one of the most important sources of the workers' dissatisfaction with work and the company. Blauner (1964), in a secondary analysis of Roper's (1947) survey data, found that alienation from work was lower among printers and chemical workers, whose jobs have a low degree of task specialization than among workers in auto and textile industries who experience a high degree of task specialization in their jobs. Turner and Lawrence (1965) in their well-documented study found significant negative associations between task simplification and job satisfaction, and 'task complexity' and absenteeism. Shepard (1971), in a sample of office and factory workers, observed negative associations between 'functional special-ization' measured with production - line mechanization and five dimensions of alienation -- powerlessness, normlessness, meaninglessness, self-evaluative involvement, and instrumental work orientation. In a recent study, Jamal (1975) found significant negative association between task specialization and organizational commitment.

In a study of automobile workers in Detroit, Walker and Guest (1952) observed during their interviews with workers that the technical con-

straint of 'pacing' was one of the major sources of workers' dissatis-
faction with work and the company. Conant and Kilbridge (1965) found
that pacing, and variety in work elements, along with many other job
characteristics, affect workers' attitudes toward work. In a study of
British factory workers, Crompton and Wedderburn (1970) found that the
technical constraints of task variety, freedom of movement in the work
place, and the opportunity of social interaction with fellow workers on
the job were the main source of workers' satisfaction with work.
Recently, Jamal (1976) also found negative relationships between eight
technical constraints and organizational commitment and job satisfaction
in a sample of 377 blue-collar workers.

Thus it may be said that the results of this study on technological
variables and need fulfillment in work have added support to the evidence
on negative relationships between technological variables and job
attitudes.

Our theoretical model made the prediction that need fulfillment in
work will be higher under a democratic supervisor than under an author-
itarian supervisor. This prediction was somewhat supported by our data.
It was found that workers who perceived their supervisor as democratic
had a slightly high level of need fulfillment in work and the workers who
perceived their supervisor as authoritarian had a slightly low level of
need fulfillment in work. These results are consistent with the empirical
evidence on leadership style and job satisfaction (Vroom, 1964; Sales,
1966; Sadler, 1970) as well as with leadership style and need fulfillment

in work (Beer, 1966; Hill and Hunt, 1973; Osborn, Hunt and Pope, 1973).
Thus, it may be said that the results of this study on supervisory style
and need fulfillment in work have modestly added to the growing body of
evidence supporting the relationship between leadership style and sub-
ordinates' job attitudes.

4.4 Need Fulfillment in Work Predicted through Organizational Variables

Our theoretical model made the prediction that the organizational
variables of 'structure' and 'size' would be differentially related to
need fulfillment in work. Results presented in Section 3.3 confirmed
the above predictions. It was found that the workers employed in flat
organization structures had a high level of need fulfillment, those
employed in intermediate structures had a moderate level of need ful-
fillment and those employed in tall organization structures had a low
level of need fulfillment. In addition, it was found that there is a
tendency toward a higher level of need fulfillment in smaller organ-
izations and sub-units only in the blue-collar sample.

The finding that structure is related to need fulfillment in work
is consistent with the empirical evidence in the area of organization
structure and job satisfaction, which, in general, suggests a negative
relationship between the two. As early as 1950, Worthy (1950) in his
study of Sears-Roebuck employees made the observation that morale among
employees may be higher in flat organization structures. However,
Meltzer and Salter (1962), in their study of 704 physiologists, found
little support for the superiority of flat structures over tall structures

in terms of employees' satisfaction. Carpenter (1971) compared tall, medium and flat structures in six public school systems, in relation to the level of job satisfaction of 120 teachers. He found that teachers in flat organizations perceived higher job satisfaction than teachers in medium and tall organizations. In a recent study of 290 trade salesmen, Ivancevich and Donnelly (1975) also found some support for the relationship between organization structure and job satisfaction. Thus it may be said that the finding of this study on organization structure and need fulfillment in work has added to the growing body of evidence supporting a negative relationship between structure and job satisfaction.

The tendency toward a higher level of need fulfillment in small organizations and sub-units among blue-collar workers is consistent with the argument of Porter and Lawler (1965) and with the findings of ElSalmi and Cummings (1968) and Cummings and ElSalmi (1970). However, even among blue-collar workers, most of the relationships between the measures of organization/sub-unit size and need fulfillment are not very strong. We feel that this may have happened due to the small range in size of the participating companies in this study. Both the organization size as well as the sub-unit size categories adopted in the present study were too small in comparison to the categories used in previously published studies in the area. For example, Cummings and ElSalmi (1970) in their study classified companies employing less than 500 employees as small organizations. In this study, none of the six participating companies had more than 350 employees. Similarly, Cummings and ElSalmi (1970) classified

sub-units having less than 50 employees as small sub-units. In the present study, 95 percent of the employers surveyed had fewer than 50 employees working in their sub-units. The smallness of the adopted categories of the total organization and sub-unit sizes may have affected the variation of the dependent variable and hence restricted the strength of the relationship between organization size variables and need fulfillment.

The findings that organization size variables are related to need fulfillment for blue-collar workers and are not related for white-collar workers have suggested that in research on organization size and workers' attitudes it is better to treat white-collar and blue-collar workers separately. Failure to do that may result in misleading conclusions.

4.5 Conclusions and Implications

This exploratory attempt at understanding the relationship between need fulfillment and mental health, and between technological, management and organizational variables and need fulfillment in work provides a number of tentative conclusions. It has been found that mental health was highest among workers who had high need fulfillment both in work and non-work; was moderately high among workers who had high need fulfillment in work but low need fulfillment in non-work; was moderate among workers who had low need fulfillment in work but high need fulfillment in non-work and was lowest among workers who had low need fulfillment both in work and in non-work. The immediate implication of these results

is that mental health should be considered on a broader level. Previous
research focussed either on work environment factors alone or on non-work
environment factors alone in understanding workers' mental health. The
results of this study indicate that it may be more useful to include both
work and non-work environment factors in research on mental health.
Future research should address itself to determining the relative import-
ance of different factors in work and non-work environments which affect
individuals' mental health. Such research could bring to light factors
in the work environment that are crucial to employees' mental health and
hence indicate areas where improvements could be made in the work envir-
onment.

It was also found that the technological variables of task
specialization and technical constraint were inversely related to need
fulfillment in work; need fulfillment was slightly higher under a demo-
cratic supervisor than under an authoritarian supervisor; and the
organizational variables of organization structure, total organization
size, and sub-unit size were differentially related to need fulfillment.
The fact that, of the above-mentioned variables, the technological
variables showed the strongest relationship with need fulfillment leads
to the conclusion that technological variables are important in
influencing individuals' behavior at the work site. The implication of
the above conclusion is that serious attention should also be paid to
technological variables in the work environment along with organizational,
management and psychological variables. There is an acute paucity of

research studies in organizational behavior which attempt to examine the impact of technolgical variables on workers' attitudes and behavior. Future research should explore the nature of the relationship between technological variables and workers' attitudes and behavior, with the object of determining the relevance of technological variables in organizational behavior.

Since the present study is a field study, the results must be treated cautiously. There were only a few significant differences found between the measures of organization variables and need fulfillment in work. In addition, most of the significant correlations of this study were zero - order correlations, which might have changed with the introduction of moderator variables. Although the results reported provide support for many of the hypotheses tested, they cannot validate causal predictions about the variables investigated. Nevertheless, our results seem to suggest that need fulfillment and mental health are related to each other; specialization in jobs, technical constraint in task performance and supervisory style are related to need fulfillment in work; and organization structure, organization size and sub-unit size are differentially related to need fulfillment in work.

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APPENDIX A

Quality of Life Questionnaire

As a starting point I would like to know a few things about your present job. Please answer the following questions by putting the check mark (√) in the appropriate category in each question. Remember, your answers are confidential and will always be used in group statistics.

1. Can you talk to people around you when you are working?

    _____ Never
    _____ Hardly ever
    _____ Some of the time
    _____ Most of the time
    _____ All the time

2. Can you think about things other than your job when you are working?

    _____ Never
    _____ Hardly ever
    _____ Some of the time
    _____ Most of the time
    _____ All the time

3. Does your job require you to work at a certain speed?

    _____ Never
    _____ Hardly ever
    _____ Some of the time
    _____ Most of the time
    _____ All the time

4. In your job, can you stop working for personal emergencies without waiting for a relief man?

    _____ Never
    _____ Hardly ever
    _____ Some of the time
    _____ Most of the time
    _____ All the time

5. In your job are there slack periods when you can do what you want?

    _____ Never
    _____ Hardly ever
    _____ Some of the time
    _____ Most of the time
    _____ All the time

6. Can you move around the factory while doing your job?

    _____ Never
    _____ Hardly ever
    _____ Some of the time
    _____ Most of the time
    _____ All the time

7. Does your job require that you watch your machine or what you are doing?

    _____ Never
    _____ Hardly ever
    _____ Some of the time
    _____ Most of the time
    _____ All the time

8. Does your job require you to do the same thing over and over again?

    _____ Never
    _____ Hardly ever
    _____ Some of the time
    _____ Most of the time
    _____ All the time

9. How do you feel about your chances for getting ahead?

    _____ Very good
    _____ Pretty good
    _____ Good
    _____ Not good
    _____ Not too good

10. How important is it to you to have friends?

    _____ Very important
    _____ Pretty important
    _____ Important
    _____ Not important
    _____ Not very important

11. Overall, how do you feel about the way you spend your time when you are not working?

____ Completely satisfied
____ Well satisfied
____ Neither satisfied nor dissatisfied
____ A little dissatisfied
____ Very dissatisfied

12. In general, how do you feel about your life? Would you say you are

____ Completely satisfied
____ Well satisfied
____ Neither satisfied nor dissatisfied
____ A little dissatisfied
____ Very dissatisfied

13. Overall, how do you feel about your job?

____ Completely satisfied
____ Well satisfied
____ Neither satisifed nor dissatisfied
____ A little dissatisfied
____ Very dissatisfied

14. Overall, how do you feel about working for this company?

____ Completely satisfied
____ Well Satisfied
____ Neither satisfied nor dissatisfied
____ A little dissatisfied
____ Very dissatisfied

15. How much task repetition is there in your job? (Please put a circle around the number which most appropriately describes your job.)

(1)   (2)   (3)   (4)   (5)

Too much. I do pretty much the same things over and over using the same equipment and procedures all the time

Moderate degree of repetition

Very little. I do many things using a variety of equipment and procedures.

16. How much does your job involve your producing an entire product or an entire service? (Please put a circle around the number which most appropriately describes your job.)

(1)   (2)   (3)   (4)   (5)

My job involves doing only a small part of the entire product or service

My job involves doing a moderate sized chunk of the work

My job involves producing entire product or service from start to finish.

17. How long does a person have to spend in training or experience to be able to handle a job like yours? (Please put a circle around the number which most appropriately describes your job.)

(1)   (2)   (3)   (4)   (5)

Not very long. My job can be learned in a matter of hours or even minutes

Moderately long. My job can be learned in a couple of months

Fairly long. My job can take years to be learned.

Below you see a number of characteristics or qualities that might be connected with your present job. You are asked to indicate for each characteristic or quality of how much is it present on your job:

	(Minimum)			(Maximum)	
	1	2	3	4	5

The feeling of insecurity in my job ___ ___ ___ ___ ___

The opportunity to give help to other people at my job ___ ___ ___ ___ ___

The feeling of self-esteem I get in my job ___ ___ ___ ___ ___

Prestige inside the company (i.e., regard received from others within the company) ___ ___ ___ ___ ___

The opportunity for participating in the determination of methods and procedures at my job ___ ___ ___ ___ ___

The opportunity for participating in the setting of goals in my job ___ ___ ___ ___ ___

The feelings of worthwhile accomplishment associated with my job ___ ___ ___ ___ ___

The feeling of self-fulfillment associated with my job ___ ___ ___ ___ ___

The threat of change which could make my present skills or knowledge obsolete at my job ___ ___ ___ ___ ___

The opportunity for conversation and exchange of ideas with colleagues and coworkers at my job ___ ___ ___ ___ ___

Below you will see a list of the same characteristics or qualities that appeared on the last page. This time would you indicate how much of each characteristic you think should be associated with your job.

	(Minimum)				(Maximum)
	1	2	3	4	5
The feeling of insecurity in my job	___	___	___	___	___
The opportunity to give help to other people at my job	___	___	___	___	___
The feeling of self-esteem I get in my job	___	___	___	___	___
Prestige inside the company (i.e., regard received from others within the company)	___	___	___	___	___
The opportunity for participating in the determination of methods and procedures at my job	___	___	___	___	___
The opportunity for participating in the setting of goals in my job	___	___	___	___	___
The feeling of self-fulfillment associated with my job	___	___	___	___	___
The threat of change which could make my present skills or knowledge obsolete at my job	___	___	___	___	___
The opportunity for conversation and exchange of ideas with colleagues and coworkers at my job	___	___	___	___	___

Below you see a number of characteristics or qualities that might be connected with activities you undertake outside your job. By activities outside your job, we mean any activity which you might do in your home, with your friends, or anywhere outside your regular job. You are asked to indicate for each characteristic or quality of how much is it present in your off-job activities.

	(Minimum)				(Maximum)
	1	2	3	4	5
The feeling of insecurity in my off-job activities	—	—	—	—	—
The opportunity to give help to other people in my off-job activities	—	—	—	—	—
The feeling of self-esteem I get in my off-job activities	—	—	—	—	—
Prestige I receive from people with whom I undertake my off-job activities	—	—	—	—	—
The opportunity for participating in the determination of methods and procedures of my off-job activities	—	—	—	—	—
The opportunity I receive for participating in the setting of goals in my off-job activities	—	—	—	—	—
The feelings of worthwhile accomplishment I receive from performing my off-job activities	—	—	—	—	—
The feeling of self-fulfillment I receive from my off-job activities	—	—	—	—	—
The opportunity for conversation and exchange of ideas with people in my off-job activities	—	—	—	—	—
The threat of change which could make my present knowledge and skills in off-job activities obsolete	—	—	—	—	—

I am interested to know the way people are feeling these days. Below you will see a number of statements which may tell me the way you feel these days. Please indicate whether you strongly agree, agree, disagree, strongly disagree, or are undecided about each of these statements with a check mark.

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
	(1)	(2)	(3)	(4)	(5)
Getting ahead in this world is mostly a matter of luck and pull.	___	___	___	___	___
Inspite of what some people say, the lot of the average man is getting worse, not better.	___	___	___	___	___
These days a person does not really know who he can count on.	___	___	___	___	___
Most people are out for themselves and don't care what happens to others.	___	___	___	___	___
It is hardly fair to bring children into the world with the way things look for the future.	___	___	___	___	___
Nowadays a person has to live pretty much for today and let tomorrow take care of itself.	___	___	___	___	___
There is little use of writing to public officials because often they are not really interested in the problems of the average man.	___	___	___	___	___
I believe that most people can be trusted.	___	___	___	___	___
I sometimes get so blue and discouraged that I wonder whether anything is worthwhile.	___	___	___	___	___
I often boil inside myself without letting people know about it.	___	___	___	___	___
Many people are so unreasonable that it is hard to talk to them.	___	___	___	___	___
I have as much chance to enjoy life as I should have.	___	___	___	___	___
I sometimes feel like smashing things for no good reason.	___	___	___	___	___

I often have to tell people to mind their own business.

_____ _____ _____ _____ _____

People often get on my nerves so that I want to do just the opposite of what they want me to do.

_____ _____ _____ _____ _____

I wake up rested most mornings.

_____ _____ _____ _____ _____

I am often worried and upset.

_____ _____ _____ _____ _____

I often have trouble getting to sleep or staying asleep.

_____ _____ _____ _____ _____

I worry much about things that might happen to me.

_____ _____ _____ _____ _____

I am sometimes bothered by nervousness.

_____ _____ _____ _____ _____

I feel that I can do much to make my future what I want it to be.

_____ _____ _____ _____ _____

I feel that I am accomplishing the sorts of things I would like to do in my life.

_____ _____ _____ _____ _____

I often blame myself and feel bad over things I have done.

_____ _____ _____ _____ _____

I often have a hard time to make up my mind.

_____ _____ _____ _____ _____

People often hurt my feelings.

_____ _____ _____ _____ _____

When things go wrong, I am usually willing to leave it to others to work matters out.

_____ _____ _____ _____ _____

On the whole, I usually like to be by myself rather than with other people.

_____ _____ _____ _____ _____

I often feel restless, wanting to be on the move doing something but not knowing what.

_____ _____ _____ _____ _____

I feel in good spirits almost all the time.

_____ _____ _____ _____ _____

There are things about my health that bother me.

_____ _____ _____ _____ _____

Listed below are some more statements which may indicate the way you feel these days. Please answer all statements by putting the check mark (✓) in the appropriate category in each statement.

	Never	Hardly Ever	Some of the time	Most of the time	All the time
	(5)	(4)	(3)	(2)	(1)
How often do you take something for slight illnesses like headaches, upset stomachs, or things like that?	___	___	___	___	___
How often do you go to see a medical doctor for slight illnesses like headaches, upset stomachs, etc.?	___	___	___	___	___
How often do you go to a doctor or clergyman or anyone like that about your personal problems, or nervousness or such things?	___	___	___	___	___
How often do you go to watch sports events?	___	___	___	___	___
How often do you use any special foods or tonics or anything like that to help keep you in good condition?	___	___	___	___	___
How often do you get together with your relatives?	___	___	___	___	___
How often do you get together with your friends (very best) as a group?	___	___	___	___	___
How often do you get together with just one or two of your friends?	___	___	___	___	___

Please answer the following statements by checking either "YES" or "NO" for each statement.

	YES	NO
	(1)	(2)
Do you have any physical or health problems?	___	___
So far as you know, did you ever have a nervous breakdown?	___	___
Do you have some friends (other than especially good friends) whom you see often?	___	___

Over the years there are a lot of things a man comes to learn about people.

a. What are some of the main things you have learned about people?

(1) _____

(2) _____

b. What would you say most people want out of life?

(1) _____

(2) _____

Are you ever bothered with headaches, indigestion, or any of the common ailments? Please put a mark against those whichever bother you.

_____ Headaches
_____ Indigestion or stomach trouble
_____ Constipation or diarrhea
_____ Sleeplessness
_____ Tiredness without knowing why
_____ Heartburn
_____ Backaches
_____ High blood pressure

_____ Neuralgia
_____ Hemorrhoids or piles
_____ Nervousness
_____ Nose, throat, or sinus trouble
_____ Many colds or coughs
_____ Others (Please specify)

_____
_____

How many specially good friends do you have?

_____ friends

How many organizations such as church and ethnic groups, labour unions or social and civic clubs do you belong to?

_____ Organizations

How do you expect things to turn out for you in the future?

_____ very good
_____ good
_____ neither good nor bad
_____ not good
_____ not very good

In how many such organizations did you hold in the past or are presently holding any kind of executive position (i.e. President, Secretary, Vice-President, Treasurer)?

_____ Organizations

Taken together, how would you say things are these days -- would you say that you are:

_____ very happy
_____ pretty happy
_____ not too happy

Overall, how many meetings of the various organizations did you attend in the last two months?

_____ meetings

In the last four weeks, approximately how many hours did you spend in attending the meetings of various organizations?

_____ hours

The following statements describe the ways that a supervisor might act with subordinates (the people that work and report to him). Please react to the following statements as descriptions of the way your immediate supervisor works with subordinates.

	To a very little extent (1)	To a little extent (2)	To some extent (3)	To a great extent (4)	To a very great extent (5)
To what extent is your immediate supervisor friendly and easy to approach?	___	___	___	___	___
To what extent is your immediate supervisor attentive to what you say?	___	___	___	___	___
To what extent is your immediate supervisor willing to listen to your problems?	___	___	___	___	___
To what extent does your immediate supervisor encourage people to give their best effort?	___	___	___	___	___
To what extent does your immediate supervisor maintain high standards of performance?	___	___	___	___	___
To what extent does your immediate supervisor set an example by working hard himself?	___	___	___	___	___
To what extent does your immediate supervisor show you how to improve your performance?	___	___	___	___	___
To what extent does your immediate supervisor offer new ideas for solving job-related problems?	___	___	___	___	___
To what extent does your immediate supervisor encourage subordinates to take action without waiting for detailed review and approval from him?	___	___	___	___	___
To what extent does your immediate supervisor provide the help you need so that you can schedule work ahead of time?	___	___	___	___	___
To what extent does your immediate supervisor encourage persons who work for him to work as a team?	___	___	___	___	___
To what extent does your immediate supervisor encourage people who work for him to exchange opinions and ideas?	___	___	___	___	___

How often does your immediate supervisor hold group meetings where he and the people who work for him can really discuss things together?

___ Never
___ Once or twice per year
___ 3 to 6 times per year
___ About 1 per month
___ More often than 1 per month

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Now I would like to find out a little bit about you and the things at your work place. Please answer the following questions as accurately as possible. Remember, your answers are confidential and will always be used in group statistics.

1. How old were you on your last birthday?

_____ years old

2. Are you:

_____ Male
_____ Female

3. How many years of regular school have you completed?

_____ years

4. How many dependents do you have?

_____

5. Are you:

_____ Single
_____ Married
_____ Separated
_____ Widowed
_____ Divorced

6. On the average, approximately how much do you earn a month before taxes?

$ _____ a month

7. Were you brought up mostly in a

_____ Village/Farm
_____ Town
_____ Small City
_____ Large City

8. About how many miles is it from your home to the place where you work?

_____ Mile(s)

9. How long have you worked for this Company:

_____ Less than 6 months
_____ 6 months to 2 years
_____ 2 years to 5 years
_____ 5 years to 10 years
_____ Over 10 years

10. What department or section do you work in?

_____

11. How long does a person have to spend in training or experience to be able to handle a job like yours?

_____ Less than 1 month
_____ 1 - 3 months
_____ 4 - 6 months
_____ 7 - 12 months
_____ Over 12 months

12. What shift do you work usually?

_____ Morning   _____ Night
_____ Afternoon   _____ Rotate Shifts

13. What is your present job title?

_____

14. Approximately how many persons work in your department or section?

_____

15. What is/was the usual occupation of your father or guardian?

_____

These days lots of people are talking about flexible work hours and shorter work week (i.e. 4 days 10 hours work week). How do you feel about them? Do you <u>favour</u>, <u>disfavour</u>, or <u>neither favour nor disfavour</u> flexible work hours and shorter work week?

	Strongly Favour	Favour	Indifferent	Disfavour	Strongly Disfavour
Flexible Hours	___	__	__	__	___
Short Work Week	___	__	__	__	___

1. Is there any provision of working over-time for <u>extra money</u> at your present job?

   ____ Yes
   ____ No

   If YES, approximately how many hours do you spend working over-time in a normal week?

   ____ Hours

2. How would you classify your present job? Would you say it is a

   ____ Line Job?
   ____ Staff Job?
   ____ Line/Staff Job?

3. Are you doing any kind of <u>paid work</u> in your spare time?

   ____ Yes
   ____ No

   If YES, what kind of work is it (please specify).

   _____

4. How many times have you been absent from work this month?

   ____ Times

5. How many times were you absent from work in the last <u>four</u> months?

   ____ Times

6. How does your <u>supervisor</u> rate your performance in comparison to your peers (coworkers)?

   ____ Much better
   ____ Better
   ____ About the same
   ____ Slightly low
   ____ Much too low

7. In comparison to your peers, how would you rate your performance?

   ____ Much better
   ____ Better
   ____ About the same
   ____ Slightly low
   ____ Much too low

8. In general, how do your peers rate your performance in comparison to theirs?

   ____ Much better
   ____ Better
   ____ About the same
   ____ Slightly low
   ____ Much too low

9. If you have your own way, will you be working for your present company <u>two years</u> from now?

   ____ Certainly
   ____ Probably
   ____ Not sure one way or the other
   ____ Probably not
   ____ Certainly not

Please answer to the following statements. How often is this true of you?

	Often true (1)	Some-times true (2)	Rarely true (3)	Never true (4)
1. I have difficulty in making decisions.	___	___	___	___
2. I feel lonely.	___	___	___	___
3. I get pains in my heart or chest.	___	___	___	___
4. I feel hopeless about the future.	___	___	___	___
5. I feel trapped or caught.	___	___	___	___
6. I get heavy feelings in my arms or legs.	___	___	___	___
7. I have trouble in concentrating.	___	___	___	___
8. I blame myself for things.	___	___	___	___
9. I feel blocked or stymied in getting things done.	___	___	___	___

Is this true of you?

	True (1)	False (4)
10. There have been times when I felt like smashing things.	___	___
11. I am always willing to admit it when I make a mistake.	___	___
12. I can remember "playing sick" to get out of something.	___	___
13. I sometimes feel resentful when I don't get my way.	___	___
14. At times I have really insisted on having things my own way.	___	___
15. I am always courteous even to people who are disagreeable.	___	___
16. I never hesitate to go out of my way to help someone in trouble.	___	___
17. I don't find it particularly difficult to get along with loud-mouthed, obnoxious people.	___	___
18. I sometimes try to get even rather than forgive and and forget.	___	___
19. There have been times when I was quite jealous of the good fortune of others.	___	___
20. I have never been irked when people expressed ideas very different from my own.	___	___
21. I never resent being asked to return a favor.	___	___

APPENDIX B

Validation of the Mental Health Measures

I am interested to know the way people are feeling these days. Below you will see a number of statements which may tell me the way you feel these days. Please indicate whether you strongly agree, agree, disagree, strongly disagree, or are undecided about each of these statements with a check mark.

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
	(1)	(2)	(3)	(4)	(5)
Getting ahead in this world is mostly a matter of luck and pull.	___	___	___	___	___
Inspite of what some people say, the lot of the average man is getting worse, not better.	___	___	___	___	___
These days a person does not really know who he can count on.	___	___	___	___	___
Most people are out for themselves and don't care what happens to others.	___	___	___	___	___
It is hardly fair to bring children into the world with the way things look for the future.	___	___	___	___	___
Nowadays a person has to live pretty much for today and let tomorrow take care of itself.	___	___	___	___	___
There is little use of writing to public officials because often they are not really interested in the problems of the average man.	___	___	___	___	___
I believe that most people can be trusted.	___	___	___	___	___
I sometimes get so blue and discouraged that I wonder whether anything is worthwhile.	___	___	___	___	___
I often boil inside myself without letting people know about it.	___	___	___	___	___
Many people are so unreasonable that it is hard to talk to them.	___	___	___	___	___
I have as much chance to enjoy life as I should have.	___	___	___	___	___
I sometimes feel like smashing things for no good reason.	___	___	___	___	___

I often have to tell people to mind their own business.

_____ _____ ___ ___ _____

People often get on my nerves so that I want to do just the opposite of what they want me to do.

_____ _____ ___ ___ _____

I wake up rested most mornings.

_____ _____ ___ ___ _____

I am often worried and upset.

_____ _____ ___ ___ _____

I often have trouble getting to sleep or staying asleep.

_____ _____ ___ ___ _____

I worry much about things that might happen to me.

_____ _____ ___ ___ _____

I am sometimes bothered by nervousness.

_____ _____ ___ ___ _____

I feel that I can do much to make my future what I want it to be.

_____ _____ ___ ___ _____

I feel that I am accomplishing the sorts of things I would like to do in my life.

_____ _____ ___ ___ _____

I often blame myself and feel bad over things I have done.

_____ _____ ___ ___ _____

I often have a hard time to make up my mind.

_____ _____ ___ ___ _____

People often hurt my feelings.

_____ _____ ___ ___ _____

When things go wrong, I am usually willing to leave it to others to work matters out.

_____ _____ ___ ___ _____

On the whole, I usually like to be by myself rather than with other people.

_____ _____ ___ ___ _____

I often feel restless, wanting to be on the move doing something but not knowing what.

_____ _____ ___ ___ _____

I feel in good spirits almost all the time.

_____ _____ ___ ___ _____

There are things about my health that bother me.

_____ _____ ___ ___ _____

Listed below are some more statements which may indicate the way you feel these days. Please answer all statements by putting the check mark (√) in the appropriate category in each statement.

	Never	Hardly Ever	Some of the time	Most of the time	All the time
	(5)	(4)	(3)	(2)	(1)
How often do you take something for slight illnesses like headaches, upset stomachs, or things like that?	—	—	—	—	—
How often do you go to see a medical doctor for slight illnesses like headaches, upset stomachs, etc.?	—	—	—	—	—
How often do you go to a doctor or clergyman or anyone like that about your personal problems, or nervousness or such things?	—	—	—	—	—
How often do you go to watch sports events?	—	—	—	—	—
How often do you use any special foods or tonics or anything like that to help keep you in good condition?	—	—	—	—	—
How often do you get together with your relatives?	—	—	—	—	—
How often do you get together with your friends (very best) as a group?	—	—	—	—	—
How often do you get together with just one or two of your friends?	—	—	—	—	—

Please answer the following statements by checking either "YES" or "NO" for each statement.

	YES (1)	NO (2)
Do you have any physical or health problems?	—	—
So far as you know, did you ever have a nervous breakdown?	—	—
Do you have some friends (other than especially good friends) whom you see often?	—	—

Over the years there are a lot of things a man comes to learn about people.

   a. What are some of the main things you have learned about people?

      (1) _____

      (2) _____

   b. What would you say most people want out of life?

      (1) _____

      (2) _____

Are you ever bothered with headaches, indigestion, or any of the common ailments? Please put a mark against those whichever bother you.

____ Headaches
____ Indigestion or stomach trouble
____ Constipation or diarrhea
____ Sleeplessness
____ Tiredness without knowing why
____ Heartburn
____ Backaches
____ High blood pressure

____ Neuralgia
____ Hemorrhoids or piles
____ Nervousness
____ Nose, throat, or sinus trouble
____ Many colds or coughs
____ Others (please specify)

_____
_____

How many specially good friends do you have?

____ friends

How many organizations such as church and ethnic groups, labour unions or social and civic clubs do you belong to?

____ Organizations

How do you expect things to turn out for you in the future?

____ very good
____ good
____ neither good nor bad
____ not good
____ not very good

In how many such organizations did you hold in the past or are presently holding any kind of executive position (i.e. President, Secretary, Vice-President, Treasurer?)

____ Organizations

Taken together, how would you say things are these days -- would you say that you are:

____ very happy
____ pretty happy
____ not too happy

Overall, how many meetings of the various organizations did you attend in the last two months?

____ Meetings

In the last four weeks, approximately how many hours did you spend in attending the meetings of various organizations?

____ hours

Overall, how do you feel about the way you spend your time when you are not working?

___ completely satisfied
___ well satisfied
___ neither satisfied nor dissatisfied
___ a little dissatisfied
___ very dissatisfied

In general, how do you feel about your life? Would you say you are

___ completely satisfied
___ well satisfied
___ neither satisfied nor dissatisfied
___ a little dissatisfied
___ very dissatisfied

How do you feel about your chances for getting ahead?

___ very good
___ pretty good
___ good
___ not good
___ not too good

How important is it to you to have friends?

___ very important
___ pretty important
___ important
___ not important
___ not very important

You just finished reviewing an individual's responses to various measures of mental health. Now, when you had already reviewed responses, you are requested to give your personal judgement about the psychological and mental health of the individual by answering the following question.

In my judgement, the level of mental health of this individual is:

___ Excellent
___ Very good
___ Good
___ Average
___ Poor
___ Very poor
___ Worst

Thank you very much for your cooperation.

Muhammed Jamal

MF/mjf

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