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**ORGANISATIONAL ALIENATION:
A STUDY WITH SPECIAL REFERENCE
TO
'KERALA WATER AUTHORITY'**

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FACULTY OF SOCIAL SCIENCES

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is the record of bonafide research carried out by Mr. T. V. Jacob
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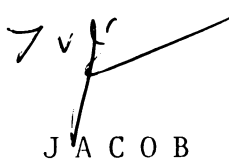
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DECLARATION

I, T.V. Jacob, hereby declare that the thesis submitted by me for the award of the degree of Doctor of Philosophy under the Faculty of Social Sciences is the original work done by me under the supervision of Prof. P. Ramachandra Poduval, School of Management Studies, Cochin University of Science and Technology. I also declare that this thesis has not previously formed the basis for the award of any degree, diploma or other similar titles

Cochin
30th March 1990.


T V J A C O B

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T V J A C O B

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CHAPTER I

INTRODUCTION

ALIENATION/INVOLVEMENT:

CONCEPTUAL FRAME- WORK AND ISSUES

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CHAPTER I

INTRODUCTION

ALIENATION/INVOLVEMENT:

CONCEPTUAL FRAME- WORK AND ISSUES

1.1.0 Introduction

1.1.1 "More often than not, one hears and reads about increasing organisational inefficiency, low morale and low productivity among Indian workers. The general feeling is that there is an overall lack of proper work ethic in Indian society. There is also a general consensus of views regarding this state of affairs in both public and private sector enterprises" (Kanungo and Misra, 1985, p.6 *). The issues relating to low motivation are complex as they are dependent on the behaviour of the individuals who constitute the organisation. "Increasing productivity is the major goal of every successful organisation, be it private or public, service or manufacturing. In order to achieve this goal, the organisation has to depend, to a large extent on both

* The method adopted in giving references is different from the traditional method of giving continuous number index at the appropriate place and giving the details at the bottom of the page. The method followed here is giving the name of the author(s), year of publication and the page number immediately after the reference is made or at the end of the sentence. When the reference is a general one, or a reference to a look only the year of publication is given. References given in brackets in the text are consolidated at the end of each chapter in alphabetical order of authors' name with full details. If there are more than one publication by the same author, chronological order of the latest appearing first is followed.

covert and overt behaviours of its members. The covert behaviours of organisational members refer to such psychological phenomena as job satisfaction, involvement and other related attitudes and beliefs. The overt behaviours, on the other hand, refer to directly observable behaviours such as absenteeism, tardiness, and other forms of on-the-job behaviour. It is the work of organisational psychologists to identify these behaviours and establish specific causal relationship between these behaviours and productivity" (Kanungo, 1986, p.8). The importance of scientific investigation and analysis of these issues need no further emphasis. These issues may differ from one organisation to another owing to difference in the particular nature of output, organisational environment, political environment, policies, and procedures. It is only after identifying the issues, its causes and the relationships that proper corrective actions could be initiated.

1.2.0 Organisation: nature and theories

1.2.1 The term 'organisation' is used in different contexts. In this study, organisation is considered as a 'socio-technical system'. It is "the rational co-ordination of the activities of a number of people for the achievement of some common explicit purpose or goal, through division of labour and function, and through a hierarchy of authority and responsibility" (Schein, 1969, p.8). The organisation has to function in an environment, conditioned by both external and internal factors. The external environment is usually the societal 'culture' which influences among other factors, the philosophy and policy of the top management. Other factors that influence culture include interdependence on other organisations and departments, technology, availability of equipments and raw materials, labour attitudes, etc. Among internal factors important ones are characteristics of employees, expertise, number of people and the organisational structure and climate. The organisational climate is something which cannot be seen and it does not refer to the physical conditions such as temperature, moisture or such other things. The organisational climate is only felt in the minds of people working in the organisation and may vary from person to person in the same organisation. Perceived climate also differs owing to the different leadership

styles of the managers. The type and appropriateness of the climate of a particular organisation is inferred and classified through the perception of people who constitute the organisation.

1.2.2 The basic characteristics of an organisation are: purpose or objectives, the people who constitute the organisation, hierarchy (superior-subordinate reporting levels), interdependence with various units, and the changing environment (both external and internal) in which the organisation functions. Various theories of organisations were evolved along with the changes in social, cultural and economic environments. Thus the earlier theories and the modern theories differ considerably on the assumptions about individuals and groups, their behaviour in the organisation and the environments in which the organisation operates. The important theories that deserve mention are: (i) traditional model or 'machine model', (ii) bureaucratic theory, (iii) classical theory, (iv) neo-classical theory, (v) behaviourist theory and (vi) modern organisation theory.

1.2.3 Traditional theory follows the scientific approach propounded by Taylor (1911) and his followers. This theory is basically production-oriented. The social needs of the individuals who constitute the organisation are not given any importance though implied.

1.2.4 The bureaucratic theory follows the concept of Weber (1947), the German social scientist who formulated the concept of bureaucracy in administration. Even today bureaucracy is the most common pattern of administration in governments and in many large organisations. According to Weber, bureaucracy is an administrative body of appointed officials. He believed that legal rational system is technically superior to all other administrative systems. He claimed that bureaucracy will bring about rationality, impersonality and competence in the organisation. The legal rational bureaucracy is popularly known as 'Weberian model' of bureaucracy. The main elements of such a model are:

- i) impersonal order,
- ii) established rules or norms of conduct,
- iii) specialisation of tasks,

- iv) concept of hierarchy of authority,
- v) specified spheres of competence,
- vi) personal and public ends,
- vii) maintenance of records and written documents, and
- viii) emphasis on form of organisation.

In this model, official business is conducted on a continuous basis. The importance is for the positions (chairs) and not for the individuals who occupy the positions. The main disadvantage of this model is that it ignores human behaviour in the organisation. The model emphasises more on structure of bureaucracy than on human beings who personify it.

1.2.5 The basis of classical organisation theory is the contribution of Fayol (1949) who believed in the universality of his principles of objectives, specialisation, co-ordination, authority and responsibility. This theory also neglects the factors of inter-play of individual personality, informal groups, intra-organisational conflicts and the decision making process.

1.2.6 Neo-classical theory approach was introduced by Mooney and Reilley (1931). In the neo-classical approach more emphasis is given to human relations and the impact of human actions. This theory recognizes the concept of informal organisations within the organisation. But this theory also is incomplete and lacks integration of many facets of human behaviour.

1.2.7 The behaviourist theory of organisation is closely linked to neo-classical approach and the modern organisation theory. Some writers have not separated the behaviourist approach from the neo-classical approach while some have included the behaviourist approach in the modern organisation theory. In the behaviourist approach, more emphasis is given to the individual and group behaviour. The main contribution of the theorists is the introduction of behavioural sciences in an integrated fashion into the theory of organisation (Bernard, 1938; Simon, 1947; Argyris, 1957; Likert, 1967).

1.2.8 The modern organisation theory greatly relies on empirical research data and tries to integrate the many facets of organisational behaviour. This approach considers organisation as a system of mutually dependent variables. As such, there is no unified body of thought as modern organisation theory. Each researcher has his special emphasis when he considers the systems. The various ingredients of the systems are: the parts (individuals), the formal organisation structure, the informal organisation, status and role patterns, the physical environment of work, interaction, the process and the goals of the systems. The parts of the systems are linked together through the process of communication, balance and decision making. There have been attempts to present organisation theories in mathematical forms. The modern organisation theory tries to consider the system as a whole with all its parts linked together. Modern organisation theorists attempt to be 'operational'.

1.3.0 Alienation/involvement in organisations

1.3.1 Alienation, as a term and as a theme, are found in many writings from very early times. But the concept and emphasis differ. The writers who have explained alienation includes theologians, philosophers, anthropologists, economists, political scientists, historians, psychologists and sociologists. Their explanations of the various facets of alienation in different contexts have caused confusion in understanding the meaning of the term and theme of alienation. Psychologists have attempted to analyse the problem of alienation from the point of view of job involvement. They tried to define and measure involvement at work rather than alienation at work. Most sociologists view work alienation as a form of dissatisfaction or feeling of disappointment with job, occupation or work in general, which do not provide intrinsic-need satisfaction or opportunities for self-direction and self-expression. They have tried to measure and analyse the state of work alienation rather than state of worker involvement. Sociologists have thus focussed on the negative side of the issue. Alienation and involvement are the two poles of the same continuum. Thus alienation and involvement cannot be treated independently, the terms only indicate the bipolar state of the same phenomenon.

1.3.2 Linguistic origin of the term 'alienation': The English term 'alienation' has its origin from the original Latin noun 'alienatio' which, in turn, is derived from the Latin verb 'alienare' meaning to 'take away' or 'remove'. The Latin usage of the term as 'noun' resulted in the meaning of 'transfer of ownership of something to another person'. In the context of the Latin usage of the verb meaning 'to cause a separation to occur', alienation is referred to as 'a state of separation' or 'dissociation' (Klein, 1966).

1.3.3 Alienation: theme and definitions: In the Christian religion, alienation is estrangement or separation of man from God. Man by his original sin, alienated from God with a detrimental effect on his psyche - disorganised self with worries, guilt and loss of identity. This psychic unrest and distress result in a strong desire for salvation by reconciliation with God and this is the only hope (Poduval, 1982, p.20). In Hinduism and Buddhism also spiritual alienation has been interpreted as a state of separation or dissociation from God.

1.3.4 Alienation, according to theologians, refers to states of separation of human beings from God, from their own bodies, from their fellow human beings and from their institutions. The theologians contended that the cause of spiritual alienation is worldly (material and sensuous) involvement. To avoid spiritual alienation, they encouraged alienation from the physical and social world. Work alienation was advocated by theologians as desirable if work was a means to satisfy material (physical), social or ego needs. In Bhagavad Gita, 'karma' (work) was considered desirable only when it was performed out of a pure sense of duty without any consideration for its outcome or without any desire for personal gains. The individual in a state of separation from an object is assumed to have an affective experience towards the object. "The term alienation, therefore, always had a reference to the individual's affective experience associated with a state of separation. The negative state of despair, guilt, dissatisfaction, anger, and so on were considered common manifestations of spiritual alienation" (Kanungo, 1982, p.10). Theologians explained the meaninglessness of human existence in terms of spiritual alienation.

- 1.3.5 To the philisophers, the failure to realise that the world is not external to the spirit is that which constitutes alienation. This alienation would cease when man becomes fully self conscious and understands his environment. Alienation of man from mankind with an anthropological significance was the special emphasis of Feuerbach. According to Moses Hess, money is the alienated essence of man (cited in Poduval, 1982, p.21).
- 1.3.6 Political scientists and historians consider that alienation as a social phenomenon or human experience has existed throughout the recorded history of mankind. The term 'alienation' is used to mean 'transfer of ownership'. Grotius (1853) was the first social-contract theorist to use the Latin term 'alienatio' to mean the transfer of 'sovereign authority' over oneself to another person. In his social contract theory, Rousseau (1947) used the term 'alienation' to mean the total surrender of an individual's person and power to the collective general will. Thus, the meaning of 'alienation' was extended from a transfer of certain individual rights to the complete surrender of the entire person.
- 1.3.7 Alienation associated with individual as a person has been described as 'separation anxiety' (Rank, 1949), 'loss of relatedness' (Fromm, 1941) and 'mistrust' (Erikson, 1959).
- 1.3.8 Hegel (1949) identified two types of alienation: conscious experience of alienation as a state of separation, and surrender or transfer of individual rights. With respect to alienation, as a state of separation, one ceases to identify oneself with 'social substance' or the social, political and cultural institutions. "It is rather a state of consciousness reflecting a condition of separation that has come to exist for the individual" (Kanungo, 1982, p.12). The second type - surrendering one's right- is something deliberate. "It involves a conscious relinquishment or surrender with the intention of securing a desired end: namely, unity with the social substance" (Schacht, 1970, p.36). Hegel considers the conscious state of separation from the social substance as an undesirable state for the individual. He suggested that such alienation can be overcome through continuous and deliberate relinquishment or surrender of one's personal

interests. Thus, alienation by deliberate surrender is very desirable. According to Hegel, in the work context, the interests of the total work organisation should be valued more than interest of the individual workers. The latter has to be sacrificed to achieve the former.

1.3.9 Marx (1844/1932) stretched the notion of alienation from religion, philosophy and politics to the socio-economic conditions. His main emphasis was on work alienation of labour in the capitalist factory system of the 19th century. Marx defines alienation as a condition in which man in his everyday life denies part of his being, in order to survive. For Marx, man's essential characteristics are individuality, sociality and sensuousness. If workers sacrifice their needs and interests and surrender their free will or control over what they do, they experience alienation. He discusses four types of alienation which emerges directly from work and organisational situation:

- (1) alienation from the process of work,
- (2) alienation from the products of work,
- (3) alienation of the worker from himself, and
- (4) alienation of the worker from others.

1.3.10 Weber's (1930) idea of alienation is very similar to that of Marx. Weber considered alienation as a much more widespread social phenomenon than what Marx did. Weber, like Marx, believed that individuality or personal worth of workers is determined by their labour, and that alienation results from working conditions that deny an expression of individuality. According to Weber, the ethical system of Protestantism trains individuals to be individualistic and to believe in the goodness of work. He argued that Protestant work ethic is the major source of work involvement. He also placed emphasis on the freedom to make one's own decisions on assuming personal responsibilities, and on proving one's worth through achievement at work.

1.3.11 Examining more recent discussions, Gold (1969, pp.121-135) describes the essential meaning of alienation in three phases:

- (1) not influenced by
- (2) not be able to influence and

(3) estranged from one's self.

1.3.12 Seeman (1959, pp.783-91) has suggested five variants of alienation:

- (i) powerlessness: refers to a perceived lack of control over important events that affect one's life,
- (ii) meaninglessness: occurs when the individual is unclear as to what he ought to believe,
- (iii) normlessness: refers to the state when previously approved social norms are no longer effective in guiding behaviour for the attainment of personal goals,
- (iv) isolation: when the norms are different from those of accepted ones, an individual may perceive himself as being separate from society and the relative system resulting in a perception of social isolation, and
- (v) self-estrangement: refers to the state when the individual is engaged in an activity that is not rewarding in itself.

1.3.13 Durkheim (1893) saw alienation as a consequence of a condition of 'anomie' or the perceived lack of socially approved means and norms to guide one's behaviour for the purpose of achieving culturally prescribed goals. Alienation, in this sense, exists when people believe that there is a breakdown of societal behavioural norms (a social normlessness) and that cultural goals are achieved through deviant behaviour. The condition of anomie is often considered as a post industrial phenomenon. Modern men and women, no longer able to feel a sense of security and belonging, find themselves isolated from others. Such social alienation results in normlessness.

1.3.14 Cultural conflict and social change leading to loss of individual autonomy, control and power are regarded as the major determinants of alienation (Misra, 1979, p.502). The core meaning of the concept of alienation is identified as a dissociative state of the individual (a cognitive state of separation) in relation to some other elements in his or her environment (Schacht, 1970, p.36).

- 1.3.18 A 'component of self-image' definition which views job involvement as a psychological identification of one's job is proposed by Lodahl and Kejner (1965, p.24-33). In supporting this view Lawler and Hall refers to 'Job involvement' as 'psychological identification with one's work' or "the degree to which the job situation is central to the person or his identity" (Lawler and Hall, 1970, pp.310-311).
- 1.3.19 Lodahl and Kejner define 'Job involvement in two ways. According to the first definition, it is "the degree to which a person is identified psychologically with his work or the importance of work in his total self image". The second definition of 'job involvement' is that it is "the degree to which a person's work performance affects his self-esteem" (Lodahl and Kejner, 1965, pp.24-25).
- 1.3.20 Lawler and Hall distinguished the psychological state of 'job involvement' from two other psychological states of the worker viz. intrinsic motivations and job satisfaction. According to them intrinsic motivation refers to a state of the individual in which satisfaction of the intrinsic need (eg. self-esteem) is contingent upon appropriate job behaviour and in which job satisfaction results from satisfaction of the needs of the individual through the attainments of job outcomes without any regard to the contingencies of the outcomes. They stated "Other things being equal, more people will become involved in a job that allow them control and a chance to use their abilities than will become involved in jobs that are lacking these characteristics" (Lawler and Hall, 1970, p.311).
- 1.3.21 According to Maurer, a combination of both self-esteem and achievement need satisfaction at work is to be the necessary condition for job involvement (Maurer, 1969).
- 1.3.22 Saleh and Hosek have identified four different interpretations of the concept of 'job involvement'. "A person is involved (i) when work to him is a central life interest; (ii) when he actively participates in his job; (iii) when he perceives performance as central to his self-esteem; (iv) when he perceives performance as consistent with his self concept" (Saleh and

Hosek, 1976, p.215). They have concluded that job involvement is "the degree to which the person identifies with the job, actively participates in it, and considers his performance important to his self-worth. It is, therefore, a complex concept based on cognition, action and feeling" (Saleh and Hosek, 1976, p.223)

1.3.23 It is to be noted that "to achieve conceptual clarity Lawler and Hall (1970) tried to differentiate the state of involvement from intrinsic motivation and job satisfaction, whereas Saleh and Hosek (1976) brought them all together again" (Kanungo, 1982, p.36).

1.3.24 From an evaluation of research on job involvement, Rabinowitz and Hall draw the following conclusions: (i) Job involvement is related to three classes of working variables: personal characteristics, situational characteristics and work outcomes. The situational variables appear to have greater effect on the attitudes of low-job-involved persons than on high-job-involved persons. The profile of the job involved persons is that he "is a believer in protestant ethic, is older, has internal (vs external) locus of control, has strong growth needs, has a stimulating job (high autonomy, variety, task identity and feed-back), participates in decisions affecting him, is satisfied with the job, has a history of success, is less likely to leave the organisation" (Rabinowitz and Hall, 1977, p.284). (ii) Job involvement is fairly stable. Even major job re-design may not increase job involvement or major organisational stress may not decrease involvement. (iii) Job involvement appears to be both a cause and an effect of job behaviour. (iv) The data are more consistent with the 'psychological identification with work definition' of job involvement, rather than with 'self esteem affected by perceived level of performance' definition (cited in Misra, 1979, p.504).

1.3.25 Kanungo (1979, pp.119-38) operationally defines job involvement as a generalised cognitive state of psychological identification with work, insofar as work is perceived to be instrumental in satisfying one's salient needs and expectations. According to him, as stated by Misra and Kalro: "(i) all behaviour, including behaviour in work situation springs from need

states of the individual and is directed towards obtaining outcomes for the satisfaction of salient needs; (ii) the development of a need structure within the individual in terms of saliency is influenced by various historical and contemporaneous factors such as group, cultural and organisational norms; (iii) the degree of job involvement will depend upon the extent to which an individual perceives his salient needs as capable of being met on the job; and (iv) the individual will make inferences about his own job involvement attitudes a la self perception (Bem, 1967) by observing his own behaviour and the context in which it occurs" (Misra and Kalro, 1981, p.420).

1.3.26 Work involvement: On a review of available literature on job involvement, Kanungo found that the terms 'job' and 'work' are used interchangeably in many conceptualizations of job involvement. According to him an individual can show personal involvement in two distinctly different contexts: (a) involvement in a particular job and (b) involvement in work in general. Job involvement is a descriptive belief that is contemporaneously caused while work involvement is a normative belief that is historically caused. As individual's psychological identification with work in general depends on the saliency of the person's needs (both extrinsic and intrinsic) and the perception the person has about the need-satisfying potentialities of work (Kanungo, 1982, pp.66-67).

1.3.27 The Protestant ethic emphasizes the importance of hard work in order to get ahead. According to Gita, life is work (un-concern for results - the self-concern and expectations of reward are absent). Behavioural scientists widely differ in their views regarding work ethic in India. According to Sinha "Work is not that valued in India. Given the opportunity, we would rather prefer to rest and relax. We have what we call 'Aram' culture. Part of the reason is the cultural priority assigned to relationship rather than to the 'task'. 'Karm' which should have meant 'work' usually reflects one's 'obligation' to others - superiors, subordinates, peers, etc. "Dependance, personalised relationship and loyalty are "manifestations of a cultural perception that one should aspire to be closer and closer to the superior whose 'Kripa' (and not the task accomplishment) will yield success on the

job. The ethos pervades all walks of our life ranging from family to the way one relates to God" (Sinha, 1978 pp.85-89, 87). Holmstrom, on the other hand, in his anthropological study of south Indian factory workers described the work ethic of workers belonging to the 'Lingaayat sect' "ethical, conscientious and even meticulous, moderately ambitious, equalitarian in principle but conservative in practice; lutheran rather than calvinist, conscientious rather than enterprising" (Holmstrom, 1976, p.120). "This, to Holmstrom, is a Lingaayat variant of the Protestant ethic" (Misra, 1979, p.505). The meanings of 'work' and its importance may vary as jobs and culture vary. Kaplan and Trausky (1974, pp.185-198) have suggested six different meanings of work based on a review of studies on the meanings and functions of work. They are: (i) an intrinsic satisfying activity, (ii) a status and prestige bestowing activity, (iii) a morally correct activity, (iv) a source of satisfying interpersonal experiences, (v) an economic activity, a means of survival and (vi) routine activity which keeps one occupied.

- 1.3.28 Some sociologists (Goldthorpe, et al, 1968) have argued that the attitude of alienation from work depends on prior orientations, which workers develop in their cultural, sub-cultural and social class settings. Such work orientations or values are learned through primary and reference group influences and are brought by workers to the work situations. Several studies (Kohn and Schooler, 1969 pp.659-78; Morse and Weiss, 1955 pp.191-98; Sykes, 1965 pp.297-310) have shown social class and occupational differences with respect to values attached to intrinsic and extrinsic work outcomes. The worker's general outlook and expectations towards the degree of work involvement and alienation is determined by the social structure and reference-group influences. According to Kanungo, "a state of work alienation or involvement may be jointly caused by two sets of events - one a historical or predisposing set of events and the other a contemporaneous or precipitating set of events. Through the socialisation process (cumulative learning and experience of the past) the individual may develop a set of relatively stable beliefs and values regarding work, and the present experiences with work may either reinforce the beliefs and values or modify them" (Kanungo, 1982, p.65). Alienation from work implies that the work role

in general is considered less important to an individual compared to his or her other roles such as in family, community and leisure contexts.

1.3.29 Job satisfaction and alienation: "Alienation is not dissatisfaction with a given job and with life. It is quite possible that a person who demands too much from his environment, but does not possess the required competence may feel dissatisfied. Unrealistic expectation may cause disappointments and dissatisfaction. It is also quite possible that individuals with low self-esteem and low expectation are quite satisfied with their jobs. In such extreme cases, possibilities for low alienation with high job dissatisfaction or high alienation with complete job satisfaction cannot be excluded (Wanous, 1975)" (cited in, Poduval, 1982, p.23).

1.3.30 Organisational alienation: A healthy and effective organisation is what one would hope for. This depends on the members who constitute the organisation. The members who are drawn from the community may have different backgrounds and may have training in different beliefs. Thus, the need saliency of individuals in the organisation may vary from member to member. This results in members developing different psychological belief states with respect to various issues like perceived importance of job outcomes, work, job, job satisfaction and the organisation itself. The individual member's attitude to these issues may vary from issue to issue depending on his perceived beliefs and feelings towards the issue. If the beliefs and feelings of most of the members of the organisation are positive towards the organisation, it can be reasonably assumed that the general (collective) belief and feeling of the members is not alienation but involvement towards the organisation. In such situations, it is possible that most of the members will desire to strive for the prosperity of the organisation and its benefits. Such a situation may be referred to as an environment conducive to developing a healthy organisational climate with respect to its members. According to Blauner "a worker may be integrated in the plant community and loyal to the company and still fail to achieve a sense of involvement and self-expression in his work activity itself" (Blauner, 1964, p.28). Kher from his study observed: "it should be noted here that a person may find work meaningful and yet develop apathy towards organisation due to various

other factors like non-recognition of work, dissatisfaction with pay, feeling of being neglected by the management and so on" (Kher, 1988, p.32). Thus there is no similarity in the relationship of job involvement and organisational alienation. The relationship may differ from organisation to organisation.

1.3.31 If the individual's expectations from the organisation are very high beyond the organisational capacity, with respect to organisation-dependent variables, the individual will be frustrated and he/she may experience a condition of alienation from the organisation. The individual's past socialisation training towards work ethic is a factor that affects his beliefs towards work involvement. The extrinsic and intrinsic need saliency may vary from individual to individual and, therefore, the degree of perceived satisfaction of the individual from the organisation may vary from person to person. The organisational alienation mainly depends on the belief states of the individuals who constitute the organisation with respect to the organisational variables of self-estrangement, social isolation, powerlessness, meaninglessness and normlessness. Hence, organisational alienation may be defined as the members' psychological dissociation with the organisation insofar as organisation is perceived as not having the potential to satisfy one's needs and expectations. Organisational alienation or involvement may also be reflected in its members' beliefs regarding job involvement, work involvement and feelings of job satisfaction in the organisation.

1.3.32 "Etzioni distinguishes three types of involvement of organisational members: (i) the alienation type: members who are not psychologically involved, but are coerced to remain as members, (ii) the calculative type: members who are involved to the extent of doing a fair day's work for a fair day's pay; and (iii) the moral type: members who intrinsically value the mission of the organisation and their jobs within it and perform the jobs primarily because they value their work" (Etzioni, 1964). The classification indicates the different degrees of frustration individuals may develop in the organisational environment which ultimately reflects the extent of alienation each individual develops towards his or her organisation.

1.4.0 Conceptual and methodological problems in the study of alienation in the organisational context

1.4.1 Even though a vast amount of literature, both theoretical and empirical, exists on the concepts of alienation and involvement, some confusion also remains in the proper understanding of the concepts. Both psychologists and sociologists have not provided a clear and definite explanation of the concepts. The concepts of work alienation, job involvement and their correlates have been defined rather loosely. Social scientists have used the concepts of alienation and involvement to describe and explain work related problems. This has led to the usage of the terms in varied contexts, thereby giving excess meanings to the concepts. Distorted and ambiguous interpretations of the concepts added to the confusions. Empirical studies very often have reported mixed results. This was mainly due to the lack of an accepted common method of measurement of the concepts of alienation and involvement and their correlates. The interpretations of the empirical data were also not uniform. The confusions, thus, have crept in not only in the theoretical explanation of the concepts, but also in the measurements and interpretations of the empirical data. Reviewing the existing literature, Kanungo (1982, 1979, pp.119-38) has classified these confusions. These are briefly described.

1.4.2 Equivocal usage of the concepts: One of the most common sources of confusion is in the multiple usage of the concepts of work alienation and involvement. Researchers have used these concepts to mean different things at different times. For example, the concepts have been used to describe the psychological states of a specific individual worker as also to describe the psychological states of groups of workers. Johnson has pointed out that "The phenomenology and the meaning connected with individual states of alienation are different both in quality and significance from those connected with the social, interactual and collective applications of the term" (Johnson, 1973, p.35). When a worker is said to be alienated, it can mean two things. "It can suggest a collective experience of work alienation, as reflected in absenteeism, tardiness, goldbricking, sabotage, and so on, that results from the prevailing social and physical conditions (mechanisation, impersonal

control through rules and regulations, and so on) within the organisation; it can also suggest an individual worker's personal view of a job that does not meet salient needs (unique to the individual) regardless of how other workers view the situation" (Kanungo, 1982, p.61).

1.4.3 Measurement of the concept: Another source of confusion arises from describing and measuring the concept of alienation in two different ways. The term alienation is sometimes used to imply objective social conditions directly observed by others and later attributed to individuals and groups. Among sociologists, Blauner (1964), for example, considered mechanisation and division of labour to be the alienating conditions, and people working under these conditions were assumed to be experiencing alienation. In the same way, psychologists (Argyris, 1964; McGregor, 1960) have argued that the presence of certain organisational climate (non-participation, pyramidal values), certain management philosophies (Theory 'X' assumption), and certain job characteristics (repetition, routine, and so on) are good measures of alienating conditions. Workers experiencing these objective social conditions were assumed to be experiencing alienation at work. Also, there have been attempts at interpreting and measuring the concepts as subjective psychological states of the individual worker. Such psychological states of the worker cannot be directly observed by outsiders, but are only experienced by the worker. Understanding work alienation in these two ways has implications for the operationalisation of the concept. States of alienation measured through the identification of objective conditions may not be equal to the subjective measures of the concept. Mechanisation, division of labour, certain routine aspects of a job, etc. in an organisation may be viewed by external observers as necessarily contributing to a state of alienation in the worker, such as powerlessness and/or meaninglessness; but the worker may not perceive the situation in the same way. Mechanisation and division of labour may create greater job involvement among many workers in developing countries who prefer clarity of job descriptions and bounded responsibilities, presumably because of their authoritarian upbringing (Kanungo, 1982 pp.61-62). From a study in India, Kher reported that "the average workers did not find anything wrong in mere receiving the orders from their superiors" (Kher, 1988, p.24).

1.4.4

Failure to distinguish the phenomenon from causes and effects: Researchers have failed to maintain the conceptual distinctions between the state of work alienation and its antecedent conditions on the one hand and its consequent states on the other. The confusion results from mistaking the cause for the effect. Mechanisation and division of labour may be the environmental conditions or causes of work alienation, but they do not represent a description of the state of alienation itself. Josephson and Josephson pointed out that "Durkheim's notion of anomie or normlessness can be regarded as an important cause of alienation but should not be confused with alienation as a state of mind, alienation should not be confused with 'social disorganisation', since estrangement may be found in highly organised bureaucracies. Alienation is often associated with loneliness, but again, not all lonely people are estranged" (Josephson and Josephson, 1973, p.166). But both the sociological and the psychological formulations neglect to maintain the distinction between alienating conditions and alienated states. Most empirical researchers have attempted to measure the state of alienation through indices of alienating conditions instead of directly measuring it, assuming that the two are equivalent. As an example "Seeman (1959) considered normlessness to be the perception of a social situation in which rules and norms regulating behaviour had broken down. Such perception may be the antecedent conditions of the alienated state, but they cannot be identified with the alienated state itself. Likewise, isolation, meaninglessness and powerlessness may describe different conditions or causes of alienation, but should not be equated with it. Even when self-estrangement was measured by Blauner (1964), he used several indexes of alienating conditions on the job, such as whether the job met the worker's achievement needs. Shepard (1971) also measured the different forms of alienation suggested by Seeman (1959) by measuring various job conditions, such as whether the job provided opportunity for participation and control (powerlessness), how the job fit into the total operation of the organisation (meaninglessness) and the like. Clearly these kinds of questions probe into the assumed conditions or causes of alienation rather than into the state of alienation itself" (Kanungo, 1982, p.63). In the psychological literature also, similar confusion are noticed. "... Saleh and Hosek (1976) have proposed a measure of job involvement that contains three dis-

tinct categories of items. The first category measures directly the state of alienation ... The second category seems to index the antecedent conditions or presumed causes of alienation,third category measures workers' behaviours and experiences that often (but not necessarily) result from the alienated state..... Thus Saleh and Hosek combine indices of causal conditions and effects of alienating states into one single instrument. Such an instrument cannot provide meaningful data on the state of alienation of the worker" (Kanungo, 1979, p.129). For conceptual clarity, state of alienation is to be measured separately from its causes and effects.

1.4.5 Nature of the psychological state of work alienation: The psychological state of work alienation is usually described as both a cognitive and an affective state of the worker. Such descriptions are another source of confusion. Researchers find it difficult to dissociate the concept of work alienation from its negative affect. Traditionally, work alienation has been associated with negative emotional states such as boredom, frustration, anger and dissatisfaction experienced on the job and work involvement has been associated with positive emotional states, such as excitement, pleasantness and satisfaction experienced on the job. Thus, many measures of work alienation or involvement contain items reflecting levels of job satisfaction or dissatisfaction. The item 'The major satisfaction in my life comes from my job' in the job involvement scale developed by Lodahl and Kejner (1965, pp.24-33) is an example. Empirical studies of Lawler and Hall (1970, pp.305-312) and Seeman (1971, pp.135-43) clearly indicate that work involvement and job satisfaction are not the same thing even though they may be related to one another. "It may be more useful to conceptualize the states of work involvement or alienation as cognitive or belief states of identity or dissociation (separateness) with work rather than as psychological states necessarily associated with feelings of satisfaction or dissatisfaction on the job" (Kanungo, 1982, p.64). A cognitive state of dissociation may or may not accompany a positive or negative affect under certain conditions. "A highly involved worker under certain conditions may feel a high level of satisfaction with his/her work and under other conditions may experience deep dissatisfaction" (Kanungo, 1979, pp.129-130). It is, therefore, nece-

ssary to identify conditions under which work involvement and alienation are related to positive, negative and neutral affective states of workers.

1.4.6 Nature of causation: Confusion also arises from the manner in which the causes of work alienation have been conceptualized. There are some researchers who have emphasized the characteristics of the work situation (situational variables) as the major determinants of work alienation. There are others who have emphasized the Protestant-work-ethic background as the major determinants of work alienation. "These two sets of determinants can be viewed as two kinds of causation: contemporaneous and historical. They can also be described as precipitating and predisposing causes of work alienation. The predisposing or historical causes of work alienation have to be found in the past socialization history of the worker" (Kanungo, 1982, p.64). Work involvement of an individual is determined by the early socialization process, during which the individual internalizes the values of the goodness of work or the Protestant ethic (Lodahl and Kejner, 1965, pp.24-33). Viewed this way, alienation from or involvement with work of the individual becomes a stable characteristic which the individual carries from one situation to another. The historical causation of alienation is viewed in a slightly different way by the sociologists. According to them job experience is central to an individual's life. The long-standing social arrangements of technology, division of labour and capitalist property institutions have created a state of alienation from work. Since work is central to one's life, alienation from work necessarily leads to alienation from all other aspects of life. The state of alienation has also been conceived as being caused by contemporaneous events or precipitating factors. Lawler and Hall consider the job-involved person as one who is "affected very much by his whole job situation, presumably because he perceives his job as an important part of his self-concept and perhaps as a place to satisfy his important needs (eg. his need for self esteem)" (Lawler and Hall, 1970, pp.310-11). They consider the worker's present perceptions of the need-satisfying potentialities of the job to be a major determinant of the state of involvement. It is, therefore, "apparent that a state of work alienation or involvement may be jointly caused by two sets of events - one a historical or predisposing set of events and the other a contemporaneous or precipitating set of

events. Through the socialisation process (cumulative learning and experience of the past) the individual may develop a set of relatively stable beliefs and values regarding work, and the present experience with work may either reinforce the beliefs and values or modify them" (Kanungo, 1982, p.65).

1.4.7 Distinguishing work alienation and involvement from intrinsic motivation: The ambiguity regarding the nature of work alienation that stems from the fact that work involvement has typically been related to the satisfaction of intrinsic, rather than extrinsic needs is another source of confusion. Both sociologists and psychologists have stressed that greater alienation or lower involvement results only when job situations lack the opportunity for satisfaction of intrinsic needs such as self-esteem, achievement, autonomy, control and self-actualisation. Intrinsic motivation and involvement have often been used synonymously both by psychologists and sociologists, because they have assumed that a person's involvement in a job will be a function of intrinsic factors, such as interesting work, independence and responsibility of the job, rather than extrinsic factors, such as pay, security and comfortable working conditions. This has led to the suggestion that when job design provides greater responsibility and autonomy on the job, workers are likely to be more involved in their job (Herzberg, 1968, pp.53-62; Lawler and Hall, 1970, pp.305-12). It is also argued (Gorn and Kanungo 1980, pp.265-277; Kanungo, 1979, pp.119-38; 1981, pp.1-16) that satisfaction of intrinsic needs on the job may be sufficient but not a necessary condition for job involvement. "While satisfaction of intrinsic needs, such as the need for self-esteem or self actualization, might increase the likelihood of work involvement, it neither characterizes nor defines the state of work involvement itself. Thus, a conceptual distinction should be made between intrinsic motivation and job involvement, a distinction supported by the work of Lawler and Hall (1970). Such a distinction is particularly warranted, given the possibility that the direct link between intrinsic motivation and the creation of high involvement may not be as strong as previously believed. It is quite likely that involvement in work may depend upon the degree to which the job is perceived to meet salient needs, be they intrinsic or extrinsic" (Kanungo, 1982, p.66).

1.4.8 Different aspects of work involvement and alienation: Both in sociological and psychological literature, the terms 'work' and 'job' have been used synonymously. The concept of 'work' is complex, more general and includes many specific identifiable components. For example, involvement with or alienation from work may include involvement with or alienation from work in general, occupation, organisation or job. Most researchers, while dealing with problems of worker alienation, have failed to differentiate the various components of work towards which a worker may show alienation or involvement. In developing a measure for job involvement, Lodahl and Kejner (1965, pp.24-33) includes items such as 'I'll stay overtime to finish a job even if I am not paid for it' and 'to me, work is only a small part of who I am'. The former would tend to measure involvement in a particular job and the latter would reflect an individual's involvement with work in general relative to other non-work activities (family, leisure, etc.). Involvement with work is considered a characteristic of the individual resulting from the Protestant-ethic type of socialization which he carries from one job situation to another. "Involvement in a particular job may be somewhat different from the individual's involvement with work in general. Involvement in a particular job is determined by a person's job satisfaction. Active involvement in a job should be dependent upon whether that particular job satisfies one's salient needs" (Kanungo, 1982, p.67). Gorn and Kanungo (1980, pp.265-77) tested the validity of such a distinction between particular job involvement and general work involvement.

1.4.9 Lack of integrated approach: Another confusion arises from the lack of an integrated approach to the study of alienation from or involvement with work. The sociological and the psychological researches on the concept run parallel to each other. Kanungo (1982) has identified the difference on three fronts. Firstly, in the sociological writings (Marx, 1932; Seeman, 1971, pp.135-43) the emphasis is on the 'state of alienation' among workers, whereas in the psychological writings (Lawlar and Hall, 1970, pp.305-312) Saleh and Hosek, 1976, pp.213-24) the emphasis is on the 'state of involvement' of the worker. The sociologists have dealt with the negative side of the concept while psychologists have dealt with the positive side. "The two approaches seem to complement each other and yet, at first glance they

appear quite divergent. As a result, the interface between the two approaches has never been examined" (Kanungo, 1982, p.68). The second difference is that the sociological treatment of work alienation considers the phenomenon at the group or social-system level, whereas the psychological treatment of work involvement concentrates on analysis at the individual level. Thirdly, in describing the concept, sociologists generally use 'epiphenomenal categories' such as 'loneliness', 'normlessness', or isolation, (Johnson, 1973, pp.27-51; Seeman, 1959, pp 783-91), whereas psychologists restrict the description to behavioural terms such as 'working overtime', 'participating in decision making process' or 'feeling satisfied at work' (Saleh and Hosek, 1976, pp 213-24). Epiphenomenal abstraction in sociological writings represent attempts at collectively summarising and classifying a series of specific behaviours under a single category. This is quite different from the psychological descriptions of the phenomenon which are purely in terms of specific behaviour. "Differences in the levels of analysis and in the usage of descriptive terminology representing different levels of abstraction have created difficulties in achieving an integration of the psychological and sociological approaches. Because of the lack of integration, psychologists and sociologists have failed to understand one another and consequently have ignored valuable literature outside their own discipline" (Kanungo, 1982, p.68).

- 1.4.10 The problem of construct validity of the measuring instrument: The construct of job and work alienation tend to carry excess meaning. For example, job involvement means both the psychological identification with a job and the performance-self-esteem contingency. Therefore, the techniques developed to measure the constructs suffer from problems of construct validity. The most widely used job involvement scale (Lodahl and Kejner, 1965, pp.24-33), for instance, contains items designed to measure both psychological identification and performance-self-esteem contingency notions. But these are two different notions and Lodahl and Kejner do not provide any explanation regarding how to interpret the relationship between the two notions. Rabinowitz and Hall state "although Lodahl and Kejner's factor analyses revealed the multidimensional nature of job involvement, these different dimensions have never been clearly identified and labelled. Most

later researchers have taken a few items from Lodahl and Kejner's questionnaire, with no consideration of what factor they loaded on, and then called their scale 'job involvement'. To date, there is still no agreement on just what the Lodahl and Kejner job involvement scale really is!" Rabinowitz and Hall, (1977, p.270). Saleh and Hosek (1976, pp.213-24), more recently have developed a new job involvement scale containing 30 items. These 30 items were selected on the basis of factor analysis from a total of 65 items taken from the work of earlier researchers. Saleh and Hosek maintained that their 30-item scale measured three dimensions of job involvement: active participation in the job, perception of work as a central life interest, and perception of job performance as central to self-esteem. As indicated earlier, job involvement as a psychological identification or central life interest should not be confused with that of intrinsic motivation on the job. But the Saleh and Hosek scale puts the two notions together as dimensions of job involvement and confuse the two issues (Kanungo, 1982, pp. 69-70). Both the most widely used Lodahl and Kejner scale and the recent Saleh and Hosek scale exclude the possibility of finding extrinsically motivated workers to be more job involved. Both the scales are insensitive to the logical distinction between intrinsic motivation and involvement. Similar problems are noticed in the scales developed by sociologists to measure alienation. For example, Shepard (1971) constructed separate scales to measure different forms of alienation suggested by Seeman (1959, pp.783-91). His scale includes many items that measure intrinsic motivations. His 'powerlessness' scale includes items that measure the level of autonomy and control and his 'meaninglessness' scale contains items that measure the level of feedback workers get from their work environment. Another problem that surrounded the three scales is that the terms 'job' and 'work' are used loosely in the scales. In each scale, some items make reference to involvement in specific job situations. "On the grounds of both the failure to distinguish involvement from intrinsic motivation and the failure to consistently use a single context (job or work or occupation) while measuring workers' involvement, the construct validity of the existing scales is questionable" (Kanungo, 1982, p.70).

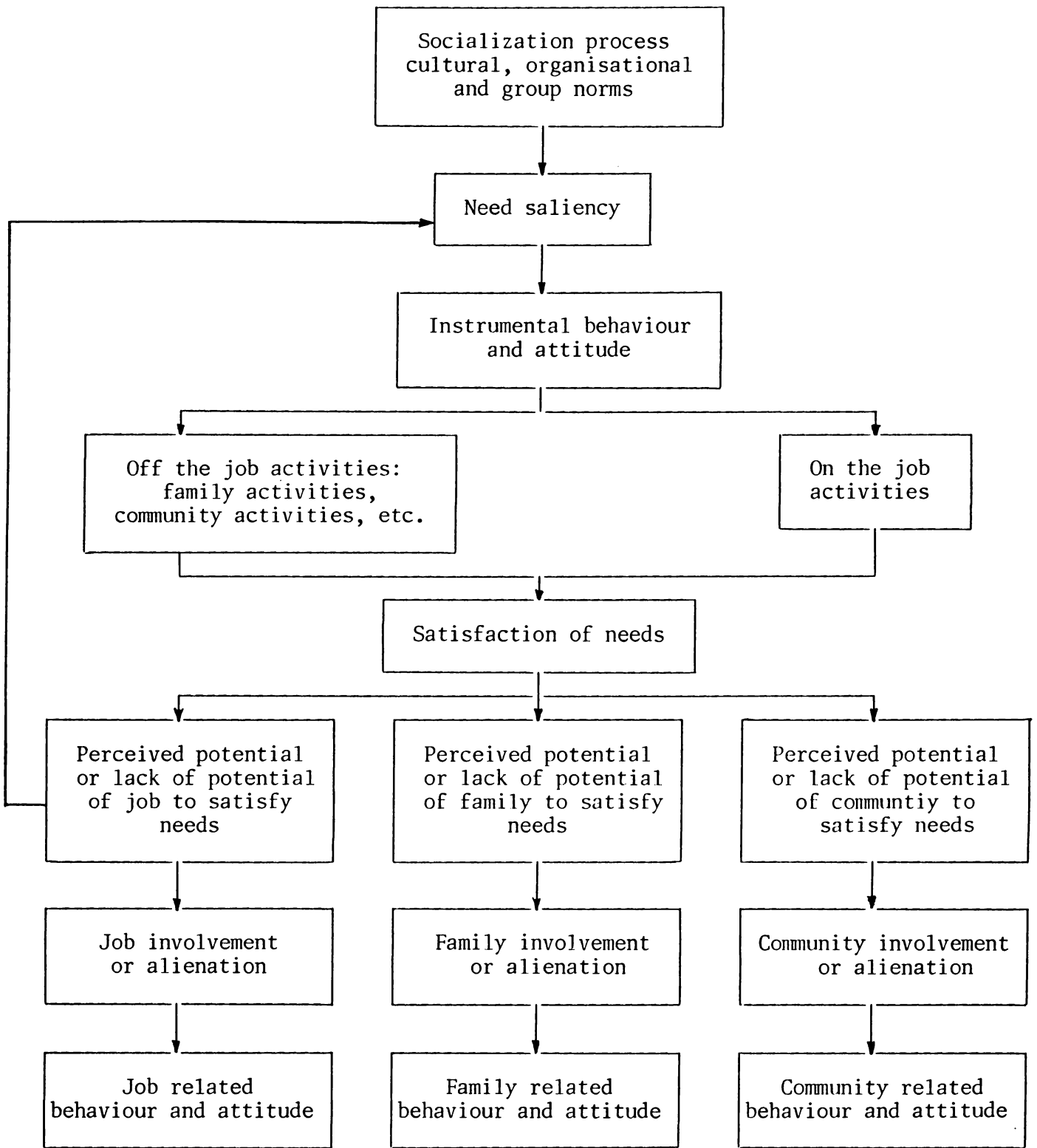
1.4.11 Problems of interpretation of empirical data: Problems of interpretation of empirical data arise from the problems of construct validity of the measures that provide the data. "It seems that the results of many psychological and sociological studies of job involvement and their correlates (including causes and effects) ... reflect more artifacts than true relationships" (Kanungo, 1982, p.71). Steers says "many employees today are unable to identify with the work they do or with their employer. They work on jobs that have little meaning and under conditions over which they have little control. As such it is not surprising to find workers who are alienated and dissatisfied" (Steers, 1981, p.10). Kanungo (1982) says that such generalized conclusions and the results on which they are based are questionable owing to two major problems inherent in the studies of job involvement. The first problem arises from the use of measures that do not differentiate job involvement from intrinsic motivation. The second problem with the interpretation of empirical results in the field is due to the U.S. culture-based characteristics of the samples used in most studies. The U.S. culture-based workers are more likely to consider intrinsic needs as more salient in their lives than extrinsic needs. Hence, it is possible that these workers would show greater psychological identification with their jobs when their jobs offered them more intrinsic outcomes such as autonomy and achievement. "Such relationships, however, may not hold true for workers belonging to other cultures holding opposite sets of values with regard to job cultures. In order to find out the true relationship of job involvement with its task and personal correlates, one needs to assess and, if possible, eliminate the confounding effects of the culture bias of respondents. This can be done only through the use of cross-cultural samples in studies on job involvement" (Kanungo, 1982, p. 73).

1.4.12 Motivational approach: An integrated approach, integrating both sociological and psychological approaches, formulated by Kanungo is labelled as 'motivational approach' (Kanungo, 1982, pp. 74-93). In this approach alienation and involvement are considered as undimensional with bipolar states of the same phenomenon. Distinctions are made between cognitive states of alienation/ involvement from the job, and work. Job involvement refers to a specific belief regarding the present job while work involvement refers to a

general belief. The belief also operates at different levels. Job involvement operates at a descriptive level; but work involvement belief operates at a normative level. Job involvement belief describes workers' job identification as they are; work involvement belief describes workers' view of their relationship with work as it should be. Involvement/alienation in work context is also distinguished from extrinsic motivation of workers. All behaviour including behaviour in work situation are considered to spring from need states of the individual and is directed towards obtaining outcomes for the satisfaction of salient needs. The individual will make inferences about his own job alienation/involvement by observing his/her own behaviour and the context in which it occurs. A diagrammatic representation of the motivational formulation to involvement/alienation, its causes and its effects as formulated by Kanungo (1982) is presented in Fig. 1.1. In the motivational formulation, the five variants of self-estrangement, social-isolation, powerlessness, meaninglessness and normlessness are described as representing work situations that frustrate some salient needs of the individual (Kanungo, 1982, pp. 89-90).

1.5.0 Focus of the present study

1.5.1 Optimum utilization of available resources of capital, material and people is an important aspect of any organisation in order to achieve greater effectiveness in implementation of projects. It has been well established that the effectiveness of the individual at work, to a great extent, depends on his/her personal feelings of involvement with nature of work he/she is doing and also with the work context factors. Lack of enthusiasm and interest among the employees of an organisation may be due to the unfavourable environment in which the employees are working. The present study is to explore the perceived beliefs and feelings of a set of professional engineers from and above the rank of assistant executive engineers working in the Kerala Water Authority with respect to the various aspects of job, work, job outcomes and the organisation. It is hoped that the enquiry will elicit useful information regarding the linkage between the associated complex issues in the areas mentioned. This may be of help in framing suitable strategies for developing a favourable climate for better effecti-



(Source: Kanungo, 1982, p. 83.)

Fig. 1.1. The Motivational Formulation to Involvement and Alienation

veness and improved efficiency. The enquiry for collection of basic data is proposed to be carried out in tune with the concept of 'motivational approach' of 'alienation' developed by Kanungo (1979, pp.119-38; 1982) using the measuring scales developed by him (1982) and also other relevant scales.

1.6.0 The context of the study

1.6.1 The present study was conducted in the Kerala Water Authority (KWA) and the subjects were the engineers from and above the rank of assistant executive engineers working in the KWA. The KWA is responsible for the development and regulation of water supply and waste water collection and disposal in the state of Kerala and for matters connected therewith. Prior to 1956, water supply and drainage in the erstwhile Travancore Cochin State were the responsibility of the 'public works department' of the State. With a view to devote more attention to the implementation of water supply schemes in general, a 'water works circle' was formed in the department and a superintending engineer for water works and drainage schemes was appointed on 30th May 1955. Towards the close of the year 1955-56, orders were passed by the government separating the 'public health engineering division' from the 'public health department' and sanctioning an independent department as 'public health engineering'. This independent 'public health engineering department', combining 'water works circle' of the 'public works department' and the 'public health engineering' branch of the 'public health department', under a chief engineer came into existence on 1st April 1956. After seven months of formation of the 'public health engineering department', State reorganization took place and the newly formed Kerala State came into existence from 1st November, 1956. The development and regulation of water supply and waste water collection and disposal in Kerala State continued to be the responsibility of the 'public health engineering department'.

1.6.2 In accordance with the U.N. proclamation, India adopted 1981-90 as the 'International Water Supply and Sanitation Decade'. To cope with the increased tempo of work during the decade, the 'public health engineering department' of the State was converted into an autonomous body, the 'Kerala

Water and Waste Water Authority' on 1st April, 1984 by the promulgation of an ordinance by the government of Kerala. 'Kerala Water Supply and Sewerage Act 1986' modified the name of 'Kerala Water and Waste Water Authority' as 'Kerala Water Authority'.

1.6.3 Structure of Kerala Water Authority as on 31st March 1988: The various activities of the KWA were controlled by a Board with the managing director acting as the chief executive. At the head office in Trivandrum, the managing director is assisted by the following senior executives:

1. The secretary to the KWA,
2. The chief engineer, planning services and general (PS & GL) and
3. The finance manager and chief accounts officer.

The secretary attends to all matters relating to board meetings. He is assisted by his subordinate staff. The chief engineer (PS & GL) is concerned with all staff matters, designs, purchases and monitoring special projects. An administrative officer assists him on staff matters. Two deputy chief engineers, one for 'general and design' including purchase and the other for 'special projects management', assist the chief engineer in their respective areas. A 'superintending engineer - monitoring', also assists the chief engineer in monitoring the special project activities. Under the deputy chief engineers and superintending engineer, executive engineers and other subordinate staff work as specialists in the respective areas. The finance manager and chief accounts officer is in overall charge of all the matters relating to finance viz. funds procurement and allotment, revenue and expenditure accounts and auditing. He is assisted by the accounts manager and other subordinate staff. For the execution of works, the managing director is assisted by three regional chief engineers with headquarters in Trivandrum for southern region, Ernakulam for central region and Calicut for northern region, respectively. Each regional chief engineer, is assisted in his office by a deputy chief engineer, executive engineers, administrative officer, accounts officer and their subordinate technical and ministerial officers. For the field activities superintending engineers assist the chief engineer. Each superintending engineer in his office is assisted by an executive engineer (personal assistant), assistant engineer, accounts officer, superintendent and other technical and ministerial staff. For

execution of works, executive engineers who have direct control of works in the field assist the superintending engineer. The executive engineers are assisted by a technical assistant (assistant executive engineer), divisional accountant, junior superintendent and other staff in their offices. For field activities, the executive engineers are assisted by assistant executive engineers. Assistant executive engineers are assisted by subordinate technical and non-technical staff in their offices. The works under the control of assistant executive engineers are supervised by assistant engineers who are, in turn, assisted by overseers and work superintendents in the field (organisational chart at various levels are given in Appendix I).

- 1.6.4 Problems of the 'Kerala Water Authority' as perceived by some of the senior officers: As a prelude to the present study of organisational alienation/involvement, the researcher elicited the views of the senior officers (superintending engineers and above) on the various aspects concerning the KWA by distributing a questionnaire consisting of 32 questions among them. The responses were obtained in the form of yes/no/no comment. Twelve officers, out of eighteen, responded. (The questionnaire and the item-wise responses are given in Appendix II). Problems of the KWA revealed from the responses, relate to certain aspects of financial, technical, administration, personnel, political and community participation. Many of them are, therefore, beyond the capacity of the senior officers of the KWA. On the personnel area, the responses indicate that the people working in the KWA are not contributing their best even though they are capable of better performance (items 26, 27). It is also observed that perception and feelings of people working for the KWA are not taken into account while framing policies, programmes and procedures (item 28). However, the officers support a system of periodical evaluation of the perception and feelings of the people working in the KWA (item 29). Officers feel that people working in the KWA do not show initiative in their work nor take responsibility (items 30,31). It is also observed that the overall morale in the KWA is not at a satisfactory level (item 32). Thus, it seems that a good percentage of the problems affecting the personnel in the organisation could be eliminated by creating a favourable work environment.

1.6.5 As indicated, the KWA was formerly a part of government and later converted into an autonomous body owned by the government. Thus the organisation of the KWA as a system, can function only in a manner similar to that of a governmental bureaucratic system. By and large, in such bureaucratic systems, little importance is given to the morale, motivation, and the perception and feelings of the people who constitute the organisation. It is in this background that the present study was carried out among the professional engineers from and above the rank of assistant executive engineers working in the KWA. The study is intended to explore the perceived beliefs of these professional engineers with respect to importance of job outcome, job involvement, work involvement, organisational alienation/involvement, and feelings of job satisfaction.

1.6.6 Scope, methodology of the study reported, objectives and hypotheses are discussed in the next chapter. The tools employed for measurement and the procedures adopted for data analyses are also explained.

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CHAPTER II
SCOPE AND METHODOLOGY

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CHAPTER II

SCOPE AND METHODOLOGY

2.1.0 Introduction

2.1.1. The sociological and psychological approaches to alienation/involvement deal with the two poles of the same continuum. The conceptual problems arising from these two streams of thought, the problems of measurement and the difficulties in the interpretation of empirical results were briefly explained in the previous chapter. Eliminating such problems Kanungo (1982) has integrated these two streams of thought and developed a motivational formulation of the 'concept of alienation/involvement'. In line with the motivational formulation, Kanungo (1982) also developed measures for the assessment of the psychological state of alienation/involvement which are free of intrinsic need bias. Also these measuring scales were found to have cross-cultural validity (Misra et al, 1985, p.501). Therefore, in the present study, the motivational formulation of the 'concept of alienation/involvement' developed by Kanungo was followed. The scales developed by him for measuring perceived importance of job outcome, job satisfaction, job involvement and work involvement were used with slight modification. A new scale developed independently for measuring organisational alienation/involvement was also used.

2.1.2 In this chapter, the scope, methodology, objectives and hypotheses are stated. The tools employed for measurement and the procedure developed for data analyses are also explained.

2.2.0 Broad objectives of the study

2.2.1 The effectiveness of an organisation depends on the members who constitute the organisation. This in turn, depends on their personal beliefs regarding work content and context factors. One of the hurdles in the proper

utilisation of human resource arises from the members' degree of perceived alienation/involvement from/in the organisation. But it has been indicated that it is possible to create a favourable working climate even in a governmental bureaucratic set up (Jacob, 1987,198-205). The scope of the present study is limited to exploring the perceived beliefs of the engineers in the rank of assistant executive engineers and above in the Kerala Water Authority (KWA) with respect to the organisation, job involvement, work involvement, importance of job outcome and feelings of job satisfaction. Organisational alienation/involvement is taken as the dependent variable and perceived importance of job outcome, job involvement, job satisfaction, and work involvement are treated as independent variables.

2.3.0 Specific objectives of the study

2.3.1 Specific objectives are stated below:

- i. To measure the inter-relatedness and degree of contribution of self-estrangement, social isolation, meaninglessness, normlessness and powerlessness of the subjects on organisational alienation/involvement.
- ii. To measure the overall organisational alienation/involvement of the engineers working in the KWA.
- iii. To study the influence of personal background factors of respondents on organisational alienation/involvement.
- iv. To measure the degree of correlation among job satisfaction, perceived importance of job outcome (extrinsically/intrinsically motivated), job involvement, work involvement and organisational alienation/involvement.
- v. To identify the two most and least salient needs of the whole group of members in the organisation and also that of different sub-groups.

2.4.0 Hypotheses

2.4.1 The following hypotheses were tested in this study.

- i. a) Among the variables that contribute to organisational alienation, 'normlessness' dimension is significantly more dominant at the level of superintending engineers and above than at that of

- executive engineers and assistant executive engineers.
- b) 'Powerlessness' dimension is significantly more dominant at executive engineers' level than at the levels of assistant executive engineers and superintending engineers and above.
 - c) 'Self-estrangement' dimension is more dominant at assistant executive engineers' level than at the levels of executive engineers and superintending engineers and above.
 - d) There is no significant difference in 'meaninglessness' dimension among different levels in the organisation as all the subjects are in the middle and senior levels.
 - e) There is no significant difference in 'social isolation' dimension among different levels of officers.
- ii. The degree of organisational alienation is less at higher levels than at lower levels of hierarchy in the organisation.
 - iii. The degree of organisational alienation is more among officers of 40 years of age and below than officers of 41 years and above.
 - iv. The degree of organisational alienation among males is more than that of female officers.
 - v. The degree of organisational alienation is significantly higher among the officers with post graduate degree/training in comparison with others.
 - vi. The degree of organisational alienation is less among the officers without degree than those with degree in engineering.
 - vii. Extrinsically motivated individuals are less likely to be involved in their job than intrinsically motivated individuals.
 - viii. More organisation-involved officers are more job satisfied than those not so involved.
 - ix. More organisation-involved officers are more job involved than those not so involved.

2.5.0 **Organisational alienation/involvement:
assumptions and definitions of concepts**

2.5.1 There are certain assumptions in the motivational frame-work to study alienation/involvement. They are briefly described below:

- i. The terms 'alienation' and 'involvement' are used to indicate bipolar states of the same phenomenon. In other words, alienation/involvement is a continuous variable. Employees are referred to as more involved (less alienated) or less involved (more alienated) in their job situation.
- ii. All behaviour, including behaviour in work situation spring from need states of the individual and are directed towards obtaining outcomes for the satisfaction of salient needs.
- iii. The development of a need structure within the individual, in terms of its saliency, is influenced by various socialising factors such as group, cultural and organisational norms.
- iv. To the extent that an individual perceives his salient needs as capable of being met on the job, he will apply himself to the job with devotion. Conversely, the extent to which an individual perceives his salient needs as capable of being met outside the job, he will redirect his energy to various off-the job activities.
- v. The individual will make inferences about his/her own job involvement or alienation by observing his/her own behaviour and the context in which it occurs.
- vi. "A distinction is made between involvement with or alienation from work in general and involvement with or alienation from a specific job" (Kanungo, 1982 p.79).
- vii. The concept of alienation/involvement is considered as cognitive states of an individual. Viewed in this manner, job and work alienation/involvement cannot be measured with existing instruments designed by Blood (1969, pp.456-59); Lodahl and Kejner (1965, pp.24-33); Saleh and Hosek (1976, pp.213-24); Shepard (1971) and Warr, Cook and Wall (1979, pp.129-48).

2.5.2 Definitions of organisational alienation/involvement and other relevant concepts are as follows:

- i. Organisational alienation: Organisational alienation is defined as the state of psychological dissociation of a member with his/her organisation insofar as organisation is perceived as not having the potential to satisfy his/her needs and expectations. Organisational involvement

is the other extreme of the same continuum.

- ii. Operational definitions of organisational alienation: Organisational alienation is measured in terms of the degree of psychological dissociation an individual has expressed with the institution where he works. The organisational alienation is basically the belief states of the individuals who constitute the organisation characterised by self-estrangement, social isolation, powerlessness, meaninglessness and normlessness. A diagrammatic presentation is given in Fig.2.1.
- iii. Self-estrangement: Self-estrangement experience of an individual in an organisation is defined as lack of opportunity to utilise his/her potentialities that results in a sense of non-achievement (and as a consequence, a feeling of non-identity).
- iv. Social isolation: Social isolation of an individual is his/her experience of a sense of not belonging to work teams within the organisation.
- v. Meaninglessness: Meaninglessness of an individual in an organisation is his/her experience of a sense of no meaning (low sense of responsibility) in doing the duties assigned, as a consequence of extreme work simplification that takes away discretionary content in the nature of work.
- vi. Powerlessness: Powerlessness of an individual in an organisation is his/her experience of lack of freedom (autonomy) and control in doing the duties assigned.
- vii. Normlessness: Normlessness of an individual in an organisation is defined as the experience of a sense of lack of adequate information (norms relating to policies, rules and regulations) to guide behaviour.
- viii. Job outcome: Job outcome is defined as the perceived outcome of job performance in the organisational context. The individual may perceive the job outcome relevant to the satisfaction of intrinsic or extrinsic needs.
- ix. Intrinsically motivated individuals: Those individuals who perceive the importance of esteem, achievement and growth needs are classified as intrinsically motivated individuals.
- x. Extrinsically motivated individuals: Those individuals who perceive the importance of physiological or survival, security and social needs at

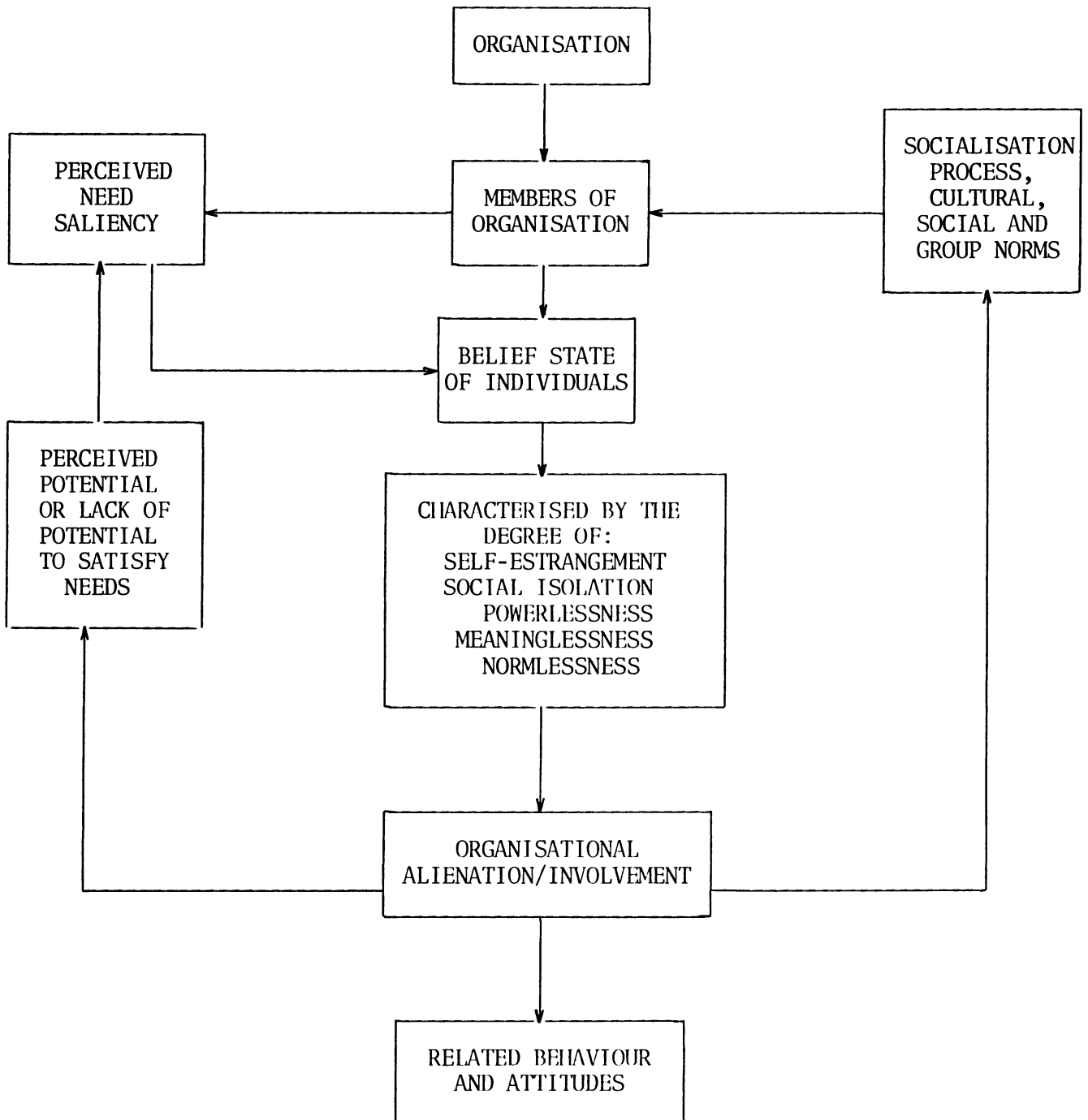


FIG. 2.1. Diagrammatic Representation of Organisational Alienation/Involvement

work are classified as extrinsically motivated individuals.

- xi. Job satisfaction: Job satisfaction is defined as a person's affective evaluative response to different aspects of his job. The job aspects include not only intrinsic factors, but also extrinsic factors.
- xii. Work involvement: Work involvement concept is defined as "a generalised cognitive (or belief) state of psychological identification with work, insofar as work is perceived to have the potentiality to satisfy one's salient needs and expectations"(Kanungo, 1979, p.131). Work is different from the job in the sense that work is a generalised normative cognitive state of the individual historically caused. A job, on the other hand, is a particular position a person holds within an organisation.
- xiii. Work alienation: Work alienation is defined "as a generalised cognitive (or belief) state of psychological separation from work insofar as work is perceived to lack the potentiality for satisfying one's salient needs and expectations" (Kanungo, 1979, p.131).
- xiv. Job involvement: "An individual's involvement with a given job is defined as a specific cognitive belief state of psychological identification with that job". Likewise, "alienation from a given job is defined as a specific cognitive belief state of psychological separation from that job" (Kanungo, 1982, p.80).

2.6.0 Methodology

2.6.1 Kanungo has argued against the usage of hitherto commonly used measuring instruments of Blood (1969, pp.456-59), Lodahl and Kejner (1965, pp.24-33), Saleh and Hosek (1976, pp.213-24), Shepard (1971), and Warr, Cook and Wall (1979, pp.129-48) for measuring job involvement and work involvement in future empirical studies. He contends that these instruments suffer from conceptual ambiguity and measurement inadequacies. Also the instruments contain items that reflect not only workers 'involvement as a state of psychological identification', but also 'states of their intrinsic motivation'. He further points out that the constructs of 'job' and 'work' have been used in an interchangeable manner creating problems of construct vali-

dity. The instruments contain items that confuses the issues of identifying the antecedent conditions of job involvement and its subsequent effects. According to him, such problems with most of these instruments make their validity questionable (Kanungo 1982, pp.59-73).

2.6.2 According to the definitions of job alienation/involvement and work alienation/involvement in the motivational formulation, Kanungo (1982) developed scales for measuring job outcome, job satisfaction, job involvement and work involvement. In this study, these instruments with slight modifications in language are used (Appendix III, Parts I to IV). For measuring organisational alienation/involvement independently, with particular reference to KWA a new scale is developed and used (Appendix III, Part V).

2.6.3 Another questionnaire is designed to provide such personal and demographic data as sex, age, marital status, native district, level of education, length of total service, experience in the present job, salary and designation (Appendix III, Part VI). The name of the respondent is also included to identify the subject who filled up the questionnaires in order to follow up and obtain the filled up questionnaires from those who have not done so for some reason or other. Another intention is to examine whether any correlation between responses obtained and the performance of the subjects could be made as an extension of the present study at a later date. The name of the district is included to determine whether there is any significant difference between the subjects hailing from different districts within the state.

2.7.0 **Development of a scale for measuring organisational alienation/involvement**

2.7.1 In developing a scale for the measurement of organisational alienation/ involvement, particular emphasis is given to the study of alienation/ involvement in KWA (Appendix III, Part V). Organisational alienation is conceived as being indicated by epiphenomenal categories such as self-estrangement, social isolation, powerlessness, meaninglessness and normlessness as suggested by Seeman (1959, pp.783-91). These variables are already

defined in accordance with the motivational formulation of the concept of alienation/involvement.

2.7.2 In the present study, organisational alienation/involvement is measured through subjective statements reflecting the belief states of individuals. It might appear that some of the statements reflect alienating causes. But actually these statements reflect the belief states of the individual indicative of the affective conditions arising from the causes.

2.7.3 In preparing statements that reflect psychological belief states of alienation/involvement from/with the KWA, references were made to the available studies of related topics. In addition, discussions with a number of senior officers of the KWA were made and written statements which they thought relevant were obtained. Based on these primary information, a first level selection of statements was made. Statements covering positive actions and decisions of the individual were also included as filler items. Total statements were discussed in detail with two senior faculty members of the School of Management, Cochin University of Science and Technology. After discussions, 89 statements were selected for further refinement. The areas included in the schedule of statements were: self-estrangement, social isolation, powerlessness, meaninglessness and normlessness as defined earlier and certain possible actions and decisions of the individual in relation to the organisation as filler items.

2.7.4 Twelve senior faculty members associated with psychology, sociology and management in five institutions around Cochin representing two universities were selected to judge and determine the values and acceptability of the statements as a measure of alienation/involvement. They were requested to act as judges to determine the direction and extent of alienation/involvement of a respondent who agrees with the given statements (the instructions given along with the statements is furnished in Appendix IV).

2.7.5 All the judges did not respond to all the statements. Responses for each statement were obtained from 9 to 12 judges. The responses were tabulated and four best statements (eliminating more or less repeat/similar

statements) in each of the areas of self-estrangement, social isolation, powerlessness, meaninglessness, and normlessness were selected. In addition, six best statements indicating possible actions and decisions of the individual in relation to the organisation were also taken as filler items for testing the validity. (In Appendix V, the statements and the areas they pertain to are indicated).

2.7.6 The new instrument was given to 34 subjects from KWA for eliciting their responses. The instructions given to them were as follows:

"Twenty six statements are given below. These statements are intended to reflect various degrees of your alienation/involvement from/with the KWA. For each of the statements listed below you will find six possible response (answer) categories. Please indicate the degree of your agreement or disagreement with the statement by putting a tick (✓) mark in the appropriate response category (strongly agree, agree, mildly agree, mildly disagree, disagree and strongly disagree) printed against the statement.

This study is only for research purposes. Your honest response to the statement will enable the researcher to test the validity of certain concepts and theories in management. Your individual responses will be kept strictly confidential".

2.7.7 Responses obtained were analysed and scores assigned on a bipolar scale for the different categories of responses indicating involvement to alienation with a score range of 6 to 1 (that is, strong involvement 6, involvement 5, mild involvement 4, mild alienation 3, alienation 2 and strong alienation 1). Total scores for alienation/involvement was computed for each individual by adding the sub-scale scores of self-estrangement, social isolation, powerlessness, meaninglessness and normlessness. The scores of filler items which were not included in the alienation/involvement scale was separately taken to test the validity. These scores were statistically analysed to determine the correlation among the different factors (areas). Using Student's 't' the extent of significance of correlation among the various factors (areas) were also computed. Split half analysis of the

total items (excluding filler items) was also adopted to determine the correlation between the two halves to assess the internal consistency of the instruments. The results indicate a very high correlation among the five factors (areas) and between the two halves (significance level: less than 0.01). The results obtained are given in table 2.1. Internal consistency of the scale that was developed was found to be very high ($r=0.719$, $t=5.85$, significance level: 0.01). High correlation between the scores of alienation/involvement and validating scores indicates that the instrument is sufficiently valid to determine the degree of alienation/involvement of the subjects towards the organisation ($r=0.757$, $t=6.55$, significance level=0.01).

2.7.8 After about three weeks, the same sample subjects were given the same instrument again for their responses. (They were not informed in the first instance that they will be requested to furnish responses for the same instrument again). Out of 34 subjects, 31 responded and their responses were analysed in the same manner as was done earlier. The results indicated a very high correlation among the different areas. The results are furnished in Table 2.2. The similarity of the results obtained in a second test with the same instrument indicates adequate consistency of the instrument. The internal consistency of the instrument was again established in the second test by the observed correlation between the two halves and the validity by the high correlation between alienation/involvement scores and the validating scores.

2.7.9 Test-retest correlations of alienation/involvement among the different areas of the 31 subjects who responded for both test and retest were determined. The results are given in Table 2.3. Test-retest analyses of the various sub-scales indicate high correlation (significance level: less than 0.01) among the five areas in the two situations. The reliability of the organisational alienation/involvement scale (total score) was further established by the high correlation between test and retest. ($r = 0.864$, $t = 9.24$, significance level = 0.01).

Table 2.1: Correlation Among Different Factors (Areas) on Initial Testing of the Instrument (n=34)

Sl. No.	Correlation between Factor (area)	Correlation coefficient (r)	Student's 't'	Significance 't' value at 0.01 level	
1	Alienation/ Involvement Scale (Total Score)	Validating Scale (Score of filler items)	0.757	6.55	2.576
2	"	Self-estrangement (sub-scale)	0.854	9.28	2.576
3	"	Social Isolation (sub-scale)	0.824	8.23	2.576
4	"	Meaninglessness (sub-scale)	0.767	6.76	2.576
5	"	Normlessness (sub-scale)	0.766	6.74	2.576
6	"	Powerlessness (sub-scale)	0.671	5.12	2.576
7	Validating scale	Self-estrangement (sub-scale)	0.665	5.04	2.576
8	"	Social Isolation (sub-scale)	0.668	5.08	2.576
9	"	Meaninglessness (sub-scale)	0.521	3.45	2.576
10	"	Normlessness (sub-scale)	0.546	3.69	2.576
11	"	Powerlessness (sub-scale)	0.541	3.63	2.576
12	Split half I	Split half II	0.719	5.85	2.576

Table 2.2: Correlation Among Different Areas on a Second Test of the Instrument (n=31)

Sl. No.	Correlation between Factor (area)	Correlation between Factor (area)	Correlation coefficient (r)	Student's 't'	Significance 't' value at 0.01 level	't' value 0.05 level
1	Alienation/ Involvement Scale (Total Score)	Validating Scale (Score of filler items)	0.697	5.23	2.576	1.960
2	"	Self-estrangement (sub-scale)	0.887	10.34	2.576	1.960
3	"	Social Isolation (sub-scale)	0.851	8.72	2.576	1.960
4	"	Meaninglessness (sub-scale)	0.795	7.06	2.576	1.960
5	"	Normlessness (sub-scale)	0.812	7.49	2.576	1.960
6	"	Powerlessness (sub-scale)	0.769	6.48	2.576	1.960
7	Validating scale	Self-estrangement (sub-scale)	0.570	3.73	2.576	1.960
8	"	Social Isolation (sub-scale)	0.793	7.00	2.576	1.960
9	"	Meaninglessness (sub-scale)	0.636	4.44	2.576	1.960
10	"	Normlessness (sub-scale)	0.354	2.04	2.576	1.960
11	"	Powerlessness (sub-scale)	0.467	2.84	2.576	1.960
12	Split half I	Split half II	0.865	9.28	2.576	1.960

Table 2.3: Test-retest Correlation of the Score (Total) and sub-scale Scores (n=31)

Sl. No.	Correlation between test and retest	Correlation coefficient (r)	Student's 't'	Significance 't' value at 0.01 level
1	Alienation/Involvement scale	0.864	9.24	2.576
2	Validating scale	0.802	7.23	2.576
3	Self-estrangement (sub-scale)	0.823	7.80	2.576
4	Social isolation (sub-scale)	0.813	7.52	2.576
5	Meaninglessness (sub-scale)	0.765	6.40	2.576
6	Normlessness (sub-scale)	0.786	6.84	2.576
7	Powerlessness (sub-scale)	0.678	4.97	2.576

2.7.10 The analyses clearly indicate sufficient validity, internal consistency and test-retest reliability of the instrument designed to measure organisational alienation/involvement with respect to KWA.

2.7.11 As indicated earlier this instrument along with those developed by Kanungo (1982) are used for the present study. For collection of basic data all the scales are combined in the form of a booklet with a covering letter and distributed to the subjects for eliciting their responses (Appendix-III).

2.8.0 Procedure for data analyses

2.8.1 In Part I of the questionnaire, the subjects were required to rank 15 job outcome factors according to their perceived importance. The fifteen factors represent both intrinsic and extrinsic job related motivation factors. The seven extrinsic job factors are: security, adequate earning,

benefits, opportunity for future promotion, comfortable working conditions, sound organisational policies and fair pay for the work done. Four of the job factors are interpersonally mediated extrinsic job outcomes which are not differentiated from extrinsic job factors in the analysis. They are: respect and recognition (from superior and co-workers), good interpersonal relations, considerate and sympathetic superior and technically competent superior. Thus there are 11 extrinsic job factors in the questionnaire. The remaining four factors are intrinsic job factors. They are: interesting nature of work, responsibility and independence, achievement and opportunity for professional growth.

2.8.2 The main objectives of job outcome questionnaire are: (i) to classify the subjects as 'intrinsic need based job factors oriented', 'extrinsic need based job factors oriented', and those who are neither extrinsic or intrinsic 'need based job factors oriented' and (ii) to identify the most salient job need factors and least salient job need factors of the group as a whole (subjects) and that of various sub-groups.

2.8.3 An individual is not only motivated by intrinsic needs, but also by extrinsic needs. Even if an individual's most important job factor is extrinsic, his/her many other important factors can be intrinsic and therefore taking him/her as a total person, he/she may be intrinsic oriented person when we consider all the job outcome factors. For example, for a highly intrinsic job oriented person job security can be very important depending on his/her family background and therefore chances of certain subjects ranking security as number one and ranking other intrinsic factors just below it cannot be ruled out. This can happen in the other way too.

2.8.4 For classification of the individuals as extrinsic or intrinsic or neutral, the following procedure is adopted. The maximum number a subject can rank intrinsic job factors out of the possible fifteen items in the questionnaire is only four as there are only four intrinsic factors in the questionnaire. Therefore, it is decided to consider only the first four ranked items of a subject for measuring the status of an individual as

extrinsic/intrinsic. Scores are assigned to the given ranks from 4 to 1, the first rank getting a score of 4 and the fourth rank getting a score of 1. Scores of intrinsic job factors are considered positive while those of extrinsic job factors as negative. Considering the signs, if a subject is getting positive net score, he/she is considered as intrinsic job oriented person and if the score is negative the individual is categorised as extrinsic job oriented person. A subject who gets a score of zero is considered as an individual who can be motivated by both intrinsic and extrinsic job factors or one who can shift his need either to extrinsic or intrinsic job factors according to the situation. This procedure is different from the methods adopted by Kanungo (1982, p.122-123) and Misra and Kalro (1981, p.421-422). Kanungo (1982) first identified two each of the most important intrinsic job factors and extrinsic job factors of the group (total sample) on the basis of percentage of subjects who ranked it as most important and second most important. After identifying these factors, the subjects who ranked the chosen most important extrinsic factors as one and two are selected as extrinsic and those who ranked the chosen most intrinsic factors as one and two as intrinsic. The procedure adopted by Misra and Kalro (1981, pp.419-426) is very similar but not exactly the same. These procedures seem to have the defect of missing a basically intrinsic person, if he/she ranked 'security' or such other extrinsic items as most important or second in importance. The method adopted by the researcher explained above, is to include such subjects also as intrinsic. Otherwise such persons are to be classified as 'other category'. This may be true in the case of a person who is basically extrinsic. However, in the method adopted, subjects who are slightly more oriented either towards extrinsic or intrinsic job factors will also be classified as extrinsic or intrinsic as the case may be. Moreover, same individual can be classified into different groups, (age-wise, sex-wise, salary-wise, designation-wise, etc.). Criterion of importance of extrinsic and intrinsic job factors may differ from group to group. If the individuals are classified based on group preference, as done by Kanungo or Misra and Kalro, this may cause some confusion in the interpretation because the same individual may fit into different groups having different preferences. In the method adopted in the present study, classification is based entirely on the subject's (individual) responses and has no

relation to groups' importance of intrinsic/extrinsic job factors and hence the individual can fit into any group without alteration of his status as extrinsic or intrinsic. For testing certain hypotheses, it is necessary to identify the subjects of high orientation towards extrinsic job factors and intrinsic job factors. This is done by categorising the subjects as follows: those subjects who ranked any two of the extrinsic job factors as first and second are categorised as very extrinsic oriented persons; those who ranked any two of the intrinsic factors as first and second are categorised as very intrinsic oriented persons.

2.8.5 In order to determine the most important extrinsic job factors and most important intrinsic job factors of a group, the method similar to the one followed by Kanungo (1982) was adopted. That is, number of subjects who ranked the items as most important and second most important are determined for all extrinsic and intrinsic items. Then the two extrinsic and two intrinsic items that have the highest preferences are considered as two most important in the overall group. The same procedure is adopted to determine the two least important (that is, ranking of 15 and 14) extrinsic and intrinsic job factors for that group.

2.8.6 In Part II of the questionnaire, the subjects were asked to indicate on a six point scale their present level of satisfaction or dissatisfaction in their job (extremely satisfied, moderately satisfied, mildly satisfied, mildly dissatisfied, moderately dissatisfied and extremely dissatisfied) with respect to each of the job factors furnished in Part I of the questionnaire listed in random order. These items include four intrinsic (7, 11, 13, and 14) and eleven extrinsic (1, 2, 3, 4, 5, 6, 8, 9, 10, 12, and 15) job factors. In addition, the subjects were also asked to indicate their overall job satisfaction (item 16). Scores are assigned to the six levels from 6 (extremely satisfied) to 1 (extremely dissatisfied).

2.8.7 In order to make easy comparisons, the scores obtained are grouped as intrinsic (total scores of items 7,11,13, and 14), extrinsic (total scores of items 1, 2, 3, 4, 5, 6, 8, 9, 10, 12 and 15), overall job satisfaction (item 16) and total scores total of intrinsic, extrinsic and overall, com-

prising of all the 16 items). Since the number of items in each group vary, total score of each individual is converted into percentage of the total maximum score of each classification (that is, percentage calculated on possible maximum intrinsic score of 24, extrinsic score of 66, overall score of 6 and the total of all items of 96). Thus each individual will have a percentage value based on his responses. These percentage values are treated as moderated scores out of one hundred for each individual and are utilised for further analyses.

2.8.8 Part III of the questionnaire was to measure the degree of job involvement and Part IV was to measure the degree of work involvement of the subjects. The motivational approach advocates that a clear conceptual distinction should be made between job alienation/involvement and work alienation/involvement. Concept of work involvement is considered to reflect normative belief not necessarily dependent on a particular job's ability to satisfy the subject's salient needs.

2.8.9 In the job involvement questionnaire, the subjects were asked to furnish their responses to 15 job factors on a six point scale to express their degree of involvement in a agree-disagree format (strongly agree, agree, mildly agree, mildly disagree, disagree and strongly disagree). Among the fifteen factors, five factors (items 2, 5, 7, 12, and 14) were filler items. Scores of 6 (strongly agree) to 1 (strongly disagree) are assigned to the items. For negatively worded items, the scores are suitably changed to 1 (strongly agree) to 6 (strongly disagree). The total scores of all items (excluding filler items) are calculated for each individual. The scoring is such that higher score will indicate greater job involvement. In order to make comparisons easier the scores of each subject are converted based on a common denominator. For this, as was done in the case of 'job satisfaction' the score obtained for each individual for the ten valid items is converted to percentage of the total maximum possible score (that is, 60: the maximum score for ten valid items). These percentage values are treated as moderated scores out of one hundred and are used for further analyses.

2.8.10 The work involvement questionnaire is exactly of the same pattern as that of the job involvement questionnaire. There are eleven items out of which five items (4, 5, 7, 9 and 11) are filler items. The scores are assigned to the responses exactly in the same way as that for job involvement responses. As in the case of job involvement scale, a higher score would indicate greater work involvement. Eliminating the filler items, there are only six scoring items and the maximum possible score for an individual is only 36. The individual scores are converted into percentage of the total maximum possible score. The percentage values are treated as moderated scores out of one hundred of each subject and are taken for further analyses.

2.8.11 Part V of the questionnaire was meant to measure the degree of organisational alienation/involvement of the subjects of KWA. The pattern of the questionnaire and that of scoring the responses are exactly the same as that of job involvement and work involvement measures. A higher score indicates greater organisational involvement. The organisational alienation/involvement questionnaire contains twenty six items out of which six items (6, 7, 13, 19, 20 and 25) are filler items. Each individual's total score excluding that of filler items, is converted to percentage score out of the possible maximum of one hundred and twenty as explained earlier. These percentage values are treated as moderated scores out of one hundred for further analyses. The total twenty scoring items consist of four items each of five organisational variables: self-estrangement (items 1, 8, 14 and 21), social isolation (2, 9, 15 and 26), powerlessness (3, 10, 16 and 22), meaninglessness (4, 11, 17 and 23) and normlessness (5, 12, 18 and 24). The total sub-scores of these five variables for each individual are also computed which are then converted to percentage scores out of the possible maximum of twenty four. These values are treated as moderated scores out of one hundred and taken for further analyses.

2.8.12 As indicated earlier, Part VI of the questionnaire was to collect the demographic data such as sex, age, marital status, native district, level of education, length of total service, experience in the present job, salary and designation of the respondents. All the demographic particulars are

coded for computer use.

2.8.13 Statistical tools used: Raw scores from a minimum of 1 to a maximum of 6 are obtained for each item of the different category of factors contained in Parts II to V of the questionnaire (Appendix-III). The scoring pattern is such that higher scores indicates more involvement (less alienation) and lower scores indicates less involvement (more alienation).

2.8.14 Organisational alienation/involvement is measured by the total scores obtained by each individual in the areas of self-estrangement, social isolation, powerlessness, meaninglessness and normlessness. In order to arrive at the weighted score of organisational alienation/involvement based on the contribution of the moderated score of each factor, inter correlation among each of the factors is determined and factor analysis by the centroid method (Fruchter, 1954, p.59-64) is carried out. This method is also adopted for finding the weighted score of job satisfaction based on the contribution of intrinsic and extrinsic factor moderated scores and overall job satisfaction moderated scores. Inter correlations among the dependent variables of organisational alienation/involvement and the independent variables of job satisfaction, job involvement and work involvement are worked out to determine the relationship among them. Tests of significance with Student's 't' is adopted to determine the differences among different sub-groups on various factors and parameters. For easy sorting out of groups, the data are computerised and the analyses done on a computer with the aid of a 'Lotus' format for inferences and conclusions.

2.8.15 In the next chapter entitled 'Review of Literature' empirical studies on the causes and correlates of alienation/involvement are briefly reviewed.

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CHAPTER III
REVIEW OF LITERATURE

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CHAPTER III

REVIEW OF LITERATURE

3.1.0 Introduction

3.1.1 Evolution of the term and the theme of 'alienation' from the past to the present day has been reviewed and described briefly in Chapter I. The two main streams of thought on the concept of alienation are those of sociologists and psychologists, but their emphasis differ. A new theoretical formulation, called the 'motivational approach' has been developed by Kanungo (1982; 1979, pp.119-38). This approach integrating the two streams of thought is believed to clarify and overcome the conceptual confusions and the measurement problems. 'Worker alienation', 'job involvement', 'work involvement', 'job satisfaction', etc. are considered to be some important correlates of 'organisational alienation'. A literature review of these conceptual aspects is done briefly in Chapter I. Assumptions and definitions of concepts are briefly explained in Chapter II. Some of the causes and correlates of alienation and that of job involvement need further elaboration for conceptual clarity. These are briefly explained in this Chapter. Available literature on the subject with emphasis on motivational approach are those of the studies of Kanungo, Misra and their associates. (Many of the basic references, especially in dealing with the various correlates of alienation/involvement and other aspects of 'motivational approach' cited, are drawn from their works).

3.2.0 Causes and correlates of work alienation

3.2.1 Review of literature with sociological emphasis indicates that the causes and correlates of alienation can be divided into three broad categories.

First category: The attitude of alienation from work depends on prior orientations, which workers develop in their cultural, sub-cultural or

social class settings. Such work orientations or values are learned through primary and reference group influences and are brought by workers to the work situations. Thus social structure and reference-group influence determine workers' general outlook and expectations towards the degree of work involvement.

Second category: Worker alienation is explained in terms of the nature of technology and social organisation at work. Worker alienation results from segmented work flow, repetitive job carried out at constant pace and mechanical control of work operations. All these technological features at work frustrate intrinsic need satisfaction which is essential for worker involvement. From a historical perspective, Blauner stated: "In the early period, dominated by craft industry, alienation is at its lowest level and workers' freedom at a maximum. Freedom declines and the curve of alienation rises sharply in the period of machine industry" (Blauner, 1964, p. 182).

Third category: Work alienation is considered very similar to the socio-psychological explanation in terms of frustration of workers' need and expectations on the job.

The three categories of sociological explanations are inter related. In Kanungo's words: "... alienation of workers, according to sociologists, is the result of intrinsic need dissatisfaction or disconfirmation of expectancies regarding intrinsic work outcomes, which in turn is influenced by social, structural and technological factors" (Kanungo, 1982, p.23-24).

3.2.2 Conditions of work-involvement: Work involvement of individuals depends on his/her normative belief regarding how important work should be in their lives. Thus development of a cognitive belief state of identification with work in general depends on past and present socialisation experiences. Individuals are trained through the influence of their culture and reference group norms to believe in the centrality of work roles in life. Once formed, such beliefs are brought by the individual in his/her job situation, the beliefs may be strengthened through constant environmental reinforcement or altered by a different socialisation processes.

3.3.0 Alienation of job involvement

3.3.1 For some psychologists, intrinsic need satisfaction is an essential condition for higher job involvement. According to them job involvement in one's job is determined by the following conditions:

- i. a greater opportunity for making job decisions,
- ii. the feeling that one is making important contributions to organisational success,
- iii. an experience of personal success,
- iv. personal achievement,
- v. self-determination and
- vi. personal autonomy in matters of setting one's own work pace (cited in Kanungo, 1982, p.37).

Supporters of participative management (Argyris, 1964; Likert, 1961; McGregor, 1960) have stressed the fact that job involvement results from an organisational (and job) environment that promote ego and growth need satisfaction.

3.3.2 Those researchers who are in favour of defining 'job involvement' as a central component of self-image consider job involvement as related to early socialization of the individual. But, they still maintain that intrinsic need satisfaction is an important pre-condition for job involvement (Lodahl and Kejner, 1965, pp.24-33; Lawler and Hall, 1970, pp.305-312).

3.3.3 Review of literature on causes of job involvement indicates that intrinsic need satisfaction of the individual (such as: self-esteem, achievement, autonomy, opportunity for participation etc.) have also been viewed as situational factors causing job involvement. In addition, the Protestant work ethic attitude (personal factor of individual difference variable) is also considered as a cause of job involvement. Thus for the satisfaction of intrinsic needs, appropriate changes in the job and the organisational environment are necessary (Rabinowitz and Hall, 1977, p.265-88).

3.3.4 According to Kanungo, causes of job involvement include both predisposing and precipitating factors. "The situational variables responsible for

an individual's past socialization and the individual variable of internalised work values are clearly predisposing causal factors of job involvement. The precipitating causal factors of job involvement would include the situational variables such as the job or the organisational outcomes, and the individual variables of intrinsic need strength" (Kanungo, 1982, p.41).

3.3.5 There are factors like personal variables (education, age, etc.) and situational variables (job level, salary, etc.) which may correlate with job involvement. But these cannot be considered as direct causes of job involvement. Work outcome is also included as a correlate in psychological literature. Since, this is an effect variable, Kanungo treats it as a part of personal variable category (Kanungo, 1982, p.44). Some of the ways categorization of the correlates is done, is presented in Table 3.1. The personal factors are subdivided into personal demographic factors and personal psychological factors. The situational factors are subdivided into three groups, viz. job characteristics, organisational characteristics and socio-cultural environment. The categorization is purely a descriptive one. The extent of correlation of these individual factors to job involvement is not correctly known (Kanungo, 1982, p.44).

3.3.6 The relationship of the various correlates with job involvement found from the various studies are briefly described.

3.3.6.1 (i) Education: The relationship between the levels of education and job involvement reported from studies are found to be weak. Some studies investigating the relationship between education and job involvement reported positive relationship (Lefkowitz, 1974, pp. 221-30; Mannheim, 1975, pp.221-30; Newman, 1975, pp.371-79). There are studies that found a negative relationship (Aldag and Brief, 1975, pp.757-60; Koch and Steers, 1978, pp.119-28; Saal, 1978, pp.53-61). Few other studies showed no relationship (Ivancevish and McMahon, 1977 pp.552-63; Jones, James and Bruni, 1975, pp.146-49; Rabinowitz, Hall and Goodale, 1977, pp.273-81; Sharma and Sharma, 1978, pp.141-47 and Ruh, White and Wood, 1975, pp.300-12).

Table 3.1 Correlates of Job Involvement

Personal Variables		Situational Variables	
Demographic	Psychological	Job	Organisation
			Sociocultural
Age	Intrinsic/extrinsic need strength	Job characteristics/outcomes	Environment
Education	Work values	Variety	Organisation climate (Participative/mechanistic)
Sex	Locus of control	Autonomy	Organisation size (large/small)
Marital Status	Satisfaction with job characteristics/outcomes	Task identity	Organisation structure (tall/flat)
Occupation	Job effort	Feedback	Organisation control system (precise/vague)
Seniority	Absenteeism	Job level (formal status in organisation)	
	Turnover potential	Salary level	
		Working conditions	
		Job security	
		Supervision	
		Interpersonal climate	

(Source: Kanungo, 1982, p.43)

3.3.6.2 (ii) Age: According to some researchers, older workers show greater work involvement than younger workers. But according to Argyris (1964) increasing work experience with jobs that constantly frustrate individual needs may lead to greater work alienation. Studies of Aldag and Brief (1975, pp.757-60), Cherrington, Condie and England (1979, pp.617-23), Hall and Mansfield (1975, pp.201-10), Jones, James and Bruni (1975 pp.146-49), Newman (1975, 371-79), Saal (1978, pp.53-61) and Sharma and Sharma (1978, pp.141-47) show positive relationship. Some studies showed no relationship (Bigoness, 1978, pp.228-33; Gechman, Wiener, 1975, pp.521-23; Ivancevish and McMahon, 1977 pp.552-63; Jacob 1973; Lodahl and Kejner, 1965, pp.24-33; Mannheim, 1975, pp.221-30; Mathew, 1982-83). Tandon and Dhavan (1981, pp.615-22) indicated mixed results among different classes of workers. Age is related to other variables, such as level of education, seniority, etc. Therefore, from simple correlation between age and job involvement a true picture of relationship cannot be obtained.

3.3.6.3 (iii) Sex: Traditionally males are trained to believe that they are the ones who should work while females are trained to accept the role of housewives. Now these traditional socialization norms are undergoing change. In the context of the changing norms, sex as a factor that influences work involvement, may depend of the nature of socialization in the changing environment (Kanungo, 1982, 10-43). Rabinowitz (1975) observed that when the effects of other correlates such as job level and seniority are removed, sex may not influence job involvement. But some studies, (Jacob, 1973; King, Murray and Atkinson, 1982, pp.119-33) indicated that women are more satisfied than men in work situation.

3.3.6.4 (iv) Marital status: Married workers have many family obligations that can divert their attention from the job; and at the same time, they have the need to meet the family obligations which make them work harder. Kanungo, Misra and Dayal (1975, pp.39-59) found married workers to be more involved. But studies of Lodahl and Kejner (1975, pp.24-33) and Saal (1978, 53-61) did not reveal any relationship.

3.3.6.5 (v) Seniority: Review of the studies on the relationship of job or organisational tenure with job involvement indicated mixed results. The studies of Aldag and Brief (1975, pp.757-60), Ivancevish and McMahon (1977, pp.552-63), Jones, James and Bruni (1975, pp.146-49), Kanungo, Misra, and Dayal (1975, pp.39-59), Newman (1975, pp.371-79), Rabinowitz, Hall and Goodale (1977, pp.273-81) and Sharma and Sharma (1978, pp.141-47) reported positive relationships. Davis (1966, pp.6-12) reported a negative relationship. Some studies reported insignificant relationship (Gechman and Wiener, 1975, pp.521-23; Hall and Mansfield, 1975, pp.201-10; Mathew, 1982-83; Saal, 1978, pp.53-61). "It is important to make a distinction between a worker's seniority on the job and seniority in the organisation. Most studies in the literature dealing with seniority as a correlate have not paid careful attention to such a distinction. A longer stay within an organisation may develop organisational loyalty in a worker, but such loyalty may or may not reflect job involvement. On the other hand, seniority on the job may be more directly related to job involvement than to organisational involvement" (Kanungo, 1982, p. 47-48).

3.3.6.6 (vi) Occupation: Occupational level of workers may be related to job involvement. A study among engineers revealed that engineers at upper job levels were more job involved than those at lower levels in hierarchy (Sharma and Sharma, 1978, p.144). Study of Girija (1988) indicated that while majority of workers exhibited high commitment towards their organisation, the commitment of managers and supervisors were less. There are not enough studies to establish direct relationship between occupation and work involvement.

3.3.6.7 (vii) Intrinsic/extrinsic need strength: Workers are classified into two groups as intrinsically motivated and extrinsically motivated based on the importance a person attaches to his/her needs. Intrinsically motivated workers attach a greater importance to the satisfaction of esteem, achievement, and growth needs. On the other hand extrinsically motivated workers attach a greater importance to the satisfaction of social and security needs at work. Most psychological literature emphasise that job involvement is the result of intrinsic-need satisfaction on the job. Empirical studies in the

area has generally supported this assumption. (Rabinowitz and Hall, 1977, pp.265-88; Kanungo, Misra and Dayal, 1975, pp.39-59; Saal, 1978, pp.53-61). But these studies reveal that the relationship considerably vary from one study to another. Studies that dealt with the relationship between achievement need and job involvement showed greater consistency in the positive relationship between the two variables. Available literature indicate that not much research has been done to explore how job involvement is related to extrinsic-need strengths. However, the studies of Gorn and Kanungo (1980, pp.265-77), Kanungo (1982, Study II) and Misra et al (1985, pp.501-18) indicated that job involvement is positively correlated to satisfaction of salient extrinsic needs. "It is quite possible that need strength of extrinsically motivated workers may relate to job involvement when the job is perceived to have the potential for satisfying these needs" (Kanungo, 1982; p.48).

3.3.6.8 (viii) Work values: If a worker strongly believes in Protestant work ethic values, that worker would automatically show greater job involvement. Rabinowitz, Hall and Goodale (1977, pp.273-81) and Saal (1978, pp.53-61) reported positive relationship while Aldag and Brief (1975, pp.757-60) could not find any significant relationship.

3.3.6.9 (ix) Locus of control: The notion of locus of control as a stable dimension of personality was developed by Rotter (1966). He also developed an internal-external locus-of control scale (I-E scale) to distinguish people who are internals from those who are externals. The internals perceive themselves as personally responsible for rewarding and punishing events they experience in their lives whereas the externals perceive themselves as pawns controlled by external forces. It is argued that internality and job involvement should go hand in hand, because the need to assume personal responsibility for one's own actions (an intrinsic need) plays a central role in both the cases. Studies of Kimmons and Greenhaus (1976 pp.815-20), Runyon (1973, pp.288-94) and Sutaria (1981, pp.219-32) supported the view but the studies of Bigoness (1978, pp.228-33) and Rabinowitz, Hall and Goodale (1977, pp.273-81) did not reveal any significant relationship between the two variables.

3.3.6.10 Relationship of job involvement to job effect variables: It is believed that alienation at work can affect both membership behaviour, such as turnover potential and absenteeism of workers, and productive behaviour such as the amount of effort spent on the job and level of performance achieved on the job. Alienation at work can also affect other job attitudes such as the intensity and quality of psychological satisfaction derived from the various intrinsic and extrinsic job outcomes. Although both satisfaction and performance variables are generally treated as effects of job involvement, they can also play a role as causal factors of job involvement. Empirical research in the psychological literature dealing with the effects of job involvement has mainly concentrated on the relationship of job involvement to five effect variables: satisfaction with job characteristics/outcomes, job efforts, job performance, absenteeism and turnover potential (Kanungo, 1982, p.53).

3.3.6.11 (i) Satisfaction with job characteristics or outcomes: There are a large number of studies which explored the relationship between job satisfaction and job involvement. Several studies (both sociological and psychological) have demonstrated a positive relationship between intrinsic-need satisfaction and job involvement. (Aldag and Brief, 1975, pp. 757-60; Bigoness, 1978, pp.228-33; Gannon and Hendrickson, 1973, pp.339-40; Hall et al, 1978, pp. 62-72; Jacob, 1973; Lodahl and Kejner, 1965, pp.24-33; Mukherjee, 1969, pp.21-32; Newman, 1975, pp.371-79; Saal, 1978, pp.53-61; Sarveswara Rao, 1973, pp.605-19; Weissenberg and Gruenfeld, 1968, pp.469-73). Intrinsic motivation and involvement have often been used synonymously by both psychologists and sociologists because they have assumed that a person's involvement in a job is a function of satisfaction of intrinsic factors. Extrinsic needs are satisfied through job-context factors such as company policies, nature of supervision, salary, benefits and working conditions. Research literature is deficient with respect to reported studies on the relationship of job involvement to extrinsic-need satisfaction. Gorn and Kanungo (1980, pp.265-77) based on their studies have argued that satisfaction of intrinsic need on the job may be a sufficient, but not a necessary condition for involvement. This view is also supported by the studies of Asha Joseph (1984-86), Kanungo (1982-study II), Misra and Kalro (1981).

pp.419-26) and Misra, et al (1985, pp.501-518). Kanungo considers job satisfaction to include states of both intrinsic and extrinsic need satisfaction. Job involvement is distinguished from job satisfaction on the basis that the former is a cognitive belief state and the latter is an affective state of the workers (Kanungo, 1982, p.77).

3.3.6.12 (ii) Job effort: A worker who is highly job involved, by definition, perceives the job both to be more central to life and to have more potential for salient-need satisfaction. Thus it is logical to expect that such a job involved worker will spend more time and effort on the job than a worker who is less job involved. Among the few studies dealing with the issue, studies of Hall and Foster (1977, pp.282-290), Hall et al (1978, pp.62-72) and Lawler and Hall (1970, pp.305-12) reported positive correlation while Cummings and Muring (1977, pp.167-79) reported negative correlation. Studies of Ivancevish and McMahon (1977, pp. 552-63), however, did not find any significant relationship between the two variables. The differences in the findings of the studies may be due to the questionable validity of the measuring instrument, contends Kanungo, as the theoretical rationale for a positive correlation seems quite sound (Kanungo, 1982, p.54-55).

3.3.6.13 (iii) Absenteeism: Absenteeism of workers, as a form of withdrawal behaviour, may be influenced by job involvement. Highly involved workers should exhibit lower levels of absenteeism. Empirical studies of Beehr and Gupta (1978, pp.73-79) and Saal (1978, pp.53-61) reported a significant negative relationship between the two variables. Another study (Siegel and Ruh, 1973, pp.318-29) reported an insignificant relationship. But it seems reasonable to assume a negative relationship between job involvement and absenteeism. Absenteeism may be due to health or other family reasons. It is the absenteeism to avoid work, that should be negatively correlated to job involvement (Kanungo, 1982, p.57).

3.3.6.14 (iv) Job performance: Performance criteria of workers is defined by the organisation and hence the level of effort spent by a worker on the job may or may not translate into the level of performance demanded by the organisation. Thus on theoretical grounds, there can be no simple straight

forward relationship between job involvement and performance. The multiple performance criteria (eg. quality, quantity or both) used by organisations will also affect the possibility of obtaining a simple relationship between job involvement and performance (Kanungo, 1982, p.54-55).

3.3.6.15 (v) Turnover potential: When workers are highly job involved it is reasonable to assume that they would not wish to withdraw from the job and consequently would show a less turnover and absentee potential. Some studies (Beehr and Gupta, 1978, pp. 73-79; Siegal and Ruh, 1973, pp.318-329) support the above contention. But the relationship between job involvement and turnover is moderated by other factors, which are not well understood. Farris (1971, pp.311-28) did not find negative relationship between the two variables among engineers. According to Baba, "Engineers identify themselves more in terms of their profession than in terms of their employing organisation. They are likely to continue their involvement in their profession even if they switch organisations" (Baba, 1979, p.18). Thus, before one can understand how job involvement of workers affects turnover, the validity of issues of how job involvement is related to both professionalism and organisation is to be resolved (Kanungo, 1982, p.56-57).

3.3.6.16 Job characteristics: One set of situational variables indicated in Table 3.1 is job characteristics. For an effective job design, it is important to know what characteristics of the job are related to job involvement. Job involvement can be related to both job-content factors and job context factors. Most psychological researchers have advocated changes only in the job content factors on the belief that job involvement results from changes that satisfy workers' intrinsic needs. Hackman and Oldham (1976, pp.250-79) identified five core job characteristics (viz. variety, autonomy, task identity, task significance and feed-back) that need to be introduced in a job enrichment programme. It is generally believed that the presence or absence of these core job characteristics are associated with job involvement or alienation respectively, but the emphasis is on the job factors that are mainly responsible for intrinsic-need satisfaction. Research on job enrichment programmes revealed that job involvement correlates with the five core job factors for workers who have strong intrinsic

needs, but not for workers who have weak intrinsic needs (Kanungo, 1982, p.50). Research studies on how job involvement may be related to other job characteristics such as salary and working conditions in both intrinsically and extrinsically motivated workers are lacking. However, studies of Ganguly (1974, pp. 189-96) and Jacob (1973) did not indicate any importance to salary, but the studies of Kalro and Misra (1973, pp. 407-13) and Kher (1988) indicated otherwise.

3.3.6.17 Rabinowitz and Hall (1977, pp.265-88) and Baba (1979) have reported several studies which looked into the relationship of job involvement with the nature of supervisions. But there exists a lack of agreement among these studies (Kanungo, 1982, p.50). One of the reasons for the lack of agreement may be the complex nature of supervision as a construct and the different ways in which it is measured in different studies. A second reason may be that the nature of relationship between job involvement and supervision is moderated by the nature of job that is supervised. Thirdly, there is no clear reason why supervisory behaviour should relate to job involvement (Kanungo, 1982, p.50). Regarding the studies on the relationship of job involvement to the interpersonal climates, the results of the various studies do not show consistency of relationship either in terms of direction or magnitude. This may be due to the lack of clarity or agreement with respect to the nature of the construct 'interpersonal climate' (Kanungo, 1982, p.51). Baba (1979, p.15) points out that 'interpersonal climate', has been described and measured in various ways. Interpersonal climate at work may fulfil the social needs of the workers and one may argue that this may increase job involvement. But "considerable theoretical progress has to be made towards identifying specific factors of importance, before any fruitful outcome can be expected in the empirical realm" (Kanungo, 1982, p.51).

3.3.6.18 According to Tannenbaum (1966), workers holding higher level job in an organisation should show more job involvement than workers holding lower level jobs. This expectation is based on the assumption that higher-level jobs can satisfy intrinsic needs to a greater extent. Studies of Chetterjee and Ganguly (1977, pp.235-41), Davis (1966, p.6-12), Mannheim (1975, pp. 221-30), Newman (1975, pp.371-79) and Sharma and Sharma (1978, pp.141-47)

reported positive relationship while the studies of Lodahl and Kejner (1965, pp.24-33) indicated no significant relationship between the two variables. Study of Giriya (1988) indicated that managers and supervisors show lesser organisational commitment than workers. Thus, the studies conducted on this issue provide mixed results.

3.3.6.19 Organisational variables: Organisational variables is another set of situational variables indicated in Table 3.1. Organisation-wise characteristics such as climate, structure and size affect worker behaviour both on and off the job even though they are not job specific. There are not many studies that report the relationship of job involvement to such organisational variables. It is suggested (Likert, 1961) that a participative organisational climate may increase worker involvement because such a climate contributes towards the fulfilment of intrinsic-needs of the worker. As a form of supervisory behaviour, participative management style has been found to be positively related to job involvement. (Gardell, 1977, pp.515-33; Jacob, 1987, pp.198-205; Ruh, et al, 1973, pp.36-45; Ruh et al, 1975, pp.300-12; Saleh and Hosek, 1976, pp.213-24; Steers, 1976, pp.6-16; White, 1978, pp.36-43). As an organisational characteristic, participative management has not been directly related to job involvement, although Tannenbaum (1966) and Likert (1961) have argued in favour of a positive relationship. "Studies on the relationship of job involvement to organisational size, structure, and control systems are simply non-existent" (Kanungo, 1982, p.52). However, Curran and Stanworth (1981, 343-65) reported on the basis of their studies that when such specific characteristics of the industry, age and marital status of respondents are taken into account, size of the firm itself is not an important factor.

3.3.6.20 Socio-cultural factors: The third set of situational variables relate to socio-cultural factors. Variables such as rural/urban background and religious background are thought to be related to job involvement because the socialization process to which these socio-cultural factors contribute acts as predisposing causes of job involvement. The results of the studies exploring the relationship between job involvement and the community size indicate both positive as well as no relationship with job involvement. No

study has been reported that deals with ethnic-cultural and religious background of workers as correlates (Kanungo 1982, p.52).

3.4.0 **Relevance of organisational climate and its influence on behaviour**

3.4.1 The organisational climate is only experienced by the people working in the organisation. The variables that influence organisational climate are of three types: (i) external influence (physical and socio-cultural environment), (ii) organisational variables (centralization, configuration, formalisation, standardisation, size, structure and technology), and (iii) person influences (managerial behaviour, leadership pattern and rewards/controls). The organisational climate (the environment as it is) influences the psychological climate of the individual (the climate as it is experienced). The link is moderated by the individual's group (group climate), task and personality (of the individual). Thus, the climate influences the behaviour of individuals in the organisation. The organisational climate concept is complex and the theorists do not have a clear consensus as to what the organisational climate is. Controversy also exists concerning the effect of organisational, group and individual or (psychological) climate (Field and Abelson, 1982, p.187). Joyce and Slocum state that "all climates are perceptions individuals have of their environment. These perceptions are a combination of stimuli the individual observes within their life space..... The life space is determined by quasi-physical facts (psychological interpretations of physical features), quasi-social facts (psychological interpretations of social facts), quasi-conceptual facts (conceptual representation of problems to be solved and goals to be attained and alien facts (changes which cannot be derived from the dynamics of the psychological life space even if one has a complete knowledge of the previous situation and all psychological laws)" (cited in Field and Abelson, 1982, p.187). There are many dimensions to describe the climate. The important dimensions are (i) autonomy/control, (ii) degree of structure, (iii) rewards and (iv) consideration, warmth and support (Field and Abelson, 1982, p.184).

3.4.2 Members of an organisation perceive the climate of the organisation and it has effects on their motivation and behaviour. Perceived climate

differs owing to the different leadership styles of the manager. Study of Jacob (1987, pp.198-205) indicated that the leadership style of the project leader is a key factor in the development of a favourable climate for increased commitment towards assigned jobs. Climate was also found to differ across groups in the same organisations (Field and Abelson, 1982, p.189). Thus there may be a number of sub-climates within an organisation. However, Venkateswara Rao and Chattopadhyay (1974, pp.55-67) in their study did not find any significant difference in the perception of organisational climate between managers, supervisors and workers. But the study of Pradeep Balakrishnan (1984-86) indicated that first line supervisors and workmen perceived organisation climate differently. Climate may also exist as an individual attribute (individual or psychological climate) due to the individual's perception of the organisational environment. The environment may vary greatly for individuals due to the interactions between the person and the environment (Field and Abelson, 1982, pp.181-201).

3.4.3 Climate and job satisfaction are related but not the same thing. Climate is the perceptual description of the work environment whereas job satisfaction is a person's affective response to aspects of his/her job. Field and Abelson cite that "individuals with different value systems were more satisfied in different climates, and that an individual's satisfaction with different aspects of work depends on different mixes of climate components" (Field and Abelson, 1982, pp.191-192). Climate which is created out of perception of organisational characteristics and interpretation of the members of the organisation influences along with individual motives and abilities, the outcome variables of satisfaction, productivity and motivation.

3.5.0 **Work/job alienation and work/job situation**

3.5.1 The different variants of work/job alienation, viz. powerlessness, meaninglessness, normlessness, social isolation and self-estrangement (subjectively felt psychological state of an individual caused by different environmental conditions) can be related to work/job situation that frustrate some salient needs of the individual. The link between subjectively

felt psychological state and the perceived lack of potential (in a job or work in general) to satisfy salient needs of work/job situation is given in table 3.2.

Table 3.2: Link Between Subjectively Felt Psychological State of Alienation and Salient Need in Work/Job Situations

Types of alienation	Environmental conditions responsible for alienation	Personal need saliency of worker	Perceived work/job potential to satisfy salient need
Isolation	Lack of social integration of worker	Affiliative need saliency	Lack of sense of membership
Normlessness	Breakdown of social norms	Self-evaluation (social comparison) need saliency	Lack of information (norms) to guide behaviour
Meaninglessness	Work simplification	Ego-need saliency	Lack of sense of responsibility
Powerlessness	Mechanization	Ego-need saliency	Lack of freedom (autonomy) and control (responsibility)
Self-estrangement	Lack of utilization of abilities or potentialities	Self actualization or achievement need saliency	Lack of opportunity to utilize ones potentialities and lack of sense of achievement

(Source: Kaunungo, 1982, p.88)

- 3.5.2 The social isolation variant of job alienation will be experienced by individuals whose social and belonging needs are most salient and who find that their work situation does not have the potential to satisfy these needs. Blauner concurs with this position when he states that the state of isolation "implies the absence of a sense of membership in an industrial community" (Blauner, 1964, p.24).
- 3.5.3 The normlessness variant of job isolation can be observed in persons who have a salient need to predict their physical and social job environment so that they can evaluate their present job behaviour and plan future course of action. Workers with a salient need for feedback on how well they are performing may develop a feeling of normlessness in their jobs if the organisation does not provide information on how performance is appraised and how rewards (merit pay, promotions, and so on) are administered. Workers may develop beliefs about the normlessness of work in general when they find that work organisations do not provide the necessary information about work (Kanungo, 1982, p.89).
- 3.5.4 The meaninglessness variant of job alienation results from situations where the work processes is broken down into simple minuscule tasks. Such job situations represent a high degree of job simplification and for the worker they involve no real responsibility. Under such situations, the worker loses all sense of purpose and the job becomes meaningless. This implies that workers with a salient need for assuming a high degree of personal responsibility experience meaninglessness in their job when the need is frustrated because of job simplification or fragmentation. Workers with a high education/skill level, and need for achievement may have a stronger urge for assuming personal responsibility than less educated, unskilled, and low-need-for achievement workers. Kanungo assumes that the former categories of workers may be more susceptible to the meaninglessness variant of alienation when the job does not provide greater responsibility (Kanungo, 1982, p.90).
- 3.5.5 The powerlessness type of variant refers to a perceived lack of control over one's work situation. Feeling of powerlessness on the job

according to Blauner (1964), results from the mechanisation process that controls the pace of work and limit worker's free movements. This means that the powerlessness type of alienation may be experienced by individuals who have salient ego needs such as the need for autonomy, control, or self-esteem, but find the job involvement incapable of satisfying them (Kanungo, 1982, p.90).

3.5.6 The self-estrangement variant of alienation is concerned with the opportunity for expressing unique abilities, potentialities or personality of the worker. If the job does not encourage such opportunities, the workers may feel self-estranged. Such state of alienation is experienced by people who have high self-actualization needs such as the need for achievement, and find the job situation limiting the realization of their potential (Kanungo, 1982, p.90).

3.5.7 In the present study, organisational alienation is considered as a composite psychological state characterised by social isolation, normlessness, meaninglessness, powerlessness and self estrangement in the job situation of the individuals in the organisation.

3.6.0 Conclusion

3.6.1 The review of literature has revealed the paucity of studies on organisational alienation as such. Most of the empirical studies are on the various causes and correlates of work or job alienation/involvement. Moreover, the studies were conducted by using the measurement tools that existed, which are now established to be inadequate (Kanungo, 1982). Comparison of studies based on the results obtained using different measurement tools, therefore, cannot be taken as conclusive but only indicative.

3.6.2 The motivational approach to 'job', 'work' and 'alienation/ involvement' as developed by Kanungo (1982) seems to have better clarity. Various hypotheses formulated within the frame-work of motivational approach seem to gain consistent support from the studies (Gorn and Kanungo, 1980, pp.265-77;

Kanungo, 1982, study II; Kanungo, 1982, study III; Misra et al, 1985; Misra and Kalro, 1981). The measuring tools developed by Kanungo (1982) appears to be more suitable than others to study the various aspects of the phenomena mentioned above. In the present study motivational approach of Kanungo (1982) is adopted.

3.6.3 The data and inferences of the present study are presented in the next chapter.

3.7.0 References

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CHAPTER IV

PRESENTATION, ANALYSES AND INTERPRETATION OF DATA

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CHAPTER IV

PRESENTATION, ANALYSES AND INTERPRETATION OF DATA

4.1.0 Introduction

4.1.1 Data collected as described in Chapter II are presented in this Chapter. The data are analysed and interpreted and the results are discussed in detail in relation to the objectives and hypotheses.

4.1.2 Responses were received from 224 (superintending engineers and above: SE 20, executive engineers: EE 56 and assistant executive engineers: AEE 148 out of a population of 303 (SE 25, EE 69 and AEE 209) engineer officers in the rank of assistant executive engineers and above in the Kerala Water Authority.

4.2.0 Demographic particulars

4.2.1 Part VI of the questionnaire (Appendix III) was to elicit responses regarding personal and demographic data such as sex, age, marital status, place of origin (district), level of education, length of service, experience in the job, salary and designation. The responses obtained were computerised. The codes adopted for computerisation are given in Appendix VI. The responses obtained are presented in Appendix VII.

4.2.2 As the group is heterogeneous, it is classified into sub-groups and the percentage of the sub-groups to the total population are furnished in Table 4.1. For analysis purposes, the groups having very small population (5 and below) are ignored as any inference based on the very small number may not be representative and may not hold good in a larger sample.

4.2.3. For analysis, apart from the total population as a whole and demographic sub-groups based on sex, age, place of origin etc., as given in the questionnaire, few other sub-groups are also identified. They are: (i) job outcome sub-groups - intrinsic and extrinsic motivated persons, and very

Table 4.1 Percentage Population of Sub-groups

Sl. No.	Group	Population	Percentage (%)
1	Total	224	100.00
2	Superintending Engineers and above	20	8.93
3	Executive Engineers	56	25.00
4	Assistant Executive Engineers	148	66.07
5	Male	195	87.05
6	Female	29	12.95
7	Intrinsic group	34	15.18
8	Extrinsic group	169	75.45
9	Very Intrinsic group	20	8.92
10	Very Extrinsic group	137	61.16
11	Age 40 years and below	56	25.00
12	Age 41 years and above	168	75.00
13	Post-graduate Degree/Training	72	32.14
14	Non Post-graduate	151	67.41
15	Degree and above	195	87.05
16	Without Degree	28	12.50
17	Salary Rs.4001 and above	37	16.51
18	Salary Rs.3001 to 4000	110	49.11
19	Salary Rs.1001 to 3000	77	34.38
20	Service upto 10 years	45	20.09
21	Service 11 to 20 years	82	36.61
22	Service 21 to 30 years	79	35.27
23	Service 31 years and above	18	8.03
24	District: Trivandrum	48	21.43
25	Quilon	23	10.27
26	Pathanamthitta	13	5.80
27	Alleppey	15	6.70
28	Kottayam	16	7.14
29	Ernakulam	31	13.84
30	Idukki	3	1.34
31	Trichur	38	16.96
32	Palghat	7	3.13
33	Malappuram	5	2.23
34	Calicut	13	5.80
35	Cannanore	10	4.47
36	Kasargode	2	0.89
37	Southern region	115	51.34
38	Central region	72	32.14
39	Northern region	37	16.52
40	More organisation-involved	56	25.00
41	Less Organisation-involved	56	25.00

intrinsic and very extrinsic motivated persons, (ii) sub-group of more organisation-involved (that is, 25% of the total respondents of least organisational alienation or most involvement) and (iii) less organisation-involved or alienated (that is, 25% of the total respondents of most organisational alienation or least involvement). Sub-group based on marital status is not taken as the number of unmarried persons are very few in the total population.

4.3.0 Job outcomes

4.3.1 Responses were received from 73.92% of the total population (SE:80%, EE:81.12% and AEE: 70.81%). Job outcome response rank order is given in Appendix VIII. In order to classify the individuals as extrinsic, very extrinsic, intrinsic, very intrinsic and neutral, the methodology described under chapter II is adopted. The scores obtained for the first four ranked items for each individual and the classification of individuals are presented in tabular form in Appendix IX. The number of individuals in each job outcome category under each hierarchy-wise sub-groups are given in Table 4.2.

4.3.2 From table 4.2, it is seen that out of the total population of 224, only 34 (15.17%) are intrinsically motivated persons. Majority of engineers from the rank of assistant executive engineers and above are extrinsically motivated. The percentage of individuals who are intrinsically motivated is greater in the higher levels of hierarchy with the groups of superintending engineers and above with 25.00%, executive engineers 21.43% and assistant executive engineers 11.49%. Extrinsic salient needs of the officers at lower levels of hierarchy are more predominant than the officers at higher levels and this could be one of the reasons for this phenomenon. However, no studies are traced indicating the influence of hierarchial levels on the extrinsic/intrinsic need strengths.

Table 4.2 Number of Intrinsic, Extrinsic and Neutral Persons in Hierarchy-wise Sub-Groups

Group	Total	Intrinsic I	Very intrinsic VI	Extrinsic E	Very Extrinsic VE	Neutral N	Percen- tage of intrinsic persons
Superintending Engineers and above (SE)	20	5	3	12	9	3	25.00
Executive Engineers (EE)	56	12	8	38	29	6	21.43
Assistant Executive Engineers (AEE)	148	17	9	119	99	12	11.49
Total	224	34	20	169	137	21	15.17

4.3.3 To identify the two most salient job need factors and least salient job need factors of the total group and the different sub-groups - superintending engineers and above, executive engineers, assistant executive engineers, intrinsic group (including very intrinsic persons), extrinsic group (including very extrinsic persons), very intrinsic persons, very extrinsic persons and neutral persons - the method described in chapter II is adopted. The table showing first, second fourteenth and fifteenth choices of the groups among the different items are given as Appendix X.

4.3.4 The two most important overall job needs, extrinsic job needs and intrinsic job needs of the individuals in the different groups are presented in table 4.3. Group-wise most important overall job needs, extrinsic job needs and intrinsic job needs are presented in table 4.4. As can be expected from a predominantly extrinsic job needs oriented overall group, the most important job needs are extrinsic. The first choice is 'security' and the second is 'adequate earnings'. In the study of Misra and Kalro (1981, pp. 419-426), among Indian managers, the most important extrinsic job needs

Table 4.3 Responses to Two Most Important Extrinsic and Intrinsic Job Needs of Individuals in Different Groups

Sl. No.	Sub-group	Number of subjects who ranked first two preferences															
		Item numbers with sign															
	Popula- tion	1 (-)	2 (-)	3 (-)	4 (-)	5 (-)	6 (+)	7 (-)	8 (-)	9 (+)	10 (+)	11 (-)	12 (-)	13 (-)	14 (+)	15 (-)	
1	Total	224	135	76	11	18	15	37	10	18	36	19	11	11	13	15	23
2	Superintending Engineers and above	20	8	8	2	2	2	8	-	2	4	2	1	-	-	-	1
3	Executive Engineers	56	32	20	-	3	4	10	6	1	12	7	2	1	1	6	7
4	Assistant Executive Engineers	148	95	48	9	13	9	19	4	15	20	10	8	10	12	9	15
5	Intrinsic group	34	3	-	-	1	1	16	3	-	21	10	1	-	3	7	2
6	Extrinsic group	169	126	74	11	17	12	10	5	13	9	6	7	10	10	7	21
7	Very Intrinsic group	20	-	-	-	-	-	9	-	-	17	9	-	-	-	5	-
8	Very Extrinsic group	137	112	69	10	17	11	-	5	11	-	-	3	8	9	-	19
9	Neutral group	21	6	2	-	-	2	11	2	5	6	3	3	1	-	1	-

Note: + Intrinsic items
- Extrinsic items

Table 4.4 Two Most Important Job Needs

Sl. No.	Group Category	Population	Overall job needs		Intrinsic job needs		Extrinsic job needs	
			1	2	1	2	1	2
1	Total	224	1 Security 2 Adequate earning	1 Interesting nature of work 2 Responsibility and independence	1 Security 2 Adequate earning			
2	Superintending Engineers and above	20	1 Security; Adequate earning; Interesting nature of work	Tie with equal preference	1 Security; Adequate earning			Tie with equal preference
3	Executive Engineers	56	1 Security 2 Adequate earning	1 Responsibility and independence 2 Interesting nature of work	1 Security 2 Adequate earning			
4	Assistant Executive Engineers	148	1 Security 2 Adequate earning	1 Responsibility and independence 2 Interesting nature of work	1 Security; Adequate earning			
5	Intrinsic group	34	1 Responsibility and independence 2 Interesting nature of work	1 Responsibility and independence 2 Interesting nature of work	1 Security; Sound organizational policies; Technically competent superior			Tie with equal preference (few responses only)
6	Extrinsic group	169	1 Security 2 Adequate earning	1 Interesting nature of work 2 Responsibility and independence	1 Security 2 Adequate earning			
7	Very intrinsic group	20	1 Responsibility and independence 2 Interesting nature of work; Achievement	1 Responsibility and independence 2 Interesting nature of work; Achievement	Tie with equal preference			-----
8	Very extrinsic group	137	1 Security 2 Adequate earning	-----	1 Security 2 Adequate earning			
9	Neutral group	21	1 Interesting nature of work 2 Security; Responsibility and independence	1 Interesting nature of work 2 Responsibility and independence	1 Security and recognition (from superiors and co-workers)			

observed are: 'respect and recognition' and 'adequate salary' with 'security', and 'advancement', tying for the third position. 'Respect and recognition' is an interpersonally mediated extrinsic factor. If this factor is excluded, there is considerable agreement between the present study on the importance of extrinsic job needs and the findings of Misra and Kalro. In another study, Misra et al (1985, pp.501-518) report that in the Federal Republic of Germany and also in India, 'security' and 'earnings' are the most important extrinsic needs. The same pattern is observed for the different groups except for the intrinsically motivated group. For them 'responsibility and independence' and 'interesting nature of work' are important. With respect to intrinsic job needs, for the overall group, 'interesting nature of work' and 'responsibility and independence' stand as the most important and second most important needs respectively. This pattern is completely in agreement with the findings of Misra and Kalro (1981, pp.419-426) and that of Misra et al (1985, pp.501-518) in FRG. For the Indian sample Misra et al report that the most important intrinsic job needs are 'achievement' and 'responsibility/independence'. 'Interesting nature of work' and 'responsibility and independence' are the most important two intrinsic job needs for the other sub-groups also except for extrinsically motivated group. Hierarchy-wise, both executive engineers and assistant executive engineers rank 'responsibility and independence' as the most important, while superintending engineers and above rank 'interesting nature of work' as the most important. This observation may be explained in terms of the positional role characterised by 'responsibility and independence' at higher levels.

4.3.5 The two least important overall job needs, extrinsic job needs and intrinsic job needs of the individuals in different groups are presented in Table 4.5. Group-wise, two least important overall job needs are presented in Table 4.6. In general, interpersonally mediated extrinsic job factor of 'considerate and sympathetic superior' and the extrinsic job factor of 'sound organisational policies' are found to be the least important. This may be due to lack of a consistent 'sound organisational policy' in the governmental model organisation which can be attributed to the various socio-political influences. The personnel might have also believed that

Table 4.5 Responses to Two Least Important Extrinsic and Intrinsic Job Needs of Individuals in Different Groups

Sl. No.	Sub-group	Number of subjects who ranked last two preferences															
		1 (-)	2 (-)	3 (-)	4 (-)	5 (-)	6 (+)	7 (-)	8 (-)	9 (+)	10 (+)	11 (-)	12 (-)	13 (-)	14 (+)	15 (-)	
1	Total	223	5	32	31	26	38	7	62	15	12	19	21	64	39	30	45
2	Superintending Engineers and above	20	1	2	5	1	6	-	7	1	-	3	2	5	5	-	2
3	Executive Engineers	56	2	6	7	6	9	2	10	3	3	4	6	20	16	7	11
4	Assistant Executive Engineers	14	2	24	19	19	23	5	45	11	9	12	13	39	18	23	32
5	Intrinsic group	34	1	5	8	5	6	-	7	4	1	1	2	14	6	2	6
6	Extrinsic group	168	4	23	18	17	26	5	50	11	11	18	18	43	30	26	36
7	Very Intrinsic group	20	1	3	5	2	5	-	4	1	-	-	2	6	4	2	5
8	Very Extrinsic group	136	1	15	15	13	18	5	40	9	8	16	17	37	24	24	30
9	Neutral group	21	-	4	5	4	6	2	5	-	-	-	1	7	3	2	3

Note: + Intrinsic item
 - extrinsic item

Table 4.6 Two Least Important Job Needs

Sl. No.	Group	Population	Overall job needs	Intrinsic job needs	Extrinsic job needs
	Category				
1	Total	223	1 Considerate and sympathetic superior 2 Sound organisational policies	1 Opportunity for professional growth 2 Achievement	1 Considerate and sympathetic superior 2 Sound organisational policies
2	Superintending Engineers and above	20	1 Sound organisational policies 2 Comfortable working conditions	1 Achievements (few responses only) 2	1 Sound organisational policies 2 Comfortable working conditions
3	Executive Engineers	56	1 Considerate and sympathetic superior 2 Technically competent superior	1 Opportunity for professional growth 2 Achievement	1 Considerate and sympathetic superior 2 Technically competent superior
4	Assistant Executive Engineers	148	1 Sound organisation policies 2 Considerate and sympathetic superior	1 Opportunity for professional growth 2 Achievement	1 Sound organisational policies 2 Considerate and sympathetic superior
5	Intrinsic group	34	1 Considerate and sympathetic superior 2 Benefits	Not enough responses	1 Considerate and sympathetic superior 2 Benefits
6	Extrinsic group	169	1 Sound organisational policies 2 Considerate and sympathetic superior	1 Opportunity for professional growth 2 Achievement	1 Sound organisational policies 2 Considerate and sympathetic superior
7	Very Intrinsic group	20	1 Considerate and sympathetic superior 2 Benefits; Comfortable working conditions; Fair pay for the work you do	Not enough responses	1 Considerate and sympathetic superior 2 Benefits; Tie Comfortable working with equal conditions; Fair pay for the preference
8	Very Extrinsic group	137	1 Sound organisational policies 2 Considerate and sympathetic superior	1 Opportunity for professional growth 2 Achievement	1 Sound organisational policies 2 Considerate and sympathetic superior
9	Neutral group	21	1 Considerate and sympathetic superior 2 Comfortable working conditions	Not enough responses	1 Considerate and sympathetic superior 2 Comfortable working conditions

'sound organisational policy', even if it exists, cannot be made operative effectively owing to the various influences and this may have developed a negative or neutral attitude towards this factor. For the 'superintending engineers and above' group, 'comfortable working conditions' is less important than 'considerate and sympathetic superior'. For intrinsic group, 'benefits' is less important than 'sound organisational policies'. The least important intrinsic job needs of the total group are 'opportunity for professional growth' and 'achievement'. In a government controlled bureaucratic type of organisation, opportunity for professional growth is less and this may have been accepted by the personnel in the organisation. The same explanation may be true of 'achievement'. There may not be appropriate machinery in the organisation for appreciating the good work done or for innovations. These factors may inhibit, to some extent, the intrinsic growth needs of many of the personnel in the organisation.

4.3.6 The whole group considers 'considerate and sympathetic superior' as least important. Many of the members in the hierarchial sub-groups also consider this factor as the least important (Table 4.5: item 12). For the hierarchial group of executive engineers, 'technically competent superior' is also of least importance. This is also indicated by many of the members in the other hierarchial sub-groups (Table 4.5. item 13). Thus in the organisation, a good number of persons indicated that both the factors of 'considerate and sympathetic superior' and 'technically competent superior' are of least importance reflecting the culture of the organisation and/or the non-motivating effect of the factors. In an effective organisational model, this phenomenon should not occur. Assuming that nobody ranks these two factors as the least important, the level of significance using Student's 't' test for proportion of the observed responses of these two factors are worked out and presented in Table 4.7.

The level of significance indicated in the table confirms that the assignment of least importance to these factors is very strong and significant in the organisation as a whole and also in the different hierarchial sub-groups.

Table 4.7 Level of Significance in Assigning Least Importance to the Factors of 'Considerate and Sympathetic Superior' and 'Technically Competent Superior'

Sl. No.	Category	Considerate and Sympathetic Superior			Technically Competent Superior			
		Groups	Frequency	Student's 't'	Table value for 0.01 and 0.02 levels of significance	Frequency	Student's 't'	Table value for 0.01 and 0.02 levels of significance
1	Total	223	64	9.474	0.01 level 2.576	39	6.875	0.01 level 2.576
2	Superintending Engineers and above	20	5	2.582	0.02 level 2.539	5	2.582	0.02 level 2.539
3	Executive Engineers	56	20	5.578	0.01 level 2.576	16	4.733	0.01 level 2.576
4	Assistant Executive Engineers	147	39	7.286	0.01 level 2.576	18	4.529	0.01 level 2.576

4.3.7 Responses to 'considerate and sympathetic superior' and 'technically competent superior' reflect on the superior subordinate relationships. Assigning least importance to these factors may mean the following: (i) lack of meaningful interaction between superior and subordinate, (ii) perceived lack of technical competence of the superior, (iii) perceived lack of leadership of the superior, (iv) lack of mutual trust among officers (v) prevalence of short circuiting in the official channels of communication,

(vi) organisational structural inadequacies (that is, absence of or not adhering to norms relating to duties and responsibilities) and (vii) the belief that for getting things done, external influence is more effective than the official channels.

4.3.8 No studies are traced that deal with the relevance of least important salient job needs in work environment. Kanungo, (1982, Study I; Study II) and Misra and Kalro (1981, pp.419-426), examined the relationship of least salient needs with job involvement and found lesser degree of job involvement. It is generally believed that when a need is satisfied, the need ceases to be a motivator and the individual may experience a neutral attitude or a feeling of non-importance towards such a need. In such cases the satisfied need may not act as a motivator for better performance. On the other hand, if the need becomes unimportant owing to other reasons as mentioned earlier, the satisfaction of such needs may act as a motivator for better performance. In this study, special emphasis is made on identifying the least important needs. However, more studies and discussions are necessary to explore the relevance of the least salient job needs of individuals in the organisation regarding the different aspects concerning job performance.

4.4.0 Job satisfaction/dissatisfaction

4.4.1 Part II of the questionnaire (Appendix III) was to elicit responses regarding job satisfaction concerning the fifteen job aspects contained in Part I of the job outcome questionnaire. The responses were obtained indicating their level of satisfaction/dissatisfaction on a six point scale (extremely satisfied, moderately satisfied, mildly satisfied, mildly dissatisfied, moderately dissatisfied and extremely dissatisfied) with respect to each of the job factors. The scoring pattern is described in detail in Chapter II, and it starts from a score of 6 for extremely satisfied to a score of 1 for extremely dissatisfied. The responses and the raw scores are given in Appendix XI.

4.4.2 The scores obtained for the different job factors are grouped as intrinsic (item 7, 11, 13, and 14), extrinsic (item 1, 2, 3, 4, 5, 6, 8, 9, 10, 12 and 15) and overall job satisfaction (item 15) and moderated scores are worked out as explained in Chapter II. These are given in Appendix XII. Based on the moderated scores of each group, inter correlations are computed. With this data, factor analysis by centroid method is carried out to determine the weightage of each group of items towards contribution to job satisfaction. The inter correlations and centroid factor analysis are given in Table 4.8. The weightage coefficients of these factors towards job satisfaction scores are:

i. intrinsic items	0.798
ii. extrinsic items	0.823
iii. overall job satisfaction item	0.819

Based on the above weightages, weighted moderated scores for each individual is computed and furnished in Appendix XIII.

4.4.3 First order factor analysis of the scores of intrinsic, extrinsic job factor scores and overall job satisfaction score indicate that 81.36% of job satisfaction of the subjects is explained by the combination of these factors and only 18.64% is accounted for by other unknown factors. The contribution of these factors are:

i. intrinsic items	31.71%
ii. extrinsic items	33.74%
iii. overall job satisfaction item	33.55%

4.4.4 Even though the moderated scores are worked out on a percentage basis, the theoretical mean is not 50 on account of the basic scoring pattern of the respondent's choice: extremely satisfied: score 6 and extremely dissatisfied: score 1. For an item, an individual can get a maximum score of 6 and a minimum score of 1, the mean being 3.50. The percentage of the mean on the maximum score of 6 will be $3.5/6 = 0.5833$, ie. 58.33%. Thus the rounded value of 58 is taken as the theoretical neutral point for analyses. Based on this theoretical neutral, number of job satisfied individuals from the total sample and from the different sub-groups and their percentages are given in Table 4.9. The degree of significance of

Table 4.8 Job Satisfaction Correlation Matrix and Factor Analysis for First Centroid Loadings

FACTORS	Correlation Coefficients			$\approx j_i$
	JSE	JSI	JSO	
Extrinsic factors (JSE)	*	0.653	0.678	1.331
Intrinsic factors (JSI)	0.653	*	(0.642)	1.295
Overall satisfaction Factor (JSO)	0.678	(0.642)	*	1.320
** $\approx j_i$	1.331	1.295	1.320	$\approx \approx j_i = 3.946$
*** tj_i	2.009	1.948	1.998	@ $T_1 = 5.955$
*@ wj_i	0.823	0.798	0.819	$\sqrt{T_1} = 2.440$
% Contribution $= \frac{wj_i}{\approx wj_i} \times 100$	33.74	32.71	33.55	$\frac{1}{\sqrt{T_1}} = 409836$
Percent covered by the factors $\frac{\approx wj_i^2}{\approx wj_i}$	81.36			$\approx wj_i = 2.431$

* This value is a first estimate of the commonality and is taken as the highest correlation coefficient in the column irrespective of sign

** $\approx j_i$ - Algebraic sum omitting the diagonal values

*** tj_i - Algebraic sum including diagonal values

@ T_i = Sum of row tj_i

* @ wj_i = weightage factor $tj_i \times \frac{1}{\sqrt{T_1}}$

Table 4.9 Number of Job Satisfied Individuals and Level of Satisfaction

Sl. No.	G R O U P ----- Category	Popula- tion	Number job satis- fied (score above 58)	Perce- ntage satis- fied	Obser- ved mean	Standard deviat- ion (SD)	Student's 't'	Level of signi- ficance (one tail test)
1	Total	224	186	83.04	69.59	12.96	13.354	0.01
2	Superintending Engineers and above	20	17	85.00	68.41	14.347	3.164	0.01
3	Executive Engineers	56	47	83.93	69.55	12.463	6.874	0.01
4	Assistant Executive Engineers	148	122	82.43	69.76	12.941	11.022	0.01
5	Male	195	158	81.03	69.24	13.575	11.538	0.01
6	Female	29	28	96.55	71.91	7.239	10.17	0.01
7	Intrinsic group	34	30	88.24	72.27	11.748	6.976	0.01
8	Extrinsic group	169	138	81.66	69.48	13.315	11.177	0.01
9	Very Intrinsic group	20	20	100.00	75.34	10.111	7.477	0.01
10	Very Extrinsic group	137	137	79.56	68.98	13.728	9.324	0.01
11	Age 40 years and below	56	47	83.93	69.35	11.158	7.547	0.01
12	Age 41 years and above	168	139	82.74	69.67	13.508	11.163	0.01
13	Post-graduate Degree/ training	72	63	87.50	69.33	12.336	7.741	0.01
14	Non Post-graduate	151	122	80.80	69.69	13.286	10.775	0.01
15	Degree and above	195	163	83.59	69.75	12.831	12.751	0.01
16	Without Degree	28	22	78.57	68.37	13.975	3.857	0.01
17	Salary Rs.4001 and above	37	32	86.49	69.45	13.096	5.245	0.01
18	Salary Rs.3001 to 4000	110	92	83.64	69.62	12.614	9.614	0.01
19	Salary Rs.1001 to 3000	77	62	80.52	69.62	13.378	7.574	0.01
20	Service upto 10 years	45	40	88.89	72.88	10.281	9.599	0.01
21	Service 11 to 20 years	82	65	79.27	68.15	13.580	6.727	0.01
22	Service 21 to 30 years	79	68	86.08	69.76	11.235	9.248	0.01
23	Service 31 years and above	18	13	72.22	67.18	19.746	1.916	0.05
24	District: Trivandrum	48	39	81.25	69.32	15.872	4.893	0.01
25	Quilon	23	21	91.90	71.08	9.849	6.229	0.01
26	Pathanamthitta	13	11	84.62	71.18	13.159	3.469	0.01
27	Alleppey	15	12	80.00	72.36	13.985	3.841	0.01
28	Kottayam	16	13	81.25	67.02	10.853	3.220	0.01
29	Ernakulam	31	28	90.32	70.38	9.980	6.800	0.01
30	Idukki	3	3	100.00	71.83	9.778	2.007	-
31	Trichur	38	29	76.31	66.69	13.00	4.064	0.01
32	Palghat	7	6	85.71	74.69	12.896	3.171	0.01
33	Malappuram	5	5	100.00	68.44	6.779	3.080	-
34	Calicut	13	11	84.62	71.99	11.916	4.067	0.01
35	Cannanore	10	7	70.00	68.74	10.597	3.040	0.01
36	Kasargode	2	1	50.00	61.42	22.498	0.152	-
37	Southern region	115	96	83.48	69.96	13.732	9.301	0.01
38	Central region	72	60	83.33	68.49	11.824	7.479	0.01
39	Northern region	37	30	81.08	70.57	12.460	6.054	0.01
40	More organisation-involved	56	56	100.00	79.68	9.313	17.261	0.01
41	Less Organisation-involved	56	33	58.93	59.90	14.403	0.979	not signi- ficant

satisfaction from the theoretical neutral of the total sample and the different sub-groups are also computed and presented in Table 4.9. The scores of different groups are compared. The level of significance of comparisons of job satisfaction scores between sub-groups are worked out and presented in Appendix XIV.

4.4.5 From Table 4.9, it can be seen that in general, the personnel in the organisation are significantly job satisfied at 0.01 significance level ($t = 13.354$). The exception is the less organisation-involved sub-group which does not indicate job satisfaction at any significant level ($t = 0.979$). Study of Jacob (1973) among non-gazetted officers indicated that there was no conspicuous feeling of satisfaction or dissatisfaction even though a slight trend towards dissatisfaction was noticed.

4.4.6 Hierarchy-wise, the group of assistant executive engineers shows a higher mean and higher 't' value than other sub-groups (Table 4.9). This indicates a trend that satisfaction decreases when the levels go up. However, inter-group comparisons did not reveal any significant level of difference in job satisfaction between the sub-groups (Appendix XIV). Study of Jacob (1973) indicated that nature of job did not have any significant influence on feelings of overall job satisfaction among non-gazetted officers. Study of Tandon and Dhawan (1981, pp. 615-22) indicated that white-collar workers show higher satisfaction than blue-collar workers. No other studies are traced indicating the influence of hierarchy among officers on job satisfaction as such.

4.4.7 It is also observed that male group is found to have lesser mean score (69.24) of job satisfaction than females (71.91) as indicated in Table 4.9. But comparison of scores between males and females does not indicate any significant difference ($t = -0.033$) in job satisfaction (Appendix XIV). Weaver (1974, pp 373-375) and Shapiro and Stern (1975, pp.388-89) found that by and large more male than female professionals were satisfied with their jobs. Studies of Jacob (1973) and King, Murray and Atkinson (1982, pp.119-33) reveal that on the whole females are more satisfied. Campbell, Converse and Rodgers (1976) and Golembiewski (1977, pp.30-32) were not able to find any significant relationship between overall satisfaction and sex.

4.4.8 Age-wise, persons in the higher age group of 41 years and above indicate a slightly higher mean score (69.67) and 't' value (11.163) than those in the lower age group of 40 years and below (mean = 69.35, t= 7.547) as indicated in Table 4.9. However, comparison between groups does not indicate any significant difference (t = 0.159, Appendix XIV). Campbell et al (1976), Ebeling, King and Rogers (1979, pp.387-393) and Glenn, Taylor and Weaver (1977, pp.189-193) found a moderate, but consistent positive correlation between age and job satisfaction. In a study of white-collar employees in five government departments, De (1977) found a positive correlation between age and job satisfaction among top level employees, a negative correlation among middle level employees and an insignificant correlation among lower level employees.

4.4.9 With respect to educational qualifications, group with post graduate degree/training indicates a lesser mean score and 't' value (69.33, t= 7.741) than non-post graduates (69.69, t=10.775), as seen from Table 4.9. However, statistical comparison does not indicate any significant difference between these two groups (t = -0.193, Appendix XIV). The group of 'degree and above' indicates a trend of higher job satisfaction (mean = 69.75, t = 12.751) than those without degree (mean = 68.37, t = 3.857). But comparison between the groups does not indicate any significant difference (t = 0.524, Appendix XIV). Studies of Jacob (1973) indicated a mixed relationship between levels of education and satisfaction. Janson and Martin (1982) did not observe any relationship between education and job satisfaction. Campbell et al (1976) indicated a negative but not strictly linear association. Glenn and Weaver (1982, pp.46-55) noted a positive relationship between education and job satisfaction.

4.4.10 The statistical data of the scores of the different tenure of service sub-groups (Table 4.9) are:

Service upto 10 years	n = 45	mean = 72.88	SD = 10.281	t = 9.599	significant at 0.01 level
Service 11 to 20 years	n = 82	mean = 68.15	SD = 13.580	t = 6.727	significant at 0.01 level

Service 21 to 30 years	n = 79	mean = 69.76	SD = 11.235	t = 9.248	significant at 0.01 level
Service 31 31 years and above	n = 18	mean = 67.18	SD = 19.746	t = 1.916	significant at 0.05 level

Looking at the mean scores and 't' values, the group with service of 31 years and above appear to be less job satisfied than the other groups. However, inter comparisons of groups indicate significant difference only between the group with service upto 10 years and the group with 11 to 20 years ($t = 2.022$: significant at 0.05 level, Appendix XIV), the group with upto 10 years being more job involved. The trend indicated is that job satisfaction decreases with length of service as between the two groups of upto 10 years service and 11 to 20 years and between the groups with service of 21 to 30 years and 31 years and above. No specific studies are traced that correlate length of service in organisations with job satisfaction.

4.4.11 Regarding salary range groups, all the sub-groups are job satisfied at 0.01 significance level even though those in the higher group of Rs.4001 and above show a slightly lower mean score of 69.45 and lower 't' value of 5.245 than the other groups (Table 4.9). However, comparisons between the groups do not indicate any statistically significant difference (Appendix XIV). Since salary is moderated by other factors like educational level, tenure of service etc. and salient needs depending on family background and number of dependents, etc. a definite relationship between salary and satisfaction cannot be established.

4.4.12 Region-wise, all officers indicate job satisfaction at a significance level of 0.01 (Table 4.9). However, inter-comparisons do not indicate any significant differences between the levels of satisfaction. King, Murray and Atkinson (1982. pp.119-133) have reported variation in job satisfaction among the geographic regions of Canada. Turner and Lawrence (1965) found that the location of the work setting (city or town) did not have a direct effect on an individual's level of job satisfaction.

4.4.13 All the sub-groups of job outcome classification - extrinsically motivated, intrinsically motivated, very extrinsically motivated and very

intrinsically motivated - are significantly job satisfied at 0.01 level (Table 4.9). Inter-comparisons between intrinsic and very intrinsic group and that between extrinsic and very extrinsic groups do not indicate any significant differences (Appendix IV). Inter-comparison between intrinsic and extrinsic group also does not indicate any significant difference ($t = 1.130$, Appendix XIV). But the comparison between very intrinsic group and very extrinsic group indicates that very intrinsic group is more job satisfied than the very extrinsic group at a significance level of 0.05 ($t = 1.982$, Appendix XIV). Gorn and Kanungo (1980, pp. 265-77) found that extrinsically motivated managers indicated greater job satisfaction. Misra and Kalro (1981, pp.419-26) did not notice any significant difference between intrinsic group and extrinsic group regarding overall job satisfaction.

4.4.14 More organisation-involved group is significantly job satisfied at 0.01 level while the less organisation-involved (alienated) group does not indicate job satisfaction at any significance level even though the mean score of this group is 59.90 which is slightly above the neutral score of 58 (Table 4.9). Statistical comparison of the scores also indicates that more organisation-involved group is significantly more job satisfied than the less-organisation-involved (alienated) group ($t = 8.533$).

4.5.0 Job involvement

4.5.1 Part II of the questionnaire (Appendix III) was to elicit responses to measure the degree of job involvement of the respondents. There are 15 job factors in the questionnaire and the respondents expressed their responses on a six point agree-disagree format (strongly agree, agree, mildly agree, mildly disagree, disagree and strongly disagree). The scoring pattern is that a score of 6 is assigned to a 'strongly agree' statement and 1 to 'strongly disagree' statement which are positively worded towards job involvement. In the case of negatively worded statements, the scoring pattern is reversed. Out of the 15 statements, five statements are filler items (items 2, 5, 7, 12 and 14) and the responses for these statements are not considered during computation. The responses on job involvement are presented in Appendix XV.

- 4.5.2 From the raw scores obtained for the different valid items (excluding filler items), moderated scores for each respondent are computed as described in Chapter II. The moderated scores of individuals which are used for further analyses and comparisons are also furnished in Appendix XV.
- 4.5.3 The theoretical neutral value (no job involvement or no job alienation) is taken as a score of 58, as explained earlier. Based on this theoretical neutral value, the level of job involvement of the total sample and the different sub-groups are computed and the level of significance (one tail test) determined using Student's 't'. These are given in Table 4.10. The scores of the different sub-groups are compared. The level of significance of comparisons of job involvement scores between sub-groups are worked out and given in Appendix XVI.
- 4.5.4 Table 4.10 indicates that on the whole, the officers are job involved at a significance level of 0.01 ($t = 9.450$). All the other sub-groups are significantly job involved and even the less organisation-involved group indicates significant job involvement ($t = 3.349$).
- 4.5.5 All the hierarchy-wise groups are job involved at a significance level of 0.01 (Table 4.10). There is no significant difference between the groups on comparison (Appendix XVI). Study of Sharma and Sharma (1978, pp.141-47) reported a positive relationship between job level and job involvement, while Davis (1966, pp.6-12) reported negative relationship. Studies of Mathew (1982-83) reported insignificant relationship. No other studies are traced indicating influence of hierarchy (without linking age or organisational tenure) on job involvement as such.
- 4.5.6 With respect to sex groups, male group has a higher mean score (66.94) and 't' value ($t = 8.791$) than the female group (mean = 66.10, $t = 3.446$) as indicated in table 4.10. This indicates a trend of more job involvement for males than females. However, comparison of the scores statistically, no significant difference is noticed between them ($t = 0.301$, Appendix XVI). No studies are traced linking sex and job involvement in the context of the present day changing social norms with respect to the beliefs regarding the work roles of men and women.

Table 4.10 Number of Job Involved Individuals and Level of Job Involvement

Sl. No.	Category	Population	Number job involved (score above 58)	Percentage job involved	Observed mean	Standard deviation (SD)	Student's 't'	Level of significance (one tail test)
1	Total	224	158	70.53	66.83	13.961	9.450	0.01
2	Superintending Engineers and above	20	15	75.00	65.20	7.801	4.023	0.01
3	Executive Engineers	56	42	75.00	69.87	16.032	5.493	0.01
4	Assistant Executive Engineers	148	101	68.24	65.90	13.594	7.051	0.01
5	Male	195	142	72.82	66.94	14.169	8.791	0.01
6	Female	29	23	79.31	66.10	12.444	3.446	0.01
7	Intrinsic group	34	24	70.59	66.56	11.735	4.190	0.01
8	Extrinsic group	169	118	69.82	66.82	14.334	7.978	0.01
9	Very Intrinsic group	20	13	65.00	66.70	11.230	3.388	0.01
10	Very Extrinsic group	137	90	65.69	66.17	14.964	6.365	0.01
11	Age 40 years and below	56	40	71.42	66.36	12.147	5.102	0.01
12	Age 41 years and above	168	118	70.23	66.99	14.512	8.009	0.01
13	Post-graduate Degree/training	72	49	68.05	64.86	13.279	4.354	0.01
14	Non Post-graduate	151	108	71.52	67.61	14.085	8.355	0.01
15	Degree and above	195	135	69.23	65.89	13.670	8.036	0.01
16	Without Degree	28	22	78.57	72.54	14.019	5.388	0.01
17	Salary Rs.4001 and above	37	27	72.97	65.16	13.019	3.301	0.01
18	Salary Rs.3001 to 4000	110	75	68.18	67.55	15.356	6.496	0.01
19	Salary Rs.1001 to 3000	77	56	72.72	66.61	12.107	6.200	0.01
20	Service upto 10 years	45	35	77.78	67.04	10.228	5.865	0.01
21	Service 11 to 20 years	82	51	62.20	64.16	14.529	3.815	0.01
22	Service 21 to 30 years	79	58	73.41	68.10	14.488	6.158	0.01
23	Service 31 years and above	18	14	77.78	72.94	14.285	4.314	0.01
24	District: Trivandrum	48	34	70.83	65.85	13.407	4.016	0.01
25	Quilon	23	15	65.21	67.70	16.449	2.765	0.01
26	Pathanamthitta	13	9	69.23	67.38	12.137	2.678	0.02
27	Alleppey	15	14	93.33	71.27	12.969	3.828	0.01
28	Kottayam	16	7	43.75	59.25	11.366	0.426	not significant
29	Ernakulam	31	22	70.97	65.35	14.955	2.694	0.01
30	Idukki	3	2	66.67	55.67	18.373	0.18	-
31	Trichur	38	28	73.68	68.68	13.139	4.946	0.01
32	Palghat	7	6	85.71	69.14	9.187	2.971	0.02
33	Malappuram	5	3	60.00	64.40	10.230	1.251	-
34	Calicut	13	10	76.92	71.23	12.367	3.706	0.01
35	Cannanore	10	7	70.00	65.70	13.259	1.742	not significant
36	Kasargode	2	2	100.00	84.00	9.000	2.889	-
37	Southern region	115	79	68.70	66.18	14.015	6.234	0.01
38	Central region	72	51	70.83	66.71	14.471	5.071	0.01
39	Northern region	37	28	75.68	69.11	12.468	5.346	0.01
40	More organisation-involved	56	50	89.29	74.29	11.368	10.624	0.01
41	Less organisation-involved	56	36	64.29	65.44	16.411	3.349	0.01

4.5.7 Age-wise, both the groups of 40 years and below and those of 41 years and above are significantly job involved at 0.01 (Table 4.10). Statistical comparison of the scores does not indicate any significant difference between them ($t = 0.291$). Higher level of job involvement for older group than younger group was supported by the findings of Aldag and Brief (1975, pp. 757-60), Cherrington, Condie and England (1979, pp.617-23), Hall and Mansfield (1975, pp.201-10), Jones, James and Bruni (1975, pp.146-49), McKelvey and Sekaran (1977, pp. 281-305), Newman (1975, pp. 371-79), Saal (1978, pp. 53-61) and Sharma and Sharma (1978, pp. 141-147). Bigoness (1978, pp.228-33), Gechman and Wiener (1975, pp.521-33), Lodahl and Kejner (1965, pp.24-33) and Mannheim (1975, pp.221-30) did not observe any relationship. However, Lefkowitz (1974, pp.221-30) and Taylor and Thompson (1976, pp.522-36) reported negative relationship.

4.5.8 Both post graduates and non post graduates are significantly job involved (Table 4.10). Between them there is no significant difference ($t = 1.382$, Appendix XVI). Even though, both groups of 'degree and above' and those 'without degree' are job involved at a significance level of 0.01 (Table 4.10), those with degree and above are found to be more job involved than those without degree at a significance level of 0.01 ($t = 3.220$, Appendix XVI). Sharma and Sharma (1978, pp.141-147) reported that graduate engineers were found to be more job involved than those with diploma in engineering. Those without degree might feel a sense of inadequacy and hence may be less job involved. There are studies that reported positive relationship between education and job involvement (Cleland et al 1976, pp.90-97; Gurin, Veroff and Feld, 1960; Lefkowitz, 1974, pp. 221-30; Mannheim, 1975, pp.221-30; Newman, 1975, pp.371-79). However, some studies reported negative relationship between education and job involvement (Aldag and Brief, 1975, pp.757-60; Koch and Steers, 1978, pp.119-28; Saal, 1978, pp.53-61). Few other studies showed no relationship (Ivancevish and McMahon, 1977, pp.552-63; Jones, James and Bruni, 1975, pp.146-49; Rabinowitz, Hall and Goodale, 1977, pp.273-84; Ruh, White and Wood, 1975, pp.300-12; Siegel and Ruh, 1973, pp.318-29).

4.5.9 Regarding length of service in the organisation, all the sub-groups are job involved at a significance level of 0.01 (Table 4.10). Statistical

comparison of the sub-group scores reveals that the sub-group with service 31 years and above is significantly more job involved at 0.05 level than those with service 11 to 20 years ($t = 2.305$, Appendix XVI). There is no significant difference between any of the other groups. In other words, those engineers with service between 11 years and 20 years are found to be less job involved. In the present set-up of the organisation (KWA), there is likely to be a stagnation in the lower cadre (AEE) in the service range of 11 years to 20 years (AEE with service 11 to 20 years may represent the bulk of this group) and this, probably, could be a reason for frustration resulting in lower job involvement. Several studies reported positive relationship between organisational tenure and job involvement (Aldag and Brief, 1975, pp.757-60; Ivancevish and McMahon, 1977, pp.552-63; Jones, James and Bruni, 1975, pp.146-49; Kanungo, Misra and Dayal, 1975, pp.39-59; Newman, 1975, pp.371-79; Rabinowitz, Hall and Goodale, 1977, pp.273-81; Sharma and Sharma, 1978, pp.141-47). There are other studies which reported insignificant relationship between seniority and job involvement (Gechman and Weiner, 1975, pp.521-23; Hall and Mansfield, 1975, pp.201-10; Saal, 1978, pp.53-61). However, Davis (1976, pp.6-12) reported negative relationship between organisational tenure and job involvement.

4.5.10 Regarding Salary ranges all the sub-groups are significantly job involved at 0.01 level (Table 4.10). On statistical comparison of the scores between groups, it is found that there are no significant differences in job involvement between the groups (Appendix XVI). Mathew (1982-83) reported insignificant influence of salary on job involvement. Kanungo (1982, Study II) reported a positive relationship between income and job involvement. Salary is moderated by other factors like hierarchy, length of service, etc. and the need strength of the individuals dependant on family background, dependents, etc. Hence a definite relationship for salary with job involvement is not possible.

4.5.11 All the region-wise sub- groups (south, central and north) are job involved at 0.01 level (Table 4.10). On comparing the scores statistically between regions, it is found that there is no significant difference between the groups regarding job involvement (Appendix XVI). Studies are not traced

linking job involvement and persons hailing from different geographic regions.

4.5.12 All the job outcome groups (intrinsically motivated, very intrinsically motivated, extrinsically motivated and very extrinsically motivated) are significantly job involved at 0.01 level (Table 4.10). Comparison of the scores between intrinsic and very intrinsic groups does not reveal any significant difference in the level of job involvement ($t = 0.042$, Appendix XVI). Similarly, there is no significant difference between extrinsic and very extrinsic group ($t = 0.385$, Appendix XVI). Further, it is also noticed that there is no significant difference in the level of job involvement between intrinsic and extrinsic group ($t = 0.099$, Appendix XVI) and also between very intrinsic and very extrinsic group ($t = 0.151$, Appendix XVI). This shows that both intrinsically motivated and extrinsically motivated individuals can be equally job involved. Gorn and Kanungo (1980, pp.265-77) found that extrinsically motivated managers, on the whole, are more job satisfied and more job involved than intrinsically motivated managers. But Misra and Kalro (1981, pp.419-26) did not find any difference in job involvement between intrinsically motivated group and extrinsically motivated group. The finding of the present study also supports the view of Kanungo (1982) that extrinsically motivated individuals can be equally job involved as intrinsically motivated individuals if the salient needs are met.

4.5.13 It is seen from table 4.10 that both more organisation-involved group and less organisation-involved (alienated) group are job involved at significance level of 0.01 as shown below:

More organisation- involved group	n = 56	mean= 74.29	SD = 11.368	t = 10.624	significant at 0.01 level
Less organisation- involved group	n = 56	mean= 65.44	SD = 16.411	t = 3.349	significant at 0.01 level

Comparing the scores statistically to find out the level of difference in job involvement between the groups, it is found that more organisation-involved group is definitely more job involved at a significance level of 0.01 than the less organisation-involved (alienated) group ($t = 3.288$, Appendix XVI).

4.6.0 Work involvement

4.6.1 Part IV of the questionnaire (Appendix III) was intended to elicit responses of the subjects on the normative belief of work in general, to measure the degree of work alienation/involvement. There were 11 work related statements out of which five statements (4,5,7,9 and 11) were filler items. The format was exactly similar to that of job involvement scales and the respondents expressed their responses on a six point agree-disagree format. The scoring pattern was also similar to that of job involvement scale, the responses of filler items were not considered during computation. (The responses on work involvement is presented in Appendix-XVII).

4.6.2 From the raw scores obtained for the different valid items (excluding filler items), moderated score for each individual respondent is computed as explained earlier. The moderated scores, which are used for further analyses and comparisons are also furnished in Appendix XVII.

4.6.3 Based on the theoretical neutral value of 58 (no-involvement or no-alienation), the level of work involvement of the total sample and of the different sub-groups are computed and the level of significance (one tail test) arrived at using Student's 't'. These are given in Table 4.11. Scores obtained for the different sub-groups are compared between the groups to assess the extent of differences in the level of work involvement between the groups. The Students 't' values and the levels of significances are given in Appendix XVIII.

4.6.4 On the whole, engineers who responded are found to be significantly work involved with a significance level of 0.01 ($t = 14.890$, Table: 4.11). The least organisation-involved group also indicates work involvement at a significance level of 0.01 ($t = 7.805$, Table 4.11).

4.6.5 Hierarchy-wise, all the sub-groups are work involved at a significance level of 0.01. A comparison of the sub-group scores statistically with each

Table 4.11 Number of Work Involved Individuals and Level of Work Involvement

Sl. No.	GROUP Category	Popula- tion	Number work in- volved (score above 58)	Perce- ntage work invol- ved	Obser- ved mean	Standard deviat- ion (SD)	Student's 't'	Level of signi- ficance (one tail test)
1	Total	224	184	82.14	71.42	13.460	14.890	0.01
2	Superintending Engineers and above	20	17	85.00	71.90	10.880	15.508	0.01
3	Executive Engineers	56	45	80.36	72.89	16.210	6.812	0.01
4	Assistant Executive Engineers	148	122	82.43	70.80	12.550	12.366	0.01
5	Male	195	174	89.23	72.32	12.970	15.387	0.01
6	Female	29	19	65.52	65.34	15.050	2.583	0.01
7	Intrinsic group	34	27	79.41	70.58	12.083	5.985	0.01
8	Extrinsic group	169	141	83.43	71.92	13.810	13.061	0.01
9	Very Intrinsic group	20	17	85.00	72.70	12.220	5.242	0.01
10	Very Extrinsic group	137	115	83.94	72.56	13.574	12.511	0.01
11	Age 40 years and below	56	44	78.57	71.43	13.460	7.399	0.01
12	Age 41 years and above	168	140	83.33	72.42	13.460	12.883	0.01
13	Post-graduate Degree/training	72	57	79.17	70.53	13.680	7.715	0.01
14	Non Post-graduate	151	126	83.44	71.66	13.180	12.694	0.01
15	Degree and above	195	156	80.00	70.37	13.352	12.903	0.01
16	Without Degree	28	27	96.42	77.71	11.450	8.948	0.01
17	Salary Rs.4001 and above	37	31	83.78	72.86	12.159	7.335	0.01
18	Salary Rs.3001 to 4000	110	88	80.00	71.31	14.484	9.593	0.01
19	Salary Rs.1001 to 3000	77	65	84.42	70.88	12.445	9.025	0.01
20	Service upto 10 years	45	39	86.67	72.33	12.190	7.797	0.01
21	Service 11 to 20 years	82	59	71.95	66.98	14.140	5.110	0.01
22	Service 21 to 30 years	79	68	86.08	72.91	11.910	11.056	0.01
23	Service 31 years and above	18	18	100.00	82.83	10.750	9.501	0.01
24	District: Trivandrum	48	40	83.33	70.21	13.046	11.056	0.01
25	Quilon	23	20	86.96	72.43	11.500	5.887	0.01
26	Pathanamthitta	13	10	76.92	73.00	11.940	4.353	0.01
27	Alleppey	15	13	86.67	76.80	14.150	4.972	0.01
28	Kottayam	16	14	87.50	75.12	13.550	4.893	0.01
29	Ernakulam	31	24	77.42	69.29	11.930	5.186	0.01
30	Idukki	3	2	66.67	65.33	13.120	0.790	-
31	Trichur	38	31	81.58	71.08	13.190	6.031	0.01
32	Palghat	7	5	71.43	69.57	17.820	1.580	not signi- ficant
33	Malappuram	5	4	80.00	66.60	10.560	1.629	-
34	Calicut	13	11	84.62	71.00	14.490	3.109	0.01
35	Cannanore	10	9	90.00	69.10	15.814	2.106	0.05
36	Kasargode	2	2	100.00	90.00	7.000	4.571	-
37	Southern region	115	97	84.35	72.51	13.070	11.855	0.01
38	Central region	72	57	79.17	70.07	12.730	7.991	0.01
39	Northern region	37	30	81.08	70.65	15.570	4.874	0.01
40	More organisation-involved	56	53	94.64	77.23	12.523	11.390	0.01
41	Less organisation-involved	56	45	80.36	73.14	14.389	7.805	0.01

other does not reveal any significant differences in work involvement between groups (Appendix XVIII). In the present study 'job' and 'work' are differentiated, 'work' being considered as a normative belief of the individual. More studies are not traced that differentiate between 'work' and 'job' and levels of 'work involvement' at different hierarchy levels.

4.6.6 Both male group as well as the female group are work involved at 0.01 level (Table 4.11) as given below:

Male : n=195 mean=72.32 SD=12.970 't'=15.387 significant at 0.01 level
 Female: n= 29 mean=63.54 SD=15.050 't'= 2.583 significant at 0.01 level
 The scores are statistically compared: t=2.633: significant at 0.01 level (Appendix XVIII). This indicates that male group is more work involved than female group.

4.6.7 Age-wise, both the groups of 40 years and below and 41 years and above are work involved at 0.01 level (Table 4.11). A comparison of scores between them revealed no significant difference in the levels of work involvement (t = 0.474, Appendix XVIII). Older people are believed to have greater work value, but the findings of this study do not indicate any significant difference between older and younger groups. Kanungo (1982, Study II) reported insignificant relationship between age and work involvement. Other studies are not available linking age with work involvement.

4.6.8 With respect to educational levels, all the sub-groups are work involved at 0.01 level (Table 4.11). A comparison of the scores of post graduate degree/training and non-post graduate groups, showed no statistical difference (t = 0.589, Appendix XVIII). However, when the scores of the groups of 'degree and above' and 'without degree' are compared, the group of degree and above is found to be less work involved (t = -2.754, Appendix XVIII). The scores are:

Degree and above	n=195	mean= 70.37	SD=13.352	't'=12.903	significant at 0.01 level
Without Degree	n= 28	mean= 77.71	SD=11.450	't'= 8.948	significant at 0.01 level

In other words, the group with less education is found to have a higher level of work involvement. Kanungo (1982, Study II) indicated insignificant relationship between education and work involvement.

4.6.9 Taking length of service into consideration, all the sub-groups indicate work involvement at 0.01 level (Table 4.11) as given below:

Service upto 10 years	n=45	mean=72.33	SD=12.190	't'= 7.970	significant at 0.01 level
Service 11 to 20 years	n=82	mean=66.98	SD=14.140	't'= 5.110	significant at 0.01 level
Service 21 to 30 years	n=79	mean=72.91	SD=11.910	't'=11.056	significant at 0.01 level
Service 31 yrs & above	n=18	mean=82.83	SD=10.750	't'= 9.501	significant at 0.01 level

Inter group statistical comparisons are furnished below (Appendix XVIII):

Service upto 10 years	and	Service 11 to 20 years	t= 2.122	significant at 0.05 level
Service 11 to 20 years	and	Service 21 to 30 years	t=(-)2.855	significant at 0.01 level
Service 21 to 30 years	and	Service upto 10 years	t= 0.256	not significant
Service 31 years and above	and	Service 11 to 20 years	t= 4.435	significant at 0.01 level
Service upto 10 years	and	Service 31 years and above	t=(-)3.141	significant at 0.01 level
Service 31 years and above	and	Service 21 to 30 years	t= 3.212	significant at 0.01 level

A comparison of the scores of the group with service upto 10 years with those of other groups, reveals that the group with service upto 10 years is more work involved than the group with service 11 to 20 years at a significance level of 0.05 (t = 2.122), the group with service of 21 to 30 years shows no significant difference (t = -0.256), and the group with service of 31 years and above is more work involved at a significance level of 0.01 (t = - 3.141). When the group with service 11 to 20 years is compared with the group with service 21 to 30 years, the former is found to be less work

involved than the latter at a significance level of 0.01 ($t = -2.855$) and as between the groups of service 11 to 20 years and 31 years and above, the latter is found to be more work involved ($t = -4.435$). Between the groups with service 21 to 30 years and 31 years and above, the latter is found to be more work involved than the former at a significance level of 0.01 ($t = -3.212$). In other words, the group with service 31 years and above is found to be significantly more work involved than all the other groups with lesser service. However, the group with service 21 to 30 years is not significantly more work involved than the group with service upto 10 years but significantly more work involved than the group with service 11 to 20 years and less work involved than the group with service of 31 years and above. The group with service 11 to 20 years is less work involved than the group with service upto 10 years, 21 to 30 years and 31 years and above. The group with service upto 10 years is more work involved than the group with service 11 to 20 years, no significant difference with the group 21 to 30 years and less work involved than the group with service of 30 years and above. In general, the tendency is that work involvement increases with the increase in service, the exception being the group with service 11 to 20 years. Kanungo (1982, Study II) did not find any significant relationship between tenure of service in organisation and work involvement.

4.6.10 All the salary-wise sub groups are work involved at a significance level of 0.01 (Table 4.11). Statistical comparison of the scores reveals no significant differences in the levels of work involvement between the groups (Appendix XVIII). Kanungo (1982, Study II) also reported insignificant relationship between income and work involvement.

4.6.11 Taking region-wise classification, all the sub-groups (south, central and north) are work involved at 0.01 level (Table 4.11). Statistical comparison of the scores of the respective regional groups with each other does not show any significant differences in work involvement between the groups (Appendix XVIII). Other studies are not available linking work involvement with geographic location of respondents.

4.6.12 The findings of this study do not provide sufficient data to conclusively relate work involvement with job levels, age, educational levels, length of service, salary and geographic region except that male group is found to be more work involved than the female group. More studies are needed for arriving at definite conclusions.

4.6.13 All the job outcome sub-groups are work involved at a significance level of 0.01 (Table 4.11). Comparison of the scores of different groups does not show any significant differences (Appendix XVIII). In other words, the findings indicate that both intrinsically motivated individuals and extrinsically motivated individuals can be equally work involved. Study of Gorn and Kanungo (1980, pp. 265-77) indicated that dissatisfied extrinsic managers tended to attach lesser importance to work than satisfied extrinsic and intrinsic managers. More studies are needed to arrive at any conclusion regarding the extent of work involvement of intrinsically and extrinsically motivated individuals.

4.6.14 Both 'more organisation-involved' and 'less organisation-involved' (alienated) groups are work involved at significance level of 0.01 (Table 4.11). No significant difference is noticed on comparison of the scores of different groups (Appendix XVIII). In the case of job involvement, more organisation-involved group is found to be more job involved than the less organisation involved group (para 4.5.12). This observation further supports the view that 'job' and 'work' are perceived differently by individuals.

4.7.0 Job satisfaction and job involvement

4.7.1 Correlation between job satisfaction and job involvement for the overall group and the different sub-groups are given in table 4.12. For the overall group job satisfaction is highly correlated with job involvement at 0.01 level ($t=2.71$). Most studies that deal with the relationship of job involvement with job satisfaction have emphasised intrinsic job need satisfaction and job involvement. (Aldag and Brief, 1975, pp. 757-60; Bigoness, 1978, pp.228-33; Hall et al, 1978, pp.62-72; Lodahl and Kejner, 1965, pp.24-33; Newman, 1975, pp.371-79; Saal, 1978, pp.53-61; Weissenberg and

Table 4.12 Inter Correlation Between Job Satisfaction, Job Involvement and Work Involvement

Sl. No.	Sub-group	Population	Inter correlations								
			Job satisfaction and job involvement		Job satisfaction and work involvement		Job involvement and work involvement				
			r	Student's 't'	Level of significance	r	Student's 't'	Level of significance	r	Student's 't'	Level of significance
1	Total	224	0.179	2.71	0.01	0.090	1.34	--	0.558	10.03	0.01
2	Superintending Engineers and above	20	0.025	0.11	--	0.091	0.39	--	0.212	0.92	--
3	Executive Engineers	56	0.314	2.43	0.02	0.270	2.06	0.05	0.542	4.74	0.01
4	Assistant Executive Engineers	148	0.141	1.73	0.10	0.008	0.10	--	0.591	8.86	0.01
5	Male	195	0.187	2.65	0.01	0.107	1.49	--	0.547	9.09	0.01
6	Female	29	0.114	0.60	--	0.102	0.53	--	0.689	4.94	0.01
7	Intrinsic group	34	0.000	0.00	--	0.164	0.94	--	0.613	4.39	0.01
8	Extrinsic group	169	0.198	2.61	0.01	0.072	0.93	--	0.539	8.27	0.01
9	Very Intrinsic group	20	(-)0.073	(-)0.31	--	(-)0.011	(-)0.05	--	0.667	3.80	0.01
10	Very Extrinsic group	137	0.223	2.66	0.01	0.056	0.65	--	0.647	9.86	0.01
11	Age 40 years and below	56	0.055	0.40	--	(-)0.206	(-)1.55	--	0.477	3.99	0.01
12	Age 41 years and above	168	0.208	2.74	0.01	0.172	2.25	0.05	0.583	9.25	0.01
13	Post-graduate degree/training	72	0.141	1.19	--	0.127	1.07	--	0.607	6.39	0.01
14	Non post-graduate	151	0.193	2.40	0.02	0.070	0.85	--	0.524	7.51	0.01
15	Degree and above	195	0.213	3.04	0.01	0.124	1.73	0.10	0.514	8.32	0.01
16	Without degree	28	0.017	0.09	--	(-)0.018	(-)0.06	--	0.734	5.51	0.01
17	Salary Rs.4001 and above	37	0.285	1.76	0.10	0.341	2.15	0.05	0.666	5.27	0.01
18	Salary Rs.3001 to 4000	110	0.146	1.53	--	0.073	0.76	--	0.563	7.09	0.01
19	Salary Rs.1001 to 3000	77	0.188	1.66	0.10	0.004	0.03	--	0.51	5.13	0.01
20	Service upto 10 years	45	0.369	2.61	0.01	(-)0.026	(-)0.17	--	0.423	3.06	0.01
21	Service 11 to 20 years	82	0.048	0.43	--	(-)0.034	(-)0.30	--	0.413	4.05	0.01
22	Service 21 to 30 years	79	0.334	3.11	0.01	0.398	3.81	0.01	0.708	8.80	0.01
23	Service 31 years and above	18	0.068	0.27	--	(-)0.054	(-)0.22	--	0.769	4.81	0.01
24	Southern region	115	0.224	2.45	0.02	0.128	1.37	--	0.603	8.04	0.01
25	Central region	72	0.089	0.75	--	(-)0.022	(-)0.18	--	0.548	5.48	0.01
26	Northern region	37	0.198	1.20	--	0.137	0.82	--	0.361	3.52	0.01
27	More organisation-involved	56	0.079	0.58	--	0.124	0.91	--	0.361	2.85	0.01
28	Less organisation-involved	56	0.164	1.22	--	0.090	0.66	--	0.631	5.98	0.01

Gruenfeld, 1968, pp.469=73). Gannon and Hendrickson (1973, pp.339-40) reported that job involvement was positively correlated to satisfaction of interpersonal relation and supervision but was not related to pay and promotion. Schuler (1975) reported positive relationship between job involvement and satisfaction with supervision, co-workers, pay and promotion. In the motivational formulation, job involvement is considered as a cognitive state while job satisfaction is an affective state experienced by the individual. It is, therefore, possible that a highly job involved individual under some conditions may feel a high level of satisfaction and under certain other conditions may experience deep dissatisfaction with the job. In the studies under the motivational formulation (Kanungo, 1982, Study I; Misra and Kalro, 1981, pp.419-26; Misra et al, 1985,pp.501-518) positive correlation was reported between satisfaction of salient needs (intrinsic/extrinsic) and job involvement.

4.7.2 Hierarchy-wise, the executive engineer group, indicates significant correlation between job satisfaction and job involvement at 0.02 level ($t = 2.43$, Table 4.12). The assistant executive engineer group has correlation only at 0.10 level ($t=1.73$) while the superintending engineer and above group indicated no correlation between job satisfaction and job involvement. In other words, hierarchy-wise, engineers at lower levels indicate more correlation between job satisfaction and job involvement than at higher levels. This indicates that, even though all the groups are job satisfied and job involved, only one group (assistant executive engineers) indicates correlation between job satisfaction and job involvement. This finding suggests that even though job satisfaction is correlated to job involvement in general, some of the aspects may not be positively correlated and this may be a reason for not finding a definite positive correlation between job satisfaction and job involvement among the other groups. Other studies are not available indicating hierarchy-wise correlation between job satisfaction and job involvement.

4.7.3 The male group indicates high correlation at 0.01 level ($t=2.65$) while the female group does not indicate any correlation ($t = 0.60$) between job satisfaction and job involvement though both groups independently are job

satisfied (Table 4.9) and job involved (Table 4.10) at significant levels. Studies correlating job satisfaction and job involvement with regard to sex are not traced.

4.7.4 Age-wise, the '41 years and above' group indicates significant correlation at 0.01 level ($t = 2.74$) between job satisfaction and job involvement while the '40 years and below' group does not show any correlation ($t = 0.40$). Both the age groups are job satisfied (Table 4.9) and job involved (Table 4.10) at significant levels. In other words, the older group indicates strong correlation between job satisfaction and job involvement. Other studies are not available that deal with the correlation of job satisfaction and job involvement with regard to age.

4.7.5 Education-wise, the group with post graduate degree/training does not have any correlation between job satisfaction and job involvement ($t = 1.19$) while the group of non post graduates indicates correlation between job satisfaction and job involvement at 0.02 significance level ($t = 2.40$, Table 4.12). The 'degree and above' group indicates significant correlation between job satisfaction and job involvement at 0.01 level ($t=3.04$, Table 4.12) while the group without degree does not show any significant correlation ($t = 0.09$, Table 4.12). Independently all the groups are job satisfied and job involved (Tables 4.9 and 4.10). In other words, the groups with the highest level and the lowest level of educational qualification do not indicate significant correlation between job satisfaction and job involvement. Other studies are not available that deal with the correlation of educational levels with job satisfaction and job involvement.

4.7.6 Salary-wise, there is not much significant correlation between job satisfaction and job involvement within the sub-groups. However, the groups in the salary range of Rs.4001 and above ($t = 1.76$) and Rs. 1001 to 3000 ($t = 1.66$) indicate correlation between job satisfaction and job involvement at significance level of 0.10. The group in the salary range of Rs.3001 to 4000 does not show any significant correlation ($t = 1.53$). With respect to job satisfaction and job involvement, all the groups are job satisfied and job involved at significant levels (Tables 4.9 and 4.10). Studies are not traced

correlating salary groups with job satisfaction and job involvement.

4.7.7 With respect to length of service, the groups having service upto 10 years ($t = 2.61$) and service of 21 years to 30 years ($t = 3.11$) indicate significant correlation between job satisfaction and job involvement at 0.01 level. The groups with service 11 to 20 years ($t = 0.43$) and service 31 years and above ($t = 0.27$) do not indicate any correlation between job satisfaction and job involvement (Table 4.12). With regard to job satisfaction and job involvement all the groups are significantly job satisfied and job involved (Table 4.9 and 4.10). Other studies are not traced correlating organisational tenure with job satisfaction and job involvement.

4.7.8 Taking regions, engineers from southern region indicates a significant correlation at 0.02 level ($t = 2.45$, Table 4.12) between job satisfaction and job involvement. No such correlation is indicated in the group of central region ($t = 0.75$) and northern region ($t = 1.20$). With respect to job satisfaction and job involvement, all the regional groups indicate, at significant levels, job satisfaction and job involvement (Table 4.9 and 4.10). Other studies are not traced on the degree of correlation between job satisfaction and job involvement with groups hailing from different geographical regions.

4.7.9 Intrinsic group indicates no significant correlation ($t = 0$, Table 4.12), while very intrinsic group indicates a negative (non-significant) correlation ($t = -0.31$) between job satisfaction and job involvement. But the extrinsic group ($t = 2.61$) and very extrinsic group ($t=2.66$) indicate significant correlation at 0.01 level between job satisfaction and job involvement. With respect to job satisfaction and job involvement both intrinsic and extrinsic groups indicate job satisfaction and job involvement at significant levels (Table 4.9 and 4.10). Other studies are not traced that deal with the correlation between job outcome groups with job satisfaction and job involvement.

4.7.10 'More organisation-involved' group, and 'less organisation-involved' group, do not indicate any significant correlation between job satisfaction

and job involvement ($t = 0.58, 1.22$, Table 4.12), even though more organisation-involved group indicates a higher degree of job satisfaction ($t = 17.261$, Table 4.9) and job involvement ($t = 10.624$, Table 4.10) than the less organisation-involved group ($t = 0.979$ and $t = 3.349$).

4.8.0 Job satisfaction and work involvement

4.8.1 The data on correlation between job satisfaction and work involvement is given in Table 4.12. The group as a whole does not show any significant correlation between job satisfaction and work involvement. However, the group with a service of 21 to 30 years indicates a correlation at 0.01 level ($t = 3.81$). Groups of executive engineers ($t = 2.06$) and those with age 41 years and above ($t = 2.25$) indicate job satisfaction and work involvement correlation at 0.05 level and the group with degree and above indicates a correlation at 0.10 level ($t = 1.73$). Negative correlation at insignificant levels are indicated by the following groups: (i) very intrinsic ($t = 0.05$), (ii) age 40 years and below ($t = 1.55$), (iii) those without degree ($t = 0.06$), (iv) service upto 10 years ($t = 0.17$), (v) service 11 to 20 years ($t = 0.30$), (vi) service 31 years and above ($t = 0.22$) and (vii) those from central region ($t = 0.18$). Such differences in correlation are not noticed with respect to job satisfaction and job involvement. Thus, these findings clearly support the view that the correlation of job satisfaction and job involvement is more than that of job satisfaction and work involvement.

4.8.2 In the motivational approach, a clear distinction is made between involvement in a specific job and involvement with work in general. Job involvement refers to a specific and descriptive belief of psychological identification with a given job while work involvement refers to a general and normative belief regarding the centrality of work in one's life. Thus the causes of job involvement and work involvement differ in different cultural environments. Need saliency of intrinsic and extrinsic needs also differs in different cultures. This aspect also affects the degree of correlation of job satisfaction with job involvement and work involvement. More studies are necessary to explore the nature of the relationship between the beliefs of job satisfaction and job/work involvement. Studies of Kanungo

(1982, Study I; Study II; Misra et al, 1985, pp. 501-518) support the view distinguishing job involvement from work involvement.

4.9.0 Job involvement and work involvement

4.9.1 Inter correlation between job involvement and work involvement for the overall sample and for the different sub-groups are given in table 4.12. For the group as a whole, job involvement is highly correlated with work involvement ($t = 10.03$), significant at 0.01 level. All the sub-groups also indicate positive correlation between job involvement and work involvement at 0.01 level except the group of superintending engineers and above which does not show any significant correlation ($t = 0.92$). No studies are traced that deal with the inter correlation of job involvement with work involvement in the motivational formulation of the concepts of 'job' and 'work'.

4.9.2 As mentioned earlier, in the motivational formulation, 'job' and 'work' are differentiated. The beliefs of involvements with 'job' and 'work' depends on many aspects like past socialisation process, culture, centrality of life, different aspects of job etc. Thus job involvement need not necessarily have positive correlation with work involvement in all situations. In this study it is observed that the overall group and all the different sub-groups are independently job involved and work involved. It is also observed that the total group and almost all the different sub-groups have high positive correlation between job involvement and work involvement. This phenomenon may be due to the fact that the prevailing environment in the organisation favours the view that job involved personnel also have the beliefs of high importance about the centrality of the work role in one's life. More studies are necessary to support this view.

4.10.0 Organisational alienation/involvement

4.10.1 Part V of the questionnaire (Appendix III) was meant to measure the degree of organisational alienation/involvement of the respondents towards KWA as an organisation. The pattern of the questionnaire and the procedure

for the assignment of scores for the different responses are exactly the same as that for job involvement and work involvement measure described earlier. The scale consists of 26 statements out of which 6 statements are filler items (6, 7, 13, 19, 20 and 25). The rest (alienation/involvement) consist of 20 statements sub-divided into 5 sub-scales of 4 statements each. The sub-scales are: self-estrangement (items 1, 8, 14 and 21), social isolation (2, 9, 15 and 26), powerlessness (3, 10, 16 and 22), meaninglessness (4, 11, 17 and 23) and normlessness (5, 12, 18 and 24). The responses and raw scores of the sub-scales and the total score for each individual with moderated scores are furnished in Appendix XIX. The mean and standard deviation of the sub-scale scores are: self-estrangement (n = 224, mean = 56.75, SD = 13.81), social isolation (n = 224, mean = 51.45, SD = 12.13), powerlessness (n = 224, mean = 65.40, SD = 14.12), meaninglessness (n = 224, mean = 63.90, SD = 11.110), and normlessness (n = 224, mean = 48.40, SD = 13.69). The scoring pattern, as mentioned earlier is that higher total score is indicative of more involvement and lower total score is indicative of less involvement (alienation).

4.10.2 Inter correlations among the different dimensions of the total group are worked out for factor analysis. Factor analysis by centroid method is carried out to determine the weightage of each sub-scale dimension that contributes to the total alienation/involvement scale. The centroid factor analysis is given in table 4.13. The weightage coefficients of these dimensions towards organisational involvement are:

i) Self-estrangement	- 0.852
ii) Social isolation	- 0.813
iii) Powerlessness	- 0.624
iv) Meaninglessness	- 0.768
v) Normlessness	- 0.619

Based on the weightages, weighted moderated scores for each individual are computed. These are given in Appendix XX.

4.10.3 First order factor analysis of the scores of the five sub-scale scores indicates that 74.78% of alienation/involvement is explained by the combina-

Table 4.13 Organisational Alienation/Involvement Correlation Matrix and Factor Analysis for First centroid loading

FACTORS	Correlation Coefficients					$\approx j_i$
	OAE	OAI	OAP	OAM	OAN	
Self estrangement (OAE)	*					
	(0.718)	0.718	0.527	0.647	0.523	2.415
Social isolation (OAI)		*				
	0.718	(0.718)	0.438	0.654	0.459	2.269
Powerlessness (OAP)			*			
	0.527	0.438	(0.527)	0.449	0.354	1.768
Meaninglessness (OAM)				*		
	0.647	0.654	0.449	(0.654)	0.418	2.168
Normlessness (OAN)					*	
	0.523	0.459	0.354	0.418	(0.523)	1.754
** $\approx j_i$	2.415	2.269	1.768	2.168	1.754	$\approx \approx j_i = 10.734$
*** tj_i	3.133	2.987	2.295	2.822	2.277	@ $T_i = 13.514$
*@ wj_i	0.852	0.813	0.624	0.768	0.619	$\sqrt{T_i} = 3.676$
% Contribution $= \frac{wj_i}{\approx wj_i} \times 100$	23.19	22.10	16.98	20.88	16.85	$\frac{1}{\sqrt{T_i}} = 0.272$
Percent covered by the factors $= \frac{\approx wj_i}{\approx wj_i} = 74.78\%$						$\approx wj_i = 3.676$
<p>* This value is a first estimate of the commonality and is taken as the highest correlation coefficient in the column irrespective of sign</p> <p>** $\approx j_i$ - Algebraic sum omitting the diagonal values</p> <p>*** tj_i - Algebraic sum including diagonal values</p> <p>@ T_i - Sum of row tj_i</p> <p>* @ $wj_i = \text{weightage factor} = tj_i \times \frac{1}{\sqrt{T_i}}$</p>						

tion of these factors and only 25.22% is accounted for by other unknown factors. The contribution of these factors towards involvement are:

i) Self-estrangement	- 23.19%
ii) Social isolation	- 22.10%
iii) Powerlessness	- 16.98%
iv) Meaninglessness	- 20.88%
v) Normlessness	- 16.85%

It is reasonably assumed that a contribution of more than 20% indicates involvement while less than 20% indicates less involvement (alienation) as the average contribution (neutral) for each dimension (five dimensions) is 20%. On this basis, normlessness and powerlessness dimensions contribute more to organisational alienation while self-estrangement and social isolation dimensions contribute more to organisational involvement. Meaninglessness dimension is in the neutral range with a contribution of 20.88%.

4.10.4 Factor analyses by centroid method are also done separately for the different hierarchial sub-groups of superintending engineers and assistant executive engineers to compare the contribution of the groups to each of the dimension towards organisational involvement/alienation. The weightage coefficients and the percentage share of contribution towards each dimension of different hierarchial sub-groups are given in table 4.14. From the table it is seen that the share of contribution of assistant executive engineers (23.48%) towards involvement is more than that of executive engineers (22.63%) and superintending engineers and above (21.52%) in their sub-groups, even though the differences are not very substantial. In social isolation dimension, the percentage contribution of assistant executive engineers (23.08%) is more than the contribution of superintending engineers and above (19.60%) and executive engineers (20.62%); the contribution of superintending engineers and above is less than 20% (assuming equal contribution to the five dimensions) and this is to be treated as a trend towards alienation. Regarding powerlessness dimension, the contribution of superintending engineers and above is more (21.58%) while executive engineers (17.03%) and assistant executive engineers (16.30%) indicate trends towards alienation. With respect to meaninglessness dimension, superintending engineers and above contribute 21.60% while the contribution of assistant

Table 4.14 Dimension-wise Weightage Coefficient and Percentage Contribution towards Organisational Involvement/Alienation of Hierarchical Groups

Sl. No.	Dimension	Weightage Coefficient			% Contribution		
		SE's and above	EE	AEE	SE's and above	EE	AEE
1	Self estrangement	0.903	0.862	0.839	21.52	22.43	23.48
2	Social isolation	0.824	0.785	0.825	19.66	20.62	23.08
3	Powerlessness	0.905	0.648	0.582	21.58	17.03	16.30
4	Meaninglessness	0.906	0.759	0.751	21.60	19.93	21.01
5	Normlessness	0.656	0.754	0.576	15.64	19.79	16.13

executive engineers is 21.01% and executive engineers is 19.93%. Even though, there are no appreciable differences, the executive engineer group indicates a slight trend towards alienation. For the normlessness dimension, all groups indicate trends towards alienation: superintending engineers and above contribute more to alienation (15.64%), followed by assistant executive engineers (16.13%) and then executive engineers (19.79%).

4.10.5 As explained earlier, the theoretical neutral score is taken as 58 (no alienation or no involvement). Based on this theoretical neutral value the number of organisation-alienated and -involved individuals of the total sample and different sub-groups and the level of significance of organisational involvement (one tail test) determined by using Student's 't' are given in Table 4.15. Scores obtained for the different sub-groups are statistically compared between the groups to assess the extent of differences in the level of organisational involvement between the sub-groups. The Student's 't' value and the levels of significance are given in Appendix XXI.

4.10.6 From table 4.15 it is seen that on the whole there is no organisational alienation, but the trend is towards more organisational involvement with 138 engineers out of 224 respondents indicating involvement with the organisation. The percentage of the number of organisational alienated

Table 4.15 Number of Organisation Involved Individuals with Percentage and Level of Significance of Organisational Involvement

Sl. No.	Sub-Group	Population	Number organisation involved (score above 58)	Number organisation alienated (score below 58)	Percentage organisation involved	Observed mean	Standard deviation (SD)	Student's 't'	Level of significance (one tail test)
1	Total	224	138	86	61.61	60.90	10.413	4.165	0.01
2	SuperIntending Engineers and above	20	12	8	60.00	57.13	11.210	(-)0.337	Not significant (alienation trend)
3	Executive Engineers	56	32	24	57.14	60.39	10.630	1.672	0.05
4	Assistant Executive Engineers	148	94	54	63.51	61.61	10.100	4.331	0.01
5	Male	195	117	78	60.00	60.65	10.410	3.547	0.01
6	Female	29	21	8	72.41	62.61	10.280	2.371	0.025
7	Intrinsic group	34	22	12	64.71	61.88	8.820	2.525	0.01
8	Extrinsic group	169	105	64	62.13	60.89	11.020	3.399	0.01
9	Very Intrinsic group	20	13	7	65.00	63.07	8.730	2.531	0.02
10	Very Extrinsic group	137	80	57	58.39	60.13	11.507	2.162	0.025
11	Age 40 years and below	56	37	19	66.07	62.18	9.380	3.304	0.01
12	Age 41 years and above	168	101	67	60.12	60.48	10.700	2.994	0.01
13	Post-graduate Degree/training	72	46	26	63.89	60.02	9.100	1.868	0.05
14	Non Post-graduate	151	92	59	60.93	61.47	10.840	3.920	0.01
15	Degree and above	195	124	71	63.59	61.43	10.255	4.653	0.01
16	Without degree	28	14	14	50.00	58.04	10.400	0.022	Not significant (neutral)
17	Salary Rs.4001 and above	37	23	14	62.16	59.24	10.536	0.706	Not significant (neutral)
18	Salary Rs.3001 to 4000	110	64	46	58.19	60.30	10.400	2.305	0.025
19	Salary Rs.1001 to 3000	77	51	26	66.23	62.57	10.150	3.929	0.01
20	Service upto 10 years	45	33	12	73.33	61.17	10.080	4.060	0.01
21	Service 11 to 20 years	82	51	31	62.20	61.12	9.070	3.096	0.01
22	Service 21 to 30 years	79	48	31	60.76	60.56	9.940	2.278	0.025
23	Service 31 years and above	18	6	12	33.33	53.25	14.180	(-)1.382	Not significant (alienation trend)
24	District: Trivandrum	48	33	15	68.75	61.63	11.520	2.161	0.025
25	Quilon	23	14	9	60.87	60.72	9.700	1.314	Not significant (neutral)
26	Pathanamthitta	13	9	4	69.23	63.53	7.330	2.613	0.025
27	Alleppey	15	12	3	80.00	66.08	11.860	2.550	0.025
28	Kottayam	16	7	9	43.75	58.53	10.050	0.203	Not significant (neutral)
29	Ernakulam	31	17	14	54.84	60.93	9.790	1.642	0.10
30	Idukki	3	2	1	66.67	59.88	7.860	0.356	-
31	Trichur	38	19	19	50.00	56.73	10.220	(-)0.753	Not significant (alienation trend)
32	Palghat	7	5	2	71.43	62.65	10.780	1.057	Not significant (neutral)
33	Malappuram	5	3	2	60.00	62.08	8.790	0.929	-
34	Calicut	13	8	5	61.54	62.09	8.290	1.710	0.10
35	Cannanore	10	7	3	70.00	61.91	8.370	1.401	0.10
36	Kasargode	2	2	0	100.00	67.03	1.760	5.129	-
37	Southern region	115	75	40	65.22	61.81	10.820	3.760	0.01
38	Central region	72	38	34	52.78	58.68	10.160	0.562	Not significant (neutral)
39	Northern region	37	25	12	67.57	62.42	8.770	3.019	0.01
40	More organisation-Involved	56	56	0	100.00	73.79	4.457	26.279	0.01
41	Less Organisation-Involved	56	0	56	0.00	47.22	6.044	(-)12.615	0.01 (significant alienation)

engineers is only 38.30%. The level of organisational involvement also is significant at 0.01 level ($t = 4.165$). In general, the pattern is similar for many of the sub-groups indicating a level of significance of 0.01. These sub-groups are: (i) assistant executive engineers, (ii) male, (iii) age 40 years and below, (iv) age 41 years and above, (v) non post-graduate, (vi) degree and above, (vii) salary Rs.1001 to 3000, (viii) service upto 10 years, (ix) service 11 to 20 years, (x) southern region, (xi) northern region, (xii) extrinsic group and (xiii) intrinsic group. Among the districts, those hailing from Trivandrum, Pathanamthitta and Alleppey indicate involvement at 0.025 significance level. Very intrinsic and very extrinsic groups indicate involvement at significance levels 0.02 and 0.025 respectively. The sub-groups of females, salary Rs.3001 to Rs.4000 and service 21 to 30 years indicate involvement at a significance level of 0.025. However, the sub-groups of executive engineers and post-graduate degree/training, indicate involvement only at a significance level of 0.05. Those hailing from Ernakulam district ($t = 1.642$) and Cannanore district ($t = 1.401$) indicate trend towards involvement at a significance level of 0.10 only. Table 4.15 also brings out the sub-groups that are neutral (not involved/alienated at any significant level) with the organisation. They are: (i) without degree, (ii) salary Rs. 4001 and above and (iii) those from central region. Among the districts (i) Quilon, (ii) Kottayam and (iii) Palghat indicate neutrality with respect to organisational alienation/involvement. However, the groups of superintending engineers and above ($t = -0.337$) and those with service of 31 years and above ($t = -1.382$) indicate insignificant trend towards alienation. Among the districts, Trichur ($t = -0.753$) also indicates a trend towards alienation. (The districts of Idukki, Malappuram and Kasargode are not considered as the number of respondents are very few). Studies are not available in the motivational approach that discuss organisational alienation with demographic variables. However, Mathew (1982-83) indicates that influence exerted by salary is very little and that organisational alienation has no significant relationship with age and educational level. Kher (1988, p.99) indicates that alienation from work and organisation are separate but interdependent. He observed that pay and status of company are influencing factors regarding organisational alienation/involvement.

4.10.7 Hierarchy-wise, the group of superintending engineers and above indicates a slight trend towards organisational alienation (but not significant) while the groups of executive engineers and assistant executive engineers indicate definite involvement with the organisation as can be seen from Table 4.15 extracts from which are given below.

Superintending engineers and above	n=20	mean= 57.13	SD= 11.210	t=(-)0.337	not significant (alienation trend)	percentage of individuals involved = 60.00
Executive engineers	n=56	mean= 60.39	SD= 10.630	t= 1.672	significant at 0.05 level	percentage of involved individuals = 57.14
Assistant executive engineers	n=148	mean= 61.61	SD= 10.100	t=4.331	significant at 0.01 level	percentage of involved individuals= 63.51

Statistical comparison of the scores between the groups, however, does not indicate any significant differences (Appendix XXI):

Superintending engineers and above	and	Executive engineers	t=(-)1.145	not significant
Executive engineers	and	Assistant executive engineers	t=(-)0.755	not significant
Assistant executive engineers	and	Superintending engineers and above	t=(-)1.826	not significant

In other words, hierarchy level has no significant relationship with organisational alienation/involvement. But the mean scores and 't' values indicate that the trend towards organisational alienation increases as the levels go up. Even though the group of superintending engineers and above is both job satisfied and job involved at 0.01 significance level, organisational involvement score indicates a trend towards alienation. This data supports the findings of Kher (1988, p.99) that alienation from job is different from organisational alienation. No other studies are traced that deal with hierarchy levels and organisational alienation.

4.10.8 Sex-wise, the male group indicates significant involvement with the organisation at 0.01 level while the female group indicates involvement at 0.025 level (Table 4.15):

Male:	n=195	mean=	SD=	t=3.547	significant	percentage of
		60.65	10.410		at 0.01	organisation
					level	involved indi-
						viduals 60.00
Female:	n=29	mean=	SD=	t=2.371	significant	percentage of
		62.61	10.280		at 0.025	organisation
					level	involved indi-
						viduals 72.41

Statistical comparison of the scores between the male and female groups does not reveal any significant difference ($t = -0.943$, Appendix XXI). In other words, sex has no significant relationship with organisational involvement and the male group is not significantly more organisation involved than the female group. Both the groups are significantly job satisfied and job involved at 0.01 level (Table 4.9 and 4.10). To establish definite relationship between sex and organisational alienation more studies are necessary. Other studies are not traced that deal with the relationship of sex with organisational alienation.

4.10.9 Age-wise, both the groups of 40 years and below and 41 years and above are significantly organisation involved (Table 4.15):

Age 40 years	n=56	mean=	SD=	t=3.304	significant	percentage of
and below		62.18	9.380		at 0.01	organisation
						involved indi-
						viduals 66.07
Age 41 years	n=168	mean=	SD=	t=2.994	significant	percentage of
and above		60.48	10.700		at 0.01	organisation
						involved indi-
						viduals 60.12

Statistical comparison of the scores does not indicate any significant difference ($t=1.056$, Appendix XXI). Even though, the mean score and the number of 'organisation involved individuals' are higher for the group with age 40 years and below, statistically the group is not more organisation involved than the group with age 41 years and above. This supports the

findings of Mathew (1982-83) that organisational alienation has no significant relationship with age. No other studies are traced that discuss relationship of age with organisational alienation/involvement. Further studies are required to establish definite trends.

4.10.10 The group with post graduate degree/training and the group of non-post graduates indicate involvement with the organisation at 0.05 and 0.01 levels of significance respectively (Table 4.15):

Post graduate degree/training	n=72	mean= 60.02	SD= 9.100	t=1.868	significant at 0.05 level	percentage of organisation involved individuals = 63.89
Non-Post graduate	n=151	mean= 61.47	SD= 10.84	t=3.920	significant at 0.01 level	percentage of organisation involved individuals = 60.93

Comparison of scores statistically, does not indicate significant difference between them ($t=-0.978$, Appendix XXI). This shows that post graduate qualification has no significant relationship with organisational alienation/involvement. The group with degree and above is significantly involved with the organisation at 0.01 level while the group without degree is not significantly involved but shows a neutral trend towards organisational alienation/involvement (Table 4.15):

Degree and above	n=195	mean= 61.43	SD= 10.255	t=4.653	significant at 0.01 level	percentage of organisation involved individuals = 63.59
Without degree	n=28	mean= 58.04	SD= 10.400	t=0.022	not significant (neutral)	percentage of organisation involved individuals = 50.00

Statistical comparison of the scores does not indicate any significant difference between them in respect of organisational alienation/involvement ($t = 1.625$, Appendix XXI). In other words, the group with degree is not significantly more organisation involved than the group without degree, even though the mean value and the percentage of 'organisation-involved individuals' are more in the 'degree and above' group. These findings support the findings of Mathew (1982-83) that educational level has no significant relationship with organisational alienation. All the sub-groups based on education are significantly job satisfied and job involved (Table 4.9 and 4.10). No other studies are traced that relate to educational levels and organisation alienation/involvement. More studies are necessary to arrive at definite relationships between educational levels and organisational alienation/involvement.

4.10.11 Salary-wise, the group with salary Rs.4001 and above indicates a neutral position in the organisational alienation/involvement scale while the groups with salary Rs.3001 to 4000 and salary Rs.1001 to 3000 indicate organisational involvement at 0.025 and 0.01 levels respectively (Table 4.15).

Salary Rs.4001 and above	n=37	mean= 59.24	SD= 10.536	t=0.706	not signi- ficant (neutral)	percentage of organisation involved indi- viduals =62.16
Salary Rs.3001 to 4000	n=110	mean= 60.30	SD= 10.400	t=2.305	significant at 0.025 level	percentage of organisation involved indi- viduals=58.19
Salary Rs.1001 to 3000	n=77	mean= 62.57	SD= 10.150	t=3.929	significant at 0.01 level	percentage of organisation involved indi- viduals=66.23

Mean scores and percentage of 'organisation involved individuals' in the groups indicate a trend that organisational involvement decreases with

increases in salary range. All the groups, however, are significantly job satisfied and job involved (Tables 4.9 and 4.10). Statistical comparison of organisational involvement scores of salary sub-group does not indicate any significant differences (Appendix XXI):

Salary Rs.4001 and above	Salary Rs.3001 to 4000	t = (-) 0.531	not significant
Salary Rs.3001 to 4000	Salary Rs.1001 to 3000	t = (-) 1.476	not significant
Salary Rs.1001 to 3000	Salary Rs.4001 and above	t = 1.601	not significant

These findings indicate that salary level has no significant relationship with organisational alienation/involvement. This finding does not support the observation of Kher (1988) that pay is an influencing factor for organisational involvement. Other studies that relate salary levels with organisational alienation are not traced. More studies are necessary to arrive at definite conclusions as salary is a means of satisfying many salient extrinsic needs.

4.10.12 Considering length of service, the groups with service upto 10 years and 11 to 20 years indicate organisational involvement at 0.01 level and the group with service 21 years to 30 years indicates organisational involvement at 0.025 level while the group with service 31 years and above indicates trend (not statistically significant) towards organisational alienation (Table 4.15):

Service upto 10 years	n=45	mean= 64.17	SD= 10.080	t=4.060	significant at 0.01 level	percentage of organisation involved individuals 73.33
Service 11 years to 20 years	n=82	mean= 61.12	SD= 9.070	t=3.096	significant at 0.01 level	percentage of organisation involved individuals 62.20

Service 21 years to 30 years	n=79	mean= 60.56	SD= 9.940	t=2.278	significant at 0.025 level	percentage of organisation involved individuals 60.76
Service 31 years and above	n=18	mean= 53.25	SD= 14.180	t=(-)1.382	not signi- ficant (alienation trend)	percentage of organisation involved individuals 33.33

Mean score of groups and the percentage of 'organisation involved individuals' in each group indicate a trend that organisational involvement decreases with length of service. Statistical comparison of scores indicates the following differences between groups and the levels of significance (Appendix XXI):

Service upto 10 years	and	Service 31 years and above	t =	3.379	significant at 0.01 level
Service 11 to 20 years	and	Service 21 to 30 years	t =	0.371	not significant
Service 21 to 30 years	and	Service 31 years and above	t =	2.552	significant at 0.02 level
Service 31 years and above	and	Service 11 to 20 years	t = (-)	2.940	significant at 0.01 level
Service 11 to 20 years	and	Service upto 10 years	t = (-)	1.728	not significant
Service upto 10 years	and	Service 21 to 30 years	t =	1.919	not significant

The sub-group with service 31 years and above is significantly less involved (more alienated) than other groups. However, the service group with 21 to 30 years is not statistically less involved than the service groups upto 10 years and 11 to 20 years. Also the service group 11 to 20 years is not less organisation-involved than the service group upto 10 years, or more organisation-involved than the service group 21 to 30 years. The sub-group of service upto 10 years, is not found to be statistically more organisation-involved than the other sub-groups of service 11 to 20 years, and service 21 to 30 years. Hence, the observation that organisational alienation increases with increase in service is not statistically valid, exception being the

group with service 31 years and above which is found to be more alienated than the other groups. All the service groups are significantly job satisfied and job involved (Tables 4.9 and 4.10). The behaviour of the sub-group of service 31 years and above support the view that organisational alienation/involvement and job involvement are two different phenomena. At the same time, the findings are contradictory with respect to engineer officers that "a longer stay within an organisation may develop organisational loyalty in a worker" (Kanungo, 1982, p.48). It is also reported by Baba that "the engineers identify themselves more in terms of their profession than in terms of their employing organisation. They are likely to continue involvement in their profession even if they switch organisations" (Baba, 1979, p.18). The sub-group of service 31 years and above is significantly job and work involved and thus supports the observation of Baba (1979). No other studies that discuss tenure of service and organisational alienation are traced. For arriving at more definite conclusions data from more studies are required.

4.10.13 Region-wise, engineers from southern region and northern region indicate organisational involvement at 0.01 level while those from central region indicate a neutral position on organisational alienation/involvement score (Table 4.15) as extracted below:

Southern region:	n=115	mean= 61.81	SD= 10.820	t=3.760	significant at 0.01 level	percentage of organisation involved individuals 65.22
Central region:	n=72	mean= 58.68	SD= 10.160	t=0.562	not significant (neutral)	percentage of organisation involved individuals 52.78
Northern region:	n=37	mean= 62.42	SD= 8.770	t=3.019	significant at 0.01 level	percentage of organisation involved individuals 67.57

All the groups are job satisfied, job involved and work involved at significant levels (Table 4.9, 4.10 and 4.11). Statistical analysis of the scores

shows that the group from central region is less organisation involved than the group from southern region and between other groups no significant differences are noticed (Appendix XXI):

Southern region	and	Central region	t = 1.960	significant at 0.05 level
Central region	and	Northern region	t = (-)1.887	not significant
Northern region	and	Southern region	t = 0.301	not significant

Mean scores and the percentage of 'organisation involved individuals' suggest, that the group from northern region is likely to be more organisation-involved than the other two groups while the group from central region is likely to be less organisation-involved (more alienated) than the other two groups. The behaviour of the group from central region also supports Baba's (1979, p.18) observation that engineers are likely to be more involved in their profession than with the organisation. Studies are not traced that throw any light on this aspect. To arrive at valid conclusions further empirical studies are necessary.

4.10.14 All the 'job outcome' sub-groups are significantly organisation involved (Table 4.15) as extracted below:

Intrinsic group	n=34	mean= 61.88	SD= 8.820	t=2.525	significant at 0.01 level	percentage of organisation involved individuals 64.71
Extrinsic group	n=169	mean= 60.89	SD= 11.020	t=3.399	significant at 0.01 level	percentage of organisation involved individuals 62.13
Very intrinsic group	n=20	mean= 63.07	SD= 8.730	t=2.531	significant at 0.02 level	percentage of organisation involved individuals 65.00

Very extrinsic group	n=137	mean= 60.13	SD= 11.507	t=2.162	significant at 0.025 level	percentage of organisation involved individuals 58.39
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The mean scores and the percentage of 'organisation involved individuals' suggest that 'very intrinsic group' has a trend towards more organisation involvement than the other groups. This trend is followed by 'intrinsic group' among the remaining groups. In other words, intrinsic groups indicate a slightly higher trend towards organisation involvement than the other groups. But this trend observed is not supported by the statistical comparisons of the scores between the groups (Appendix XXI):

Intrinsic group	and	Very intrinsic group	t = (-) 0.472	not significant
Extrinsic group	and	Very extrinsic group	t = 0.586	not significant
Intrinsic group	and	Extrinsic group	t = 0.491	not significant
Very intrinsic group	and	Very extrinsic group	t = 1.090	not significant

These comparisons suggest that both intrinsic and extrinsic groups can be equally organisation involved. According to Kanungo (1982) extrinsically motivated individuals can be equally job involved as intrinsically motivated individuals if the salient needs are met. Data of the present study suggest that the above observation is true of organisational involvement also. Studies that relate organisational alienation/involvement with job outcomes are not traced. More studies are required for arriving at definite conclusions.

4.10.15 In order to identify the specific characteristics, if any, that relate to organisational alienation/involvement, one known 'more organisation-involved' group and another 'less organisation -involved' group are identified as indicated earlier in para 4.2.3 (that is, 25% of the total respondents of least organisational alienation or most involvement and 25% of the total respondents of most organisational alienation or least involvement). These extreme groups are expected to amplify the important and relevant

characteristics than the overall group. As expected, there is marked statistical difference in the scores between 'more organisation involved' group and 'less organisation involved' group (Table 4.15) as extracted below:

More organisation involved group	n=56	mean= 73.79	SD= 4.457	t=26.279	significant at 0.01 level	percentage of organisation involved individuals 100.00
Less organisation involved group	n=56	mean= 47.22	SD= 6.044	t=(-)12.615	significant at 0.01 level	percentage of organisation involved individuals 0.00

Statistical comparison of the scores of the two extreme groups indicates clear cut distinction in organisational alienation/involvement as seen in Appendix XXI:

More organisation-involved group	Less organisation-involved group	t=26.239	significant at 0.01 level
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The characteristics of the more organisation involved group and the less organisation involved (alienated) group are given in Table 4.16.

4.10.16 Table 4.16 indicates that in almost all demographic characteristics (sex, age, education, salary, length of service and origin) and hierarchy levels, the 'more organisation-involved' group is statistically different from 'less organisation-involved' (alienated) group at a significance level of 0.01. This further confirms that the two groups have distinct characteristics.

4.10.17 Regarding job satisfaction, the job satisfaction score of organisation-involved group (including the scores of job-satisfied and job not-satisfied individuals) is statistically different from that of organisation-alienated group (including the scores of job-satisfied and job not-satisfied). On further analyses, it is seen that the scores of 'job satisfied' individuals (scores of job-satisfied individuals only) in the organisation-involved group and that of the alienated group (scores of job-satisfied individuals only) are statistically different. When the scores of 'job not satisfied' individuals in the organisation-involved group (scores of job

Table 4.16 Characteristics of More Organisation-Involved (n=56) Groups and the Level of Significance of the Different Factors Between the Groups

Sl. No.	Factors	MORE ORGANISATION-INVOLVED			LESS ORGANISATION-INVOLVED			Student's 't'	Level of significance
		n	Mean	Standard deviation (SD)	n	Mean	Standard deviation (SD)		
1	Superintending Engineers and above	3	71.97	0.77	5	42.03	10.36	4.330	0.01
2	Executive Engineers	13	74.74	6.04	19	49.16	4.74	12.967	0.01
3	Assistant Executive Engineers	40	73.62	3.92	32	47.75	5.25	23.590	0.01
4	Executive Engineers and above	16	74.22	5.56	24	47.67	6.96	12.451	0.01
5	Male	46	73.85	4.78	52	47.98	5.95	23.290	0.01
6	Female	10	73.54	2.47	4	44.27	6.24	11.630	0.01
7	Age 40 years and below	18	73.22	3.54	11	49.52	4.55	15.450	0.01
8	Age 41 years and above	38	74.06	4.81	45	47.28	6.31	21.170	0.01
9	Post graduate degree/training	14	72.27	3.01	17	48.46	7.43	10.880	0.01
10	Non post graduates	42	74.30	4.74	39	47.40	5.29	23.833	0.01
11	Degree and above	53	73.67	4.47	45	48.08	6.18	23.470	0.01
12	Without degree	3	76.01	3.56	11	46.26	5.20	8.640	0.01
13	Salary Rs.4001 and above	6	74.33	2.72	11	47.27	8.53	7.100	0.01
14	Salary Rs.3001 to 4000	25	73.61	4.99	29	47.34	5.08	18.760	0.01
15	Salary Rs.1001 to 3000	31	73.84	4.21	16	48.72	5.44	16.180	0.01
16	Salary Rs.5001 and above	31	73.75	4.65	40	47.32	6.22	19.480	0.01
17	Service upto 10 years	19	73.93	3.81	8	49.25	4.82	13.620	0.01
18	Service 11 to 20 years	21	72.06	3.58	16	48.53	5.52	15.260	0.01
19	Service 21 to 30 years	12	76.85	5.65	20	48.39	4.53	15.150	0.01
20	Service 31 years and above	4	73.04	1.25	12	44.51	8.16	6.520	0.01
21	Service upto 20 years	40	72.95	3.81	24	48.77	5.31	20.810	0.01
22	Service 21 years and above	16	75.90	5.20	32	46.93	6.43	15.310	0.01
23	Southern region	33	74.52	5.04	27	47.72	5.73	18.930	0.01
24	Central region	13	72.90	2.93	21	46.83	6.95	12.450	0.01
25	Northern region	10	72.54	3.42	8	50.07	3.21	13.400	0.01
26	Intrinsic group	8	74.73	2.87	8	51.26	2.99	14.980	0.01
27	Extrinsic group	45	73.76	4.73	42	46.45	6.35	22.570	0.01
28	Very intrinsic group	6	74.72	2.11	4	52.33	0.86	17.990	0.01
29	Very extrinsic group	35	74.09	5.02	38	46.06	6.52	20.180	0.01
30	Job satisfied (score above neutral)	56	79.68	9.31	33	69.59	8.15	5.110	0.01
31	Job not satisfied (score below neutral)	0	--	--	23	46.00	9.05	--	High significance
32	Job involvement (score above neutral)	50	76.88	8.94	36	75.94	9.20	0.470	Not significant
33	No job involvement (score below neutral)	4	50.00	2.00	20	46.45	6.52	1.030	Not significant
34	Work involvement (score above neutral)	53	79.17	9.30	45	78.78	9.56	0.203	Not significant
35	No work involvement (score below neutral)	2	35.50	8.50	9	48.53	2.49	(-) 3.480	0.01
36	No self estrangement (score above neutral)	55	76.15	6.78	1	67.00	0	1.320	Not significant
37	Self estrangement (score below neutral)	0	--	--	49	43.37	8.10	--	High significance
38	No social isolation (score above neutral)	53	74.25	6.94	3	65.67	3.77	2.090	0.05
39	Social isolation (score below neutral)	3	50.00	3.27	49	42.10	8.11	1.640	0.10
40	No powerlessness (score above neutral)	51	75.71	7.28	17	66.29	4.17	4.980	0.01
41	Powerlessness (score below neutral)	1	54.00	0.00	35	43.60	7.76	1.300	0.01
42	No meaninglessness (score above neutral)	56	80.80	6.23	20	69.20	5.58	7.250	0.01
43	Meaninglessness (score below neutral)	0	0	0	29	49.31	4.34	--	High significance
44	No normlessness (score above neutral)	34	70.24	7.85	1	75.00	--	(-) 0.590	Not significant
45	Normlessness (score below neutral)	14	48.86	3.52	54	38.22	10.53	3.670	0.01
46	Job satisfaction (total score)	56	79.67	9.31	56	59.90	14.40	8.551	0.01
47	Job involvement (total score)	56	74.29	11.37	56	65.41	16.41	3.297	0.01
48	Work involvement (total score)	56	77.23	12.52	56	73.14	14.59	1.590	Not significant
49	Self estrangement (total score)	56	72.95	7.14	56	45.36	9.29	19.281	0.01
50	Social isolation (total score)	56	72.82	8.71	56	44.50	10.02	15.887	0.01
51	Powerlessness (total score)	56	74.05	8.74	56	51.52	12.30	11.074	0.01
52	Meaninglessness (total score)	56	80.80	6.23	56	37.50	10.77	14.437	0.01
53	Normlessness (total score)	56	63.14	11.22	56	39.23	11.71	10.938	0.01

not-satisfied individuals only) and that of alienated group (scores of job not satisfied individuals only) are compared statistically significant difference is also noticed (Table 4.16). The implication of these is that job-satisfaction/or no job-satisfaction is a relevant differentiating factor in organisation-involved and organisation-alienated groups. Analysis of the job involvement scores (job involvement total score, job involved score and no job involved score), in the same way as that of job satisfaction scores, between the two groups shows that job involvement total score of organisation-involved group and organisation-alienated group are statistically different. The comparisons of 'job involved' and 'no job involved' scores between the groups of organisation-involved and organisation-alienated, however, does not indicate any statistical difference (Table 4.16). This implies that job involvement/or no job involvement is not a significant factor in differentiating the organisation-involved and organisation-alienated group. Statistical comparisons of the work involvement total score, 'work involved' score and 'no work involved' score between the two groups indicate that only the scores of 'no work involved' individuals in the two groups are different. But this observation cannot be considered as reliable since the number of 'no work involved' individuals in the 'organisation-involved' group is only two (Table 4.16). Moreover, work involvement is a normative belief of the individuals and therefore, this factor may not be relevant in organisational alienation/involvement. Of the factors of job satisfaction, job involvement and work involvement, available data indicates that only job satisfaction is relevant in differentiating more organisation-involved and organisation-alienated group.

4.10.18 The scores of the organisational alienation/involvement dimensions of social isolation, powerlessness and meaninglessness are significantly different between the two groups. However, with respect to self-estrangement and normlessness dimensions only those who are 'not self-estranged' and 'no normlessness' are not significantly different between the groups; but, since the number in the alienated group is very small for these two dimensions, the finding may not be valid (Table 4.16). That is, by and large, the scores of all the organisational alienation/involvement dimensions are found to be different between the two groups.

4.10.19 In order to identify the relevant characteristics in the more-involved group, the various sub-group characteristics are statistically compared between them. These are given in Table 4.17. The comparisons indicate that among the demographic characteristics, only the length of service groups have significant influence. The scores of the service of 21 years and above are found to be different from the group with service upto 20 years. Job satisfaction, job involvement, work involvement and the dimensions of self estrangement, social isolation, powerlessness, meaninglessness and normlessness are also found to be significant. Of these, job satisfaction, self estrangement and normlessness are found to be more significant.

4.10.20 The comparison of the scores of the different factors for the less involved (alienated) group is given in Table 4.18. It is seen from the table that job outcomes, job satisfaction, job involvement, work involvement and the five dimensions of self-estrangement, social isolation, powerlessness, meaningless and normlessness are significant while demographic factors are not significant.

4.10.21 Since the demographic factors are not significant either for organisation-involved group or for the organisation-alienated group, it is to be inferred that demographic factors are not differentiating factors between organisation-involved and organisation-alienated groups. The relevance of 'job satisfaction' in differentiating organisation-involved and organisation-alienated groups will be further examined later in this chapter when discussing the correlation between job satisfaction and organisational alienation/involvement.

4.11.0 **Organisational alienation/involvement and job satisfaction**

4.11.1 Inter correlations between organisational alienation/involvement scores and job satisfaction scores are worked out. The correlations and the level of significance are given in Table 4.19. In general, the group as a whole is found to have high correlation at 0.01 significance level between organisational involvement and job satisfaction. This pattern of 0.01 significance level in correlation coefficient is seen with the different sub-

Table 4.17 Level of Significance of Difference in Factors within More Organisation-Involved Group

Sl. No.	Sub-group Data				Sub-group Data				Student's 't'	Level of Significance	
	Sub-group No.	n	Mean	Standard deviation	Sub-group	n	Mean	Standard deviation			
1	2	3	4	5	6	7	8	9	10	11	
1	Executive Engineers and above	16	74.22	5.56		Assistant Executive Engineers	40	73.62	3.92	0.448	Not significant
2	Males	46	73.85	4.78		Females	10	73.54	2.47	0.196	Not significant
3	Age 40 years and below	18	73.22	3.54		Age 41 years and above	38	74.06	4.81	(-)-0.649	Not significant
4	Post graduate degree/training	14	72.27	3.01		Non Post graduate	42	74.30	4.74	(-)-1.477	Not significant
5	Degree and above	53	73.67	4.47		Without degree	3	76.01	3.56	(-)-0.875	Not significant
6	Salary Rs.3001 and above	31	73.75	4.65		Salary Rs.1001 to 3000	25	73.84	4.21	(-)-0.074	Not significant
7	Service upto 20 years	40	72.95	3.81		Service 21 years and above	16	75.90	5.20	(-)-2.302	0.05
8	Southern region	33	74.52	5.04		Central region	13	72.90	2.93	1.065	Not significant
9	Northern region	10	72.54	3.42		Southern region	33	74.52	5.04	(-)-1.136	Not significant
10	Central region	13	72.90	2.93		Northern region	10	72.54	3.42	0.259	Not significant
11	Intrinsic group	8	74.73	2.87		Extrinsic group	45	73.76	4.73	0.551	Not significant
12	Very intrinsic group	6	74.72	2.11		Very extrinsic group	35	74.09	5.02	0.295	Not significant
13	Job satisfaction	56	79.65	9.31		No job satisfaction	0	-	-	-	High significance
14	Job involvement	50	76.88	8.94		No job involvement	4	50.00	2.00	5.889	0.01
15	Work involvement	53	79.17	9.30		No work involvement	2	35.50	8.50	6.418	0.01
16	No self estrangement	55	76.15	6.78		Self estrangement	0	-	-	-	High significance
17	No social isolation	53	74.25	6.94		Social isolation	3	50.00	3.27	5.906	0.01
18	No powerlessness	51	75.71	7.28		Powerlessness	1	54.00	0.00	2.924	0.01
19	No meaninglessness	56	80.80	6.23		Meaninglessness	0	0	0	-	High significance
20	No normlessness	34	70.24	7.85		Normlessness	14	48.86	3.52	9.587	0.01

Table 4.18 Level of Significance of Difference in Factors Within Less Organisation-Involved Group

Sl. No.	Sub-group Data				Sub-group Data				Student's 't'	Level of Significance		
	Sub-group?	n	Mean	Standard deviation	Sub-group	n	Mean	Standard deviation				
1	2	3	4	5	6	7	8	9	10	11		
1	Executive Engineers and above	24	47.67	6.96	Assistant Executive Engineers	32	47.75	5.25	(-)	0.048	Not significant	
2	Males	52	47.98	5.95	Females	4	44.27	6.24		1.176	Not significant	
3	Age 40 years and below	11	49.52	4.35	Age 41 years and above	45	47.28	6.31		1.094	Not significant	
4	Post graduate degree/training	17	48.46	7.43	Non Post graduate	39	47.40	5.29		0.595	Not significant	
5	Degree and above	45	48.08	6.18	Without degree	11	46.26	5.20		0.886	Not significant	
6	Salary Rs.3001 and above	40	47.32	6.22	Salary Rs.1001 to 3000	16	48.72	5.44		0.774	Not significant	
7	Service upto 20 years	24	48.77	5.31	Service 21 years and above	32	46.93	6.43		1.120	Not significant	
8	Southern region	27	47.72	5.73	Central region	21	46.83	6.95		0.476	Not significant	
9	Northern region	8	50.07	3.21	Southern region	27	47.72	5.73		1.077	Not significant	
10	Central region	21	46.83	6.95	Northern region	8	50.07	3.21		(-)	1.224	Not significant
11	Intrinsic group	8	51.26	2.99	Extrinsic group	42	46.45	6.35		2.056	0.05	
12	Very intrinsic group	4	52.33	0.86	Very Extrinsic group	38	46.06	6.52		1.875	0.10	
13	Job satisfaction	33	69.59	8.15	No job satisfaction	23	46.00	9.05		9.997	0.01	
14	Job involvement	36	75.94	9.20	No job involvement	20	46.45	6.52		12.447	0.01	
15	Work involvement	45	78.78	9.56	No work involvement	8	48.33	2.49		8.785	0.01	
16	No self estrangement	1	67.00	0	Self estrangement	49	43.37	8.10		2.858	0.01	
17	No social isolation	3	65.67	3.77	Social isolation	49	42.10	8.11		4.904	0.01	
18	No powerlessness	17	66.29	4.17	Powerlessness	35	43.60	7.76		11.071	0.01	
19	No meaninglessness	20	69.20	5.58	Meaninglessness	29	49.31	4.34		13.721	0.01	
20	No normlessness	1	75.00	0	Normlessness	54	38.22	10.53		3.429	0.01	

Table 4.19 Inter Correlations Between Organisational Involvement, Job Satisfaction, Job Involvement and Work Involvement

Sl. No.	Sub-group	Popula- tion	Inter correlations								
			Organisational involvement and job satisfaction			Organisational involvement and job involvement			Organisational involvement and work involvement		
			r	Stude- nt's 't'	Level of signifi- cance	r	Stude- nt's 't'	Level of signifi- cance	r	Stude- nt's 't'	Level of signifi- cance
1	Total	224	0.593	10.99	0.01	0.276	4.28	0.01	0.133	2.00	0.05
2	Superintending Engineers and above	20	0.812	5.91	0.01	0.055	0.23	Not signi- ficant	0.123	0.52	Not signi- ficant
3	Executive Engineers	56	0.615	5.73	0.01	0.437	3.57	0.01	0.262	1.99	0.05
4	Assistant Executive Engineers	148	0.551	7.98	0.01	0.236	2.93	0.01	0.079	0.96	Not signi- ficant
5	Male	195	0.617	10.89	0.01	0.304	4.43	0.01	0.162	2.28	0.05
6	Female	29	0.375	2.10	0.05	0.080	0.42	Not signi- ficant	0.055	0.29	Not signi- ficant
7	Intrinsic group	34	0.495	3.22	0.01	(-)0.052	(-)0.29	Not signi- ficant (negative)	0.107	0.61	Not signi- ficant
8	Extrinsic group	169	0.600	9.69	0.01	0.325	4.43	0.01	0.142	1.85	0.10
9	Very Intrinsic group	20	0.487	2.36	0.05	0.135	0.58	Not signi- ficant	0.143	0.61	Not signi- ficant
10	Very Extrinsic group	137	0.617	9.10	0.01	0.357	4.44	0.01	0.190	2.25	0.05
11	Age 40 years and below	56	0.414	3.34	0.01	0.364	2.87	0.01	0.154	1.15	Not signi- ficant
12	Age 41 years and above	168	0.640	10.72	0.01	0.258	3.43	0.01	0.127	1.65	0.10
13	Post-graduate degree/ training	72	0.679	7.73	0.01	0.307	2.70	0.01	0.201	1.71	0.10
14	Non Post-graduate	151	0.575	8.58	0.01	0.290	3.69	0.01	0.135	1.66	0.10
15	Degree and above	195	0.611	10.74	0.01	0.366	5.47	0.01	0.238	3.41	0.01
16	Without degree	28	0.545	3.32	0.01	0.020	0.10	Not signi- ficant	(-)0.288	(-)1.53	Not signi- ficant (negative)
17	Salary Rs.4001 and above	37	0.686	5.57	0.01	0.319	1.99	0.05	0.315	1.97	0.05
18	Salary Rs.3001 to 4000	110	0.618	8.16	0.01	0.239	2.56	0.02	0.050	0.52	Not signi- ficant
19	Salary Rs.1001 to 3000	77	0.528	5.38	0.01	0.333	3.06	0.01	0.204	1.81	0.10
20	Service upto 10 years	45	0.487	3.65	0.01	0.509	3.88	0.01	0.218	1.47	Not signi- ficant
21	Service 11 to 20 years	82	0.597	6.65	0.01	0.249	2.30	0.02	0.076	0.69	Not signi- ficant
22	Service 21 to 30 years	79	0.575	6.16	0.01	0.435	4.24	0.01	0.423	4.10	0.01
23	Service 31 years and above	18	0.752	4.56	0.01	(-)0.033	(-)0.13	Not signi- ficant (negative)	(-)0.089	(-)0.36	Not signi- ficant (negative)
24	Southern region	115	0.650	9.10	0.01	0.395	4.57	0.01	0.272	3.00	0.01
25	Central region	72	0.550	5.52	0.01	0.122	1.03	Not signi- ficant	(-)0.041	(-)0.34	Not signi- ficant (negative)
26	Northern region	37	0.444	2.93	0.01	0.181	1.09	Not signi- ficant	(-)0.032	(-)0.19	Not signi- ficant (negative)
27	More organisation- involved	56	0.155	1.16	Not signi- ficant	(-)0.328	2.55	0.02	0.400	3.21	0.01
28	Less organisation- involved	56	0.388	3.09	0.01	0.054	0.39	Not signi- ficant	(-)0.095	(-)0.70	Not signi- ficant (negative)

groups, based on: (i) hierarchy, (ii) age, (iii) education, (iv) salary, (v) length of service and (vi) region. In other words, for these groups, job satisfaction is positively associated with organisational involvement.

4.11.2 In the case of sex sub-groups, male group is found to be positively correlated at 0.01 significance level between organisational involvement and job satisfaction while female group is found to be correlated only at 0.05 significance level (Table 4.19):

Male: n=195 r=0.617 t=10.89 significant at 0.01 level

Female: n= 29 r=0.375 t=2.10 significant at 0.05 level

Both the groups are independently job satisfied and organisation involved at significant levels (tables 4.9 and 4.15).

4.11.3 With respect to job outcome sub-groups, very intrinsic group is found to have positive correlation between organisational involvement and job satisfaction at a significance level of 0.05 while the other groups are found to have more correlation at a significance level of 0.01 (Table 4.19). All the groups independently are job satisfied and organisation involved at significant levels (Tables 4.9 and 4.15). Job satisfaction is found to be positively associated with organisational involvement for both intrinsic and extrinsic groups, this association being more with the extrinsic groups than with the intrinsic groups as can be seen from the higher correlation factors 'r' and 't' values indicated below:

Intrinsic group: n= 34 r=0.495 t=3.22 significant at 0.01 level

Extrinsic group: n=169 r=0.600 t=9.69 significant at 0.01 level

Very intrinsic group: n= 20 r=0.487 t=2.36 significant at 0.05 level

Very extrinsic group: n=137 r=0.617 t=9.10 significant at 0.01 level

4.11.4 With respect to the 'more organisation-involved' group, there is no correlation at any significant level between organisational involvement score and job satisfaction score. For the 'less organisation-involved' (alienated) group, there is significant correlation between organisational involvement score and job satisfaction score (Table 4.19):

More organisa- n= 56 r=0.155 t=1.16 not significant
tion-involved:

Less organisation-involved: n= 56 r=0.388 t=3.09 significant at 0.01 level

Considering job satisfaction by itself, the 'less organisation-involved' (alienated) group does not have significant job satisfaction while 'more organisation-involved' group is significantly job satisfied (Table 4.9):

More organisation-involved group n= 56 mean=79.68 SD = 9.313 t=17.261 significant at 0.01 level

Less organisation-involved (alienated) group n= 56 mean=59.90 SD = 14.403 t=0.979 not significant

Considering organisational involvement by itself, 'more organisation involved' group is significantly involved while 'less organisation-involved' (alienated) group is significantly alienated with negative 't' value (Table 4.15):

More organisation-involved group n= 56 mean=73.79 SD = 4.457 t=26.279 significant at 0.01 level

Less organisation-involved group n= 56 mean=47.72 SD = 6.044 t=(-)12.615 significant at 0.01 level (alienation)

Even though the 'more organisation involved' group, independently is job satisfied and organisation involved at significant levels, positive relationship between job satisfaction and organisational involvement cannot be established even at 0.05 significance level. Though the 'less organisation-involved' (alienated) group, is independently job satisfied but not organisation involved, there is significant correlation between job satisfaction scores and organisational involvement scores. The implication of this observation is that job satisfaction is not ^{a sufficient} ~~an essential~~ requirement for organisational involvement for organisation-involved individuals, whereas job satisfaction may be an important factor for higher level of involvement for those who do not experience such organisational involvement now.

More empirical data is necessary for establishing this observation. But no study is traced that discusses the association between organisational alienation/involvement and job satisfaction.

4.12.0 Organisational alienation/involvement and job involvement

4.12.1 Inter correlations between organisational alienation/involvement scores and job involvement scores are worked out for the total group and the different sub-groups. Correlations and levels of significance are given in Table 4.19. The group as a whole is found to have correlation between organisational involvement and job involvement at a significance level of 0.01. In general, most of the sub-groups are also found to have positive correlation between organisational involvement and job involvement at 0.01 to 0.05 levels of significance. In other words, for these groups, job involvement is positively associated with organisational involvement. The sub-groups which do not show any significant correlation are: (i) superintending engineers and above, (ii) female, (iii) without degree, (iv) service 31 years and above, (v) central region, (vi) northern region, (vii) intrinsic group, (viii) very intrinsic group and (ix) less organisation-involved group. These groups are now discussed.

4.12.2 The correlations and levels of significance of hierarchy groups are given in Table 4.19. The relevant extract is shown below:

Superintending engineers and above	n= 20	r = 0.055	t= 0.23	not significant
Executive Engineers	n= 56	r = 0.437	t= 3.57	significant at 0.01 level
Assistant executive engineers	n=148	r = 0.236	t= 2.93	significant at 0.01 level

Taking job involvement independently, all the hierarchial groups are job involved at a significance level of 0.01 (Table 4.10). But with respect to organisational involvement, superintending engineers and above indicate a trend (but not significant) towards alienation while the other groups are significantly involved with the organisation (Table 4.15).

Superintending engineers and above	n= 20	mean=57.13	SD =11.210	t=(-)0.337	not significant (trend towards alienation)
Executive Engineers	n= 56	mean=60.39	SD =10.630	t= 1.672	significant at 0.05 level
Assistant executive engineers	n=148	mean=61.61	SD =10.100	t= 4.331	significant at 0.01 level

These findings indicate that for all the hierarchical groups job involvement is positively associated with organisational involvement but for the group of superintending engineers and above job involvement is not that much important for organisational involvement. For them, job involvement and organisational involvement are two different aspects.

4.12.3 With respect to sex groups, while male group indicates a positive relationship at significant level between job involvement and organisational involvement, the female group shows only a positive but insignificant trend (Table 4.19):

Male	n= 195	r = 0.304	t= 4.43	significant at 0.01 level
Female	n= 29	r = 0.080	t= 0.42	not significant

Both the groups are independently job involved (Table 4.10) and organisation involved (Table 4.19) at significant levels. Thus, even though the data indicate that job involvement is positively associated with organisational involvement for both the groups, the relationship between the two is rather weak (not significant) for the female group.

4.12.4 With respect to educational levels, while the group without degree indicates a non-significant correlation between job involvement and organisational involvement all the other groups indicate positive correlation at a significance level of 0.01 (Table 4.19):

Post graduate degree/ training	n= 72	r = 0.307	t= 2.70	significant at 0.01 level
Non-post graduates	n=151	r = 0.290	t= 3.69	significant at 0.01 level

Regarding job involvement, all the groups are job involved at a significance level of 0.01 (Table 4.10). With respect to organisational involvement, except the group with service 31 years and above, all the other sub-groups indicate organisational involvement at significance level of 0.01 to 0.025 while the group with service 31 years and above indicates a non significant trend towards alienation (Table 4.19):

Service upto 10 years	n= 45	mean=64.17	SD =10.080	t = 4.060	significance at 0.01 level
Service 11 to 20 years	n= 82	mean=61.12	SD = 9.070	t = 3.096	significance at 0.01 level
Service 21 to 30 years	n= 79	mean=60.56	SD = 9.940	t = 2.278	significance at 0.025 level
Service 31 years and above	n= 18	mean=53.25	SD =14.180	t = (-) 1.382	not signifi- cant (alienat- ion trend)

The findings indicate that for length of service sub-groups other than that of 31 years and above, job satisfaction is positively associated with organisational involvement. But the officers with more than 31 years of service do not feel involvement with the organisation, though they are committed to the given job.

4.12.6 Region-wise, officers from southern region indicate positive correlation between job involvement and organisational involvement while officers from both central and northern regions do not indicate significant correlation (Table 4.19):

Southern region	n=115	r = 0.395	t= 4.57	significant at 0.01 level
Central region	n= 72	r = 0.122	t= 1.03	not significant
Northern region	n= 37	r = 0.181	t= 1.09	not significant

These region-wise sub-groups are found to be job involved at significance level of 0.01 (Table 4.10). But with respect to organisational involvement, central region sub-group indicates a neutral position while the other groups are significantly organisation-involved (Table 4.15) as shown below:

Southern region	n=115	mean=61.81	SD =10.820	t = 3.760	significant at 0.01 level
Central region	n= 72	mean=58.68	SD =10.160	t = 0.562	not significant (neutral)
Northern region	n= 37	mean=62.42	SD = 8.770	t = 3.019	significant at 0.01 level

In other words, for the officers from southern region, job involvement is positively associated with organisational involvement. For those from northern region, job involvement is not that much important for organisational involvement. For central region group, high job involvement does not necessarily follow organisational involvement.

4.12.7 In the case of job outcome sub-groups, the intrinsic group is found to have slight negative insignificant correlation between organisational involvement scores and job involvement scores while the very intrinsic group is found to be positively correlated (not significant). Both the extrinsic and the very extrinsic groups are found to have positive correlation at significant levels of 0.01 (Table 4.19):

Intrinsic group	n= 34	r = (-)0.052	t= (-)0.29	not significant (negative)
Extrinsic group	n=169	r = 0.325	t= 4.43	significant at 0.01 level
Very intrinsic group	n= 20	r = 0.135	t= 0.58	not significant
Very extrinsic group	n=137	r = 0.357	t= 4.44	significant at 0.01 level

The negative correlation trend observed for the intrinsic group can be ignored as the negative correlation is only 0.052. All the job outcome sub-groups are job involved (Table 4.10) and also organisation involved (Table 4.15) at significant levels. The implication of the observation is that in the case of the intrinsic groups there is no significant correlation between organisational involvement and job involvement, whereas for the extrinsic sub-groups, job involvement has a positive correlation indicating that job involvement is positively associated with organisational involvement.

4.12.8 'More organisation-involved' group indicates a significant correlation between job involvement and organisational involvement at 0.02 level (Table 4.19). This group also is job involved (Table 4.10) and organisation involved at significant levels of 0.01 (Table 4.15). This indicates that for this group job involvement is associated with organisation involvement. 'Less organisation-involved' (alienated) group indicates only a non-significant correlation (Table 4.19). Even though 'less organisation-involved' (alienated) group is job involved at a significance level of 0.01 (Table 4.10), the group is significantly organisation alienated (Table 4.15). The implication is that, for the organisational alienated group, job involvement alone is not a condition for organisational involvement or in other words job involvement and organisational alienation are separate and independent. This supports the earlier observation that job involvement is not a significant factor distinguishing 'organisation involved group' and 'organisation alienated group' (Para 4.10.17). More data based studies are necessary for establishing this observation. But no studies are traced that deal with the relationship of organisational alienation/involvement and job involvement.

4.13.0 **Organisational alienation/involvement and work involvement**

4.13.1 Inter correlations between organisational alienation/involvement scores and work involvement scores are worked out. Inter correlation and the levels of significance are given in Table 4.19. The group as a whole indicates a positive correlation between organisational involvement and work involvement at 0.05 significance level ($t=2.00$).

4.13.2 The different sub-groups indicate mixed trends in correlations between organisational involvement and work involvement. The groups that indicate positive correlation at a significance level of 0.01 are (i) degree and above, (ii) service 21 to 30 years, (iii) southern region and (iv) more organisation-involved. The groups that indicate correlation at a significance level of 0.05 are (i) executive engineers, (ii) male, (iii) very extrinsic groups and (iv) salary Rs.4001 and above. The groups that indicate positive definite trend at a significance level of 0.10 are: (i) extrinsic group, (ii) age 41 years and above, (iii) post graduate degree/training,

(iv) non post graduate and (v) salary Rs. 1001 to 3000. The groups which do not have any significant correlation but which indicate positive trends are: (i) superintending engineers and above, (ii) assistant executive engineers, (iii) female, (iv) intrinsic group, (v) very intrinsic group, (vi) age 40 years and below, (vii) salary Rs.3001 to 4000, (viii) service upto 10 years and (ix) service 11 to 20 years. The remaining sub-groups indicate negative trend (not statistically significant). They are: (i) without degree, (ii) service 31 years and above, (iii) central region, (iv) northern region and (v) less organisation-involved. These mixed trends of correlation phenomena between organisational alienation/involvement scores and work involvement scores make it difficult to make a conclusive observation on the relationship between organisational alienation/involvement and work involvement. The data also supports the observation that work involvement is not a significant factor distinguishing organisation-involved and organisation-alienated groups. This does not, however, go completely in line with the finding of Kher (1988, p.99) that alienation from work and organisation are separate but inter-dependent. More empirical data are required for general conclusions. In the motivational approach 'work' is considered a normative belief state while organisational alienation/involvement is considered as a belief state arising out of job environment variables. No other studies are traced that discuss the relationship of organisational alienation/involvement with work involvement.

4.14.0 Testing of hypotheses

4.14.1 The hypotheses mentioned in Chapter II, section 4.4.0 are now tested.

4.14.2 The hypothesis i(a) states "Among the variables that contribute to organisational alienation, 'normlessness' dimension is significantly more dominant at the level of superintending engineers and above than at that of executive engineers and assistant executive engineers". As can be seen from Table 4.14, in the overall score that indicates organisational alienation/involvement of the hierarchical groups, the contribution to 'normlessness' by the group of superintending engineers and above is 15.6% which is the lowest among other dimensions in the group. For the group of

executive engineers, the contribution is 19.79% which is not the lowest among other dimensions in the group. Since the percentage contribution are less than 20% (percentage of equal contribution by the five dimensions) the contributions can be considered as being towards alienation. The statistical data of weighted moderated scores of 'normlessness' dimension of the different hierarchial sub-groups are:

Superintending engineers and above	n = 20	mean = 48.40	SD = 13.69
Executive engineers	n = 56	mean = 53.36	SD = 13.38
Assistant executive engineers	n = 148	mean = 50.63	SD = 14.672

On comparison of the scores (n, mean and SD), between the sub-groups, Student's 't' values obtained are as follows:

Superintending engineers and above	and	Executive engineers	t = (-)1.394	not significant
Superintending engineers and above	and	Assistant executive engineers	t = (-)0.641	not significant
Executive engineers	and	Assistant executive engineers	t = 1.205	not significant

When the group of superintending engineers and above are compared with the groups of executive engineers and assistant executive engineers it is found that the differences are not statistically significant. Hence it cannot be inferred from the data that 'normlessness' dimension is more dominant for the group of superintending engineers and above than the other groups. The hypothesis is rejected.

4.14.3 The hypothesis i(b) states "'Powerlessness' dimension is significantly more dominant at executive engineers level than at the levels of assistant executive engineers and superintending engineers". As can be seen from Table 4.14, the contribution of 'powerlessness' dimension towards alienation is the lowest (17.03%) for executive engineers in that group than for other dimensions. For the group of superintending engineers and above, the contri-

butions of this dimension (21.58%) is not the lowest and can be assumed to indicate a trend towards involvement (more than 20%). For assistant executive engineers, the contribution of this dimension (16.30%) is not the lowest though indicating of alienation. The statistical data of the weighted moderated scores of this dimension for the different hierarchial sub-groups are:

Executive engineers	n = 56	mean = 60.71	SD = 13.57
Assistant executive engineers	n = 148	mean = 64.32	SD = 12.697
Superintending engineers and above	n = 20	mean = 65.40	SD = 14.122

On comparison of the scores (n, mean and SD), between the sub-groups Student's 't' values obtained are as follows:

Executive engineers	and	Superintending engineers and above	t = (-)1.294	not significant
Executive engineers	and	Assistant executive engineers	t = (-)1.769	not significant
Superintending engineers and above	and	Assistant executive engineers	t = (-)0.349	not significant

The 't' values, when the group of executive engineers is compared with that of superintending engineers and assistant executive engineers are not statistically significant. Hence it cannot be inferred that 'powerlessness' dimension is significantly more dominant at the level of executive engineers than at other levels. Hence the hypothesis is rejected.

4.14.4 The hypothesis i(c) states "'Self-estrangement' dimension is more dominant at assistant executive engineers' level than at the levels of executive engineers and superintending engineers and above". As is seen from Table 4.14, the contribution of this dimension is not the lowest in any of the groups and the contribution can be considered as a trend towards involvement (superintending engineers and above: 21.52%, executive engineers: 22.43%, assistant executive engineers: 23.48%). For the groups of assistant

executive engineers and executive engineers, the percentage contribution of this dimension is the highest among other dimensions. The statistical data of weighted moderated scores of 'self-estrangement' dimension of the different groups are:

Assistant executive engineers	n =148	mean = 62.45	SD = 12.837
Executive engineers	n = 56	mean = 60.64	SD = 13.930
Superintending engineers and above	n = 20	mean = 56.75	SD = 13.810

The Students 't' values obtained on comparison of the group scores are as follows:

Assistant executive engineers	and	Superintending engineers	t = 1.83	not significant
Assistant executive engineers	and	Executive engineers	t = 0.87	not significant
Executive engineers	and	Superintending engineers	t = 1.061	not significant

In other words, 'self-estrangement' dimension is not statistically more dominant at the level of assistant executive engineers than at the levels of executive engineers or superintending engineers and above. Hence, the hypothesis is rejected.

4.14.5 Hypothesis i(d) states "There is no significant difference in 'meaninglessness' dimension among different levels in the organisation as all the subjects are in the middle and senior levels". The contribution of this dimension in the various hierarchial groups are: superintending engineers and above: 21.60%, executive engineers: 19.93% and assistant executive engineers: 21.01% (Table 4.14). These contributions are neither the lowest nor the highest among other dimensions in any of the groups. Also, there are no appreciable differences in contribution between the groups which are almost at the average level (around 20%). The statistical data of the weighted moderated scores of 'meaninglessness' dimension of the different groups are:

Superintending engineers and above	n = 20	mean = 63.90	SD = 11.113
Executive engineers	n = 56	mean = 68.77	SD = 11.500
Assistant executive engineers	n = 148	mean = 70.06	SD = 11.348

The Students 't' values obtained on comparison of the group scores are:

Superintending engineers and above	and	Executive engineers	t = (-) 1.617	not significant
Superintending engineers and above	and	Assistant executive engineers	t = (-) 2.27	significant at 0.05 level
Executive engineers	and	Assistant executive engineers	t = (-) 0.720	not significant

The analysis reveals, that 'meaninglessness' dimension is significantly more dominant at assistant executive engineer level than at the level of superintending engineers and above. With respect to other comparisons, there are no significant differences. Thus the hypothesis that there is no significant difference in 'meaninglessness' dimension is rejected. An alternative hypothesis that, "'meaninglessness' dimension is significantly more dominant at the 'assistant executive engineers' level than at the 'superintending engineers' and above level" is supported by the data.

4.14.6 Hypothesis i(e) states "There is no significant difference in 'social isolation' dimension among different levels of officers". Among the different sub-groups, the contribution of this dimension are: superintending engineers and above 19.66%, executive engineers: 20.62% and assistant executive engineers: 23.08% (Table 4.14). The statistical data of the weighted moderated scores of this dimension of the different sub-groups are:

Superintending engineers and above	n= 20	mean = 51.45	SD = 12.126
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Executive engineers	n= 56	mean = 57.34	SD = 13.007
Assistant executive engineers	n=148	mean = 59.01	SD = 13.670

The Student's 't' obtained on comparison of the scores (n, mean, and SD) between the sub-groups are:

Superintending engineers and above	Executive and engineers	t = (-) 1.745	not significant
Superintending engineers and above	Assistant and executive engineers	t = (-) 2.336	significant at 0.02 level
Executive engineers	and Assistant executive engineers	t = (-) 0.784	not significant

'Social isolation' dimension is found to be significantly more dominant at the assistant executive engineer level than at the level of superintending engineers and above. With respect to other comparisons, there are no significant differences. Hence the hypothesis is rejected. An alternative hypothesis that "'Social isolation' dimension is more dominant at the assistant executive engineers level than at the level of superintending engineers and above" can be supported by the data.

4.14.7 Hypothesis (ii) states: "The degree of organisational alienation is less at higher levels than at lower levels of hierarchy in the organisation". The organisational involvement weighted moderated scores and the level of significance of organisational involvement of the different hierarchical sub-groups given in Table 4.15 are:

Superintending engineers and above	n= 20	mean = 57.13	SD=11.210	t=(-)0.337	not significant (alienation trend)
Executive engineers	n= 56	mean = 60.39	SD=10.630	t= 1.672	significant at 0.05 level)

Assistant executive engineers n=148 mean = 61.61 SD=10.100 t= 4.331 significant at 0.01 level)

These data, as mentioned earlier under para 4.10.7, indicate that the group of 'superintending engineers and above' indicates a slight trend towards organisational alienation (but not significant) while groups of executive engineers, and assistant executive engineers indicate definite involvement with the organisation. The mean scores indicate that the trend towards organisational alienation is becoming more and more as the levels go up. The 't' values obtained on comparison of the scores of the sub groups between each other (n, mean and SD) are (Appendix XXI):

Superintending engineers and above	and	Executive engineers	t = (-)1.145	not significant
Superintending engineers and above	and	Assistant executive engineers	t = (-)1.826	not significant
Executive engineers	and	Assistant executive engineers	t = (-)0.755	not significant

These data indicate that the degree of organisational alienation is not significantly less at higher levels than at lower levels and the hypothesis is rejected. Though statistically not significant, there is a trend towards greater alienation as one goes up in the organisation.

4.14.8 Hypothesis (iii) states: "The degree of organisational alienation is more among officers of 40 years of age and below than officers of 41 years and above". Age-wise, both the groups of 40 years and below and 41 years and above are significantly organisation involved at 0.01 significance level (Table 4.15) as given below:

Age 40 years and below	n = 56	mean = 62.18	SD= 9.380	t=3.304	significant at 0.01 level
Age 41 years and above	n =168	mean = 60.48	SD=10.700	t=2.294	significant at 0.01 level

The mean scores, however, indicate that the group with age 40 years and

below indicates a higher trend of involvement. The 't' value obtained on comparison of the scores of the groups is 1.056 (Appendix XXI) which is not significant. In other words, age group of 40 years and below is not more alienated than the group of 41 years and above. Hence, the hypothesis is rejected.

4.14.9 Hypothesis (iv) states: "The degree of organisational alienation among males is more than that of female officers". Sex-wise, the male group indicates significant involvement with the organisation at 0.01 level while the female group indicates involvement at a significance level of 0.025 (Table 4.15):

Male	n =195	mean = 60.65	SD=10.410	t=3.547	significant at 0.01 level
Female	n = 29	mean = 62.61	SD=10.280	t=2.371	significant at 0.025 level

Comparison of mean scores indicates that female group shows a higher trend towards organisational involvement. The 't' value obtained on a statistical comparison between male and female groups is (-) 0.943 (Appendix XXI), which is not significant. Hence the male group is not significantly more organisation alienated than the female group and the hypothesis is rejected.

4.14.10 Hypothesis (v) states: "The degree of organisational alienation is significantly higher among the officers with post graduate degree/training in comparison with others". The group with post graduate degree/training and the group of non post graduates indicate involvement with the organisation at 0.05 and 0.01 levels of significance respectively (Table 4.15) as extracted below:

Post graduate degree/training	n = 72	mean = 60.02	SD= 9.100	t=1.868	significance level 0.05
Non post graduates	n =151	mean = 61.47	SD=10.840	t=3.920	significance level 0.01

Mean score of non post graduates indicates a higher value suggesting higher involvement than post graduate degree/training. The 't' value obtained on comparison of the scores of post graduate degree/training and non post graduates is (-) 0.978 (Appendix XXI) which is not significant. This, in

other words, indicates that the degree of organisational alienation of post graduates is not significantly higher than that of non-post graduates. Hence the hypothesis is rejected.

4.14.11 Hypothesis (vi) states: "The degree of organisational alienation is less among the officers without degree than those with degree in engineering". The group with degree and above is significantly involved with the organisation at 0.01 level while the group without degree shows a neutral trend towards organisational alienation/involvement (Table 4.15):

Degree and above	n = 195	mean = 61.43	SD=10.255	t=4.653	significant at 0.01 level
Without degree	n = 28	mean = 58.04	SD=10.400	t=0.022	not significant(neutral)

Mean score of the group with degree and above indicates a trend towards more involvement for the group than the group without degree. However, on comparison of the scores (n, mean and SD) of those with degree and above with the group without degree, the 't' value obtained is 1.625 (Appendix XXI) which is not significant. In other words, there is no significant difference in organisational alienation between the group of officers with degree and that without degree in engineering. Hence the hypothesis is rejected.

4.14.12 Hypothesis (vii) states: "Extrinsically motivated individuals are less likely to be involved in their job than intrinsically motivated individuals". Both intrinsically motivated group and extrinsically motivated groups are found to be job involved at a significance level of 0.01 (Table 4.10):

Intrinsic group	n = 34	mean = 66.56	SD=11.735	t=4.190	significant at 0.01 level
Extrinsic group	n = 169	mean = 66.82	SD=14.334	t=7.978	significant at 0.01 level

Both mean and 't' values are higher for the extrinsic group than for the intrinsic group. This indicates a trend of higher job involvement for the extrinsic group than the intrinsic group. However, on comparison of the scores between intrinsic group and extrinsic group, the 't' value obtained

is (-)0.099 (Appendix XVI) which is not significant. This indicates that extrinsically motivated individuals are not less involved than the intrinsically motivated individuals. Hence the hypothesis is rejected. Alternatively, the hypothesis that "extrinsically motivated individuals and intrinsically motivated individuals are equally involved in their job" is supported by the data.

4.14.13 Hypothesis (viii) states: 'More organisation-involved officers are more job satisfied than those not so involved'. 'More organisation-involved' group is job satisfied at 0.01 significance level while 'less organisation-involved' (alienated) group is not job satisfied at any significance level (Table 4.9)

More organi- sation involved group	n = 56	mean = 79.68	SD= 9.313	t=17.261	significant at 0.01 level
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Less organi- sation involved group	n = 56	mean = 59.90	SD=14.403	t= 0.979	not signi- ficant
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The mean scores indicate that 'more organisation-involved' group is more job satisfied than the less involved group. Also on comparison of the scores of 'more organisation-involved' group with that of 'less organisation-involved' group, the 't' value obtained is 8.553 (Appendix XIV) which is significant. Hence the hypothesis that 'more organisation-involved group' is more job satisfied than the 'less organisation involved group' is supported.

4.14.14 Hypothesis (ix) states: "More organisation involved officers are more job involved than those not so involved". Both the groups are job involved at significance level of 0.01 (Table 4.10):

More organi- sation- involved group	n = 56	mean = 74.29	SD=11.368	t=10.624	significant at 0.01 level
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Less organi- sation- involved group	n = 56	mean = 65.44	SD=16.411	t= 3.349	significant at 0.01 level
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The 'mean' and 't' values are higher for the 'more organisation-involved' group than the 'less organisation-involved' group indicating higher job involvement for the former group. Also on comparison of the scores of 'more organisation-involved' group with that of 'less organisation involved' group, the 't' value obtained is 3.288 (Appendix XVI) which is significant. This confirms that 'more organisation-involved' group is more job involved than the 'less organisation involved' group. Hence the hypothesis is accepted.

4.15.0 Factors relevant to organisational alienation/involvement

4.15.1 The present study indicates that the group as a whole and the different sub-groups indicate significant job satisfaction, job involvement and work involvement. Job satisfaction is an affective state while job involvement and work involvement are effect variables. Significant correlation is also seen between job involvement and work involvement. But the strength of correlation between job satisfaction and job involvement is much stronger than that between job satisfaction and work involvement (Many of the groups do not indicate correlation between job satisfaction and work involvement). Therefore, it is argued that 'job' and 'work' are separate but job involved individuals are likely to have high work ethic values.

4.15.2 The organisational alienation/involvement scores of various demographic sub-groups indicate a mixed trend though the majority of the sub-groups indicate organisational involvement than alienation. An inter comparison of the sub-groups based on personal back-ground factors within the groups of 'more organisation-involved' and 'less organisation involved' indicates that within the groups there are no significant differences. It is also observed that the different groups based on personal back ground factors do not indicate any significant difference in the organisational involvement scores. Therefore, it is argued that personal back-ground factors (including demographic factors) are not significant in explaining the phenomenon of organisational alienation/involvement.

4.15.3 The total group as well as all the sub-groups except 'less organisation-involved' group indicate job satisfaction at significant levels. However, the 'less organisation-involved' group does not indicate job satisfaction at any significant level. The group as a whole and most of the sub-groups indicate significant correlation between job satisfaction and organisational involvement. But the 'more organisation-involved group' does not indicate any correlation between job satisfaction and organisational involvement. Because of this mixed phenomenon in job satisfaction and also the insignificant correlation between organisational involvement and job satisfaction of the 'more organisation-involved' group, it is argued that job satisfaction is not a ^{significant} ~~significant~~ factor in explaining the phenomenon of organisational ~~alienation~~/involvement. Moreover, job satisfaction is an affective state of individual, while organisational alienation/involvement is an effect variable (dependent variable).

4.15.4 The group as a whole, and most of the sub-groups indicate job involvement at significant levels. Also, the total group and some of the sub-groups indicate correlation between job involvement and organisational involvement. However, the 'less organisation-involved' group and several other sub-groups do not indicate correlation between job involvement and organisational involvement. This mixed trend in the correlation between job involvement and organisational involvement is an indication that job involvement need not be a necessary condition for organisational involvement. In other words, job involvement and organisational involvement can be treated as separate phenomena. Job involvement refers to a particular job the individual is engaged in while organisational involvement depends on the satisfaction of organisation related salient factors. Therefore, it is argued that job involvement need not be a relevant factor that contributes to organisational alienation/involvement.

4.15.5 With respect to the correlation between organisational involvement and work involvement, most of the sub-groups including 'less organisation-involved group' do not indicate significant correlation even though, the group as a whole indicates significant correlation at 0.05 level of significance. Also statistical comparison of the scores of 'work involvement'

(including the scores of both work involved and no work involved individuals) between the two extreme groups of 'more organisation-involved group' and 'less organisation-involved group' indicate that there is no significant correlation of these scores between the two groups. Similarly, comparison of 'work involved' score (scores of work involved individuals) and 'no work involved' score (scores of no work involved individuals) within the two extreme groups also indicate no significant correlation. Hence, it is argued that work involvement is not a significant factor in explaining the phenomenon of organisational alienation/involvement.

4.15.6 First order factor analysis of the scores of the five dimensions of self-estrangement, social isolation, powerlessness, meaninglessness and normlessness in the organisational alienation/involvement score indicates that 74.78% of organisational alienation/involvement is explained by the combination of these factors. Also when the scores of these dimensions are statistically compared with the groups of 'more organisation-involved' and 'less organisation-involved', it is found that within these two groups the scores are different at a significance level of 0.01 (Table 4.16). Thus it is concluded that these dimensions are differentiating factors between these two groups and that these dimensions explain the phenomenon of organisational alienation/involvement to a great extent even though not fully. These variables that are relevant to organisational alienation/involvement may not be related to personal back-ground factors of the individuals but may be related to management policies and practices. The management policies and practices may determine the nature of belief of the individual towards these dimensions of self-estrangement, social isolation, powerlessness, meaninglessness and normlessness.

4.16.0 **Conceptual and theoretical issues involved in the study**

4.16.1 Understanding the phenomenon of job/work involvement: The concepts have been studied by many researchers. But the main streams of thought are those of sociologists and psychologists. The sociologists tried to analyse the state of work alienation at social system level rather than the state of worker involvement. Psychologists have attempted to analyse the concepts

from the point of view of job involvement. Both the streams of thought have considered intrinsic motivation as a necessary pre-condition for work involvement. Also the concepts of 'work' and 'job' are not clearly distinguished. All these resulted in some confusion in understanding the concepts. Integrating the two approaches, Kanungo (1982) formulated the 'motivational approach'. In the motivational approach, alienation and involvement are considered undimensional with bipolar states of the same phenomenon. Also distinctions between cognitive states of job and work alienation/involvement have been made. Job involvement is assumed to operate at a descriptive level while work involvement operates at a normative level. Behaviour in work situations is considered to be patterned by the need states of the individual and will be directed towards obtaining satisfaction of salient needs. It is also assumed that intrinsic motivation may be a sufficient but not an essential condition for job involvement; extrinsic salient need satisfaction also can result in job involvement.

4.16.1.1 Interpretation of the data from the present study reveals that the concepts of 'job' and 'work' are not the same and that these two may be independent of each other. Also, it is indicated that the strength of the correlation between job satisfaction and job involvement is stronger than that between job satisfaction and work involvement. Data further supports that extrinsically motivated individuals can be equally job involved as intrinsically motivated individuals. These observations are in tune with those of Kanungo (1982) in his motivational approach to alienation/involvement.

4.16.1.2 Job satisfaction is an affective state of the individual while job involvement and work involvement are effect variables. The data indicates mixed phenomenon by the various groups towards job satisfaction. Also correlations between job satisfaction and job involvement and between job satisfaction and work involvement are not consistent with the group. These phenomena indicate that job involvement, work involvement and job satisfaction could be different though correlated.

4.16.2 Organisational alienation/involvement: Not much studies are available regarding the phenomenon of organisational alienation/involvement. In the present study organisational alienation is defined as the state of psychological dissociation of a member with the organisation insofar as organisation is perceived as not having the potential to satisfy the needs and expectations. This definition is in consonance with the argument that organisational alienation/involvement is distinct from job involvement or work involvement. The data of the present study and the observation of Kher (1988, p.99) support that organisational alienation/involvement is different from job involvement and work involvement. If an individual does not get an opportunity to utilise the potentialities for the benefit of the organisation the individual may feel a sense of non achievement and as a consequence, a feeling of non identity with the organisation. Also, if the organisational environment does not encourage a sense of belonging to the work team the individual may experience social isolation. If the duties are so structured that the individual is denied discretionary latitude in performing the assigned task, he/she may feel a sense of meaninglessness. If the individual does not have some say or control in doing the assigned task the individual may feel a sense of powerlessness. The individual may experience normlessness when it is considered that adequate information (norms relating to policies, rules and regulations) are not furnished to guide the individual's behaviour in the organisation. All these may develop in the individual a psychological state of dissociation with the organisation (organisational alienation). It is also argued on the strength of the data of this study that the relevant factors that are significant in explaining organisational alienation/involvement are the different dimensions of alienation - self-estrangement, social isolation, powerlessness, meaninglessness and normlessness-as suggested by sociologists and integrated into the motivational approach by Kanungo (1982). Thus, organisational dynamics which influences these factors may become more relevant in organisational alienation/involvement than the personal back-ground factors of the individual.

4.17.0

4.17.1 Organizational policies and practices greatly influence an individual's work situation in the organisation. If the individual develops a feeling of powerlessness owing to lack of control in doing the task the individual may as well develop a feeling of self-estrangement in not contributing adequately for the accomplishment of the task. In these circumstances, a feeling of meaninglessness may develop as the discretionary content in the task will get reduced and eventually psychologically withdraw from the team developing a feeling of social isolation. In the absence of proper policies (norms, rules and regulations) the individual may also develop a feeling of normlessness. Such cumulative feelings develop in the individual a cognitive state of not satisfying the needs in the organisation and this may result in organisational alienation. In order to develop a positive environment the management practices are to be suitably adapted for greater organisational involvement.

4.17.2 The data of the present study suggests that some of the organisational factors are also to be integrated into the study of organisational alienation/involvement for better clarity in understanding the phenomenon. Jacob (1987 pp.198-205) indicated that for effectiveness in project implementation, a favourable climate should be developed by creating positive attitudes amongst the team members towards the project. It is further reported in the same study that this was achieved by the project leader by the daily meetings and his managerial style of providing personal support and encouragement. These could be significant factors in creating a positive effect in organisational involvement. Thus such factors like leadership, communication and management practices in planning, problem solving and decision making found significant by Jacob in his study may be significant factors that contribute to powerlessness, self-estrangement, social isolation, meaninglessness and normlessness which, in turn, results in organisational alienation/involvement.

4.17.3 The respondents of the present study are engineers. The limited data of the present study indicate a trend that engineers are more concerned with

their job as their profession rather than the organisation. This supports the observation of Baba (1979, p.18) that engineers identify themselves more with their profession than with their organisation. This further implies that there is likely to be a difference in organisational alienation/involvement between profession-oriented persons who may be more concerned with their job than the non profession oriented and trade union members who may be more concerned with the organisation as an entity. This view is also supported by Giriya (1988) in her study indicating workers' higher commitment towards the organisation compared to managers and supervisors.

4.17.4 Management policies, programmes and practices with emphasis on behavioural dynamics within the organisation affect the individuals' feelings of relationship with the organisation. And these in turn determine the level of organisational alienation/involvement. This is relevant since the personal back-ground factors of the individuals are found not relevant in explaining the phenomenon of organisational alienation/involvement. Thus an 'organisational dynamics approach' is to be developed by integrating the motivational approach with the relevant components of leadership, communication, management policies and practices, feed-back system etc. Only such an approach can provide a meaningful, conceptual and theoretical framework for better scientific understanding of organisational alienation/involvement phenomenon. It is only by understanding the phenomenon on a scientific basis that one can devise methods to boost the level of organisational involvement of the members.

4.17.5 Future researchers who are interested in the study of organisational alienation/involvement phenomenon should devote more attention to the organisation dynamics than individual's back-ground. Such study may throw more light on the concepts and the related issues involved in the 'organisation dynamics approach'.

4.18.0 References

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CHAPTER V

SUMMARY OF CONCLUSIONS

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CHAPTER V

SUMMARY OF CONCLUSIONS

5.1.0 Introduction

5.1.1 The present study was limited to exploring the perceived belief of the engineers in the rank of assistant executive engineers and above in the Kerala Water Authority (KWA) with respect to perceived importance of job outcomes, job satisfaction, job involvement, work involvement and organisational alienation/involvement. For the study certain specific objectives were stated. Further, a few hypotheses were also formulated. The main conclusions are briefly summarised in this Chapter.

5.2.0 Inter-relatedness and the degree of contributions of the dimensions of organisational alienation/involvement

5.2.1 Organisational alienation/involvement of the respondents were measured through a scale consisting of the dimensions of self-estrangement, social isolation, powerlessness, meaninglessness and normlessness. This study also indicated that they were the most significant with respect to organisational alienation/involvement. On factor analysis, the contributions of these dimensions indicated organisational involvement/alienation scores as follows (para 4.10.3):

i) Self-estrangement	23.19%
ii) Social isolation	22.10%
iii) Powerlessness	16.98%
iv) Meaninglessness	20.88%
v) Normlessness	16.85%

5.3.0 Organisational alienation/involvement of the total group

5.3.1 On the whole, the respondents indicated a trend towards organisational involvement. Out of 224 engineers (respondents) 138 were organisation-involved. Only 38.30% were alienated. The level of organisational involve-

ment was also significant at 0.01 level. In general, most of the sub-groups also indicated significant organisational involvement. However, there were some sub-groups which did not indicate organisational involvement at any significant level (section 4.9.0).

5.4.0 Influence of personal back-ground factors of respondents on organisational alienation/involvement

5.4.1 In general, none of the personal back-ground factors studied (hierarchy levels, sex, age, education, salary, length of service, origin and job outcome) had any significance in organisational alienation/involvement (paras 4.10.7 to 4.10.14).

5.5.0 Inter correlations among job satisfaction, job involvement, work involvement, job outcome and organisational alienation/involvement

5.5.1 Job satisfaction and job involvement: For the overall group, job satisfaction was found to be correlated with job involvement at 0.01 level. However, there were a few sub-groups which did not indicate any significant correlation (section 4.7.0).

5.5.2 Job satisfaction and job outcomes: Both extrinsic and intrinsic groups indicated job satisfaction at significance level of 0.01 (para 4.4.13).

5.5.3 Job satisfaction and work involvement: The respondents as a whole did not indicate any significant correlation between job satisfaction and work involvement. However there are some sub-groups which indicated positive correlation and some others negative correlation trends (section 4.8.0).

5.5.4 Job satisfaction and organisational alienation/involvement: The total group was found to have high correlation at 0.01 significance level between job satisfaction and organisational involvement. However, it was argued that job satisfaction was not a ^{sufficient} ~~significant~~ factor in explaining the phenomenon of organisational ~~alienation~~/involvement (para 4.15.3).

- 5.5.5 Job involvement and work involvement: Scores of the group as a whole were correlated with job involvement and work involvement scores at a significance level of 0.01. However, it was argued that job involvement and work involvement are different (section 4.9.0).
- 5.5.6 Job involvement and job outcomes: Both extrinsically motivated and intrinsically motivated individuals were job involved at 0.01 significance level (para 4.5.11).
- 5.5.7 Job involvement and organisational alienation/involvement: The group as a whole was found to have positive correlation at significance level of 0.01 between job involvement and organisational involvement scores. However, it was argued that job involvement need not be a relevant factor that contributed to organisational alienation/involvement (para 4.15.4).
- 5.5.8 Work involvement and job outcomes: Both intrinsically motivated individuals and extrinsically motivated individuals were work involved at a significance level of 0.01 (para 4.6.13).
- 5.5.9 Work involvement and organisation and alienation/involvement: The group as a whole indicated significant positive correlation between organisational involvement and work involvement scores at a significance level of 0.05. However, it was argued that work involvement was not a significant factor in explaining the phenomenon of organisational alienation/involvement (para 4.15.5).
- 5.5.10 Organisational alienation/involvement and job outcomes: Both extrinsic and intrinsic groups were organisation involved at a significance level of 0.01. However, the very intrinsic and very extrinsic sub-groups indicated organisational involvement at a significance level of 0.02 and 0.025 respectively (para 4.10.14).

5.6.0 Most and the least salient needs

5.6.1 Two most salient needs: The two most salient needs observed for the group as a whole and for the different hierarchy-wise groups (para 4.3.4) were:

i	Total group	1 Security	
		2 Adequate earning	
ii	Superintending engineers and above	Security; adequate earning; interesting nature of work	Tie with equal preference
iii	Executive engineers	1 Security	
		2 Adequate earning	
iv	Assistant executive engineers	1 Security	
		2 Adequate earning	

5.6.2 Two least salient needs: The two least salient needs observed for the group as a whole and for the different hierarchial groups (para 4.3.5) were:

i	Total group	1 Considerate and sympathetic superior	
		2 Sound organisational policies	
ii	Superintending engineers and above	1 Sound organisational policies	
		2 Technically competent superior	
iii	Executive engineers	1 Considerate and sympathetic superior	
		2 Technically competent superior	
iv	Assistant executive engineers	1 Sound organisational policies	
		2 Considerate and sympathetic superior	

5.7.0 Testing of hypotheses

5.7.1 Acceptance or rejection of the hypotheses formulated:

- i (a) The hypothesis "Among the variables that contribute to organisational alienation, 'normlessness' dimension is significantly more dominant at the level of superintending engineers and above than that of executive

- engineers and assistant executive engineers" was rejected (para 4.14.2).
- i (b) The hypothesis "'Powerlessness' dimension is significantly more dominant at executive engineers level than at the levels of assistant executive engineers and superintending engineers was rejected (para 4.14.3).
 - i (c) The hypothesis "'Self-estrangement' dimension is more dominant at 'assistant executive engineers' level than at the levels of executive engineers and superintending engineers and above level" was rejected (para 4.14.4).
 - i (d) The hypothesis "There is no significant difference in 'meaninglessness' dimension among different levels in the organisation as all the subjects are in the middle and senior levels" was rejected. An alternative hypothesis supported was "'meaninglessness' dimension is significantly more dominant at the assistant executive engineers' level than at the superintending engineers and above level" (para 4.14.5).
 - i (e) The hypothesis "There is no significant difference in 'social isolation' dimension among different levels of officers" was rejected. An alternative hypothesis supported was "'social isolation' dimension is more dominant at the assistant executive engineers' level than at the level of superintending engineers and above" (para 4.14.6).
 - ii. The hypothesis "The degree of organisational alienation is less at higher levels than at lower levels of hierarchy" was rejected (para 4.14.7).
 - iii. The hypothesis "The degree of organisational alienation is more among officers of 40 years of age and below than officers of 41 years and above" was rejected (para 4.14.8).
 - iv. The hypothesis "The degree of organisational alienation among males is more than that of female officers" was rejected (para 4.14.8).
 - v. The hypothesis "The degree of organisational alienation is significantly higher among the officers with post graduate degree/training in comparison with others" was rejected (para 4.14.10).
 - vi. The hypothesis "The degree of organisational alienation is less among

the officers without degree than those with degree in engineering" was rejected (para 4.14.11).

- vii. The hypothesis "Extrinsically motivated individuals are less likely to be involved in their job than intrinsically motivated individuals" was rejected. An alternative hypothesis that "extrinsically motivated individuals and intrinsically motivated individuals are equally involved in their job" was supported (para 4.14.12).
- viii. The hypothesis "More organisation-involved officers are more job satisfied than those not so involved" was accepted (para 4.14.13).
- ix. The hypothesis "More organisation-involved officers are more job involved than those not so involved" was accepted (para 4.14.14).

5.8.0 Other observations from the study

5.8.1 Certain other observations also emerged from the present study. These are summarised below:

- i. The percentage of individuals who were intrinsically motivated was greater in the higher levels of hierarchy (para 4.3.2).
- ii. Salient extrinsic needs of the officers at lower levels of hierarchy were more predominant than those of the officers at higher levels (para 4.3.2).
- iii. The two most important intrinsic job needs of the total group were (i) 'interesting nature of work' and (ii) 'responsibility and independence'. The two most important extrinsic job needs were (i) 'security' and (ii) 'adequate earning' (paras 4.3.4 and 4.3.5).
- iv. The job factors of 'considerate and sympathetic superior' and 'technically competent superior' were of lesser importance for the group as a whole. This was stated as reflecting on the superior-subordinate relationship (para 4.3.7).
- v. The group as a whole was significantly job satisfied, significantly job involved, significantly work involved, and significantly organisation-involved. But this pattern was not true for the different subgroups. The 'less organisation-involved group' though not job satisfied was job involved and work involved and indicated significant organisational alienation (sections 4.4.0, 4.5.0 and 4.6.0).

- vi. The group as a whole indicated significant correlation between job satisfaction and job involvement as well as between job involvement and work involvement but did not indicate any significant correlation between job satisfaction and work involvement. This pattern was indicated by many of the sub-groups (sections 4.7.0, 4.8.0 and 4.9.0). The only sub-group that indicated no correlation between job satisfaction and job involvement, job satisfaction and work involvement and job involvement and work involvement was the group of superintending engineers and above. All the other groups indicated correlation between job involvement and work involvement. Most of the sub-groups, in general, did not indicate significant correlation between job satisfaction and work involvement but indicated significant correlations between job satisfaction and job involvement and between job involvement and work involvement. However, there were a few sub-groups that indicated significant correlation between job satisfaction and job involvement, job satisfaction and work involvement and job involvement and work involvement. There were also a few groups that indicated no correlation between job satisfaction and job involvement and job satisfaction and work involvement but significant correlation between job involvement and work involvement. Thus the groups did not indicate a uniform pattern.
- vii. Both 'more organisation-involved' and 'less organisation-involved' groups indicated correlation between job involvement and work involvement but did not indicate any correlation between job satisfaction and job involvement and between job satisfaction and work involvement (sections 4.7.0, 4.8.0 and 4.9.0).
- viii. Intrinsically motivated groups did not indicate correlation between job satisfaction and job involvement and job satisfaction and work involvement but indicated correlation between job involvement and work involvement. But extrinsically motivated groups indicated correlation between job satisfaction and job involvement and job involvement and work involvement but did not indicate correlation between job satisfaction and work involvement (sections 4.7.0, 4.8.0 and 4.9.0).
- ix. Most of the sub-groups indicated correlation between job satisfaction and work involvement.

and job involvement but not between job satisfaction and work involvement. The Student's 't' values, in general were higher for the correlation between job satisfaction and job involvement than for that between job satisfaction and work involvement. This showed that the strength of correlation between job satisfaction and job involvement was more than between job satisfaction and work involvement (sections 4.7.0 and 4.8.0 and para 4.15.1).

- x. Factors found more significant for organisational alienation/involvement were: self-estrangement, social isolation, powerlessness, meaninglessness and normlessness. Other factors such as job involvement, work involvement and job outcomes were found not important (paras 4.15.2, 4.15.3, 4.15.4, 4.15.5 and 4.15.6).
- xi. The group as a whole indicated significant correlations between organisational involvement and job satisfaction, organisational involvement and job involvement and between organisation involvement and work involvement. Most of the groups indicated significant correlation between organisational involvement and job satisfaction. However, more organisation-involved group did not indicate any significant correlation between organisation involvement and job satisfaction. Only few groups indicated significant correlation between organisational involvement and job involvement. 'Less organisation-involved' (alienated) group did not indicate any significant correlation between organisational involvement score and job involvement score. The groups that indicated correlation between organisational involvement and work involvement were very few. The intrinsic group indicated correlation between organisational involvement and job satisfaction but did not indicate any correlation between organisational involvement and job involvement and between organisational involvement and work involvement. The extrinsic group indicated correlation between organisational involvement and job satisfaction and between organisational involvement and job involvement but did not indicate significant correlation between organisational involvement and work involvement (sections 4.11.0, 4.12.0, 4.13.0).

5.9.0 **Some general observations**

5.9.1 Some of the general observations are the following:

- i. Motivational approach to the study of alienation/involvement is generally supported.
- ii. 'Work' and 'job' though not generally differentiated the strength of correlation between job satisfaction and job involvement is more than that between job satisfaction and work involvement.
- iii. Intrinsically and extrinsically motivated individuals can be equally job involved.
- iv. Organisational alienation/involvement is found to be distinct from work and job alienation/involvement.
- v. There is likely to be a difference in organisational alienation/involvement between professionals and non professionals (para 4.17.3).

5.10.0 **Some contradictions**

5.10.1 The group as a whole and most of the sub-groups indicated significant correlation between job satisfaction and organisational involvement. But 'more organisation-involved group' did not indicate any correlation between job satisfaction and organisational involvement. The group as a whole indicated significant correlation between job involvement and organisational involvement. But the 'less organisation-involved' group and several other sub-groups did not indicate correlation between job involvement and organisational involvement. The total group indicated correlation between organisational involvement and work involvement. But the 'less organisation-involved' group and many of the sub-groups did not indicate any correlation between organisational involvement and work involvement. The group as a whole and the different sub-groups indicated significant job satisfaction, job involvement and work involvement. The group as a whole and almost all of the sub-groups also indicated correlation between job involvement and work involvement. But there were significant differences between the strength of correlations between job satisfaction and job involvement and between job satisfaction and work involvement.

5.11.0 Scope for further research

5.11.1 Further investigations are to be carried out to corroborate the findings of this study and to establish theoretical relationships between the different factors. The following areas are specifically suggested for further research.

- i. Individuals of higher hierarchical levels, older, lower educational level, higher salary and more length of service indicate trends towards organisational alienation (para 4.10.7, 4.10.9, 4.10.10, 4.10.11 and 4.10.12). This is to be investigated further.
- ii. Organisational alienation/involvement is not fully explained by the factors studied. Further studies are to be conducted incorporating managerial aspects of leadership, communication, management style of the leader and organisational policy frame-work.
- iii. This study does not explain fully the phenomenon of organisational alienation/involvement. The nature of work and organisational dynamics may be more important than the personal back-ground factors of the individuals. This is to be examined further.
- iv. A frame-work of 'organisational dynamics approach' is to be developed for the study of organisational alienation/involvement integrating motivational approach and the relevant components of organisational dynamics. This requires detailed investigations.

5.11.2 The methodology and findings of this study should lead to continued enquiries in understanding the psychology of 'alienated man' in the organisation context.

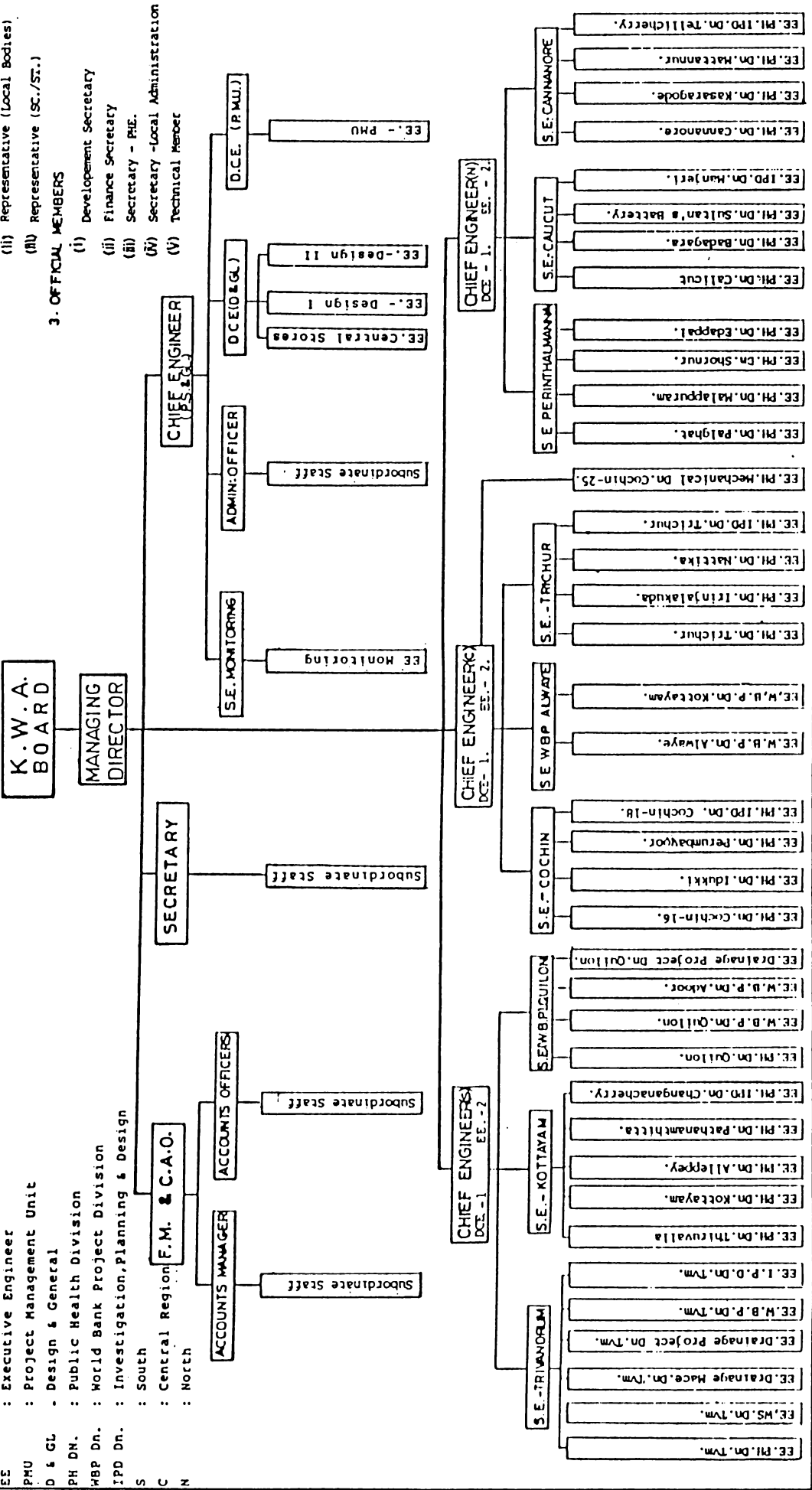
ABBREVIATIONS:

- KWA : Kerala Water Authority
- FM & CAO : Finance Manager & Chief Accounts Officer
- PS & GI : Planning, Service & General
- DCE : Deputy Chief Engineer
- SE : Superintending Engineer
- EE : Executive Engineer
- PMU : Project Management Unit
- D & GL : Design & General
- PH DN. : Public Health Division
- WBP Dn. : World Bank Project Division
- IPD Dn. : Investigation, Planning & Design
- S : South
- C : Central Region
- N : North

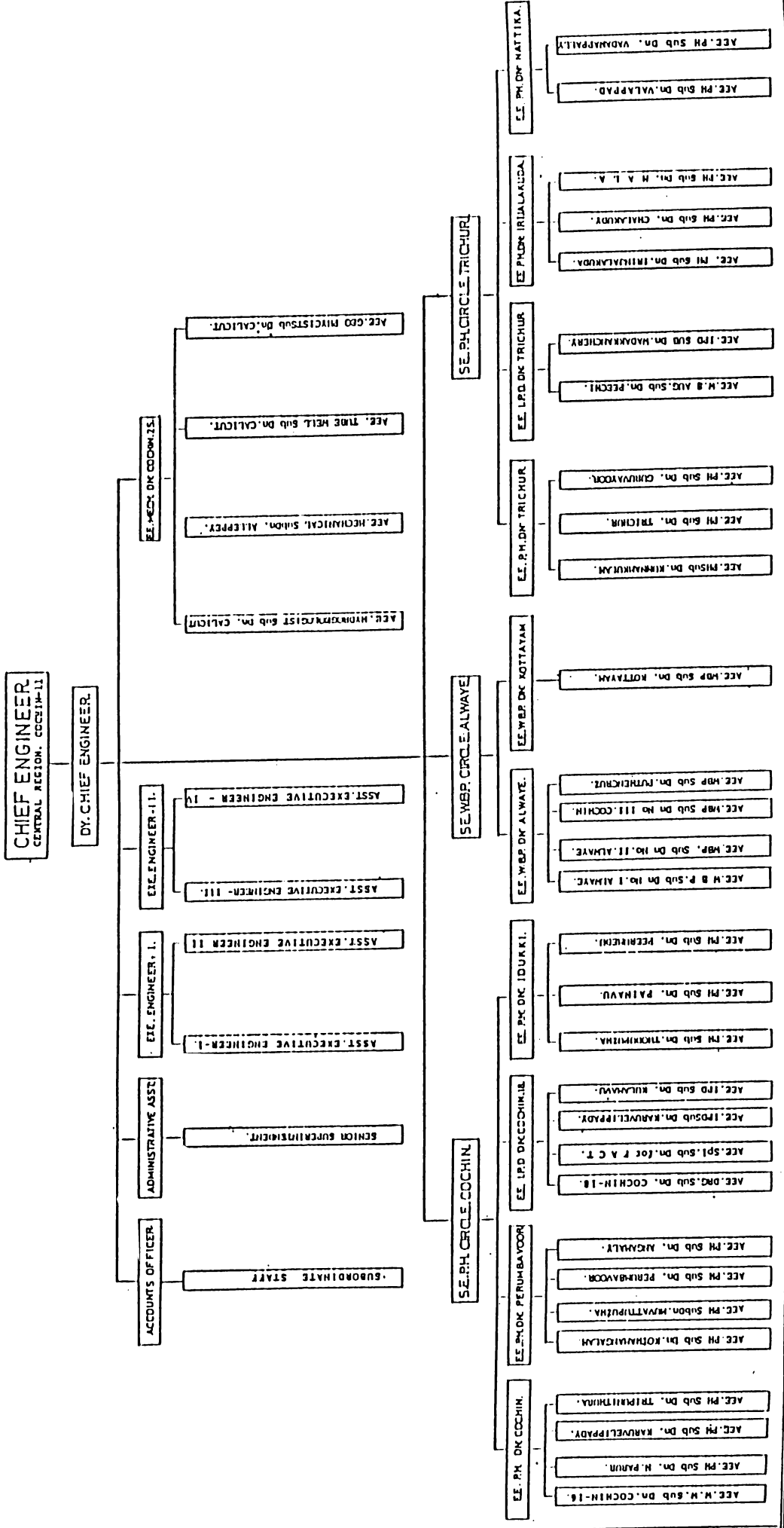
ORGANISATION CHART
(BOARD LEVEL)

K.W.A. BOARD

1. CHAIRMAN
2. NON OFFICIAL MEMBERS
 - (i) Representative (Local Bodies)
 - (ii) Representative (Local Bodies)
 - (iii) Representative (SC./St.)
3. OFFICIAL MEMBERS
 - (i) Development Secretary
 - (ii) Finance Secretary
 - (iii) Secretary - P&E.
 - (iv) Secretary - Local Administration
 - (v) Technical Member



ORGANISATION CHART
(CHIEF ENGINEER LEVEL)



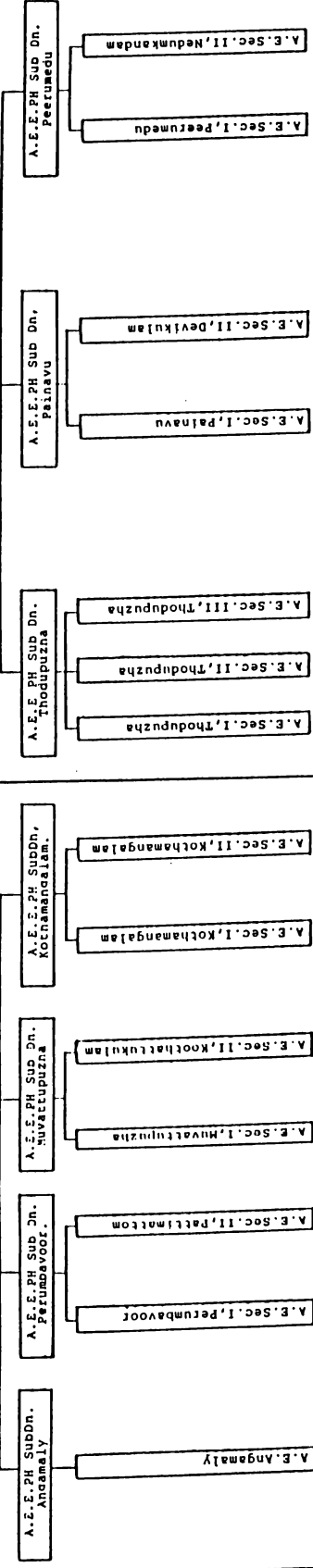
ORGANISATION CHART
(SUPERINTENDING ENGINEER LEVEL)

SE.PH.CIRCLE.
COCHIN-11.

PERSONAL ASST.
Head Draughtsman.
FINANCIAL ASST.
SENIOR SUPDNT.
Jr. Superintendent.

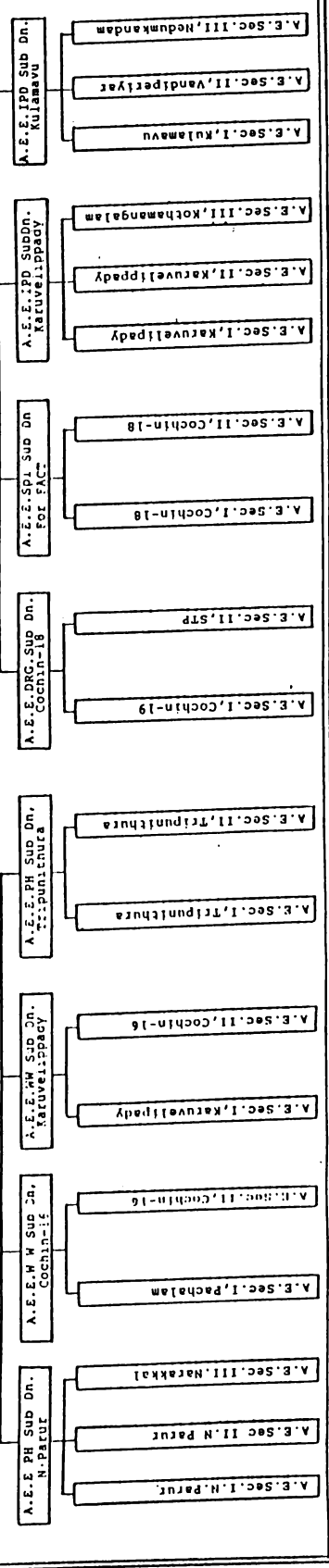
EE.PH DN IDUKKI.

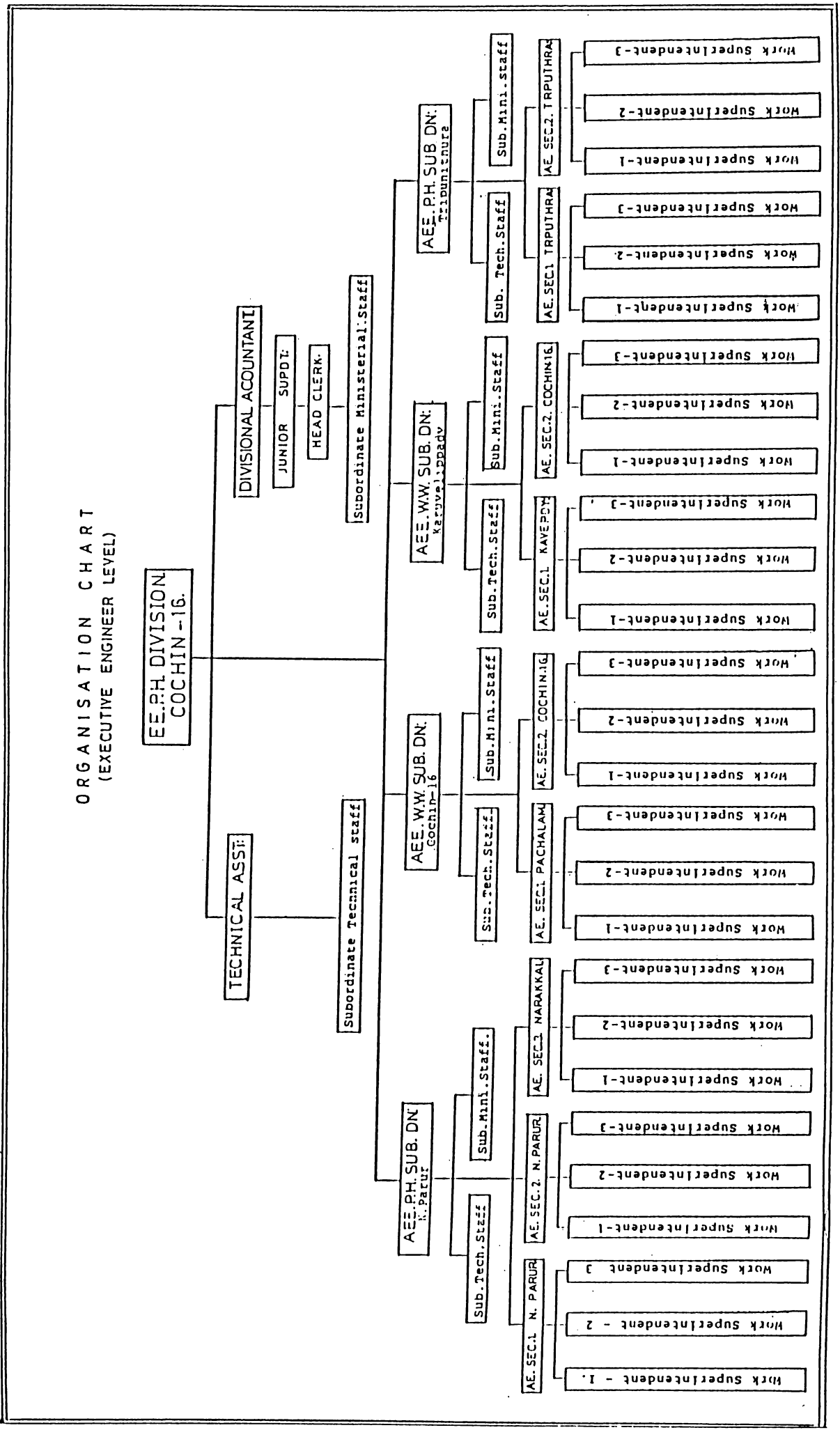
EE.PH DN PERUMBAVOOR.



EE.PH DN COCHIN 16.

EE.I.PD DN COCHIN-18.





QUESTIONNAIRE TO ELICIT THE VIEWS OF
SENIOR OFFICERS ON VARIOUS ASPECTS
OF KERALA WATER AUTHORITY

Thirty two statements are given below to ascertain your views on the various aspects in the Kerala Water Authority. You are requested to express your views by making a tick mark (✓) on any one of the choices acceptable to you viz., Yes/No/No comment, against each item. If you have your own views on any particular item please feel free to comment at the end of the questionnaire with the indication on the item number on which the comment is made. Your frank and free responses will be very much appreciated.

STATEMENTS

1. Finance is a major constraint in the implementation of schemes in the Kerala Water Authority.
Do you agree to this view? Yes/No/No comment
(* Ry=9, Rn=3, Rnc=0)

2. Do the Authority give greater priority to coverage of drinking water supply schemes than other projects? Yes/No/No comment
(Ry=12, Rn=0, Rnc=0)

3. If (2) is 'Yes'; is it due to the drought situations that occurred during the recent past? Yes/No/No comment
(Ry=2, Rn=9, Rnc=1)

4. While fixing up of priority for water supply schemes, do you feel that political influence is a consideration? Yes/No/No comment
(Ry=1, Rn=10, Rnc=1)

* Responses indicated by Ry="Yes", Rn="No" and Rnc="No Comment"

5. Do you feel that costwise effective coverage was taken into account while fixing up priority for water supply schemes?
(Ry=2, Rn=8, Rnc=2) Yes/No/No comment

6. Do the beneficiaries of water supply schemes (people) admit that they have to pay for the given facility?
(Ry=3, Rn=7, Rnc=2) Yes/No/No comment

7. Admitting drinking water as a basic need, do you think that the people (beneficiaries) should pay through water charges for the enjoyment of services (water supply) given?
(Ry=11, Rn=0, Rnc=1) Yes/No/No comment

8. In your opinion, do the politicians admit that people have to pay through water charges for the construction and maintenance of drinking water supply to them?
(Ry=2, Rn=8, Rnc=2) Yes/No/No comment

9. Do the local bodies according to you, pay to the Authority the water charges due from them regularly?
(Ry=1, Rn=11, Rnc=0) Yes/No/No comment

10. Do you feel that the local bodies pass on to the Authority the water charges they collect from their consumers?
(Ry=1, Rn=11, Rnc=0) Yes/No/No comment

11. Do the Authority find it difficult to maintain the existing services with the water charges collected from the local bodies?
(Ry=11, Rn=1, Rnc=0) Yes/No/No comment

12. Is the Authority properly geared to collect water charges from its consumers including bulk consumers like local bodies now?
(Ry=2, Rn=10, Rnc=0) Yes/No/No comment
13. Is inadequacies of water sources a major problem for water supply schemes?
(Ry=9, Rn=2, Rnc=1) Yes/No/No comment
14. Are there problems of water sources depleting/drying up of existing schemes in summer months which cause reduction/stoppage of water supply?
(Ry=12, Rn=0, Rnc=0) Yes/No/No comment
15. Do drying up of tube wells create problems of stoppage/reduction of supply of existing schemes?
(Ry=11, Rn=1, Rnc=0) Yes/No/No comment
16. Do you feel that community participation is necessary for the effective functioning of water supply schemes?
(Ry=9, Rn=2, Rnc=1) Yes/No/No comment
17. Do you agree with the statement that for a successful water supply and sanitation system, the system design should respond to the user's needs?
(Ry=12, Rn=0, Rnc=0) Yes/No/No comment
18. Do you think that social customs/festivals/special occasions upset planned water supply systems in the area?
(Ry=0, Rn=11, Rnc=1) Yes/No/No comment
19. Are the technical personnel (engineers) working for the Authority being updated by encouraging them to attend various technical training programmes and seminars?
(Ry=4, Rn=5, Rnc=3) Yes/No/No comment

20. Do you feel the need for full-fledged Research & Development Wing in the Authority?
(Ry=11, Rn=1, Rnc=0) Yes/No/No comment
21. Many of the older water supply schemes are designed to the needs at that time. Do you think that those schemes require changes now to be more productive and effective?
(Ry=12, Rn=0, Rnc=0) Yes/No/No comment
22. To attract external funding agencies is it necessary to have well-planned, designed, and effective schemes ready?
(Ry=12, Rn=0, Rnc=0) Yes/No/No comment
23. Is it necessary to impress on the external funding agencies that the Authority is maintaining its schemes effectively and deriving optimum benefits from the schemes for getting aids for other schemes?
(Ry=12, Rn=0, Rnc=0) Yes/No/No comment
24. Do you think that unnecessary paper work exists in the offices of the Authority?
(Ry=8, Rn=3, Rnc=1) Yes/No/No comment
25. Do you think that a good public image will do lot of good to the Authority in the long term?
(Ry=11, Rn=0, Rnc=1) Yes/No/No comment
26. Do you think that most people working for the Authority are contributing their best towards the goals of the Authority?
(Ry=3, Rn=7, Rnc=2) Yes/No/No comment
27. Do you think that most people working for the Authority are capable of producing better performance towards effectiveness?
(Ry=10, Rn=1, Rnc=1) Yes/No/No comment

28. Do you think that perception and feelings of people working for the Authority are taken into account while framing policies, programmes and procedures?
(Ry=2, Rn=8, Rnc=2) Yes/No/No comment
29. Do you support a system of periodical evaluation of the perception and feelings of the people working for the Authority?
(Ry=9, Rn=3, Rnc=0) Yes/No/No comment
30. Do you agree with the statement that people working for the Authority do not show initiative in their work?
(Ry=8, Rn=1, Rnc=3) Yes/No/No comment
31. Do you agree to the view that people working for the Authority do not take responsibility?
(Ry=5, Rn=4, Rnc=3) Yes/No/No comment
32. Do you think that the overall morale in the Authority is at a satisfactory level?
(Ry=1, Rn=9, Rnc=2) Yes/No/No comment

BOOK-LET CONTAINING QUESTIONNAIRE FOR ELICITING RESPONSES

T. V. JACOB
Chief Engineer
Kerala Water Authority

Hospital Road
COCHIN-11
30th May 1989

Dear colleague,

You are probably aware that I am doing a research study for a Ph. D. Degree of the Cochin University of Science and Technology. The topic of study is organizational effectiveness as a function of personnel involvement/alienation. In this connection, I have to collect realistic data on the perceptions of officers and others towards their jobs, work and organization.

There are six parts in this book-let (the instrument for collecting data). Part I to V deals with certain aspects of your job, work and organization. Part VI deals with the demographic particulars. Instructions regarding filling up your responses are provided at the beginning of each part. Your honest responses (answers) to the statements will enable me to test the validity of certain concepts and theories in management. Your valuable co-operation is earnestly solicited.

Thank you.

Yours sincerely,

(T. V. JACOB)

Part I

INSTRUCTIONS

Below is a list of things people look for in their job career. Please read all the items from top to bottom before making any choice. First decide which one you think is the most important to you in your present job and then place 1 in the blank provided for the item. Do the same for your choice 2, 3, 4, 5 and so on. Since there are 15 items in the list given below, your choice 15 would represent the thing that is least important to you in your present job. Please be sure you have placed a number opposite each item.

- Security (permanent job, steady work)
-Adequate earning (for a better standard of living)
-Benefits (leave, bonus, pension, insurance, medical, disability, and so on)
-Opportunity for future promotion
-Comfortable working conditions (pleasant surrounding, good lighting, good office space and so on)
-Interesting nature of work (a job that you very much enjoy)
-Sound Organizational policies and practices (reasonable and nondiscriminatory)
-Respect and recognition (from superiors and coworkers)
-Responsibility and independence (a job that gives you responsibility and freedom to work in your own way)
-Achievement (opportunity to achieve excellence in your work)
-Good interpersonal relations (a job that gives you the opportunity to work with others cordially)
-Considerate and sympathetic superior
-Technically competent superior
-Opportunity for professional growth (to become more skilled and competent on the job)
-Fair pay for the work you do

Part II

INSTRUCTIONS

In this part, I have listed some job characteristics or qualities that people look for in their jobs. I would like to know the degree of your satisfaction or dissatisfaction with each of the job qualities as they relate to your present job. For each job quality listed below, you will find six response (answer) categories. Please indicate your feeling by putting a tick (✓) mark in the appropriate space representing your answer. Make sure that you indicate your feelings for each item.

Statements	Response Categories					
	Extremely satisfied	Moderately satisfied	Mildly satisfied	Mildly dissatisfied	Moderately dissatisfied	Extremely dissatisfied
1. With the <u>amount of security</u> I have on my job, I feel
2. With the kind of <u>organizational policies and practices</u> that govern my job, I feel
3. With the <u>amount of compensation</u> that I receive to maintain a reasonably good living, I feel
4. With the <u>kind of benefit plans</u> (leave retirement, medical, and so on) that go with my job, I feel
5. With the <u>chance of future promotion</u> I have in my job, I feel
6. With the <u>kind of working conditions</u> (lighting, noise, office space, and so on) surrounding my job, I feel
7. With the <u>interesting or enjoyable nature of the work</u> in my job, I feel

(Contd...)

Statements	Response Categories					
	Extremely satisfied	Moderately satisfied	Mildly satisfied	Mildly dissatisfied	Moderately dissatisfied	Extremely dissatisfied
8. With the <u>amount of recognition and respect</u> that I receive for my work, I feel
9. With the <u>opportunity I have in my job to work with people I like</u> I feel
10. With the <u>technical competence of my immediate superior</u> , I feel
11. With the <u>opportunity that I have in my job to achieve excellence in my work</u> , I feel
12. With the <u>considerate and sympathetic nature of my immediate superior</u> I feel
13. With the <u>kind of responsibility and independence that I have in my job</u> , I feel
14. With the <u>opportunity for a acquiring higher competence</u> , I feel
15. With the <u>amount of compensation I receive for the work I do</u> , I feel
16. From an <u>overall consideration</u> , with respect to my job, I feel

Part III

INSTRUCTIONS

Below are a number of statements each of which you may agree or disagree with depending on your own personal evaluation of your present job. Please indicate the degree of your agreement or disagreement with each statement by putting a tick (✓) mark in one of the six blanks representing the response (answer) categories (strongly agree; agree; mildly agree; mildly disagree; disagree; strongly disagree) that appear against the statement.

Statements	Response Categories					
	Strongly agree	Agree	Mildly Agree	Mildly disagree	Disagree	Strongly disagree
1. The most important things that happen to me are related to my present job.
2. I will stay overtime to finish my job, even if I am not paid for it.
3. My job is only a small part of me as a person.
4. I am very much involved personally in my job.
5. Generally I avoid taking extra duties and responsibilities in my job.
6. I live, eat, and breathe my job.
7. Sometimes I would like to kick myself for the mistakes I make in my job.
8. Most of my interests are centered around my job.
9. I have very strong ties with my present job which would be very difficult to break.

Statements

Response Categories

	Strongly agree	Agree	Mildly agree	Mildly disagree	Disagree	Strongly disagree
10. Usually I feel detached from my job.
11. Most of my personal life goals are job oriented.
12. I feel depressed when I fail at something connected with my job.
13. I consider my job to be very central to my existence.
14. I have other activities which are more satisfying than my job.
15. I like to be absorbed in my job most of the time.

Part IV

INSTRUCTIONS

Below are a number of statements each of which you may agree or disagree with depending on your own personal evaluation of work in general without any specific reference to your present job. Please indicate the degree of your agreement or disagreement with each statement by putting a tick (✓) mark in one of the six blanks representing the response (answer) categories (strongly agree; agree; mildly agree; mildly disagree; disagree; strongly disagree) that appear against the statement.

Statements

Response Categories

	Strongly agree	Agree	Mildly agree	Mildly disagree	Disagree	Strongly disagree
1. The most important things that happen in life involve are related to work

Statements

Response Categoris

	Strongly agree	Agree	Mildly agree	Mildly disagree	Disagree	Strongly disagree
2. Work is something people should get involved in most of the time.
3. Work should be only a small part of one's life.
4. Happiness in life comes mainly through work.
5. People feel guilty if they don't work.
6. Work should be considered central to life.
7. There are other activities which are more meaningful than work.
8. In my view, an individual's personal life goals should be work oriented.
9. Work should be a fulfilling experience.
10. Life is worth living only when people get involved in their work.
11. People should derive satisfaction from work.

Part V

INSTRUCTIONS

Twenty six statements are given below. These statements are intended to reflect various degrees of your alienation/involvement with the Kerala water Authority. For each of the statement listed below you will find six possible response (answer) categories. Please indicate the degree of your agreement or disagreement with the statement by putting a tick (✓) mark in the appropriate response category (strongly agree, agree, mildly agree, mildly disagree, disagree and strongly disagree) printed against the statement.

Statements	Response Categories					
	Strongly agree	Agree	Mildly agree	Mildly disagree	Disagree	Strongly disagree
1. The work atmosphere in the Kerala water Authority inspires the very best in me in my performance.
2. The status I enjoy in society is largely due to the good image of the Kerala water Authority.
3. There is high centralization of authority at Chief Engineer's and Superintending Engineer's level making the execution of work difficult for field officers.
4. It is a pleasure to continue in my present work in the Kerala Water Authority.
5. The Kerala Water Authority has no clear cut policy or norms on transfer.
6. I will leave the Kerala Water Authority if I am allowed to proceed on deputation to another organization.

Statements

Response Categories

	Strongly agree	Agree	Mildly Agree	Mildly disagree	Disagree	Strongly disagree
7. I work for the Kerala Water Authority in spite of certain personal disadvantages primarily because I like the organization and its activities.
8. Creativity is encouraged in the Kerala Water Authority.
9. My superior often succeeds in getting his subordinates to work together as a team.
10. Immediate supervisor exercises more control than necessary.
11. Most of the officers in the Kerala Water Authority show much enthusiasm in the discharge of their responsibilities.
12. Most people working in the Kerala Water Authority are forced to be dishonest.
13. I am proud to tell others that I am a part of the Kerala Water Authority.
14. I believe that my immediate superior officer has no trust in my competence and commitment.
15. The management has created an environment where every employee of the Kerala Water Authority feels that he/she is a part and parcel of the Authority.
16. One can always depend upon the required support from one's immediate superior for carrying out assignments.

Statements

Response Categories

	Strongly agree	Agree	Mildly agree	Mildly disagree	Disagree	Strongly disagree
17. I consider it my duty to complete the assignments given to me in spite of adverse circumstances.
18. In the Kerala Water Authority there is no system for appreciating good work done by the employees.
19. I really do not care for the future of the Kerala Water Authority.
20. I am fully committed to the objectives of the Kerala Water Authority.
21. I get realistic and timely feed-back from my superior to improve my performance.
22. I am able to carry out my assignments properly because enough authority is delegated to me.
23. There is no relationship between the goals of the Kerala Water Authority and the work I do in my area of activity.
24. It requires great political manoeuvre to get a convenient posting in the Kerala Water Authority.
25. I enjoy working for the Kerala Water Authority more than my leisure activities.
26. Working for the Kerala Water Authority is a matter of pride for me.

Part VI

INSTRUCTIONS

Please make a tick (✓) mark in the appropriate space against the information applicable to you and fill in the necessary information in the space provided below.

1. Sex	Male	..	<input type="checkbox"/>
	Female	..	<input type="checkbox"/>
2. Age in years		
3. Marital status	Married	..	<input type="checkbox"/>
	Single	..	<input type="checkbox"/>
	Widow/Widower		<input type="checkbox"/>
4. Native District		
5. Educational qualifications	Engineering:		
	Diploma	..	<input type="checkbox"/>
	Graduate/AMIE		<input type="checkbox"/>
	Post Graduate		<input type="checkbox"/>
	Undergone Post Graduate Training		<input type="checkbox"/>
	Non Engineering:		
	Graduate/Post Graduate		<input type="checkbox"/>
	Others	..	<input type="checkbox"/>
6. Length of your service (in years) in the Kerala Water Authority		
7. Your present designation		
8. How long have you been in your present position (in years) ?		
9. Gross salary:	Rs. 5000 and above	..	<input type="checkbox"/>
	Rs. 4001—5000	..	<input type="checkbox"/>
	Rs. 3001—4000		<input type="checkbox"/>
	Rs. 2001—3000		<input type="checkbox"/>
	Rs. 1001—2000	..	<input type="checkbox"/>
10. Your name:		
11. Date		

(Instructions given to the Judges)

A list of statements consisting of 89 items is given below. These statements are expected to elicit responses reflecting various degrees of organisational alienation/involvement. Organisational-alienation* is defined as personal belief state of psychological separation/non-involvement of a member with his/her organisation in so far as the organisation is perceived as not having the potential to satisfy his/her needs. Organisation-Involvement** is defined as the personal belief state of psychological identification with the organisation.

* The statements given in the list refer to lack of opportunity to utilise one's potentialities that result in a sense of non-achievement, a sense of not belonging to work teams/organisation, lack of freedom (autonomy) and control, a sense of meaninglessness in doing the work assigned, lack of inadequate information and norms to guide behaviour and certain possible actions and decisions of the individual in relation to his organisation.

** Involvement refers to the opposite of alienation.

You are selected as a judge to determine the value and acceptability of these statements as a measure of alienation/involvement. The 'organisation' under reference in the study is the 'Kerala Water Authority'.

Please remember that your own reaction to the statement is irrelevant. You have to act as a judge to determine the direction and extent of alienation/involvement of a respondent who agrees with the given statement.

If you consider that an agreement with the given statement indicates 'strong' degree of 'alienation' with the organisation, please put a tick (✓) mark in column 'alienation-strong' and if an agreement with the statement indicates only 'mild' degree of 'alienation' put a tick (✓) mark in column 'alienation-weak'.

If you consider that an agreement with the given statement indicates 'strong' degree of 'involvement' with the organisation, please put a tick (✓) mark in column 'involvement-strong' and if an agreement with the statement indicates only 'mild' degree of 'involvement' put a tick (✓) mark in column 'involvement-weak'.

If the given statement does not give a clear meaning or in any way does not indicate any degree of 'alienation/involvement' of the respondent owing to language expression or other reasons, please put a tick (✓) mark in column 'other category'.

STATEMENTS SELECTED AFTER EVALUATION BY JUDGES

1. The work atmosphere in the Kerala Water Authority inspires the very best in me in my performance.
2. The status I enjoy in society is largely due to the good image of the Kerala Water Authority.
3. There is high centralization of authority at Chief Engineer's and Superintending Engineer's level making the execution of work difficult for field officers.
4. It is a pleasure to continue in my present work in the Kerala Water Authority.
5. The Kerala Water Authority has no clear cut policy or norms on transfer.
6. I will leave the Kerala Water Authority if I am allowed to proceed on deputation to another organisation.
7. I work for the Kerala Water Authority in spite of certain personal disadvantages primarily because I like the organisation and its activities.
8. Creativity is encouraged in the Kerala Water Authority.
9. My superior officer succeeds in getting his subordinates to work together as a team.
10. Immediate supervisor exercises more control than necessary.
11. Most of the officers in the Kerala Water Authority show much enthusiasm in the discharge of their responsibilities.
12. Most people working in the Kerala Water Authority are forced to be dishonest.

13. I am proud to tell others that I am a part of the Kerala Water Authority.
14. I believe that my immediate superior officer has no trust in my competence and commitment.
15. The Management has created an environment where every employee of the Kerala Water Authority feels that he/she is a part and parcel of the Authority.
16. One can always depend upon the required support from one's immediate superior for carrying out assignments.
17. I consider it my duty to complete the assignment given to me inspite of adverse circumstances.
18. In the Kerala Water Authority there is no system for appreciating good work done by the employees.
19. I really do not care for the future of the Kerala Water Authority.
20. I am fully committed to the objectives of the Kerala Water Authority.
21. I get realistic and timely feed-back from my superior to improve my performance.
22. I am able to carry out my assignments properly because enough authority is delegated to me.
23. There is no relationship between the goals of the Kerala Water Authority and the work I do in my area of activity.
24. It requires great political manoeuvre to get a convenient posting in the Kerala Water Authority.
25. I enjoy working for the Kerala Water Authority more than my leisure activities.
26. Working for the Kerala Water Authority is a matter of pride for me.

NOTE

Items 1, 8, 14 and 21 pertain to 'self-estrangement'.

Items 2, 9, 15 and 26 pertain to 'social isolation'.

Items 3, 10, 16 and 22 pertain to 'powerlessness'.

Items 4, 11, 17 and 23 pertain to 'meaninglessness'.

Items 5, 12, 18 and 24 pertain to 'normlessness'.

Items 6, 7, 13, 20 and 25 are filler items representing validating statements.

Items 3, 5, 6, 10, 12, 14, 18, 19, 23 and 24 are negatively worded, that is, an agreement on these statements indicate alienation.

Codes of Demographic Particulars Used for Computerisation

Demographic particulars		Code	
1 Sex	SEX	01	- Male
		02	- Female
2 Age Group	AGE	01	- 21-30 years
		02	- 31-40 years
		03	- 41-50 years
		04	- 51 years & above
3 Marital status	FIRST	01	- Married
		02	- Single
		03	- Widow/Widower
4 Districts	DIST	01	- Trivandrum
		02	- Quilon
		03	- Pathanamthitta
		04	- Alleppey
		05	- Kottayam
		06	- Ernakulam
		07	- Idukki
		08	- Trichur
		09	- Palghat
		10	- Malappuram
		11	- Calicut
		12	- Cannanore
		13	- Kasargode
		14	- Wyanad

5	Qualifications	QUAL	01 - Diploma - Engineering 02 - Graduate/AMIE - Engineering 03 - Post graduate/ Undergone Post graduate training - Engineering 00 - Others
6	Length of service	SERV	01 - Upto 10 years 02 - 11 to 20 years 03 - 21 to 30 years 04 - 31 years and above
7	Present job experience	EXPR	01 - Upto 5 years 02 - 6 to 10 years 03 - 11 years & above
8	Salary (compensation)	SAL	01 - Rs.5000/- & above 02 - between Rs.4001 & 5001 03 - between Rs.3001 & 4000 04 - between Rs.2001 & 3001 05 - between Rs.1001 & 2001
9	Designation	SE	101-199 - Superintending Engineers and above
		EE	201-299 - Executive Engineers
		AEE	301-499 - Assistant executive engineers

Responses of Demographic Particulars

S1. Subject										
No.	code	SEX	AGE	MRST	DIST	QUAL	SERV	EXPR	SAL	JBOU

1	SE-101	1	4	1	1	3	4	1	1	VE
2	SE-102	1	3	1	2	3	3	1	2	N
3	SE-103	1	4	1	6	3	3	1	2	E
4	SE-104	1	3	1	6	3	3	1	2	E
5	SE-105	1	4	1	11	3	3	1	2	VI
6	SE-106	1	3	1	5	3	3	1	2	VE
7	SE-107	1	3	1	6	3	3	1	2	VE
8	SE-108	1	3	1	8	3	3	1	2	N
9	SE-109	1	3	1	4	3	3	1	2	VE
10	SE-110	1	3	1	12	2	3	1	2	VI
11	SE-111	1	3	2	1	3	3	1	2	I
12	SE-112	1	4	1	1	2	3	1	2	I
13	SE-113	1	3	1	2	3	3	1	2	VE
14	SE-114	1	4	1	1	3	4	1	2	VE
15	SE-115	1	4	1	1	3	4	1	1	VE
16	SE-116	1	3	1	1	3	3	1	2	VE
17	SE-117	1	4	1	8	3	4	2	2	VE
18	SE-118	2	3	1	1	3	3	1	2	N
19	SE-119	1	4	1	6	3	4	1	2	VI
20	SE-120	1	4	1	3	3	4	1	2	E
21	EE-201	1	3	1	9	2	3	2	2	N
22	EE-202	2	3	1	1	3	3	1	3	E
23	EE-203	1	3	1	4	3	2	1	3	VE
24	EE-204	1	3	1	1	3	3	1	2	N
25	EE-205	1	3	1	6	2	3	1	2	VE
26	EE-206	1	3	1	4	3	3	2	3	VI
27	EE-207	1	2	1	2	3	2	1	3	N
28	EE-208	1	3	1	11	3	3	1	2	VE
29	EE-209	1	3	1	8	3	3	2	3	VE
30	EE-210	1	3	1	5	2	2	1	3	VE
31	EE-211	1	3	1	8	3	3	2	2	N
32	EE-212	1	3	1	1	3	3	1	2	N

33	EE-213	1	3	1	1	3	3	2	2	VE
34	EE-214	1	3	1	1	3	2	1	3	E
35	EE-215	1	3	1	1	3	3	2	3	VE
36	EE-216	1	3	1	6	3	3	1	3	VE
37	EE-217	1	4	1	8	2	3	1	3	VE
38	EE-218	1	3	1	11	2	2	1	3	VE
39	EE-219	1	3	1	4	3	3	1	3	VE
40	EE-220	1	3	1	1	3	3	1	3	VI
41	EE-221	1	4	1	5	2	3	1	2	VE
42	EE-222	1	3	1	3	2	3	1	3	N
43	EE-223	1	3	1	5	2	2	1	3	VE
44	EE-224	1	3	1	8	2	3	2	2	E
45	EE-225	1	3	1	6	3	3	2	2	VE
46	EE-226	1	2	1	2	3	2	1	3	VI
47	EE-227	1	3	1	7	2	3	1	2	VE
48	EE-228	1	3	1	4	3	3	2	2	E
49	EE-229	1	3	1	10	2	2	1	3	E
50	EE-230	1	3	1	12	3	3	1	3	VE
51	EE-231	2	3	3	1	3	3	2	3	VE
52	EE-232	1	3	1	2	3	2	1	3	E
53	EE-233	1	4	1	1	2	3	2	3	VE
54	EE-234	1	3	1	1	3	3	1	2	VE
55	EE-235	1	4	1	6	2	3	2	2	VE
56	EE-236	2	4	1	8	2	3	2	3	E
57	EE-237	1	3	1	4	2	3	1	3	VE
58	EE-238	1	3	1	2	2	3	1	2	VI
59	EE-239	1	3	1	1	2	3	1	3	VE
60	EE-240	1	3	1	5	2	2	1	3	VI
61	EE-241	1	2	1	1	3	2	1	3	I
62	EE-242	1	3	1	8	2	4	1	3	VE
63	EE-243	1	4	1	8	1	4	1	3	I
64	EE-244	1	3	1	1	3	2	1	3	VE
65	EE-245	2	2	1	8	3	2	1	3	I
66	EE-246	1	3	1	12	2	2	1	3	E
67	EE-247	1	3	1	11	3	3	1	3	I
68	EE-248	1	4	1	2	2	3	2	2	VI
69	EE-249	1	3	1	7	3	3	1	3	E
70	EE-250	1	4	1	8	1	4	1	3	VE
71	EE-251	1	4	1	11	2	3	1	3	VI

72	EE-252	1	3	1	2	2	3	1	3	VE
73	EE-253	1	3	1	8	2	2	1	3	VI
74	EE-254	1	2	1	5	3	2	1	3	VE
75	EE-255	1	3	1	4	3	3	1	3	VE
76	EE-256	1	3	1	6	2	3	1	3	VE
77	AEE-301	1	3	1	1	2	2	1	4	VE
78	AEE-302	1	4	2	5	1	3	1	3	VE
79	AEE-303	1	3	1	5	3	2	1	4	VE
80	AEE-304	2	2	1	1	2	1	1	4	I
81	AEE-305	1	3	1	8	2	3	2	3	VE
82	AEE-306	1	3	1	8	2	2	2	3	VE
83	AEE-307	2	2	1	6	3	1	1	4	VE
84	AEE-308	1	3	1	1	2	2	3	3	VI
85	AEE-309	1	3	1	8	2	2	2	4	I
86	AEE-310	1	3	1	6	1	3	1	3	E
87	AEE-311	1	3	1	6	2	2	2	3	VE
88	AEE-312	1	3	1	6	2	2	2	3	VE
89	AEE-313	2	2	1	1	2	1	1	4	VE
90	AEE-314	1	4	1	6	2	2	2	3	VE
91	AEE-315	1	3	1	6	2	2	2	3	VE
92	AEE-316	2	3	1	3	3	2	3	3	VE
93	AEE-317	1	3	1	6	2	2	2	3	VE
94	AEE-318	1	4	1	5	1	4	2	3	VE
95	AEE-319	1	4	1	6	1	4	2	3	VI
96	AEE-320	1	4	1	12	1	3	2	3	VE
97	AEE-321	1	2	1	8	3	2	2	3	N
98	AEE-322	1	2	1	8	2	2	3	3	VI
99	AEE-323	1	3	1	2	3	2	3	3	VI
100	AEE-324	1	3	1	2	3	2	2	3	I
101	AEE-325	2	3	1	2	3	2	2	3	VE
102	AEE-326	1	2	1	1	2	1	1	4	VE
103	AEE-327	1	2	1	1	3	1	1	4	VE
104	AEE-328	1	2	1	8	2	2	3	4	VE
105	AEE-329	1	4	1	1	1	4	2	3	VE
106	AEE-330	1	2	1	1	2	1	1	4	VE
107	AEE-331	1	2	1	5	3	2	2	3	N
108	AEE-332	1	3	1	2	2	2	2	4	N
109	AEE-333	1	3	1	12	2	2	1	4	VE
110	AEE-334	1	3	1	5	2	2	2	3	VE

111	AEE-335	1	2	1	5	2	2	1	3	VE
112	AEE-336	1	3	1	3	3	2	1	3	N
113	AEE-337	1	4	1	8	1	4	1	3	I
114	AEE-338	2	3	1	6	2	2	1	3	I
115	AEE-339	2	2	1	8	2	1	1	4	VE
116	AEE-340	1	4	1	3	2	3	1	4	E
117	AEE-341	2	2	1	8	3	1	1	5	VE
118	AEE-342	2	3	1	8	2	2	2	3	VE
119	AEE-343	1	3	1	8	2	3	2	3	VE
120	AEE-344	2	2	1	3	3	1	1	4	E
121	AEE-345	1	2	1	3	2	1	1	4	VE
122	AEE-346	1	3	1	8	3	3	2	4	N
123	AEE-347	1	4	1	3	1	3	1	3	N
124	AEE-348	1	2	1	4	2	1	1	4	VE
125	AEE-349	1	3	1	5	1	3	2	3	E
126	AEE-350	2	3	1	1	3	2	2	3	VE
127	AEE-351	1	3	1	8	2	3	2	3	VE
128	AEE-352	1	3	1	6	2	1	2	4	VE
129	AEE-353	1	3	1	6	2	3	1	3	VE
130	AEE-354	1	3	1	6	1	3	2	3	VE
131	AEE-355	2	2	1	6	2	2	2	3	VE
132	AEE-356	1	4	1	6	1	4	2	3	N
133	AEE-357	1	3	1	11	1	4	1	3	VE
134	AEE-358	1	2	1	5	2	1	1	5	VE
135	AEE-359	1	2	1	2	2	1	1	4	N
136	AEE-360	1	2	1	1	2	1	1	4	VE
137	AEE-361	2	2	1	1	2	1	1	4	E
138	AEE-362	2	2	1	1	2	1	1	4	E
139	AEE-363	1	3	1	4	2	2	2	3	VE
140	AEE-364	1	3	1	2	3	2	2	4	N
141	AEE-365	1	3	1	1	3	2	3	4	VE
142	AEE-366	1	3	1	1	2	2	2	3	VE
143	AEE-367	1	3	1	2	2	2	2	3	VE
144	AEE-368	2	2	1	2	3	1	1	4	VE
145	AEE-369	1	2	1	2	2	1	1	4	VE
146	AEE-370	1	3	1	1	2	2	2	1	VE
147	AEE-371	2	1	1	8	2	1	1	5	VE
148	AEE-372	1	1	2	6	2	1	1	5	VE
149	AEE-373	1	4	1	8	1	4	1	3	E

150	AEE-374	1	3	1	2	3	2	3	4	VE
151	AEE-375	1	3	1	10	1	3	2	3	VE
152	AEE-376	2	3	1	9	2	2	2	3	VE
153	AEE-377	1	2	1	9	2	2	2	3	VE
154	AEE-378	1	4	1	9	1	4	2	3	VE
155	AEE-379	1	3	1	8	2	2	2	4	VE
156	AEE-380	1	3	1	1	2	2	2	4	VE
157	AEE-381	1	3	1	1	2	2	2	4	VE
158	AEE-382	2	2	1	2	2	1	1	4	VE
159	AEE-383	1	1	2	6	2	1	1	4	VE
160	AEE-384	1	2	1	7	3	1	2	4	VE
161	AEE-385	2	3	1	6	2	2	2	3	E
162	AEE-386	1	3	1	4	2	3	1	3	VE
163	AEE-387	1	2	1	1	2	1	1	4	VE
164	AEE-388	1	4	1	4	1	3	1	3	VE
165	AEE-389	1	3	1	6	2	2	2	4	VE
166	AEE-390	1	3	1	9	2	1	2	4	VE
167	AEE-391	1	2	1	9	3	2	2	3	VE
168	AEE-392	1	2	1	1	2	2	1	4	E
169	AEE-393	1	3	1	1	2	2	3	4	VE
170	AEE-394	1	2	1	13	2	2	1	4	VE
171	AEE-395	1	3	1	13	2	1	2	4	E
172	AEE-396	1	3	1	12	2	2	2	3	VE
173	AEE-397	1	3	1	11	2	2	2	4	VE
174	AEE-398	1	3	1	11	1	3	1	3	VI
175	AEE-399	1	3	1	5	2	2	2	3	VE
176	AEE-400	1	3	1	8	2	2	2	3	VE
177	AEE-401	1	4	1	1	1	3	3	3	VE
178	AEE-402	1	2	1	1	2	1	1	4	VE
179	AEE-403	1	3	1	2	2	3	1	3	VE
180	AEE-404	1	3	1	1	3	2	1	4	N
181	AEE-405	2	2	1	8	2	1	1	4	VE
182	AEE-406	1	2	1	12	3	1	1	4	VE
183	AEE-407	1	2	1	4	3	1	1	4	E
184	AEE-408	1	2	1	8	2	1	1	4	VE
185	AEE-409	1	4	1	8	1	4	3	3	VE
186	AEE-410	1	3	1	4	2	2	2	4	E
187	AEE-411	2	2	1	1	2	1	1	4	I
188	AEE-412	1	2	1	2	2	1	1	4	VI

189	AEE-413	1	4	1	8	1	3	1	3	VE
190	AEE-414	1	3	1	8	2	2	2	4	E
191	AEE-415	1	2	1	2	2	1	1	4	VE
192	AEE-416	1	2	1	1	2	1	1	4	I
193	AEE-417	1	3	1	6	2	2	2	4	E
194	AEE-418	1	3	1	4	2	2	2	3	VE
195	AEE-419	1	4	1	6	2	2	1	3	VE
196	AEE-420	1	4	1	11	1	3	2	3	VE
197	AEE-421	1	2	1	5	2	1	1	4	VE
198	AEE-422	2	3	1	9	2	2	1	3	N
199	AEE-423	2	2	1	6	2	1	1	5	VE
200	AEE-424	1	3	1	11	2	2	1	3	VE
201	AEE-425	1	3	1	8	2	2	2	3	VE
202	AEE-426	1	3	1	8	2	2	2	4	VE
203	AEE-427	1	3	1	4	2	2	2	4	VE
204	AEE-428	1	3	1	1	2	1	1	4	VE
205	AEE-429	1	3	1	1	2	2	2	4	VI
206	AEE-430	1	2	1	1	2	1	1	4	E
207	AEE-431	1	3	1	8	2	2	2	4	VE
208	AEE-432	1	4	1	6	1	3	2	3	N
209	AEE-433	1	2	1	3	3	1	1	4	VI
210	AEE-434	1	2	1	2	2	1	1	4	VE
211	AEE-435	1	3	1	12	1	3	1	4	E
212	AEE-436	1	3	1	12	2	2	3	3	E
213	AEE-437	1	3	1	11	3	2	2	4	E
214	AEE-438	1	4	1	10	1	3	2	3	VE
215	AEE-439	1	3	1	10	2	2	2	4	VE
216	AEE-440	1	3	1	11	1	3	1	3	VE
217	AEE-441	1	2	1	10	2	1	1	4	VE
218	AEE-442	2	3	1	8	0	3	2	3	VE
219	AEE-443	1	2	1	12	2	1	1	5	VI
220	AEE-444	1	3	1	3	2	3	1	3	E
221	AEE-445	1	4	1	3	1	3	1	3	VE
222	AEE-446	1	4	1	3	2	3	2	4	VE
223	AEE-447	1	3	1	11	2	2	1	4	E
224	AEE-448	1	2	3	3	2	1	1	5	I

Job Outcome Response Rank Order

Sl. Subject		Items/Response Rank Order														
No.	Code No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	SE-101	1	2	3	4	7	6	14	11	8	9	10	13	15	5	12
2	SE-102	5	8	6	4	1	2	10	9	3	12	11	13	14	7	15
3	SE-103	7	14	12	5	4	1	3	6	9	11	2	3	8	10	15
4	SE-104	1	11	12	5	13	4	14	3	2	15	8	10	9	6	7
5	SE-105	10	9	14	5	13	8	7	6	1	2	11	15	12	4	3
6	SE-106	1	2	4	3	13	6	12	9	5	10	7	14	15	11	8
7	SE-107	1	2	3	4	15	13	14	12	10	11	9	8	7	6	5
8	SE-108	11	13	12	10	15	7	4	1	3	2	5	14	8	6	9
9	SE-109	4	8	1	2	12	13	15	5	6	14	9	11	10	7	3
10	SE-110	3	5	6	7	14	1	8	13	2	10	15	12	11	9	4
11	SE-111	8	7	15	14	2	1	9	10	11	3	5	12	13	4	6
12	SE-112	4	12	13	5	6	1	15	14	7	8	9	10	11	3	2
13	SE-113	4	2	15	3	13	7	14	1	5	6	8	10	11	9	12
14	SE-114	1	9	14	2	13	3	11	4	6	5	7	12	15	8	10
15	SE-115	1	2	3	4	12	5	6	8	9	14	7	13	15	10	11
16	SE-116	1	2	13	10	14	4	15	5	8	6	9	7	11	3	12
17	SE-117	15	1	2	13	14	3	6	4	5	9	11	8	7	10	12
18	SE-118	3	2	11	7	14	1	10	8	9	12	6	15	5	4	13
19	SE-119	5	6	10	7	12	2	13	8	1	3	14	15	11	4	9
20	SE-120	1	15	14	12	11	2	3	13	4	8	5	6	7	9	10
21	EE-201	8	9	10	11	12	14	15	1	6	3	13	4	5	2	7
22	EE-202	1	3	5	6	7	4	10	8	12	11	13	14	15	2	9
23	EE-203	1	2	4	5	6	7	9	8	10	11	12	13	14	15	3
24	EE-204	13	5	7	8	6	2	1	9	3	11	14	15	12	10	4
25	EE-205	1	2	3	5	4	12	11	7	6	8	15	14	13	9	10
26	EE-206	10	11	12	7	6	9	8	3	2	5	4	13	14	1	15
27	EE-207	2	3	14	15	11	1	10	13	9	6	12	8	7	4	5
28	EE-208	1	2	15	3	6	7	9	4	11	13	10	14	5	8	12
29	EE-209	1	2	4	5	6	8	13	10	11	9	12	15	14	7	3
30	EE-210	1	3	11	2	10	6	12	7	4	5	13	15	14	8	9
31	EE-211	11	12	13	14	15	1	10	3	4	9	2	5	6	8	7
32	EE-212	8	4	6	7	15	9	1	12	2	3	11	14	10	13	5
33	EE-213	2	3	4	5	6	7	1	13	14	15	11	10	9	8	12

34	EE-214	1	9	8	13	14	10	6	5	7	2	3	15	4	11	12
35	EE-215	1	2	5	3	15	7	13	9	6	8	14	12	11	10	4
36	EE-216	3	2	4	7	13	15	9	10	5	6	11	14	12	8	1
37	EE-217	1	2	13	3	4	5	6	14	7	8	9	15	12	11	10
38	EE-218	1	2	15	3	11	4	6	5	9	7	8	10	14	13	12
39	EE-219	2	14	3	6	4	5	15	13	7	9	11	10	12	8	1
40	EE-220	12	11	13	6	14	9	5	7	1	2	8	10	15	3	4
41	EE-221	1	2	3	5	4	9	12	7	8	13	10	6	11	14	15
42	EE-222	2	5	15	13	6	1	8	7	11	9	10	12	3	4	14
43	EE-223	3	1	12	14	2	11	4	7	6	13	8	15	9	10	5
44	EE-224	1	4	14	11	3	2	15	5	13	6	7	8	9	10	12
45	EE-225	1	2	8	4	13	6	9	12	11	7	10	15	14	3	5
46	EE-226	5	9	10	11	6	3	7	13	1	8	4	14	15	2	12
47	EE-227	13	1	12	11	10	4	3	5	6	7	9	15	14	8	2
48	EE-228	15	14	13	10	12	6	5	11	7	4	1	9	8	2	3
49	EE-229	1	9	8	10	3	2	6	4	5	7	11	12	13	14	15
50	EE-230	1	2	5	4	9	8	12	13	7	10	11	15	14	6	3
51	EE-231	1	6	5	14	2	13	3	12	7	11	10	8	9	15	4
52	EE-232	5	2	3	4	14	13	12	6	1	7	15	9	8	10	11
53	EE-233	2	15	8	10	3	9	14	5	4	13	6	11	12	7	1
54	EE-234	2	15	8	10	3	9	14	5	4	13	6	11	12	7	1
55	EE-235	1	2	3	15	14	11	12	13	4	5	10	6	7	8	9
56	EE-236	1	15	7	6	13	8	12	5	2	9	3	4	10	11	14
57	EE-237	1	2	7	9	10	3	13	12	14	15	11	8	4	5	6
58	EE-238	6	14	7	8	5	9	4	15	1	10	3	11	12	2	13
59	EE-239	1	3	4	7	9	11	8	5	13	10	12	15	14	6	2
60	EE-240	10	11	12	13	14	7	15	3	1	2	4	6	5	8	9
61	EE-241	10	11	5	12	13	7	1	9	2	3	8	15	14	4	6
62	EE-242	1	10	12	2	13	3	14	4	5	11	6	7	8	9	15
63	EE-243	5	6	9	7	8	10	11	12	1	15	13	14	2	3	4
64	EE-244	1	2	14	10	6	5	15	13	12	11	9	8	7	3	4
65	EE-245	7	12	15	9	10	1	2	4	3	5	6	14	11	8	13
66	EE-246	12	1	3	4	5	7	10	13	14	2	11	15	8	9	6
67	EE-247	11	12	13	14	6	1	2	15	3	7	4	5	8	9	10
68	EE-248	9	7	13	6	10	3	11	12	1	2	5	8	4	14	15
69	EE-249	3	2	6	4	14	1	9	10	11	8	12	13	15	7	5
70	EE-250	1	5	10	4	2	3	14	6	7	8	13	12	9	11	15
71	EE-251	15	9	10	7	11	4	5	3	1	2	12	13	14	6	8
72	EE-252	5	6	7	8	1	4	9	10	11	12	13	2	3	14	15

73	EE-253	8	7	6	3	4	1	9	10	11	2	13	5	12	15	14
74	EE-254	1	11	12	2	10	3	13	5	6	7	15	9	8	4	14
75	EE-255	1	2	4	3	6	8	10	9	12	15	14	7	13	11	5
76	EE-256	1	4	10	8	13	3	15	5	6	9	11	12	14	7	2
77	AEE-301	1	15	14	13	2	10	11	3	4	5	8	7	9	12	6
78	AEE-302	3	1	13	2	11	7	5	14	6	8	9	15	10	4	12
79	AEE-303	1	13	4	12	3	14	7	11	8	6	10	15	9	5	2
80	AEE-304	1	10	11	14	15	3	13	8	2	4	9	7	5	6	12
81	AEE-305	1	2	15	11	13	5	7	6	3	8	9	12	14	4	10
82	AEE-306	2	1	8	15	12	3	11	4	13	5	10	14	9	7	6
83	AEE-307	1	2	3	14	9	4	12	11	10	8	5	13	6	7	15
84	AEE-308	3	13	14	6	7	8	15	9	1	10	11	4	5	2	12
85	AEE-309	2	7	10	11	12	6	15	8	9	3	4	14	13	1	5
86	AEE-310	3	2	5	6	4	7	10	11	9	8	12	13	14	1	15
87	AEE-311	1	2	3	4	8	9	15	5	6	10	7	11	12	14	13
88	AEE-312	1	2	9	8	4	5	13	11	6	10	7	15	14	12	3
89	AEE-313	1	3	4	14	15	5	10	9	8	6	7	11	12	13	2
90	AEE-314	2	3	5	1	6	10	8	11	12	13	14	15	9	7	4
91	AEE-315	1	2	7	15	13	3	11	6	5	12	10	8	9	4	14
92	AEE-316	8	12	15	14	13	9	1	5	6	3	4	10	2	7	11
93	AEE-317	1	8	9	2	13	12	3	6	14	11	15	5	4	7	10
94	AEE-318	1	2	6	5	8	7	15	10	11	9	13	12	14	4	3
95	AEE-319	3	11	4	15	9	1	13	6	7	2	5	14	12	8	10
96	AEE-320	1	2	15	3	9	4	14	5	10	6	11	12	7	8	13
97	AEE-321	1	5	6	7	8	2	9	10	11	3	12	13	15	14	4
98	AEE-322	6	3	15	5	14	13	11	7	2	1	12	10	9	8	4
99	AEE-323	4	6	12	5	11	1	7	13	2	8	3	15	9	10	14
100	AEE-324	1	14	15	12	7	2	13	5	3	4	6	8	10	9	11
101	AEE-325	1	2	5	3	6	7	11	4	9	8	11	15	13	14	10
102	AEE-326	1	12	13	11	6	5	7	8	9	10	4	2	3	14	15
103	AEE-327	1	12	13	11	6	5	9	10	7	4	8	2	3	14	15
104	AEE-328	1	12	13	11	6	5	10	9	7	4	8	2	3	14	15
105	AEE-329	5	6	7	8	15	9	2	1	3	4	14	10	13	11	12
106	AEE-330	1	7	8	9	2	3	10	4	5	12	14	15	11	13	6
107	AEE-331	7	1	8	6	12	2	9	13	10	3	4	15	14	5	11
108	AEE-332	10	15	14	11	9	5	6	7	8	1	2	13	3	4	12
109	AEE-333	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
110	AEE-334	1	3	12	2	11	13	4	10	5	6	15	14	7	8	9
111	AEE-335	1	12	10	9	14	5	13	6	15	8	4	3	2	7	11

112	AEE-336	1	8	9	6	5	7	12	10	2	3	13	15	11	14	4
113	AEE-337	9	10	11	12	4	1	5	15	8	6	13	14	2	3	7
114	AEE-338	9	12	10	11	4	7	6	13	14	1	2	15	5	3	8
115	AEE-339	1	15	13	2	11	3	4	14	5	12	10	8	7	9	6
116	AEE-340	3	11	4	7	6	1	8	9	10	12	13	14	15	5	2
117	AEE-341	1	3	5	6	2	7	10	15	9	11	8	14	13	12	4
118	AEE-342	1	14	8	3	4	12	11	9	5	13	6	7	10	15	2
119	AEE-343	3	1	4	12	9	5	14	15	11	13	10	6	7	8	2
120	AEE-344	1	8	9	14	3	4	13	5	2	10	6	11	7	15	13
121	AEE-345	2	1	8	7	4	3	10	9	5	11	13	14	15	12	6
122	AEE-346	2	5	15	13	6	1	8	7	11	9	10	12	3	4	14
123	AEE-347	13	14	15	8	12	11	10	5	6	1	7	2	3	4	9
124	AEE-348	1	15	14	9	4	5	12	2	3	7	6	10	8	13	11
125	AEE-349	1	14	12	11	15	13	4	3	2	10	6	5	7	8	9
126	AEE-350	1	14	13	12	8	9	11	2	3	5	4	15	6	7	10
127	AEE-351	2	1	3	6	4	5	7	9	8	10	14	15	13	11	12
128	AEE-352	1	15	2	3	14	4	12	9	10	13	11	6	5	9	8
129	AEE-353	1	3	8	6	7	4	5	9	10	10	10	10	10	10	2
130	AEE-354	1	2	7	3	5	6	15	9	14	8	12	13	11	10	4
131	AEE-355	1	2	4	3	12	10	15	11	7	8	13	14	9	5	6
132	AEE-356	11	15	12	13	2	1	14	3	10	4	8	6	5	7	9
133	AEE-357	1	3	9	10	11	8	12	2	5	6	7	13	14	15	4
134	AEE-358	1	4	5	3	6	7	11	8	10	13	12	14	15	9	2
135	AEE-359	7	8	9	11	14	1	3	13	12	6	2	15	5	4	10
136	AEE-360	1	7	3	6	12	11	13	4	8	10	9	15	14	5	2
137	AEE-361	1	3	9	5	4	10	15	14	12	2	8	6	11	7	13
138	AEE-362	1	3	9	7	11	4	15	13	14	2	8	12	6	5	10
139	AEE-363	2	1	6	5	4	3	15	14	10	9	13	12	11	8	7
140	AEE-364	9	10	13	12	11	14	15	1	2	3	4	5	6	7	8
141	AEE-365	1	2	6	7	12	4	15	5	3	8	11	14	13	9	10
142	AEE-366	3	4	10	7	12	5	1	15	8	13	9	11	2	6	14
143	AEE-367	13	15	14	12	10	8	11	6	5	4	7	1	2	3	9
144	AEE-368	12	1	5	6	7	4	8	9	10	11	2	13	3	14	15
145	AEE-369	1	12	2	11	3	4	14	5	7	15	6	8	9	10	13
146	AEE-370	13	1	2	3	4	8	5	7	6	9	14	15	12	10	11
147	AEE-371	1	7	5	3	9	4	14	2	6	8	13	15	12	11	10
148	AEE-372	1	9	10	5	3	4	14	2	6	11	7	13	12	8	15
149	AEE-373	8	6	5	10	3	13	14	7	4	2	1	15	12	11	9
150	AEE-374	1	2	3	6	12	8	7	11	4	14	5	13	9	10	15

151	AEE-375	1	2	3	4	11	14	13	12	6	9	5	7	8	10	15
152	AEE-376	1	4	5	2	14	6	15	7	8	3	10	9	11	12	13
153	AEE-377	1	2	5	6	7	9	8	10	11	12	15	13	14	4	3
154	AEE-378	1	2	5	3	13	6	15	9	8	7	10	11	12	14	4
155	AEE-379	2	12	1	5	11	8	15	7	9	10	6	3	4	13	14
156	AEE-380	1	2	4	3	14	6	13	5	8	10	11	9	12	7	15
157	AEE-381	4	7	12	3	5	14	13	1	6	15	2	8	9	11	10
158	AEE-382	3	2	4	5	6	7	15	12	11	13	10	8	9	14	1
159	AEE-383	1	2	3	4	12	10	11	5	6	7	13	9	8	14	15
160	AEE-384	1	6	8	7	11	15	12	10	13	9	14	3	2	4	5
161	AEE-385	12	11	6	8	14	7	15	4	1	9	10	2	3	13	5
162	AEE-386	6	7	8	9	14	13	10	11	5	4	2	1	12	3	15
163	AEE-387	1	6	9	2	3	5	11	10	7	12	15	14	13	8	4
164	AEE-388	3	15	4	14	5	6	7	9	8	10	11	1	2	12	13
165	AEE-389	1	2	6	3	15	13	7	8	10	14	9	12	4	5	11
166	AEE-390	1	2	6	3	14	11	15	7	5	4	8	13	12	9	10
167	AEE-391	1	2	14	15	13	4	11	12	10	5	3	8	9	6	7
168	AEE-392	3	2	9	4	13	10	14	15	1	5	11	12	6	7	8
169	AEE-393	1	4	5	3	6	11	8	12	13	14	15	10	9	7	2
170	AEE-394	1	7	9	10	11	12	15	2	3	13	4	5	6	14	8
171	AEE-395	1	15	14	11	3	6	7	13	4	8	9	10	5	2	12
172	AEE-396	1	2	3	6	4	5	8	7	9	10	11	15	13	12	14
173	AEE-397	1	2	4	6	11	7	15	8	9	10	12	5	13	14	3
174	AEE-398	4	6	5	15	13	1	14	3	2	12	10	7	9	11	8
175	AEE-399	2	3	4	5	6	7	9	8	10	13	11	14	12	15	1
176	AEE-400	1	12	3	2	4	5	15	10	14	13	6	8	7	11	9
177	AEE-401	11	5	10	14	6	7	15	8	4	3	9	1	2	13	12
178	AEE-402	1	2	4	7	9	5	11	10	14	12	6	8	13	3	15
179	AEE-403	1	2	4	3	5	6	12	14	9	13	10	2	7	15	8
180	AEE-404	4	6	12	14	9	11	15	1	2	3	5	7	8	13	10
181	AEE-405	1	15	14	12	2	4	6	10	5	3	11	9	7	8	13
182	AEE-406	1	14	2	3	13	12	11	9	8	7	6	4	5	10	15
183	AEE-407	5	11	12	4	6	9	13	1	2	7	3	14	15	8	10
184	AEE-408	1	14	4	3	13	10	12	2	6	5	7	8	9	11	15
185	AEE-409	2	1	12	15	3	4	13	14	5	11	6	9	8	10	7
186	AEE-410	1	4	3	14	15	2	10	9	5	11	6	7	12	13	8
187	AEE-411	6	7	9	10	5	4	15	13	11	3	12	14	1	2	8
188	AEE-412	10	14	9	8	12	1	15	5	6	2	3	7	11	4	13
189	AEE-413	1	6	4	15	11	10	9	8	13	12	14	3	2	7	5

190	AEE-414	6	15	11	5	7	8	14	9	10	13	4	2	3	1	12
191	AEE-415	6	1	8	2	14	3	13	4	9	7	12	11	10	5	15
192	AEE-416	13	14	10	2	9	1	12	11	3	4	5	6	7	8	15
193	AEE-417	4	13	12	11	10	9	15	5	1	14	8	6	2	7	3
194	AEE-418	1	2	11	5	15	9	6	13	3	10	14	7	4	12	8
195	AEE-419	4	2	11	1	8	13	12	6	10	3	9	15	14	5	7
196	AEE-420	1	2	11	3	4	7	12	8	5	14	13	10	6	9	15
197	AEE-421	1	11	3	2	8	7	15	4	5	14	6	13	12	9	10
198	AEE-422	11	10	9	8	15	5	14	1	2	3	4	7	6	12	13
199	AEE-423	1	2	12	10	9	3	15	4	5	8	6	14	11	7	13
200	AEE-424	1	3	12	11	2	10	15	4	5	6	7	8	13	14	9
201	AEE-425	1	3	7	4	5	6	12	9	15	14	10	13	11	8	2
202	AEE-426	1	2	6	7	15	8	9	10	12	11	13	14	4	3	5
203	AEE-427	1	3	4	5	2	11	15	7	8	14	12	9	10	13	6
204	AEE-428	1	4	2	3	5	13	6	7	12	14	9	8	10	11	15
205	AEE-429	13	15	14	9	8	3	6	5	2	7	4	10	11	1	12
206	AEE-430	15	13	10	3	12	4	9	8	5	11	1	6	7	2	14
207	AEE-431	1	2	14	13	12	7	15	6	10	11	5	3	8	4	9
208	AEE-432	2	15	7	14	6	8	9	10	1	4	11	5	12	13	3
209	AEE-433	10	9	8	7	12	1	13	5	2	3	6	15	11	4	14
210	AEE-434	1	7	15	11	10	9	2	8	12	13	3	4	5	6	14
211	AEE-435	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
212	AEE-436	1	3	10	8	14	2	13	4	15	9	7	11	12	6	5
213	AEE-437	3	8	12	14	5	11	13	1	4	2	9	10	7	6	15
214	AEE-438	1	2	3	13	9	12	14	5	6	11	4	7	10	15	8
215	AEE-439	1	2	3	9	8	12	13	10	4	14	11	5	7	15	6
216	AEE-440	4	9	11	1	8	12	10	2	13	3	5	7	14	6	15
217	AEE-441	5	7	10	4	15	8	9	6	11	12	13	3	2	14	1
218	AEE-442	1	5	10	4	2	3	14	6	7	8	13	12	9	11	15
219	AEE-443	5	4	14	6	15	2	9	10	1	7	8	11	12	13	3
220	AEE-444	6	5	1	13	15	2	14	3	4	7	8	12	11	9	10
221	AEE-445	1	15	2	3	13	4	14	5	7	8	9	12	10	11	5
222	AEE-446	3	1	2	6	7	8	9	11	12	10	13	15	14	4	5
223	AEE-447	5	6	12	14	1	2	3	4	7	8	9	13	15	11	10
224	AEE-448	5	9	12	10	7	6	13	8	2	3	11	15	14	4	1

Job Outcome: Scores of the First Four Ranked Items

Sl. No.	Subject Code No	Rank	Items/Responses (Rank)															Net Score	Classification			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15					
			(-)	(-)	(-)	(-)	(-)	(+)	(-)	(-)	(+)	(+)	(-)	(-)	(-)	(+)	(-)			(+)	(-)	(+)
1	SE-101	R	1	2	3	4														-10		
		S	4	3	2	1														+ 0	-10	VE
2	SE-102	R				4	1	2		3										- 5		
		S				1	4	3		2										+ 5	0	N
3	SE-103	R					4	1				2	3							- 6		
		S					1	4				3	2							4	- 2	E
4	SE-104	R	1					4		3	2									- 6		
		S	4					1		2	3									4	- 2	E
5	SE-105	R								1	2				4	3				- 2		
		S								4	3				1	2				8	6	VI
6	SE-106	R	1	2	4	3														-10		
		S	4	3	1	2														0	-10	VE
7	SE-107	R	1	2	3	4														-10	-10	VE
		S	4	3	2	1														-10	-10	VE
8	SE-108	R						4	1	3	2									- 5		
		S						1	4	2	3									5	0	N
9	SE-109	R	4		1	2										3						
		S	1		4	3										2				-10	-10	VE
10	SE-110	R	3					1		2						4				-3		
		S	2					4		3						1				7	4	VI
11	SE-111	R					2	1			3				4					-3		
		S					3	4			2				1					7	4	I
12	SE-112	R	4					1							3	2				-4		
		S	1					4							2	3				6	2	I
13	SE-113	R	4	2		3				1										-10		
		S	1	3		2				4										0	-10	VE
14	SE-114	R	1			2		3		4										-8		

		S	4		3	2	1			2	- 6	VE		
15	SE-115	R	1	2	3	4				-10				
		S	4	3	2	1				0	-10	VE		
16	SE-116	R	1	2			4			3	-7			
		S	4	3			1			2	3	- 4	VE	
17	SE-117	R		1	2		3	4			-8			
		S		4	3		2	1			2	- 6	VE	
18	SE-118	R	3	2			1			4	-5			
		S	2	3			4			1	5	0	N	
19	SE-119	R					2		1	3	4	0		
		S					3		4	2	1	+10	+10	VI
20	SE-120	R	1				2	3	4			- 6		
		S	4				3	2	1			+ 4	- 2	E
21	EE-201	R						1	3	4	2	- 5		
		S						4	2	1	3	5	0	N
22	EE-202	R	1	3			4				2	- 6		
		S	4	2			1				3	4	- 2	E
23	EE-203	R	1	2	4						3	-10		
		S	4	3	1						2	0	-10	VE
24	EE-204	R					2	1	3		4	- 5		
		S					3	4	2		1	5	0	N
25	EE-205	R	1	2	3	4						-10		
		S	4	3	2	1						0	-10	VE
26	EE-206	R						3	2	4	1	- 3		
		S						2	3	1	4	+ 7	4	VI
27	EE-207	R	2	3			1				4	- 5		
		S	3	2			4				1	5	0	N
28	EE-208	R	1	2	3			4				-10		
		S	4	3	2			1				0	-10	VE
29	EE-209	R	1	2	4						3	-10		
		S	4	3	1						2	0	-10	VE
30	EE-210	R	1	3		2		4				- 9		
		S	4	2		3			1			1	- 8	VE
31	EE-211	R					1	3	4	2		- 5		
		S					4	2	1	3		5	0	N
32	EE-212	R		4			1	2	3			- 5		
		S		1			4	3	2			5	0	N
33	EE-213	R	2	3	4		1					-10		
		S	3	2	1		4					0	-10	VE

34	EE-214	R	1				2	3	4			- 7			
		S	4				3	2	1			3	- 4	E	
35	EE-215	R	1	2		3					4	-10			
		S	4	3		2					1	0	-10	VE	
36	EE-216	R	3	2	4						1	-10			
		S	2	3	1						4	0	-10	VE	
37	EE-217	R	1	2		3	4					-10			
		S	4	3		2	1					0	-10	VE	
38	EE-218	R	1	2		3		4				- 9			
		S	4	3		2		1				1	- 8	VE	
39	EE-219	R	2		3		4				1	-10			
		S	3		2		1				4	0	-10	VE	
40	EE-220	R					1	2			3	4	- 1		
		S					4	3			2	1	9	8	VI
41	EE-221	R	1	2	3		4					-10			
		S	4	3	2		1					0	-10	VE	
42	EE-222	R	2				1				3	4	- 5		
		S	3				4				2	1	5	0	N
43	EE-223	R	3	1		2		4				-10			
		S	2	4		3		1				0	-10	VE	
44	EE-224	R	1	4		3	2					- 7			
		S	4	1		2	3					3	- 4	E	
45	EE-225	R	1	2		4					3	- 8			
		S	4	3		1					2	2	- 6	VE	
46	EE-226	R				3		1	4		2	- 1			
		S				2		4	1		3	9	8	VI	
47	EE-227	R		1		4	3				2	- 9			
		S		4		1	2				3	1	- 8	VE	
48	EE-228	R						4	1		2	3	- 6		
		S						1	4		3	2	4	- 2	E
49	EE-229	R	1			3	2		4			- 7			
		S	4			2	3		1			3	- 4	E	
50	EE-230	R	1	2		4					3	-10			
		S	4	3		1					2	0	-10	VE	
51	EE-231	R	1			2		3			4	-10			
		S	4			3		2			1	0	-10	VE	
52	EE-232	R		2	3	4			1			- 6			
		S		3	2	1			4			4	- 2	E	
53	EE-233	R	2			3			4		1	- 9			

		S	3			2			1			4	1	- 8	VE		
54	EE-234	R	2			3			4			1	- 9				
		S	3			2			1			4	1	- 8	VE		
55	EE-235	R	1	2	3				4				- 9				
		S	4	3	2				1				1	- 8	VE		
56	EE-236	R	1						2	3	4		- 7				
		S	4						3	2	1		3	- 4	E		
57	EE-237	R	1	2			3					4	- 8				
		S	4	3			2					1	2	- 6	VE		
58	EE-238	R					4	1	3			2	- 3				
		S					1	4	2			3	7	4	VI		
59	EE-239	R	1	3	4							2	-10				
		S	4	2	1							3	0	-10	VE		
60	EE-240	R						3	1	2	4		- 3				
		S						2	4	3	1		7	4	VI		
61	EE-241	R					1	2	3			4	- 4				
		S					4	3	2			1	6	2	I		
62	EE-242	R	1		2	3	4						- 8				
		S	4		3	2	1						2	- 6	VE		
63	EE-243	R						1				2	3	4	- 4		
		S						4				3	2	1	6	2	I
64	EE-244	R	1	2								3	4	- 8			
		S	4	3								2	1	2	- 6	VE	
65	EE-245	R				1	2	4	3				- 4				
		S				4	3	1	2				6	2	I		
66	EE-246	R		1	3	4				2			- 7				
		S		4	2	1				3			+ 3	- 4	E		
67	EE-247	R				1	2	3	4				- 4				
		S				4	3	2	1				6	2	I		
68	EE-248	R				3		1	2			4	- 1				
		S				2		4	3			1	9	+ 8	VI		
69	EE-249	R	3	2	4	1							- 6				
		S	2	3	1	4							4	- 2	E		
70	EE-250	R	1		4	2	3						- 8				
		S	4		1	3	2						2	- 6	VE		
71	EE-251	R				4	3	1	2				- 2				
		S				1	2	4	3				8	6	VI		
72	EE-252	R				1	4				2	3	- 9				
		S				4	1				3	2	1	- 8	VE		

73	EE-253	R			3	4	1		2				- 3	
		S			2	1	4		3				7	4 VI
74	EE-254	R	1		2		3				4		- 7	
		S	4		3		2				1		3	- 4 VE
75	EE-255	R	1	2	4	3							-10	
		S	4	3	1	2							0	-10 VE
76	EE-256	R	1	4			3				2		- 8	
		S	4	1			2				3	2	- 6	VE
77	AEE-301	R	1			2		3	4				- 9	
		S	4			3		2	1				1	- 8 VE
78	AEE-302	R	3	1		2					4		- 9	
		S	2	4		3					1		1	- 8 VE
79	AEE-303	R	1		4		3				2		-10	
		S	4		1		2				3	0	-10	VE
80	AEE-304	R	1				3		2	4			- 4	
		S	4				2		3	1			6	2 I
81	AEE-305	R	1	2					3		4		- 7	
		S	4	3					2		1		3	- 4 VE
82	AEE-306	R	2	1			3		4				- 8	
		S	3	4			2		1				2	- 6 VE
83	AEE-307	R	1	2	3		4						- 9	
		S	4	3	2		1						1	- 8 VE
84	AEE-308	R	3					1		4	2		- 3	
		S	2					4		1	3		7	4 VI
85	AEE-309	R	2						3	4	1		- 4	
		S	3						2	1	4		6	2 I
86	AEE-310	R	3	2			4				1		- 6	
		S	2	3			1				4		4	- 2 E
87	AEE-311	R	1	2	3	4							- 10	
		S	4	3	2	1							0	-10 VE
88	AEE-312	R	1	2			4				3		-10	
		S	4	3			1				2	0	-10	VE
89	AEE-313	R	1	3	4						2		-10	
		S	4	2	1						3	0	-10	VE
90	AEE-314	R	2	3		1					4		-10	
		S	3	2		4					1	0	-10	VE
91	AEE-315	R	1	2			3				4		- 7	
		S	4	3			2				1		3	- 4 VE
92	AEE-316	R					1		3	4	2		- 8	

	S				4		2	1		3		2	- 6	VE	
93 AEE-317	R	1		2		3				4		-10			
	S	4		3		2				1		0	-10	VE	
94 AEE-318	R	1	2							4	3	- 9			
	S	4	3							1	2	1	- 8	VE	
95 AEE-319	R	3		4		1		2				- 3			
	S	2		1		4		3				+ 7	+ 4	VI	
96 AEE-320	R	1	2		3	4						- 9			
	S	4	3		2	1						1	- 8	VE	
97 AEE-321	R	1				2		3			4	- 5			
	S	4				3		2			1	5	0	N	
98 AEE-322	R		3					2	1		4	- 3			
	S		2					3	4		1	7	4	VI	
99 AEE-323	R	4				1		2		3		- 3			
	S	1				4		3		2		7	4	VI	
100 AEE-324	R	1				2		3	4			- 4			
	S	4				3		2	1			6	2	I	
101 AEE-325	R	1	2		3			4				-10			
	S	4	3		2			1				0	-10	VE	
102 AEE-326	R	1							4	2	3	-10			
	S	4							1	3	2	0	-10	VE	
103 AEE-327	R	1						4		2	3	- 9			
	S	4						1		3	2	1	- 8	VE	
104 AEE-328	R	1						4		2	3	- 9			
	S	4						1		3	2	1	- 8	VE	
105 AEE-329	R					2	1	3	4			- 7			
	S					3	4	2	1			3	- 4	VE	
106 AEE-330	R	1			2	3		4				- 8			
	S	4			3	2		1				2	- 6	VE	
107 AEE-331	R		1			2			3	4		- 5			
	S		4			3			2	1		5	0	N	
108 AEE-332	R								1	2	3	4	- 5		
	S								4	3	2	1	5	0	N
109 AEE-333	R	1	2	3	4							-10			
	S	4	3	2	1							0	-10	VE	
110 AEE-334	R	1	3		2			4				-10			
	S	4	2		3			1				0	-10	VE	
111 AEE-335	R	1							4	3	2	-10			
	S	4							1	2	3	0	-10	VE	

112	AEE-336	R	1					2	3			4	-	5		
		S	4					3	2			1	5	0	N	
113	AEE-337	R			4	1						2	3	-	4	
		S			1	4						3	2	6	2	I
114	AEE-338	R			4				1	2			3	-	4	
		S			1				4	3			2	6	2	I
115	AEE-339	R	1		2		3	4						-	8	
		S	4		3		2	1						+ 2	- 6	VE
116	AEE-340	R	3		4		1						2	-	6	
		S	2		1		4						3	+ 4	- 2	E
117	AEE-341	R	1	3			2						4	-10		
		S	4	2			3						1	0	-10	VE
118	AEE-342	R	1			3	4						2	-10		
		S	4			2	1						3	0	-10	VE
119	AEE-343	R	3	1	4								2	-10		
		S	2	4	1								3	0	-10	VE
120	AEE-344	R	1			3	4		2					-	6	
		S	4			2	+1		+3					4	- 2	E
121	AEE-345	R	2	1		4	3							-	8	
		S	3	4		1	2							2	- 6	VE
122	AEE-346	R	2				1					3	4	-	5	
		S	3				+4					2	+1	+ 5	0	N
123	AEE-347	R							1	2	3	4		-	5	
		S							4	3	2	1		5	0	N
124	AEE-348	R	1			4		2	3					-	8	
		S	4			1		3	2					2	- 6	VE
125	AEE-349	R	1				4	3	2					-	7	
		S	4				1	2	3					3	- 4	E
126	AEE-350	R	1					2	3		4			-	8	
		S	4					3	2		1			2	- 6	VE
127	AEE-351	R	2	1	3		4							-10		
		S	3	4	2		1							0	-10	VE
128	AEE-352	R	1		2	3		4						-	9	
		S	4		3	2		1						1	- 8	VE
129	AEE-353	R	1	3			4						2	-	9	
		S	4	2			1						3	1	- 8	VE
130	AEE-354	R	1	2		3							4	-10		
		S	4	3		2							1	0	-10	VE
131	AEE-355	R	1	2	4	3								-10		

	S	4	3	1	2					0	-10	VE		
132 AEE-356	R					2	1	3	4	-	5			
	S					3	+4	2	+1	+	5	0 N		
133 AEE-357	R	1	3					2		4	-10			
	S	4	2					3		1	0	-10 VE		
134 AEE-358	R	1	4		3					2	-10			
	S	4	1		2					3	0	-10 VE		
135 AEE-359	R					1	3		2	4	-	5		
	S					4	2		3	1	5	- 0 N		
136 AEE-360	R	1		3				4		2	-10			
	S	4		2				1		3	0	-10 VE		
137 AEE-361	R	1	3		4				2		-	7		
	S	4	2		1				3		3	- 4 E		
138 AEE-362	R	1	3			4			2		-	6		
	S	4	2			1			3		4	- 2 E		
139 AEE-363	R	2	1		4	3					-	8		
	S	3	4		1	2					2	- 6 VE		
140 AEE-364	R							1	2	3	4	-	5	
	S							4	3	2	1	5	0 N	
141 AEE-365	R	1	2			4			3		-	7		
	S	4	3			1			2		3	- 4 VE		
142 AEE-366	R	3	4			1				2	-10			
	S	2	1			4				3	0	-10 VE		
143 AEE-367	R								4	1	2	3	-	7
	S								1	4	3	2	3	- 4 VE
144 AEE-368	R		1			4			2	3	-	9		
	S		4			1			3	2	1	-	8 VE	
145 AEE-369	R	1		2	3	4					-	9		
	S	4		3	2	1					1	-	8 VE	
146 AEE-370	R		1	2	3	4					-10			
	S		4	3	2	1					0	-10 VE		
147 AEE-371	R	1			3	4		2			-	9		
	S	4			2	1		3			1	-	8 VE	
148 AEE-372	R	1			3	4		2			-	9		
	S	4			2	1		3			1	-	8 VE	
149 AEE-373	R				3			4	2	1	-	6		
	S				2			1	3	4	4	-	2 E	
150 AEE-374	R	1	2	3					4		-	9		
	S	4	3	2					1		1	-	8 VE	

	S	4				3	2	1			2	- 6	VE		
171 AEE-395	R	1			3		4			2	- 6				
	S	4			2		1			3	4	- 2	E		
172 AEE-396	R	1	2	3	4						-10				
	S	4	3	2	1						0	-10	VE		
173 AEE-397	R	1	2	4						3	-10				
	S	4	3	1						2	0	-10	VE		
174 AEE-398	R	4			1	3	2				- 3				
	S	1			4	2	+3				7	4	VI		
175 AEE-399	R	2	3	4						1	-10				
	S	3	2	1						4	0	-10	VE		
176 AEE-400	R	1		3	2	4					-10				
	S	4		2	3	1					0	-10	VE		
177 AEE-401	R						4	3	1	2	- 7				
	S						1	2	4	3	3	- 4	VE		
178 AEE-402	R	1	2	4						3	- 8				
	S	4	3	1						2	2	- 6	VE		
179 AEE-403	R	1	2	4	3						-10				
	S	4	3	1	2						0	-10	VE		
180 AEE-404	R	4				1	2	3			- 5				
	S	1				4	3	2			5	0	N		
181 AEE-405	R	1			2	4		3			- 7				
	S	4			3	1		2			3	- 4	VE		
182 AEE-406	R	1		2	3					4	-10				
	S	4		3	2					1	0	-10	VE		
183 AEE-407	R				4		1	2	3		- 7				
	S				1		4	3	2		3	- 4	E		
184 AEE-408	R	1			4	3		2			-10				
	S	4			1	2		3			0	-10	VI		
185 AEE-409	R	2	1			3	4				- 9				
	S	3	4			2	1				1	- 8	VI		
186 AEE-410	R	1	4	3		2					- 7				
	S	4	1	2		3					3	- 4	E		
187 AEE-411	R				4			3		1	2	- 4			
	S				1			2		4	3	6	2	I	
188 AEE-412	R				1				2	3		4	- 2		
	S				+4				+3	2		+1	8	6	V
189 AEE-413	R	1			4					3	2	-10			
	S	4			1					2	3	0	-10	VI	

190	AEE-414	R					4	2	3	1		- 6				
		S					1	3	2	+4		4	- 2	E		
191	AEE-415	R	1		2		3			4		- 8				
		S	4		3		+2		1			2	- 6	VI		
192	AEE-416	R			2		1		3	4		- 3				
		S			3		+4		+2	+1		7	4	I		
193	AEE-417	R	4						1		2	3	- 6			
		S	1						+4		3	2	4	- 2	E	
194	AEE-418	R	1	2					3		4		- 8			
		S	4	3					+2		1		2	- 6	VI	
195	AEE-419	R	4	2		1				3			- 8			
		S	1	3		4				+2			2	- 6	VE	
196	AEE-420	R	1	2		3	4						-10			
		S	4	3		2	1						0	-10	VE	
197	AEE-421	R	1		3	2				4			-10			
		S	4		2	3				1			0	-10	VE	
198	AEE-422	R							1	2	3	4	- 5			
		S							4	3	2	1	5	0	N	
199	AEE-423	R	1	2			3		4				- 8			
		S	4	3			2		1				2	- 6	VE	
200	AEE-424	R	1	3		2			4				-10			
		S	4	2		3			1				0	-10	VE	
201	AEE-425	R	1	3		4						2	-10			
		S	4	2		1						3	0	-10	VE	
202	AEE-426	R	1	2							4	3	- 8			
		S	4	3							1	2	2	- 6	VE	
203	AEE-427	R	1	3	4		2						-10			
		S	4	2	1		3						0	-10	VE	
204	AEE-428	R	1	4	2	3							-10			
		S	4	1	3	2							0	-10	VE	
205	AEE-429	R					3		2		4		1	- 1		
		S					+2		+3		1		4	9	8	VI
206	AEE-430	R			3	4					1		2	- 6		
		S			2		+1				4		3	4	- 2	E
207	AEE-431	R	1	2							3	4	- 9			
		S	4	3							2	1	1	- 8	VI	
208	AEE-432	R	2						1	4			3	- 5		
		S	3						4	1			2	5	0	N
209	AEE-433	R					1		2	3		4	0			

	S			4			3	2			1	10	10	VI
210 AEE-434	R	1			2				3	4			-10	
	S	4				3				2	1	0	-10	VE
211 AEE-435	R								4	3	2	1	-7	
	S									1	2	3	4	3 - 4 E
212 AEE-436	R	1	3		2		4						-7	
	S	4	2			3		1					3 - 4	E
213 AEE-437	R		3				1	4	2				-6	
	S		2				4	1	3				4 - 2	E
214 AEE-438	R	1	2	3						4			-10	
	S	4	3	2							1		0 - 10	VE
215 AEE-439	R	1	2	3				4					-9	
	S	4	3	2					1				1 - 8	VE
216 AEE-440	R	4			1		2		3				-8	
	S	1			4			3		2			2 - 6	VE
217 AEE-441	R				4					3	2	1	-10	
	S					1					2	3	4	0 - 10 VE
218 AEE-442	R	1			4	2	3						-8	
	S	4				1	3	2					2 - 6	VE
219 AEE-443	R		4			2			1			3	-3	
	S			1			3			4		2	7	4 VI
220 AEE-444	R			1		2		3	4				-6	
	S				4			3	2	1			4 - 2	E
221 AEE-445	R	1		2	3	4							-9	
	S	4			3	2	1						1 - 8	VE
222 AEE-446	R	3	1	2							4		-9	
	S	2	4	3								1	1 - 8	VE
223 AEE-447	R					1	2	3	4				-7	
	S						4	3	2	1			3 - 4	E
224 AEE-448	R							2	3			4	1 - 4	
	S								3	2		1	4	6 2 I

Note: Only first four ranks are taken

Rank 1 Score 4 Rank 2 Score 3 Rank 3 Score 2 Rank 4 Score 1

APPENDIX X

Tabulation Showing the First Two and Last Two Need Preferences
of the Respondents

Sl. No.	Subject Code No.	Items/Response Rank Order															classification
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1	SE-101	1	2					14					15				VE
2	SE-102					1	2						14		15		N
3	SE-103		14				1					2			15		E
4	SE-104	1						14	2	15							E
5	SE-105			14						1	2		15				VI
6	SE-106	1	2										14	15			VE
7	SE-107	1	2			15		14									VE
8	SE-108					15			1		2		14				N
9	SE-109			1	2			15			14						VE
10	SE-110					14	1			2		15					VI
11	SE-111			15	14	2	1										I
12	SE-112						1	15	14						2		I
13	SE-113		2	15				14	1								VE
14	SE-114	1		14	2								15				VE
15	SE-115	1	2								14		15				VE
16	SE-116	1	2			14		15									VE
17	SE-117	15	1	2		14											VE
18	SE-118		2			14	1						15				N
19	SE-119						2		1		14	15					VI
20	SE-120	1	15	14			2										E
21	EE-201						14	15	1						2		N
22	EE-202	1										14	15	2			E
23	EE-203	1	2										14	15			VE
24	EE-204						2	1				14	15				N
25	EE-205	1	2									15	14				VE
26	EE-206								2					14	1	15	VI
27	EE-207	2		14	15		1										N

28	EE-208	1	2	15			14			VE		
29	EE-209	1	2				15	14		VE		
30	EE-210	1		2			15	14		VE		
31	EE-211			14	15	1		2		N		
32	EE-212			15		1	2		14	N		
33	EE-213	2				1	14	15		VE		
34	EE-214	1		14			2		15	E		
35	EE-215	1	2	15				14		VE		
36	EE-216		2			15			14	1	VE	
37	EE-217	1	2				14		15		VE	
38	EE-218	1	2	15					14		VE	
39	EE-219	2	14			15				1	VE	
40	EE-220			14			1	2		15	VI	
41	EE-221	1	2						14	15	VE	
42	EE-222	2		15		1				14	N	
43	EE-223		1	14	2				15		VE	
44	EE-224	1		14		2	15				E	
45	EE-225	1	2					15	14		VE	
46	EE-226						1		14	15	2	VI
47	EE-227		1					15	14		2	VE
48	EE-228	15	14					1			2	E
49	EE-229	1				2				14	15	E
50	EE-230	1	2					15	14			VE
51	EE-231	1		14	2					15		VE
52	EE-232		2		14			1		15		E
53	EE-233	2	15				14				1	VE
54	EE-234	2	15				14				1	VE
55	EE-235	1	2	15	14							VE
56	EE-236	1	15					2			14	E
57	EE-237	1	2					14	15			VE
58	EE-238		14				15	1			2	VI
59	EE-239	1							15	14	2	VE
60	EE-240			14		15		1	2			VI
61	EE-241					1		2		15	14	I
62	EE-242	1		2		14					15	VE

63	EE-243					1	15	14	2			I		
64	EE-244	1	2	14			15					VE		
65	EE-245			15		1	2		14			I		
66	EE-246		1					14	2	15		E		
67	EE-247			14		1	2	15				I		
68	EE-248						1	2		14	15	VI		
69	EE-249		2		14	1				15		E		
70	EE-250	1			2		14				15	VE		
71	EE-251	15						1	2		14	VI		
72	EE-252				1					2	14	15	VE	
73	EE-253					1			2		15	14	VI	
74	EE-254	1		2						15		14	VE	
75	EE-255	1	2						15	14			VE	
76	EE-256	1					15				14	2	VE	
77	AEE-301	1	15	14		2							VE	
78	AEE-302		1		2			14			15		VE	
79	AEE-303	1					14				15	2	VE	
80	AEE-304	1			14	15			2				I	
81	AEE-305	1	2	15							14		VE	
82	AEE-306	2	1		15					14			VE	
83	AEE-307	1	2		14							15	VE	
84	AEE-308			14			15	1			2		VI	
85	AEE-309	2					15			14	1		I	
86	AEE-310		2								14	1	15	E
87	AEE-311	1	2				15					14	VE	
88	AEE-312	1	2							15	14		VE	
89	AEE-313	1			14	15						2	VE	
90	AEE-314	2			1				14	15			VE	
91	AEE-315	1	2			15						14	VE	
92	AEE-316			15	14		1				2		VE	
93	AEE-317	1			2			14		15			VE	
94	AEE-318	1	2				15				14		VE	
95	AEE-319				15	1			2		14		VI	
96	AEE-320	1	2	15				14					VE	
97	AEE-321	1				2					15	14	N	

98	AEE-322		15	14		2	1					VI		
99	AEE-323						2		15		14	VI		
100	AEE-324	1	14	15		2						I		
101	AEE-325	1	2						15		14	VE		
102	AEE-326	1							2		14	15	VE	
103	AEE-327	1							2		14	15	VE	
104	AEE-328	1							2		14	15	VE	
105	AEE-329				15	2	1		14				VE	
106	AEE-330	1			2				14	15			VE	
107	AEE-331		1			2				15	14		N	
108	AEE-332		15	14					1	2			N	
109	AEE-333	1	2								14	15	VE	
110	AEE-334	1		2					15	14			VE	
111	AEE-335	1			14			15			2		VE	
112	AEE-336	1						2		15		14	N	
113	AEE-337					1		15			14	2	I	
114	AEE-338								14	1	2	15	I	
115	AEE-339	1	15	2				14					VE	
116	AEE-340					1				14	15	2	E	
117	AEE-341	1			2			15		14			VE	
118	AEE-342	1	14									15	2	VE
119	AEE-343		1				14	15					2	VE
120	AEE-344	1		14					2			15		E
121	AEE-345	2	1							14	15			VE
122	AEE-346	2		15		1							14	N
123	AEE-347		14	15					1		2			N
124	AEE-348	1	15	14				2						VE
125	AEE-349	1	14		15				2					E
126	AEE-350	1	14					2			15			VE
127	AEE-351	2	1							14	15			VE
128	AEE-352	1	15	2		14								VE
129	AEE-353	1											2	VE
130	AEE-354	1	2				15		14					VE
131	AEE-355	1	2				15			14				VE
132	AEE-356		15		2	1	14							N

133	AEE-357	1				2			14	15		VE	
134	AEE-358	1							14	15	2	VE	
135	AEE-359			14	1			2	15			N	
136	AEE-360	1							15	14	2	VE	
137	AEE-361	1				15	14	2				E	
138	AEE-362	1				15		14	2			E	
139	AEE-363	2	1			15	14					VE	
140	AEE-364				14	15	1	2				N	
141	AEE-365	1	2			15			14			VE	
142	AEE-366					1	15			2	14	VE	
143	AEE-367		15	14					1	2		VE	
144	AEE-368		1						2		14	15	VE
145	AEE-369	1		2		14		15				VE	
146	AEE-370		1	2					14	15		VE	
147	AEE-371	1				14	2			15		VE	
148	AEE-372	1				14	2				15	VE	
149	AEE-373					14		2	1	15		E	
150	AEE-374	1	2					14			15	VE	
151	AEE-375	1	2			14					15	VE	
152	AEE-376	1		2	14		15					VE	
153	AEE-377	1	2						15		14	VE	
154	AEE-378	1	2				15				14	VE	
155	AEE-379	2		1			15				14	VE	
156	AEE-380	1	2			14					15	VE	
157	AEE-381					14	1	15	2			VE	
158	AEE-382		2				15				14	1	VE
159	AEE-383	1	2								14	15	VE
160	AEE-384	1				15			14		2		VE
161	AEE-385				14		15	1		2			E
162	AEE-386				14				2	1		15	VE
163	AEE-387	1			2				15	14			VE
164	AEE-388		15		14					1	2		VE
165	AEE-389	1	2			15			14				VE
166	AEE-390	1	2			14		15					VE
167	AEE-391	1	2	14	15								VE

168	AEE-392		2			14	15	1									E
169	AEE-393	1							14	15			2				VE
170	AEE-394	1				15	2						14				VE
171	AEE-395	1	15	14									2				E
172	AEE-396	1	2							15			14				VE
173	AEE-397	1	2			15							14				VE
174	AEE-398				15	1	14	2									VI
175	AEE-399	2								14		15	1				VE
176	AEE-400	1		2		15		14									VE
177	AEE-401			14		15				1	2						VE
178	AEE-402	1	2					14						15			VE
179	AEE-403	1	2					14					15				VE
180	AEE-404				14		15	1	2								N
181	AEE-405	1	15	14		2											VE
182	AEE-406	1	14	2										15			VE
183	AEE-407						1	2		14	15						E
184	AEE-408	1	14					2						15			VE
185	AEE-409	2	1		15			14									VE
186	AEE-410	1			14	15	2										E
187	AEE-411						15			14	1	2					I
188	AEE-412		14			1	15		2								VI
189	AEE-413	1			15					14		2					VE
190	AEE-414		15				14			2		1					E
191	AEE-415		1		2	14								15			VE
192	AEE-416		14		2		1							15			I
193	AEE-417						15		1	14		2					E
194	AEE-418	1	2			15					14						VE
195	AEE-419		2		1						15	14					VE
196	AEE-420	1	2							14				15			VE
197	AEE-421	1			2		15			14							VE
198	AEE-422					15	14	1	2								N
199	AEE-423	1	2				15				14						VE
200	AEE-424	1				2	15						14				VE
201	AEE-425	1							15	14					2		VE
202	AEE-426	1	2			15					14						VE

203	AEE-427	1		2	15		14			VE			
204	AEE-428	1	2				14		15	VE			
205	AEE-429		15	14			2		1	VI			
206	AEE-430	15						1	2	14	E		
207	AEE-431	1	2	14		15					VE		
208	AEE-432	2	15		14			1			N		
209	AEE-433					1		2	15		14	VI	
210	AEE-434	1		15			2				14	VE	
211	AEE-435	15	14							2	1	E	
212	AEE-436	1			14	2			15			E	
213	AEE-437				14			1	2			15	E
214	AEE-438	1	2				14				15		VE
215	AEE-439	1	2						14			15	VE
216	AEE-440			1				2			14	15	VE
217	AEE-441				15					2	14	1	VE
218	AEE-442	1			2		14					15	VE
219	AEE-443			14		15	2			1			VI
220	AEE-444			1		15	2	14					E
221	AEE-445	1	15	2							14		VE
222	AEE-446		1	2						15	14		VE
223	AEE-447				14	1	2					15	E
224	AEE-448							2		15	14	1	I

Job Satisfaction Responses and Raw Scores

Sl No	Subject Code No	RC/S	I t e m s															
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	SE-101	RC	B	C	B	B	B	B	C	C	C	C	C	C	C	C	C	C
		S	5	4	5	5	5	5	5	4	4	4	4	4	4	4	4	4
2	SE-102	RC	B	C	D	B	B	B	B	C	B	B	B	C	B	D	D	C
		S	5	4	3	5	5	5	5	4	5	5	5	5	4	5	3	3
3	SE-103	RC	C	E	F	E	B	B	A	C	C	B	E	B	C	D	F	C
		S	4	2	1	2	5	5	6	4	4	5	2	5	4	3	1	4
4	SE-104	RC	C	D	D	C	B	B	C	B	B	B	C	C	C	C	E	C
		S	4	3	3	4	5	5	4	5	5	5	4	4	4	4	2	4
5	SE-105	RC	B	D	C	D	B	C	C	C	D	B	D	B	B	D	D	C
		S	5	3	4	3	5	4	4	4	3	5	3	5	5	3	3	4
6	SE-106	RC	C	B	C	B	B	C	B	B	D	C	E	B	C	C	B	C
		S	4	5	4	5	5	4	5	5	3	4	2	5	4	4	4	5
7	SE-107	RC	C	C	C	B	B	D	C	C	B	B	C	B	B	B	B	B
		S	4	4	4	5	5	3	4	4	5	5	4	5	5	5	5	5
8	SE-108	RC	B	D	E	C	A	B	D	D	D	B	C	B	C	E	F	B
		S	5	3	2	4	6	5	3	3	3	5	4	5	4	2	1	5
9	SE-109	RC	B	C	D	D	B	D	D	D	C	B	C	C	C	C	D	C
		S	5	4	3	3	5	3	3	3	4	5	4	4	4	4	3	4
10	SE-110	RC	A	D	B	C	A	B	C	B	B	B	C	A	B	C	B	B
		S	6	3	5	4	6	5	4	5	5	5	4	6	5	4	5	5
11	SE-111	RC	B	B	C	C	B	C	B	B	B	C	C	C	C	B	C	C
		S	5	5	4	4	5	4	5	5	5	4	4	4	4	4	5	4
12	SE-112	RC	F	F	F	C	C	C	B	C	D	B	F	C	C	E	F	C
		S	1	1	1	4	4	4	5	4	3	5	1	4	4	2	1	4
13	SE-113	RC	B	D	B	B	B	A	B	B	B	B	C	C	B	B	B	B
		S	5	3	5	5	5	6	5	5	5	5	4	4	5	5	5	5
14	SE-114	RC	B	B	B	B	B	A	B	A	A	A	B	A	B	B	B	B
		S	5	5	5	5	5	6	5	6	6	6	5	6	5	5	5	5
15	SE-115	RC	B	D	E	B	B	D	C	D	D	C	F	E	F	E	E	E
		S	5	3	2	5	5	3	4	3	3	4	1	2	1	2	2	2
16	SE-116	RC	B	C	C	C	C	D	B	B	B	C	B	B	B	C	C	C
		S	5	4	4	4	4	3	5	5	5	4	5	5	5	4	4	4

17	SE-117	RC	F	F	F	B	A	C	F	F	E	F	F	C	E	F	E	F
		S	1	1	1	5	6	4	1	1	2	1	1	4	2	1	2	1
18	SE-118	RC	A	C	D	E	A	B	C	C	C	C	D	B	B	C	D	C
		S	6	4	3	2	6	5	4	4	4	4	3	5	5	4	3	4
19	SE-119	RC	A	E	B	B	B	B	A	A	B	B	B	B	A	A	B	B
		S	6	2	5	5	5	5	6	6	5	5	5	5	6	6	5	5
20	SE-120	RC	B	C	C	B	B	C	A	A	A	A	A	A	B	A	C	B
		S	5	4	4	5	5	4	6	6	6	6	6	6	5	6	4	5
21	EE-201	RC	B	C	B	C	E	B	C	B	B	B	C	B	C	C	B	B
		S	5	4	5	4	2	5	4	5	5	5	4	5	4	4	5	5
22	EE-202	RC	B	C	D	C	C	B	C	C	C	C	B	C	B	C	B	C
		S	5	4	3	4	4	5	4	4	4	4	5	4	5	4	5	4
23	EE-203	RC	B	C	D	D	E	B	C	C	D	D	E	C	C	E	D	D
		S	5	4	3	3	2	5	4	4	3	3	2	4	4	2	3	3
24	EE-204	RC	A	F	F	F	F	B	B	F	B	B	B	B	F	B	F	F
		S	6	1	1	1	1	5	5	1	5	5	5	5	1	5	1	1
25	EE-205	RC	B	C	C	C	C	B	B	B	B	B	B	B	B	B	C	B
		S	5	4	4	4	4	5	5	5	5	5	5	5	5	5	4	5
26	EE-206	RC	C	C	C	D	C	B	B	C	C	C	C	C	C	C	D	C
		S	4	4	4	3	4	5	5	4	4	4	4	4	4	4	3	4
27	EE-207	RC	E	D	E	E	E	C	C	C	C	B	B	B	B	B	E	C
		S	2	3	2	2	2	4	4	4	4	5	5	5	5	5	2	4
28	EE-208	RC	A	D	C	B	A	C	B	C	B	B	C	B	B	A	C	C
		S	6	3	4	5	6	4	5	4	5	5	4	5	5	6	4	4
29	EE-209	RC	A	B	D	C	B	B	B	C	C	B	C	B	B	B	D	C
		S	6	5	3	4	5	5	5	4	4	5	4	5	5	5	3	4
30	EE-210	RC	B	F	F	B	E	A	C	B	E	C	C	B	B	B	F	C
		S	5	1	1	5	2	6	4	5	2	4	4	5	5	5	1	4
31	EE-211	RC	D	D	D	D	E	E	B	B	B	B	E	B	B	D	E	B
		S	3	3	3	3	2	2	5	5	5	5	2	5	5	3	2	5
32	EE-212	RC	B	D	D	C	B	B	B	B	B	B	B	B	B	B	C	B
		S	5	3	3	4	5	5	5	5	5	5	5	5	5	5	4	5
33	EE-213	RC	B	D	B	B	B	B	C	C	B	B	C	B	B	C	C	B
		S	5	3	5	5	5	5	4	4	5	5	4	5	5	4	4	5
34	EE-214	RC	B	D	F	B	C	B	B	D	B	B	B	B	B	C	F	C
		S	5	3	1	5	4	5	5	3	5	5	5	5	5	4	1	4
35	EE-215	RC	B	C	D	D	C	C	D	C	C	C	C	C	C	C	D	C
		S	5	4	3	3	4	4	3	4	4	4	4	4	4	4	3	4
36	EE-216	RC	B	F	C	B	B	B	E	D	C	B	D	C	F	B	E	B

		S	5	1	4	5	5	5	2	3	4	5	3	4	1	5	2	5
37	EE-217	RC	B	E	F	B	C	B	B	C	D	C	D	B	B	C	F	C
		S	5	2	1	5	4	5	5	4	3	4	3	5	5	4	1	4
38	EE-218	RC	B	C	B	B	A	B	D	D	B	B	D	A	D	B	B	B
		S	5	4	5	5	6	5	3	3	5	5	3	6	3	5	5	5
39	EE-219	RC	A	B	A	A	A	A	A	C	F	C	A	C	A	A	A	A
		S	6	5	6	6	6	6	6	4	1	4	6	4	6	6	6	6
40	EE-220	RC	B	D	D	B	C	C	C	D	C	B	D	B	B	D	C	C
		S	5	3	3	5	4	4	4	3	4	5	3	5	5	3	4	4
41	EE-221	RC	C	B	C	B	C	B	C	D	C	B	D	B	C	C	D	C
		S	4	5	4	5	4	5	4	3	4	5	3	5	4	4	3	4
42	EE-222	RC	B	E	E	C	F	B	D	E	E	B	F	B	E	F	D	D
		S	5	2	2	4	1	5	3	2	2	5	1	5	2	1	3	3
43	EE-223	RC	B	D	D	E	C	E	E	D	C	C	E	C	D	E	E	E
		S	5	3	3	2	4	2	2	3	4	4	2	4	3	2	2	2
44	EE-224	RC	B	C	B	C	B	B	B	A	B	A	A	A	B	A	B	B
		S	5	4	5	4	5	5	5	6	5	6	6	6	5	6	5	5
45	EE-225	RC	B	B	B	D	E	B	E	B	C	B	D	D	C	F	E	E
		S	5	5	5	3	2	5	2	5	4	5	3	3	4	1	2	2
46	EE-226	RC	B	D	C	C	B	B	D	B	B	C	C	C	E	D	C	C
		R	5	3	4	4	5	5	3	5	5	4	4	4	2	3	4	4
47	EE-227	RC	A	E	E	A	A	C	E	A	C	A	F	B	C	F	E	C
		S	6	2	2	6	6	4	2	6	4	6	1	5	4	1	2	4
48	EE-228	RC	B	B	B	B	C	A	B	C	B	B	C	C	C	B	B	B
		S	5	5	5	5	4	6	5	4	5	5	4	4	4	5	5	5
49	EE-229	RC	B	B	C	C	C	B	B	B	B	B	C	C	B	B	B	B
		S	5	5	4	4	4	5	5	5	5	5	4	4	5	5	5	5
50	EE-230	RC	B	D	D	B	C	D	C	C	B	C	C	C	D	B	D	C
		S	5	3	3	5	4	3	4	4	5	4	4	4	3	5	3	4
51	EE-231	RC	A	B	B	B	B	B	B	B	B	A	B	B	B	B	B	B
		S	6	5	5	5	5	5	5	5	5	6	5	5	5	5	5	5
52	EE-232	RC	B	D	C	C	B	D	C	E	C	B	E	B	F	F	B	D
		S	5	3	4	4	5	3	4	2	4	5	2	5	1	1	5	3
53	EE-233	RC	B	C	D	B	C	B	C	B	C	B	C	B	C	B	C	C
		S	5	4	3	5	4	5	4	5	4	5	4	5	4	5	4	4
54	EE-234	RC	B	C	C	B	C	B	C	B	C	B	C	C	C	B	C	C
		S	5	4	4	5	4	5	4	5	4	5	4	4	4	5	4	4
55	EE-235	RC	C	C	D	B	B	B	C	B	D	B	C	B	D	C	C	B
		S	4	4	3	5	5	5	4	5	3	5	4	5	3	4	4	5

56	EE-236	RC	C	F	D	B	B	B	C	C	B	B	E	B	C	E	E	C
		S	4	1	3	5	5	5	4	4	5	5	2	5	4	2	2	4
57	EE-237	RC	A	B	A	A	B	A	A	A	A	A	A	A	A	B	A	A
		S	6	5	6	6	5	6	6	6	6	6	6	6	6	5	6	6
58	EE-238	RC	B	C	B	B	C	B	B	B	B	A	B	B	B	C	C	B
		S	5	4	5	5	4	5	5	5	5	6	5	5	5	4	4	5
59	EE-239	RC	C	C	E	C	D	E	C	C	C	D	D	E	C	E	E	E
		S	4	4	2	4	3	2	4	4	4	3	3	2	4	2	2	2
60	EE-240	RC	A	C	C	B	F	C	B	C	B	A	B	B	B	C	E	B
		S	6	4	4	5	1	4	5	4	5	6	5	5	5	4	2	5
61	EE-241	RC	B	C	C	C	D	B	B	C	C	A	E	A	D	E	C	D
		S	5	4	4	4	3	5	5	4	4	6	2	6	3	2	4	3
62	EE-242	RC	A	E	B	B	A	B	B	B	B	C	C	B	B	C	B	B
		S	6	2	5	5	6	5	5	5	5	4	4	5	5	4	5	5
63	EE-243	RC	B	C	E	E	F	F	E	D	D	B	C	C	C	E	F	C
		S	5	4	2	2	1	1	2	3	3	5	4	4	4	2	1	4
64	EE-244	RC	A	B	A	A	A	A	A	A	A	A	B	A	A	B	A	A
		S	6	5	6	6	6	6	6	6	6	6	5	6	6	5	6	6
65	EE-245	RC	B	C	D	B	B	B	C	C	C	B	D	B	B	B	D	D
		S	5	4	3	5	5	5	4	4	4	5	3	5	5	5	3	3
66	EE-246	RC	C	B	E	D	C	B	B	B	B	A	B	B	C	C	D	C
		S	4	5	2	3	4	5	5	5	5	6	5	5	4	4	3	4
67	EE-247	RC	B	B	D	B	B	B	B	B	A	B	B	A	A	B	D	B
		S	5	5	3	5	5	5	5	5	6	5	5	6	6	5	3	5
68	EE-248	RC	B	C	C	C	D	C	B	C	C	C	D	C	C	D	D	C
		S	5	4	4	4	3	4	5	4	4	4	3	4	4	3	3	4
69	EE-249	RC	B	C	E	B	C	A	B	B	B	A	C	A	B	D	E	B
		S	5	4	2	5	4	6	5	5	5	6	4	6	5	3	2	5
70	EE-250	RC	B	A	D	B	D	F	B	B	C	B	C	B	C	D	C	B
		S	5	6	3	5	3	1	5	5	4	5	4	5	4	3	4	5
71	EE-251	RC	A	E	D	C	D	A	B	F	B	B	C	B	B	B	D	B
		S	6	2	3	4	3	6	5	1	5	5	4	5	5	5	3	5
72	EE-252	RC	C	F	B	B	B	B	B	B	B	B	B	B	B	B	B	B
		S	4	1	5	5	5	5	5	5	5	5	5	5	5	5	5	5
73	EE-253	RC	B	B	B	C	C	B	B	C	B	C	B	C	B	B	C	B
		S	5	5	5	4	4	5	5	4	5	4	5	4	5	5	4	5
74	EE-254	RC	A	F	D	D	D	A	A	A	A	C	F	F	F	F	D	C
		S	6	1	3	3	3	6	6	6	6	4	1	1	1	1	3	4
75	EE-255	RC	B	B	C	B	F	F	B	B	B	A	C	A	C	A	F	C

		S	5	5	4	5	1	1	5	5	5	6	4	6	4	6	1	4
76	EE-256	RC	D	C	C	B	C	C	C	D	B	C	D	C	C	D	C	C
		S	3	4	4	5	4	4	4	3	5	4	3	4	4	3	4	4
77	AEE-301	RC	B	C	C	B	B	B	C	C	B	A	B	A	C	B	B	A
		S	5	4	4	5	5	5	4	4	5	6	5	6	4	5	5	6
78	AEE-302	RC	B	F	B	B	D	C	B	B	C	D	D	C	B	C	B	B
		S	5	1	5	5	3	4	5	5	4	3	3	4	5	4	5	5
79	AEE-303	RC	A	C	F	E	D	B	A	C	B	B	A	C	A	B	C	B
		S	6	4	1	2	3	5	6	4	5	5	6	4	6	5	4	5
80	AEE-304	RC	C	E	F	F	E	B	F	B	A	A	F	B	D	A	F	C
		S	4	2	1	1	2	5	1	5	6	6	1	5	3	6	1	4
81	AEE-305	RC	C	E	E	B	F	B	C	D	D	A	D	A	C	E	E	B
		S	4	2	2	5	1	5	4	3	3	6	3	6	4	2	2	5
82	AEE-306	RC	C	F	F	E	F	C	C	C	B	B	C	C	D	E	F	D
		S	4	1	1	2	1	4	4	4	5	5	4	4	3	2	1	3
83	AEE-307	RC	B	B	C	B	D	B	A	B	A	A	B	B	B	B	C	B
		S	5	5	4	5	3	5	6	5	6	6	5	5	5	5	4	5
84	AEE-308	RC	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
		S	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
85	AEE-309	RC	B	C	D	C	D	C	C	C	D	B	C	B	C	B	B	C
		S	5	4	3	4	3	4	4	4	3	5	4	5	4	5	5	4
86	AEE-310	RC	B	C	F	D	F	B	B	E	B	D	F	F	B	E	D	B
		S	5	4	1	3	1	5	5	2	5	3	1	1	5	2	3	5
87	AEE-311	RC	B	D	D	D	D	B	B	B	B	A	B	B	A	C	D	B
		S	5	3	3	3	3	5	5	5	5	6	5	5	6	4	3	5
88	AEE-312	RC	B	C	B	B	F	B	B	D	C	C	D	D	C	C	C	C
		S	5	4	5	5	1	5	5	3	4	4	3	3	4	4	4	4
89	AEE-313	RC	C	B	C	C	B	B	B	C	C	B	B	B	C	B	C	B
		S	4	5	4	4	5	5	5	4	4	5	5	5	4	5	4	5
90	AEE-314	RC	B	D	B	B	C	C	C	B	B	B	C	B	C	E	B	C
		S	5	3	5	5	4	4	4	5	5	5	4	5	4	2	5	4
91	AEE-315	RC	B	B	C	B	F	B	B	B	B	B	C	B	B	C	B	B
		S	5	5	4	5	1	5	5	5	5	5	4	5	5	4	5	5
92	AEE-316	RC	A	C	B	B	F	C	B	A	B	A	B	A	B	C	B	B
		S	6	4	5	5	1	4	5	6	5	6	5	6	5	4	5	5
93	AEE-317	RC	B	B	B	B	C	C	B	B	B	C	B	C	B	B	B	B
		S	5	5	5	5	4	4	5	5	5	4	5	4	5	5	5	5
94	AEE-318	RC	B	D	F	C	F	D	D	C	A	B	A	B	B	A	F	C
		S	5	3	1	4	1	3	3	4	6	5	6	5	5	6	1	4

95	AEE-319	RC	B	E	D	B	F	C	B	C	C	D	B	C	B	C	E	C
		S	5	2	3	5	1	4	5	4	4	3	5	4	5	4	2	4
96	AEE-320	RC	B	D	B	D	F	F	B	C	C	B	E	B	B	D	E	D
		S	5	3	5	3	1	1	5	4	4	5	2	5	5	3	2	3
97	AEE-321	RC	C	F	F	D	D	C	B	D	D	C	D	B	D	D	E	C
		S	4	1	1	3	3	4	5	3	3	4	3	5	3	3	2	4
98	AEE-322	RC	B	C	B	C	D	D	C	B	B	B	C	A	A	C	C	B
		S	5	4	5	4	3	3	4	5	5	5	4	6	6	4	4	5
99	AEE-323	RC	A	B	C	E	F	D	B	A	B	A	C	B	A	C	D	C
		S	6	5	4	2	1	3	5	6	5	6	4	5	6	4	3	4
100	AEE-324	RC	B	C	B	B	C	B	B	B	B	A	B	A	B	B	B	B
		S	5	4	5	5	4	5	5	5	5	6	5	6	5	5	5	5
101	AEE-325	RC	B	B	C	D	F	B	B	B	B	C	D	C	B	B	C	C
		S	5	5	4	3	1	5	5	5	5	4	3	4	5	5	4	4
102	AEE-326	RC	C	D	F	E	E	D	C	D	B	B	C	B	C	C	F	D
		S	4	3	1	2	2	3	4	3	5	5	4	5	4	4	1	3
103	AEE-327	RC	C	E	F	E	E	D	C	D	B	B	C	B	C	C	F	C
		S	4	2	1	2	2	3	4	3	5	5	4	5	4	4	1	4
104	AEE-328	RC	C	F	F	E	E	D	D	D	B	B	C	B	C	C	F	E
		S	4	1	1	2	2	3	3	3	5	5	4	5	4	4	1	2
105	AEE-329	RC	C	F	D	E	F	B	F	F	F	E	F	B	F	F	E	F
		S	4	1	3	2	1	5	1	1	1	2	1	5	1	1	2	1
106	AEE-330	RC	C	B	F	F	E	D	C	E	C	A	E	F	C	A	F	C
		S	4	5	1	1	2	3	4	2	4	6	2	1	4	6	1	4
107	AEE-331	RC	B	E	E	B	E	C	C	C	F	A	F	B	C	C	E	C
		S	5	2	2	5	2	4	4	4	1	6	1	5	4	4	2	4
108	AEE-332	RC	C	B	C	C	E	B	A	B	B	B	B	B	C	C	C	C
		S	4	5	4	4	2	5	6	5	5	5	5	5	4	4	4	4
109	AEE-333	RC	A	B	B	B	B	B	C	B	B	A	B	C	B	C	B	B
		S	6	5	5	5	5	5	4	5	5	6	5	4	5	4	5	5
110	AEE-334	RC	A	B	B	B	C	B	C	B	C	B	B	B	B	B	B	B
		S	6	5	5	5	4	5	4	5	4	5	5	5	5	5	5	5
111	AEE-335	RC	C	C	D	C	B	E	B	B	C	B	B	A	D	B	C	B
		S	4	4	3	4	5	2	5	5	4	5	5	6	3	5	4	5
112	AEE-336	RC	B	E	F	E	B	C	F	F	A	B	C	B	D	E	D	B
		S	5	2	1	2	5	4	1	1	6	5	4	5	3	2	3	5
113	AEE-337	RC	E	F	A	A	F	C	A	F	F	A	D	F	D	D	A	F
		S	2	1	6	6	1	4	6	1	1	6	3	1	3	3	6	1
114	AEE-338	RC	B	D	D	B	B	B	B	B	B	B	B	B	B	B	B	B

		S	5	3	3	5	5	5	5	5	5	5	5	5	5	5	5	
115	AEE-339	RC	B	C	B	B	C	C	D	C	C	E	E	E	D	C	B	B
		S	5	4	5	5	4	4	3	4	4	2	2	2	3	4	5	5
116	AEE-340	RC	B	D	C	C	F	C	B	B	B	B	E	B	D	E	D	D
		S	5	3	4	4	1	4	5	5	5	5	2	5	3	2	3	3
117	AEE-341	RC	B	B	B	B	C	C	C	C	B	B	C	B	C	C	C	C
		S	5	5	5	5	4	4	4	4	5	5	4	5	4	4	4	4
118	AEE-342	RC	B	D	B	B	D	B	B	B	B	B	C	B	B	D	B	B
		S	5	3	5	5	3	5	5	5	5	5	4	5	5	3	5	5
119	AEE-343	RC	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
		S	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
120	AEE-344	RC	B	B	C	B	C	C	C	B	B	A	B	A	B	C	B	B
		S	5	5	4	5	4	4	4	5	5	6	5	6	5	4	5	5
121	AEE-345	RC	A	D	B	B	B	B	B	A	A	A	B	A	A	C	B	A
		S	6	3	5	5	5	5	5	6	6	6	5	6	6	4	5	6
122	AEE-346	RC	B	E	E	B	F	B	D	E	E	B	F	B	E	F	D	D
		S	5	2	2	5	1	5	3	2	2	5	1	5	2	1	3	3
123	AEE-347	RC	B	E	C	B	E	C	B	E	E	C	B	C	F	C	B	C
		S	5	2	4	5	2	4	5	2	2	4	5	4	1	4	5	4
124	AEE-348	RC	B	B	B	B	B	B	C	C	C	B	C	B	B	B	C	B
		S	5	5	5	5	5	5	4	4	4	5	4	5	5	5	4	5
125	AEE-349	RS	A	C	C	C	F	C	C	C	C	C	C	C	B	D	D	C
		S	6	4	4	4	1	4	4	4	4	4	4	4	5	3	3	4
126	AEE-350	RC	A	C	C	B	F	C	C	B	B	B	B	B	B	D	C	B
		S	6	4	4	5	1	4	4	5	5	5	5	5	5	3	4	5
127	AEE-351	RC	B	B	B	C	F	B	C	C	B	A	C	B	B	B	C	B
		S	5	5	5	4	1	5	4	4	5	6	4	5	5	5	4	5
128	AEE-352	RC	B	C	C	C	B	C	B	C	B	B	B	C	B	C	B	B
		S	5	4	4	4	5	4	5	4	5	5	5	4	5	4	5	5
129	AEE-353	RC	D	E	C	C	C	C	D	D	C	D	C	E	D	C	C	C
		S	3	2	4	4	4	4	3	3	4	3	4	2	3	4	4	4
130	AEE-354	RC	B	C	B	B	F	F	B	C	B	B	B	A	B	C	B	B
		S	5	4	5	5	1	1	5	4	5	5	5	6	5	4	5	5
131	AEE-355	RC	B	B	C	C	D	C	B	B	C	B	C	C	B	C	C	C
		S	5	5	4	4	3	4	5	5	4	5	4	4	5	4	4	4
132	AEE-356	RC	C	B	A	A	B	A	A	B	F	C	A	A	B	E	B	A
		S	4	5	6	6	5	6	6	5	1	4	6	6	5	2	5	6
133	AEE-357	RC	A	C	B	D	F	A	B	A	A	D	C	B	B	F	B	B
		S	6	4	5	3	1	6	5	6	6	3	4	5	5	1	5	5

134	AEE-358	RC	B	D	C	B	C	C	B	B	B	C	C	B	C	C	C	B
		S	5	3	4	5	4	4	5	5	5	4	4	5	4	4	4	5
135	AEE-359	RC	C	C	D	C	D	B	B	B	A	C	D	A	B	D	E	B
		S	4	4	3	4	3	5	5	5	6	4	3	6	5	3	2	5
136	AEE-360	RC	D	D	D	C	C	C	C	C	B	B	B	C	B	C	D	C
		S	3	3	3	4	4	4	4	4	5	5	5	4	5	4	3	4
137	AEE-361	RC	B	B	C	E	C	E	E	C	D	B	C	C	B	D	E	C
		S	5	5	4	2	4	2	2	4	3	5	4	4	5	3	2	4
138	AEE-362	RC	B	C	E	D	C	C	B	B	A	A	D	B	A	D	E	B
		S	5	4	2	3	4	4	5	5	6	6	3	5	6	3	2	5
139	AEE-363	RC	B	C	B	B	B	B	B	B	B	B	A	B	B	B	B	B
		S	5	4	5	5	5	5	5	5	5	5	6	5	5	5	5	5
140	AEE-364	RC	A	B	B	A	B	A	E	A	B	A	C	C	B	C	C	D
		S	6	5	5	6	5	6	2	6	5	6	4	4	5	4	4	3
141	AEE-365	RC	B	D	C	C	B	C	B	B	B	B	B	C	B	B	C	B
		S	5	3	4	4	5	4	5	5	5	5	5	4	5	5	4	5
142	AEE-366	RC	C	C	E	C	B	A	A	B	C	C	B	A	C	E	C	A
		S	4	4	2	4	5	6	6	5	4	4	5	6	4	2	4	6
143	AEE-367	RC	E	C	D	D	E	F	C	D	B	A	C	A	E	C	E	C
		S	2	4	3	3	2	1	4	3	5	6	4	6	2	4	2	4
144	AEE-368	RC	B	D	C	B	B	D	C	B	B	B	D	C	B	D	C	B
		S	5	3	4	5	5	3	4	5	5	5	3	4	5	3	4	5
145	AEE-369	RC	B	B	C	B	C	B	A	A	A	A	B	A	B	B	C	B
		S	5	5	4	5	4	5	6	6	6	6	5	6	5	5	4	5
146	AEE-370	RC	C	B	C	C	B	C	C	C	C	A	C	A	A	C	C	C
		S	4	5	4	4	5	4	4	4	4	6	4	6	6	4	4	4
147	AEE-371	RC	B	B	A	D	C	A	B	B	C	B	C	C	A	C	B	C
		S	5	5	6	3	4	6	5	5	4	5	4	4	6	4	5	4
148	AEE-372	RC	B	C	D	C	A	A	B	B	C	B	B	C	C	A	C	C
		S	5	4	3	4	6	6	5	5	4	5	5	4	4	6	4	4
149	AEE-373	RC	B	B	A	A	B	A	B	B	B	C	B	C	B	C	A	B
		S	5	5	6	6	5	6	5	5	5	4	5	4	5	4	6	5
150	AEE-374	RC	C	D	D	D	E	C	C	D	E	C	D	C	C	D	D	C
		S	4	3	3	3	2	4	4	3	2	4	3	4	4	3	3	4
151	AEE-375	RC	B	D	D	D	F	C	C	C	B	A	B	A	B	D	D	C
		S	5	3	3	3	1	4	4	4	5	6	5	6	5	3	3	4
152	AEE-376	RC	C	D	C	C	C	C	C	C	C	C	C	C	C	C	C	C
		S	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4
153	AEE-377	RC	D	E	E	C	E	F	D	C	C	B	E	C	D	D	D	D

		S	3	2	2	4	2	1	3	4	4	5	2	4	3	3	3	3
154	AEE-378	RC	A	B	B	B	F	B	B	B	A	A	A	A	A	F	D	B
		S	6	5	5	5	1	5	5	5	6	6	6	6	6	1	3	5
155	AEE-379	RC	B	F	E	B	C	C	F	B	B	B	C	B	D	E	F	D
		S	5	1	2	5	4	4	1	5	5	5	4	5	3	2	1	3
156	AEE-380	RC	A	D	F	B	F	B	B	C	B	B	C	C	B	D	D	D
		S	6	3	1	5	1	5	5	4	5	5	4	4	5	3	3	3
157	AEE-381	RC	D	D	F	D	F	C	B	C	C	A	D	A	C	D	F	D
		S	3	3	1	3	1	4	5	4	4	6	3	6	4	3	1	3
158	AEE-382	RC	D	C	F	B	C	B	C	B	B	C	C	C	B	C	E	D
		S	3	4	1	5	4	5	4	5	5	4	4	4	5	4	2	3
159	AEE-383	RC	C	C	C	C	C	C	C	C	B	C	C	C	C	C	C	C
		S	4	4	4	4	4	4	4	4	5	4	4	4	4	4	4	4
160	AEE-384	RC	B	B	B	C	B	B	B	B	B	B	C	B	B	B	C	B
		S	5	5	5	4	5	5	5	5	5	5	4	5	5	5	4	5
161	AEE-385	RC	B	D	F	E	B	C	C	D	C	B	C	D	D	D	E	C
		S	5	3	1	2	5	4	4	3	4	5	4	3	3	3	2	4
162	AEE-386	RC	C	C	C	B	B	C	D	D	D	C	F	C	B	B	D	E
		S	4	4	4	5	5	4	3	3	3	4	1	4	5	5	3	2
163	AEE-387	RC	B	B	B	B	B	B	B	C	B	B	C	C	B	B	C	B
		S	5	5	5	5	5	5	5	4	5	5	4	4	5	5	4	5
164	AEE-388	RC	B	C	C	B	D	B	B	D	B	A	B	A	B	B	C	B
		S	5	4	4	5	3	5	5	3	5	6	5	6	5	5	4	5
165	AEE-389	RC	A	E	F	C	E	B	C	C	B	B	E	C	C	C	F	D
		S	6	2	1	4	2	5	4	4	5	5	2	4	4	4	1	3
166	AEE-390	RC	B	B	B	B	B	B	C	B	A	A	A	A	A	B	A	A
		S	5	5	5	5	5	5	4	5	6	6	6	6	6	5	6	6
167	AEE-391	RC	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
		S	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
168	AEE-392	RC	E	C	F	D	C	B	C	C	E	B	A	D	A	A	F	C
		S	2	4	1	3	4	5	4	4	2	5	6	3	6	6	1	4
169	AEE-393	RC	B	D	F	E	F	F	E	F	F	F	F	F	F	D	F	F
		S	5	3	1	2	1	1	2	1	1	1	1	1	1	3	1	1
170	AEE-394	RC	A	F	F	B	F	B	B	F	E	B	F	B	B	F	F	F
		S	6	1	1	5	1	5	5	1	2	5	1	5	5	1	1	1
171	AEE-395	RC	A	B	F	C	B	B	B	B	A	B	A	B	A	B	C	B
		S	6	5	1	4	5	5	5	5	6	5	6	5	6	5	4	5
172	AEE-396	RC	A	B	B	B	C	D	C	B	C	C	C	C	D	D	C	E
		S	6	5	5	5	4	3	4	5	4	4	4	4	3	3	4	2

173	AEE-397	RC	B	C	B	B	C	D	D	E	D	C	D	D	D	C	D	E
		S	5	4	5	5	4	3	3	2	3	4	3	3	3	4	3	2
174	AEE-398	RC	B	C	B	B	E	B	A	B	B	B	C	B	A	C	B	B
		S	5	4	5	5	2	5	6	5	5	5	4	5	6	4	5	5
175	AEE-399	RC	B	E	F	C	E	C	B	B	B	B	E	A	B	C	F	C
		S	5	2	1	4	2	4	5	5	5	5	2	6	5	4	1	4
176	AEE-400	RC	B	C	C	C	F	B	B	C	B	B	C	A	B	B	C	C
		S	5	4	4	4	1	5	5	4	5	5	4	6	5	5	4	4
177	AEE-401	RC	A	A	A	A	B	C	B	A	A	A	A	A	A	A	A	A
		S	6	6	6	6	5	4	5	6	6	6	6	6	6	6	6	6
178	AEE-402	RC	C	C	E	C	B	B	B	C	C	C	C	C	B	C	E	C
		S	4	4	2	4	5	5	5	4	4	4	4	4	5	4	2	4
179	AEE-403	RC	A	B	C	B	D	A	B	A	A	A	B	A	A	B	C	B
		S	6	5	4	5	3	6	5	6	6	6	5	6	6	5	4	5
180	AEE-404	RC	B	B	B	C	D	D	B	C	B	B	C	C	B	C	C	C
		S	5	5	5	4	3	3	5	4	5	5	4	4	5	4	4	4
181	AEE-405	RC	B	B	C	B	C	C	B	C	D	B	C	B	B	C	C	B
		S	5	5	4	5	4	4	5	4	3	5	4	5	5	4	4	5
182	AEE-406	RC	A	F	E	A	C	B	D	E	D	C	E	B	E	C	F	D
		S	6	1	2	6	4	5	3	2	3	4	2	5	2	4	1	3
183	AEE-407	RC	B	C	D	C	B	B	B	B	C	C	C	B	B	A	C	B
		S	5	4	3	4	5	5	5	5	4	4	4	5	5	6	4	5
184	AEE-408	RC	B	B	C	B	B	C	C	B	B	C	C	B	B	B	C	B
		S	5	5	4	5	5	4	4	5	5	4	4	5	5	5	4	5
185	AEE-409	RC	A	C	B	B	C	C	C	C	C	A	C	A	C	C	B	B
		S	6	4	5	5	4	4	4	4	4	6	4	6	4	4	5	5
186	AEE-410	RC	B	D	C	B	F	C	C	D	C	B	D	B	F	E	B	C
		S	5	3	4	5	1	4	4	3	4	5	3	5	1	2	5	4
187	AEE-411	RC	D	C	E	E	C	B	B	A	A	B	E	A	A	D	E	C
		S	3	4	2	2	4	5	5	6	6	5	2	6	6	3	2	4
188	AEE-412	RC	C	C	C	C	C	C	B	A	A	C	C	A	B	C	C	C
		S	4	4	4	4	4	4	5	6	6	4	4	6	5	4	4	4
189	AEE-413	RC	A	B	C	B	F	F	C	F	D	B	C	B	C	E	D	E
		S	6	5	4	5	1	1	4	1	3	5	4	5	4	2	3	2
190	AEE-414	RC	C	B	C	B	B	C	C	C	B	A	B	A	A	A	C	C
		S	4	5	4	5	5	4	4	4	5	6	5	6	6	6	4	4
191	AEE-415	RC	B	D	D	B	B	B	D	D	C	C	D	C	D	E	D	D
		S	5	3	3	5	5	5	3	3	4	4	3	4	3	2	3	3
192	AEE-416	RC	C	B	C	C	B	B	A	B	B	B	B	B	C	C	D	C

		S	4	5	4	4	5	5	6	5	5	5	5	5	4	4	3	4
193	AEE-417	RC	E	C	F	D	F	B	C	C	B	B	C	C	B	D	F	E
		S	2	4	1	3	1	5	4	4	5	5	4	4	5	3	1	2
194	AEE-418	RC	B	F	C	C	D	D	C	D	C	D	F	C	C	D	D	D
		S	5	1	4	4	3	3	4	3	4	3	1	4	4	3	3	3
195	AEE-419	RS	A	D	C	D	E	B	E	B	B	B	F	B	B	E	B	C
		S	6	3	4	3	2	5	2	5	5	5	1	5	5	2	5	4
196	AEE-420	RS	B	C	B	C	D	B	B	B	D	B	D	C	B	D	C	B
		S	5	4	5	4	3	5	5	5	3	5	3	4	5	3	4	5
197	AEE-421	RC	B	F	E	B	C	B	C	C	E	C	E	C	D	E	A	E
		S	5	1	2	5	4	5	4	4	2	4	2	4	3	2	6	2
198	AEE-422	RC	A	C	B	C	C	C	B	D	D	B	C	B	C	C	B	B
		S	6	4	5	4	4	4	5	3	3	5	4	5	4	4	5	5
199	AEE-423	RC	A	B	C	C	B	A	B	C	C	B	C	C	B	C	C	B
		S	6	5	4	4	5	6	5	4	4	5	4	4	5	4	4	5
200	AEE-424	RC	B	C	C	E	E	B	C	B	B	C	C	C	C	D	C	C
		S	5	4	4	2	2	5	4	5	5	4	4	4	4	3	4	4
201	AEE-425	RC	C	D	E	E	F	B	C	C	C	C	E	B	C	F	D	C
		S	4	3	2	2	1	5	4	4	4	4	2	5	4	1	3	4
202	AEE-426	RC	D	C	E	E	F	C	D	E	B	B	C	F	C	C	D	C
		S	3	4	2	2	1	4	3	2	5	5	4	1	4	4	3	4
203	AEE-427	RC	B	B	B	C	C	D	C	C	B	A	B	A	C	C	C	C
		S	5	5	5	4	4	3	4	4	5	6	5	6	4	4	4	4
204	AEE-428	RC	B	F	B	B	F	C	B	C	A	B	B	A	A	A	F	B
		S	5	1	5	5	1	4	5	4	6	5	5	6	6	6	1	5
205	AEE-429	RC	A	A	A	A	A	B	B	A	A	A	B	A	A	A	A	A
		S	6	6	6	6	6	5	5	6	6	6	5	6	6	6	6	6
206	AEE-430	RC	C	C	C	C	B	B	B	B	B	B	B	B	B	B	B	B
		S	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5
207	AEE-431	RC	C	D	C	E	E	B	B	C	C	C	C	B	B	B	C	C
		S	4	3	4	2	2	5	5	4	4	4	4	5	5	5	4	4
208	AEE-432	RC	C	F	D	D	D	D	C	C	C	B	D	B	B	C	C	B
		S	4	1	3	3	3	3	4	4	4	5	3	5	5	4	4	5
209	AEE-433	RC	A	E	F	E	E	C	B	B	B	B	D	B	B	D	E	C
		S	6	2	1	2	2	4	5	5	5	5	3	5	5	3	2	4
210	AEE-434	RC	B	B	B	B	B	B	B	B	A	B	B	B	A	B	B	B
		S	5	5	5	5	5	5	5	5	6	5	5	5	6	5	5	5
211	AEE-435	RC	C	B	C	C	D	C	B	B	B	A	B	A	B	B	C	C
		S	4	5	4	4	3	4	5	5	5	6	5	6	5	5	4	4

212	AEE-436	RC	B	B	C	B	C	A	A	B	B	B	C	B	B	B	B	B
		S	5	5	4	5	4	6	6	5	5	5	4	5	5	5	5	5
213	AEE-437	RC	B	C	E	B	D	A	B	C	C	B	D	B	C	C	D	D
		S	5	4	2	5	3	6	5	4	4	5	3	5	4	4	3	3
214	AEE-438	RC	B	C	B	B	D	B	C	D	C	C	D	C	D	E	D	C
		S	5	4	5	5	3	5	4	3	4	4	3	4	3	2	3	4
215	AEE-439	RC	C	C	B	B	D	B	D	E	D	B	E	B	C	E	A	C
		S	4	4	5	5	3	5	3	2	3	5	2	5	4	2	6	4
216	AEE-440	RC	D	C	E	F	F	A	B	B	A	E	F	A	E	D	F	C
		S	3	4	2	1	1	6	5	5	6	2	1	6	2	3	1	4
217	AEE-441	RC	B	C	B	C	B	C	B	C	C	B	B	B	C	C	D	C
		S	5	4	5	4	5	4	5	4	4	5	5	5	4	4	3	4
218	AEE-442	RC	B	A	D	B	D	F	B	B	C	B	C	B	C	D	C	B
		S	5	6	3	5	3	1	5	5	4	5	4	5	4	3	4	5
219	AEE-443	RC	C	B	E	B	B	D	B	C	B	A	C	B	C	D	D	C
		S	4	5	2	5	5	3	5	4	5	6	4	5	4	3	3	4
220	AEE-444	RC	C	C	C	B	D	F	C	C	B	C	B	D	D	C	C	C
		S	4	4	4	5	3	1	4	4	5	4	5	3	3	4	4	4
221	AEE-445	RC	B	E	F	B	B	D	C	C	C	B	B	C	E	C	E	B
		S	5	2	1	5	5	3	4	4	4	5	5	4	2	4	2	5
222	AEE-446	RC	B	C	D	C	C	B	C	B	B	C	B	B	A	D	D	B
		S	5	4	3	4	4	5	4	5	5	4	5	5	6	3	3	5
223	AEE-447	RC	A	A	A	A	A	E	A	A	A	A	A	A	A	A	A	A
		S	6	6	6	6	6	2	6	6	6	6	6	6	6	6	6	6
224	AEE-448	RC	B	B	A	B	B	B	A	B	C	C	A	C	A	B	A	B
		S	5	5	6	5	5	5	6	5	4	4	6	4	6	5	6	5

Note:

A - Extremely satisfied

B - Moderately satisfied

C - Mildly satisfied

D - Mildly dissatisfied

E - Moderately dissatisfied

F - Extremely dissatisfied

RC - Response Code

S - Score

APPENDIX XII

Job Satisfaction: Intrinsic, Extrinsic and Overall Moderated Scores

Sl. Subject		Intrinsic Items						Extrinsic Items										Overall Satisfaction				
No.	Code No.	7	11	13	14	Total Moderated score	1	2	3	4	5	6	8	9	10	12	15	Total Moderated Score	16	Moderated score		
1	SE-101	4	4	4	4	16	66.67	5	4	5	5	5	5	4	4	4	4	4	49	74.24	4	66.67
2	SE-102	5	5	5	3	18	75.00	5	4	3	5	5	5	4	5	5	4	3	48	72.73	4	66.67
3	SE-103	6	2	4	3	15	62.50	4	2	1	2	5	5	4	4	5	5	1	38	57.57	4	66.67
4	SE-104	4	4	4	4	16	66.67	4	3	3	4	5	5	5	5	5	4	2	45	68.18	4	66.67
5	SE-105	4	3	5	3	15	62.50	5	3	4	3	5	4	4	3	5	5	3	44	66.67	4	66.67
6	SE-106	5	2	4	4	15	62.50	4	5	4	5	5	4	5	3	4	5	5	49	74.24	4	66.67
7	SE-107	4	4	5	5	18	75.00	4	4	4	5	5	3	4	5	5	5	5	49	74.24	5	83.33
8	SE-108	3	4	4	2	13	54.17	5	3	2	4	6	5	3	3	5	5	1	42	63.64	5	83.33
9	SE-109	3	4	4	4	15	62.50	5	4	3	3	5	3	3	4	5	4	3	42	63.64	4	66.67
10	SE-110	4	4	5	4	17	70.83	6	3	5	4	6	5	5	5	5	6	5	55	83.33	5	83.33
11	SE-111	5	4	4	5	18	75.00	5	5	4	4	5	4	5	5	4	4	4	49	74.24	4	66.67
12	SE-112	5	1	4	2	12	50.00	1	1	1	4	4	4	4	3	5	4	1	32	48.48	4	66.67
13	SE-113	5	4	5	5	19	79.17	5	3	5	5	5	6	5	5	5	4	5	53	80.30	5	83.33
14	SE-114	5	5	5	5	20	83.33	5	5	5	5	5	6	6	6	6	6	5	60	90.90	5	83.33
15	SE-115	4	1	1	2	8	33.33	5	3	2	5	5	3	3	3	4	2	2	37	56.06	2	33.33
16	SE-116	5	5	5	4	19	79.17	5	4	4	4	4	3	5	5	4	5	4	47	71.21	4	66.67
17	SE-117	1	1	2	1	5	20.83	1	1	1	5	6	4	1	2	1	4	2	28	42.42	1	16.67
18	SE-118	4	3	5	4	16	66.67	6	4	3	2	6	5	4	4	4	5	3	46	69.69	4	66.67
19	SE-119	6	5	6	6	23	95.83	6	2	5	5	5	5	6	5	5	5	5	54	81.82	5	83.33
20	SE-120	6	6	5	6	23	95.83	5	4	4	5	5	4	6	6	6	6	4	55	83.33	5	83.33
21	EE-201	4	4	4	4	16	66.67	5	4	5	4	2	5	5	5	5	5	5	50	75.76	5	83.33
22	EE-202	4	5	5	4	18	75.00	5	4	3	4	4	5	4	4	4	4	5	46	69.70	4	66.67
23	EE-203	4	2	4	2	12	50.00	5	4	3	3	2	5	4	3	3	4	3	39	59.09	3	50.00
24	EE-204	5	5	1	5	16	66.67	6	1	1	1	1	5	1	5	5	5	1	32	48.48	1	16.67
25	EE-205	5	5	5	5	20	83.33	5	4	4	4	4	5	5	5	5	5	4	50	75.76	5	83.33
26	EE-206	5	4	4	4	17	70.83	4	4	4	3	4	5	4	4	4	4	3	43	65.15	4	66.67
27	EE-207	4	5	5	5	19	79.17	2	3	2	2	2	4	4	4	5	5	2	35	53.03	4	66.67
28	EE-208	5	4	5	6	20	83.33	6	3	4	5	6	4	4	5	5	5	4	51	77.27	4	66.67
29	EE-209	5	4	5	5	19	79.17	6	5	3	4	5	5	4	4	5	5	3	49	74.24	4	66.67

30	EE-210	4	4	5	5	18	75.00	5	1	1	5	2	6	5	2	4	5	1	37	56.06	4	66.67
31	EE-211	5	2	5	3	15	62.50	3	3	3	3	2	2	5	5	5	5	2	38	57.50	5	83.33
32	EE-212	5	5	5	5	20	83.33	5	3	3	4	5	5	5	5	5	5	4	49	74.24	5	83.33
33	EE-213	4	4	5	4	17	70.83	5	3	5	5	5	5	4	5	5	5	4	51	77.27	5	83.33
34	EE-214	5	5	5	4	19	79.17	5	3	1	5	4	5	3	5	5	5	1	42	63.64	4	66.67
35	EE-215	3	4	4	4	15	62.50	5	4	3	3	4	4	4	4	4	3	42	63.63	4	66.67	
36	EE-216	2	3	1	5	11	45.80	5	1	4	5	5	5	3	4	5	4	2	43	65.15	5	83.33
37	EE-217	5	3	5	4	17	70.83	5	2	1	5	4	5	4	3	4	5	1	39	59.09	4	66.67
38	EE-218	3	3	3	5	14	58.33	5	4	5	5	6	5	3	5	5	6	5	54	81.82	5	83.33
39	EE-219	6	6	6	6	24	100.00	6	5	6	6	6	6	4	1	4	4	6	54	81.82	6	100.00
40	EE-220	4	3	5	3	15	62.50	5	3	3	5	4	4	3	4	5	5	4	45	68.18	4	66.67
41	EE-221	4	3	4	4	15	62.50	4	5	4	5	4	5	3	4	5	5	3	47	71.21	4	66.67
42	EE-222	3	1	2	1	7	29.17	5	2	2	4	1	5	2	2	5	5	3	36	54.55	3	50.00
43	EE-223	2	2	3	2	9	37.50	5	3	3	2	4	2	3	4	4	4	2	36	54.55	2	33.33
44	EE-224	5	6	5	6	22	91.67	5	4	5	4	5	5	6	5	6	6	5	56	84.85	5	83.33
45	EE-225	2	3	4	1	10	41.67	5	5	5	3	2	5	5	4	5	3	2	44	66.67	2	33.33
46	EE-226	3	4	2	3	12	50.00	5	3	4	4	5	5	5	5	4	4	4	48	72.73	4	66.67
47	EE-227	2	1	4	1	8	33.33	6	2	2	6	6	4	6	4	6	5	2	49	74.24	4	66.67
48	EE-228	5	4	4	5	18	75.00	5	5	5	5	4	6	4	5	5	4	5	53	80.30	5	83.33
49	EE-229	5	4	5	5	19	79.17	5	5	4	4	4	5	5	5	5	4	5	51	77.27	5	83.33
50	EE-230	4	4	3	5	16	66.67	5	3	3	5	4	3	4	5	4	4	3	43	65.15	4	66.67
51	EE-231	5	5	5	5	20	83.33	6	5	5	5	5	5	5	5	6	5	5	57	86.36	5	83.33
52	EE-232	4	2	1	1	8	33.33	5	3	4	4	5	3	2	4	5	5	5	45	68.18	3	50.00
53	EE-233	4	4	4	5	17	70.83	5	4	3	5	4	5	5	4	5	5	4	49	74.24	4	66.67
54	EE-234	4	4	4	5	17	70.83	5	4	4	5	4	5	5	4	5	4	4	49	74.24	4	66.67
55	EE-235	4	4	3	4	15	62.50	4	4	3	5	5	5	5	3	5	5	4	48	72.73	5	83.33
56	EE-236	4	2	4	2	12	50.00	4	1	3	5	5	5	4	5	5	5	2	44	66.67	4	66.67
57	EE-237	6	6	6	5	23	95.83	6	5	6	6	5	6	6	6	6	6	6	64	96.97	6	100.00
58	EE-238	5	5	5	4	19	79.17	5	4	5	5	4	5	5	5	6	5	4	53	80.3	5	83.33
59	EE-239	4	3	4	2	13	54.17	4	4	2	4	3	2	4	4	3	2	2	34	51.52	2	33.33
60	EE-240	5	5	5	4	19	79.17	6	4	4	5	1	4	4	5	6	5	2	46	69.7	5	83.33
61	EE-241	5	2	3	2	12	50.00	5	4	4	4	3	5	4	4	6	6	4	49	74.24	3	50.00
62	EE-242	5	4	5	4	18	75.00	6	2	5	5	6	5	5	5	4	5	5	53	80.30	5	83.33
63	EE-243	2	4	4	2	12	50.00	5	4	2	2	1	1	3	3	5	4	1	31	46.97	4	66.67
64	EE-244	6	5	6	5	22	91.67	6	5	6	6	6	6	6	6	6	6	6	65	98.48	6	100.00
65	EE-245	4	3	5	5	17	70.83	5	4	3	5	5	5	4	4	5	5	3	48	72.75	3	50.00
66	EE-246	5	5	4	4	18	75.00	4	5	2	3	4	5	5	5	6	5	3	47	71.21	4	66.67
67	EE-247	5	5	6	5	21	87.50	5	5	3	5	5	5	5	6	5	6	3	53	80.30	5	83.33
68	EE-248	5	3	4	3	15	62.50	5	4	4	4	3	4	4	4	4	4	3	43	65.15	4	66.67

69	EE-249	5	4	5	3	17	70.83	5	4	2	5	4	6	5	5	6	6	2	50	75.75	5	83.33
70	EE-250	5	4	4	3	16	66.67	5	6	3	5	3	1	5	4	5	5	4	46	69.70	5	83.33
71	EE-251	5	4	5	5	19	79.17	6	2	3	4	3	6	1	5	5	5	3	43	65.15	5	83.33
72	EE-252	5	5	5	5	20	83.33	4	1	5	5	5	5	5	5	5	5	5	50	75.75	5	83.33
73	EE-253	5	5	5	5	20	83.33	5	5	5	4	4	5	4	5	4	4	4	49	74.24	5	83.33
74	EE-254	6	1	1	1	9	37.50	6	1	3	3	3	6	6	6	4	1	3	42	63.67	4	66.67
75	EE-255	5	4	4	6	19	79.17	5	5	4	5	1	1	5	5	6	6	1	44	66.67	4	66.67
76	EE-256	4	3	4	3	14	58.33	3	4	4	5	4	4	3	5	4	4	4	44	66.67	4	66.67
77	AEE-301	4	5	4	5	18	75.00	5	4	4	5	5	5	4	5	6	6	5	54	81.81	6	100.00
78	AEE-302	5	3	5	4	17	70.83	5	1	5	5	3	4	5	4	3	4	5	44	66.67	5	83.33
79	AEE-303	6	6	6	5	23	95.83	6	4	1	2	3	5	4	5	5	4	4	43	65.15	5	83.33
80	AEE-304	1	1	3	6	11	45.83	4	2	1	1	2	5	5	6	6	5	1	38	57.58	4	66.67
81	AEE-305	4	3	4	2	13	54.17	4	2	2	5	1	5	3	3	6	6	2	39	59.09	5	83.33
82	AEE-306	4	4	3	2	13	54.17	4	1	1	2	1	4	4	5	5	4	1	32	48.48	3	50.00
83	AEE-307	6	5	5	5	21	87.50	5	5	4	5	3	5	5	6	6	5	4	53	80.30	5	83.33
84	AEE-308	6	6	6	6	24	100.00	6	6	6	6	6	6	6	6	6	6	6	66	100.00	6	100.00
85	AEE-309	4	4	4	5	17	70.83	5	4	3	4	3	4	4	3	5	5	5	45	68.18	4	66.67
86	AEE-310	5	1	5	2	13	54.17	5	4	1	3	1	5	2	5	3	1	3	33	50.00	5	83.33
87	AEE-311	5	5	6	4	20	83.33	5	3	3	3	3	5	5	5	6	5	3	46	69.70	5	83.33
88	AEE-312	5	3	4	4	16	66.67	5	4	5	5	1	5	3	4	4	3	4	43	65.15	4	66.67
89	AEE-313	5	5	4	5	19	79.17	4	5	4	4	5	5	4	4	5	5	4	49	74.24	5	83.33
90	AEE-314	4	4	4	2	14	58.33	5	3	5	5	4	4	5	5	5	5	5	51	77.27	4	66.67
91	AEE-315	5	4	5	4	18	75.00	5	5	4	5	1	5	5	5	5	5	5	50	75.76	5	83.33
92	AEE-316	5	5	5	4	19	79.17	6	4	5	5	1	4	6	5	6	6	5	53	80.34	5	83.33
93	AEE-317	5	5	5	5	20	83.33	5	5	5	5	4	4	5	5	4	4	5	51	77.27	5	83.33
94	AEE-318	3	6	5	6	20	83.33	5	3	1	4	1	3	4	6	5	5	1	38	57.58	4	66.67
95	AEE-319	5	5	5	4	19	79.17	5	2	3	5	1	4	4	4	3	4	2	37	56.06	4	66.67
96	AEE-320	5	2	5	3	15	62.50	5	3	5	3	1	1	4	4	5	5	2	38	57.58	3	50.00
97	AEE-321	5	3	3	3	14	58.33	4	1	1	3	3	4	3	3	4	5	2	33	50.00	4	66.67
98	AEE-322	4	4	6	4	18	75.00	5	4	5	4	3	3	5	5	5	6	4	49	74.24	5	83.33
99	AEE-323	5	4	6	4	19	79.17	6	5	4	2	1	3	6	5	6	5	3	46	69.70	4	66.67
100	AEE-324	5	5	5	5	20	83.33	5	4	5	5	4	5	5	5	6	6	5	55	83.33	5	83.33
101	AEE-325	5	3	5	5	18	75.00	5	5	4	3	1	5	5	5	4	4	4	45	68.18	4	66.67
102	AEE-326	4	4	4	4	16	66.67	4	3	1	2	2	3	3	5	5	5	1	34	51.52	3	50.00
103	AEE-327	4	4	4	4	16	66.67	4	2	1	2	2	3	3	5	5	5	1	33	50.00	4	66.67
104	AEE-328	3	4	4	4	15	62.50	4	1	1	2	2	3	3	5	5	5	1	32	48.48	2	33.33
105	AEE-329	1	1	1	1	4	16.66	4	1	3	2	1	5	1	1	2	5	2	27	40.90	1	16.67
106	AEE-330	4	2	4	6	16	66.67	4	5	1	1	2	3	2	4	6	1	1	30	45.45	4	66.67
107	AEE-331	4	1	4	4	13	54.17	5	2	2	5	2	4	4	1	6	5	2	38	57.58	4	66.67

108	AEE-332	6	5	4	4	19	79.17	4	5	4	4	2	5	5	5	5	5	4	48	72.73	4	66.67
109	AEE-333	4	5	5	4	18	75.00	6	5	5	5	5	5	5	6	4	5	56	84.85	5	83.33	
110	AEE-334	4	5	5	5	19	79.17	6	5	5	5	4	5	5	4	5	5	5	54	81.82	5	83.33
111	AEE-335	5	5	3	5	18	75.00	4	4	3	4	5	2	5	4	5	6	4	46	69.70	5	83.33
112	AEE-336	1	4	3	2	10	41.67	5	2	1	2	5	4	1	6	5	5	3	39	59.09	5	83.33
113	AEE-337	6	3	3	3	15	62.50	2	1	6	6	1	4	1	1	6	1	6	35	53.03	1	16.67
114	AEE-338	5	5	5	5	20	83.33	5	3	3	5	5	5	5	5	5	5	5	51	77.27	5	83.33
115	AEE-339	3	2	3	4	12	50.00	5	4	5	5	4	4	4	4	2	2	5	44	66.67	5	83.33
116	AEE-340	5	2	3	2	12	50.00	5	3	4	4	1	4	5	5	5	5	3	44	66.67	3	50.00
117	AEE-341	4	4	4	4	16	66.67	5	5	5	5	4	4	4	5	5	5	4	51	77.27	4	66.67
118	AEE-342	5	4	5	3	17	70.83	5	3	5	5	3	5	5	5	5	5	5	51	77.27	5	83.33
119	AEE-343	5	5	5	5	20	83.33	6	5	5	5	5	5	5	5	5	5	5	56	84.85	5	83.33
120	AEE-344	4	5	5	4	18	75.00	5	5	4	5	4	4	5	5	6	6	5	54	81.82	5	83.33
121	AEE-345	5	5	6	4	20	83.33	6	3	5	5	5	5	6	6	6	6	5	58	87.88	6	100.00
122	AEE-346	3	1	2	1	7	29.17	5	2	2	5	1	5	2	2	5	5	3	37	56.06	3	50.00
123	AEE-347	5	5	1	4	15	62.50	5	2	4	5	2	4	2	2	4	4	5	39	59.09	4	66.67
124	AEE-348	4	4	5	5	18	75.00	5	5	5	5	5	5	4	4	5	5	4	52	78.79	5	83.33
125	AEE-349	4	4	5	3	16	66.67	6	4	4	4	1	4	4	4	4	4	3	42	63.64	4	66.67
126	AEE-350	4	5	5	3	17	70.83	6	4	4	5	1	4	5	5	5	5	4	48	72.73	5	83.33
127	AEE-351	4	4	5	5	18	75.00	5	5	5	4	1	5	4	5	6	5	4	49	74.24	5	83.33
128	AEE-352	5	5	5	4	19	79.17	5	4	4	4	5	4	4	5	5	4	5	49	74.24	5	83.33
129	AEE-353	3	4	3	4	14	58.33	3	2	4	4	4	4	3	4	3	2	4	37	56.06	4	66.67
130	AEE-354	5	5	5	4	19	79.17	5	4	5	5	1	1	4	5	5	6	5	46	69.70	5	83.33
131	AEE-355	5	4	5	4	18	75.00	5	5	4	4	3	4	5	4	5	4	4	47	71.21	4	66.67
132	AEE-356	6	6	5	2	19	79.17	4	5	6	6	5	6	5	1	4	6	5	53	80.30	6	100.00
133	AEE-357	5	4	5	1	15	62.50	6	4	5	3	1	6	6	6	3	5	5	50	75.76	5	83.33
134	AEE-358	5	4	4	4	17	70.83	5	3	4	5	4	4	5	5	4	5	4	48	72.73	5	83.33
135	AEE-359	5	3	5	3	16	66.67	4	4	3	4	3	5	5	6	4	6	2	46	69.70	5	83.33
136	AEE-360	4	5	5	4	18	75.00	3	3	3	4	4	4	4	5	5	4	3	42	63.64	4	66.67
137	AEE-361	2	4	5	3	14	58.33	5	5	4	2	4	2	4	3	5	4	2	40	60.60	4	66.67
138	AEE-362	5	3	6	3	17	70.83	5	4	2	3	4	4	5	6	6	5	2	46	69.70	5	83.33
139	AEE-363	5	6	5	5	21	87.50	4	5	5	5	5	5	5	5	5	5	5	54	81.82	5	83.33
140	AEE-364	2	4	5	4	15	62.50	6	5	5	6	5	6	6	5	6	4	4	58	87.88	3	50.00
141	AEE-365	5	5	5	5	20	83.33	5	3	4	4	5	4	5	5	5	4	4	48	72.73	5	83.33
142	AEE-366	6	5	4	2	17	70.83	4	4	2	4	5	6	5	4	4	6	4	48	72.77	6	100.00
143	AEE-367	4	4	2	4	14	58.33	2	4	3	3	2	1	3	5	6	6	2	37	56.06	4	66.67
144	AEE-368	4	3	5	3	15	62.50	5	3	4	5	5	3	5	5	5	4	4	48	72.73	5	83.33
145	AEE-369	6	5	5	5	21	87.50	5	5	4	5	4	5	6	6	6	6	4	56	84.85	5	83.33
146	AEE-370	4	4	6	4	18	75.00	4	5	4	4	5	4	4	4	6	6	4	50	75.76	4	66.67

147	AEE-371	5	4	6	4	19	79.17	5	5	6	3	4	6	5	4	5	4	5	52	78.79	4	66.67
148	AEE-372	5	5	4	6	20	83.33	5	4	3	4	6	6	5	4	5	4	4	50	75.76	4	66.67
149	AEE-373	5	5	5	4	19	79.17	5	5	6	6	5	6	5	5	4	4	6	57	86.36	5	83.33
150	AEE-374	4	3	4	3	14	58.33	4	3	3	3	2	4	3	2	4	4	3	35	53.03	4	66.67
151	AEE-375	4	5	5	3	17	70.83	5	3	3	3	1	4	4	5	6	6	3	43	65.15	4	66.67
152	AEE-376	4	4	4	4	16	66.67	4	3	4	4	4	4	4	4	4	4	4	43	65.15	4	66.67
153	AEE-377	3	2	3	3	11	45.83	3	2	2	4	2	1	4	4	5	4	3	34	51.52	3	50.00
154	AEE-378	5	6	6	1	18	75.00	6	5	5	5	1	5	5	6	6	6	3	53	80.30	5	83.33
155	AEE-379	1	4	3	2	10	41.67	5	1	2	5	4	4	5	5	5	5	1	42	63.64	3	50.00
156	AEE-380	5	4	5	3	17	70.83	6	3	1	5	1	5	4	5	5	4	3	42	63.64	3	50.00
157	AEE-381	5	3	4	3	15	62.50	3	3	1	3	1	4	4	4	6	6	1	36	54.55	3	50.00
158	AEE-382	4	4	5	4	17	70.83	3	4	1	5	4	5	5	5	4	4	2	42	63.64	3	50.00
159	AEE-383	4	4	4	4	16	66.67	4	4	4	4	4	4	4	5	4	4	4	45	68.18	4	66.67
160	AEE-384	5	4	5	5	19	79.17	5	5	5	4	5	5	5	5	5	5	4	53	80.30	5	83.33
161	AEE-385	4	4	3	3	14	58.33	5	3	1	2	5	4	3	4	5	3	2	37	56.06	4	66.67
162	AEE-386	3	1	5	5	14	58.33	4	4	4	5	5	4	3	3	4	4	3	43	65.15	2	33.33
163	AEE-387	5	4	5	5	19	79.17	5	5	5	5	5	5	4	5	5	4	4	52	78.79	5	83.33
164	AEE-388	5	5	5	5	20	83.33	5	4	4	5	3	5	3	5	6	6	4	50	75.76	5	83.33
165	AEE-389	4	2	4	4	14	58.33	6	2	1	4	2	5	4	5	5	4	1	39	59.09	3	50.00
166	AEE-390	5	6	6	5	22	91.67	5	5	5	5	5	4	6	6	6	6	6	59	89.39	6	100.00
167	AEE-391	5	5	5	5	20	83.33	5	5	5	5	5	5	5	5	5	5	5	55	83.33	5	83.33
168	AEE-392	4	6	6	6	22	91.67	2	4	1	3	4	5	4	2	5	3	1	34	51.52	4	66.67
169	AEE-393	2	1	1	3	7	29.17	5	3	1	2	1	1	1	1	1	1	1	18	27.27	1	16.67
170	AEE-394	5	1	5	1	12	50.00	6	1	1	5	1	5	1	2	5	5	1	33	50.00	1	16.67
171	AEE-395	5	6	6	5	22	91.67	6	5	1	4	5	5	5	6	5	5	4	51	77.27	5	83.33
172	AEE-396	4	4	3	3	14	58.33	6	5	5	5	4	3	5	4	4	4	4	49	74.24	2	33.33
173	AEE-397	3	3	3	4	13	54.17	5	4	5	5	4	3	2	3	4	3	3	41	62.12	2	33.33
174	AEE-398	6	4	6	4	20	83.33	5	4	5	5	2	5	5	5	5	5	5	51	77.27	5	83.33
175	AEE-399	5	2	5	4	16	66.67	5	2	1	4	2	4	5	5	5	6	1	40	60.60	4	66.67
176	AEE-400	5	4	5	5	19	79.17	5	4	4	4	1	5	4	5	5	6	4	47	71.21	4	66.67
177	AEE-401	5	6	6	6	23	95.83	6	6	6	6	5	4	6	6	6	6	6	63	95.45	6	100.00
178	AEE-402	5	4	5	4	18	75.00	4	4	2	4	5	5	4	4	4	4	2	42	63.64	4	66.67
179	AEE-403	5	5	6	5	21	87.50	6	5	4	5	3	6	6	6	6	6	4	57	86.36	5	83.33
180	AEE-404	5	4	5	4	18	75.00	5	5	5	4	3	3	4	5	5	4	4	47	71.21	4	66.67
181	AEE-405	5	4	5	4	18	75.00	5	5	4	5	4	4	4	3	5	5	4	48	72.73	5	83.33
182	AEE-406	3	2	2	4	11	45.83	6	1	2	6	4	5	2	3	4	5	1	39	59.09	3	50.00
183	AEE-407	5	4	5	6	20	83.33	5	4	3	4	5	5	5	4	4	5	4	48	72.73	5	83.33
184	AEE-408	4	4	5	5	18	75.00	5	5	4	5	5	4	5	5	4	5	4	51	77.27	5	83.33
185	AEE-409	4	4	4	4	16	66.67	6	4	5	5	4	4	4	4	6	6	5	53	80.30	5	83.33

186	AEE-410	4	3	1	2	10	41.67	5	3	4	5	1	4	3	4	5	5	5	44	66.67	4	66.67
187	AEE-411	5	2	6	3	16	66.67	3	4	2	2	4	5	6	6	5	6	2	45	68.18	4	66.67
188	AEE-412	5	4	5	4	18	75.00	4	4	4	4	4	4	6	6	4	6	4	50	75.76	4	66.67
189	AEE-413	4	4	4	2	14	58.33	6	5	4	5	1	1	1	3	5	5	3	39	59.09	2	33.33
190	AEE-414	4	5	6	6	21	87.50	4	5	4	5	5	4	4	5	6	6	4	52	78.79	4	66.67
191	AEE-415	3	3	3	2	11	45.83	5	3	3	5	5	5	3	4	4	4	3	44	66.67	3	50.00
192	AEE-416	6	5	4	4	19	79.17	4	5	4	4	5	5	5	5	5	5	3	50	75.76	4	66.67
193	AEE-417	4	4	5	3	16	66.67	2	4	1	3	1	5	4	5	5	4	1	35	53.03	2	33.33
194	AEE-418	4	1	4	3	12	50.00	5	1	4	4	3	3	3	4	3	4	3	37	56.06	3	50.00
195	AEE-419	2	1	5	2	10	41.67	6	3	4	3	2	5	5	5	5	5	5	48	72.73	4	66.67
196	AEE-420	5	3	5	3	16	66.67	5	4	5	4	3	5	5	3	5	4	4	47	71.21	5	83.33
197	AEE-421	4	2	3	2	11	45.83	5	1	2	5	4	5	4	2	4	4	6	42	63.64	2	33.33
198	AEE-422	5	4	4	4	17	70.83	6	4	5	4	4	4	3	3	5	5	5	48	72.73	5	83.33
199	AEE-423	5	4	5	4	18	75.00	6	5	4	4	5	6	4	4	5	4	4	51	77.27	5	83.33
200	AEE-424	4	4	4	3	15	62.50	5	4	4	2	2	5	5	5	4	4	4	44	66.67	4	66.67
201	AEE-425	4	2	4	1	11	45.83	4	3	2	2	1	5	4	4	4	5	3	37	56.06	4	66.67
202	AEE-426	3	4	4	4	15	62.50	3	4	2	2	1	4	2	5	5	1	3	32	48.48	4	66.67
203	AEE-427	4	5	4	4	17	70.83	5	5	5	4	4	3	4	5	6	6	4	51	77.27	4	66.67
204	AEE-428	5	5	6	6	22	91.67	5	1	5	5	1	4	4	6	5	6	1	43	65.15	5	83.33
205	AEE-429	5	5	6	6	22	91.67	6	6	6	6	6	5	6	6	6	6	6	65	98.48	6	100.00
206	AEE-430	5	5	5	5	20	83.33	4	4	4	4	5	5	5	5	5	5	5	51	77.27	5	83.33
207	AEE-431	5	4	5	5	19	79.17	4	3	4	2	2	5	4	4	4	5	4	41	62.12	4	66.67
208	AEE-432	4	3	5	4	16	66.67	4	1	3	3	3	3	4	4	5	5	4	39	59.09	5	83.33
209	AEE-433	5	3	5	3	16	66.67	6	2	1	2	2	4	5	5	5	5	2	39	59.09	4	66.67
210	AEE-434	5	5	6	5	21	87.50	5	5	5	5	5	5	5	6	5	5	5	56	84.85	5	83.33
211	AEE-435	5	5	5	5	20	83.33	4	5	4	4	3	4	5	5	6	6	4	50	75.76	4	66.67
212	AEE-436	6	4	5	5	20	83.33	5	5	4	5	4	6	5	5	5	5	5	54	81.82	5	83.33
213	AEE-437	5	3	4	4	16	66.67	5	4	2	5	3	6	4	4	5	5	3	46	69.70	3	50.00
214	AEE-438	4	3	3	2	12	50.00	5	4	5	5	3	5	3	4	4	4	3	45	68.18	4	66.67
215	AEE-439	3	2	4	2	11	45.83	4	4	5	5	3	5	2	3	5	5	6	47	71.21	4	66.67
216	AEE-440	5	1	2	3	11	45.83	3	4	2	1	1	6	5	6	2	6	1	37	56.06	4	66.67
217	AEE-441	5	5	4	4	18	75.00	5	4	5	4	5	4	4	4	5	5	3	48	72.73	4	66.67
218	AEE-442	5	4	4	3	16	66.67	5	6	3	5	3	1	5	4	5	5	4	46	69.70	5	83.33
219	AEE-443	5	4	4	3	16	66.67	4	5	2	5	5	3	4	5	6	5	3	47	71.21	4	66.67
220	AEE-444	4	5	3	4	16	66.67	4	4	4	5	3	1	4	5	4	3	4	41	62.12	4	66.67
221	AEE-445	4	5	2	4	15	62.50	5	2	1	5	5	3	4	4	5	4	2	40	60.60	5	83.33
222	AEE-446	4	5	6	3	18	75.00	5	4	3	4	4	5	5	5	4	5	3	47	71.21	5	83.33
223	AEE-447	6	6	6	6	24	100.00	6	6	6	6	6	2	6	6	6	6	6	62	93.94	6	100.00
224	AEE-448	6	6	6	5	23	95.83	5	5	6	5	5	5	5	4	4	4	6	54	81.82	5	83.33

Note:

$$\text{Intrinsic moderated score} = \frac{\text{Intrinsic score}}{24} \times 100$$

$$\text{Extrinsic moderated score} = \frac{\text{Extrinsic score}}{66} \times 100$$

$$\text{Overall moderated score} = \frac{\text{Overall score}}{6} \times 100$$

APPENDIX XIII

Job Satisfaction: Weighted Moderated Scores

Sl. No.	Subject Code	JSE			JSI			JSO			Total Moderated Score
		Score	Weightage	Moderated Score	Score	Weightage	Moderated Score	Score	Weightage	Moderated Score	
1	SE-101	74	0.823	60.902	67	0.798	53.466	67	0.819	54.873	69.361
2	SE-102	73	0.823	60.079	75	0.798	59.850	67	0.819	54.873	71.640
3	SE-103	58	0.823	47.734	63	0.798	50.274	67	0.819	54.873	62.656
4	SE-104	68	0.823	55.964	67	0.798	53.466	67	0.819	54.873	67.337
5	SE-105	67	0.823	55.141	63	0.798	50.274	67	0.819	54.873	65.692
6	SE-106	74	0.823	60.902	63	0.798	50.274	67	0.819	54.873	68.053
7	SE-107	74	0.823	60.902	75	0.798	59.850	83	0.819	67.977	77.348
8	SE-108	64	0.823	52.672	54	0.798	43.092	83	0.819	67.977	67.107
9	SE-109	64	0.823	52.672	63	0.798	50.274	67	0.819	54.873	64.680
10	SE-110	83	0.823	68.309	71	0.798	56.658	83	0.819	67.977	79.075
11	SE-111	74	0.823	60.902	75	0.798	59.850	67	0.819	54.873	71.977
12	SE-112	48	0.823	39.504	50	0.798	39.900	67	0.819	54.873	55.032
13	SE-113	80	0.823	65.840	79	0.798	63.042	83	0.819	67.977	80.680
14	SE-114	91	0.823	74.893	83	0.798	66.234	83	0.819	67.977	85.698
15	SE-115	56	0.823	46.088	33	0.798	26.334	33	0.819	27.027	40.758
16	SE-116	71	0.823	58.433	79	0.798	63.042	67	0.819	54.873	72.274
17	SE-117	42	0.823	34.566	21	0.798	16.758	17	0.819	13.923	26.741
18	SE-118	70	0.823	57.610	67	0.798	53.466	67	0.819	54.873	68.012
19	SE-119	82	0.823	67.486	96	0.798	76.608	83	0.819	67.977	86.914
20	SE-120	83	0.823	68.309	96	0.798	76.608	83	0.819	67.977	87.252
21	EE-201	76	0.823	62.548	67	0.798	53.466	83	0.819	67.977	75.406
22	EE-202	70	0.823	57.610	75	0.798	59.850	67	0.819	54.873	70.628
23	EE-203	59	0.823	48.557	50	0.798	39.900	50	0.819	40.950	53.036
24	EE-204	48	0.823	39.504	67	0.798	53.466	17	0.819	13.923	43.809
25	EE-205	76	0.823	62.548	83	0.798	66.234	83	0.819	67.977	80.639
26	EE-206	65	0.823	53.495	71	0.798	56.658	67	0.819	54.873	67.634
27	EE-207	53	0.823	43.619	79	0.798	63.042	67	0.819	54.873	66.202
28	EE-208	77	0.823	63.371	83	0.798	66.234	67	0.819	54.873	75.606
29	EE-209	74	0.823	60.902	79	0.798	63.042	67	0.819	54.873	73.286

30	EE-210	56	0.823	46.088	75	0.798	59.850	67	0.819	54.873	65.906
31	EE-211	58	0.823	47.734	63	0.798	50.274	83	0.819	67.977	68.027
32	EE-212	74	0.823	60.902	83	0.798	66.234	83	0.819	67.977	79.964
33	EE-213	77	0.823	63.371	71	0.798	56.658	83	0.819	67.977	77.052
34	EE-214	64	0.823	52.672	79	0.798	63.042	67	0.819	54.873	69.913
35	EE-215	64	0.823	52.672	63	0.798	50.274	67	0.819	54.873	64.680
36	EE-216	65	0.823	53.495	46	0.798	36.708	83	0.819	67.977	64.828
37	EE-217	59	0.823	48.557	71	0.798	56.658	67	0.819	54.873	65.610
38	EE-218	82	0.823	67.486	58	0.798	46.284	83	0.819	67.977	74.486
39	EE-219	82	0.823	67.486	100	0.798	79.800	100	0.819	81.900	93.929
40	EE-220	68	0.823	55.964	63	0.798	50.274	67	0.819	54.873	66.029
41	EE-221	71	0.823	58.433	63	0.798	50.274	67	0.819	54.873	67.041
42	EE-222	55	0.823	45.265	29	0.798	23.142	50	0.819	40.950	44.818
43	EE-223	55	0.823	45.265	38	0.798	30.324	33	0.819	27.027	42.056
44	EE-224	85	0.823	69.955	92	0.798	73.416	83	0.819	67.977	86.618
45	EE-225	67	0.823	55.141	42	0.798	33.516	33	0.819	27.027	47.411
46	EE-226	73	0.823	60.079	50	0.798	39.900	67	0.819	54.873	63.464
47	EE-227	74	0.823	60.902	33	0.798	26.334	67	0.819	54.873	58.241
48	EE-228	80	0.823	65.840	75	0.798	59.850	83	0.819	67.977	79.372
49	EE-229	77	0.823	63.371	79	0.798	63.042	83	0.819	67.977	79.668
50	EE-230	65	0.823	53.495	67	0.798	53.466	67	0.819	54.873	66.325
51	EE-231	86	0.823	70.778	83	0.798	66.234	83	0.819	67.977	84.012
52	EE-232	68	0.823	55.964	33	0.798	26.334	50	0.819	40.950	50.511
53	EE-233	74	0.823	60.902	71	0.798	56.658	67	0.819	54.873	70.669
54	EE-234	74	0.823	60.902	71	0.798	56.658	67	0.819	54.873	70.669
55	EE-235	73	0.823	60.079	63	0.798	50.274	83	0.819	67.977	73.086
56	EE-236	67	0.823	55.141	50	0.798	39.900	67	0.819	54.873	61.440
57	EE-237	97	0.823	79.831	96	0.798	76.608	100	0.819	81.900	97.680
58	EE-238	80	0.823	65.840	79	0.798	63.042	83	0.819	67.977	80.680
59	EE-239	52	0.823	42.796	54	0.798	43.092	33	0.819	27.027	46.277
60	EE-240	70	0.823	57.610	79	0.798	63.042	83	0.819	67.977	77.307
61	EE-241	74	0.823	60.902	50	0.798	39.900	50	0.819	40.950	58.095
62	EE-242	80	0.823	65.840	75	0.798	59.850	83	0.819	67.977	79.372
63	EE-243	47	0.823	38.681	50	0.798	39.900	67	0.819	54.873	54.694
64	EE-244	98	0.823	80.654	92	0.798	73.416	100	0.819	81.900	96.709
65	EE-245	73	0.823	60.079	71	0.798	56.658	50	0.819	40.950	64.626
66	EE-246	71	0.823	58.433	75	0.798	59.850	67	0.819	54.873	70.966
67	EE-247	80	0.823	65.840	88	0.798	70.224	83	0.819	67.977	83.623
68	EE-248	65	0.823	53.495	63	0.798	50.274	67	0.819	54.873	65.017

69	EE-249	76	0.823	62.548	71	0.798	56.658	83	0.819	67.977	76.714
70	EE-250	70	0.823	57.610	67	0.798	53.466	83	0.819	67.977	73.382
71	EE-251	65	0.823	53.495	79	0.798	63.042	83	0.819	67.977	75.620
72	EE-252	76	0.823	62.548	83	0.798	66.234	83	0.819	67.977	80.639
73	EE-253	74	0.823	60.902	83	0.798	66.234	83	0.819	67.977	79.964
74	EE-254	64	0.823	52.672	38	0.798	30.324	67	0.819	54.873	56.504
75	EE-255	67	0.823	55.141	79	0.798	63.042	67	0.819	54.873	70.925
76	EE-256	67	0.823	55.141	58	0.798	46.284	67	0.819	54.873	64.057
77	AEE-301	82	0.823	67.486	75	0.798	59.850	100	0.819	81.900	85.752
78	AEE-302	67	0.823	55.141	71	0.798	56.658	83	0.819	67.977	73.679
79	AEE-303	65	0.823	53.495	96	0.798	76.608	83	0.819	67.977	81.180
80	AEE-304	58	0.823	47.734	46	0.798	36.708	67	0.819	54.873	57.096
81	AEE-305	59	0.823	48.557	54	0.798	43.092	83	0.819	67.977	65.420
82	AEE-306	48	0.823	39.504	54	0.798	43.092	50	0.819	40.950	50.634
83	AEE-307	80	0.823	65.840	88	0.798	70.224	83	0.819	67.977	83.623
84	AEE-308	100	0.823	82.300	100	0.798	79.800	100	0.819	81.900	100.000
85	AEE-309	68	0.823	55.964	71	0.798	56.658	67	0.819	54.873	68.645
86	AEE-310	50	0.823	41.150	54	0.798	43.092	83	0.819	67.977	62.385
87	AEE-311	70	0.823	57.610	83	0.798	66.234	83	0.819	67.977	78.615
88	AEE-312	65	0.823	53.495	67	0.798	53.466	67	0.819	54.873	66.325
89	AEE-313	74	0.823	60.902	79	0.798	63.042	83	0.819	67.977	78.656
90	AEE-314	77	0.823	63.371	58	0.798	46.284	67	0.819	54.873	67.430
91	AEE-315	76	0.823	62.548	75	0.798	59.850	83	0.819	67.977	78.023
92	AEE-316	80	0.823	65.840	79	0.798	63.042	83	0.819	67.977	80.680
93	AEE-317	77	0.823	63.371	83	0.798	66.234	83	0.819	67.977	80.976
94	AEE-318	58	0.823	47.734	83	0.798	66.234	67	0.819	54.873	69.197
95	AEE-319	56	0.823	46.088	79	0.798	63.042	67	0.819	54.873	67.214
96	AEE-320	58	0.823	47.734	63	0.798	50.274	50	0.819	40.950	56.950
97	AEE-321	50	0.823	41.150	58	0.798	46.284	67	0.819	54.873	58.323
98	AEE-322	74	0.823	60.902	75	0.798	59.850	83	0.819	67.977	77.348
99	AEE-323	70	0.823	57.610	79	0.798	63.042	67	0.819	54.873	71.936
100	AEE-324	83	0.823	68.309	83	0.798	66.234	83	0.819	67.977	83.000
101	AEE-325	68	0.823	55.964	75	0.798	59.850	67	0.819	54.873	69.954
102	AEE-326	52	0.823	42.796	67	0.798	53.466	50	0.819	40.950	56.234
103	AEE-327	50	0.823	41.150	67	0.798	53.466	67	0.819	54.873	61.266
104	AEE-328	48	0.823	39.504	63	0.798	50.274	33	0.819	27.027	47.871
105	AEE-329	41	0.823	33.743	17	0.798	13.566	17	0.819	13.923	25.095
106	AEE-330	45	0.823	37.035	67	0.798	53.466	67	0.819	54.873	59.580
107	AEE-331	58	0.823	47.734	54	0.798	43.092	67	0.819	54.873	59.713

108	AEE-332	73	0.823	60.079	79	0.798	63.042	67	0.819	54.873	72.948
109	AEE-333	85	0.823	69.955	76	0.798	59.850	83	0.819	67.977	81.058
110	AEE-334	82	0.823	67.486	79	0.798	63.042	83	0.819	67.977	81.355
111	AEE-335	70	0.823	57.610	75	0.798	59.850	83	0.819	67.977	75.999
112	AEE-336	59	0.823	48.557	42	0.798	33.516	83	0.819	67.977	61.496
113	AEE-337	53	0.823	43.619	63	0.798	50.274	17	0.819	13.923	44.187
114	AEE-338	77	0.823	63.371	83	0.798	66.234	83	0.819	67.977	80.976
115	AEE-339	67	0.823	55.141	50	0.798	39.900	83	0.819	67.977	66.811
116	AEE-340	67	0.823	55.141	50	0.798	39.900	50	0.819	40.950	55.734
117	AEE-341	77	0.823	63.371	67	0.798	53.466	67	0.819	54.873	70.373
118	AEE-342	77	0.823	63.371	71	0.798	56.658	83	0.819	67.977	77.052
119	AEE-343	85	0.823	69.955	83	0.798	66.234	83	0.819	67.977	83.675
120	AEE-344	82	0.823	67.486	75	0.798	59.850	83	0.819	67.977	80.046
121	AEE-345	88	0.823	72.424	83	0.798	66.234	100	0.819	81.900	90.393
122	AEE-346	56	0.823	46.088	29	0.798	23.142	50	0.819	40.950	45.156
123	AEE-347	59	0.823	48.557	63	0.798	50.274	67	0.819	54.873	62.993
124	AEE-348	79	0.823	65.017	75	0.798	59.850	83	0.819	67.977	79.034
125	AEE-349	64	0.823	52.672	67	0.798	53.466	67	0.819	54.873	65.988
126	AEE-350	73	0.823	60.079	71	0.798	56.658	83	0.819	67.977	75.702
127	AEE-351	74	0.823	60.902	75	0.798	59.850	83	0.819	67.977	77.348
128	AEE-352	74	0.823	60.902	79	0.798	63.042	83	0.819	67.977	78.656
129	AEE-353	56	0.823	46.088	58	0.798	46.284	67	0.819	54.873	60.346
130	AEE-354	70	0.823	57.610	79	0.798	63.042	83	0.819	67.977	77.307
131	AEE-355	71	0.823	58.433	75	0.798	59.850	67	0.819	54.873	70.966
132	AEE-356	80	0.823	65.840	79	0.798	63.042	100	0.819	81.900	86.386
133	AEE-357	76	0.823	62.548	63	0.798	50.274	83	0.819	67.977	74.098
134	AEE-358	73	0.823	60.079	71	0.798	56.658	83	0.819	67.977	75.702
135	AEE-359	70	0.823	57.610	67	0.798	53.466	83	0.819	67.977	73.382
136	AEE-360	64	0.823	52.672	75	0.798	59.850	67	0.819	54.873	68.605
137	AEE-361	61	0.823	50.203	58	0.798	46.284	67	0.819	54.873	62.033
138	AEE-362	70	0.823	57.610	71	0.798	56.658	83	0.819	67.977	74.691
139	AEE-363	82	0.823	67.486	88	0.798	70.224	83	0.819	67.977	84.298
140	AEE-364	88	0.823	72.424	63	0.798	50.274	50	0.819	40.950	67.069
141	AEE-365	73	0.823	60.079	83	0.798	66.234	83	0.819	67.977	79.627
142	AEE-366	73	0.823	60.079	71	0.798	56.658	100	0.819	81.900	81.409
143	AEE-367	56	0.823	46.088	58	0.798	46.284	67	0.819	54.873	60.346
144	AEE-368	73	0.823	60.079	63	0.798	50.274	83	0.819	67.977	73.086
145	AEE-369	85	0.823	69.955	88	0.798	70.224	83	0.819	67.977	85.310
146	AEE-370	76	0.823	62.548	75	0.798	59.850	67	0.819	54.873	72.652

147	AEE-371	79	0.823	65.017	79	0.798	63.042	67	0.819	54.873	74.972
148	AEE-372	76	0.823	62.548	83	0.798	66.234	67	0.819	54.873	75.268
149	AEE-373	86	0.823	70.778	79	0.798	63.042	83	0.819	67.977	82.704
150	AEE-374	53	0.823	43.619	58	0.798	46.284	67	0.819	54.873	59.334
151	AEE-375	65	0.823	53.495	71	0.798	56.658	67	0.819	54.873	67.634
152	AEE-376	65	0.823	53.495	67	0.798	53.466	67	0.819	54.873	66.325
153	AEE-377	52	0.823	42.796	46	0.798	36.708	50	0.819	40.950	49.366
154	AEE-378	80	0.823	65.840	75	0.798	59.850	83	0.819	67.977	79.372
155	AEE-379	64	0.823	52.672	42	0.798	33.516	50	0.819	40.950	52.106
156	AEE-380	64	0.823	52.672	71	0.798	56.658	50	0.819	40.950	61.590
157	AEE-381	55	0.823	45.265	63	0.798	50.274	50	0.819	40.950	55.938
158	AEE-382	64	0.823	52.672	71	0.798	56.658	50	0.819	40.950	61.590
159	AEE-383	68	0.823	55.964	67	0.798	53.466	67	0.819	54.873	67.337
160	AEE-384	80	0.823	65.840	79	0.798	63.042	83	0.819	67.977	80.680
161	AEE-385	56	0.823	46.088	58	0.798	46.284	67	0.819	54.873	60.346
162	AEE-386	65	0.823	53.495	58	0.798	46.284	33	0.819	27.027	51.970
163	AEE-387	79	0.823	65.017	79	0.798	63.042	83	0.819	67.977	80.343
164	AEE-388	76	0.823	62.548	83	0.798	66.234	83	0.819	67.977	80.639
165	AEE-389	59	0.823	48.557	58	0.798	46.284	50	0.819	40.950	55.652
166	AEE-390	89	0.823	73.247	92	0.798	73.416	100	0.819	81.900	93.673
167	AEE-391	83	0.823	68.309	83	0.798	66.234	83	0.819	67.977	83.000
168	AEE-392	52	0.823	42.796	92	0.798	73.416	67	0.819	54.873	70.117
169	AEE-393	27	0.823	22.221	29	0.798	23.142	17	0.819	13.923	24.298
170	AEE-394	50	0.823	41.150	50	0.798	39.900	17	0.819	13.923	38.923
171	AEE-395	77	0.823	63.371	92	0.798	73.416	83	0.819	67.977	83.920
172	AEE-396	74	0.823	60.902	58	0.798	46.284	33	0.819	27.027	55.005
173	AEE-397	62	0.823	51.026	54	0.798	43.092	33	0.819	27.027	49.650
174	AEE-398	77	0.823	63.371	83	0.798	66.234	83	0.819	67.977	80.976
175	AEE-399	61	0.823	50.203	67	0.798	53.466	67	0.819	54.873	64.976
176	AEE-400	71	0.823	58.433	79	0.798	63.042	67	0.819	54.873	72.274
177	AEE-401	95	0.823	78.185	96	0.798	76.608	100	0.819	81.900	97.005
178	AEE-402	64	0.823	52.672	75	0.798	59.850	67	0.819	54.873	68.605
179	AEE-403	86	0.823	70.778	88	0.798	70.224	83	0.819	67.977	85.647
180	AEE-404	71	0.823	58.433	75	0.798	59.850	67	0.819	54.873	70.966
181	AEE-405	73	0.823	60.079	75	0.798	59.850	83	0.819	67.977	77.011
182	AEE-406	59	0.823	48.557	46	0.798	36.708	50	0.819	40.950	51.727
183	AEE-407	73	0.823	60.079	83	0.798	66.234	83	0.819	67.977	79.627
184	AEE-408	77	0.823	63.371	75	0.798	59.850	83	0.819	67.977	78.360
185	AEE-409	80	0.823	65.840	67	0.798	53.466	83	0.819	67.977	76.755

186	AEE-410	67	0.823	55.141	42	0.798	33.516	67	0.819	54.873	58.824
187	AEE-411	68	0.823	55.964	67	0.798	53.466	67	0.819	54.873	67.337
188	AEE-412	76	0.823	62.548	75	0.798	59.850	67	0.819	54.873	72.652
189	AEE-413	59	0.823	48.557	58	0.798	46.284	33	0.819	27.027	49.946
190	AEE-414	79	0.823	65.017	88	0.798	70.224	67	0.819	54.873	77.916
191	AEE-415	67	0.823	55.141	46	0.798	36.708	50	0.819	40.950	54.426
192	AEE-416	76	0.823	62.548	79	0.798	63.042	67	0.819	54.873	73.960
193	AEE-417	53	0.823	43.619	67	0.798	53.466	33	0.819	27.027	50.866
194	AEE-418	56	0.823	46.088	50	0.798	39.900	50	0.819	40.950	52.024
195	AEE-419	73	0.823	60.079	42	0.798	33.516	67	0.819	54.873	60.848
196	AEE-420	71	0.823	58.433	67	0.798	53.466	83	0.819	67.977	73.720
197	AEE-421	64	0.823	52.672	46	0.798	36.708	33	0.819	27.027	47.708
198	AEE-422	73	0.823	60.079	71	0.798	56.658	83	0.819	67.977	75.702
199	AEE-423	77	0.823	63.371	75	0.798	59.850	83	0.819	67.977	78.360
200	AEE-424	67	0.823	55.141	63	0.798	50.274	67	0.819	54.873	65.692
201	AEE-425	56	0.823	46.088	46	0.798	36.708	67	0.819	54.873	56.422
202	AEE-426	48	0.823	39.504	63	0.798	50.274	67	0.819	54.873	59.283
203	AEE-427	77	0.823	63.371	71	0.798	56.658	67	0.819	54.873	71.681
204	AEE-428	65	0.823	53.495	92	0.798	73.416	83	0.819	67.977	79.872
205	AEE-429	98	0.823	80.654	92	0.798	73.416	100	0.819	81.900	96.709
206	AEE-430	77	0.823	63.371	83	0.798	66.234	83	0.819	67.977	80.976
207	AEE-431	62	0.823	51.026	79	0.798	63.042	67	0.819	54.873	69.238
208	AEE-432	59	0.823	48.557	67	0.798	53.466	83	0.819	67.977	69.672
209	AEE-433	59	0.823	48.557	67	0.798	53.466	67	0.819	54.873	64.302
210	AEE-434	85	0.823	69.955	88	0.798	70.224	83	0.819	67.977	85.310
211	AEE-435	76	0.823	62.548	83	0.798	66.234	67	0.819	54.873	75.268
212	AEE-436	82	0.823	67.486	83	0.798	66.234	83	0.819	67.977	82.663
213	AEE-437	70	0.823	57.610	67	0.798	53.466	50	0.819	40.950	62.306
214	AEE-438	68	0.823	55.964	50	0.798	39.900	67	0.819	54.873	61.777
215	AEE-439	71	0.823	58.433	46	0.798	36.708	67	0.819	54.873	61.481
216	AEE-440	56	0.823	46.088	46	0.798	36.708	67	0.819	54.873	56.422
217	AEE-441	73	0.823	60.079	75	0.798	59.850	67	0.819	54.873	71.640
218	AEE-442	70	0.823	57.610	67	0.798	53.466	83	0.819	67.977	73.382
219	AEE-443	71	0.823	58.433	67	0.798	53.466	67	0.819	54.873	68.349
220	AEE-444	62	0.823	51.026	67	0.798	53.466	67	0.819	54.873	65.314
221	AEE-445	61	0.823	50.203	63	0.798	50.274	83	0.819	67.977	69.039
222	AEE-446	71	0.823	58.433	75	0.798	59.850	83	0.819	67.977	76.336
223	AEE-447	94	0.823	77.362	100	0.798	79.800	100	0.819	81.900	97.976
224	AEE-448	82	0.823	67.486	96	0.798	76.608	83	0.819	67.977	86.914

Notes: JSE - Job satisfaction extrinsic items
 JSI - Job satisfaction intrinsic items
 JSO - Overall job satisfaction

APPENDIX XIV

Level of Significance of Differences Between Sub-groups in Job Satisfaction Scores

Sl. No.	Sub-group Data				Sub-group Data				Student's 't'	Level of Significance
	Sub-group	n	Mean	Standard deviation	Sub-group	n	Mean	Standard deviation		
1	2	3	4	5	6	7	8	9	10	11
1	Superintending Engineers and above	20	68.41	14.347	Executive Engineers	56	69.55	12.463	(-) 0.332	Not significant
2	Superintending Engineers and above	20	68.41	14.347	Assistant Executive Engineers	148	69.96	12.941	(-) 0.429	Not significant
3	Executive Engineers	56	69.55	12.463	Assistant Executive Engineers	148	69.76	12.941	(-) 0.104	Not significant
4	Males	195	69.24	13.575	Females	29	71.91	7.239	(-) 0.033	Not significant
5	Age 41 years and above	168	69.67	13.508	Age 40 years and below	56	69.35	11.158	(-) 0.159	Not significant
6	Post graduate degree/training	72	69.33	12.356	Non post-graduates	151	69.69	13.286	(-) 0.193	Not significant
7	Degree and above	195	69.75	12.831	Without degree	28	68.37	13.975	(-) 0.524	Not significant
8	Salary Rs.4001 and above	37	69.45	13.096	Salary Rs.3001 to 4000	110	69.62	12.614	(-) 0.070	Not significant
9	Salary Rs.1001 to 3000	77	69.62	13.378	Salary Rs.4001 and above	37	69.45	13.096	0.063	Not significant
10	Salary Rs.3001 to 4000	110	69.62	12.614	Salary Rs.1001 to 3000	77	69.62	13.378	0.00	Not significant
11	Service 11 to 20 years	45	72.88	10.281	Service 11 to 20 years	82	68.15	13.580	2.022	0.05
12	Service 21 to 30 years	82	68.15	13.580	Service 21 to 30 years	79	69.76	11.235	(-) 0.813	Not significant
13	Service 31 years and above	79	69.76	11.235	Service upto 10 years	45	72.88	10.281	(-) 1.520	Not significant
14	Service upto 10 years	18	67.18	19.746	Service upto 10 years	82	68.15	13.580	(-) 0.248	Not significant
15	Service 11 to 20 years	45	72.88	10.281	Service 11 to 20 years	18	67.18	19.746	(-) 1.471	Not significant
16	Service 21 to 30 years	18	67.18	19.746	Service 31 years and above	79	69.76	11.235	(-) 0.739	Not significant
17	Service 31 years and above	115	69.96	13.732	Service 21 to 30 years	72	68.49	11.824	(-) 0.747	Not significant
18	Southern region	72	68.49	11.824	Central region	37	70.57	12.460	(-) 0.846	Not significant
19	Northern region	37	70.57	12.460	Northern region	115	69.96	13.732	(-) 0.239	Not significant
20	More organisational involved group	56	79.68	9.313	Southern region	115	69.96	13.732	8.553	0.01
21	Intrinsic group	34	72.27	11.748	Less organisational group	56	59.90	14.403	1.130	Not significant
22	Very intrinsic group	20	75.34	10.111	Extrinsic group	169	69.48	13.315	1.982	0.05
23	Intrinsic group	34	72.27	11.748	Very extrinsic group	137	68.98	13.728	(-) 0.957	Not significant
24	Extrinsic group	164	69.48	13.315	Very intrinsic group	20	75.34	10.111	0.321	Not significant
					Very extrinsic group	137	68.98	13.728		

Job Involvement Responses: Raw Scores and Moderated Scores

I t e m s															Mode-					

S1. Subject	RC/	-----														Total	rated			
No.	Code	No	S	1	2*	3 \emptyset	4	5* \emptyset	6	7*	8	9	10 \emptyset	11	12*	13	14* \emptyset	15	Score	Score

1	SE-101	RC	MDA	A	DA	MDA		DA	A	SDA	DA	DA	DA	A	DA	MA	MDA			
		S	3	0	5	3	0	2	0	1	2	5	2	0	2	0	3		28	46.67
2	SE-102	RC	MA	MDA	DA	MDA	DA	DA	DA	MA	DA	DA	MA	MDA	A	MA	MA			
		S	4	0	5	3	0	2	0	4	2	5	4	0	5	0	4		38	63.33
3	SE-103	RC	MDA	SA	MA	A	MDA	SDA	A	DA	MA	DA	DA	MDA	DA	DA	A			
		S	3	0	3	5	0	1	0	2	4	5	2	0	2	0	5		32	53.33
4	SE-104	RC	MA	A	DA	A	SDA	MDA	MDA	MA	A	DA	MA	A	MDA	MDA	MDA			
		S	4	0	5	5	0	3	0	4	5	5	4	0	3	0	3		41	68.33
5	SE-105	RC	MDA	A	MA	MA	DA	MA	MA	MDA	MDA	DA	MDA	MDA	DA	MA	MA			
		S	3	0	3	4	0	4	0	3	3	5	3	0	2	0	4		34	56.67
6	SE-106	RC	A	A	SA	MA	DA	MA	MDA	A	MDA	MDA	A	MA	A	DA	A			
		S	5	0	1	4	0	4	0	5	3	4	5	0	5	0	5		41	68.33
7	SE-107	RC	A	SA	DA	A	A	MDA	MA	MA	MA	MDA	MDA	A	A	DA	A			
		S	5	0	5	5	0	3	0	4	4	4	3	0	5	0	5		43	71.67
8	SE-108	RC	MA	SA	DA	SA	SDA	MA		MA	MDA	DA	A	SA	SA	SDA	MDA			
		S	4	0	5	6	0	4	0	4	3	5	5	0	6	0	3		45	75.00
9	SE-109	RC	A	SA	MA	A	DA	MA	A	A	A	DA	MA	A	A	MDA	A			
		S	5	0	3	5	0	4	0	5	5	5	4	0	5	0	5		46	76.67
10	SE-110	RC	DA	A	DA	A	DA	DA	A	DA	A	DA	DA	A	A	DA	DA			
		S	2	0	5	5	0	2	0	2	5	5	2	0	5	0	2		35	58.33
11	SE-111	RC	DA	DA	MA	A	MA	MDA	MDA	MA	A	DA	MDA	DA	MDA	MA	MDA			
		S	2	0	3	5	0	3	0	4	5	5	3	0	3	0	3		36	60.00
12	SE-112	RC	A	A	MA	A	DA	SDA	MA	MA	MA	DA	DA	MDA	MA	DA	A			
		S	5	0	3	5	0	1	0	4	4	5	2	0	4	0	5		38	63.33
13	SE-113	RC	A	A	DA	A	DA	MA	A	A	DA	DA	A	A	MA	DA	A			
		S	5	0	5	5	0	4	0	5	2	5	5	0	4	0	5		45	75.00
14	SE-114	RC	MA	SA	A	SA	SDA	DA	MA	MA	DA	SA	MDA	SA	A	DA	SA			
		S	4	0	2	6	0	2	0	4	2	1	3	0	5	0	6		35	58.33
15	SE-115	RC	A	A	MA	A	DA	DA	DA	DA	A	DA	MA	MA	A	MA	A			

	S	5	0	3	5	0	2	0	2	5	5	4	0	5	0	5	41	68.33
16 SE-116	RC	A	SA	MA	SA	SDA	A	MA	MA	A	SDA	DA	A	MA	MA	MA		
	S	5	0	3	6	0	5	0	4	5	6	2	0	4	0	4	44	73.33
17 SE-117	RC	A	SA	DA	A	SDA	MA	A	DA	MDA	DA	MDA	A	MDA	MA	A		
	S	5	0	5	5	0	4	0	2	3	5	3	0	3	0	5	40	66.67
18 SE-118	RC	MDA	A	DA	A	DA	DA	MDA	MA	MA	MDA	MA	A	MDA	MA	MDA		
	S	3	0	5	5	0	2	0	4	4	4	4	0	3	0	3	37	61.67
19 SE-119	RC	MA	SA	A	SA	DA	A	MA	MA	A	SDA	MDA	MA	MDA	A	A		
	S	4	0	2	6	0	5	0	4	5	6	3	0	3	0	5	43	71.66
20 SE-120	RC	SA	SA	MDA	SA	DA	MA	A	A	A	DA	DA	MA	MDA	DA	SDA		
	S	6	0	4	6	0	4	0	5	5	5	2	0	3	0	1	41	68.33
21 EE-201	RC	A	A	DA	A	DA	MDA	MA	MA	DA	DA	A	A	A	DA	MDA		
	S	5	0	5	5	0	3	0	4	2	5	5	0	5	0	3	42	70.00
22 EE-202	RC	MA	A	MDA	A	A	MA	A	MA	MDA	MDA	A	A	MA	MA	A		
	S	4	0	4	5	0	4	0	4	3	4	5	0	4	0	5	42	70.00
23 EE-203	RC	MA	A	DA	A	MDA	MDA	MA	MDA	DA	MA	MA	A	A	DA	MA		
	S	4	0	5	5	0	3	0	3	2	3	4	0	5	0	4	38	63.33
24 EE-204	RC	DA	A	A	A	DA	DA	DA	DA	A	DA	A	DA	A	DA			
	S	2	0	2	5	0	2	0	2	2	2	2	0	2	0	2	23	38.33
25 EE-205	RC	A	SA	SDA	SA	DA	A	SDA	SA	SA	DA	SA	A	SA	SDA	SA		
	S	5	0	6	6	0	5	0	6	6	5	6	0	6	0	6	57	95.00
26 EE-206	RC	MA	A	MDA	A	MDA	MA	MA	MA	A	MDA	MA	A	MA	MDA	A		
	S	4	0	4	5	0	4	0	4	5	4	4	0	4	0	5	43	71.67
27 EE-207	RC	A	A	SDA	SA	SDA	SA	SA	SA	SA	SDA	A	SA	SA	SDA	SA		
	S	5	0	6	6	0	6	0	6	6	6	5	0	6	0	6	58	96.67
28 EE-208	RC	MA	MDA	SDA	SA	MDA	A	A	SA	A	SDA	A	A	SA	MDA	SA		
	S	4	0	6	6	0	5	0	6	5	6	5	0	6	0	6	55	91.67
29 EE-209	RC	MA	SA	MA	A	DA	DA	MA	A	MA	DA	MA	MA	MA	MA	MA		
	S	4	0	3	5	0	2	0	5	4	5	4	0	4	0	4	40	66.67
30 EE-210	RC	A	A	SDA	SA	SDA	DA	SDA	MA	MA	DA	MA	MA	MA	DA	A		
	S	5	0	6	6	0	2	0	4	4	5	4	0	4	0	5	45	75.00
31 EE-211	RC	A	A	DA	A	MDA	A	A	A	A	MDA	A	A	A	MA	MA		
	S	5	0	5	5	0	5	0	5	5	4	5	0	5	0	4	48	80.00
32 EE-212	RC	MA	A	DA	A	MA	DA	MA	MDA	DA	DA	MA	MA	MDA	MA	MA		
	S	4	0	5	5	0	2	0	3	2	5	4	0	3	0	4	37	61.67
33 EE-213	RC	MDA	MA	A	MA	MA	DA	DA	MDA	DA	DA	MDA	MDA	DA	MA	DA		
	S	3	0	2	4	0	2	0	3	2	5	3	0	2	0	2	28	46.67
34 EE-214	RC	MA	A	DA	A	DA	MDA	DA	A	MDA	DA	DA	A	MDA	MA	MA		
	S	4	0	5	5	0	3	0	5	3	5	2	0	3	0	4	39	65.00

35	EE-215	RC	SA	SA	DA	SA	DA	SA	MA	SA	SA	SDA	MA	A	SA	DA	SA		
		S	6	0	5	6	0	6	0	6	6	6	4	0	6	0	6	57	95.00
36	EE-216	RC	DA	A	MA	MA	DA	SDA	MDA	DA	DA	DA	DA	A	MDA	MA	DA		
		S	2	0	3	4	0	1	0	2	2	5	2	0	3	0	2	26	43.33
37	EE-217	RC	MDA	MA	SDA	A	DA	DA	SDA	MDA	MDA	MDA	DA	MA	DA	DA	MDA		
		S	3	0	6	5	0	2	0	3	3	4	2	0	2	0	3	33	55.00
38	EE-218	RC	A	A	DA	A	DA	MA	A	MA	A	DA	A	A	A	MDA	A		
		S	5	0	5	5	0	4	0	4	5	5	5	0	5	0	5	48	80.00
39	EE-219	RC	SDA	A	A	SA	A	SDA	SDA	SDA	A	SDA	SDA	A	SA	DA	DA		
		S	1	0	2	6	0	1	0	1	5	6	1	0	6	0	2	31	86.11
40	EE-220	RC	MA	MA	DA	A	MDA	MDA	MA	DA	DA	MDA	DA	MA	DA	MA	MDA		
		S	4	0	5	5	0	3	0	2	2	4	2	0	2	0	3	32	53.33
41	EE-221	RC	MA	A	DA	A	DA	MA	MDA	A	DA	DA	MDA	DA	MDA	DA	A		
		S	4	0	5	5	0	4	0	5	2	5	3	0	3	0	5	41	68.33
42	EE-222	RC	MDA	A	DA	MA	DA	MDA	DA	MA	MA	MDA	A	DA	MA	DA	MDA		
		S	3	0	5	4	0	3	0	4	4	4	5	0	4	0	3	39	65.00
43	EE-223	RC	MDA	MA	DA	A	DA	MDA	MA	A	MA	MDA	MA	A	A	MDA	A		
		S	3	0	5	5	0	3	0	5	4	4	4	0	5	0	5	43	71.67
44	EE-224	RC	DA	SA	SA	SA	DA	MA	DA	DA	DA	DA	DA	DA	DA	SA	A		
		S	2	0	1	6	0	4	0	2	2	5	2	0	2	0	5	31	51.67
45	EE-225	RC	DA	A	MDA	A	DA	DA	A	DA	DA	DA	DA	DA	DA	MA	DA		
		S	2	0	4	5	0	2	0	2	2	5	2	0	2	0	2	28	46.67
46	EE-226	RC	MDA	A	MA	A	DA	A	A	MA	A	DA	MA	MA	MA	MDA	A		
		S	3	0	3	5	0	5	0	4	5	5	4	0	4	0	5	43	71.67
47	EE-227	RC	DA	MDA	SA	DA	A	SDA	DA	DA	DA	A	DA	DA	DA	A	DA		
		S	2	0	1	2	0	1	0	2	2	2	2	0	2	0	2	18	30.00
48	EE-228	RC	A	SA	MDA	A	DA	MA	MDA	DA	DA	SDA	DA	SDA	MA	MDA	MA		
		S	5	0	4	5	0	4	0	2	2	6	2	0	4	0	4	38	63.33
49	EE-229	RC	MA	MA	DA	A	MDA	DA		A	A	DA	MA	MDA	MA	DA	A		
		S	4	0	5	5	0	2	0	5	5	5	4	0	4	0	5	44	73.33
50	EE-230	RC	DA	MDA	A	MA	A	DA	MA	DA	DA	A	DA	A	A	A	DA		
		S	2	0	2	4	0	2	0	2	2	2	2	0	5	0	2	25	41.67
51	EE-231	RC	SA	SA	A	A	DA	A	A	MA	MA	DA	A	A	A	DA	A		
		S	6	0	2	5	0	5	0	4	4	5	5	0	5	0	5	46	76.67
52	EE-232	RC	MA	SA	SDA	SA	SDA	SA	A	A	A	DA	A	A	SA	DA	A		
		S	4	0	6	6	0	6	0	5	5	5	5	0	6	0	5	53	88.33
53	EE-233	RC	MA	SA	MDA	A	DA	MA	A	MA	A	DA	MDA	A	MA	MDA	MA		
		S	4	0	4	5	0	4	0	4	5	5	3	0	4	0	4	42	70.00
54	EE-234	RC	MA	SA	MDA	A	DA	MA	A	MA	A	DA	MDA	A	MA	MDA	MA		

	S	4	0	4	5	0	4	0	4	5	5	3	0	4	0	4	42	70.00
55	EE-235	RC	A	SA	MA	SA	DA	MA	MA	A	A	DA	MDA	A	MDA	DA	A	
	S	5	0	3	6	0	4	0	5	5	5	3	0	3	0	5	44	73.33
56	EE-236	RC	DA	SA	SDA	SA	SDA	SA	MA	SA	A	SDA	DA	A	DA	DA	A	
	S	2	0	6	6	0	6	0	6	5	6	2	0	2	0	5	46	76.67
57	EE-237	RC	SA	SA	DA	SA	DA	SA	DA	SA	SA	DA	SA	DA	SA	DA	SA	
	S	6	0	5	6	0	6	0	6	6	5	6	0	6	0	6	58	96.67
58	EE-238	RC	A	SA	DA	A	MDA	A	MA	A	MA	DA	MA	MA	A	DA	A	
	S	5	0	5	5	0	5	0	5	4	5	4	0	5	0	5	48	80.00
59	EE-239	RC	A	DA	MA	DA	MDA	DA	DA	DA	MA	DA	MDA	MA	DA	A	MDA	
	S	5	0	3	2	0	2	0	2	4	5	3	0	2	0	3	31	51.67
60	EE-240	RC	DA	A	A	SA	DA	SA	DA	A	SA	SDA	MDA	DA	MDA	SDA	A	
	S	2	0	2	6	0	6	0	5	6	6	3	0	3	0	5	44	73.33
61	EE-241	RC	A	A	SA	SA	SDA	DA	DA	DA	MDA	DA	DA	MA	A	MA	DA	
	S	5	0	1	6	0	2	0	2	3	5	2	0	5	0	2	33	55.00
62	EE-242	RC	A	SA	DA	A	DA	A	A	A	MDA	A	A	A	DA	A		
	S	5	0	5	5	0	5	0	5	5	4	5	0	5	0	5	49	81.67
63	EE-243	RC	SDA	SA	SDA	SA	SDA	SA		SA	SA	SDA	SA		SA	SDA	SA	
	S	1	0	6	6	0	6	0	6	6	6	6	0	6	0	6	55	91.67
64	EE-244	RC	DA	SA	SDA	SA	SDA	A	A	A	A	SDA	A	A	A	DA	DA	
	S	2	0	6	6	0	5	0	5	5	6	5	0	5	0	2	47	78.33
65	EE-245	RC	MA	A	DA	MA	DA	MDA	MA	MA	DA	DA	DA	A	MA	MDA	MA	
	S	4	0	5	4	0	3	0	4	2	5	2	0	4	0	4	37	61.67
66	EE-246	RC	SA	A	DA	SA	MDA	SA	A	A	SA	DA	MA	A	SA	SDA	A	
	S	6	0	5	6	0	6	0	5	6	5	4	0	6	0	5	54	90.00
67	EE-247	RC	A	SA	DA	SA	SDA	MA	MA	A	SDA	DA	A	DA	A	DA	DA	
	S	5	0	5	6	0	4	0	5	1	5	5	0	5	0	2	43	71.67
68	EE-248	RC	A	A	DA	A	A	MA	MDA	MA	MA	DA	MDA	MA	MA	DA	A	
	S	5	0	5	5	0	4	0	4	4	5	3	0	4	0	5	44	73.33
69	EE-249	RC	DA	A	MA	A	DA	MA	DA	MA	MA	DA	MA	A	A	DA	MDA	
	S	2	0	3	5	0	4	0	4	4	5	4	0	5	0	3	39	65.00
70	EE-250	RC	SDA	A	SDA	SA	SDA	SA	SA	SA	SA	SDA	SA	SA	SA	A	SA	
	S	1	0	6	6	0	6	0	6	6	6	6	0	6	0	6	55	91.67
71	EE-251	RC	A	SA	SDA	SA	SDA	A	DA	MA	MDA	SDA	DA	A	A	A	A	
	S	5	0	6	6	0	5	0	4	3	6	2	0	5	0	5	47	78.33
72	EE-252	RC	DA	A	A	A	DA	MA	DA	DA	DA	DA	DA	A	DA	A	DA	
	S	2	0	2	5	0	4	0	2	2	5	2	0	2	0	2	28	46.67
73	EE-253	RC	MA	MDA	MDA	MA	DA	MDA	A	SDA	A	DA	DA	MA	DA	MA	A	
	S	4	0	4	4	0	3	0	1	5	5	2	0	2	0	5	35	58.33

74	EE-254	RC	SA	SA	SA	SA	SDA	DA	SDA	SDA	SA	SDA	SDA	SDA	SDA	MA	DA		
		S	6	0	1	6	0	2	0	1	6	6	1	0	1	0	2	32	53.33
75	EE-255	RC	A	A	SDA	SA	SDA	SA	SA	A	SA	SDA	A	SA	SA	SDA	SA		
		S	5	0	6	6	0	6	0	5	6	6	5	0	6	0	6	57	95.00
76	EE-256	RC	DA	A	DA	SA	MDA	MA	MA	MA	A	DA	A	SA	A	DA	MA		
		S	2	0	5	6	0	4	0	4	5	5	5	0	5	0	4	45	75.00
77	AEE-301	RC	A	SA	DA	SA	SDA	A	A	A	A	SDA	A	A	A	SDA	A		
		S	5	0	5	6	0	5	0	5	5	6	5	0	5	0	5	52	86.67
78	AEE-302	RC	MDA	A	A	A	MDA	MDA	MA	MDA	MDA	A	MDA	MA	MDA	MA	DA		
		S	3	0	2	5	0	3	0	3	3	2	3	0	3	0	2	29	48.33
79	AEE-303	RC	SDA	MA	A	A	MA	MDA	A	DA	MDA	DA	DA	DA	DA	A	MDA		
		S	1	0	2	5	0	3	0	2	3	5	2	0	2	0	3	28	46.67
80	AEE-304	RC	A	SA	SDA	SA	DA	SA	SA	A	A	SDA	A	SA	SA	DA	DA		
		S	5	0	6	6	0	6	0	5	5	6	5	0	6	0	2	52	86.67
81	AEE-305	RC	MA	A	MDA	A	DA	A	A	A	MA	SDA	DA	A	A	A	SA		
		S	4	0	4	5	0	5	0	5	4	6	2	0	5	0	6	46	76.67
82	AEE-306	RC	A	A	MA	SA	SDA	A	DA	MDA	A	DA	MDA	MA	MA	DA	A		
		S	5	0	3	6	0	5	0	3	5	5	3	0	4	0	5	44	73.33
83	AEE-307	RC	MA	MDA	A	A	A	MA	A	MA	A	DA	MA	A	MA	DA	DA		
		S	4	0	2	5	0	4	0	4	5	5	4	0	4	0	2	39	65.00
84	AEE-308	RC	A	A	DA	A	MDA	MDA	A	A	DA	MDA	MA	A	A	MDA	MA		
		S	5	0	5	5	0	3	0	5	2	4	4	0	5	0	4	42	70.00
85	AEE-309	RC	DA	A	MDA	MDA	MDA	MDA	A	MA	MA	DA	MA	A	A	MDA	MA		
		S	2	0	4	3	0	3	0	4	4	5	4	0	5	0	4	38	63.33
86	AEE-310	RC	DA	A	SA	SA	MA	SA	A	A	MA	DA	A	A	SA	DA	A		
		S	2	0	1	6	0	6	0	5	4	5	5	0	6	0	5	45	75.00
87	AEE-311	RC	A	SA	DA	A	DA	MDA	DA	MA	MDA	DA	DA	MA	MA	DA	MDA		
		S	5	0	5	5	0	3	0	4	3	5	2	0	4	0	3	39	65.00
88	AEE-312	RC	DA	A	DA	A	MA	MDA	MA	MDA	DA	DA	DA	A	DA	DA	MA		
		S	2	0	5	5	0	3	0	3	2	5	2	0	2	0	4	33	55.00
89	AEE-313	RC	MDA	MA	DA	A	DA	MA	MA	MDA	DA	DA	MDA	A	MA	MDA	MDA		
		S	3	0	5	5	0	4	0	3	2	5	3	0	4	0	3	37	61.67
90	AEE-314	RC	DA	A	A	MA	MDA	SDA	MDA	SDA	SDA	SDA	DA	SDA	SDA	A	SDA		
		S	2	0	2	4	0	1	0	1	1	6	2	0	1	0	1	21	35.00
91	AEE-315	RC	SA	A	DA	A	A	A	A	A	DA	DA	A	MA	A	DA	MA		
		S	6	0	5	5	0	5	0	5	2	5	5	0	5	0	4	47	78.33
92	AEE-316	RC	MA	A	DA	A	DA	DA	A	A	A	DA	A	A	A	DA	MA		
		S	4	0	5	5	0	2	0	5	5	5	5	0	5	0	4	45	75.00
93	AEE-317	RC	A	A	DA	A	DA	MA	MDA	A	MA	DA	MA	A	A	DA	MA		

		S	5	0	5	5	0	4	0	5	4	5	4	0	5	0	4	46	76.67
94	AEE-318	RC	DA	A	DA	A	DA	A	SA	A	MDA	DA	A	SA	SA	SDA	A		
		S	2	0	5	5	0	5	0	5	3	5	5	0	6	0	5	46	76.67
95	AEE-319	RC	MA	SA	MA	SA	MA	A	DA	MA	SA	SDA	A	SA	A	SDA	SA		
		S	4	0	3	6	0	5	0	4	6	6	5	0	5	0	6	50	83.33
96	AEE-320	RC	MA	A	DA	A	DA	MDA	A	A	A	DA	A	A	A	DA	MA		
		S	4	0	5	5	0	3	0	5	5	5	5	0	5	0	4	46	76.67
97	AEE-321	RC	DA	MA	DA	A	DA	DA	A	MA	A	DA	A	A	A	A	MDA		
		S	2	0	5	5	0	2	0	4	5	5	5	0	5	0	3	41	68.33
98	AEE-322	RC	MDA	A	A	MDA	MDA	DA	DA	DA	DA	DA	DA	MA	MDA	MA	MDA		
		S	3	0	2	3	0	2	0	2	2	5	2	0	3	0	3	27	45.00
99	AEE-323	RC	MA	A	MDA	SA	DA	SDA	MA	MA	MDA	MDA	A	DA	DA	DA	MDA		
		S	4	0	4	6	0	1	0	4	3	4	5	0	2	0	3	36	60.00
100	AEE-324	RC	DA	MA	DA	A	MDA	DA	MDA	DA	MDA	MDA	MDA	MDA	DA	DA	MDA		
		S	2	0	5	5	0	2	0	2	3	4	3	0	2	0	3	31	51.67
101	AEE-325	RC	DA	MA	DA	MA	DA	DA	DA	MDA	MDA	DA	MA	A	MA	MDA	MDA		
		S	2	0	5	4	0	2	0	3	3	5	4	0	4	0	3	35	58.33
102	AEE-326	RC	MA	SA	DA	A	DA	MA	A	A	MA	DA	MDA	A	MA	MA	MA		
		S	4	0	5	5	0	4	0	5	4	5	3	0	4	0	4	43	71.67
103	AEE-327	RC	MA	SA	DA	A	DA	MA	A	A	MA	DA	MDA	A	MA	MA	MA		
		S	4	0	5	5	0	4	0	5	4	5	3	0	4	0	4	43	71.67
104	AEE-328	RC	MA	SA	DA	A	DA	MA	A	A	MA	DA	MDA	A	MA	MA	MA		
		S	4	0	5	5	0	4	0	5	4	5	3	0	4	0	4	43	71.67
105	AEE-329	RC	SA	SA	A	A	SDA	SA	SA	A	SA	A	SA	SA	SA	SDA	SA		
		S	6	0	2	5	0	6	0	5	6	2	6	0	6	0	6	50	83.33
106	AEE-330	RC	A	A	DA	A	DA	MDA	A	DA	MA	DA	A	A	A	DA	MA		
		S	5	0	5	5	0	3	0	2	4	5	5	0	5	0	4	43	71.67
107	AEE-331	RC	SDA	A	A	A	DA	DA	A	DA	DA	DA	DA	A	DA	DA	DA		
		S	1	0	2	5	0	2	0	2	2	5	2	0	2	0	2	25	41.67
108	AEE-332	RC	A	SA	SDA	SA	SDA	A	DA	A	MA	SDA	A	MA	SA	DA	A		
		S	5	0	6	6	0	5	0	5	4	6	5	0	6	0	5	53	88.33
109	AEE-333	RC	A	MA	MDA	A	A	MA	MDA	A	MA	DA	MA	A	A	MDA	A		
		S	5	0	4	5	0	4	0	5	4	5	4	0	5	0	5	46	76.67
110	AEE-334	RC	A	A	A	MA	MA	DA	DA	A	DA	DA	DA	DA	DA	MDA	DA		
		S	5	0	2	4	0	2	0	5	2	5	2	0	2	0	2	31	51.67
111	AEE-335	RC	DA	SA	A	A	DA	DA	A	MA	MDA	DA	DA	DA	DA	DA	MA		
		S	2	0	2	5	0	2	0	4	3	5	2	0	2	0	4	31	51.67
112	AEE-336	RC	A	MA	DA	A	DA	DA	DA	DA	SDA	DA	SDA	SDA	SDA	DA	A		
		S	5	0	5	5	0	2	0	2	1	5	1	0	1	0	5	32	53.33

113	AEE-337	RC	SDA	SA	SA	MA	SDA	SDA	SDA	MDA	SA	MA	MDA	DA	MDA	A	DA		
		S	1	0	1	4	0	1	0	3	6	3	3	0	3	0	2	27	45.00
114	AEE-338	RC	MA	MA	DA	A	DA	MDA	DA	MDA	DA	DA	MDA	A	MA	MA	MDA		
		S	4	0	5	5	0	3	0	3	2	5	3	0	4	0	3	37	61.67
115	AEE-339	RC	SA	A	A	A	A	MA	MA	DA	A	DA	A	A	A	DA	DA		
		S	6	0	2	5	0	4	0	2	5	5	5	0	5	0	2	41	68.33
116	AEE-340	RC	DA	MDA	A	A	SDA	DA	DA	MDA	MDA	DA	SDA	DA	SDA	MA	DA		
		S	2	0	2	5	0	2	0	3	3	5	1	0	1	0	2	26	43.33
117	AEE-341	RC	MDA	MDA	MDA	MDA	MA	DA	MA	DA	DA	DA	MDA	MA	MDA	MDA	DA		
		S	3	0	4	3	0	2	0	2	2	5	3	0	3	0	2	29	48.33
118	AEE-342	RC	MA	MDA	A	MDA	MA	MDA	A	MA	MA	DA	A	MA	MA	MA	DA		
		S	4	0	2	3	0	3	0	4	4	5	5	0	4	0	2	36	60.00
119	AEE-343	RC	SA	A	SDA	SA	SDA	MDA	A	A	A	SDA	SA	SA	A	SDA	DA		
		S	6	0	6	6	0	3	0	5	5	6	6	0	5	0	2	50	83.33
120	AEE-344	RC	MA	MA	DA	A	DA	SA	A	MA	MA	DA	A	A	A	SDA	A		
		S	4	0	5	5	0	6	0	4	4	5	5	0	5	0	5	48	80.00
121	AEE-345	RC	SA	A	MA	SA	DA	MDA	MA	MDA	DA	SDA	A	MA	SA	MA	DA		
		S	6	0	3	6	0	3	0	3	2	6	5	0	6	0	2	42	70.00
122	AEE-346	RC	MDA	A	DA	MA	DA	MDA	DA	A	A	DA	A	A	A	SDA	MDA		
		S	3	0	5	4	0	3	0	5	5	5	5	0	5	0	3	43	71.67
123	AEE-347	RC	A	SA	DA	SA	MDA	MA	MA	A	A	SDA	A	SA	A	DA	SA		
		S	5	0	5	6	0	4	0	5	5	6	5	0	5	0	6	52	86.67
124	AEE-348	RC	MDA	A	SA	A	DA	A	A	MA	MDA	DA	MA	A	MA	DA	A		
		S	3	0	1	5	0	5	0	4	3	5	4	0	4	0	5	39	65.00
125	AEE-349	RC	MA	A	MDA	A	DA	A	MDA	A	DA	DA	MDA	MDA	MDA	DA	MA		
		S	4	0	4	5	0	5	0	5	2	5	3	0	3	0	4	40	66.67
126	AEE-350	RC	SDA	A	A	MDA	DA	DA	DA	DA	DA	DA	DA	MA	DA	A	DA		
		S	1	0	2	3	0	2	0	2	2	5	2	0	2	0	2	23	38.33
127	AEE-351	RC	MA	A	DA	A	DA	MDA	A	DA	DA	DA	DA	MDA	DA	DA	A		
		S	4	0	5	5	0	3	0	2	2	5	2	0	2	0	5	35	58.33
128	AEE-352	RC	A	SA	DA	A	SDA	DA	DA	A	A	DA	A	A	SA	DA	DA		
		S	5	0	5	5	0	2	0	5	5	5	5	0	6	0	2	45	75.00
129	AEE-353	RC	MDA	A	DA	A	DA	MA	DA	MA	MA	DA	MA	MA	A	DA	A		
		S	3	0	5	5	0	4	0	4	4	5	4	0	5	0	5	44	73.33
130	AEE-354	RC	DA	A	A	A	DA	DA	DA	DA	DA	DA	DA	A	MDA	A	DA		
		S	2	0	2	5	0	2	0	2	2	5	2	0	3	0	2	27	45.00
131	AEE-355	RC	MA	A	DA	A	MDA	MA	MA	MA	MA	SDA	MA	A	MA	DA	MA		
		S	4	0	5	5	0	4	0	4	4	6	4	0	4	0	4	44	73.33
132	AEE-356	RC	SA	SA	SDA	SA	A	SDA	DA	A	MA	SDA	MA	SA	A	DA	A		

		S	6	0	6	6	0	1	0	5	4	6	4	0	5	0	5	48	80.00
133	AEE-357	RC	A	SA	DA	A	SDA	A	SA	A	A	SDA	A	SA	SA	SDA	A		
		S	5	0	5	5	0	5	0	5	5	6	5	0	6	0	5	52	86.67
134	AEE-358	RC	DA	A	DA	A	DA	DA	A	DA	DA	DA	MDA	A	MA	A	MDA		
		S	2	0	5	5	0	2	0	2	2	5	3	0	4	0	3	33	55.00
135	AEE-359	RC	MA	A	MA	MA	A	MA	MDA	MDA	DA	DA	SDA	MDA	MA	MDA	DA		
		S	4	0	3	4	0	4	0	3	2	5	1	0	4	0	2	32	53.33
136	AEE-360	RC	MA	A	A	A	DA	MDA	MA	DA	MDA	MDA	MA	MA	MA	SA	DA		
		S	4	0	2	5	0	3	0	2	3	4	4	0	4	0	2	33	55.00
137	AEE-361	RC	MA	A	A	A	A	A	MA	MA	MA	MA	A	A	DA	A			
		S	4	0	2	5	0	5	0	4	4	3	4	0	5	0	5	41	68.33
138	AEE-362	RC	MA	A	SDA	A	SDA	DA	DA	MA	MA	DA	MA	A	A	DA	SA		
		S	4	0	6	5	0	2	0	4	4	5	4	0	5	0	6	45	75.00
139	AEE-363	RC	MA	A	A	MA	MA	DA	DA	DA	MDA	DA	DA	A	DA	DA	MDA		
		S	4	0	2	4	0	2	0	2	3	5	2	0	2	0	3	29	48.33
149	AEE-364	RC	SA	SA	A	SA	MA	MA	A	MA	MA	SA	SA	A	SA	MDA	SDA		
		S	6	0	2	6	0	4	0	4	4	1	6	0	6	0	1	40	66.67
141	AEE-365	RC	MDA	A	MDA	MA	MDA	MDA	DA	DA	MDA	DA	DA	MA	A	MDA	MA		
		S	3	0	4	4	0	3	0	2	3	5	2	0	5	0	4	35	58.33
142	AEE-366	RC	A	SA	SDA	A	SDA	SA	A	A	A	DA	MDA	A	SA	SDA	A		
		S	5	0	6	5	0	6	0	5	5	5	3	0	6	0	5	51	85.00
143	AEE-367	RC	MDA	SA	A	DA	SDA	SDA	DA	DA	SDA	MA	DA	MDA	SDA	MA	A		
		S	3	0	2	2	0	1	0	2	1	3	2	0	2	0	5	23	38.33
144	AEE-368	RC	DA	DA	A	MA	A	DA	MA	MDA	DA	DA	DA	DA	MDA	MDA	DA		
		S	2	0	2	4	0	2	0	3	2	5	2	0	3	0	2	27	45.00
145	AEE-369	RC	A	A	DA	SA	DA	SA	DA	SA	A	DA	A	SA	SA	SDA	A		
		S	5	0	5	6	0	6	0	6	5	5	5	0	6	0	5	54	90.00
146	AEE-370	RC	A	A	A	A	A	MA	MA	MA	A	MDA	SDA	A	A	DA	A		
		S	5	0	2	5	0	4	0	4	5	4	1	0	5	0	5	40	66.67
147	AEE-371	RC	MA	SA	MDA	MA	MDA	MA	MA	DA	MDA	DA	MA	A	MA	A	A		
		S	4	0	4	4	0	4	0	2	3	5	4	0	4	0	5	39	65.00
148	AEE-372	RC	MA	SA	MDA	MA	MDA	MA	MA	DA	MDA	DA	MA	A	MA	A	A		
		S	4	0	4	4	0	4	0	2	3	5	4	0	4	0	5	39	65.00
149	AEE-373	RC	A	A	DA	A	DA	SDA	SDA	A	MA	DA	A	MA	MA	DA	A		
		S	5	0	5	5	0	1	0	5	4	5	5	0	4	0	5	44	73.33
150	AEE-374	RC	A	A	MDA	A	MA	MA	MA	MA	MA	DA	MA	MA	MA	MDA	MDA		
		S	5	0	4	5	0	4	0	4	4	5	4	0	4	0	3	42	70.00
151	AEE-375	RC	A	A	DA	A	DA	A	A	A	A	DA	MA	MA	MA	DA	MDA		
		S	5	0	5	5	0	5	0	5	5	5	4	0	4	0	3	46	76.67

152	AEE-376	RC	MA	A	DA	A	DA	A	A	DA	MDA	DA	DA	A	A	MA	DA		
		S	4	0	5	5	0	5	0	2	3	5	2	0	5	0	2	38	63.33
153	AEE-377	RC	MA	MA	MDA	A	DA	MA	MA	MA	MA	MDA	MA	MA	A	MDA	MA		
		S	4	0	4	5	0	4	0	4	4	4	4	0	5	0	4	42	70.00
154	AEE-378	RC	A	A	DA	SA	DA	SA	SA	SA	A	A	SA	SA	SA	DA	A		
		S	5	0	5	6	0	6	0	6	5	2	6	0	6	0	5	52	86.67
155	AEE-379	RC	SDA	SA	SDA	SA	SDA	A	MA	SA	A	SDA	A	SA	A	DA	A		
		S	1	0	6	6	0	5	0	6	5	6	5	0	5	0	5	50	83.33
156	AEE-380	RC	DA	A	MA	MA	DA	SDA	SA	DA	SDA	DA	MDA	MA	MDA	MA	MA		
		S	2	0	3	4	0	1	0	2	1	5	3	0	3	0	4	28	46.67
157	AEE-381	RC	MDA	A	MA	A	MDA	MDA	MA	MA	MA	MDA	MA	A	A	MA	MA		
		S	3	0	3	5	0	3	0	4	4	4	4	0	5	0	4	39	65.00
158	AEE-382	RC	DA	A	A	MA	DA	MA	MA	DA	DA	DA	DA	A	A	MA	DA		
		S	2	0	2	4	0	4	0	2	2	5	2	0	5	0	2	30	50.00
159	AEE-383	RC	MA	A	DA	MA	MDA	MA	MA	MA	MDA	MDA	MA	MA	MA	MA	MA		
		S	4	0	5	4	0	4	0	4	3	4	4	0	4	0	4	40	66.67
160	AEE-384	RC	A	MA	A	A	DA	MDA	MDA	MDA	A	DA	A	A	A	DA	A		
		S	5	0	2	5	0	3	0	3	5	5	5	0	5	0	5	43	71.67
161	AEE-385	RC	SDA	SA	MA	MA	MDA	DA	MDA	DA	DA	DA	MDA	A	MA	DA	DA		
		S	1	0	3	4	0	2	0	2	2	5	3	0	4	0	2	28	46.67
162	AEE-386	RC	SDA	SA	SA	SA	SDA	MA	DA	SA	SDA	DA	MA	A	A	DA	A		
		S	1	0	1	6	0	4	0	6	1	5	4	0	5	0	5	38	63.33
163	AEE-387	RC	MA	A	MDA	A	DA	MA	MA	MDA	MA	DA	MA	MA	MA	MDA	MA		
		S	4	0	4	5	0	4	0	3	4	5	4	0	4	0	4	41	68.33
164	AEE-388	RC	A	SA	MA	SA	DA	MDA	MDA	A	A	DA	MDA	MDA	DA	MA	A		
		S	5	0	3	6	0	3	0	5	5	5	3	0	2	0	5	42	70.00
165	AEE-389	RC	MDA	A	DA	MA	MA	DA	DA	DA	MDA	DA	DA	A	A	DA	MDA		
		S	3	0	5	4	0	2	0	2	3	5	2	0	5	0	3	34	56.67
166	AEE-390	RC	MDA	SA	DA	A	DA	MA	MDA	A	MDA	DA	A	A	A	DA	A		
		S	3	0	5	5	0	4	0	5	3	5	5	0	5	0	5	45	75.00
167	AEE-391	RC	A	A	MDA	MA	MDA	DA	DA	DA	MDA	DA	DA	A	MA	MDA	MDA		
		S	5	0	4	4	0	2	0	2	3	5	2	0	4	0	3	34	56.67
168	AEE-392	RC	MA	SA	SDA	SA	SDA	MA	DA	A	MDA	SDA	A	SA	SA	SDA	SA		
		S	4	0	6	6	0	4	0	5	3	6	5	0	6	0	6	51	85.00
169	AEE-393	RC	DA	MA	SA	SA	SDA	MDA	SDA	SDA	SDA	DA	SDA	DA	DA	MA	SDA		
		S	2	0	1	6	0	3	0	1	1	5	1	0	2	0	1	23	38.33
170	AEE-394	RC	A	SA	SDA	SA	SDA	SA	A	SA	SA	SDA	A	SA	A	SDA	A		
		S	5	0	6	6	0	6	0	6	6	6	5	0	5	0	5	56	93.33
171	AEE-395	RC	MA	SA	DA	SA	SDA	MDA	DA	A	DA	DA	A	DA	SA	DA	MA		

		S	4	0	5	6	0	3	0	5	2	5	5	0	6	0	4	45	75.00
172	AEE-396	RC	A	A	MA	MDA	MA	MDA	MDA	DA	MA	A	MDA	MA	DA	MA	MDA		
		S	5	0	3	3	0	3	0	2	4	2	3	0	2	0	3	30	50.00
173	AEE-397	RC	DA	A	DA	DA	DA	DA	DA	DA	DA	DA	DA	A	MA	A	DA		
		S	2	0	5	2	0	2	0	2	2	5	2	0	4	0	2	28	46.67
174	AEE-398	RC	A	A	DA	SA	DA	MA	MA	A	MA	DA	A	A	A	DA	A		
		S	5	0	5	6	0	4	0	5	4	5	5	0	5	0	5	49	81.67
175	AEE-399	RC	SDA	A	DA	A	MA	SDA	SDA	SDA	SDA	SDA	DA	MA	A	DA	MA		
		S	1	0	5	5	0	1	0	1	1	6	2	0	5	0	4	31	51.67
176	AEE-400	RC	DA	A	MA	A	MDA	DA	DA	DA	DA	DA	DA	MA	DA	DA	DA		
		S	2	0	3	5	0	2	0	2	2	5	2	0	2	0	2	27	45.00
177	AEE-401	RC	A	A	DA	SA	A	A	DA	A	SA	DA	A	A	A	DA	SA		
		S	5	0	5	6	0	5	0	5	6	5	5	0	5	0	6	53	88.33
178	AEE-402	RC	DA	A	MA	A	DA	MDA	DA	MDA	MDA	DA	DA	MDA	MDA	MDA	MA		
		S	2	0	3	5	0	3	0	3	3	5	2	0	3	0	4	33	55.00
179	AEE-403	RC	SA	A	DA	SA	DA	A	SA	SA	A	DA	SA	A	A	SDA	SA		
		S	6	0	5	6	0	5	0	6	5	5	6	0	5	0	6	55	91.67
180	AEE-404	RC	MA	A	MDA	A	DA	A	MA	A	A	MDA	MDA	MA	A	MA	MA		
		S	4	0	4	5	0	5	0	5	5	4	3	0	5	0	4	44	73.33
181	AEE-405	RC	MA	A	DA	SA	DA	MA	A	A	A	DA	A	A	A	MA	MDA		
		S	4	0	5	6	0	4	0	5	5	5	5	0	5	0	3	47	78.33
182	AEE-406	RC	SA	SA	MDA	A	SDA	MA	MA	MDA	DA	MDA	MDA	MA	A	DA	MA		
		S	6	0	4	5	0	4	0	3	2	4	3	0	5	0	4	40	66.67
183	AEE-407	RC	MA	SA	MA	A	MDA	MDA	DA	MDA	MDA	MDA	MA	MDA	MA	MDA	MA		
		S	4	0	3	5	0	3	0	3	3	4	4	0	4	0	4	37	61.67
184	AEE-408	RC	A	A	A	A	MA	MA	MDA	MA	MA	MA	MA	A	A	MA	MA		
		S	5	0	2	5	0	4	0	4	4	3	4	0	5	0	4	40	66.67
185	AEE-409	RC	MA	DA	MDA	MA	MDA	DA	DA	DA	DA	MDA	DA	MDA	DA	DA	A		
		S	4	0	4	4	0	2	0	2	2	4	2	0	2	0	5	31	51.67
186	AEE-410	RC	DA	SA	SDA	A	SDA	A	A	MA	A	DA	MA	A	SA	DA	A		
		S	2	0	6	5	0	5	0	4	5	5	4	0	6	0	5	47	78.33
187	AEE-411	RC	MA	A	SDA	A	SDA	DA	SDA	DA	MA	DA	DA	A	A	DA	SA		
		S	4	0	6	5	0	2	0	2	4	5	2	0	5	0	6	41	68.33
188	AEE-412	RC	MDA	A	DA	A	SDA	MA	MA	MA	A	SDA	MA	A	A	DA	A		
		S	3	0	5	5	0	4	0	4	5	6	4	0	5	0	5	46	76.67
189	AEE-413	RC	SA	A	A	SA	A	MA	DA	SA	MA	SDA	A	MA	MA	SDA	SA		
		S	6	0	2	6	0	4	0	6	4	6	5	0	4	0	6	49	81.67
190	AEE-414	RC	A	MA	DA	A	DA	MDA	MA	A	A	DA	MA	MA	A	DA	A		
		S	5	0	5	5	0	3	0	5	5	5	4	0	5	0	5	47	78.33

191	AEE-415	RC	DA	SA	SA	A	SDA	MDA	SA	MA	MA	SA	A	MA	DA	A	MDA		
		S	2	0	1	5	0	3	0	4	4	1	5	0	2	0	3	30	50.00
192	AEE-416	RC	A	SA	MA	A	DA	A	DA	MA	A	MA	MA	DA	MA	MA	MA		
		S	5	0	3	5	0	5	0	4	5	3	4	0	4	0	4	42	70.00
193	AEE-417	RC	A	A	DA	A	DA	A	A	A	A	DA	A	A	A	DA	A		
		S	5	0	5	5	0	5	0	5	5	5	5	0	5	0	5	50	83.33
194	AEE-418	RC	MA	SA	DA	A	SDA	A	A	MA	SDA	DA	DA	A	DA	DA	MDA		
		S	4	0	5	5	0	5	0	4	1	5	2	0	2	0	3	36	60.00
195	AEE-419	RC	DA	A	A	DA	DA	SDA	DA	SDA	SDA	DA	DA	SDA	SDA	MA	SDA		
		S	2	0	2	2	0	1	0	1	1	5	2	0	1	0	1	18	30.00
196	AEE-420	RC	MA	SA	DA	A	SDA	MDA	SA	MDA	MA	DA	MDA	A	A	MDA	MDA		
		S	4	0	5	5	0	3	0	3	4	5	3	0	5	0	3	40	66.67
197	AEE-421	RC	DA	MA	A	A	DA	MDA	DA	DA	DA	DA	SDA	DA	MDA	MA	MDA		
		S	2	0	2	5	0	3	0	2	2	5	1	0	3	0	3	28	46.67
198	AEE-422	RC	A	A	A	A	A	MA	DA	MA	MA	DA	MDA	MA	DA	DA	MA		
		S	4	0	2	5	0	4	0	4	4	5	3	0	2	0	4	37	61.67
199	AEE-423	RC	MDA	A	DA	A	DA	A	A	A	A	DA	A	A	A	A	A		
		S	3	0	5	5	0	5	0	5	5	5	5	0	5	0	5	48	80.00
200	AEE-424	RC	MDA	A	DA	A	MA	DA	MDA	DA	DA	DA	MDA	MDA	A	DA	MDA		
		S	3	0	5	5	0	2	0	2	2	5	3	0	5	0	3	35	58.33
201	AEE-425	RC	MA	A	SDA	A	A	MA	A	A	A	DA	A	A	A	DA	A		
		S	4	0	6	5	0	4	0	5	5	5	5	0	5	0	5	49	81.67
202	AEE-426	RC	MA	A	A	A	DA	MA	A	A	DA	DA	MA	MDA	MA	SDA	A		
		S	4	0	2	5	0	4	0	5	2	5	4	0	4	0	5	40	66.67
203	AEE-427	RC	A	MA	MDA	A	DA	MA	A	MA	MA	DA	MDA	MA	MA	MDA	MA		
		S	5	0	4	5	0	4	0	4	4	5	3	0	4	0	4	42	70.00
204	AEE-428	RC	A	A	DA	A	DA	A	A	MA	MDA	DA	MDA	MA	MA	MDA	MA		
		S	5	0	5	5	0	5	0	4	3	5	3	0	4	0	4	43	71.67
205	AEE-429	RC	A	A	A	A	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA		
		S	5	0	2	5	0	2	0	2	2	5	2	0	2	0	2	29	48.33
206	AEE-430	RC	MA	A	A	A	DA	A	A	MA	A	DA	MDA	A	A	DA	MA		
		S	4	0	2	5	0	5	0	4	5	5	3	0	5	0	4	42	70.00
207	AEE-431	RC	DA	SA	A	A	DA	DA	MDA	DA	A	DA	MDA	A	MA	MA	MDA		
		S	2	0	2	5	0	2	0	2	5	5	3	0	4	0	3	33	55.00
208	AEE-432	RC	A	A	A	A	DA	DA	A	DA	MA	DA	DA	A	MDA	DA	A		
		S	5	0	2	5	0	2	0	2	4	5	2	0	3	0	5	35	58.33
209	AEE-433	RC	DA	SA	DA	A	DA	SDA	MA	MDA	MA	SDA	DA	A	MA	MA	SDA		
		S	2	0	5	5	0	1	0	3	4	6	2	0	4	0	1	33	55.00
210	AEE-434	RC	MA	A	A	A	DA	MA	A	A	A	DA	MA	A	A	DA	MA		

		S	4	0	2	5	0	4	0	5	5	5	4	0	5	0	4	43	71.67
211	AEE-435	RC	DA	A	MA	MA	MDA	MA	MA	MDA	MDA	DA	MDA	A	MA	MA	A		
		S	2	0	3	4	0	4	0	3	3	5	3	0	4	0	5	36	60.00
212	AEE-436	RC	MDA	SA	DA	SA	DA	A	A	DA	A	DA	MA	A	A	DA	MA		
		S	3	0	2	6	0	5	0	2	5	5	4	0	5	0	4	41	68.33
213	AEE-437	RC	DA	A	MDA	A	DA	MA	DA	DA	MDA	DA	MA	MDA	MDA	MA	A		
		S	2	0	4	5	0	4	0	2	3	5	4	0	3	0	5	37	61.67
214	AEE-438	RC	DA	MA	DA	MDA	MDA	DA	MDA	MDA	DA	DA	MDA	DA	MA	DA	MDA		
		S	2	0	5	3	0	2	0	3	2	5	3	0	4	0	3	32	53.33
215	AEE-439	RC	MDA	MA	MA	MDA	MDA	DA	MA	MDA	MDA	MDA	MDA	MDA	MA	MDA	MDA		
		S	3	0	3	3	0	2	0	3	3	4	3	0	4	0	3	31	51.67
216	AEE-440	RC	A	A	DA	A	A	SDA	DA	A	A	A	A	DA	A	DA	A		
		S	5	0	5	5	0	1	0	5	5	2	5	0	5	0	5	43	71.67
217	AEE-441	RC	MA	A	MA	A	DA	MA	DA	MA	DA	DA	MA	A	MA	DA	A		
		S	4	0	3	5	0	4	0	4	2	5	4	0	4	0	5	40	66.67
218	AEE-442	RC	SDA	A	SDA	SA	SDA	SA	SA	SA	SA	SDA	SA	SA	SA	A	SA		
		S	1	0	6	6	0	6	0	6	6	6	6	0	6	0	6	55	91.67
219	AEE-443	RC	MA	A	DA	A	DA	A	MA	DA	A	DA	MDA	A	MDA	SDA	MA		
		S	4	0	5	5	0	5	0	2	5	5	3	0	3	0	4	41	68.33
220	AEE-444	RC	A	A	A	A	DA	A	A	A	A	DA	MA	MA	A	MDA	MA		
		S	5	0	2	5	0	5	0	5	5	5	4	0	5	0	4	45	75.00
221	AEE-445	RC	MA	A	MA	A	DA	MA	DA	MA	MA	DA	MA	MDA	A	MA	A		
		S	4	0	3	5	0	4	0	4	4	5	4	0	5	0	5	43	71.67
222	AEE-446	RC	DA	A	MA	MA	MDA	MDA	DA	MDA	MDA	DA	DA	MDA	MA	DA	MA		
		S	2	0	3	4	0	3	0	3	3	5	2	0	4	0	4	33	55.00
223	AEE-447	RC	A	A	A	A	A	A	A	A	A	DA	MDA	A	MDA	SDA	A		
		S	5	0	2	5	0	5	0	5	5	5	3	0	3	0	5	43	71.67
224	AEE-448	RC	A	MA	SDA	A	DA	MA	A	A	SA	SDA	MDA	A	DA	DA	A		
		S	5	0	6	5	0	4	0	5	6	6	3	0	2	0	5	47	78.33

Notes: SA - Strongly agree A - Agree * - Filler items
MA - Mildly agree MDA - Mildly disagree RC - Response Code
DA - Disagree SDA - Strongly disagree S - Score
@ - Negatively worded (that is, agree indicated alienation.)

Level of Significance of Difference Between Sub-groups in Job Involvement Scores

Sl. No.	Sub-group Data				Sub-group Data				Student's 't'			Level of Significance
	Sub-group	n	Mean	Standard deviation	Sub-group	n	Mean	Standard deviation	(-)	(-)	(-)	
1	2	3	4	5	6	7	8	9	10	11		
1	Superintending Engineers and above	20	65.20	7.810	Executive Engineers	56	69.87	16.032	(-) 1.234			Not significant
2	Executive Engineers	56	69.87	16.032	Assistant Executive Engineers	148	65.90	13.594	1.760			Not significant
3	Assistant Executive Engineers	148	65.90	13.594	Superintending Engineers and above	20	65.20	7.801	0.224			Not significant
4	Males	195	66.94	14.169	Females	29	66.10	12.444	0.301			Not significant
5	Age 40 years and below	56	66.56	12.147	Age 41 years and above	168	66.99	14.512	(-) 0.291			Not significant
6	Post graduate degree/training	72	64.86	13.279	Non post-graduates	151	67.61	14.085	(-) 1.382			Not significant
7	Degree and above	195	65.89	13.670	Without degree	28	72.54	14.019	(-) 3.220			0.01
8	Salary Rs.4001 and above	37	65.16	13.019	Salary Rs.5001 to 4000	110	67.55	15.356	(-) 0.801			Not significant
9	Salary Rs.1001 to 3000	77	66.61	12.107	Salary Rs.4001 and above	37	65.16	13.019	0.579			Not significant
10	Salary Rs.5001 to 4000	110	67.55	15.356	Salary Rs.1001 to 3000	77	66.61	12.107	0.446			Not significant
11	Service upto 10 years	45	67.04	10.228	Service 11 to 20 years	82	64.16	14.529	1.170			Not significant
12	Service 11 to 20 years	82	64.14	14.529	Service 21 to 30 years	79	68.10	14.488	(-) 1.711			Not significant
13	Service 21 to 30 years	79	68.10	14.488	Service upto 10 years	45	67.04	10.228	0.430			Not significant
14	Service 31 years and above	18	72.94	14.285	Service 11 to 20 years	82	64.16	14.529	2.305			0.05
15	Service upto 10 years	45	67.04	10.228	Service 31 years and above	18	72.94	14.285	(-) 1.805			Not significant
16	Service 31 years and above	18	72.94	14.285	Service 21 to 30 years	79	68.10	14.488	1.269			Not significant
17	Southern region	115	66.18	14.015	Central region	72	66.71	14.471	(-) 0.247			Not significant
18	Central region	72	66.71	14.471	Northern region	37	69.11	12.468	(-) 0.850			Not significant
19	Northern region	37	69.11	12.468	Southern region	115	66.18	14.015	1.128			Not significant
20	More organisational involved group	56	74.29	11.368	Less organisational involved group	56	65.44	16.411	3.288			0.01
21	Intrinsic group	34	66.56	11.735	Extrinsic group	169	66.82	14.334	(-) 0.099			Not significant
22	Very intrinsic group	20	66.70	11.230	Very extrinsic group	137	66.17	14.964	0.1513			Not significant
23	Intrinsic group	34	66.56	11.735	Very intrinsic group	20	66.70	11.230	(-) 0.042			Not significant
24	Extrinsic group	169	66.82	14.334	Very extrinsic group	137	66.17	14.964	0.385			Not significant

Work Involvement Responses, Raw Scores and Moderated Scores

Subject		I t e m s											Total Mode		
Sl. Code	RC/	-----											Sco-	rate	
No. No	S	1	2	3@	4*	5*	6	7*@	8	9*	10	11*	res	scor	
1	SE-101	RC	MDA	MA	MDA	MA	MA	MA	A	MA		MA	MA		
		S	3	4	4	0	0	4	0	4	0	4	0	23	63.8
2	SE-102	RC	DA	A	MDA	DA	DA	MA	A	A	DA	MDA	A		
		S	2	5	4	0	0	4	0	5	0	3	0	23	63.8
3	SE-103	RC	MA	A	DA	A	MDA	A	MDA	A	A	A	SA		
		S	4	5	5	0	0	5	0	5	0	5	0	29	80.5
4	SE-104	RC	MDA	MA	MDA	MDA	A	MDA	MA	MDA	MDA	MDA	MA		
		S	3	4	4	0	0	3	0	3	0	3	0	20	55.5
5	SE-105	RC	MA	MA	MA	MDA	A	A	A	MDA	MA	A	A		
		S	4	4	3	0	0	5	0	3	0	5	0	24	66.6
6	SE-106	RC	A	A	MDA	MA	A	A	A	A	MA	A	SA		
		S	5	5	4	0	0	5	0	5	0	5	0	29	80.5
7	SE-107	RC	MDA	MA	MDA	MA	MA	MA	MDA	MDA	MA	MA	A		
		S	3	4	4	0	0	4	0	3	0	4	0	22	61.1
8	SE-108	RC	A	SA	MA	A	SA	A	SDA	SA	MA	A	SA		
		S	5	6	3	0	0	5	0	6	0	5	0	30	83.3
9	SE-109	RC	MDA	A	DA	A	A	A	DA	MA	MA	A	MA		
		S	3	5	5	0	0	5	0	4	0	5	0	27	75.0
10	SE-110	RC	MDA	MA	DA	MA	A	A	DA	MA	A	A	A		
		S	3	4	5	0	0	5	0	4	0	5	0	26	72.2
11	SE-111	RC	MA	MDA	MDA	A	MA	MA	DA	MDA	MA	A	A		
		S	4	3	4	0	0	4	0	3	0	5	0	23	63.8
12	SE-112	RC	MDA	MA	MA	MA	DA	DA	MA	DA	A	A	A		
		S	3	4	3	0	0	2	0	2	0	5	0	19	52.7
13	SE-113	RC	MA	A	DA	A	A	A	DA	A	A	A	A		
		S	4	5	5	0	0	5	0	5	0	5	0	29	80.5
14	SE-114	RC	MDA	SA	DA	A	SA	SA	DA	MA	A	A	A		
		S	3	6	5	0	0	6	0	4	0	5	0	29	80.5
15	SE-115	RC	A	A	DA	A	A	A	DA	A	A	A	A		
		S	5	5	5	0	0	5	0	5	0	5	0	30	83.3
16	SE-116	RC	MA	MA	A	MA	MDA	MA	A	MDA	A	MA	A		

		S	4	4	2	0	0	4	0	3	0	4	0	21	58.3
17	SE-117	RC	MDA	A	DA	A	A	A	DA	A	A	A	A		
		S	3	5	5	0	0	5	0	5	0	5	0	28	77.7
18	SE-118	RC	MDA	MDA	MDA	MDA	MDA	MA	MDA	MA	A	MA	MA		
		S	3	3	4	0	0	4	0	4	0	4	0	22	61.1
19	SE-119	RC	A	SA	DA	SA	A	A	A	A	A	A	A		
		S	5	6	5	0	0	5	0	5	0	5	0	31	86.1
20	SE-120	RC	A	A	MDA	SA	SA	SA	DA	SA	SA	SA	SA		
		S	5	5	4	0	0	6	0	6	0	6	0	32	88.8
21	EE-201	RC	SA	A	DA	A	A	A	DA	A	MA	A	A		
		S	6	5	5	0	0	5	0	5	0	5	0	31	86.1
22	EE-202	RC	MA	MA	MA	A	A	MA	MA	A	A	MA	A		
		S	4	4	3	0	0	4	0	5	0	4	0	24	66.6
23	EE-203	RC	MDA	MA	MDA	A	A	MA	MDA	MA	A	A	A		
		S	3	4	4	0	0	4	0	4	0	5	0	24	66.6
24	EE-204	RC	DA	A	A	DA	A	DA	A	DA	A	A	A		
		S	2	5	2	0	0	2	0	2	0	5	0	18	50.0
25	EE-205	RC	A	SA	SDA	SA	SA	SA	SDA	SA	SA	SA	SA		
		S	5	6	6	0	0	6	0	6	0	6	0	35	97.2
26	EE-206	RC	A	A	DA	A	A	A	DA	A	A	A	A		
		S	5	5	5	0	0	5	0	5	0	5	0	30	83.3
27	EE-207	RC	A	A	DA	A	A	A	DA	A	A	A	A		
		S	5	5	5	0	0	5	0	5	0	5	0	30	83.3
28	EE-208	RC	MDA	SA	DA	SA	SA	SA	DA	SA	SA	SA	SA		
		S	3	6	5	0	0	6	0	6	0	6	0	32	88.8
29	EE-209	RC	MA	MDA	MA	MDA	MA	MA	MA	MA	MA	MA	MA		
		S	4	3	3	0	0	4	0	4	0	4	0	22	61.1
30	EE-210	RC	MA	A	DA	MA	MA	A	DA	A	A	A	A		
		S	4	5	5	0	0	5	0	5	0	5	0	29	80.5
31	EE-211	RC	A	A	MDA	A	A	A	MA	A	A	A	A		
		S	5	5	4	0	0	5	0	5	0	5	0	29	80.5
32	EE-212	RC	MA	MA	MDA	A	A	MA	MDA	MA	A	A	A		
		S	4	4	4	0	0	4	0	4	0	5	0	25	69.4
33	EE-213	RC	MDA	MA	MA	MA	MA	MA	MA	MA	A	MA	A		
		S	3	4	3	0	0	4	0	4	0	4	0	22	61.1
34	EE-214	RC	DA	SDA	A	MDA	DA	DA	A	DA	A	MDA	A		
		S	2	1	2	0	0	2	0	2	0	3	0	12	33.3
35	EE-215	RC	A	MA	DA	MA	A	A	MDA	MA	A	MA	SA		
		S	5	4	5	0	0	5	0	4	0	4	0	27	75.0

36	EE-216	RC	DA	MDA	A	DA	DA	DA	MDA	DA	A	SA	A		
		S	2	3	2	0	0	2	0	2	0	6	0	17	47.2
37	EE-217	RC	MDA	A	MDA	MA	A	A	MDA	MDA	MA	MA	A		
		S	3	5	4	0	0	5	0	3	0	4	0	24	66.6
38	EE-218	RC	A	A	DA	A	A	A	DA	MA	A	A	A		
		S	5	5	5	0	0	5	0	4	0	5	0	29	80.5
39	EE-219	RC	SA	SA	DA	SA	A	SA	DA	SA	SA	SA	SA		
		S	6	6	5	0	0	6	0	6	0	6	0	35	97.2
40	EE-220	RC	MDA	A	DA	A	MA	A	MDA	A	A	A	A		
		S	3	5	5	0	0	5	0	5	0	5	0	28	77.7
41	EE-221	RC	MA	SA	DA	A	SA	A	DA	A	A	SA	SA		
		S	4	6	5	0	0	5	0	5	0	6	0	31	86.1
42	EE-222	RC	DA	MDA	SDA	A	DA	A	SA	A	A	A	A		
		S	2	3	6	0	0	5	0	5	0	5	0	26	72.2
43	EE-223	RC	MDA	A	DA	MA	MDA	A	MDA	MA	SA	SA	SA		
		S	3	5	5	0	0	5	0	4	0	6	0	28	77.7
44	EE-224	RC	A	A	MA	A	MA	A	A	A	A	A	A		
		S	5	5	3	0	0	5	0	5	0	5	0	28	77.7
45	EE-225	RC	MA	MDA	A	MA	A	MA	A	MA	A	MA	A		
		S	4	3	2	0	0	4	0	4	0	4	0	21	58.3
46	EE-226	RC	A	A	DA	MA	MDA	MA	MA	MA	A	A	A		
		R	5	5	5	0	0	4	0	4	0	5	0	28	77.7
47	EE-227	RC	DA	DA	MA	A	A	A	DA	DA	A	MDA	A		
		S	2	2	3	0	0	5	0	2	0	3	0	17	47.2
48	EE-228	RC	SDA	A	DA	MA	A	A	DA	A	SA	SA	A		
		S	1	5	5	0	0	5	0	5	0	6	0	27	75.0
49	EE-229	RC	MDA	A	DA	A	A	A	DA	MDA	A	DA	A		
		S	3	5	5	0	0	5	0	3	0	2	0	23	63.8
50	EE-230	RC	A	MDA	MA	A	A	A	DA	DA	A	A	A		
		S	5	3	3	0	0	5	0	2	0	5	0	23	63.8
51	EE-231	RC	A	A	DA	A	A	A	DA	A	A	A	SA		
		S	5	5	5	0	0	5	0	5	0	5	0	30	83.3
52	EE-232	RC	MA	MA	DA	SA	SA	A	MDA	A	SA	SA	A		
		S	4	4	5	0	0	5	0	5	0	6	0	29	80.5
53	EE-233	RC	MA	A	MDA	A	A	A	MDA	A	A	A	A		
		S	4	5	4	0	0	5	0	5	0	5	0	28	77.7
54	EE-234	RC	MA	A	MDA	A	A	A	MDA	A	A	A	A		
		S	4	5	4	0	0	5	0	5	0	5	0	28	77.7
55	EE-235	RC	A	SA	DA	A	A	MA	MA	MA	A	SA	A		

	S	5	6	5	0	0	4	0	4	0	6	0	30	83.3
56 EE-236	RC	DA	A	DA	SA	SA	MDA	MA	A	A	A	A		
	S	2	5	5	0	0	3	0	5	0	5	0	25	69.4
57 EE-237	RC	SA	SA	DA	SA	SA	SA	DA	SA	SA	SA	SA		
	S	6	6	5	0	0	6	0	6	0	6	0	35	97.2
58 EE-238	RC	MA	A	DA	A	A	A	MDA	A	A	A	SA		
	S	4	5	5	0	0	5	0	5	0	5	0	29	80.5
59 EE-239	RC	MDA	A	MA	MA	MA	MA	MDA	MA	MA	MA	MA		
	S	3	5	3	0	0	4	0	4	0	4	0	23	63.8
60 EE-240	RC	MA	SA	SDA	A	SA	A	DA	A	SA	SA	SA		
	S	4	6	6	0	0	5	0	5	0	6	0	32	88.8
61 EE-241	RC	DA	MA	MA	DA	SDA	DA	A	DA	A	A	A		
	S	2	4	3	0	0	2	0	2	0	5	0	18	50.0
62 EE-242	RC	MA	A	DA	A	A	A	DA	A	A	A	A		
	S	4	5	5	0	0	5	0	5	0	5	0	29	80.5
63 EE-243	RC	SDA	SA	SDA	SA	SA	SA	SDA	SA	SA	SA	SA		
	S	1	6	6	0	0	6	0	6	0	6	0	31	86.1
64 EE-244	RC	SA	SA	DA	A	DA	MDA	A	MDA	A	A	A		
	S	6	6	5	0	0	3	0	3	0	5	0	28	77.7
65 EE-245	RC	DA	A	DA	MDA	A	MDA	MA	DA	A	DA	A		
	S	2	5	5	0	0	3	0	2	0	2	0	19	52.7
66 EE-246	RC	MDA	A	DA	A	MA	A	DA	MA	A	A	A		
	S	3	5	5	0	0	5	0	4	0	5	0	27	75.0
67 EE-247	RC	A	MA	DA	SA	SA	A	DA	A	SA	SA	SA		
	S	5	4	5	0	0	5	0	5	0	6	0	30	83.3
68 EE-248	RC	DA	MA	DA	A	MDA	A	MA	A	A	A	A		
	S	2	4	5	0	0	5	0	5	0	5	0	26	72.2
69 EE-249	RC	DA	MA	DA	A	A	MA	DA	MA	A	MA	A		
	S	2	4	5	0	0	4	0	4	0	4	0	23	76.6
70 EE-250	RC	SA	SA	SDA	SA	SA	SA	SDA	SA	SA	SA	SA		
	S	6	6	6	0	0	6	0	6	0	6	0	36	100.
71 EE-251	RC	A	DA	DA	A	MA	MA	DA	DA	A	A	A		
	S	5	2	5	0	0	4	0	2	0	5	0	23	63.8
72 EE-252	RC	DA	DA	A	DA	A	MA	A	A	DA	A	MA		
	S	2	2	2	0	0	4	0	5	0	5	0	20	55.5
73 EE-253	RC	MA	DA	MDA	A	MA	MDA	A	DA	A	SDA	DA		
	S	4	2	4	0	0	3	0	2	0	1	0	16	44.4
74 EE-254	RC	SA	SA	SDA	SA	SA	SA	SDA	SA	SA	SA	SA		
	S	6	6	6	0	0	6	0	6	0	6	0	36	100.

75	EE-255	RC	A	SA	SDA	SA	A	SA	A	SA	SA	SA	SA		
		S	5	6	6	0	0	6	0	6	0	6	0	35	97.2
76	EE-256	RC	DA	MA	MDA	A	MDA	MA	MDA	MDA	A	MA	A		
		S	2	4	4	0	0	4	0	3	0	4	0	21	58.3
77	AEE-301	RC	A	MA	MDA	A	SA	MA	A	A	MA	A	MA		
		S	5	4	4	0	0	4	0	5	0	5	0	27	75.0
78	AEE-302	RC	MA	MA	MA	A	MDA	A	MDA	A	A	A	A		
		S	4	4	3	0	0	5	0	5	0	5	0	26	72.2
79	AEE-303	RC	DA	A	A	MA	A	A	MA	MA	MA	MA	MA		
		S	2	5	2	0	0	5	0	4	0	4	0	22	61.1
80	AEE-304	RC	MA	DA	DA	MA	MA	A	A	A	MA	MA	A		
		S	4	2	5	0	0	5	0	5	0	4	0	25	69.4
81	AEE-305	RC	MA	A	MA	DA	MDA	A	A	MA	A	A	SA		
		S	4	5	3	0	0	5	0	4	0	5	0	26	72.2
82	AEE-306	RC	A	A	MA	A	A	SA	MA	MDA	A	A	A		
		S	5	5	3	0	0	6	0	3	0	5	0	27	75.0
83	AEE-307	RC	MA	MA	MA	MA	A	MA	MA	MA	A	A	A		
		S	4	4	3	0	0	4	0	4	0	5	0	24	66.6
84	AEE-308	RC	MDA	MDA	DA	A	DA	A	MDA	A	A	A	A		
		S	3	3	5	0	0	5	0	5	0	5	0	26	72.2
85	AEE-309	RC	MA	MA	MDA	MA	MA	MA	MDA	MA	A	A	A		
		S	4	4	4	0	0	4	0	4	0	5	0	25	69.4
86	AEE-310	RC	DA	A	DA	SA	A	A	SDA	SA	A	A	A		
		S	2	5	5	0	0	5	0	6	0	5	0	28	77.7
87	AEE-311	RC	MA	MA	DA	MDA	MA	MA	MDA	DA	A	A	A		
		S	4	4	5	0	0	4	0	2	0	5	0	24	66.6
88	AEE-312	RC	MA	A	DA	A	A	A	DA	A	A	A	A		
		S	4	5	5	0	0	5	0	5	0	5	0	29	80.5
89	AEE-313	RC	MDA	MDA	MA	DA	MA	MDA	MA	DA	A	MDA	A		
		S	3	3	3	0	0	3	0	2	0	3	0	17	47.2
90	AEE-314	RC	SDA	SA	MDA	A	A	A	MA	A	A	DA	A		
		S	1	6	4	0	0	5	0	5	0	2	0	23	63.8
91	AEE-315	RC	A	MA	DA	MA	MA	A	DA	A	A	A	SA		
		S	5	4	5	0	0	5	0	5	0	5	0	29	80.5
92	AEE-316	RC	MA	A	DA	A	A	A	DA	A	A	A	A		
		S	4	5	5	0	0	5	0	5	0	5	0	29	80.5
93	AEE-317	RC	A	MA	MA	MA	A	A	MDA	A	A	A	A		
		S	5	4	3	0	0	5	0	5	0	5	0	27	75.0
94	AEE-318	RC	A	A	DA	A	A	A	DA	A	A	SA	A		

		S	5	5	5	0	0	5	0	5	0	6	0	31	86.1
95	AEE-319	RC	DA	A	DA	SA	MA	SA	A	A	A	SA	SA		
		S	2	5	5	0	0	6	0	5	0	6	0	29	80.5
96	AEE-320	RC	A	A	DA	A	A	A	DA	A	A	A	A		
		S	5	5	5	0	0	5	0	5	0	5	0	30	83.3
97	AEE-321	RC	DA	DA	A	A	A	A	DA	A	A	A	A		
		S	2	2	2	0	0	5	0	2	0	5	0	18	50.0
98	AEE-322	RC	MDA	MDA	MA	MDA	MA	MA	MA	MDA	MDA	DA	MA		
		S	3	3	3	0	0	4	0	3	0	2	0	18	50.0
99	AEE-323	RC	A	A	MA	SA	DA	MDA	A	MDA	A	SA	SA		
		S	5	5	3	0	0	3	0	3	0	6	0	25	69.4
100	AEE-324	RC	MA	MA	DA	MA	A	MA	DA	MA	A	MA	SA		
		S	4	4	5	0	0	4	0	4	0	4	0	25	69.4
101	AEE-325	RC	DA	MDA	DA	MDA	A	MA	MDA	MA	MA	A	A		
		S	2	3	5	0	0	4	0	4	0	5	0	23	63.8
102	AEE-326	RC	MA	A	SDA	SA	SA	A	MA	A	A	A	SA		
		S	4	5	6	0	0	5	0	5	0	5	0	30	83.3
103	AEE-327	RC	MA	A	SDA	SA	SA	A	MDA	A	A	A	SA		
		S	4	5	6	0	0	5	0	5	0	5	0	30	83.3
104	AEE-328	RC	MA	A	SDA	SA	SA	A	MDA	A	MA	A	SA		
		S	4	5	6	0	0	5	0	5	0	5	0	30	83.3
105	AEE-329	RC	SA	SA	SDA	SA	SA	SA	SDA	SA	SA	SA	SA		
		S	6	6	6	0	0	6	0	6	0	6	0	36	100.
106	AEE-330	RC	DA	A	DA	A	A	A	DA	A	A	A	SA		
		S	2	5	5	0	0	5	0	5	0	5	0	27	75.0
107	AEE-331	RC	DA	MA	A	MA	DA	MA	MA	MA	A	A	MA		
		S	2	4	2	0	0	4	0	4	0	5	0	21	58.3
108	AEE-332	RC	MDA	MDA	DA	A	SA	A	MA	SA	A	A	SA		
		S	3	3	5	0	0	5	0	6	0	5	0	27	75.0
109	AEE-333	RC	MA	A	MDA	A	A	A	DA	A	A	A	A		
		S	4	5	4	0	0	5	0	5	0	5	0	28	77.7
110	AEE-334	RC	A	A	A	A	A	MDA	MA	MA	A	A	A		
		S	5	5	2	0	0	3	0	4	0	5	0	24	66.6
111	AEE-335	RC	DA	MA	DA	A	A	A	DA	A	A	A	SA		
		S	2	4	5	0	0	5	0	5	0	5	0	26	72.2
112	AEE-336	RC	A	A	A	MA	DA	DA	A	DA	A	MA	A		
		S	5	5	2	0	0	2	0	2	0	4	0	20	55.5
113	AEE-337	RC	SDA	A	DA	SA	DA	A	MDA	MA	A	A	A		
		S	1	5	5	0	0	5	0	4	0	5	0	25	69.4

114	AEE-338	RC	MDA	MDA	MDA	MDA	MA	MDA	MDA	MA	MA	MDA	MA		
		S	3	3	4	0	0	3	0	4	0	3	0	20	55.5
115	AEE-339	RC	A	DA	DA	A	A	A	DA	A	A	SA	SA		
		S	5	2	5	0	0	5	0	5	0	6	0	28	77.7
116	AEE-340	RC	DA	SDA	MDA	MDA	SA	A	MA	DA	A	A	SA		
		S	2	1	4	0	0	5	0	2	0	5	0	19	52.7
117	AEE-341	RC	MDA	MA	MA	A	A	A	MDA	A	A	A	A		
		S	3	4	3	0	0	5	0	5	0	5	0	25	69.4
118	AEE-342	RC	DA	MA	MDA	DA	MDA	MA	SA	MA	MA	MA	MA		
		S	2	4	4	0	0	4	0	4	0	4	0	22	61.1
119	AEE-343	RC	A	DA	DA	A	SA	A	DA	A	A	A	A		
		S	5	2	5	0	0	5	0	5	0	5	0	27	75.0
120	AEE-344	RC	A	A	DA	A	MA	A	DA	A	A	SA	A		
		S	5	5	5	0	0	5	0	5	0	6	0	31	86.1
121	AEE-345	RC	A	MA	DA	MDA	SA	MA	MA	DA	DA	MDA	A		
		S	5	4	5	0	0	4	0	2	0	3	0	23	76.6
122	AEE-346	RC	A	MDA	SDA	A	DA	A	SA	A	A	A	A		
		S	5	3	6	0	0	5	0	5	0	5	0	29	80.5
123	AEE-347	RC	A	A	DA	SA	A	A	DA	A	A	A	A		
		S	5	5	5	0	0	5	0	5	0	5	0	30	83.3
124	AEE-348	RC	MDA	A	DA	A	A	A	MDA	MA	A	A	A		
		S	3	5	5	0	0	5	0	4	0	5	0	27	75.0
125	AEE-349	RS	MDA	MA	MA	A	A	A	DA	A	A	A	A		
		S	3	4	3	0	0	5	0	5	0	5	0	25	69.4
126	AEE-350	RC	DA	DA	A	MDA	A	DA	A	MDA	A	MDA	A		
		S	2	2	2	0	0	2	0	3	0	3	0	14	38.8
127	AEE-351	RC	DA	A	DA	A	DA	A	DA	MDA	DA	A	A		
		S	2	5	5	0	0	5	0	3	0	5	0	25	69.4
128	AEE-352	RC	DA	DA	DA	A	A	A	DA	A	A	A	A		
		S	2	2	5	0	0	5	0	5	0	5	0	24	66.6
129	AEE-353	RC	MDA	MA	DA	MA	MDA	MA	MA	MA	MA	MA	A		
		S	3	4	5	0	0	4	0	4	0	4	0	24	66.6
130	AEE-354	RC	DA	MA	DA	DA	MA	MA	A	MA	A	A	A		
		S	2	4	5	0	0	4	0	4	0	5	0	24	66.6
131	AEE-355	RC	A	A	DA	A	A	A	DA	A	A	A	A		
		S	5	5	5	0	0	5	0	5	0	5	0	30	83.3
132	AEE-356	RC	A	A	MA	SA	A	MA	DA	MA	A	A	SA		
		S	5	5	3	0	0	4	0	4	0	5	0	26	72.2
133	AEE-357	RC	SA	A	DA	SA	SA	SA	DA	SA	SA	SA	A		

		S	6	5	5	0	0	6	0	6	0	6	0	34	94.4
134	AEE-358	RC	DA	DA	A	MA	MDA	MDA	MA	DA	MA	A	A		
		S	2	2	2	0	0	3	0	2	0	5	0	16	44.4
135	AEE-359	RC	MDA	MDA	MA	A	MA	A	MA	A	A	A	A		
		S	3	3	3	0	0	5	0	5	0	5	0	24	66.6
136	AEE-360	RC	MA	MA	A	DA	A	MA	A	A	MDA	MA	MA		
		S	4	4	2	0	0	4	0	5	0	4	0	23	76.6
137	AEE-361	RC	DA	A	A	MA	A	MA	MDA	A	A	A	A		
		S	2	5	2	0	0	4	0	5	0	5	0	23	76.6
138	AEE-362	RC	MA	A	DA	A	A	A	DA	MDA	MA	A	A		
		S	4	5	5	0	0	5	0	3	0	5	0	27	75.0
139	AEE-363	RC	DA	DA	A	DA	A	A	A	A	A	A	SA		
		S	2	2	2	0	0	5	0	5	0	5	0	21	58.3
140	AEE-364	RC	SA	SA	MA	A	MDA	MDA	DA	DA	MDA	DA	SA		
		S	6	6	3	0	0	3	0	2	0	2	0	22	61.1
141	AEE-365	RC	MDA	A	MDA	A	DA	A	MDA	A	A	A	A		
		S	3	5	4	0	0	5	0	5	0	5	0	27	75.0
142	AEE-366	RC	A	A	SDA	SA	SA	A	MA	MA	SA	SA	SA		
		S	5	5	6	0	0	5	0	4	0	6	0	31	86.1
143	AEE-367	RC	DA	A	MDA	A	MA	A	A	SA	SA	SA	SA		
		S	2	5	4	0	0	5	0	6	0	6	0	28	77.7
144	AEE-368	RC	DA	MDA	A	MA	A	MDA	MA	MDA	A	MA	MA		
		S	2	3	2	0	0	3	0	3	0	4	0	17	47.2
145	AEE-369	RC	A	SA	DA	A	SA	A	DA	SA	A	SA	SA		
		S	5	6	5	0	0	5	0	6	0	6	0	33	91.6
146	AEE-370	RC	MA	MA	SA	SA	SA	A	MDA	A	A	A	A		
		S	4	4	1	0	0	5	0	5	0	5	0	24	66.6
147	AEE-371	RC	MDA	A	MA	MA	SA	A	A	MA	A	A	A		
		S	3	5	3	0	0	5	0	4	0	5	0	25	69.4
148	AEE-372	RC	MDA	A	A	MA	A	A	A	MA	A	A	A		
		S	3	5	2	0	0	5	0	4	0	5	0	24	66.6
149	AEE-373	RC	A	SA	DA	MA	A	A	DA	A	A	A	SA		
		S	5	6	5	0	0	5	0	5	0	5	0	31	86.1
150	AEE-374	RC	A	MA	DA	MDA	A	A	MDA	A	A	MA	MA		
		S	5	4	5	0	0	5	0	5	0	4	0	28	77.7
151	AEE-375	RC	A	A	DA	MA	A	A	DA	A	A	A	A		
		S	5	5	5	0	0	5	0	5	0	5	0	30	83.3
152	AEE-376	RC	MA	DA	MA	A	A	MA	MA	DA	A	MDA	A		
		S	4	2	3	0	0	4	0	2	0	3	0	18	50.0

153	AEE-377	RC	MA	MA	MDA	MA	MA	MA	MDA	A	A	A	MA		
		S	4	4	4	0	0	4	0	5	0	5	0	26	72.2
154	AEE-378	RC	A	SA	DA	SA	A	SA	DA	SA	SA	SA	SA		
		S	5	6	5	0	0	6	0	6	0	6	0	34	94.4
155	AEE-379	RC	DA	MA	SDA	SA	A	A	SA	SA	SA	A	SA		
		S	2	4	6	0	0	5	0	6	0	5	0	28	77.7
156	AEE-380	RC	MA	MA	DA	MDA	A	MDA	MDA	MDA	A	DA	A		
		S	4	4	5	0	0	3	0	3	0	2	0	21	58.3
157	AEE-381	RC	DA	MA	MDA	MDA	A	MA	MDA	MA	A	A	A		
		S	2	4	4	0	0	4	0	4	0	5	0	23	63.8
158	AEE-382	RC	DA	DA	A	A	DA	DA	A	A	A	MA	MA		
		S	2	2	2	0	0	2	0	5	0	4	0	17	47.2
159	AEE-383	RC	MA	A	DA	A	A	A	MDA	A	A	A	A		
		S	4	5	5	0	0	5	0	5	0	5	0	29	80.5
160	AEE-384	RC	MDA	MDA	DA	A	A	A	DA	A	A	A	A		
		S	3	3	5	0	0	5	0	5	0	5	0	26	72.2
161	AEE-385	RC	DA	MDA	MA	A	DA	MDA	A	MDA	A	A	MA		
		S	2	3	3	0	0	3	0	3	0	5	0	19	52.7
162	AEE-386	RC	A	A	A	A	A	A	DA	A	A	SA	SA		
		S	5	5	2	0	0	5	0	5	0	6	0	28	77.7
163	AEE-387	RC	MDA	MA	MDA	MA	A	MA	MDA	MA	A	MA	A		
		S	3	4	4	0	0	4	0	4	0	4	0	23	76.6
164	AEE-388	RC	A	MA	MA	A	A	A	MA	A	A	A	SA		
		S	5	4	3	0	0	5	0	5	0	5	0	27	75.0
165	AEE-389	RC	DA	A	SDA	A	A	MA	DA	MA	A	A	SA		
		S	2	5	6	0	0	4	0	4	0	5	0	26	72.2
166	AEE-390	RC	A	A	DA	A	A	A	DA	A	A	A	A		
		S	5	5	5	0	0	5	0	5	0	5	0	30	83.3
167	AEE-391	RC	MDA	MDA	MDA	MDA	A	MA	MDA	MDA	MA	MA	A		
		S	3	3	4	0	0	4	0	3	0	4	0	21	58.3
168	AEE-392	RC	A	A	DA	A	DA	A	DA	A	A	A	A		
		S	5	5	5	0	0	5	0	5	0	5	0	30	83.3
169	AEE-393	RC	SDA	SDA	MDA	MDA	SA	MA	SA	SA	SA	SA	SA		
		S	1	1	4	0	0	4	0	6	0	6	0	22	61.1
170	AEE-394	RC	A	SA	SDA	SA	DA	SA	SDA	SA	SA	SA	SA		
		S	5	6	6	0	0	6	0	6	0	6	0	35	97.2
171	AEE-395	RC	A	A	DA	A	A	A	MA	A	A	A	A		
		S	5	5	5	0	0	5	0	5	0	5	0	30	83.3
172	AEE-396	RC	A	MDA	MA	DA	MA	MDA	DA	MDA	MDA	A	MDA		

		S	5	3	3	0	0	3	0	3	0	5	0	22	61.1
173	AEE-397	RC	DA	DA	A	A	A	A	A	DA	DA	DA	DA		
		S	2	2	2	0	0	5	0	2	0	2	0	15	41.6
174	AEE-398	RC	A	A	DA	A	MDA	SA	DA	SA	SA	A	SA		
		S	5	5	5	0	0	6	0	6	0	5	0	32	88.8
175	AEE-399	RC	A	DA	A	A	MA	MA	SDA	SA	SA	SA	A		
		S	5	2	2	0	0	4	0	6	0	6	0	25	69.4
176	AEE-400	RC	DA	DA	DA	A	DA	A	DA	DA	A	A	A		
		S	2	2	5	0	0	5	0	2	0	5	0	21	58.3
177	AEE-401	RC	MA	A	DA	A	A	A	DA	A	A	A	SA		
		S	4	5	5	0	0	5	0	5	0	5	0	29	80.5
178	AEE-402	RC	DA	A	MA	MDA	A	MA	MA	MDA	MA	A	A		
		S	2	5	3	0	0	4	0	3	0	5	0	22	61.1
179	AEE-403	RC	SA	A	DA	SA	A	A	SDA	A	SA	A	SA		
		S	6	5	5	0	0	5	0	5	0	5	0	31	86.1
180	AEE-404	RC	A	A	MDA	A	A	A	MDA	A	A	A	A		
		S	5	5	4	0	0	5	0	5	0	5	0	29	80.5
181	AEE-405	RC	MA	A	DA	A	SA	A	MA	A	A	A	SA		
		S	4	5	5	0	0	5	0	5	0	5	0	29	80.5
182	AEE-406	RC	A	A	SDA	A	MA	A	DA	MA	MA	A	A		
		S	5	5	6	0	0	5	0	4	0	5	0	30	83.3
183	AEE-407	RC	MA	MDA	MA	MA	A	MA	MA	A	SA	A	SA		
		S	4	4	3	0	0	4	0	5	0	5	0	24	66.6
184	AEE-408	RC	MA	MA	MA	MA	MA	MA	MA	MA	A	A	A		
		S	4	4	3	0	0	4	0	4	0	5	0	24	66.6
185	AEE-409	RC	DA	A	DA	MA	MDA	DA	DA	MA	MA	MA	MA		
		S	2	5	5	0	0	2	0	4	0	4	0	22	61.1
186	AEE-410	RC	DA	MA	DA	SA	SA	MA	DA	MA	SA	SA	A		
		S	2	4	5	0	0	4	0	4	0	6	0	25	69.4
187	AEE-411	RC	MA	A	DA	A	A	A	DA	MDA	MA	A	SA		
		S	4	5	5	0	0	5	0	3	0	5	0	27	75.0
188	AEE-412	RC	MDA	A	SDA	MA	SA	A	DA	A	A	A	SA		
		S	3	5	6	0	0	5	0	5	0	5	0	29	80.5
189	AEE-413	RC	MA	A	SDA	SA	SA	A	A	MDA	A	A	SA		
		S	4	5	6	0	0	5	0	3	0	5	0	28	77.7
190	AEE-414	RC	DA	SDA	A	DA	DA	MDA	MDA	MA	MA	MA	MA		
		S	2	1	2	0	0	3	0	4	0	4	0	16	44.4
191	AEE-415	RC	SDA	SA	SDA	MA	A	SA	SDA	MA	SA	SA	SA		
		S	1	6	6	0	0	6	0	4	0	6	0	29	80.5

192	AEE-416	RC	MA	MA	A	A	A	A	MDA	MA	A	A	A		
		S	4	4	2	0	0	5	0	4	0	5	0	24	66.6
193	AEE-417	RC	DA	DA	DA	DA	A	A	A	A	A	A	A		
		S	2	2	5	0	0	5	0	5	0	5	0	24	66.6
194	AEE-418	RC	SDA	MDA	DA	A	SDA	DA	A	SDA	A	A	SA		
		S	1	3	5	0	0	2	0	1	0	5	0	17	47.2
195	AEE-419	RS	DA	MA	DA	A	A	DA	MDA	A	A	A	MA		
		S	2	4	5	0	0	2	0	5	0	5	0	23	63.8
196	AEE-420	RS	DA	MA	MDA	MDA	A	MA	MDA	MA	SA	MA	A		
		S	2	4	4	0	0	4	0	4	0	4	0	22	61.1
197	AEE-421	RC	A	SA	DA	SA	SA	A	DA	A	A	SA	SA		
		S	5	6	5	0	0	5	0	5	0	6	0	32	88.8
198	AEE-422	RC	DA	DA	A	DA	MDA	MDA	MA	DA	MA	A	A		
		S	2	2	2	0	0	3	0	2	0	5	0	16	44.4
199	AEE-423	RC	DA	MDA	MA	DA	A	DA	DA	DA	MA	MA	A		
		S	2	3	3	0	0	2	0	2	0	4	0	16	44.4
200	AEE-424	RC	MDA	A	MA	A	MA	MA	MDA	MA	A	A	A		
		S	3	5	3	0	0	4	0	4	0	5	0	24	66.6
201	AEE-425	RC	MDA	A	MDA	A	A	MA	A	A	A	A	A		
		S	3	5	4	0	0	4	0	5	0	5	0	26	72.2
202	AEE-426	RC	MA	DA	DA	A	A	A	MA	A	A	A	SA		
		S	4	2	5	0	0	5	0	5	0	5	0	26	72.2
203	AEE-427	RC	A	A	DA	SA	A	SA	DA	SA	SA	SA	SA		
		S	5	5	5	0	0	6	0	6	0	6	0	33	91.6
204	AEE-428	RC	A	A	DA	SA	A	SA	DA	SA	SA	SA	SA		
		S	5	5	5	0	0	6	0	6	0	6	0	33	91.6
205	AEE-429	RC	A	A	DA	DA	A	DA	DA	DA	DA	A	A		
		S	5	5	5	0	0	2	0	2	0	5	0	24	66.6
206	AEE-430	RC	MDA	A	DA	A	A	A	DA	MA	A	A	A		
		S	3	5	5	0	0	5	0	4	0	5	0	27	75.0
207	AEE-431	RC	DA	MA	A	MA	A	MA	A	MDA	A	MA	A		
		S	2	4	2	0	0	4	0	3	0	4	0	19	52.7
208	AEE-432	RC	DA	A	A	A	A	A	DA	A	A	A	A		
		S	2	5	2	0	0	5	0	5	0	5	0	24	66.6
209	AEE-433	RC	DA	MA	MA	SDA	A	MDA	MDA	MDA	A	MA	A		
		S	2	4	3	0	0	3	0	3	0	4	0	19	52.7
210	AEE-434	RC	A	A	A	A	MA	A	A	A	A	A	MA		
		S	5	5	2	0	0	5	0	5	0	5	0	27	75.0
211	AEE-435	RC	DA	DA	DA	A	A	A	MDA	A	MA	A	MA		

		S	2	2	5	0	0	5	0	5	0	5	0	24	66.6
212	AEE-436	RC	DA	A	DA	A	A	A	DA	A	A	SA	SA		
		S	2	5	5	0	0	5	0	5	0	6	0	20	77.7
213	AEE-437	RC	DA	A	MA	MA	A	A	MA	DA	A	A	A		
		S	2	3	4	0	0	5	0	2	0	5	0	22	61.1
214	AEE-438	RC	MA	MA	MDA	A	MA	MA	MDA	MA	MA	MA	MA		
		S	4	4	4	0	0	4	0	4	0	4	0	24	66.6
215	AEE-439	RC	DA	MDA	MA	MA	MDA	MA	MDA	DA	MA	MA	MA		
		S	2	3	3	0	0	4	0	2	0	4	0	18	50.0
216	AEE-440	RC	DA	DA	A	A	DA	A	DA	A	MDA	A	A		
		S	2	2	2	0	0	5	0	5	0	5	0	21	58.3
217	AEE-441	RC	MA	MA	MA	A	A	A	MA	MA	MA	A	A		
		S	4	4	3	0	0	5	0	4	0	5	0	25	69.4
218	AEE-442	RC	SA	SA	SDA	SA	SA	SA	SDA	SA	SA	SA	SA		
		S	6	6	6	0	0	6	0	6	0	6	0	36	100.
219	AEE-443	RC	DA	A	SDA	A	A	A	SDA	A	A	A	A		
		S	2	5	6	0	0	5	0	5	0	5	0	28	77.7
220	AEE-444	RC	MA	A	MDA	A	A	A	MA	A	A	A	A		
		S	4	5	4	0	0	5	0	5	0	5	0	28	77.7
221	AEE-445	RC	MA	A	DA	MA	A	MA	MDA	DA	MA	A	A		
		S	4	5	5	0	0	4	0	2	0	5	0	25	69.4
222	AEE-446	RC	MA	A	MA	MDA	MA	A	MDA	MA	MA	MA	A		
		S	4	5	3	0	0	5	0	4	0	4	0	25	69.4
223	AEE-447	RC	DA	DA	DA	A	A	A	A	A	A	A	A		
		S	2	2	5	0	0	5	0	5	0	5	0	24	66.6
224	AEE-448	RC	A	A	SDA	SA	A	A	A	MA	SA	A	A		
		S	5	5	6	0	0	5	0	4	0	5	0	30	83.3

Notes:

SA - Strongly agree A - Agree * - Filler items
MA - Mildly agree MDA - Mildly disagree RC - Response code
DA - Disagree SDA - Strongly disagree S - Score
@ - Negatively worded (that is, agree indicates alienation)

Level of Significance of Difference Between Sub-Groups in Work Involvement Scores

Sl. No.	Sub-group Data				Sub-group Data				Student's 't'			Level of Significance
	n	Mean	Standard deviation	Sub-group	n	Mean	Standard deviation	n	Mean	Standard deviation	Level of Significance	
1	2	3	4	5	6	7	8	9	10	11		
1	Superintending Engineers and above	20	71.90	10.880	Executive Engineers	56	72.89	16.210	(-) 0.250	Not significant		
2	Executive Engineers	56	72.89	16.210	Assistant Executive Engineers	148	70.80	12.550	0.971	Not significant		
3	Assistant Executive Engineers	148	70.80	12.550	Superintending Engineers and above	120	71.90	10.880	(-) 0.371	Not significant		
4	Males	195	72.32	12.970	Females	29	65.34	15.050	2.633	0.01		
5	Age 40 years and below	56	71.43	15.460	Age 41 years and above	168	72.42	13.460	(-) 0.474	Not significant		
6	Post graduate degree/training	72	70.53	13.680	Non post-graduates	151	71.66	13.180	(-) 0.589	Not significant		
7	Degree and above	195	70.37	13.352	Without degree	28	77.71	11.450	(-) 2.754	0.01		
8	Salary Rs.4001 and above	37	72.86	12.159	Salary Rs.3001 to 4000	110	71.31	14.484	0.581	Not significant		
9	Salary Rs.1001 to 3000	77	70.88	12.445	Salary Rs.4001 and above	37	72.86	12.159	(-) 0.794	Not significant		
10	Salary Rs.3001 to 4000	110	71.31	14.484	Salary Rs.1001 to 3000	77	70.85	12.445	0.225	Not significant		
11	Service upto 10 years	45	72.33	12.190	Service 11 to 20 years	82	66.98	14.140	2.122	0.05		
12	Service 11 to 20 years	82	66.98	14.140	Service 21 to 30 years	79	72.91	11.910	(-) 2.855	0.01		
13	Service 21 to 30 years	79	72.91	11.910	Service upto 10 years	45	72.33	12.190	0.256	Not significant		
14	Service 31 years and above	18	82.83	10.750	Service 11 to 20 years	82	66.98	14.140	4.435	0.01		
15	Service upto 10 years	45	72.33	12.190	Service 31 years and above	18	82.83	10.750	(-) 3.141	0.01		
16	Service 31 years and above	18	82.83	10.750	Service 21 to 30 years	79	72.91	11.910	3.212	0.01		
17	Southern region	115	72.51	13.070	Central region	72	70.07	12.730	1.248	Not significant		
18	Central region	72	70.07	12.730	Northern region	37	70.65	15.570	(-) 0.206	Not significant		
19	Northern region	37	70.65	15.570	Southern region	115	72.51	13.070	(-) 0.713	Not significant		
20	More organisational involved group	56	77.23	12.523	Less organisational involved group	56	73.14	14.389	1.590	Not significant		
21	Intrinsic group	34	70.58	12.083	Extrinsic group	169	71.92	13.810	(-) 0.524	Not significant		
22	Very intrinsic group	20	72.70	12.220	Very extrinsic group	137	72.56	13.574	0.043	Not significant		
23	Intrinsic group	34	70.58	12.083	Very intrinsic group	20	72.70	12.220	(-) 0.641	Not significant		
24	Extrinsic group	169	71.92	13.810	Very extrinsic group	137	72.56	13.574	(-) 0.405	Not significant		

APPENDIX XIX

Alienation/Involvement Responses, Raw Scores and Moderated Scores

Sl. No.	Subject	I t e m s																									Mode-		
		1	2	3	4	5	6*	7*	8	9	10	11	12	13*	14	15	16	17	18	19*	20*	21	22	23	24	25*		26	
		-----Total rated																											
		-----Score																											
1	SE-101	RC	DA	DA	SDA	DA	A	A	DA	DA	A	DA	DA	DA	MA	DA	A	A	DA	A	DA	DA	DA	MDA	A	DA	MDA	57	47.50
2	SE-102	RC	MDA	MA	DA	MDA	SA	DA	DA	MDA	A	MDA	MDA	MA	MDA	DA	MA	A	A	MDA	MA	MA	DA	SA	DA	MA	58	56.67	
3	SE-103	RC	DA	DA	SDA	MA	A	MDA	A	DA	DA	DA	MA	SDA	DA	A	SA	A	SDA	SA	MA	DA	DA	MDA	A	A	75	62.50	
4	SE-104	RC	MDA	MA	MA	MA	MDA	MA	MA	MDA	MDA	A	MDA	MDA	MA	MDA	DA	MDA	MA	A	DA	MDA	MDA	MA	MA	A	MA	65	54.17
5	SE-105	RC	DA	DA	MDA	MDA	A	MDA	MDA	MA	DA	DA	DA	DA	MA	DA	DA	MA	DA	MA	MDA	MDA	MDA	MDA	MDA	MDA	MA	67	55.83
6	SE-106	RC	MDA	MA	DA	MA	MA	MDA	MDA	MA	A	MDA	MDA	DA	MA	DA	MA	A	A	MA	SDA	A	A	DA	MDA	A	MA	85	70.83
7	SE-107	RC	MDA	MDA	MDA	MA	MDA	MDA	MA	NDA	MA	MDA	MA	MA	MDA	MA	MA	MDA	MA	MA	MDA	MDA	MA	MA	MDA	MDA	MDA	73	60.83
8	SE-108	RC	NDA	DA	SDA	A	A	MDA	MDA	MDA	A	SDA	SDA	MDA	SDA	DA	MDA	SA	SA	SDA	MA	MA	MDA	MDA	MA	MDA	MDA	68	56.67
9	SE-109	RC	MDA	MDA	SDA	MA	MA	DA	MA	MDA	MDA	DA	MDA	DA	DA	DA	A	DA	A	MA	MDA	DA	MA	MA	A	A	A	76	63.33
10	SE-110	RC	DA	DA	MDA	MA	A	MA	MA	DA	A	DA	DA	MA	DA	DA	DA	A	DA	DA	MA	MA	DA	MA	A	MA	A	72	60.00
11	SE-111	RC	NDA	MDA	MDA	MA	NDA	DA	MA	MA	MDA	MA	MDA	MA	MDA	NDA	MA	MA	DA	A	MA	MA	MA	MA	MA	MA	MA	74	61.67
12	SE-112	RC	DA	DA	MA	DA	A	A	MDA	DA	MA	NDA	DA	MA	SDA	DA	SDA	A	A	A	DA	A	MA	SA	DA	SDA	A	58	48.33
13	SE-113	RC	DA	DA	DA	MA	DA	A	MA	MA	DA	MA	MA	NDA	DA	MDA	MA	A	A	DA	A	DA	MDA	DA	DA	A	A	75	62.50
14	SE-114	RS	A	DA	MA	A	A	DA	MDA	MDA	A	DA	MA	DA	A	DA	MA	A	SA	MA	DA	A	A	DA	DA	MDA	MA	86	71.67
S		5	2	3	5	2	0	0	3	5	5	4	5	0	5	4	5	6	3	0	0	5	5	5	5	0	4	86	71.67

15 SE-115	RC	DA	DA	NDA	DA	A	DA	A	DA	A	DA	A	DA	NDA	A	A	DA	A	DA	A	DA	A	DA	DA				
	S	2	2	4	2	0	2	2	2	2	0	2	2	3	5	2	0	0	2	2	2	2	0	2	46			
16 SE-116	RC	MDA	DA	DA	MA	A	MDA	MDA	NDA	DA	MDA	DA	MA	A	A	SDA	SA	MA	A	DA	NDA	MDA	MDA					
	S	3	2	5	4	2	0	3	3	4	2	4	0	6	2	4	5	2	0	0	4	5	4	0	72			
17 SE-117	RC	SDA	DA	SA	SDA	SDA	SA	SDA	A	DA	SA	SDA	SDA	A	SA	A	A	SDA	SDA	A	SA	DA	DA					
	S	1	2	1	1	0	0	1	1	1	2	0	1	1	1	5	1	0	0	1	1	2	1	0	28			
18 SE-118	RC	MA	NDA	DA	MDA	MA	NDA	A	MDA	NDA	NDA	SDA	MA	DA	MA	A	DA	SA	NDA	A	NDA	NDA	MA					
	S	4	3	5	3	3	0	0	3	3	4	3	6	0	5	2	4	5	2	0	0	3	5	4	0	75		
19 SE-119	RC	DA	MA	MA	SA	SA	DA	SA	DA	NDA	MA	DA	SA	A	SA	SA	DA	SA	DA	A	A	A	A					
	S	2	4	3	6	1	0	0	2	3	3	2	1	0	6	2	5	6	1	0	0	2	5	2	0	63		
20 SE-120	RC	MA	MA	SDA	A	DA	A	MA	MA	DA	MA	A	SDA	MDA	SA	SA	A	SDA	A	MA	MA	DA	DA	A				
	S	4	4	6	5	2	0	0	4	4	5	4	3	0	6	3	6	6	2	0	0	4	4	5	0	87		
21 EE-201	RC	DA	DA	NDA	A	MA	DA	DA	DA	NDA	DA	DA	DA	NDA	DA	DA	MA	MA	A	MA	MDA	A						
	S	2	2	4	5	3	0	0	2	3	5	2	5	0	5	2	2	3	1	0	0	4	4	2	3	0	64	
22 EE-202	RC	MDA	NDA	NDA	MA	MA	NDA	NDA	A	MA	MA	A	DA	MA	MA	A	A	DA	A	MA	DA	DA	A	A				
	S	3	3	4	4	3	0	0	3	5	3	4	3	0	5	4	4	5	2	0	0	4	2	5	2	0	73	
23 EE-203	RC	DA	SDA	DA	MA	SA	MA	NDA	NDA	MA	DA	DA	MA	DA	SDA	A	NDA	A	MA	DA	A	DA	A	MA	MDA			
	S	2	1	5	4	1	0	0	3	4	4	2	3	0	6	5	3	5	3	0	0	4	5	5	2	0	70	
24 EE-204	RC	DA	A	A	DA	A	A	DA	DA	A	DA	DA	DA	A	DA	DA	A	A	DA	A	DA	DA	A	DA	A			
	S	2	5	2	2	0	0	2	5	5	2	5	0	5	2	2	5	2	0	0	2	2	2	2	0	61		
25 EE-205	RC	A	A	MA	SA	DA	DA	A	MA	MA	MA	A	SDA	SA	SDA	MA	MA	SA	SA	SDA	SA	MA	A	SDA	SDA	SA	SA	
	S	5	5	3	6	5	0	0	4	4	3	5	6	0	6	4	4	6	1	0	0	4	5	6	6	0	94	
26 EE-206	RC	MA	NDA	MA	MA	NDA	A	NDA	NDA	MA	NDA	NDA	NDA	NDA	NDA	NDA	NDA	A	A	NDA	MA	MA	MA	A	MA			
	S	4	3	3	4	4	0	0	3	3	3	3	4	0	4	3	3	5	2	0	0	3	4	3	0	4	68	
27 EE-207	RC	A	DA	DA	NDA	NDA	A	A	DA	NDA	MA	DA	DA	DA	DA	A	SA	DA	SDA	SA	A	A	DA	MA	A	MDA		
	S	5	2	5	3	4	0	0	5	5	3	3	0	5	2	5	6	5	0	0	5	5	3	0	3	84		
28 EE-208	RC	MDA	NDA	A	SA	SA	A	NDA	MDA	NDA	MA	DA	NDA	NDA	DA	DA	SA	A	DA	A	NDA	DA	DA	A	A			
	S	3	3	2	6	1	0	0	3	3	3	2	4	0	4	2	2	6	2	0	0	3	2	5	2	0	63	
29 EE-209	RC	MA	MA	NDA	MA	SA	NDA	MA	MA	MA	NDA	MA	DA	MA	DA	MA	NDA	A	NDA	DA	MA	MA	DA	MA	MA			
	S	4	4	4	4	1	0	0	4	4	4	4	5	0	5	4	3	5	4	0	0	4	4	5	3	0	4	79
30 EE-210	RC	SDA	DA	A	MA	SA	NDA	MA	SDA	A	NDA	MA	MA	MA	SDA	SDA	MA	A	MA	DA	A	A	MA	MDA	SA	DA	MA	
	S	1	2	2	4	1	0	0	1	5	4	4	3	0	6	1	4	5	3	0	0	5	4	4	1	0	4	64
31 EE-211	RC	MDA	NDA	NDA	A	A	NDA	MA	DA	MA	A	MA	NDA	MA	NDA	NDA	MA	A	A	DA	A	MA	A	MA	MA			
	S	3	3	4	5	2	0	0	2	4	2	4	4	0	4	3	4	5	2	0	0	4	5	5	2	0	4	71
32 EE-212	RC	MDA	DA	DA	MA	MA	A	MA	NDA	A	DA	NDA	DA	MA	DA	NDA	MA	A	A	DA	A	A	MA	DA	MA	MA		

50	EE-230	RC	DA	MA	A	A	MA	DA	DA	NDA	NDA	MA	DA	DA	MA	DA	DA	MA	NDA	NDA	MA	DA	MA	NDA	DA	MA	DA	MDA			
		S	2	4	2	5	3	0	0	3	3	3	0	3	2	2	4	3	0	0	4	2	3	4	0	3	61	50.83			
51	EE-231	RC	A	A	DA	A	A	DA	MA	DA	A	DA	MA	A	A	DA	A	A	DA	A	A	A	DA	DA	A	MA					
		S	5	5	5	2	0	0	4	5	4	5	0	5	4	5	5	2	0	0	5	5	5	5	0	4	90	75.00			
52	EE-232	RC	SDA	DA	MDA	DA	A	MDA	A	DA	MA	A	DA	MA	DA	A	NDA	SA	A	SDA	A	DA	SDA	MA	A	MA	MA				
		S	1	2	4	2	2	0	0	2	4	3	5	5	0	5	3	6	2	0	0	2	1	3	2	0	63	52.50			
53	EE-233	RC	MA	MA	NDA	MA	A	MDA	MA	MA	MDA	MDA	DA	MA	DA	MDA	MA	A	MA	DA	A	MA	MA	DA	MDA	MA	MA				
		S	4	4	4	4	2	0	0	4	4	4	3	5	0	5	3	4	5	3	0	4	4	5	4	0	4	79	65.83		
54	EE-234	RC	MA	MA	NDA	MA	A	MDA	MA	MA	MA	MA	DA	MA	DA	MDA	MA	A	MA	DA	A	MA	MA	DA	MDA	MA	MA				
		S	4	4	4	4	2	0	0	4	4	3	4	5	0	5	3	4	5	3	0	4	4	5	4	0	4	79	65.83		
55	EE-235	RC	DA	MDA	A	MA	NDA	MA	MA	DA	A	DA	DA	MA	SDA	MA	MDA	A	A	DA	A	A	MDA	DA	MA	SA	A				
		S	2	3	2	4	4	0	0	2	5	5	2	5	0	6	4	3	5	2	0	0	5	3	5	0	5	75	62.50		
56	EE-236	RC	SDA	SEA	SA	DA	A	SDA	A	DA	A	SDA	SDA	A	DA	SA	DA	A	SA	SA	DA	DA	A	SDA	SDA	DA	A	DA			
		S	1	1	1	2	2	0	0	2	5	6	1	2	0	1	2	5	6	1	0	0	5	1	6	5	0	2	57	47.50	
57	EE-237	RC	SA	SA	DA	SA	DA	SA	SA	SA	DA	SA	DA	SA	DA	SA	SA	SA	SA	DA	SA	DA	SA	SA	DA	DA	SA	SA			
		S	6	6	5	6	5	0	0	6	6	5	6	5	0	5	6	6	6	1	0	0	6	6	5	5	0	6	108	90.00	
58	EE-238	RC	A	MA	A	A	NDA	SDA	A	MA	A	DA	MA	DA	MA	SDA	MA	SA	A	DA	DA	A	A	MDA	MDA	DA	MA	MA			
		S	5	4	2	5	4	0	0	4	5	4	5	0	6	4	6	5	5	0	0	5	3	4	5	0	4	90	75.00		
59	EE-239	RC	DA	DA	A	DA	A	A	DA	DA	DA	A	DA	MA	DA	A	DA	NDA	MA	A	MDA	DA	DA	A	A	DA	DA				
		S	2	2	2	2	0	0	2	2	2	3	0	2	2	3	4	2	0	0	2	2	2	2	2	0	2	44	36.67		
60	EE-240	RC	NDA	NDA	MA	A	MDA	MDA	A	MA	A	DA	A	DA	MA	SDA	MA	A	A	MDA	DA	A	A	MA	DA	DA	A	MA			
		S	3	3	3	5	4	0	0	4	5	5	5	0	6	4	5	5	4	0	0	5	4	5	5	0	4	89	74.17		
61	EE-241	RC	DA	DA	DA	DA	A	DA	MA	NDA	A	DA	DA	MA	DA	MDA	NDA	A	NDA	DA	A	DA	DA	MDA	A	MDA					
		S	2	2	5	2	2	0	0	3	5	5	2	5	0	5	3	3	5	4	0	0	5	2	5	4	0	3	72	60.00	
62	EE-242	RC	MA	DA	DA	MA	MA	DA	A	MA	A	MA	NDA	DA	DA	MA	NDA	A	A	DA	A	MA	MA	NDA	DA	A	A				
		S	4	2	5	4	3	0	0	4	5	3	3	5	0	5	4	3	5	2	0	0	4	4	4	5	0	5	79	65.83	
63	EE-243	RC	SDA	SDA	SDA	SDA	SA	A	NDA	SDA	MA	NDA	DA	MA	A	MDA	MA	SA	SA	SDA	SA	MA	SDA	MDA	SA	SA	MA				
		S	1	1	6	1	1	0	0	1	4	4	2	3	0	2	3	4	6	1	0	0	4	1	4	1	0	4	54	45.00	
64	EE-244	RC	MA	DA	DA	A	A	DA	A	MA	A	DA	A	DA	DA	SDA	DA	A	SA	SA	SDA	A	SA	A	DA	MA	MA	MA			
		S	4	2	5	5	2	0	0	4	5	5	5	0	6	2	5	6	1	0	0	6	5	5	3	0	4	85	70.83		
65	EE-245	RC	NDA	NDA	MA	DA	A	MA	NDA	NDA	A	DA	NDA	DA	DA	DA	MA	A	NDA	SDA	A	MA	MA	DA	MDA	A	MDA				
		S	3	3	3	2	2	0	0	3	5	5	3	5	0	5	2	4	5	4	0	0	4	4	5	4	0	3	74	61.67	
66	EE-246	RC	NDA	DA	MDA	A	MA	DA	MA	MDA	A	NDA	A	SDA	MA	SA	A	MA	SA	A	DA	A	A	MDA	DA	DA	A	A			
		S	3	2	4	5	3	0	0	3	5	4	5	6	0	5	4	4	6	2	0	0	5	3	5	5	0	5	84	70.00	
67	EE-247	RC	DA	NDA	SA	A	MA	MA	A	SDA	SA	SDA	SDA	DA	A	SDA	SDA	DA	A	SDA	DA	A	SA	A	SDA	NDA	A	MA			

S 2 3 1 5 3 0 0 1 6 6 1 5 0 6 1 2 5 6 0 0 6 5 6 4 0 4 78 65.00
 68 EE-248 RC MA A MDA MA MA MDA MDA MA SDA MDA MA MDA MDA A A DA A MDA MA MDA DA A A
 S 4 5 4 4 3 0 0 3 3 3 1 4 0 4 3 3 5 2 0 0 3 4 4 5 0 5 72 60.00
 69 EE-249 RC MDA DA DA MA A DA A DA DA DA DA DA A A A DA MA A A DA A MDA MDA
 S 3 2 5 4 2 0 0 2 5 5 2 5 0 5 2 5 5 2 0 0 5 5 5 2 0 3 74 61.67
 70 EE-250 RC SDA SDA A SDA SA SA SDA SDA MA MA DA MA DA DA DA SA SA DA SA MA DA A SA A MA
 S 1 1 2 1 1 0 0 1 4 3 2 3 0 5 2 2 6 1 0 0 4 2 2 1 0 4 48 40.00
 71 EE-251 RC MA DA A SA MA SDA DA DA A A SDA SDA MA SDA SDA MA SA SA SDA A MA DA DA A DA DA
 S 4 2 2 6 3 0 0 2 5 2 1 6 0 6 1 4 6 1 0 0 4 2 5 2 0 2 66 55.00
 72 EE-252 RC DA DA A MA A A DA DA A DA MA A DA DA DA MA A MA A DA A A MA A DA DA
 S 2 2 2 4 2 0 0 2 5 5 4 2 0 5 2 4 5 3 0 0 5 5 3 2 0 2 66 55.00
 73 EE-253 RC MDA MDA MA MA MDA DA MDA MDA A MA MDA MDA MA DA MDA A A MDA DA MA DA MDA MDA MDA
 S 3 3 3 4 4 0 0 3 5 3 3 4 0 5 3 5 5 4 0 0 2 4 5 4 0 3 75 62.50
 74 EE-254 RC SDA SDA SDA A SDA SDA SA SDA SDA SDA SDA SA SDA SDA SDA SA SDA SDA SA SA
 S 1 1 6 5 6 0 0 1 1 6 1 6 0 6 1 1 6 1 0 0 1 5 6 1 0 6 68 56.67
 75 EE-255 RC A SA DA A DA DA A MA SA DA MDA DA A SDA MA A SA MA SDA SA A MA DA DA A A
 S 5 6 5 5 5 0 0 4 6 5 3 5 0 6 4 5 6 3 0 0 5 4 5 5 0 5 97 80.83
 76 EE-256 RC DA MDA A MA A MA MDA DA MDA MDA DA MDA DA MDA DA A MA DA A MA DA A MDA MA DA
 S 2 3 2 4 2 0 0 2 3 4 2 4 0 4 2 2 5 3 0 0 4 2 2 4 0 2 58 48.33
 77 AEE-301 RC MA A MA SA SA A A MA A DA A SDA A SA MA MA SA MA SDA A A A SDA SA A A
 S 4 5 3 6 1 0 0 4 5 5 6 0 1 4 4 6 3 0 0 5 5 6 1 0 5 84 70.00
 78 AEE-302 RC DA DA MDA DA A A MA DA DA DA DA A DA DA DA A MDA DA MDA DA MA A A MA DA
 S 2 2 4 2 2 0 0 2 2 5 2 2 0 5 2 2 5 4 0 0 2 4 2 2 0 2 55 45.83
 79 AEE-303 RC MA DA MDA DA A A MA DA MA MA DA DA A DA MA A A A DA A A A DA SA DA MA
 S 4 2 4 2 2 0 0 2 4 3 2 5 0 5 4 5 5 2 0 0 5 5 5 1 0 4 71 59.17
 80 AEE-304 RC DA SDA SDA DA SA MA DA MDA MA DA MDA A MDA DA MDA A SA A DA MA MDA SA A SA MA MA
 S 2 1 6 2 1 0 0 3 4 5 3 2 0 5 3 5 6 2 0 0 3 6 2 1 0 4 66 55.00
 81 AEE-305 RC MA MDA MDA A MA SDA A MDA A SDA A DA MA SDA MA A A MDA DA A MA DA DA MA A A
 S 4 3 4 5 3 0 0 3 5 6 5 5 0 6 4 5 5 4 0 0 4 2 5 3 0 5 86 71.67
 82 AEE-306 RC DA MDA SA MA SA A MA DA A DA MA DA MA DA MDA A A SA DA SA SA SDA MDA DA A A
 S 2 3 1 4 1 0 0 2 5 5 4 5 0 5 3 5 5 1 0 0 6 1 4 5 0 5 72 60.00
 83 AEE-307 RC A MA MA A A DA MA MA A DA A MA A DA A A A MA DA A A A DA A MA A
 S 5 4 3 5 2 0 0 4 5 5 5 3 0 5 5 5 5 3 0 0 5 5 5 2 0 5 86 71.67
 84 AEE-308 RC A MA DA SA A DA MDA MA SA DA A DA A DA A A MA MDA MA A A MA MA A A
 S 5 4 5 6 2 0 0 4 6 5 5 5 0 5 5 5 5 3 0 0 5 5 5 3 0 5 91 75.83

S 2 1 3 2 1 0 0 2 5 5 5 0 6 1 4 6 1 0 0 5 5 1 0 5 5 1 0 5 70 58.33
 103 AEE-327 RC DA SDA MA SDA A MA A DA A DA MA SDA SDA MA SA SA SDA SA A A DA SA A A
 S 2 1 3 1 2 0 0 2 5 5 5 0 6 1 4 6 1 0 0 5 5 5 1 0 5 5 1 0 5 70 58.33
 104 AEE-328 RC DA SDA MA SDA SA MA A DA A DA MA SDA SDA MA SA SA SDA SA A A DA SA A MA
 S 2 1 3 1 1 0 0 2 5 5 5 0 6 1 4 6 1 0 0 5 5 5 1 0 4 68 56.67
 105 AEE-329 RC DA SDA DA DA SA SDA DA SDA DA DA SDA SDA A SDA A SA SA DA SDA SDA MA A A SDA
 S 2 1 5 2 1 0 0 2 1 5 2 6 0 2 1 5 6 1 0 0 1 1 3 2 0 1 50 41.67
 106 AEE-330 RC MA SDA A DA SA MA MDA DA A DA MDA SDA MDA SDA MA A SA MA DA A SA A DA MA SA MDA
 S 4 1 2 2 1 0 0 2 1 0 0 2 5 5 3 6 0 6 4 5 6 3 0 0 6 5 5 3 0 3 77 64.17
 107 AEE-331 RC DA DA MA SA A A DA A DA A A MDA MDA DA MA A A DA A A DA A A DA A
 S 2 2 5 4 1 0 0 2 5 5 2 0 4 2 4 5 2 0 0 5 2 2 0 5 2 2 0 5 66 55.00
 108 AEE-332 RC DA A MDA SA DA MDA MA A MA DA MA MDA SDA DA MA SA MDA DA MA MA A SA MDA MDA
 S 2 2 2 3 1 0 0 4 5 3 2 3 0 6 2 4 6 4 0 0 4 4 2 1 0 3 63 52.50
 109 AEE-333 RC MA MA MDA MA MA MDA MA DA A MDA A DA MA MDA A A MA A MA MDA DA A A MA
 S 4 4 4 4 3 0 0 3 4 5 5 4 0 5 4 3 5 2 0 0 4 3 5 2 0 4 77 64.17
 110 AEE-334 RC A MA A A A MA MA MA MA DA A DA MA A A MA DA A MA MA DA MDA MDA A
 S 5 4 2 5 2 0 0 4 4 3 4 5 0 5 4 5 5 3 0 0 4 4 5 4 0 5 82 68.33
 111 AEE-335 RC MDA DA A MA A DA MA MDA A DA A SDA A SDA MA A A MDA DA A A MDA DA DA A MA
 S 3 2 2 4 2 0 0 3 5 5 6 0 6 4 5 5 4 0 0 5 3 5 5 0 4 83 69.17
 112 AEE-336 RC MDA MA A MDA SA DA A DA A DA A DA A DA MDA DA A A SDA SA DA DA MDA SA MA A
 S 3 4 2 3 1 0 0 2 5 5 5 0 5 3 2 5 2 0 0 2 2 4 1 0 5 66 55.00
 113 AEE-337 RC DA A MDA SA MDA DA DA A DA DA A MDA DA MA MA A MA DA MDA DA MA MDA DA MDA
 S 2 2 2 3 1 0 0 2 5 5 2 2 0 5 4 4 5 3 0 0 2 4 4 5 0 3 65 54.17
 114 AEE-338 RC MA MDA DA A SA MA MDA DA MA DA DA MA DA DA MA A A DA A MA MA DA A DA MA
 S 4 3 5 5 1 0 0 2 4 5 2 5 0 5 2 4 5 2 0 0 4 4 5 2 0 4 73 60.83
 115 AEE-339 RC A DA MA MDA SA MA DA DA SA SDA SA DA MA DA DA A A MA DA DA SA A DA DA
 S 5 2 3 3 1 0 0 2 2 1 1 0 3 2 2 5 2 0 0 2 2 1 2 0 2 44 36.67
 116 AEE-340 RC MDA DA MA A MDA MA MA MDA A DA MDA SDA A DA MA A MA MA DA A MA MDA DA MA MA
 S 3 2 3 5 4 0 0 3 5 5 3 6 0 5 4 5 4 3 0 0 4 3 5 3 0 4 79 65.83
 117 AEE-341 RC MDA DA MA MDA MA MDA MDA MA DA MDA DA MDA MDA A A MA MDA MDA MA MDA MDA DA MDA
 S 3 2 5 4 4 0 0 3 4 5 3 5 0 4 3 5 5 3 0 0 4 4 4 4 0 3 77 64.17
 118 AEE-342 RC MDA DA MA MDA A DA MDA DA MA MDA MA MA DA DA A A DA MA MA MDA A DA MA
 S 3 2 3 3 2 0 0 2 4 4 4 3 0 5 2 5 5 2 0 0 4 4 4 2 0 4 67 55.83
 119 AEE-343 RC MA A SDA A A DA DA DA DA A DA A DA DA DA A A DA A MA A DA DA A A
 S 4 5 6 5 2 0 0 2 2 5 5 5 0 5 2 2 5 2 0 0 4 5 5 0 5 81 57.50

120 AEE-344 RC MA MA MA A DA DA MA A SDA A A DA A A A DA SDA MA A A DA A A A
S 4 4 3 4 2 0 0 4 5 6 5 2 0 5 5 5 5 5 0 0 5 5 5 2 0 5 86 71.67
121 AEE-345 RC MDA DA MA SA MA MDA MA SA MA MDA MA A SDA MDA SA A SA A A SDA DA MDA MA
S 3 2 3 4 1 0 0 4 6 3 3 3 0 6 3 6 5 1 0 0 5 5 6 5 0 4 78 65.00
122 AEE-346 RC DA SDA MA MDA A A MDA DA MA DA MDA MDA DA DA MDA SA A MA MDA A DA MA MA MDA MDA
S 2 1 3 3 2 0 0 2 4 3 2 4 0 5 2 3 6 2 0 0 5 2 3 3 0 3 60 50.00
123 AEE-347 RC DA SDA A DA MA SDA SA A MDA DA MDA MA MDA SDA DA MA SA A DA A DA SDA DA MA MDA A
S 2 1 2 2 3 0 0 5 3 5 3 3 0 6 2 4 6 2 0 0 2 1 5 3 0 5 65 54.17
124 AEE-348 RC MA MDA MA MA MA MDA MA MDA MA DA MA MA MA A MA DA A MA MA MA A A MA
S 4 3 3 4 3 0 0 3 4 4 4 5 0 3 4 4 5 3 0 0 4 4 3 2 0 4 73 60.83
125 AEE-349 RC MA MDA A MA A MA MA MA A MDA MDA MA MDA MA MDA A SA A A A MDA MDA MA A A
S 4 3 2 4 2 0 0 4 4 2 3 4 0 4 4 3 5 1 0 0 5 3 4 3 0 5 69 57.50
126 AEE-350 RC MDA DA MA A DA DA DA A DA DA DA MDA DA DA MDA SA A DA DA MDA A DA DA DA
S 3 2 5 4 2 0 0 2 5 5 2 5 0 5 2 3 6 2 0 0 3 5 5 5 0 2 73 60.83
127 AEE-351 RC A A SA DA DA SA A A DA MA DA A DA DA A A SA DA DA A DA DA DA A A
S 5 5 2 6 5 0 0 5 5 5 4 5 0 5 2 5 5 1 0 0 5 2 5 5 0 5 87 72.50
128 AEE-352 RC A A A DA A A A DA MDA SDA A DA MA A SA A DA A A A SDA A A MA
S 5 5 2 5 5 0 0 5 5 5 3 6 0 5 4 5 6 2 0 0 5 5 6 2 0 4 90 75.00
129 AEE-353 RC DA MDA A MA MA MDA MDA DA DA A DA MDA MDA MDA DA MA A MDA MA DA DA MA MDA MDA
S 2 3 2 4 3 0 0 2 2 2 2 4 0 4 3 2 4 2 0 0 2 2 3 4 0 3 55 45.83
130 AEE-354 RC DA MA MA A DA DA MDA A DA DA DA DA MA A SA A A MA MA MDA MA MA DA DA
S 2 2 3 4 2 0 0 3 5 5 2 5 0 5 4 5 6 2 0 0 4 3 3 3 0 2 70 58.33
131 AEE-355 RC A MA MDA A DA DA MA MA A DA MA MDA A SDA MA MA A MA MDA A A A DA DA MDA MA
S 5 4 4 5 5 0 0 4 5 5 4 4 0 6 4 4 5 3 0 0 5 5 5 5 0 4 91 75.83
132 AEE-356 RC MA A MA MA SDA SA SA MDA A SDA A MA SA MDA MDA A SA SDA MDA MA SA DA MA SDA A A
S 4 5 3 4 6 0 0 3 5 6 5 3 0 4 3 5 6 6 0 0 6 2 3 6 0 5 90 75.00
133 AEE-357 RC SDA DA SDA MDA A MA A SDA DA DA SDA DA A A SDA DA SA A SDA A MA A MA
S 1 2 6 3 2 0 0 1 2 5 1 5 0 2 1 2 6 2 0 0 2 2 2 3 0 4 54 45.00
134 AEE-358 RC DA DA MDA DA A DA DA DA MA MDA DA MA MA MDA DA DA A MA MDA MDA DA MDA MDA
S 2 2 4 2 2 0 0 2 4 4 2 3 0 4 2 3 0 0 3 2 4 4 4 4 0 3 59 49.17
135 AEE-359 RC MA MA MDA A MDA MA DA A MDA MDA MA MA DA MA MDA A A SDA A MA MA DA SA A MA
S 4 3 3 3 2 0 0 2 5 4 3 3 0 5 4 3 5 2 0 0 4 4 5 1 0 4 69 57.50
136 AEE-360 RC MDA DA MA DA SA DA MA MDA DA A DA MA A A MA A DA MA DA A MA A DA DA
S 3 2 3 2 1 0 0 2 4 4 2 2 0 3 5 5 4 2 0 0 2 5 3 2 0 2 58 48.33
137 AEE-361 RC A MA DA A MA DA A A DA DA DA A DA MDA DA A A DA A MA A DA SDA A A

138	AEE-362	RC	A	MA	DA	SA	MA	DA	A	DA	DA	SA	DA	MA	DA	MA	DA	SA	A	SDA	A	MA	A	DA	SDA	A	SA	86	71.67	
139	AEE-363	RC	DA	DA	DA	A	SA	DA	DA	MA	DA	MA	DA	A	SA	SA	DA	A	A	SDA	DA	A	A	SDA	DA	DA	MA	87	72.50	
140	AEE-364	RC	SA	A	SA	SA	A	SA	SA	A	A	MDA	SA	DA	SDA	A	SA	MA	A	A	MA	SA	A	MA	SA	A	MA	SA	85	70.83
141	AEE-365	RC	MDA	DA	MDA	MA	A	MA	DA	DA	MA	MDA	MDA	MDA	MDA	MA	A	A	DA	A	MDA	A	A	MA	MDA	MDA	MDA	88	56.67	
142	AEE-366	RC	DA	DA	MDA	SA	SA	SDA	SDA	A	A	DA	SA	MA	DA	SDA	MA	SA	SA	SA	SA	DA	DA	DA	DA	MA	DA	86	55.00	
143	AEE-367	RC	DA	DA	A	DA	SA	A	A	SDA	A	DA	SDA	SA	DA	A	SDA	SA	SA	SDA	A	MDA	DA	MA	SA	SDA	DA	87	47.50	
144	AEE-368	RC	DA	DA	MDA	DA	SA	A	MA	MDA	MA	DA	DA	MA	SDA	DA	MA	A	A	MDA	DA	MA	DA	DA	DA	SA	DA	DA	88	37.50
145	AEE-369	RC	MA	A	DA	A	MA	MA	MA	A	DA	A	DA	A	A	A	MA	DA	A	A	MA	DA	A	A	MA	DA	MDA	MA	89	52.50
146	AEE-370	RC	MA	MA	MA	MA	A	DA	A	A	A	A	A	A	A	A	MDA	A	A	MA	MDA	DA	A	A	NDA	A	A	90	75.83	
147	AEE-371	RC	MA	SDA	A	MDA	A	A	DA	MDA	A	A	A	A	DA	MA	SA	A	DA	A	MA	MA	DA	A	MA	DA	A	MA	91	65.83
148	AEE-372	RC	MA	SDA	A	MA	A	DA	NDA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	92	53.33
149	AEE-373	RC	NDA	A	A	MA	MA	DA	MA	MA	DA	MA	NDA	MA	NDA	MA	NDA	MA	A	MA	DA	MA	MA	DA	MDA	A	MA	93	55.00	
150	AEE-374	RC	DA	DA	NDA	NDA	SA	DA	MA	DA	NDA	NDA	NDA	MA	NDA	NDA	NDA	MA	MA	MA	MA	MA	MA	MA	MA	MA	DA	MA	94	65.00
151	AEE-375	RC	MDA	DA	DA	MA	A	DA	MA	DA	MA	DA	NDA	MDA	MDA	MA	DA	NDA	A	A	SDA	A	A	MA	DA	DA	DA	MA	95	50.83
152	AEE-376	RC	MA	DA	A	A	MA	MA	DA	MDA	A	MA	DA	A	MA	MDA	SA	A	SA	A	MA	NDA	A	DA	SDA	DA	MA	96	64.17	
153	AEE-377	RC	DA	DA	MA	MDA	SA	MA	MDA	DA	NDA	MA	MA	DA	NDA	DA	DA	A	SA	MDA	MDA	MDA	DA	MA	MDA	MDA	MDA	97	60.00	
154	AEE-378	RC	MA	MA	A	A	DA	MA	NDA	A	DA	A	DA	MA	NDA	A	SA	A	DA	A	A	A	DA	DA	A	MA	98	45.83		

155 AEE-379 RC SDA MDA MA MDA A DA SDA A DA SDA SDA SDA A A SDA A A NDA MA MDA A NDA
S 1 3 3 3 2 0 0 1 5 5 1 2 0 6 1 5 5 2 0 0 5 3 4 0 3 63 52.50
156 AEE-380 RC MDA DA SA MDA MA DA A DA MDA DA DA MA DA MDA MA A A DA SA DA MA DA DA MDA MA
S 3 2 1 3 3 0 0 2 3 5 2 3 0 5 3 4 5 2 0 0 2 4 5 5 0 4 66 55.00
157 AEE-381 RC MDA MDA MA MA MDA A MA MDA A DA A MDA MA DA MA MA A MA DA A A A NDA MA A MA
S 3 3 3 4 4 0 0 3 5 5 4 0 5 4 4 5 3 0 0 5 5 4 3 0 4 81 67.50
158 AEE-382 RC MA MA DA A A MDA MA MA MDA MA MDA A DA MA MDA A A A MA DA MDA MA A DA DA
S 4 4 5 5 2 0 0 4 3 3 3 2 0 3 3 5 5 2 0 0 2 3 3 2 0 2 65 54.17
159 AEE-383 RC MDA MDA MDA MDA DA MDA MDA MDA A DA MDA MA MDA DA MDA A A A DA A A A DA A A MA
S 3 3 4 3 5 0 0 3 5 5 3 3 0 5 3 5 5 2 0 0 5 5 5 2 0 4 78 65.00
160 AEE-384 RC MA MA MDA MA MA DA MDA MA A MA MA MA A DA MA MA A A DA A A A DA MA DA A
S 4 4 4 4 3 0 0 4 5 3 4 3 0 5 4 4 5 2 0 0 5 5 5 3 0 5 81 67.50
161 AEE-385 RC MA DA MDA A A MA MA DA A MA MDA MDA A DA SDA MDA SA A DA SA MA MA DA DA A
S 4 2 4 5 2 0 0 2 5 3 3 4 0 5 1 3 6 2 0 0 4 4 5 5 0 5 74 61.67
162 AEE-386 RC SDA DA A SDA SDA MA MA DA A DA DA SDA SDA A SDA DA A DA DA A A DA DA SA MA SDA
S 1 2 2 1 6 0 0 2 5 5 2 6 0 2 1 2 5 5 0 0 5 2 5 1 0 1 61 50.83
163 AEE-387 RC MDA A MA A MA MDA MA MDA MA DA A DA A MA A MA DA A MA MA DA MA A A
S 3 5 3 5 3 0 0 3 4 4 5 0 5 5 4 5 3 0 0 4 4 5 3 0 5 82 68.33
164 AEE-388 RC MA DA DA MDA A MDA MDA SA DA MDA A DA DA A A A A A NDA A A DA
S 4 2 5 2 4 0 0 3 6 5 3 2 0 5 5 5 2 0 0 5 5 4 2 0 2 76 63.33
165 AEE-389 RC DA SDA DA A SA A MA DA A DA DA SDA MA SDA MDA DA A A SDA A MDA DA DA A MA A
S 2 1 5 5 1 0 0 2 5 5 2 6 0 6 3 2 5 2 0 0 3 2 5 2 0 5 69 57.50
166 AEE-390 RC A A DA A DA A A A DA A DA A DA A MA A MA DA A A MA DA DA A A
S 5 5 5 5 5 0 0 5 5 5 5 5 5 5 5 4 5 3 0 0 5 4 5 5 0 5 96 80.00
167 AEE-391 RC MDA MDA MDA MA MA MA MDA MA MA MDA MA MDA MDA MA MA DA MA MDA MDA MDA MA MA
S 3 3 4 4 3 0 0 3 4 3 3 4 0 4 3 4 4 3 0 0 3 3 4 4 0 4 70 58.33
168 AEE-392 RC A DA MA SA A MDA MDA MA MA MDA A A MA SCA SCA A SA MA A A NDA DA SA MA MA
S 5 2 3 6 2 0 0 4 4 3 3 2 0 3 1 1 5 1 0 0 5 3 5 1 0 4 63 52.50
169 AEE-393 RC SDA SDA SA SDA SA A SDA SDA SCA SCA SA DA SDA SCA SCA SA SA DA DA SDA SCA MA SA SDA MDA
S 1 1 1 1 1 0 0 1 1 6 1 1 0 6 1 1 6 1 0 0 1 1 3 1 0 3 39 32.50
170 AEE-394 RC DA DA SA A MA DA SA MA MA DA MA DA MA DA A SA SA SDA SA A MA DA DA A A
S 2 2 1 5 3 0 0 4 4 5 4 5 0 5 2 5 6 1 0 0 5 4 5 5 0 5 78 65.00
171 AEE-395 RC MDA MDA DA A MA DA MA MA A MA MA DA A MA A A SA A DA A A DA A A MA
S 3 3 5 5 3 0 0 4 5 3 4 5 0 3 5 5 6 2 0 0 5 5 5 2 0 4 82 68.33
172 AEE-396 RC DA MDA MDA DA DA DA DA A DA DA DA A DA DA A DA A A DA DA DA A

190 AEE-414 RC NA DA NDA MA MA MDA MA DA A DA MA SDA DA SDA SDA NA A A MDA MA A MA SDA MA DA MA
S 4 2 4 4 3 0 0 2 5 5 4 6 0 6 1 4 5 2 0 0 5 4 6 3 0 4 79 65.83
191 AEE-415 RC DA DA MA A DA MDA DA MDA MA MDA MDA DA MDA DA MDA A A SDA SA MDA MA DA MA MA MA
S 2 2 3 4 2 0 0 2 3 3 3 4 0 4 2 3 5 2 0 0 3 4 5 3 0 4 63 52.50
192 AEE-416 RC MA MDA MA A MA MA A A MA MA MA A DA A MA MA DA MA A A DA MDA A A
S 4 3 3 5 3 0 0 5 5 3 4 3 0 5 5 4 4 3 0 0 5 5 5 4 0 5 83 69.17
193 AEE-417 RC DA DA A DA A DA DA DA DA DA MDA DA DA MA A A DA MA MA MDA DA SA DA DA
S 2 2 2 2 2 0 0 2 2 5 2 5 0 5 2 4 5 2 0 0 4 3 5 1 0 2 59 49.17
194 AEE-418 RC DA NDA A DA SA DA DA DA MDA DA DA A DA A SDA A SA A DA A DA DA SA SA A
S 2 3 2 2 1 0 0 2 3 5 2 2 0 2 1 5 6 2 0 0 2 2 5 1 0 5 55 45.83
195 AEE-419 RC DA MDA MDA MDA A MA MDA DA MA MDA DA DA MDA DA DA MDA A MA A MDA A DA DA
S 2 3 4 3 2 0 0 2 4 4 2 5 0 5 2 3 5 3 0 0 4 5 4 2 0 2 66 55.00
196 AEE-420 RC DA MA MDA MA MA A MA MA DA MA DA MDA SDA DA MDA SA MA DA A MA MA MDA DA MDA MDA
S 2 4 4 4 3 0 0 4 4 5 4 5 0 6 2 3 6 3 0 0 4 4 4 5 0 3 79 65.83
197 AEE-421 RC SDA DA MA DA A MA DA DA MDA MA DA DA MDA DA DA MDA SA A DA MA MDA MDA SDA A MDA DA
S 1 2 3 2 2 0 0 2 3 3 2 5 0 5 2 3 6 2 0 0 3 3 6 2 0 2 59 49.17
198 AEE-422 RC MA A DA A A DA DA DA DA MDA A DA SDA MA MA A DA DA MA MA DA A MA MA
S 4 5 5 2 0 0 2 2 4 5 5 0 6 4 5 5 0 6 4 4 5 5 0 4 4 5 2 0 4 82 68.33
199 AEE-423 RC MA MDA DA A DA DA A MDA A DA A DA A DA A MA A A DA A MA MA DA A MA A
S 4 3 5 5 0 0 3 5 5 5 5 0 5 5 4 5 2 0 0 4 4 5 2 0 5 86 71.67
200 AEE-424 RC MA MDA DA MA MDA DA A MA A DA MA DA A DA MA MDA A MA DA MA MDA A MA MDA DA MA
S 4 3 5 4 4 0 0 4 5 5 4 5 0 5 4 3 5 3 0 0 3 5 3 4 0 4 82 68.33
201 AEE-425 RC NDA DA DA NDA A MA MDA MDA A DA A DA A DA DA DA A A DA A DA DA A A A
S 3 2 5 3 2 0 0 3 5 5 5 5 0 5 2 2 5 2 0 0 2 2 2 2 0 5 67 55.83
202 AEE-426 RC DA SDA MA DA MA A DA DA MA DA DA A SDA DA SDA A A A DA A MA DA A MA DA DA
S 2 1 3 2 3 0 0 2 4 5 2 2 0 5 1 5 5 2 0 0 4 2 2 3 0 2 57 47.50
203 AEE-427 RC A MA DA MA DA MA A MA A SDA SA SDA SA SDA A A A SDA SDA A A DA SDA A A
S 5 4 5 4 5 0 0 4 5 6 6 6 0 6 5 5 5 6 0 0 5 5 5 6 0 5 103 85.83
204 AEE-428 RC MA MA DA MA DA MA A MA A NDA SA SDA SA DA MA A A MA DA A A MDA DA SDA A A
S 4 4 5 4 5 0 0 4 5 4 6 6 0 5 4 5 3 0 0 5 3 5 6 0 5 93 77.50
205 AEE-429 RC A DA DA SA SA DA A A A DA DA DA DA DA DA A A DA DA A A A DA DA DA DA
S 5 2 5 6 1 0 0 5 5 5 2 5 0 5 2 5 5 2 0 0 5 5 5 5 0 2 85 70.83
206 AEE-430 RC A A DA A MDA DA MDA A A DA A DA A DA A MA A DA DA A A A DA DA A A
S 5 5 5 5 4 0 0 5 5 5 5 5 0 5 5 4 5 5 0 0 5 5 5 5 0 5 98 81.67
207 AEE-431 RC DA DA A MA MDA NDA A MDA DA DA MA DA NA DA DA MDA SA NDA SDA A NDA DA MA MA MA

208	AEE-432	RC	DA	DA	MA	MA	A	MA	A	DA	MA	A	SDA	SDA	DA	A	MA	A	MA	A	MA	A	DA	A	DA	DA	68	56.67	
	S	2	2	4	4	0	0	3	2	5	4	5	0	5	2	3	6	4	0	0	3	2	3	3	0	4			
209	AEE-433	RC	DA	MA	DA	SA	A	MA	DA	A	DA	A	MA	SDA	SDA	MDA	A	DA	A	MA	DA	SA	MDA	MA		77	64.17		
	S	2	4	5	2	1	0	0	2	5	5	2	0	6	1	3	5	2	0	0	5	4	5	1	0	4			
210	AEE-434	RC	MA	MA	A	A	A	DA	MA	A	MA	A	DA	DA	DA	A	A	DA	A	A	MA	DA	SA	A	A	69	57.50		
	S	4	4	2	5	2	0	0	4	5	3	5	0	5	2	5	5	2	0	0	5	5	4	1	0	5			
211	AEE-435	RC	MA	MA	MDA	MDA	MDA	MA	MA	NDA	MDA	DA	MA	DA	MDA	A	MDA	MDA	DA	MA	DA	MDA	MDA	MDA	MA	78	65.00		
	S	4	4	4	3	4	0	0	4	4	3	5	0	5	3	5	3	4	0	0	2	3	4	4	0	4			
212	AEE-436	RC	MA	MA	DA	SA	A	DA	DA	DA	A	DA	NDA	MDA	A	DA	MDA	A	SA	DA	A	MA	SDA	DA	MDA	MA	76	63.33	
	S	4	4	5	6	2	0	0	2	5	5	3	4	0	5	3	5	5	1	0	0	4	6	5	0	4			
213	AEE-437	RC	DA	MA	DA	MA	NDA	DA	A	A	MDA	A	DA	A	DA	MA	A	A	MA	DA	A	MA	DA	MDA	MA	MA	82	68.33	
	S	2	4	5	4	4	0	0	5	5	4	5	0	5	4	5	5	3	0	0	5	4	5	4	0	4			
214	AEE-438	RC	MA	MDA	MDA	MDA	MA	MA	MDA	MDA	MA	MDA	DA	DA	MDA	DA	MA	A	MDA	MA	MA	MDA	MDA	MA	MDA	DA	87	72.50	
	S	4	3	4	3	3	0	0	3	4	4	2	4	0	5	3	2	4	2	0	0	4	3	4	3	0	2		
215	AEE-439	RC	MA	DA	A	MA	A	MDA	MA	DA	A	MDA	DA	DA	MDA	DA	MA	MA	MDA	MA	DA	A	A	MDA	DA	DA	66	55.00	
	S	4	2	2	4	2	0	0	2	5	4	2	4	0	4	2	4	3	0	0	4	2	2	2	0	2			
216	AEE-440	RC	DA	DA	A	SA	DA	DA	DA	DA	DA	A	DA	DA	A	DA	A	A	MA	DA	DA	A	A	DA	DA	DA	58	48.33	
	S	2	2	2	5	1	0	0	2	5	5	2	5	0	5	2	5	2	0	0	4	2	5	2	0	2			
217	AEE-441	RC	A	A	A	DA	DA	A	MA	A	DA	MA	DA	A	DA	MA	MA	A	A	DA	MA	A	A	MA	MA	MA	A	65	54.17
	S	5	5	2	5	5	0	0	4	5	5	4	5	0	5	4	4	5	2	0	0	5	3	3	0	5			
218	AEE-442	RC	SDA	SDA	A	SDA	SA	SDA	MA	MA	DA	MA	DA	MA	DA	DA	SA	SA	DA	SA	MA	DA	A	SA	A	MA	86	71.67	
	S	1	1	2	1	1	0	0	1	4	3	2	3	0	3	2	2	6	1	0	0	4	2	2	1	0	4		
219	AEE-443	RC	MDA	A	DA	SA	DA	DA	MA	A	DA	A	NDA	A	DA	MA	A	A	MA	DA	A	A	DA	MA	MA	A	46	38.33	
	S	3	5	5	6	5	0	0	4	5	5	4	0	5	4	5	3	0	0	5	5	3	0	5	3	0	5		
220	AEE-444	RC	MA	MA	NDA	A	MDA	MA	A	MDA	A	MA	DA	A	MA	A	A	DA	MA	MA	MDA	MDA	MA	A	A	92	76.67		
	S	4	4	4	5	4	0	0	5	3	2	4	5	0	3	5	4	5	2	0	0	4	4	4	0	5			
221	AEE-445	RC	MA	MA	DA	DA	DA	A	MA	A	NDA	MA	DA	A	MDA	MA	MA	A	A	DA	A	A	MA	MA	A	DA	A	80	66.67
	S	4	4	5	2	5	0	0	4	5	4	4	5	0	4	4	4	5	2	0	0	4	4	4	0	5			
222	AEE-446	RC	MA	MA	DA	A	A	DA	MA	A	MA	MDA	MDA	MDA	MA	DA	MA	MDA	A	DA	A	A	MA	MDA	MDA	MA	80	66.67	
	S	4	4	5	5	2	0	0	5	4	4	3	4	0	5	4	3	5	2	0	0	5	4	3	0	4			
223	AEE-447	RC	A	A	A	A	A	DA	A	A	DA	NDA	DA	A	SDA	NDA	A	A	SDA	A	A	DA	DA	DA	DA	A	79	65.83	
	S	5	5	2	5	2	0	0	5	5	3	5	0	6	3	5	5	2	0	0	5	2	5	5	0	5			
224	AEE-448	RC	MDA	DA	A	MA	MA	A	DA	DA	A	MA	A	DA	DA	SA	SDA	A	MDA	DA	DA	A	DA	MDA	MDA	85	70.83		
	S	3	2	2	4	3	0	0	2	5	3	5	0	2	4	6	1	0	0	3	2	5	2	0	3	64			

Note: SA - Strongly agree A - Agree RC - Response code
MA - Mildly agree MDA - Mildly disagree S - Score
DA - Disagree SDA - Strongly disagree
* - Filler items 0 - Negatively worded (that is, agree indicates alienation)

APPENDIX XX

Alienation/Involvement: Weighted Moderated Score

Sl. Subject		O A E			O A I			O A P			O A M			O A N			Total
No.	Code	Sc-	Weigh-	Mode-	Sc-	Weigh-	Mode-	Sc-	Weigh-	Mode-	Sc-	Weigh-	Mode-	Sc-	Weigh-	Mode-	rated
		ore	tage	Score	ore	tage	Score	ore	tage	Score	ore	tage	Score	ore	tage	Score	Score
1	SE-101	38	0.852	32.376	38	0.813	30.894	63	0.624	39.312	54	0.768	41.472	46	0.619	28.474	46.934
2	SE-102	63	0.852	53.676	67	0.813	54.471	63	0.624	39.312	63	0.768	48.384	29	0.619	17.951	58.159
3	SE-103	58	0.852	49.416	54	0.813	43.902	75	0.624	46.800	71	0.768	54.528	54	0.619	33.426	62.044
4	SE-104	58	0.852	49.416	54	0.813	43.902	58	0.624	36.192	58	0.768	44.544	42	0.619	25.998	54.421
5	SE-105	54	0.852	46.008	50	0.813	40.650	63	0.624	39.312	54	0.768	41.472	58	0.619	35.902	55.317
6	SE-106	71	0.852	60.492	71	0.813	57.723	79	0.624	49.296	71	0.768	54.528	63	0.619	38.997	71.011
7	SE-107	54	0.852	46.008	54	0.813	43.902	67	0.624	41.808	67	0.768	51.456	63	0.619	38.997	60.438
8	SE-108	67	0.852	57.084	42	0.813	34.146	58	0.624	36.192	67	0.768	51.456	50	0.619	30.950	57.081
9	SE-109	63	0.852	53.676	58	0.813	47.154	71	0.624	44.304	71	0.768	54.528	54	0.619	33.426	63.408
10	SE-110	54	0.852	46.008	54	0.813	43.902	63	0.624	39.312	67	0.768	51.456	63	0.619	38.997	59.759
11	SE-111	63	0.852	53.676	58	0.813	47.154	67	0.624	41.808	63	0.768	48.384	58	0.619	35.902	61.731
12	SE-112	58	0.852	49.416	33	0.813	26.829	67	0.624	41.808	50	0.768	38.400	33	0.619	20.427	48.118
13	SE-113	54	0.852	46.008	58	0.813	47.154	71	0.624	44.304	75	0.768	57.600	54	0.619	33.426	62.158
14	SE-114	75	0.852	63.900	63	0.813	51.219	75	0.624	46.800	83	0.768	63.744	63	0.619	38.997	71.997
15	SE-115	33	0.852	28.116	33	0.813	26.829	46	0.624	28.704	46	0.768	35.328	33	0.619	20.427	37.923
16	SE-116	67	0.852	57.084	42	0.813	34.146	75	0.624	46.800	67	0.768	51.456	50	0.619	30.950	59.966
17	SE-117	17	0.852	14.484	25	0.813	20.325	17	0.624	10.608	38	0.768	29.184	21	0.619	12.999	23.830
18	SE-118	63	0.852	53.676	50	0.813	40.650	75	0.624	46.800	63	0.768	48.384	63	0.619	38.997	62.162
19	SE-119	50	0.852	42.600	58	0.813	47.154	67	0.624	41.808	67	0.768	51.456	21	0.619	12.999	53.323
20	SE-120	75	0.852	63.900	67	0.813	54.471	88	0.624	54.912	83	0.768	63.744	50	0.619	30.950	72.899
21	EE-201	54	0.852	46.008	50	0.813	40.650	63	0.624	39.312	50	0.768	38.400	50	0.619	30.950	53.134
22	EE-202	63	0.852	53.676	71	0.813	57.723	54	0.624	33.696	75	0.768	57.600	42	0.619	25.998	62.212
23	EE-203	63	0.852	53.676	54	0.813	43.902	71	0.624	44.304	67	0.768	51.456	38	0.619	23.522	58.993
24	EE-204	46	0.852	39.192	71	0.813	57.723	46	0.624	28.704	46	0.768	35.328	46	0.619	28.474	51.529
25	EE-205	79	0.852	67.308	79	0.813	64.227	63	0.624	39.312	96	0.768	73.728	75	0.619	46.425	79.162
26	EE-206	58	0.852	49.416	54	0.813	43.902	54	0.624	33.696	63	0.768	48.384	54	0.619	33.426	56.807
27	EE-207	83	0.852	70.716	50	0.813	40.650	83	0.624	51.792	71	0.768	54.528	63	0.619	38.997	69.827
28	EE-208	54	0.852	46.008	54	0.813	43.902	38	0.624	23.712	79	0.768	60.672	38	0.619	23.522	53.813

29	EE-209	71	0.852	60.492	67	0.813	54.471	63	0.624	39.312	75	0.768	57.600	54	0.619	33.426	66.730
30	EE-210	54	0.852	46.008	50	0.813	40.650	58	0.624	36.192	71	0.768	54.528	33	0.619	20.427	53.810
31	EE-211	54	0.852	46.008	58	0.813	47.154	63	0.624	39.312	79	0.768	60.672	42	0.619	25.998	59.615
32	EE-212	67	0.852	57.084	58	0.813	47.154	75	0.624	46.800	71	0.768	54.528	63	0.619	38.997	66.530
33	EE-213	58	0.852	49.416	58	0.813	47.154	63	0.624	39.312	75	0.768	57.600	54	0.619	33.426	61.727
34	EE-214	71	0.852	60.492	58	0.813	47.154	63	0.624	39.312	67	0.768	51.456	58	0.619	35.902	63.742
35	EE-215	67	0.852	57.084	50	0.813	40.650	46	0.624	28.704	67	0.768	51.456	54	0.619	33.426	57.486
36	EE-216	46	0.852	39.192	33	0.813	26.829	46	0.624	28.704	50	0.768	38.400	29	0.619	17.951	41.098
37	EE-217	63	0.852	53.676	58	0.813	47.154	50	0.624	31.200	71	0.768	54.528	50	0.619	30.950	59.170
38	EE-218	71	0.852	60.492	75	0.813	60.975	54	0.624	33.696	79	0.768	60.672	63	0.619	38.997	69.323
39	EE-219	63	0.852	53.676	63	0.813	51.219	75	0.624	46.800	75	0.768	57.600	71	0.619	43.949	68.891
40	EE-220	50	0.852	42.600	42	0.813	34.146	58	0.624	36.192	63	0.768	48.384	42	0.619	25.998	50.958
41	EE-221	75	0.852	63.900	71	0.813	57.723	79	0.624	49.296	79	0.768	60.672	75	0.619	46.425	75.630
42	EE-222	58	0.852	49.416	42	0.813	34.146	50	0.624	31.200	58	0.768	44.544	46	0.619	28.474	51.083
43	EE-223	45	0.852	38.340	50	0.813	40.650	67	0.624	41.808	50	0.768	38.400	50	0.619	30.950	51.727
44	EE-224	42	0.852	35.784	50	0.813	40.650	42	0.624	26.208	71	0.768	54.528	50	0.619	30.950	51.175
45	EE-225	38	0.852	32.376	58	0.813	47.154	54	0.624	33.696	71	0.768	54.528	29	0.619	17.951	50.518
46	EE-226	58	0.852	49.416	42	0.813	34.146	33	0.624	20.592	75	0.768	57.600	50	0.619	30.950	52.422
47	EE-227	46	0.852	39.192	42	0.813	34.146	71	0.624	44.304	54	0.768	41.472	38	0.619	23.522	49.683
48	EE-228	63	0.852	53.676	58	0.813	47.154	63	0.624	39.312	71	0.768	54.528	67	0.619	41.473	64.239
49	EE-229	75	0.852	63.900	67	0.813	54.471	75	0.624	46.800	71	0.768	54.528	58	0.619	35.902	69.532
50	EE-230	50	0.852	42.600	50	0.813	40.650	38	0.624	23.712	63	0.768	48.384	54	0.619	33.426	51.353
51	EE-231	79	0.852	67.308	75	0.813	60.975	83	0.624	51.792	79	0.768	60.672	58	0.619	35.902	75.258
52	EE-232	42	0.852	35.784	63	0.813	51.219	46	0.624	28.704	67	0.768	51.456	46	0.619	28.474	53.220
53	EE-233	71	0.852	60.492	63	0.813	51.219	67	0.624	41.808	71	0.768	54.528	58	0.619	35.902	66.363
54	EE-234	71	0.852	60.492	63	0.813	51.219	63	0.624	39.312	75	0.768	57.600	58	0.619	35.902	66.519
55	EE-235	63	0.852	53.676	71	0.813	57.723	54	0.624	33.696	67	0.768	51.456	58	0.619	35.902	63.235
56	EE-236	38	0.852	32.376	42	0.813	34.146	54	0.624	33.696	63	0.768	48.384	42	0.619	25.998	47.497
57	EE-237	96	0.852	81.792	100	0.813	81.300	92	0.624	57.408	95	0.768	72.960	67	0.619	41.473	91.113
58	EE-238	83	0.852	70.716	71	0.813	57.723	67	0.624	41.808	75	0.768	57.600	79	0.619	48.901	75.285
59	EE-239	33	0.852	28.116	33	0.813	26.829	38	0.624	23.712	42	0.768	32.256	38	0.619	23.522	36.571
60	EE-240	75	0.852	63.900	67	0.813	54.471	71	0.624	44.304	83	0.768	63.744	75	0.619	46.425	74.223
61	EE-241	63	0.852	53.676	54	0.813	43.902	63	0.624	39.312	58	0.768	44.544	63	0.619	38.997	59.965
62	EE-242	71	0.852	60.492	67	0.813	54.471	63	0.624	39.312	67	0.768	51.456	63	0.619	38.997	66.575
63	EE-243	33	0.852	28.116	50	0.813	40.650	63	0.624	39.312	54	0.768	41.472	25	0.619	15.475	44.893
64	EE-244	83	0.852	70.716	54	0.813	43.902	83	0.624	51.792	88	0.768	67.584	46	0.619	28.474	71.400
65	EE-245	63	0.852	53.676	54	0.813	43.902	67	0.624	41.808	63	0.768	48.384	63	0.619	38.997	61.689

66	EE-246	67	0.852	57.084	67	0.813	54.471	63	0.624	39.312	88	0.768	67.584	67	0.619	41.473	70.708
67	EE-247	63	0.852	53.676	58	0.813	47.154	58	0.624	36.192	71	0.768	54.528	75	0.619	46.425	64.737
68	EE-248	58	0.852	49.416	66	0.813	53.658	58	0.624	36.192	58	0.768	44.544	58	0.619	35.902	59.769
69	EE-249	63	0.852	53.676	50	0.813	40.650	83	0.624	51.792	67	0.768	51.456	46	0.619	28.474	61.493
70	EE-250	46	0.852	39.192	46	0.813	37.398	38	0.624	23.712	46	0.768	35.328	25	0.619	15.475	41.106
71	EE-251	67	0.852	57.084	42	0.813	34.146	42	0.624	26.208	75	0.768	57.600	50	0.619	30.950	56.036
72	EE-252	58	0.852	49.416	46	0.813	37.398	67	0.624	41.808	67	0.768	51.456	38	0.619	23.522	55.386
73	EE-253	54	0.852	46.008	58	0.813	47.154	63	0.624	39.312	71	0.768	54.528	67	0.619	41.473	62.153
74	EE-254	38	0.852	32.376	38	0.813	30.894	75	0.624	46.800	75	0.768	57.600	58	0.619	35.902	55.379
75	EE-255	83	0.852	70.716	88	0.813	71.544	79	0.624	49.296	79	0.768	60.672	75	0.619	46.425	81.244
76	EE-256	50	0.852	42.600	42	0.813	34.146	42	0.624	26.208	54	0.768	41.472	54	0.619	33.426	48.382
77	AEE-301	58	0.852	49.416	79	0.813	64.227	71	0.624	44.304	96	0.768	73.728	46	0.619	28.474	70.770
78	AEE-302	46	0.852	39.192	33	0.813	26.829	63	0.624	39.312	46	0.768	35.328	42	0.619	25.998	45.337
79	AEE-303	67	0.852	57.084	58	0.813	47.154	71	0.624	44.304	58	0.768	44.544	42	0.619	25.998	59.598
80	AEE-304	54	0.852	46.008	50	0.813	40.650	92	0.624	57.408	54	0.768	41.472	25	0.619	15.475	54.683
81	AEE-305	71	0.852	60.492	71	0.813	57.723	71	0.624	44.304	83	0.768	63.744	63	0.619	38.997	72.160
82	AEE-306	63	0.852	53.676	67	0.813	54.471	50	0.624	31.200	71	0.768	54.528	50	0.619	30.950	61.160
83	AEE-307	79	0.852	67.308	79	0.813	64.227	75	0.624	46.800	83	0.768	63.744	42	0.619	25.998	72.926
84	AEE-308	79	0.852	67.308	83	0.813	67.479	83	0.624	51.792	79	0.768	60.672	54	0.619	33.426	76.354
85	AEE-309	63	0.852	53.676	58	0.813	47.154	54	0.624	33.696	63	0.768	48.384	58	0.619	35.902	59.524
86	AEE-310	63	0.852	53.676	50	0.813	40.650	58	0.624	36.192	58	0.768	44.544	46	0.619	28.474	55.369
87	AEE-311	75	0.852	63.900	67	0.813	54.471	79	0.624	49.296	79	0.768	60.672	50	0.619	30.950	70.536
88	AEE-312	50	0.852	42.600	42	0.813	34.146	67	0.624	41.808	63	0.768	48.384	58	0.619	35.902	55.180
89	AEE-313	67	0.852	57.084	63	0.813	51.219	54	0.624	33.696	75	0.768	57.600	54	0.619	33.426	63.391
90	AEE-314	58	0.852	49.416	54	0.813	43.902	63	0.624	39.312	54	0.768	41.472	46	0.619	28.474	55.108
91	AEE-315	71	0.852	60.492	71	0.813	57.723	71	0.624	44.304	67	0.768	51.456	63	0.619	38.997	68.817
92	AEE-316	75	0.852	63.900	71	0.813	57.723	79	0.624	49.296	83	0.768	63.744	50	0.619	30.950	72.256
93	AEE-317	75	0.852	63.900	71	0.813	57.723	67	0.624	41.808	75	0.768	57.600	75	0.619	46.425	72.757
94	AEE-318	50	0.852	42.600	38	0.813	30.894	46	0.624	28.704	58	0.768	44.544	21	0.619	12.999	43.455
95	AEE-319	38	0.852	32.376	63	0.813	51.219	42	0.624	26.208	75	0.768	57.600	42	0.619	25.998	52.612
96	AEE-320	54	0.852	46.008	54	0.813	43.902	38	0.624	23.712	58	0.768	44.544	54	0.619	33.426	52.120
97	AEE-321	46	0.852	39.192	58	0.813	47.154	46	0.624	28.704	71	0.768	54.528	33	0.619	20.427	51.688
98	AEE-322	54	0.852	46.008	54	0.813	43.902	79	0.624	49.296	67	0.768	51.456	63	0.619	38.997	62.475
99	AEE-323	75	0.852	63.900	71	0.813	57.723	67	0.624	41.808	63	0.768	48.384	46	0.619	28.474	65.367
100	AEE-324	75	0.852	63.900	58	0.813	47.154	75	0.624	46.800	83	0.768	63.744	50	0.619	30.950	68.702
101	AEE-325	54	0.852	46.008	63	0.813	51.219	75	0.624	46.800	63	0.768	48.384	42	0.619	25.998	59.415
102	AEE-326	63	0.852	53.676	50	0.813	40.650	71	0.624	44.304	75	0.768	57.600	33	0.619	20.427	58.938

103	AEE-327	63	0.852	53.676	50	0.813	40.650	71	0.624	44.304	71	0.768	54.528	38	0.619	23.522	58.945
104	AEE-328	63	0.852	53.676	46	0.813	37.398	71	0.624	44.304	71	0.768	54.528	33	0.619	20.427	57.218
105	AEE-329	29	0.852	24.708	17	0.813	13.821	67	0.624	41.808	54	0.768	41.472	42	0.619	25.998	40.209
106	AEE-330	75	0.852	63.900	54	0.813	43.902	71	0.624	44.304	67	0.768	51.456	54	0.619	33.426	64.469
107	AEE-331	54	0.852	46.008	58	0.813	47.154	67	0.624	41.808	67	0.768	51.456	29	0.619	17.951	55.598
108	AEE-332	67	0.852	57.084	50	0.813	40.650	54	0.624	33.696	54	0.768	41.472	38	0.619	23.522	53.434
109	AEE-333	67	0.852	57.084	67	0.813	54.471	63	0.624	39.312	79	0.768	60.672	46	0.619	28.474	65.292
110	AEE-334	75	0.852	63.900	71	0.813	57.723	58	0.624	36.192	79	0.768	60.672	58	0.619	35.902	69.203
111	AEE-335	71	0.852	60.492	63	0.813	51.219	63	0.624	39.312	79	0.768	60.672	71	0.619	43.949	69.544
112	AEE-336	50	0.852	42.600	71	0.813	57.723	46	0.624	28.704	71	0.768	54.528	38	0.619	23.522	56.332
113	AEE-337	46	0.852	39.192	58	0.813	47.154	63	0.624	39.312	58	0.768	44.544	46	0.619	28.474	54.047
114	AEE-338	63	0.852	53.676	54	0.813	43.902	75	0.624	46.800	71	0.768	54.528	42	0.619	25.998	61.182
115	AEE-339	50	0.852	42.600	33	0.813	26.829	33	0.624	20.592	42	0.768	32.256	25	0.619	15.475	37.473
116	AEE-340	63	0.852	53.676	63	0.813	51.219	67	0.624	41.808	71	0.768	54.528	67	0.619	41.473	66.024
117	AEE-341	58	0.852	49.416	50	0.813	40.650	79	0.624	49.296	67	0.768	51.456	67	0.619	41.473	63.191
118	AEE-342	58	0.852	49.416	50	0.813	40.650	67	0.624	41.808	67	0.768	51.456	38	0.619	23.522	56.271
119	AEE-343	63	0.852	53.676	58	0.813	47.154	75	0.624	46.800	83	0.768	63.744	58	0.619	35.902	67.268
120	AEE-344	75	0.852	63.900	79	0.813	64.227	79	0.624	49.296	79	0.768	60.672	46	0.619	28.474	72.516
121	AEE-345	75	0.852	63.900	63	0.813	51.219	71	0.624	44.304	75	0.768	57.600	42	0.619	25.998	66.110
122	AEE-346	58	0.852	49.416	42	0.813	34.146	46	0.624	28.704	58	0.768	44.544	46	0.619	28.474	50.404
123	AEE-347	63	0.852	53.676	46	0.813	37.398	50	0.624	31.200	67	0.768	51.456	46	0.619	28.474	55.007
124	AEE-348	58	0.852	49.416	63	0.813	51.219	63	0.624	39.312	67	0.768	51.456	54	0.619	33.426	61.161
125	AEE-349	71	0.852	60.492	67	0.813	54.471	42	0.624	26.208	67	0.768	51.456	42	0.619	25.998	59.474
126	AEE-350	54	0.852	46.008	46	0.813	37.398	75	0.624	46.800	71	0.768	54.528	58	0.619	35.902	60.021
127	AEE-351	83	0.852	70.716	71	0.813	57.723	58	0.624	36.192	83	0.768	63.744	67	0.619	41.473	73.408
128	AEE-352	83	0.852	70.716	75	0.813	60.975	71	0.624	44.304	83	0.768	63.744	63	0.619	38.997	75.826
129	AEE-353	42	0.852	35.784	46	0.813	37.398	33	0.624	20.592	54	0.768	41.472	54	0.619	33.426	45.885
130	AEE-354	58	0.852	49.416	54	0.813	43.902	67	0.624	41.808	63	0.768	48.384	50	0.619	30.950	58.341
131	AEE-355	83	0.852	70.716	71	0.813	57.723	75	0.624	46.800	79	0.768	60.672	71	0.619	43.949	76.132
132	AEE-356	71	0.852	60.492	76	0.813	61.788	67	0.624	41.808	75	0.768	57.600	88	0.619	54.472	75.125
133	AEE-357	25	0.852	21.300	38	0.813	30.894	63	0.624	39.312	50	0.768	38.400	50	0.619	30.950	43.758
134	AEE-358	46	0.852	39.192	46	0.813	37.398	50	0.624	31.200	54	0.768	41.472	50	0.619	30.950	49.024
135	AEE-359	63	0.852	53.676	67	0.813	54.471	58	0.624	36.192	67	0.768	51.456	33	0.619	20.427	58.820
136	AEE-360	42	0.852	35.784	54	0.813	43.902	71	0.624	44.304	46	0.768	35.328	29	0.619	17.951	48.223
137	AEE-361	79	0.852	67.308	71	0.813	57.723	71	0.624	44.304	71	0.768	54.528	67	0.619	41.473	72.181
138	AEE-362	67	0.852	57.084	79	0.813	64.227	71	0.624	44.304	79	0.768	60.672	67	0.619	41.473	72.840
139	AEE-363	67	0.852	57.084	67	0.813	54.471	83	0.624	51.792	88	0.768	67.584	50	0.619	30.950	71.241

140	AEE-364	75	0.852	63.900	79	0.813	64.227	29	0.624	18.096	71	0.768	54.528	29	0.619	17.951	59.495
141	AEE-365	50	0.852	42.600	50	0.813	40.650	71	0.624	44.304	58	0.768	44.544	46	0.619	28.474	54.563
142	AEE-366	42	0.852	35.784	42	0.813	34.146	54	0.624	33.696	67	0.768	51.456	33	0.619	20.427	47.745
143	AEE-367	33	0.852	28.116	42	0.813	34.146	46	0.624	28.704	50	0.768	38.400	17	0.619	10.523	38.055
144	AEE-368	58	0.852	49.416	50	0.813	40.650	67	0.624	41.808	58	0.768	44.544	29	0.619	17.951	52.875
145	AEE-369	75	0.852	63.900	79	0.813	64.227	79	0.624	49.296	83	0.768	63.744	63	0.619	38.997	76.214
146	AEE-370	75	0.852	63.900	79	0.813	64.227	63	0.624	39.312	75	0.768	57.600	38	0.619	23.522	67.617
147	AEE-371	54	0.852	46.008	50	0.813	40.650	50	0.624	31.200	79	0.768	60.672	33	0.619	20.427	54.123
148	AEE-372	58	0.852	49.416	46	0.813	37.398	54	0.624	33.696	79	0.768	60.672	38	0.619	23.522	55.687
149	AEE-373	63	0.852	53.676	67	0.813	54.471	63	0.624	39.312	75	0.768	57.600	58	0.619	35.902	65.550
150	AEE-374	42	0.852	35.784	50	0.813	40.650	63	0.624	39.312	63	0.768	48.384	38	0.619	23.522	51.048
151	AEE-375	63	0.852	53.676	54	0.813	43.902	79	0.624	49.296	71	0.768	54.528	54	0.619	33.426	63.881
152	AEE-376	50	0.852	42.600	50	0.813	40.650	63	0.624	39.312	79	0.768	60.672	58	0.619	35.902	59.613
153	AEE-377	46	0.852	39.192	42	0.813	34.146	42	0.624	26.208	63	0.768	48.384	38	0.619	23.522	46.641
154	AEE-378	71	0.852	60.492	67	0.813	54.471	75	0.624	46.800	88	0.768	67.584	58	0.619	35.902	72.157
155	AEE-379	54	0.852	46.008	50	0.813	40.650	67	0.624	41.808	50	0.768	38.400	42	0.619	25.998	52.466
156	AEE-380	50	0.852	42.600	50	0.813	40.650	58	0.624	36.192	63	0.768	48.384	54	0.619	33.426	54.748
157	AEE-381	67	0.852	57.084	67	0.813	54.471	71	0.624	44.304	75	0.768	57.600	58	0.619	35.902	67.835
158	AEE-382	54	0.852	46.008	50	0.813	40.650	67	0.624	41.808	67	0.768	51.456	33	0.619	20.427	54.502
159	AEE-383	67	0.852	57.084	63	0.813	51.219	79	0.624	49.296	67	0.768	51.456	50	0.619	30.950	65.290
160	AEE-384	75	0.852	63.900	75	0.813	60.975	67	0.624	41.808	75	0.768	57.600	46	0.619	28.474	68.759
161	AEE-385	63	0.852	53.676	54	0.813	43.902	58	0.624	36.192	79	0.768	60.672	54	0.619	33.426	61.988
162	AEE-386	42	0.852	35.784	38	0.813	30.894	46	0.624	28.704	54	0.768	41.472	75	0.619	46.425	49.858
163	AEE-387	63	0.852	53.676	79	0.813	64.227	63	0.624	39.312	79	0.768	60.672	58	0.619	35.902	69.039
164	AEE-388	71	0.852	60.492	63	0.813	51.219	83	0.624	51.792	58	0.768	44.544	42	0.619	25.998	63.668
165	AEE-389	54	0.852	46.008	58	0.813	47.154	58	0.624	36.192	71	0.768	54.528	46	0.619	28.474	57.768
166	AEE-390	83	0.852	70.716	83	0.813	67.479	75	0.624	46.800	83	0.768	63.744	75	0.619	46.425	80.295
167	AEE-391	54	0.852	46.008	58	0.813	47.154	58	0.624	36.192	63	0.768	48.384	58	0.619	35.902	58.118
168	AEE-392	71	0.852	60.492	46	0.813	37.398	42	0.624	26.208	79	0.768	60.672	25	0.619	15.475	54.474
169	AEE-393	38	0.852	32.376	25	0.813	20.325	38	0.624	23.712	46	0.768	35.328	17	0.619	10.523	33.260
170	AEE-394	67	0.852	57.084	54	0.813	43.902	63	0.624	39.312	83	0.768	63.744	58	0.619	35.902	65.273
171	AEE-395	63	0.852	53.676	71	0.813	57.723	75	0.624	46.800	83	0.768	63.744	50	0.619	30.950	68.796
172	AEE-396	58	0.852	49.416	63	0.813	51.219	67	0.624	41.808	46	0.768	35.328	71	0.619	43.949	60.316
173	AEE-397	63	0.852	53.676	46	0.813	37.398	58	0.624	36.192	67	0.768	51.456	83	0.619	51.377	62.595
174	AEE-398	67	0.852	57.084	67	0.813	54.471	71	0.624	44.304	83	0.768	63.744	46	0.619	28.474	67.486
175	AEE-399	58	0.852	49.416	38	0.813	30.894	58	0.624	36.192	67	0.768	51.456	50	0.619	30.950	54.110
176	AEE-400	58	0.852	49.416	54	0.813	43.902	54	0.624	33.696	67	0.768	51.456	58	0.619	35.902	58.317

177	AEE-401	88	0.852	74.976	75	0.813	60.975	83	0.624	51.792	88	0.768	67.584	67	0.619	41.473	80.740
178	AEE-402	54	0.852	46.008	54	0.813	43.902	71	0.624	44.304	71	0.768	54.528	46	0.619	28.474	59.090
179	AEE-403	79	0.852	67.308	88	0.813	71.544	88	0.624	54.912	79	0.768	60.672	54	0.619	33.426	78.308
180	AEE-404	79	0.852	67.308	71	0.813	57.723	58	0.624	36.192	79	0.768	60.672	58	0.619	35.902	70.130
181	AEE-405	67	0.852	57.084	63	0.813	51.219	75	0.624	46.800	83	0.768	63.744	63	0.619	38.997	70.143
182	AEE-406	42	0.852	35.784	42	0.813	34.146	79	0.624	49.296	71	0.768	54.528	21	0.619	12.999	50.803
183	AEE-407	67	0.852	57.084	58	0.813	47.154	50	0.624	31.200	79	0.768	60.672	58	0.619	35.902	63.115
184	AEE-408	67	0.852	57.084	71	0.813	57.723	63	0.624	39.312	79	0.768	60.672	25	0.619	15.475	62.640
185	AEE-409	54	0.852	46.008	42	0.813	34.146	54	0.624	33.696	54	0.768	41.472	58	0.619	35.902	52.020
186	AEE-410	63	0.852	53.676	58	0.813	47.154	75	0.624	46.800	79	0.768	60.672	58	0.619	35.902	66.432
187	AEE-411	71	0.852	60.492	79	0.813	64.227	83	0.624	51.792	92	0.768	70.656	71	0.619	43.949	79.194
188	AEE-412	83	0.852	70.716	75	0.813	60.975	83	0.624	51.792	83	0.768	63.744	46	0.619	28.474	75.000
189	AEE-413	71	0.852	60.492	67	0.813	54.471	54	0.624	33.696	75	0.768	57.600	71	0.619	43.949	68.065
190	AEE-414	71	0.852	60.492	50	0.813	40.650	71	0.624	44.304	79	0.768	60.672	58	0.619	35.902	65.838
191	AEE-415	46	0.852	39.192	46	0.813	37.398	54	0.624	33.696	71	0.768	54.528	46	0.619	28.474	52.581
192	AEE-416	79	0.852	67.308	75	0.813	60.975	63	0.624	39.312	75	0.768	57.600	54	0.619	33.426	70.354
193	AEE-417	54	0.852	46.008	33	0.813	26.829	58	0.624	36.192	58	0.768	44.544	42	0.619	25.998	48.850
194	AEE-418	33	0.852	28.116	50	0.813	40.650	58	0.624	36.192	63	0.768	48.384	25	0.619	15.475	45.924
195	AEE-419	54	0.852	46.008	46	0.813	37.398	67	0.624	41.808	58	0.768	44.544	50	0.619	30.950	54.600
196	AEE-420	67	0.852	57.084	54	0.813	43.902	67	0.624	41.808	75	0.768	57.600	67	0.619	41.473	65.796
197	AEE-421	46	0.852	39.192	38	0.813	30.894	50	0.624	31.200	67	0.768	51.456	46	0.619	28.474	49.297
198	AEE-422	67	0.852	57.084	63	0.813	51.219	71	0.624	44.304	83	0.768	63.744	58	0.619	35.902	68.622
199	AEE-423	67	0.852	57.084	75	0.813	60.975	75	0.624	46.800	83	0.768	63.744	58	0.619	35.902	71.955
200	AEE-424	67	0.852	57.084	67	0.813	54.471	75	0.624	46.800	67	0.768	51.456	67	0.619	41.473	68.358
201	AEE-425	54	0.852	46.008	58	0.813	47.154	58	0.624	36.192	63	0.768	48.384	46	0.619	28.474	56.097
202	AEE-426	54	0.852	46.008	33	0.813	26.829	63	0.624	39.312	46	0.768	35.328	42	0.619	25.998	47.191
203	AEE-427	83	0.852	70.716	79	0.813	64.227	88	0.624	54.912	83	0.768	63.744	96	0.619	59.424	85.153
204	AEE-428	75	0.852	63.900	75	0.813	60.975	71	0.624	44.304	83	0.768	63.744	83	0.619	51.377	77.339
205	AEE-429	83	0.852	70.716	46	0.813	37.398	83	0.624	51.792	75	0.768	57.600	67	0.619	41.473	70.451
206	AEE-430	83	0.852	70.716	83	0.813	67.479	79	0.624	49.296	83	0.768	63.744	79	0.619	48.901	81.647
207	AEE-431	54	0.852	46.008	42	0.813	34.146	50	0.624	31.200	71	0.768	54.528	67	0.619	41.473	56.408
208	AEE-432	75	0.852	63.900	46	0.813	37.398	83	0.624	51.792	75	0.768	57.600	42	0.619	25.998	64.387
209	AEE-433	63	0.852	53.676	58	0.813	47.154	71	0.624	44.304	71	0.768	54.528	25	0.619	15.475	58.525
210	AEE-434	75	0.852	63.900	67	0.813	54.471	63	0.624	39.312	79	0.768	60.672	42	0.619	25.998	66.473
211	AEE-435	63	0.852	53.676	63	0.813	51.219	67	0.624	41.808	54	0.768	41.472	71	0.619	43.949	63.146
212	AEE-436	63	0.852	53.676	67	0.813	54.471	79	0.624	49.296	83	0.768	63.744	50	0.619	30.950	68.590
213	AEE-437	71	0.852	60.492	71	0.813	57.723	75	0.624	46.800	79	0.768	60.672	67	0.619	41.473	72.677

214	AEE-438	67	0.852	57.084	50	0.813	40.650	54	0.624	33.696	54	0.768	41.472	50	0.619	30.950	55.455
215	AEE-439	58	0.852	49.416	46	0.813	37.398	42	0.624	26.208	50	0.768	38.400	46	0.619	28.474	48.938
216	AEE-440	54	0.852	46.008	58	0.813	47.154	46	0.624	28.704	71	0.768	54.528	42	0.619	25.998	55.058
217	AEE-441	79	0.852	67.308	79	0.813	64.227	67	0.624	41.808	71	0.768	54.528	63	0.619	38.997	72.597
218	AEE-442	38	0.852	32.376	46	0.813	37.398	38	0.624	23.712	46	0.768	35.328	25	0.619	15.475	39.252
219	AEE-443	71	0.852	60.492	79	0.813	64.227	83	0.624	51.792	88	0.768	67.584	63	0.619	38.997	77.011
220	AEE-444	67	0.852	57.084	71	0.813	57.723	58	0.624	36.192	75	0.768	57.600	63	0.619	38.997	67.355
221	AEE-445	71	0.852	60.492	75	0.813	60.975	71	0.624	44.304	58	0.768	44.544	58	0.619	35.902	66.980
222	AEE-446	79	0.852	67.308	67	0.813	54.471	67	0.624	41.808	71	0.768	54.528	46	0.619	28.474	67.081
223	AEE-447	88	0.852	74.976	75	0.813	60.975	58	0.624	36.192	75	0.768	57.600	58	0.619	35.902	72.265
224	AEE-448	42	0.852	35.784	50	0.813	40.650	46	0.624	28.704	83	0.768	63.744	46	0.619	28.474	53.688

Notes: OAE - Self-estrangement dimension OAM - Meaninglessness dimension
 OAI - Social isolation dimension OAN - Normlessness dimension
 OAP - Powerlessness dimension

Level of Significance of Difference Between the Sub-groups in Organisational Alienation/Involvement Scores

Sl. No.	Sub-group Data			Sub-group Data			Sub-group Data			Student's 't'		Level of Significance
	Sub-group	n	Stand-ard de- viation	Sub-group	n	Stand-ard de- viation	Sub-group	n	Mean	Stand-ard de- viation	(-)	
1	2	3	4	5	6	7	8	9	10	11		
1	Superintending Engineers and above	20	57.13	11.210	Executive Engineers	56	60.39	10.630	(-) 1.145	Not significant		
2	Executive Engineers	56	60.39	10.630	Assistant Executive Engineers	148	61.61	10.100	(-) 0.755	Not significant		
3	Assistant Executive Engineers	148	61.61	10.100	Superintending Engineers and above	120	57.13	11.210	1.826	Not significant		
4	Males	195	60.65	10.410	Females	29	62.61	10.280	(-) 0.943	Not significant		
5	Age 40 years and below	56	62.18	9.380	Age 41 years and above	168	60.48	10.700	1.056	Not significant		
6	Post graduate degree/training	72	60.02	9.100	Non post-graduates	151	61.47	10.840	(-) 0.978	Not significant		
7	Degree and above	195	61.43	10.255	Without degree	28	58.04	10.400	1.625	Not significant		
8	Salary Rs.4001 and above	37	59.24	10.556	Salary Rs.3001 to 4000	110	60.30	10.400	(-) 0.531	Not significant		
9	Salary Rs.3001 to 4000	110	62.57	10.150	Salary Rs.1001 to 3000	77	62.57	10.150	(-) 1.476	Not significant		
10	Salary Rs.1001 to 3000	77	62.57	10.150	Salary Rs.4001 and above	37	59.24	10.536	1.601	Not significant		
11	Service upto 10 years	45	64.17	10.080	Service 11 to 30 years	18	53.25	14.180	3.379	Not significant		
12	Service 11 to 20 years	82	61.12	9.070	Service 21 to 30 years	79	60.56	9.940	0.571	Not significant		
13	Service 21 to 30 years	79	60.56	9.940	Service 31 years and above	18	53.25	14.180	2.552	0.02		
14	Service 31 years and above	18	53.25	14.180	Service 11 to 20 years	82	61.12	9.070	(-) 2.940	0.01		
15	Service 11 to 20 years	82	61.12	9.070	Service upto 10 years	45	64.17	10.080	(-) 1.728	Not significant		
16	Service upto 10 years	45	64.17	10.080	Service 21 to 30 years	79	60.56	9.940	1.919	Not significant		
17	Southern region	115	61.81	10.820	Central region	72	58.68	10.160	1.960	0.05		
18	Central region	72	58.68	10.160	Northern region	37	62.42	8.770	(-) 1.887	Not significant		
19	Northern region	37	62.42	8.770	Southern region	115	61.81	10.820	0.501	Not significant		
20	More organisational involved group	56	73.79	4.457	Less organisational involved group	56	47.22	6.044	26.239	0.01		
21	Intrinsic group	34	61.88	8.820	Extrinsic group	169	60.89	11.020	0.491	Not significant		
22	Very intrinsic group	20	63.07	8.750	Very extrinsic group	137	60.13	11.507	1.090	Not significant		
23	Intrinsic group	34	61.88	8.820	Very intrinsic group	20	63.07	8.750	(-) 0.472	Not significant		
24	Extrinsic group	169	60.89	11.020	Very extrinsic group	137	60.13	11.507	0.586	Not significant		