A BEHAVIORAL ECONOMIC STUDY OF SUPERVISOR STUDENT RELATIONSHIP IN HIGHER EDUCATION AND IT'S IMPACT ON ACADEMIC SELF PERCEPTION

Thesis submitted to the Jawaharlal Nehru University in partial fulfillment of the requirements for the award of degree of

DOCTOR OF PHILOSOPHY

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For my grandfather, my first teacher and a lifelong friend

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Declaration

Dated: 28-01-2021

I, **Nainy Rao**, hereby declare that this thesis titled "**A Behavioral Economic Study Of Supervisor Student Relationship In Higher Education And It's Impact On Academic Self Perception**" is based on my original research work and to the best of my knowledge, has not been submitted in whole or in part in this university or in any other university for the award of any degree.

(Nainy Rao)

Certificate

We recommend that this thesis be placed before the examiner(s) for evaluation and award of the degree of Doctor of Philosophy.

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Introduction

We live in an age of incentives. The transactional nature of human response to incentives has infiltrated every realm of the society. Actions are understood in a simplistic fashion, as incentivized. Behavior is comprehended as a product of reinforcements, which reward socially desirable behavior and punish undesirable behavior. Underlying motivation is assumed to be a unitary concept, where actions are driven by a desire to gain, or an expectation of yielding something 'fruitful'. Overall, human behavior has been subject to stringent assumptions, which simplify modelling of human behavior and empirically verify testable hypotheses based on these assumptions. Two disciplines which reaped the benefits of modelling human behavior in such a fashion are economics and psychology.

Prebehavioristic psychology had a foot in two domains. It looked for and found the subject matter of study in physiological and extended physical world, but attempted to explain this behavior with the help of states of consciousness and the world of thought, which was not as tangible and which could not be verified to be as concrete as the experience it was trying to explain. There was an epistemological ambiguity where the answers to questions about physiological processes were explained in terms which belonged to a world which was different as compared to the world where the problem originated. Behaviorists found the solution to resolve this epistemological ambiguity by resorting to find answers to physiological questions in the physical world itself.

The theoretical contribution of behaviorists in adding the dimension of empiricism to study of human behavior is unmatched. The precise idea was to give scientific temper to the study of human behavior and distinguish it from other disciplines which attempted to theorize behavior on the basis of what couldn't be observed but inferred. As opposed to understanding behavior employing abstract concepts which had no tangibility, behaviorists concentrated their focus on what was observable behavior and how it could be improved for the betterment of society. The human subject was at par with any other biological specie under study of natural sciences. And the methodology employed to study the subject attempted to mimic natural sciences in the best way possible.

All behavior was assumed to be reflexive, in response to stimuli from the environment. By rejecting explanations of behavior which took help of abstract concepts such as 'mind', an approach was adopted which tried to embrace a biological basis of behavior. What is observable is all there is, and that is what must be studied to make the study of humans as 'scientific' as possible. The methods and findings of behaviorists held a great appeal not only for academic community but society in general. The quest was no longer limited to subjecting individuals to societal rules and reprimanding them for moral turpitude. Because a possibility had emerged that with appropriate stimuli, individual behavior could be modulated. If it is expected of an individual that he repeats a particular behavior, it must be reinforced and he should be taught to associate specific stimuli with specific behavior. If the behavior in question is to be eliminated, then appropriate reinforcements can be used to achieve that.

Economics as a discipline, refined its conceptualization of human being and came up with the idea of *homoeconomicus*, a neoclassical entity incessantly engaged in self interest and driven by rationality. The idea of economic man, as proposed by Adam Smith emphasized on rationality but rationality alone was not the supreme characteristic of economic man. Smith's theorization of economic behavior as it took place in the market place did not exclude innate tendencies, desires and environment in which economic transaction was taking place. But the discipline of economics could not escape the trend of legitimizing knowledge and making it scientific that disciplines such as psychology were also undergoing. The 'ideal type' was abstracted by neoclassical economics and then idealized.

This process of abstraction and idealization is at the heart of positivism. There is no doubt that the theoretical contributions which resulted from positivism were intriguing. Particularly so, because the abstractions of human behavior made it easier to study things in isolation. Elements which were salient to the study of discipline were included. Modelling of human behavior on the basis of these ideal types created new knowledge which was then applied in social situations. What remained to be desired was to infuse this abstraction with elements of sociality and understand exchange not only in economic terms but also social. The economic aspect of any interaction or exchange between two economic entities unfolds in actuality as social exchange between two individuals.

Interaction between two individuals when segregated from the social reality of it tends to pose a danger of the analysis being one dimensional. By stating this, the intention is not to undermine the importance of biological basis of behavior but to question the supremacy awarded to it by behaviorists. Similarly, questioning and thinking deeply about the accuracy of assumptions

behind postulations of *homo-economicus* is not intended to destabilize the succinct and pointed observations about human behavior but to incorporate human nature into the construction of economic man. As opposed to the presentation of human behavior in a homogenized way and placing the eccentricities of individuals under anomalies, an attempt will be made to recognize and incorporate these individual differences throughout this research work. For it is these eccentricities which grant individuality to a human being.

How to situate individual and interaction in the world of incentives?

Individual and society happen to be two sides of the same coin. Just as a society is a composite representation of the individuals who are a part of it, individuals too are components of the collective which calls itself society. For methodological individualists, individual was primary, for a society would not exist if it were not for individuals. As a result, individual's freedom, autonomy, creativity and expression of individuality was of utmost importance. It is this individual behavior that gives a shape and definition to social phenomenon. Which is why, the individual cannot be derived by reducing the macro principles of society at a micro level.

At the same time, an individual operates in a world of 'others'. Everything which has meaning was awarded that because the collective assigned a meaning to it. From actions and inactions, objects to gestures, emotions, communication; holds a significance which is collectively agreed upon. Individual understands himself and others and the world around him with the help of these socially awarded meanings. This becomes the channel through which society permeates the deepest layers of the inner world of an individual. Every thought an individual has, every lived experience, every emotion he encounters even within his own mind gains a shape and structure with the help of and against these socially agreed upon meanings.

Social influence on individual thought and experience goes beyond the process of enabling meaning making. Base instincts and desires of an individual are very potent forces which are reined in by the moral norms and rules of law in a society. Society ensures that individuals adhere to a socially acceptable and moral code of conduct to be a part of the collective. Explicitly, it is achieved by putting in place institutions which reward 'good' acceptable conduct and implicate appropriate sanctions and punishments in response to 'unacceptable' behavior. The institutions act as watchdogs for the collective to ensure smooth functioning of a society by generating an awareness amongst the individuals that their actions are always under observation.

More importantly, the power in absentia which a society exerts upon an individual is by way of making him conscious that his actions and behavior are under surveillance by other members of the society. Individual operates in effect of this power which uses individuals as objects, objectives and instruments of it (Hoffman, 2011). The disciplinary power exerts itself with the help of its institutions to produce individuals who are docile and conform to its rules and regulations. These individuals are assigned tasks and their activities are controlled to meet an end as deemed fit. They are then ascribed ranks on the basis of their performance in examinations. The disciplinary power does not notice individuals for their existence as it is, but looks at them as bodies which can be subjected to force and transformed into docile bodies which are capable of performing actions assigned to them. It seeks to extract the maximum possible utility from this body, to make it the most productive it can be so that it can operate in conjunction with other bodies operating in society.

In the world of incentives, good behavior is rewarded and bad behavior is reprimanded, but one's behavior is judged using the concept of 'norm' which as per Foucault (1979) is the standard of behavior on the basis of which its measured as good or bad. By normalizing behavior and subjecting it to constant surveillance, individuals are objectified and examined. The most interesting aspect of the operation of disciplinary power is that it makes use of other individuals who are subject to it as instruments to spread its wings. Yet the operation of it is so subtle and simplified that it seems rather inconspicuous.

The authoritative gaze of disciplinary power rests not only in the institutions but multiple hierarchical levels of surveillance throughout which this power is distributed. The torchbearers of social norms are the very individuals who are its subjects. One of the essential techniques of the exercise of disciplinary power is that each individual is situated in a *Panoptic* apparatus, wherein they can keep an eye on other subjects and others can keep an eye on them. This power and its operation is internalized by its subjects to an extent that the individual is at the same time an 'object' and the 'subject' of this power. He is made aware that his actions are constantly being observed so that he becomes mindful of his own actions, constantly scrutinizing himself as others would (Feder, 2011; Foucalt, 1979).

Several analogies can be drawn from the discussion above. Disciplinary power is ubiquitous- it exists in social apparatus, in everyday communication, in others around and is also internalized by individuals. Individuals are born into a power structure which they have little control over. Considering that this force outside of individual shapes much of what he thinks, how he acts and how he perceives himself and others; it is important to ponder upon where an

individual is to be placed. Is the individual to be looked at in a reduced form as a mere product of the society they are born into or is the individual struggling with this social apparatus to carve a niche for himself while being a part of a society?

In Foucauldian thought, power inhibits daily practices and constantly strives to make an individual compliant, obedient and more productive. But once one understands the operations of this power, the fettering control with which it limits the possibilities of being; one is also equipped with the opportunity to decide which forces amongst those around him are acceptable and which are intolerable and then resist the intolerable forces, never knowing if one will successfully escape them or not (May, 2011). There is this little window of opportunity to situate arguments in favor of individuality in the understanding of what constitutes an individual apart from social forces.

Burkitt (2008) suggests that an individual cannot escape from the social structure he is born into owing to which society has a huge influence in shaping who and how they turn out to be. This society extends some privileges to the individual in the form of rights but also confers upon some duties and responsibilities which one needs to toe in order to be socially accepted. Society inhibits the nature of being, limits the possibility for an individual to indulge in desires and instincts as they please by evoking in them a sense of morality and moral turpitude which is internalized. Freedom lies in struggling to find oneself within this power structure and the capillaries via which it operates.

Incentives are a good example of modern power. Economic understanding of incentives is an even better example of modern power. Actions are understood as incentivized. With the use of appropriate incentives, an individual can be manipulated to do what he wouldn't of his own accord. The individual in question is not explicitly coerced into undertaking desirable behavior but in a very subtle way, incentives hold a magnetic appeal which the individual might find hard to resist. Or as economists would describe the phenomenon- the *opportunity cost* of not acting in the light of incentives increases. It is comparable to modern power because it reaffirms the notion that action and motivation for that action arise externally to the individual.

Incentives have assumed an instrumental role in the way society manages and controls its individuals. They have infiltrated every aspect of human world possible- from schooling to work environments to social responsibility. It is thought that if appropriately incentivized, individual action and effort can be focused in a 'desirable' direction. The appeal of incentives holds a power over the individual because they are made to believe they are gaining something

which is socially relevant or personally relevant to them in exchange for their effort. They become habituated to the process of being rewarded for 'appropriate actions' which 'are for their own good'.

The locus of control for incentivized behaviors lies outside the individual. This tends to drive the attention away from individual behaviors where locus of control emanates from within an individual. Particularly behaviors which are undertaken because they tend to be inherently satisfying for an individual such as taking part in activities which are interesting, the act of pursuing which itself is rewarding for an individual. When individuals are habituated to pursue activities because of their instrumentality, prompted by rewards, such behaviors tend to be overlooked. More so, incentives create a diversion by promoting instrumental behaviors and engaging an individual's time and effort towards exercises which may not be inherently appealing to them.

Frey (2012) also points out that once an individual is habituated to the concept of rewards as remuneration for an activity, it is quite likely that when the rewards are discontinued an individual will find himself less inclined to continue engaging with the task. This is especially problematic in case of behaviors which are intrinsically motivated but managed with rewards. Because when rewards are no longer offered, the individual is likely to not partake in an activity which he found interesting to begin with. Considering the evidence provided by literature in support of the argument that individual engagement with a task is more productive and enjoyable if the individual is intrinsically inclined towards it, with an overt reliance on incentives, this channel of productivity might be looked over. If the purpose of incentives is to exact maximum possible productivity from an individual, then this possibility of a negative impact of incentives should be taken into account.

Rationale for the study

The present research work is an attempt to place the interpersonal interaction between two individuals at the center of economic analysis of behavior in the light of incentives. Economic analysis of behavior tends to rely on a one-dimensional understanding of human motivation and analyzes behavior in the presence of incentives with cost benefit analysis. But this often yields individual differences in response to same incentives. A possible reason for the same could be that the importance of individuality itself is underplayed in modelling of behavior. People tend to have varied reasons to associate themselves with a task and with other people or institutions. Furthermore, the response to incentives as suggested by cost benefit analysis

leaves little scope to understand the variability in response as a result of differences in how they are mentally perceived by the individual at the receiving end.

In an educational setup, employment of incentives in the form of rewards and punishments, verbal or tangible is widespread. In line with the behavioristic understanding of reinforcements, it is assumed that incentives will enable better learning outcomes and improve productivity amongst the students. External mediation on part of instructors at all levels of education tend to be reflective of the social importance of incentives in a modern world. At the same time, if heterogeneity amongst students, their motives behind pursuing education and their psychological needs are integrated with the process of using incentives, it might explain variability in responses as a result of variability in individual characteristics. Incentives can be made much more effective by molding them in accordance of individual needs. With a better understanding of the purpose behind incentives, their design and their impact on individual who is at the receiving end, educational outcomes might be improved.

Research Objective

This research work attempts to understand the nature of relationship between supervisor and supervisee over the course of research and how the two exchange resources. Considering that the two work in tandem to execute a research task at hand, the exchange between a supervisor and student in terms of resources, verbal and non verbal feedback, attitudes towards each other become instrumental in collaborative process of completing research. This exchange assumes a particularly important role because the student mentally interprets the actions and attitude of the supervisor and formulates a perception of how he is perceived by his supervisor. This perception feeds into student's motivation to work and his self perception about his caliber to pursue research. This research work will attempt to unveil the process through which incentives compel the researcher to revise his academic self-perception and influence his motivation on the basis of his perception of his supervisor's opinion about him.

Research questions

- In what form can the theoretical framework of principal-agent relationship be adapted to the academic exchange between a research scholar and his supervisor? What sort of information asymmetries exist in this relationship? Why does the need for incentives arise in this model?

- How is the academic motivation to be understood in the case of research scholars? Is there a correlation between academic exchange and relationship with supervisor and agent's intrinsic or extrinsic motivation level?
- How are the principal's perceptions of the agent and principal's actions perceived by the agent? To what extent does this perceived impression exert any impact on the agent's self-perception with pertinence to the task?
- Is there an affective relationship between academic motivation and academic self perception? How do these two mental processes work in tandem?
- Does past academic achievement bear some correlation with academic motivation and self perception?

Methodology

This research work attempts to understand the nature of social exchange between two individuals who find themselves operating in a hierarchical relationship. It is a study of interplay of power between the two individuals and how this power is interpreted, implied and employed in the working dynamics. The nature of exchange between the two, inclusive of verbal and non verbal communication, attitudes, gestures, is reflective of the extent and exertion of power by the one in a dominant position. Those who submit to this power, either internalize its operation or accept it to avoid conflict. In either case, the ones who submit, interpret and analyze the actions and attitudes of the dominant person and derive meaning from the interpersonal exchange. This meaning further influences their self beliefs and actions.

The instrument used in this study attempted to assess the impact of interpersonal communication between supervisors and supervisees on supervisees' academic motivation and self perception. The subjects for this study were students enrolled in Jawaharlal Nehru University in M.Phil. or Ph.D. program. This subject works in tandem with his or her supervisor in order to produce a good research work in a stipulated amount of time as prescribed by the university. In this journey, supervisor provides useful guidance regarding academic endeavors and creates opportunities and provides resources to facilitate the pursuit of research.

The instrument begins by seeking information regarding demographic and social background of the subject. Questions pertaining to gender, age, location of hometown, social category, religion, parental education background, and parental annual income were asked. The research course a subject is enrolled in, GPA obtained in coursework and amount of scholarship received were also asked. Along with this the subject was asked to award themselves a rating

on a scale of 1 to 5 to see how capable they perceive themselves to be as a researcher, where 1 signified very poor and 5 signified very good. This question would again be asked at the end of the questionnaire to assess if the response of subject changed after they were through with the questionnaire which contained elements that would enable them to reflect on their journey as a researcher.

The discussions about self emphasized on how self is a social construct. In the formation of self, an individual actively assimilates information from their environment, assess others' reactions towards them and their actions and tries to interpret others' attitudes and impressions of them. At the same time, there is a fine balance between the autonomy from others' opinion and dependence on others' opinion. The opinion of the people who hold a particular significance for the individual is heavy and more meaningful for the individual as compared to others. It thus was important to establish who was the significant other for the subject with pertinence to their academic journey as a researcher. The subject was asked to choose between supervisor, peer group and family and tell whose opinion mattered the most when it came to their research work.

At this point in the questionnaire, the subject was asked to reflect on what according to them constitutes an ideal researcher. The reason to ask these questions at this point of survey was to set a pretext against which subject would assess themselves in the sections to come. The theoretical basis for setting such a premise was that in theories of self conception, it has been suggested that an individual oscillates between an 'ideal self' and a 'real self'. The ideal self is a hypothetical construct in the individual's mind. It is a reflection of what society would probably define as ideal, a level which individual aspires to attain. Questions asked in this section asked subjects to rate six statements from 1 to 5 in order of agreeability.

The statements chosen in this section enquired about the ideal researcher according to the subjects. Characteristics chosen for this ideal researcher were dedication towards research, good academic performance in coursework, publications and participation in academic activities, ability to think and analyze critically, good command over English and the ability to produce ideas in writing and familiarity with literature and methodology relevant to one's field of study. The same components would reappear in later sections of the questionnaire with slight paraphrasing to compare and contrast how a subject would rate himself on similar parameters and how according to them their supervisor would rate them on these parameters.

The questionnaire then moved on to enquire the reasons behind subject's decision to pursue research degree at JNU. *Academic Motivation Scale*[1] based on the Self-Determination Theory proposed by Deci and Ryan (1985) was used. It is composed of 28 items subdivided into seven sub scales assessing three types of intrinsic motivation (to know, to accomplish and to experience stimulation), three types of extrinsic motivation (introjected, identified and external regulation) and amotivation. The scale has satisfactory levels of internal consistency (mean alpha value = .81) and temporal stability over a one-month period (mean test-retest correlation = .79). In addition, results of a confirmatory factor analysis (LISREL) confirmed the seven-factor structure of the AMS. The factorial validity and reliability of the Academic Motivation Scale make it a useful instrument for the purpose of this research work. No major modifications were made to the scale except replacing the word 'university' with JNU and 'school' with research.

The questionnaire then moved on to seek information from the subject about their journey as a researcher with special emphasis on interaction with their supervisors. The typology of rewards as suggested by Ryan (1983) was employed to design questions which seek to identify various dimensions of incentive structure offered by the principal in order to assess how they were perceived by the individual. The incentives offered by the supervisor could be verbal or tangible, expected or unexpected, controlling or non controlling. Based on the permutations and combinations of these identifiers, eight subcategories of incentives were identified- tangible expected controlling, tangible expected non controlling, tangible unexpected controlling, tangible unexpected non controlling, verbal expected controlling, verbal expected non controlling, verbal unexpected controlling and verbal unexpected non controlling incentives. Along with this, six broad categories- verbal incentives, tangible incentives, expected incentives, unexpected incentives, controlling incentives and non-controlling incentives were also created with appropriate combinations of subcategories.

At this point, questionnaire asked subjects to give out some information about their supervisors. The purpose of this section was to assess how favorably the subject perceives their supervisor. The statements attempted to ask the subjects how they would rate their supervisors on a scale of 1 to 5 on the basis of their talent as an academician, amount of time they receive to discuss their work, to what extent supervisor takes interest in subjects' research, how helpful supervisor

[1] The Academic motivation scale was translated from French to English by Vallerand, R. J., Pelletier, L. G., Blais, M. R., Briere, N. M., Senecal, C., & Vallieres, E. F. (1992).

is when subject feels stuck in the journey of research, emotional support which supervisor lends through tough life situations and how fair their supervisor is in his conduct towards his students. The statements were asked from the point of view of the subject to establish what their perception is about their supervisor in general.

In Self Determination Theory, the three psychological needs which hold paramount importance are the needs to experience autonomy, relatedness and competence. With pertinence to their journey as a researcher, subjects were asked to rate statements on a scale of 1 to 5 in order of agreeability. For autonomy, the subjects were asked questions about the extent to which they exercise control on the direction of their research work, how favorably supervisors respond to their academic opinions and if they feel free to consult other professors and specialists for their research work without the fear of judgment from their own supervisor. To assess relatedness, subjects were asked to rate the extent to which they feel a connection with their own research work and the extent to which their choice of topic was influenced by their supervisor's interests as opposed to their own. To assess competence, the subjects were asked to compare themselves to their peer group and see if they fare well and if they need to invest more time comparatively in order to understand their own subject.

The next section of the questionnaire asked subjects to give out information about themselves. The questions were asked to gather information regarding subjects' self perception of their own academic abilities and general self esteem. The components which were used to assess their perception of what constitutes an ideal researcher were asked again, with a change in the tone of the statement. The subjects were also asked to rate the statements based on same components to assess how their supervisors must perceive them and their abilities as a researcher. The purpose of this design was to compare and contrast the perceptions of subjects regarding what is ideal, where they think they stand against this perception and how they would fare on these components from the point of view of their supervisor.

These questions were interspersed with some questions about general self esteem of the agent. The subjects were asked to rate statements from 1 to 5 in order of agreeability. Statements were designed to enquire if they perceive themselves as talented, proactive in seeking opportunities to further their career in research, stability of interests, comparison to others in their field, importance attached to others' opinion about them and how they react to criticism and negative impressions that others have of them. The questionnaire then asked the subjects to once again rate themselves as a researcher on a scale of 1 to 5 as was mentioned previously. Towards the end of the questionnaire subjects were asked an open ended question. "Over the course of

research, we all share a working and non working relationship with our supervisors. Our interactions are not only academic, but we become emotionally involved and affected in our conversations with supervisors. Please tell us about your journey with your supervisor".

Chapterization

The first chapter presents the theoretical paradigm of principal agent model which will be employed as the conceptual framework for this research work. Shapiro (2005); Eisenhardt (1989) present comprehensive literature reviews of the existing research in understanding principal agent relationships and the dynamics of it. Arrow (1984), Laffont and Martimort (2008) and Braun & Guston (2003) expound on the source and existence of information asymmetries in this relationship and how their negative impact can be minimized with the help of incentives. Boly (2012); Fama & Jensen (1983) and Barney & Ouchi (1986) discuss the importance and effects of information systems and governing mechanisms to keep a check on activities of the agent. With reference to this research work, it is also discussed if the contract between principal and agent is behavior based or outcome based with the help of theorizations of Anderson (1985), Eisenhardt (1985) and Lambert (1983).

The chapter moves on to discuss a cost benefit analysis of agent's actions in the light of incentives provided by the principal with the help of mathematical representation used by Frey & Jegen (1999) and ponder upon the nature of incentives and how the term incentive structure could be broadened and made more inclusive. The observations of Barnard (1968), Dimock and Dimock (1964) and Tead (1951) are especially useful in the quest of understanding the nature of an inclusive incentive structure. The chapter then moves on to present an account of behavioral agency relationship with the help of works of Frey (2012) and Frey and Oberholzer-Gee (2003) and how such a framework can be applied to institutes of higher education.

The second chapter discusses the theories from psychology with the help of which the understanding of human motivation in accounts of economics can benefit. It begins by discussing about behaviorism and classical and operant conditioning from a review of human motivation by Atkinson (1964). Schultz & Schultz (2015); Baum (2011) discuss the relevance of reinforcements alongside evolutionary history in acquiring new behaviors. Huitt and Hummel (1998) identify four types of reinforcements which can be used to learn new behaviors and eliminate undesirable ones. Thereafter, the construction of individual in accounts of psychology and economics is compared and contrasted to highlight the similarities between behaviorist school of thought and employment of incentives in principal agent relationship.

The chapter then moves on to discuss Self Determination theory as proposed by Deci and Ryan (1985). The levels and types of motivation identified by this theory are threefold- intrinsic, extrinsic and amotivation and their sub categories. The theory discusses about the importance of psychological needs for autonomy, competence and relatedness for an individual with the help of discussions about the same in Ryan & Deci (2017); Chen, Vansteenkiste, et. Al. (2015) and Deci and Ryan, (2014). To integrate Self Determination Theory with principal agent model, the mathematical and theoretical framework suggested by Benabou & Tirole (2003) has been especially helpful. The authors suggest that incentives have an impact on individual motivation by influencing self esteem of an individual by way of *looking glass self* which paved way for discussions about conceptualization of self in the following chapter.

The third chapter engages with the question that to what extent are individual and society interdependent with special reference to conceptualization of self. The chapter begins by looking at philosophical explorations about the nature of self from Hellenists to Nietzsche with the help of detailed accounts in Taylor (1989), Burkitt (2008), Seigel (2005), Hollingdale (1965) and Mauss (1938). Thereafter discussion moves on to accounts about the interactionist paradigm as found in Denzin (2007) and Rock (1979) to understand how an individual by way of interaction finds a pivot in the form of others around him to conceptualize about himself.

Special emphasis is laid on discussions about Cooley's concept of *looking glass self* and its relevance for the current research work with the help of theoretical explorations of the same in Shaffer (2004), Cooley (1902). The active and selective aspect of interpersonal relationships, the role of reflected appraisals and their significance in self conception and self perception is discussed with the help of accounts in Franks and Gecas (1992), Rosenberg (1979), Felson (1981, 1985); Bohrnstedt and Felson (1983). The theoretical contributions of Rogers (1959), Bem (1967, 1972), Shavelson and Marsh (1985), Marsh and O'Mara (2008) have been especially helpful in understanding how conception and perception of self come into being.

The fourth chapter attempts to integrate the theoretical positions from first three chapters and analyze the impact of incentives and punishments in principal agent relationship on individual motivation and self perception. The chapter reflects on the construction of an agent and information asymmetries in these relationships which have theoretically been discussed from the point of view of the principal. Boly (2012), Barney and Ouchi (1986) present an account of the impact of punishment and monitoring strategies on agent. Discussions in Angyl (1965) and Deci and Ryan (1980, 1985, 2017) are used to emphasize on the need for an individual to experience autonomy and homonomy at the same time to be well functioning. A typology of

rewards suggested by Ryan et. al.(1983) is used to gain a better understanding of how reward contingencies can be theorized. Sansone and Harackiewicz (2000) and Ryan and deci (2017) discuss about the impact of these reward contingencies on individual motivation. the importance of informational and controlling aspect of reward and punishments is then discussed with reference to the perceptive and reflective ability and nature of an agent to place it in relevance for the theoretical framework adopted for this study.

The fifth chapter presents the results obtained from the data collected for this research and places them in the context of the theoretical framework discussed in preceding chapters. The sixth chapter focusses on the analysis of conversations with supervisors and their supervisees and attempts to situate the interpersonal interaction between the two at the center of the discussion about supervisees' academic motivation and self perception. The final chapter presents a conclusion to the thesis, implications of the study and possible directions for future research.

Chapter One

Principal-Agent Model: Theoretical discussion about the conceptual framework

Agency theory is a pervasive fact of economic life. In his day to day life, an individual encounters several junctures where he finds himself making decisions on behalf of someone or having someone execute tasks as his representative. How the parties in question choose to define the terms and conditions of their interaction is subjective, but, it must be observed that the interaction happens to be symbiotic in nature where decisions taken by the individual impact the benefits reaped by both the parties, whether this individual (in the position of agent) is taking decisions on behalf of someone or he (in the position of principal) is outsourcing the task of arriving at decisions to someone else.

Principal-Agent Theory is a specific social relationship which hinges on exchange of resources between the actors involved. The principal is the actor who has a number of resources at his disposal, a task at hand and is seeking an agent, who would take advantage of these specific resources to execute the task and further the interests of the principal. In the framework of 'new institutional economics', this relationship has been understood in terms of delegation. Coleman (1990) proposes that principal seeks an 'extension of self' by way of delegation because he disposes of a number of resources but not of the 'appropriate' kind, whereas the agent has the required skill set to execute the task at hand.

The notion of exchange lies at the heart of all economic activity. So does purposiveness. Two economic actors engage in collective action because undertaking it would result in mutual gains for both the parties involved. To further our understanding as to why people cooperate, literature in Organization Theory may be useful. Barnard (1968) maintains that man, by virtue of his sociality, associates himself with a task or an organization because every individual has some personal goals, attainment of which is hindered by physical, social, technological or physiological limitations. What makes this association purposive is an expectation that it will help the individual in attainment of his personal goals.

In the event of success, benefits of association will be reaped by both, principal as well as agent. But whether the joint task reaches culmination or not, is a product of multiple and complex factors which may be exogenous to the control of both parties and not contingent on

effort alone. Given that a probability of failure is almost intrinsic to all ventures, it becomes important to discuss how risk of failure is shared by individuals. Eisenhardt (1989) points out that agency theory bloomed from information economics wherein the likes of Arrow (1971) and Wilson (1968) began exploring different attitudes towards risk between cooperating parties. In the analysis of ubiquitous agency relationship, it becomes important to take into account the risk preferences of all actors involved.

Differing attitudes towards risk are not the only factor that complicate the relationship between principal and agent. Literature in agency theory especially focusses on how symbiotic interactions of this nature are riddled with information asymmetries. In analogous relationships, the backbone of collaborative action is trust and accountability but information asymmetries have a tendency to infuse mistrust and inefficiency in working relationships. Which is why the terms and conditions of interaction must be carefully chosen to optimize the benefits from interaction for both parties. Agency theory uses the metaphor of 'contract' to define and study these terms and conditions (Jensen & Meckling, 1976). Subsequent sections of this chapter will attempt to expound on the nature of information asymmetry, contract, incentive structure and how this model may be adapted to a university setup.

Information asymmetry and the need for contract

"Agency Theory, in most general terms, can be viewed as the economic analysis of cooperation in situations where externalities, uncertainty, limited observability, or asymmetric information exclude the pure market organization" (Bamberg & Spremann, 1989, p.2)

In the principal-agent framework, 'principal' is an economic entity who has a task at hand, several resources at his disposal and is looking for suitable candidates with requisite skill set to execute the task by putting these resources to good use. The 'agent' is an economic entity who associates himself with the principal for varied reasons and puts in a certain amount of effort towards the completion of the task. These two rational actors are striving to maximize their preferences ranked on the basis of their priorities but payoffs for principal as well as agent are contingent upon the effort level supplied by the agent towards accomplishing the task at hand. Shapiro (2005) calls agency relationship a 'dyadic' relationship between individuals. In economics paradigm, agency relationships have been understood in terms of contract between principal and agent and elements of this contract (incentive structure, monitoring, social control, bonding and so on) are an attempt to minimize agency costs.

Firstly, because principal and agent work in collaboration to ensure that their task reaches completion, it becomes important that goals of the agent be aligned with the principal. Secondly, the nature of this relationship is such that both parties have private information pertinent to their competence in the task at hand which is not disclosed beforehand. But, with the progression of the task, this information becomes salient and has the potential to negatively impact the quality of work. According to Arrow (1984), Laffont and Martimort (2008) and Braun & Guston (2003); this information asymmetry can be of two types- *hidden information* and *hidden action*. Hidden information refers to a situation wherein the agent has some private information about his capabilities or intentions or suitability for the task which he does not reveal to the principal (adverse selection). Shapiro (2005) states that when selecting from a pool of potential candidates, principals can't always be sure of the true 'type' of agent they are shortlisting. Hence there is a possibility that the principal might select his agent from a large number of low quality applicants or that he has no way of verifying if the agent has the skills that are required by the job.

Hidden action describes a situation wherein an agent can undertake an action unobserved by the principal (moral hazard). In economic accounts of agency relationships, one common concern is that agents have a tendency to pursue self-interest with 'guile' (Williamson, 1975; Shapiro, 2005). Once selected, an agent might shirk, be opportunistic or take advantage of the resources provided by the principal for his personal needs but principal may find it difficult to keep a close watch on agent's actions at all times.

The need for incentive structure in any principal agent relationship arises when confronted with these two difficulties: conflicting objectives and decentralized information. In order to incite action from the agent, the principal devises an incentive structure on the basis of some observed signals that provide information relevant to the task and agent's capabilities. The principal is the first mover and on the basis of what the principal has to offer, agent determines his expected payoff and chooses the optimal course of action that maximizes his expected payoff. This action taken by the agent eventually determines the payoffs for both principal as well as the agent. In other words, incentive structures are important instruments which, if devised carefully, can be used to manipulate agent's behavior.

Along with this; principal may as well choose to invest in information systems to supplement his ability to keep a track on activities undertaken by the agents. The idea of monitoring falls in line with the theoretical postulations that hidden action on part of agent has the potential to harm principal's interests. Eisenhardt (1989) describes these as governing mechanisms that

limit agent's self-serving behavior. In order to mitigate agent opportunism and keep him in line, it might be beneficial for the principal to install information systems and probably inform the agent as well that he is 'under somebody's watch'. Such systems can be thought of as disciplining mechanisms on part of the principal (Boly, 2012) to induce a fear in the agent that if his actions indicate that his goals and activities are not in interests of the principal, suitable action might be taken against him. According to Fama & Jensen (1983) and Barney & Ouchi (1986), agent is more likely to behave in the interests of the principal when principal has information to verify the agent's actions. Together, incentive structure and information systems are vital components of the contract that underlies the exchange of resources between cooperating parties.

Understanding contract in terms of risk sharing

The nature of contracts is often problematized in economic enquiries into agency relationships. Structure of preferences of cooperating parties, nature of uncertainty that looms over their relationship, informational structure and effects of contracting environment are some key areas on which literature especially focusses. Contracts lay out the terms and conditions of interaction for both the parties involved, attempt to alleviate inefficiencies on account of information asymmetry but also govern how risk is transferred between the two parties.

Eisenhardt (1989) in her review of literature identifies two types of contracts- outcome based and behavior based and lists the probable scenarios which are more suited for either of the contracts. In principal-agent stream of literature, assumption is that agents are risk averse because of their inability to diversify employment whereas, principals are risk neutral on account of their capability of diversifying their investments. The choice of contract then, is dependent upon the tradeoff between cost of measuring behavior vs the cost of measuring outcomes and transferring risk to the agent.

The choice of contract certainly depends on the possibility and extent of goal conflict between principal and agent. If in case, goal conflict is limited, agent desires the same outcome as principal and his behavior will be in accordance with the interests of the principal. So a behavior based contract is more attractive than an outcome based contract because risk of outcome uncertainty will not be borne by an already risk averse agent. But, situations marked by high possibility of goal conflict make outcome based contracts more attractive, so that agent strives for the same outcomes as principal.

In case the principal has complete information about the activities undertaken by the agent, a behavior based contract is more suitable because in outcome based contracts under complete information, risk would needlessly be transferred to the agent. However, in case principal has limited means to verify what agent has been up to i.e. unobservable behavior, an outcome based contract would be more beneficial for the principal because payoffs for both parties would depend on the same outcome and preferences would be co-aligned. Alternatively, principal can choose to invest in information systems to keep a check on the agent and minimize the impact of un-observability but this brings in additional costs to the principal which must be weighed against the benefits.

Choice of contract is also influenced by duration of task and length of association between principal and agent (Anderson, 1985; Eisenhardt, 1985). If the task at hand is short, it becomes difficult for the principal to assess the agent over a shorter period of time and an outcome based contract would make more sense. At the same time, over a longer duration of time, it becomes relatively easier for principal to familiarize himself with agent and assess his behavior and a behavior based contract would work well (Lambert, 1983). All in all, choice of contract is a choice between controlling behavior and controlling outcome. And the choice depends on risk attitudes of parties involved, outcome uncertainty and information systems with the principal.

Incentive structure as a vital component of contract

Bamberg & Spremann (1989) observe that focus of agency theory is on cooperation in the presence of external effects and asymmetric information. External effects in this relationship refer to how welfare of both, principal as well as agent, is dependent upon action and effort on part of agent. At the same time, expending time and energy towards a task is considered to yield a *disutility* to the agent which is why the principal offers compensation or reward in lieu of agent's association with the task and actions undertaken by him. The idea of effort yielding disutility to the agent, as hedonistic as it is, is deeply embedded in economic conceptualization of *homo-economicus* or the rational man. Hence, remuneration for effort becomes a significant component of incentive structure offered by the principal.

When the principal delegates the task to an agent, the agent considers costs (C) and benefits (B) of his own actions. In order to induce agent to devote more time and effort towards the task, principal offers him enticements in the form of rewards and in some cases threats in the form of punishments. For the moment, to depict behavioral changes with the introduction of

positive reinforcers, the term 'incentives' implies 'rewards' alone. In the presence of incentives, benefit and cost may be denoted as follows.

$B = B(P,E)$

$C = C(P,E)$

As agent's performance (P) increases, the benefits he derives from undertaking the task increase alongside an increase in the costs he incurs for having performed the task.

$B_P = \frac{\partial B}{\partial P} > 0$

$C_P = \frac{\partial C}{\partial P} > 0$

As agent's performance level goes on increasing, his marginal benefit from the task is diminishing i.e. $B_{PP} < 0$ whereas his marginal cost is still increasing i.e. $C_{PP} > 0$. Economic theory tells us that a rational agent will choose a performance level which maximizes his net benefits from performing the task i.e. (B- C). Therefore, the first order condition for maximization is

$$B_P = C_P \quad (1)$$

As external intervention E changes, agent also alters his optimum performance level P^*. To demonstrate how a change in E brings about a change in P^*, the first order condition is differentiated with respect to E.

$$B_{PE} + B_{PP} \cdot \frac{\partial P*}{\partial E} = C_{PE} + C_{PP} \cdot \frac{\partial P*}{\partial E}$$

$$\frac{\partial P*}{\partial E}(C_{PP} - B_{PP}) = (B_{PE} - C_{PE})$$

$$\frac{\partial P*}{\partial E} = (B_{PE} - C_{PE}) / (C_{PP} - B_{PP}) \quad (2)$$

Standard economic interpretation of equation (2) would find its roots in *relative price effect*. Incentives increase the marginal cost of shirking and decrease the marginal cost of performing the task i.e. C_{PE} is negative. If the most popular form of rewards, monetary compensations, are considered they provide a material utility to the agent. In the light of material benefits that an agent draws from rewards, B_{PE} can be considered to be positive. So the sign of numerator in equation (2) is positive. As was discussed in the preceding paragraphs, C_{PP} is positive and B_{PP}

is negative, the sign of denominator is positive. Overall, sign of $\frac{\partial P*}{\partial E}$ is positive which means as the principal employs more rewards, the optimal performance level of the agent increases[2].

This cost benefit analysis indicates how reward mechanisms decrease the marginal cost of performing and thereby exact a higher performance level from the agent which is a very succinct postulation of agent's behavior in the light of incentives. Incentives here work by inducing a feeling that agent's hard work will be rewarded with monetary compensation, the chance to earn which will be foregone if he shirks. But this analysis works with a conditionality that left to his own device, an agent would have no interest in pursuing the task were it not for the promised compensation. A conditionality of such nature undermines the variability in intentions with which an agent pursues a task. With a unitary conceptualization of motivation and effort as a response to rewards, analysis tends to overlook the possibility that individuals associate themselves with tasks because they are inherently interested or derive a procedural utility from executing it or feel a satisfaction from having accomplished something they love to do. In subsequent chapters, these themes will be explored in detail but for now, it would suffice to say that this research work proceeds with a broader understanding of incentive structure, looking beyond the aspect of monetary compensation.

Incentive structure is an instrument carefully devised by the principal to incite action from the agent, to keep his preferences aligned with the principal and to ensure that he pursues a course of action deemed fit by the principal. At this juncture, an important observation must be made. There is a subjective valuation attached to the incentives that principal has to offer. To view it in terms of monetary remuneration alone would undermine how incentives are mentally perceived by an individual in the capacity of an agent which, more often than not, generates variability in responses to the same incentive structure offered to multiple agents. Human beings seek satisfactions in two directions- internal, which is integrity or self-hood and external which is relating himself to his surroundings (Tead, 1951). Although the underlying elements are similar, what brings about a uniqueness to every individual's personality is how he or she strikes a balance between personal integrity and integration of his personality. And money is not enough to seek satisfactions in both these directions.

"In effecting this combination, furthermore, the individual seeks and is guided by values, which are influences or things held in sufficiently high regard by the individual so that he uses them

[2] For the equations employed to demonstrate this cost-benefit analysis in the light of incentives, refer to Frey and Jegen (1999)

to determine his choice of behavior. People are also what may be called other-minded, or altruistic, being happy when they are devoted to something worthwhile outside themselves." (Dimock and Dimock, 1964: p.241)

That is not to say that monetary remuneration is not vital to understand how agency relationships function but to posit that the definition of incentives should delve deeper than a limited scope of viewing it as a compensation mechanism. To quote Barnard (1968);

"It seems to…be definitely a general fact that even in purely commercial organizations material incentives are so weak as to be almost negligible except when reinforced by other incentives"

He postulated that financial remunerations are weak enforcers to stimulate human behavior in long run although, they serve the purpose to enable an individual to sustain and provide for himself a life of comfort as per his desire. But when complemented with non-material incentives, they can ensure that workers stay motivated for longer durations of time. He classifies inducements into two broad categories: general inducements and specific inducements each having four subcategories. *Specific incentives* include material inducements such as money, physical conditions or tangible objects of interest; personal, non-material incentives such as opportunities for gaining distinction, prestige and power; desirable physical conditions of work; ideal benefactions such as pride of workmanship, sense of adequacy, altruistic services towards the nation, society or family, loyalty to the organization and patriotism, aesthetic and religious feelings and the satisfaction of the motives of faith or revenge. *General incentives* which are- associated attractiveness dependent upon compatibility with associates; the adaptation of working conditions to habitual methods and attitudes; the opportunity to feel enlarged participation in the course of events; the condition of communing with others based upon personal comfort in social relations and the opportunity for comradeship and mutual support in personal attitudes.

With pertinence to this research work, a broader definition of incentives will be pursued with the intention to explore that the association between principal and agent is not just transactional, but an interplay of various factors which make them cooperate. Incentive structure offered by the principal will include tangible as well as non-tangible inducements of interest to the agent, so that agent can seek satisfaction from exerting effort for the task at hand and feels motivated rather than feeling remunerated for his time and effort alone.

Towards a behavioral agency theory

In standard agency framework, focus is on devising an appropriate contract between principal and agent, and to see which monitoring and incentive alignment strategies would help the principal to exact a better performance level from his agent. In this framework, principals are considered to be risk neutral, since they have the flexibility to diversify their investments whereas agents are assumed to exhibit risk aversion because their employment security and income are inextricably linked to the principal. According to Eisenhardt (1989) models of positive agency theory assume bounded rationality i.e. individual behavior can be reasonably assumed to be rational, but perfect rationality is hardly attainable. This research work will attempt to extend the model, and in some places contend its assumptions, in several ways.

Like every other economic transaction, principal-agent relationship as well is rooted in the notion that two economic agents associate themselves with each other for mutual benefit. But, if the purpose behind this association is understood in transactional terms alone, it will overlook layered dimensions with which people take up tasks or associate themselves with other people or institutions. A prime focus of this research work will be to incorporate elements from Self Determination theory (Deci and Ryan, 1985; Deci and Ryan, 2000) in Principal-Agent Model to understand what motivates the agents to work for and with the principal and assert that individuals associate themselves with tasks or institutions or other people with varying levels of motivation.

Different individuals respond differently to the same contract offered by the principal which means that action and motivation cannot be conceptualized in a unitary fashion and understood as a response to incentives alone. Self Determination Theory posits that individuals are shaped by their need to experience competence, relatedness and autonomy and the extent of these three needs eventually determines whether they are intrinsically motivated or extrinsically motivated or amotivated to pursue a task. Variability in response can be attributed to varying levels and types of motivation with which an agent begins a task and this research work will attempt to acknowledge and incorporate these multiplicities in individuals' personalities and motivation.

This exercise will serve two purposes. The philosophical underpinnings of the doctrine of hedonism are the foundation on which economic understanding of motivation and action have bloomed. Economic action is prima facie voluntary, in pursuit of pleasure and avoidance of pain and guided by the idea of 'end of an action'. This outcome orientation of economic approach, where human utility is reduced to outcome considerations, seems to be restraining

because in actuality individuals can derive utility from multiple sources and not all of these are tangible. This creates a potential to examine the intersectionality between human needs and desires and economic decision making. In many areas of economic life, individuals not only value outcomes but the processes and conditions leading to those outcomes (Benz, 2007). This idea of procedural utility, seen in conjunction with postulations of Self Determination Theory may prove to be helpful in understanding the dynamics of the working relationship between principal and agent.

Secondly, it paves way for a more dynamic approach in understanding one of the most crucial aspect of agency relationships- how to sustain passion, creativity and effort. The contract offered by the principal will serve its purpose if it is carefully designed keeping in mind agent's motivation and methods employed by the principal aim to foster it and enable the agent to perform par excellence. It becomes particularly important when dealing with intrinsically motivated agents because intrinsic motivation has a tendency to be negatively influenced by external mediation, if the mediation is perceived by the agent to be controlling (Frey, 1997; Frey & Oberholzer-Gee, 2003).

Another point which this research work will attempt to highlight pertains to how information asymmetries are understood in standard accounts of agency theory from a principal's perspective- hidden action and hidden information are problems which arise in this model because agent is construed to be in the pursuit of self-interest with guile (Shapiro, 2005; Eisenhardt, 1989). Agent opportunism is understandable but there is another possibility that may arise in the principal-agent framework that the principal is a 'shirker', that the principal has resources to expend but he is not willing to, that the employment of resources towards task inflicts a cost on the principal which he tries to minimize.

Although this scenario gives an interesting twist to the analysis of principal-agent relationship, this research will cover this possibility in an indirect manner. A lax on the part of the principal has a negative impact on agent's perception through the *'looking-glass-self'*. If an agent discovers a slack or negligence on the part of principal, he might form an opinion about the principal that he is disinterested in agent's work or he has lost interest because he has formed a negative private opinion about the agent which is not necessarily conveyed through words, but is implied through the lack of concern. An adverse disposition of the principal will thus reduce an agent's motivation and effort level to pursue the task till its completion.

Another point of focus in this research work is going to be the context in which principal and agent interact with each other. According to Mitnick (1992), the relationship between principal and agent is not a-contextual, ahistorical and static and these relations are enacted in a broader social context and buffeted by outside forces. The context holds particular importance because in several circumstances, attainment of outcome is dependent on the factors exogenous to the agency relationship. The context can either fetter or facilitate the relationship as well as attainment of outcome. Also, the context sometimes creates complex forms of agency relationships where the agent works with multiple principals or where agency relationships can be found within agency relationships such as the principal-supervisor-agent model.

With these complex models, an opportunity arises to take into account hierarchies and their influence on working relationship between principal and agent. Organizations function as a network of contracts that interplay rather than a single contract (Tirole, 1986). A principal who is situated upward in the hierarchy by virtue of control that he can exercise over availability of resources to the agent, doesn't use coercion but carefully devises an incentive structure to induce the agent to work towards the task. At the same time, it is hard to ignore the power dynamics underlying this scheme of things. Coercion is not the only form in which power is exercised and this is especially true for agency relations. In case of multiple hierarchical structures, there is a certain power dynamic between principal and agent but along with this, the relationship between principal and mediators and mediators and agent is also an agency relationship where principal is situated upwards in hierarchy, followed by the mediator Each of these relationships is plagued by information asymmetries and the possibility of collusion. But each of these relationships carries its own power dynamic.

Concluding Remarks: Adapting the framework of Principal-Agent theory to institutes of higher education

Higher education institutes worldwide engage in the pursuit of excellence in teaching and learning and research and development. On one hand, they contribute towards creation of skilled work force, capacity building and enhancement and on the other hand, they engage in research relevant to the perceived priority needs of their respective society (UNESCO consultation on higher education, 1991). The social function of a university is measured by the knowledge it produces, knowledge which is an enquiry into the problems that plague a society and recommendations for policy makers to resolve those impediments in the direction of economic and social prosperity of a country.

This research work attempts to investigate this process of knowledge production in the name of research in institutes of higher education using the lens of principal agent framework. If one looks at institutes of higher education, undertones of agency theory can be discovered. A university is an entity which desires research to be carried forth, has several tangible and non-tangible resources at its disposal and is in requirement of skilled individuals to make use of these resources and further its interests. University employs faculty and enrolls students through a careful selection process meant to assess their caliber and inclination for research and the selected candidates engage in academic research with the help of resources that the university provides. An exchange of resources happens at various stages between these three participants and resultant organizational set-up is multi-tier.

The first tier pertains to an obvious exchange of resources between the university and faculty employed by it. In a university set up, professors generally contribute by being a researcher alongside being a teacher. Additionally, when window to apply for research program is open, professors also serve in the position of *managers* or *recruiters*. When prospective candidates apply to enroll themselves in research programs, they undergo a rigorous screening process comprising of entrance tests, personal interviews and test scores of general aptitude and ability. In this process, professors try to assess candidate's aptitude for research, knowledge about the subject, motivation behind their inclination towards research.

The basic idea behind this protocol is the same as stated in the above theoretical discussions about principal-agent relationship. The principal (here, supervisor) having had prior experience in research knows what qualities one must possess to pursue research and in his capacity as a recruiter, he tries to gauge how the candidate fares in these qualities. And once the selection procedure is complete, and a candidate is accepted to assume the position of research scholar, he and his supervisor work in tandem to pursue research. The supervisor facilitates the scholar's research exercise by providing him necessary academic guidance and access to resources and his own knowledge. This is the second tier of hierarchical organizational structure in a university.

The third hierarchical tier pertains to the relationship between university and the research scholar. Once an individual enrolls himself in a university to pursue research, his sphere of interaction is not limited to the supervisor alone. The overall academic culture of the university in terms of symposiums, seminars, access to resources such as library, subscription of online journals and magazines, opportunities to go on exchange programs, infrastructure such as laboratories, living accommodation and many other such factors contribute towards creating a

conducive ambience for conducting research. To add to this, interaction with fellow research scholars, reading groups and discussion programs, political activities in the campus also enrich the personal experiences as well as the research of the scholar. Considering the pivotal role played by all these contributing factors, and acknowledging that most of these benefits are accrued to the research scholar by virtue of being a part of the university, it is essential to acknowledge that there exists an agency relationship between the university and the research scholar as well.

In a nutshell, the framework adopted for this research work assumes that there are several agency relationships at work in a hierarchical organizational structure within a university. The research scholar in the position of agent is answerable to the university (who, in the position of principal, provides him access to resources) and his supervisor (who, in the position of principal, provides him access to academic expertise and guidance). The supervisor who is a principal in the above relationship, is an agent who works for the university (who, in the position of principal employs him to carry out research).

At this juncture, an argument may crop up that rather than a multi tier agency relationship, a principal-supervisor-agent model may be a better fit as a theoretical framework for this research work where university is the principal, research scholar is the agent and academic supervisor of the research scholar is the mediator in this relationship between principal and agent. In a university, faculty plays a role beyond being a facilitator for the agent's research work and a surveillance medium for the principal. Worldwide, faculty in higher education institutes oriented towards research continue with their own research work alongside supervision of doctoral or post doctoral candidates. In fact, one of the key strategies for universities to build their research capacity is to employ faculty with a keen interest in research. Their contribution to academia is considered vital in more ways than one.

According to Fisher (2009), the conventional purpose of academic research at universities-to generate and disseminate new knowledge, is being extended to prepare a future generation of knowledge creators and users.

"Any strategy which seeks to enhance a nation's research capacity has first of all to turn its attention to that part of the research system which involves the conversion of graduates into qualified and capable researchers" (Neave, 2006; p.3)

In this sense, faculty at university assume the role of *'mentors'* alongside their traditional role of imparting subject specific knowledge. Universities expect their faculty to be active citizens in academic communities which is often reflected in specification of requirements of published papers for applications to universities and consideration for promotion. If academia is an

economy, publications are its currency. The faculty at university are expected to teach and train future generations of researchers and also set an example by pursuing their own research. If research output is the currency in which metal of university is measured, then faculty is not just a mediator between university and research scholars, it is also an agent who is carrying forth the desire of the university to produce research.

In this multi-tiered structure of agency relationships, each relationship involves agents who associate themselves with principal with a particular type and level of motivation. The agent can be intrinsically motivated, or extrinsically motivated or amotivated. This motivation may be influenced by the incentive structure devised by the principal which is why Self-determination theory appeals to carefully deliberate the design of incentive structure and take into account the agent's individual (and variable) need for competence, relatedness and autonomy. Forthcoming chapters will explore the information asymmetries within each of these relationships, the role of monitoring by principal and how incentive structures are not only a potent instrument at the hands of principal to exact more effort from the agent, but also how agent's own interpretation of incentive structure feeds into his motivation and self-perception in relation to his academic pursuits.

Chapter Two

Motivation and action: Insights from psychology and economics

Understanding 'why we do what we do' has been a subject of academic enquiry across fields that seek to define and probe behavior especially, economics and psychology because of the emphasis they place on decision making. Historically, both the disciplines have devised their unique ways to understand what incites action and what directs behavior towards attainment of individual goals but the latter part of twentieth century witnessed a sort of reconciliation, wherein economics borrowed generously from the discipline of psychology in order to refine and 'redefine' the economic conceptualization of human motivation and action.

To begin the discussion, motivation is identified as one of the most important explanations to behavior. According to some theories, motivation is the force which grips an organism to alleviate the 'need' it feels within. With respect to human beings, who are categorically identified as a higher form of life, the need within may be physical, biological or psychological in nature but it is this need which incites action to mitigate the 'deficiency' he or she feels. This inner state which energizes, activates an individual to take an action which brings it closer to the goal, the object of desire, is known as motivation. In a sense, motivation is the genesis of action although, the space between motivation and action is mediated by other underlying mental processes.

This research work emphasizes on developing a deeper understanding of motivation, action and mediating processes because in order to have a holistic picture of human behavior, mental phenomenon which defines it must be taken into account. Methodological constraints which restrict modelling of human behavior to include only that which is observable or quantifiable, may provide empirically testable theories but these theories are, more often than not, plagued by their own myopia. Discussions about mental phenomenon are discounted for being speculative and unscientific because their basis is unobservable. At the same time, quite a few of these theories have been tested for empirical validity and their robustness and relevance has been established. So these theories may be a good fit to fill in the voids which economic analyses of human behavior leave behind owing to their disciplinary orientation towards empiricism.

This chapter attempts to outline how motivation and action has been understood in discipline of psychology and economics. Whereas the discipline of psychology has much to offer to help one understand what motivation is, economics has very rarely acknowledged or accounted for its importance. To understand action, psychology theorizes about the biological or psychological or physical need behind action. On the other hand, economics understands action in the light of incentives. Economic discussions of action in the light of incentives has been widely appreciated for being a succinct description of human behavior, but it leaves much to be desired owing to its generalizations about workings of human mind. This chapter attempts to outline how these two disciplines have contributed towards understanding of motivation and action and how insights from psychology may be incorporated into economic analysis to pave way for a holistic economic understanding of human behavior and decision making process.

Motivation and action: Behaviorist approach to study human behavior

Darwin's theory of evolution was pivotal for the discipline of psychology. Prior to this, man was considered to be qualitatively different from animals based on his mental capabilities, his ability to make decisions which are not guided by instincts alone, but are a product of thought and deliberation. Darwin's theory questioned this notion of superiority of human life by virtue and suggested that it was a product of evolution, thereby connecting human life to lesser forms of life such as animals. As a result, new modes of enquiry into behavior of organisms came into being.

First, if man is taken to be the highest form of mental life, then the capability to think and reason can also be found in lesser forms of life from which man has evolved. Second, if man has evolved into a complex being from simpler forms of life then tendencies attributed to animals, to be driven by instincts and automatically, must be present in man as well. Third, there are individual variations in the characteristics of animals or organisms and these variations are the reason why certain life forms sustained while others perished. In other words, 'survival of the fittest' highlights the presence of individual differences in abilities, preferences, intelligence and other parameters. Implications of this nature gave rise to different streams of thought which drew connections between human life and other forms of life in order to arrive at some theorizations of human behavior.

One such theorist was William James who presented a behaviorist perspective of motivation. He traced the causality of motivation to stimulus and response and classified behavior into three categories- instinctive, expression of emotion and voluntary. While instinctive and

emotional behavior are primary functions, instincts alone are not the sole determinants of behavior. Voluntary behavior on the other hand involves deliberation and is steered by the idea of *'end of an action'* (James, 1890). An organism stumbles upon an action through kinesthetic measures and the consequences of that action are embedded in his consciousness. Anticipating similar consequences, the organism either performs the activity again (seeking pleasure) or avoids undertaking the same course of action.

At the same time, not all ideas of action are acted upon because alongside the impulse to act, there exists an internal resistance. All observable behavior is thus a product of this interplay between impulsive and inhibitory tendencies within an organism. This is also what brings about variations in the impulse to act from individual to individual and also within the same individual over a period of time. Propensity to act per se is less than the impulse that idea carries but once effort adds itself to the impulse, individual acts despite resistance he feels within.

But one fundamental question which remains is what exactly grants this impulsive power to an idea. According to James, objects and thoughts of objects incite action, but resultant pleasure or pain are what grant impulsive or inhibitory power to thoughts about the object. Present pleasures are excellent reinforcers and present pains are excellent inhibitors which modify and regulate future course of action (Atkinson, 1964). Once an individual has involuntarily performed an act and discovered the consequences, the idea of end of an action will steer him towards or away from performing the same action again. Voluntary actions thus, are acts of pursued pleasure fuelled by the motivation to seek similar pleasures or avoid previously incurred pains.

In psychology, the tendency to look at behavior as stimulus-response mechanism was solidified by the legacy of objectivity in behaviorism. Inferences about motivation and action were drawn on the basis of observable behavior and how it responds to changes in environment. The overarching theme was that behavior of organisms, man and animal alike, can be conditioned with the use of appropriate stimuli to achieve desirable behavior. The scope to account for private thoughts, emotions and consciousness was limited because these variables don't have a concrete shape and are not explicit but internal to an organism. They were deemed 'unscientific' and relationships between behavior and such factors was neither quantifiable, nor empirically testable.

A pioneer of this methodological change was Pavlov's theory of classical conditioning which focused on the cause and effect relationship between stimulus and response. All behavior, for Pavlov, was reflexive because it existed in response to a stimulus. In the wake of an external or internal stimulus, nervous receptors produce an impulse which travels to the central nervous system which again gives rise to an impulse that makes its way back to the active organ through a network of nerve fibers and elicits a cellular reaction. Highlight of this theory was that subject can acquire new behavior via the process of association where two stimuli are linked together to generate a new learned response. Although Pavlov's subject was dog, he proposed that his findings were equally applicable to human beings because they were rooted in 'science' and not verbal discourse about an intangible entity such as mind. Generalization of Pavlov's findings to humans was done by Watson (1920). The stimuli from environment can be conditioned and then used on animals and humans alike to modulate existing behaviors and teach new ones. Further, to ensure that the acquired behavior persists, humans should be subject to same conditioning over and over again, a process called repetition without which learned responses would wane.

Several inferences about motivation and action can be drawn from the conceptualization of behavior as per behaviorists. First and foremost, motivation is something which is activated only in relation to stimulus and there is a biological basis for it. Each stimulus produces an impulse, which in turn yields a response. Secondly, varying strength of stimuli generate varying strength of impulses. And lastly, all action is purposive in nature i.e. directed towards a particular goal and the relationship between stimulus and response is a means-end relationship.

At this stage, psychology as a discipline was embracing the idea of explaining behavior in the light of purposiveness rather than conceding to the projections about consciousness as laid down by mentalistic theories. Hull (1943) put forth his theory according to which human behavior is mechanical, automatic and repetitive. All organisms are biologically programmed to undertake actions which give them a certain biological advantage over others, thereby enhancing their chances of survival. Hull's theory was based on the idea of homeostatis which means an active regulation of biological needs. A 'need' is the biological requirement of the organism; a 'drive' is the biological arousal that organism feels as a result of this need, and 'motivation' is felt to balance out the deficiency because of which need arose in the first place.

The primary reinforcement in Hull's theory of drive reduction is the drive itself. In the wake of a stimulus, external or internal, organism feels a drive, a certain scarcity or deprivation, which must be balanced out with action. The intensity of drive depends on how long the body

has been deprived of the biological need and how strongly the need is felt i.e. excitation of the stimulus. In the process of goal attainment, an organism is confronted by many inhibitors and fatigue experienced due to exertion of effort which bring down the excitation potential of the stimulus. At the same time, if previous responses to the stimulus have resulted in reduction of need then in future, if same stimuli arise, they will be responded to in a similar fashion. Previously acquired behaviors strengthen the excitation potential of the stimulus.

Hull's theory emphasized on learned behavior. Once the organism learns that particular stimuli give rise to a particular drive and figure out the mechanism to eliminate the deficiency they feel within, they acquire new behaviors. If it is desired that in future, organism should respond in a similar way to that stimuli, number of reinforcements of desirable behavior should be increased and habit strength should be amplified (Schultz and Schultz, 2015). This argument is in sync with what was proposed by Pavlov and later Watson, and it was strengthened by Skinner's theory of operant conditioning.

Skinner attempted to explain behavior in totality by taking into consideration both, past as well as the present environment alongside evolutionary history (Baum, 2011). According to him, all behavior can be described as a result of learned associations between stimuli and responses and reinforcing desirable associations via rewards and extinguishing undesirable associations via punishments. Any and all behavior, for Skinner was either strengthened or weakened by its consequences and the number of times it is reinforced.

In real life, reinforcements may actually be inconsistent or non-continuous which will have an impact on response time. To this, Skinner's response was that frequent reinforcers and continuous reinforcers will elicit rapid responses. The efficacy of reinforcement schedule is dependent on two factors. One, time elapsed between two reinforcements should not be high. Also, the number of responses required prior to offering of reinforcement should not be large either. Two, reinforcement should be proportional to the amount of effort exerted. In the initial stages, when behavior is being acquired, reinforcers should be frequent to aid rapid acquisition. But in the long run, reinforcers may lose their quality of satiation and should be used sparingly.

On the basis of Skinner's theorization, Huitt and Hummel (1998) identified four types of reinforcements. Positive reinforcement, where an individual is provided with an appealing stimulus to increase the probability of recurrence of desirable behavior. Negative reinforcement, where an unappealing stimulus is taken away from the individual to ensure the recurrence of desirable behavior. Positive punishment, where a strong unpleasant stimulus is

given to the individual to eliminate undesirable behaviors. Negative punishment, where something that's appealing to the individual is taken away from him to reduce the possibility that they engage themselves in undesirable behavior again.

The main contribution of theories of conditioning to the existing body of work was that these experiments provided substance to the argument that an organism carried a capability to learn from his environment and this was a better way to explain behavior than instincts alone. This paved way for arguments in support of altering behavior for suitability using the approach of conditioning. They opened new directions to reform behavior with the help of reinforcements and changes in environment. At the same time, this mechanist approach reduced the study of behavior to focus on what can be learned via manipulation of stimuli and this alone cannot explain human behavior in its entirety. Blatant ignorance of the existence of emotions, private thoughts and consciousness; left much to be desired.

How to situate the 'conditioning' arguments in context of principal agent relationship: A discussion about *homoeconomicus*

Economics as a discipline lays emphasis on decision making- how individuals arrive at decisions while keeping their self interest into consideration. The philosophical underpinnings of the doctrine of hedonism, seeking pleasure, minimizing pain are also at heart of economic decision making process. An individual is endlessly engaged in undertaking actions and making choices seeking satisfaction, which maximize his welfare. And in this process, as a nudge to enable them to make choices which are god for them, incentivizing the right actions is often resorted to, especially so, in case of principal agent relationship. Principal carefully devises a structure of rewards to motivate the agent to put in more effort towards the task and threats of punishment if the agent fails to deliver.

Extrinsic intervention by the principal in the form of rewards or punishments bear a close semblance to the ideas of conditioning as theorized by psychologists. And the justification for this proposition may be arrived at by pondering upon one fundamental question- why the need for incentive structure (rewards or punishments) arises at all in this relationship? One possible reason can be that individual needs a certain push to overcome the 'native inertia' in him which in other words can be called an inherent dislike to work. Rewards are an assurance that desirable action undertaken by the agent will be acknowledged with something of value to the agent. Conversely, punishments act as a deterrent which prevent him from diverging. In both the cases, extrinsic mediation seems to be laced with the intention of arousal, to incite him into

action. That, left to his own device, agent would not put in effort towards the task unless he is enticed by rewards or threatened with punishment.

At this point in the discussion, one must think about the idea of economic man, to see how individuals have been understood and conceptualized in economic modelling of human behavior and what inferences can be drawn regarding motivation and action in economics. Grampp (1948) discusses about the idea of economic man as proposed by forefather of economics, Adam Smith. He said that for Smith, economic man was not the mechanistic entity, constantly engaged in the pursuit of self advancement and operating with rationality at all hours. He was governed by human nature and observable behavior was a reflection of innate desires, human tendencies and environment. Self-interest was undoubtedly a primary tendency, but not as central as has been advocated by neoclassical renditions of *homoeconomicus*.

"If the economic man is an abstraction which typifies social behavior in the market place, it cannot be denied that Adam Smith created such a figure and gave it a place in his writings. However, it so little resembled the monstrosity which later was invented by critics of classical economics that one hesitates to designate both of them by a single term… In his lineaments the economic man for whom Smith is held responsible is an alarmingly rational creature who invariably seeks his own interest, who reacts with lightning speed to actual and anticipated changes in his real income and wealth, turning with ease here and there upon the slightest fluctuation in relative prices. Not only is he as free of error as was Adam originally free of sin, but he is so utterly absorbed by his calculations that he is conscious of no other activities which legitimately could engage a human being." (Grampp, 1948, p. 315)

If Smith's intentions were to propose a model of economic man with his emotional range in mind, then one should ponder upon how this concept evolved and developed over the years to take the form of *homoeconomicus*. With the advent of 19th century, the idea of legitimizing knowledge by mimicking the methodology of natural sciences was gaining importance. As was discussed previously, the behaviorist school of thought emerged in psychology as a response to this desire of producing knowledge which was as 'scientific' in nature as it could be. Focal points were to theorize about what was observable, tangible and could be manipulated. Mill suggested that economic behavior should be separated from non-economic behavior rather than focusing on emotional spectrum of decision making process. In order to create a scientific account of economic behavior, 'ideal type' was abstracted and extrapolated to the extent of perfection.

According to Morgan (2006), two processes were employed to arrive at the model of economic man. One was generalization. Characteristics which were common to all were used to create a simplified portrait of man wherein, individual differences were isolated. Two, abstraction and idealization. Elements which are salient to the study of economics were used to construct a portrait such as twentieth century *homoeconomicus*. Jevons was amongst the first to present a mathematical account of decision making process. Where Mill suggested that action was directed towards attainment of wealth, Jevons proposed that it was directed towards maximization of utility from consumption. Utility here was not an inherent property of the good but existed in relation to the needs of the man and was subjective, introspective and not observable directly. Jevons also introduced the concept of marginal utility and stated that with every subsequent unit consumed of the same good, benefits derived reduce and satiation is reached at a certain point.

Frank Knight contributed towards a positivist stance in economics by bringing in the elements of arriving at decisions with full information and perfect foresight. The idea behind such modelling was not to understand the actuality of decision making but a hypothetical caricature which could be mathematized. According to Morgan (2006), Knight himself accepted that this version of economic man falls short of predicting reality of decision making process but its purpose was to contribute towards mathematical formulation of the discipline. Marginalist trend recognized that man is motivated by his innate needs and desires and this is what puts him to action, at the same time, what was of interest to these theorist was the action itself, and its outcomes rather than the desire behind the action. When Paul Samuelson introduced his Revealed Preference Approach in mid twentieth century, economics became a purely deductive science.

'In the dominant American neo-classical economics of the mid twentieth century, economists preferred to assume nothing about people's motivations, but to suppose that however arrived at, their choices are rational. Rational economic man is named so because he chooses rationally. Here rationality is instrumental-economists claimed nothing about people or their underlying feelings, preferences and variations as in marginal economics, let alone about their reasoned aims and motivations as in classical economics.' (Morgan, 2006, p.22)

What Grampp calls a monstrosity and Morgan presents a detailed account of, is this conception of *homoeconomicus* which dominated the discipline of economics till the latter half of twentieth century. One can draw parallels with simultaneous developments in behaviorist school of psychology where, Pavlov, Hull and Skinner were contributing by giving a scientific

temper to the theory. Like behaviorists, the actions of economic man were purposive in nature, driven towards attainment of a certain goal which was utility maximization. With reference to principal agent literature, just as behaviorists suggested that desirable behaviors can be acquired with the use of appropriate reinforcements, economists suggested that individuals can be made to undertake desirable actions, if its incentivized. The common thread running through all the theories discussed above was the essence of operationalism- of explaining behavior with the help of a mathematical function.

What's left to be desired?

The movement of logical positivism undoubtedly influenced the study of human behavior in economics and psychology in its own way. The desire to predict and control behavior appeared to be the guiding principle behind behaviorist school and economic modelling of human behavior under assumptions of rationality. The analyses in both the fields contributed by providing a succinct, mathematical depiction of behavior which carried a certain appeal and was not wrong in entirety. The intention of this movement was to elevate knowledge emanating from these disciplines to the level of natural sciences. At the same time, by leaving mental phenomenon outside the purview of analysis, theorists overlooked the complexities and reasoning behind behavior.

For the same reason that neoclassical conception of economic man has been reproached, behaviorist formulation of behavior has been criticized. A bold proclamation like Skinner's that *'All behavior is learned behavior'* falls prey to its own shortcomings. What is observable, is not just a mechanistic, calculated, rational response to changes in environment. Invariably, there's a mental phenomenon underlying these responses which cannot be observed. To assume that behavior is contingent upon reinforcements alone undermines the ideas of volition as well as agency. To assume that an economic agent feels motivated when an act is incentivized would not explain why individuals voluntarily pursue acts out of which they don't get any tangible outcomes but sheer pleasure.

What was required of a theory at this stage was to embrace the behaviorist aspect of theories and give a cognitive dimension to it. Bandura proposed one such theory where he observed how human beings acquire new behaviors by way of interaction. He said that it was possible to correct socially undesirable behaviors by way of reinforcement but he differed from Skinner in several ways. One, whereas Skinner believed that when a stimulus is presented to the subject, an automatic reaction is triggered in the body, Bandura believed that these reactions are self

activated. An individual begins to anticipate that his particular responses would result in specific reinforcers and this anticipation was a hint of mental activity. Two, Bandura believed that the nature of reinforcements need not always be tangible. When a person observes others around him, he learns. When he is about to undertake the same action in future he visualizes the consequences of those actions for people around him and deliberates on it. Therefore, thought processes, beliefs, expectations and social interaction are equally qualified to be a part of reinforcement schedule which he calls 'vicarious reinforcement'.

'Learning can occur by observing the behavior of other people, and the consequences of their behavior, rather than always experiencing reinforcement personally. This ability to learn by example and vicarious reinforcement assumes that we have the capacity to anticipate and appreciate consequences we observe in others, even though we have not experienced them ourselves' (Schultz and Schultz, 2015; p.353)

Julian Rotter proposed another theory to integrate subjective experiences and social interaction into explanations of human behavior. He gave a new dimension to the stimulus response relationship by suggesting that this gap between presentation of stimulus and observed reaction is a plane mediated by individual's consciousness and internal cognitive state. Four principles govern the behavioral outcome. One, the amount and type of reinforcement governs individual's expectation about the outcome of his actions. Two, an individual anticipates that a particular behavior will yield a specific reinforcement and behavioral adjustments take place. Three, there is a subjective valuation of different type of reinforcers based upon their relative usefulness for an individual and his situation. Four, since no two individuals have the same psychological functioning, the subjective valuation of reinforcers differ from person to person (Schultz and Schultz, 2015).

One of the most important contributions of Rotter, however, was seeing reinforcements from the angle of locus of control. By locus of control what was meant was where an individual perceives his source of reinforcement to be. If an individual feels that reinforcement is contingent upon external factors and he has no power to modulate it, they perceive locus of control to be external, but if individual feels that reinforcement is contingent upon his own behavior, they will perceive locus of control to lie internally. This holds a special significance with respect to usage of incentives in principal agent relationship and will be further discussed in the sections to come.

From the above discussion, several points relevant to the present research work emerge. One, the use of reinforcements as a tool to moderate human behavior is a very potent concept. Rather than use of coercion, principal employs incentives to moderate agent's behavior in a direction that is fit for the task at hand. Two, social interaction and mental phenomenon play a huge role in determining the efficacy of learning new behaviors. Even in principal agent relationship, agent doesn't just passively respond to the incentives employed by the principal. Owing to his capability as a thinking being, he does mentally interpret the incentives in a certain manner and cost benefit analysis of actions in the light of incentives doesn't capture this element. Three, with external mediation, locus of control shifts from inside to outside and individual perception of this shift may precipitate in some way on behavioral outcome. Four, borrowing from Bandura's understanding of what constitutes reinforcements, incentives in principal agent relationship need not exist in tangible form always.

Self determination theory: A discussion about intrinsic and extrinsic motivation

The dominant approach in enquiries about human motivation and behavior change was focused on how to control behaviors with the help of external contingencies. What self determination theory proposed was a different approach to look at motivation- to focus on its functional design, to fathom where it emanates from and understand the forces which facilitate or fetter motivation experienced by an individual. Whereas theories in psychology understood motivation via reinforcements, in economics conceptualization of motivation can be inferred from description of behavior in the light of incentives. However, these approaches have a unitary conceptualization of motivation. and here self determination theory made immense contribution by stating that there can be different types as well as levels of motivation and behavior can be better understood by taking this multitude into account.

'Self-determination theory is an empirically based, organismic theory of human behavior and personality development. SDT's analysis is focused primarily at the psychological level, and it differentiates types of motivation along a continuum from controlled to autonomous. The theory is particularly concerned with how socio-contextual factors support or thwart people's thriving through the satisfaction of their basic psychological needs for competence, relatedness and autonomy.' (Ryan and Deci, 2017; p.3)

Self determination theory concerns itself with the nature, structure and functioning of an individual in action. It assumes that human beings by nature are inherently curious and deeply social and they seek proactive engagement, constantly assimilate information from their

external environments and seek integration within social groups. The idea of *self* as discussed in the theory focusses on an individual's ability to be proactive, and to seek self-regulated engagement. This was a departure from behaviorist theories where an individual is in a somewhat passive role and can be programmed, conditioned and trained to acquire 'positive' behaviors and eradicate 'negative' behaviors. The term *need* here implies that psychological needs are as powerful as physiological needs and must be satisfied and sustained for growth and development.

The three basic psychological needs which are a focal point of discussion in self-determination theory are *competence, relatedness* and *autonomy.* Just as deprivation of physiological needs (Hull's homeostatis) leads an organism to seek satisfaction, a deprivation of these psychological needs also requires satisficing. Irrespective of subjective valuation, desire or preference for these needs, they contribute towards functional development of an individual (Chen, Vansteenkiste, et. Al., 2015). At the same time, subjective valuation may have an impact on the likelihood of these needs being satisfied i.e. they will govern the intensity with which an individual seeks satisfaction for the lack within.

Autonomy is the need to self-regulate one's experiences and actions (Ryan and Deci, 2017). The idea of volition is deeply interpreted in how self determination theory awards a meaning to autonomy. When an individual engages in behaviors out of his own volition, congruent with their interests and values, they are said to be acting with autonomy. If an individual engages in behaviors which are regulated by external forces or not in sync with their own personality they will experience conflict. At the same time this theory recognizes that autonomy does not imply independence, because people can be autonomously or heteronomously dependent, independent or interdependent depending on context and behaviors entailed (Ryan and Lynch, 1989).

Competence is the basic need to experience effectance and gain mastery. Competence is a need inherently imbibed in individuals and has been known to be a significant energizer for behaviors. Interpersonal interactions, task difficulty and feedback impact the feeling of competence. *Relatedness* refers to the desire to feel socially connected, where an individual experiences a sense of belonging and feels he can contribute to others (Deci and Ryan, 2014). Together these three needs not only act as energizers for behavior, their satisfaction also vitally contribute to emotional well being of an individual.

Self determination theory defines two types of motivation- intrinsic and extrinsic. Intrinsic motivation is a manifestation of their innate desire to explore and understand. By virtue of their sociality, individuals assimilate social norms and behavioral regulations through the process of active internalization and integration. And the reason they do so is because they are seeking to satisfy their innate need for feeling competence, autonomy and relatedness. For intrinsically motivated behaviors, locus of causality lies with the individual i.e. an individual engages himself in a task for sheer pleasure, because the task is inherently enjoyable for him or he wants to exercise and extend his capabilities and experience something new. Self-determination theory identifies three types of intrinsic motivation. *Intrinsic motivation to know* which describes individual's engagement with a particular task because he is curious, intellectually stimulated and wants to explore, understand and learn. *Intrinsic motivation to accomplish* describes behaviors when an individual pursues a task because he wants to create or achieve something and it satisfices him and brings him pleasure. *Intrinsic motivation to experience stimulation* refers to the situations where an individual involves himself in an activity out of sheer excitement, with the pure motive of experiencing some form of stimulation, be it sensory, aesthetic or entertaining.

This theory also tries to explain the variations in degree of extrinsic motivation using the parameter of *internalization of norms, values and behavioral regulations*. Four types of extrinsic motivation have been identified. *External regulation*, where what prompts an individual to perform an activity is either the promise of a reward or the threat of a punishment. There is no involvement of his choice in behavior, so the perceived locus of control is completely external to the individual. Amongst extrinsically motivated behaviors, this category represents the behaviors that exhibit least degree of self-determination and autonomy. *Introjected regulation*, where the rules and regulations have been accepted and ingrained in behavior but only because behaving otherwise would entail the individual to punishment. Here too, what controls the behavior is an external contingency but what differentiates it from external regulation is that behavior is a result of 'internal coercion'.

The individual performs these actions either to maintain self-esteem and self-worth or to avoid guilt and anxiety. So there is a hint of self-determination in the behavior. *Identified regulation*, where an individual not only accepts and internalizes the regulatory process, he also identifies with it and values the outcomes which behavior will yield. The individual involves himself in the task mainly due to its instrumental nature, yet his behavior has a perceived sense of volition. *Integrated regulation*, where the external regulatory mechanism has been fully integrated with the individual's sense of self and identity. This category of behavior lies the closest to intrinsic

motivation because the degree of autonomy and self-determination is very high. Yet what differentiates the two is that activity here, is not performed because it interests the individual but because individual attaches importance to the outcome. The individual's behavior is regulated by external processes but these processes have been integrated into his sense of self.

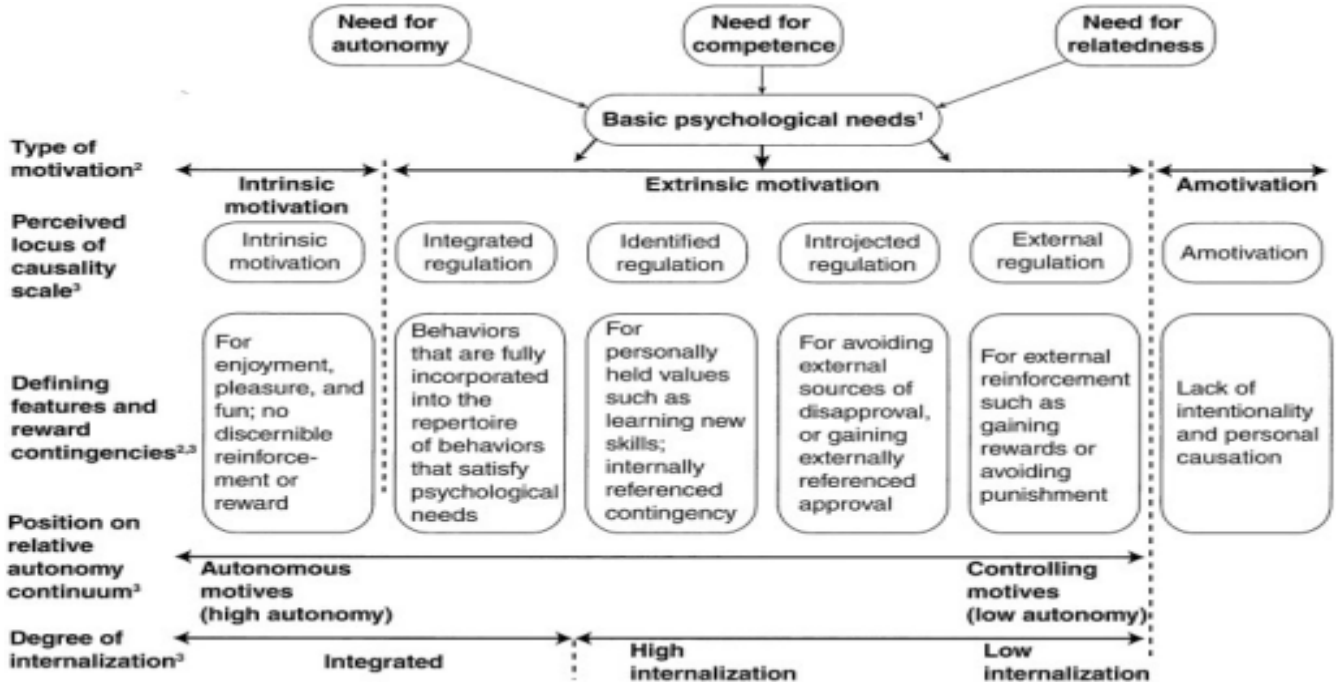

Fig.2.1 A taxonomy of human motivation

Integrating self determination theory with principal agent model

Benabou & Tirole (2003) discuss the use of incentive structure in a principal agent model and analyze the impact of incentive structure on the agent's effort level and psychological frame of mind. Like any principal-agent model, here as well the principal has a vested interest if the agent undertakes the task and succeeds in it but the difference is that here agent is assumed to have imperfect knowledge of self whereas the principal is assumed to be possessing perfect knowledge. This knowledge is not just limited to the difficulty level, degree of specialization required to perform the task; it also includes private knowledge about the agent's ability to perform the task. On the basis of this private information that principal possesses, he devises an incentive structure to offer to the agent. To put it mathematically;

β: private information that principal has an access to.

p: the incentive structure or "extrinsic motivator" that principal formulates on the basis of β.

e: the effort level that agent chooses on the basis of p

Not only the agent's, but also the principal's payoff depends on agent's effort level, which in turn is dependent on p and β. So payoff for principal and agent respectively can be denoted as

$U_P(\beta, e, p)$ and $U_A(\beta, e, p)$. This model then proceeds to postulate that although, β was known privately to the principal and agent had no inkling about it; when p is chosen on the basis of β; agent receives a signal σ about β. On the basis of this signal he formulates a conditional expectation about β, say B^. This eventually determines his optimal effort level, say e* (p, B^(σ, p)). Benabou and Tirole call this "looking-glass-self" phenomenon because the agent is trying to see through the decision taken by the principal to formulate p. Principal must have formulated p with some 'ulterior motive' which can be approximated with the help of the nature of incentive structure. Since principal's payoff is dependent on agent's effort level, his expected payoff can be written as follows.

$E_\sigma[U_p(\beta, e^*(p, B^(\sigma,p)), p)|\ \beta]$

Differentiating the function with respect to choice of incentive structure p;

$$E_\sigma\left[\frac{\partial U_P}{\partial p}+\frac{\partial U_P}{\partial e}\cdot\frac{\partial e^*}{\partial p}+\frac{\partial U_P}{\partial e}\cdot\frac{\partial e^*}{\partial \hat{\beta}}\cdot\frac{\partial \hat{\beta}}{\partial p}\ \middle|\ \beta\right]=0^{3}$$

Looking at individual terms on the LHS,

$\frac{\partial U_P}{\partial p}$ denotes the direct impact of a change in incentive structure on the principal's payoff.

$\frac{\partial U_P}{/\partial e}\cdot\frac{\partial e^*}{\partial p}$ denotes the impact that a change in incentive structure brings about in an agent's behavior. If principal revises the incentive scheme, agent accordingly alters his effort level which again has an impact on principal's payoff.

The third term $\frac{\partial U_P}{\partial e}\cdot\frac{\partial e^*}{\partial \widehat{\beta}}\cdot\frac{\partial \widehat{\beta}}{\partial p}$ is referred to as the "confidence management motive" of the principal. This term corresponds to the psychological response of the agent to incentives. When p is chosen by the principal, agent is aware that principal has chosen it on the basis of private information about the task and agent's capabilities. So agent tries to gauge from the choice of incentive what is the principal's opinion about him and the task or to put it differently, agent's self-confidence and motivation also respond to p. Principal, through his incentive scheme might be able to direct agent's confidence and effort level and motivation in a direction that improves his payoff or contrarily, his incentive structure might send out a negative signal to the agent which can dissuade him from pursuing the task and performing at his best.

[3] For the mathematical arrival at this equation, refer to Benabou and Tirole (2003): pp.493-494

The confidence management motive can arise through two channels: Firstly, *Profitability effect* wherein agent's ability is heightened when he gets to function autonomously as compared to working under constant monitoring. In this scenario, principal can offer different incentives to different agents and delegate more work to agents who he thinks are more capable. This delegation of work itself reveals to the agent how his abilities are perceived by the agent. Secondly, *Trust Effect* wherein principal is somewhat uncertain about how incentives will be perceived by the agent. In case where the private information reveals some negative detail to the principal about agent's behavior, the principal will be cautious about it when he designs incentives. But carefully crafted or stronger incentives will again reveal to the agent principal's perception of him i.e. agent will think that principal's decision to provide stronger incentives must be based on some 'damaging information' pertaining to the task and his ability to perform it. Thus, to concretely determine how an agent chooses to respond in the light of incentives is a very ambiguous and subjective domain.

Importance of the idea of 'self' in study of motivation

Behaviorism enjoyed a favorable position in academic psychology for a large part of twentieth century. The school of thought prides itself in being explanatory (based upon observed behavior) and remedial (eliminating undesirable behaviors and inculcating good ones with the use of reinforcement) with its positivist, quantitative approach. However, with its relentless opposition to mentalism, it paved way for its own demise (Day, 1980). As a philosophy of science, behaviorism was powerful indeed. But by tracing causal explanations of behavior to learned consequences of reinforcement with no scope to acknowledge the role of feelings and inner states resulted in growing dissatisfaction. The fact remains that there is an underlying private world which operates on a dimension different than the one where behavior takes place.

Cognitive psychology tapped into this dissatisfaction and embraced mentalism to offer better causal explanations than behaviorism. Moore (1990) defines mentalism in the following way.

'An orientation to the study of behavior, which holds that a unique, a necessary, and the primary contribution to the causal explanation of behavior consists in proposing various internal acts, states, mechanisms or processes, presumed to be operating in neural, conceptual, or psychic dimensions.' (p. 20)

As far as the understanding of reinforcement goes, especially in radical behaviorism, many natural contingencies which are not necessarily revealed in behavior do shape behavior (Day, 1976). Our experience is necessarily shaped by metaphors which are and have been perpetuated

by social and cultural institutions. As a consequence of this acculturation, we develop a comprehensive mentalistic world view which shapes our behavior. So, in analyzing or describing or explaining behavior, it not only becomes important to include accounts about the non-physical space that's 'mind' but also the environment that shapes it and may have a causative role in behavior as it is observed.

With pertinence to this research work, it becomes important to incorporate the idea of 'self' into principal agent relationship. The relationship is purposive in nature where both principal and agent are pursuing their respective goals which may or may not be aligned. With purpose, comes a sense of imminent goals, previsioning the outcome and what personal gains are expected to be achieved by attaining it and this hints towards the involvement of mental activity. To accept that behavior is motivated by self-gain but to not speak about how the idea of self-gain comes into being for each individual in a unique way is a shortcoming that needs exploration.

These individual differences which are labelled as 'anomaly' grant uniqueness to each individual. Frey and Stutzer (2007) express their discontentment with the handicap of existing models that not only don't account for these anomalies, but discredit them for being irregularities in what would be termed 'rational behavior'. They make a strong case for attempting to regularize the irregularities in behavior. The only way to do this would be to appreciate the distinctiveness that irregularities grant to human behavior and understand where they stem from and what affects them.

Both the actors work in collaboration towards the task at hand and the working dynamic of such collaborative relationships has an emotional aspect to it which need not be explicitly revealed especially so in the mathematically oriented cost benefit analysis of agent's behavior in the light of incentives. People not only experience incentives but also interpret them and these interpretations play a larger role in behavior than they are credited for. By taking into account the idea of self, this research work will attempt to outline how individual goals come into being, why they are different and how in collaborative associations, this idea of self is constantly revised owing to dynamic interaction between principal and agent.

Chapter Three

Self and self-perception as shaped by looking glass self

Where a premium has been placed on individual and his freedom, autonomy, creativity and individuality; it must be recognized that formation of self and uniqueness of identity is created in a world of 'others'. Individual self is located within social activity where we engage with others. This social aspect of individuality has a significant role to play when one tries to put together an image of oneself because one looks to others to find that image reflected back in their words, attitudes, actions and expressions. This is not to negate or deny the importance of individualism but to emphasize the connection that individuals have with others in creation and identification of selves. Burkitt (2008) acknowledges this aspect and hence terms this process of creation and outcome as 'social selves'.

Methodological individualists, however, awarded primacy to individual over the society citing that a society was nothing were it not for the individuals who constituted it. An example of this would be the characterization of 'possessive individualism' as per Hausman and Mcpherson (2004, 1993). An individual possesses certain skills and capabilities and the society isn't owed anything for the development of these. Individual then exchanges his capabilities and skills in a market economy in return for wages. If such a position is to be accepted, then individual is bound to others only via the institution of market which is a distorted picturization of human nature. The question arises invariably that to what extent there exists a division between the individual and the society.

Burkitt (2008) in this regard adopts a position according to which individuals cannot be considered isolated entities and yet they can't be reduced to mere products of their society. Emphasizing on the social aspect in the making of self, he points out that the time, place and societal relations one is born into are not of their own making. Individuals are born into a power structure and this has a sizable impact on how their personalities shape up. In the search for self, one not only looks inwards but also outwards in a world that one shares with others, where they engage in activities with others and share ideas and develop the techniques for self formation.

A concern of utmost importance here is also that who we want to be and what we can become is a political issue. The society we live in extends certain privileges to us and confers some

duties upon us. But more often than not, rather than liberating an individual to assume an identity, society tries to constrain him. Then ensues a socio-political struggle for rights and through these struggles individuals find themselves. Thus, self-identity is not a given right, but one which is created in the process of fighting for those rights. This chapter attempts to explore the ideas behind creation of self and bring into focus the extent to which society and social interaction has an impact on formation of an idea of self.

The idea of self: Philosophical explorations from Hellenists to Nietzsche

The idea of self has been a subject matter of enquiry since time immemorial. Mauss (1938) traces the first usage of the term 'persona' to ancient Rome, where it was used as a reference to the masks which people would adorn in public ceremonies. These masks intended to be a reflection of the rights and duties which were bestowed upon the people who wore them. The meaning attached to the usage of persona was primarily pertinent to public domain. Stoics came up with a notion of self on a personal level. They believed that individuals should decide who they want to be and should engage in taking care of the self. The Stoic tradition of private correspondence citing details of everyday routine addressing friends and philosophical teachers is considered to be the genesis of generating a 'narrative of the self'. The motive behind these letters was to keep one's habits in check and exercise moderation so as to achieve self-mastery because a free citizen should be able to govern themselves.

Foundations of metaphysical notions of self tend to emerge in Christian ideas of the soul such as St. Augustine's. it was believed that within every human heart, there existed a continuous tussle between good and evil, and through this inner struggle, an individual finds his way to God. Although, the central element in these ideas and practices tends to be the 'soul' and not 'self' per se, the discussions mark a turn 'inwards' and identify the soul as something of substance, a mark of individuality which can be separated from the body. It was a spiritual quest to embark on the search for God at the depth of one's soul but Augustine Christian ideas are closer to a metaphysical definition of an invisible entity within an individual, riddled with conflict.

The western philosophical notions of self begin to appear in concrete forms in the work of Descartes who believed that what granted uniqueness and individuality to people was their mental reflections of their own selves, distinct from their bodies and its carnal desires. Descartes theorized about the capability of human mind to think and create mental

representations of the external world. Knowledge, therefore, was not external to humanity but a construct of human mind. To quote;

"while I decided thus to think that everything was false, it followed necessarily that I who thought thus must be something; and observing that this truth: I think therefore I am, was so certain and so evident that all the most extravagant suppositions of the sceptics were not capable of shaking it….. I thereby concluded that I was a substance, of which the whole essence or nature consists in thinking, and which, in order to exist, needs no place and depends on no material thing; so that this 'I', that is to say, the mind, by which I am what I am, is entirely distinct from the body, and… that even if the body were not, it would not cease to be all that it is" (Descartes, 1968; pp. 53–4)

In Descartes' theorization, this 'I' which is the self, is to be found in mind which is a thinking entity distinct from the body. This dualism, the distinction between a non-material mind and a material body splits human existence into two halves. Whereas the body produces sensations and impulses which have a finite character, the mind has the potency to think infinitely about the finite experiences of embodied individuals. And this is because Descartes considered mind to be closer to God than to material things. The questions posed by Cartesian Dualism continued to be of interest across disciplines which attempted to philosophize about the nature of self and human existence and continue to do so to date.

The major takeaway from Cartesian dualism for Romantics, such as Rousseau, was that human beings are good by nature, but society imposes upon them and restrains their capability and desire for self-expression and with this imposition of artificiality and authority, it corrupted the essence of human nature. For Romantics, self-identity was not only related to the mind's capacity to think and reflect upon the nature of being, but being able to freely express their thoughts and creativity which fell prey to adherence of formal rules and authority (Taylor, 1989). To Rousseau, society should instead serve the purpose of enabling individuals to feel closer to the voice within and their true nature, grant them autonomy and relative independence to express their true selves.

For Rationalists, such as Kant, reason trumped experience of embodied individuals. Human beings have natural tendencies and desires which can get overwhelming and against these passions of the sensory world, reason may flail and appear weak. But it is this reason, and not feeling which gives them freedom and dignity (Taylor, 1989). The source of this reason is not cognitive thought or bodily experience, nor is it something divine as Descartes suggested.

Rather, it exists in the mind and allows human beings to make sense of their disordered sensory world and guides them to act in a consistently moral way (Burkitt, 2008).

'I' for rationalists refers to a transcendental self, which guided by rationality has the potential to abstract itself from its embodied social, cultural, historical experience; has the potential to make sense of the mayhem in his external world; and the potential to fight the potency of desire and follow principles of morality. The self, is thus to be found within an individual. It exists either in thought or inherent nature of human beings as per the discussions up until now. At the same time, individuals live together in a society and conceptualization of the self can hardly escape its shadows. In the account of Romantics it exists in the form of authority which restrains the self. In the account of Rationalists it exists in the form of morality which acts as a lubricant for societal functioning.

The foundations about explicitly thinking of self as a social construct are often traced to Adam Smith. Alongside conceptualizing about individual as an economic entity in pursuit of self interest, he also discussed about other human motives, emotions and aspects of human nature that connect an individual to others in the society. A view of self is possible because individuals interact with others, identify with others and also judge their own conduct by putting themselves in the shoes of others. Smith introduced the idea of an 'impartial spectator', an aspect of self which is not from the point of view of the individual, nor a specific other; but the point of view of an impartial other using which one analyzes their own behavior.

One acknowledges that others judge them as they judge others, and keeping this into consideration act accordingly i.e. attempt to control one's actions and impulses. But unlike the Stoics, self-mastery was not under the guidance of a philosophical teacher. An impartial spectator could be anyone in the society and this is what broadened the horizon of interaction and learning about self for the individual. Smith put forth an aspect of self for whom, individual's actions are an object of judgment using the lens of an impartial spectator. There is an 'I' who judges and there is an 'I' that's being judged (Seigel, 2005).

Another important theorization about self as a social creation came from the works of Hegel. For Hegel, the composite 'self' was reflective of contradiction and conflict within oneself by resolving which one would attain a higher level of being. Conflict and resolution of conflict were crucial in Hegel's dialectical philosophy. And so is the social and historical frame within which the individual is located. If the context is such that the society demarcates the rights and responsibilities for its individuals, they are a part of collective which is trying to explicitly

convey to the citizens who they are and what place they hold in a society. If the nation state is authoritarian, it stifles the individuals and their individuality by placing them under the burden of moral obligations. By subjecting the individuals to a power structure which grants it supremacy over the individuals, the possibility of development of self is limited as the stringent rules imposed upon individuals restrict them. At the same time, if a society collapses like it did in the medieval period that followed the collapse of Roman empire, individuals experienced alienation from the collective under the impending necessity for survival. Amidst the chaos, it was not possible for the self to find a stable reference point out of which it could generate a coherent self-identity (Burkitt, 2008).

From these discussions, a point emerges that conceptualization of self is hardly devoid of influence of society. Alienation from society impedes the awareness of self and so does an authoritative society. There may be dialectical forces at work, emanating from the individual and the collective that he is a part of; but there is a possibility of synthesis of these two forces in a democratic nation state. For Hegel, a democratic nation state offers the possibility that an individual can engage in self-development and has the freedom to do so but at the same time is a part of a highly developed collective spirit.

For Hegel, self is always in the process of becoming up until old age. It constantly strives to resolve social and personal contradictions, and attempts to reconstruct itself with the help of reason. This reason is not an inexplicable power beyond individuals or over and above them. Rather, it's a force of everyday life which enables the individual to freely participate in a democracy along with others. It is possible for reason and feelings to coexist in harmony without creating contradictions. It in fact becomes a medium to resolve those contradictions and bring about a reconciliation of collective and individual self which was hard to find in previous social organizations.

Nietzsche's theorization of self argued that human instincts are extremely strong and potent. Consciousness on the other hand is equally weak and incomplete. Yet, as a part of a civilized society, one tries to abide by morality, reason and rules of conduct which are aimed at reining in the natural instincts. The human self, self reflects using principles of reasoned thought and moral behavior but this constantly suppresses its natural instincts. In such a manner, human nature has no inherent goodness (as suggested by Rousseau), but society demands that they behave morally by suppressing this 'immorality' owed to natural instincts. Society, religion, reason are instrumental in driving human beings away from their true nature.

Nietzsche, unlike Hegel, was not a believer that modern democratic societies could resolve the conflict within an individual because collective identity is as important as self-identity. In order to unleash one's true self, one needs to find the strength not not oppose or limit their desires and passions, but free themselves from collective morality. These men should own their passions, acknowledge and affirm that nature and their inbuilt nature has no particular moral direction, yet is assigned one by the laws of society (Hollingdale, 1965). What is considered to be self, one that reflects, is formed by a part of the human body but when it turns against its carnal elements.

As opposed to the metaphysical understanding of self proposed by those before him, Nietzsche refused to believe in a substance such as soul (from Christian conceptualizations), or in the inherent goodness at the heart of all beings (as proposed by Romantics) but presented a dark side to human nature which should be embraced by the individuals even as society tries to restrain them. At this juncture, a materialist as well as a metaphysical conceptualization of self has emerged and to develop a deeper understanding the discussions about self from the discipline of psychology should be taken into account.

The idea of self: Insights from Psychology

William James was amongst the first to present a psychological account of the self wherein he divided the self into three parts- the 'constituents', the feelings and emotions they arouse and the actions they prompt. In this account, he introduces a distinction between two intertwined aspects of the self- self as subject or self as knower or 'I' and the self as object or self as known or 'ME'. The objective self was organized in a hierarchy and comprised of four domains- a bodily self, a social self, a material self and a spiritual self (Rayner, 2001). This was a major contribution towards theorization of self-concept because after him, researchers continued to look at the aggregated hierarchies in defining self concept and they were often refined and conflated.

Work of Sigmund Freud has also been an immense contribution in development of self understanding. In Freudian theory, a major part of the self is unknown to us, the 'unconscious'. What is known i.e. the 'conscious' is a fraction of the iceberg visible while most of it lies beneath the surface of water. As part of a civilization, individuals conceal their natural instincts because these instincts or their expression does not behoove someone who is a part of that particular society. As a result, many of these desires are repressed in the unconscious or

channeled in the form of socially acceptable forms of expression. These repressed aspects of the self fight against conscious and desire to be unleashed and freely expressed.

Freud proposed a tripartite theory of self divided as ego (consciousness or the part with which we identify ourselves), super-ego (conscience or the laws of society and morality imbibed in us from infancy) and id (unconscious or everything we repress which we don't wish to accept is a part of us). Self according to Freud is constantly torn between expression of its repressed desires and ensuring that what's repressed doesn't emerge for the fear of social condemnation of our actions. In other words, ego is constantly striving in a state of conflict between the authority of society (super-ego) and temptation of satisfying deep rooted and repressed desires (id).

In Freud's theorization, id and super ego were stronger and more virile in comparison to ego (similar in comparison to Nietzsche). Ego was oscillating and living in the shadows of id and super ego. However, unlike Nietzsche, Freud did not dismiss self analysis. He in fact suggested that self analysis could be used as a tool to reach a greater harmony between these three divisions of self. In the process of self analysis, individuals uncover their repressed desires, some of which can be potentially dangerous, and finds ways to defuse them or control them from becoming overwhelming. Psychoanalysis was instrumental for Freud in order to contain destructive forces which when repressed, or the longer they are repressed, pose a threat to civilization. Through psychoanalysis, more that's uncovered, more that's channeled will prevent alienation of the self from its natural desires as well as from society.

The theme persistent in all discussions till now pertains to the alienation of self. When power consolidates in the hands of state or a particular social class or religion, it attempts to exercise control upon the individual by subjecting him to rules of law and morality. This creates a state of conflict within the individual and alienates him either from the social life or from his inherent nature. The question remains that is self to be understood in conjunction with society or as an independent substance. Considering that individual struggles with the competing demands from society to abide by its rules and temptation to give into desire, the relation between individual and society needs more exploration.

Individual and society: Antithetical or dialectical

In the quest for self, theoretical considerations are caught up between individuality and sociality. Considering a society is composed of individuals and individuals can hardly be seen in isolation from society, it is important to consider the extent to which the two can exist

independently. In increasingly modernizing capitalist societies, which place a premium on individuality, one is inadvertently drawn to look at each individual as a unique, self-encompassing entity. And this is also convenient for modelling individual behavior, lending it a characteristic of operating in isolation. But, the question remains that to what extent can can individuals experience themselves as free from social bonds and act as they deem fit.

Pragmatists were of the opinion that knowledge, consciousness and self emerges from social activity. Ideas are social and cultural because they are produced through dialogue and interaction between groups of individuals. Ideas are the tools individuals devise to cope with the world they find themselves in i.e. to not only come to terms with the world around, but to actively transform it to suit their purposes, meet their needs and further their interests (Menand, 2002). Individuals are not just passively going about their lives in the world they are born into but are actively trying to reshape the world around them by creating new knowledge through social activity.

This also meant that the society must be an open, democratic society which is tolerant to differing viewpoints. Democracy was important for pragmatists as it would avoid the concentration of power around a single viewpoint but would embrace multiplicity of ideas. Their understanding of consciousness and self hood was neither spiritual, nor substantial but materialist. And it fit perfectly with the rapidly evolving capitalist society. In the wake of Darwin's revolution, pragmatists adopted the evolutionary theory in their own way.

Rather than a species being selected via the process of natural selection, it was the characteristics of individuals selected in evolution. Unrelated to the ability of individual to conform to a particular type, individuals evolve via social interaction to better adapt to their environment (Menand, 2002). Social relations and social interaction were of utmost importance to the pragmatists. As a corollary, consciousness and self-awareness, the ability to reflect on one's actions (some of which is a product of habit acquired at some stage in life) enable individuals to consider alternate paths of action better suited to their environment. Consciousness is not static but ever evolving and temporal.

On the nature of self, William James proposed three aspects of self. First, 'material me' which is the bodily self by which I am identified by others as well as myself and our family which we are a part of and who are a part of us. Second, 'social me' which pertains to how favorably we are perceived by others around us. The innate desire of all human beings is to be noticed, to be acknowledged and their existence rests on being recognized by others around them, especially

those who are known. Third, ‘spiritual me’ which is the totality of our experiences up until that point in life, which becomes the object of conscious reflection and evokes emotional reactions. (Burkitt, 2008). These three different aspects of personality conflate and often exist in contradiction within the same individual and more generally, within the society.

For George Herbert Mead, self was a social construct because as per evolutionary theory, human beings were not only reflecting on their actions and adapting to their environment, but were also adapting to others around him in the society he is a part of. Evolution of human self is intertwined with social activity and signs, symbols and language which mediate this social activity.in the discourse of social group, human beings interact with one another, interpret the actions of others, reflect on their own impulses and actions and adjust their own conduct accordingly. Socially produced systems of meaning rest upon language and more importantly gestures such as body language which are subject to interpretation and basis for communication. This line of thought has come to be known as ‘symbolic interactionism’.

Mead was not dismissive of the instinctive aspect of human nature but he proposed that in the wake of social processes and symbols, these instincts are reconfigured and reshaped in symbolic activity. It is via these social situations that self-consciousness emerges. About individuals experiencing themselves in their consciousness, Mead said that it could only happen indirectly, inferred from the way others are reacting towards the concerned individual and his actions. Self thus takes the form of an object, an empirical fact thriving in a world of others, being objectively analyzed by others and reflected upon by the subject.

In a conversation where an individual refers to himself as ‘I’ from the position of the speaker (subject) and ‘me’ from the position of the listener (object), self is the interaction of I and Me, when individual regards himself as a social object. There is no substantial self from which I emerges. Self is a product of an inner conversation, the one who speaks also hears. Individual puts together a picture of self by analyzing their response in the conversation and others’ reaction to them. Others are omnipresent, according to Mead, in conversations with others as well as in conversations with oneself. Individual self-reflects from the point of view of a generalized impersonal other.

This generalized other, is inculcated in individual right from childhood, in the form of laws and moral standards of a society and hence an individual’s moral understanding becomes impersonal. Judgment of our actions in our own thinking reflects the judgment of this impersonal other. A similarity can be spotted between Mead’s account of a generalized other

and Smith's account of an impartial spectator. At the same time, in Mead's theory, social meanings and values are not stable for very long because all people will never share the same meaning for a social object. Considering that democratic culture was important for pragmatists, that conflict and division were tolerated and resolved, the scope of expansion of social meanings was created. In this way, not only society evolved over time, but also self.

The interactionist subject

Central to the interactionist paradigm is study of intersections of interaction, biography, social structure and historical context. The experience of an interactionist subject is considered to be organized in terms of accounts of experience (learned from others or acquired from popular culture) and motives (that explain past behavior and predict future behavior). The foundation stone of human group life is intersubjectivity- i.e. the shared knowledge that exists between two individuals regarding each others' mental states (Denzin, 2007). The search for self continues in everyday experiences surrounded by emotionaility, subjected to power and given a shape using shared meanings with others around us.

Selves cannot be construed as static fixed entities, rather they are always in the making and this lends them an incomplete, less understood and ill structured character. By virtue, human nature carries within itself innumerable possibilities of what it can be, and in such pursuits selves are continuously evolving which makes the task of defining self rather complicated. For pragmatists, self was a social construct that emerges in the general process of evolution (Rock, 1979). Self is a product which arises with experience and reflecting upon that experience to the extent that one is able to analyze oneself as if they were an object and language was the medium which made this possible.

'the medium for translating inarticulate experience into reflexivity is held to be language, and the pragmatists defined the self as a stage in an inner dialogue which was built around the forms of conversation. That conversation enables a person to confront himself, make indications to himself, discourse with himself, assess himself, and survey himself from without selves are then aspects of an inner forum in which social individuals encounter themselves and interpret their own experiences.' (Rock, 1979; p. 75)

Self here is simultaneously both, intellectual subject and intellectual object. The objects, events, processes and interactions that an individual experiences or produces are deliberated upon and awarded meaning but this process of evolution of self creates and refracts important social phenomenon. Self in this sense becomes 'the vehicle as well as the object of knowledge'

(Rock, 1979; p.103). In the interactionist paradigm, pre-reflexive knowledge does not constitute consciousness or self hood. Lived experience is structurally similar to the responses towards stimuli from environment. In an attempt to convey what was experienced is when consciousness arises. Immediate interaction with the environment or others exists at an unreflecting level. Selves arise when this unreflexive activity attains social significance.

Self-conception and self-perception: Looking Glass Self

William James was amongst the first to present an account of social origin of self according to which, self was construed on the basis of recognition that one receives from others and because perceptions of people differ there may be plural ways to define one self (Jackson, 1988). Depending upon the situation, there may be different versions of self available for different situations and these inconsistencies exist because individuals may have as many selves as others who know them (Shaffer, 2005). This demonstrates that accounts of self invariably take into consideration the aspect of society. Individual and society are not ontologically independent. In fact, they are interwoven to the extent that each one shapes the other. Society and individuals happen to be collective and distributive aspects of the same phenomenon because a separate individual is an abstraction unknown to experience, and so is a society when its regarded as being a separate entity from the individuals who shape it (Cooley, 1902).

What constitutes a subject's mind and self come from the social world. According to Cooley, self is not just individual or just social because it can't be an isolated concept. It is a dialectic process which is built with the help of communication and interaction with other persons and reflecting upon these interactions. As opposed to a unitary structure, self was an ever evolving concept which develops as a result of individuals' interactions with their social and physical environment and reflecting upon these interactions. Cooley illustrated this phenomenon of reflection towards building a sense of self by using the metaphor of *looking glass*.

'A self idea of this sort seems to have three principal elements: the imagination of our appearance to the other person, the imagination of his judgment of that appearance, and some sort of self-feeling such as pride or mortification' (Cooley, 1964; p.184)

Imagination of the subject here plays a crucial role, for it is this imagination of how one is perceived that feeds into one's concept of self. There are three components to Cooley's looking glass self. One, in every situation actors exercise their imaginations to see themselves as others would see them and self-reflect on their social performance. Two, actors imagine how others would perceive or evaluate their social performance. Three, in response to these imagined

evaluations, actors experience an effective reaction. For example, if they imagine that others' evaluation will be positive they might experience a positive affect such as pride and if they imagine others' evaluation to be negative, they might experience a negative affect such as shame or embarrassment (Shaffer, 2004).

Findings from studies on reflected appraisals shed light on the primacy of perceived responses over actual responses (Felson 1981, 1985; Bohrnstedt and Felson, 1983). While there is a dependency on others for formation of self concept, the beauty in Cooley's conceptualization of self is that one's idea of oneself is not just a mechanical reflection of others' actual responses but requires an active involvement of the subject. The subject's conceptions about other's ideas about him demand an active role on part of his mental faculties and these conceptions feed into his idea of self. Looking glass aspect of self formation has an interpretive dimension about it.

Apart from interpretation, several other factors have been identified as qualifiers which influence the effect of reflected appraisals and at the same time, highlight the role played by an individual who is the subject. The first amongst these is the significance that subject attaches to the other person. *"*...weight of that other, in whose mind we see ourselves, makes all the difference with our feeling*"* (Cooley, 1964, p.184). So there is an active or selective aspect of the looking glass self significance of interpersonal relationships comes to light (Franks and Gecas, 1992; Rosenberg, 1979). Opinion of other matters as much as the other matters to the subject. Amongst other factors were subject's awareness of reflected appraisals, their agreement with them and the personal significance which such appraisals carry (Franks and Gecas, 1992).

Although the greatest takeaway from Cooley's theory has been the concept of looking glass self, Cooley didn't intend for the metaphor to be considered a complete theory of self. When taken together- the emphasis placed on other and other's opinion, and reflexive tendencies of an individual; there appears to be an interplay between autonomy and other's influence. Other people's judgments tend to occupy an individual's mind, but individual tends to carefully walk through these opinions and only takes those into consideration which are in line with his view of self-development. In the creation of self, influence of others is weighed against the necessity to achieve autonomy from others and continuity of one's established character.

Although Cooley did not elaborate much on this, but an individual is emotionally attached to his values which is why changing values is often resisted. However, when certain values emerge as a threat to our self conceptions or are made to appear as incongruent, individual feels

that his self-esteem is under attack and takes steps to change his values. Mead's theory fills the gaps and proposes that the quintessentially social and impersonal notion of a 'generalized other' which pervades the reflective aspect of an individual's mind allows them to incorporate changes in their value system to adapt socially. This allows individuals to objectively analyze, control and respond to incoming thoughts devoid of the point of view of any one particular person. This brings elements of stability, continuity and autonomy to conceptualization of self.

In Cooley's work, a fusion of autonomy and social dependency is presented with clarity in discussions about 'appropriation'. Right from childhood, children appropriate adults' attention and affection through their actions. These actions are a replication of those around them but they are initiated by the child with certain intention and thus reflect self-initiation and self-efficacy. At the same time, social dependency is highlighted in this phenomenon based on the extent to which child craves to appropriate others' affection which is governed by the degree to which his emotions are tied to others' reaction.

An individual is acutely aware of the society he is a part of, abiding by its rules and morality which he has internalized, constantly acting with the awareness that his actions and reactions are being judged by others. In the endeavor to define oneself, individual objectively engages in self reflection and seeks approval of his actions from the point of view of a generalized other, especially from significant others. The generalized other, especially significant other holds a certain power over the individual as it evokes in him a desire to be approved and acknowledged. But there is a fine balance between feeling autonomous and seeking approval which one must traverse carefully, lest they should trade autonomy for dependency.

Alongside looking glass self, several points regarding self conception emerge from Cooley's larger theory of self development. The theory presents an individual by highlighting his assertiveness and independence. Imagination plays a crucial role when it comes to reflected opinions of others and these opinions are filtered by the individual through an interpretive and selective process where the individual attaches more importance to the opinion of those who matter to him. Also, owing to core values and identities which are instilled in an individual right from childhood, individual has a certain continuity to his character where change in core values is hard to come by unless necessitated by circumstances. Also, appropriation of affection and attention continues from childhood and individual voluntarily engages in activities to please those who are important to him. Such actions constitute the development of self concept as well (Franks and Gecas, 1992)

Self conception: Self esteem, self-image and the ideal self

The interplay between social interaction and individual's imagination is central to Cooley's theory. An individual actively organizes and interprets the perceived responses and these perceptions are internalized by the individual. Siljanovska and Stojcevska (2018) connect this concept to the notions of 'an ideal self' and 'a real self'. The real self may be defined as an individual's perception of how he really is and the ideal self is the individual's perception of how he would like to be (Dolich, 1969; p.80). The space in between is mediated by individual's self-image (the view they have of themselves), self-confidence (the value they attach to themselves) and interpersonal communication which according to Rogers (1959) are the key components of self concept.

Self-image and self-esteem are closely knit to the idea of real self. A person may have a self-image which is exponentially higher or a reductionist view of their true self. Based on the standards which individuals set for themselves (inspired by and taking into cognizance the desire to be favorably perceived by others), individuals strive to fulfill the criteria to meet these standards. Failure to do so shatters their self-esteem and makes them rethink their standards, add new criteria and reconcile with their self-image. The imaginary character that is self-image is often a source of confusion, discontent and disappointment for people if its not a close approximation of the real self.

Self-esteem acts when coupled with self image. If a person suffers from low self esteem, he tends to be insecure about himself and constantly questions his actions, characteristics, appearance and imagines that he is not perceived favorably by significant others and society. This obsession with negative perception feeds into his self image which drives him away from his true self, with a desire to become more likable by standards of those around him and blend well into the society. A person with high self esteem, on the other hand, exhibits confidence that he is perceived well and is desired by the society. Although it might not always be true, but this person might feel that he already is what society wants him to be, that he fulfills all their assessments. Since self confidence is perceived as a positive attribute, other people might also believe this person's perception of himself (Siljanovska and Stojcevska, 2018).

An individual's ideal self is a hypothetical construct, a mental representation of what the person ought to be. It comes into being on the basis of individual's perception of those around him; their characteristics, achievements, appearances and so on. When these perceptions from immediate surroundings (or significant others) are taken into account by the individual, he

aspires to become and achieve what others have. At the same time only those people who are held in high regard by the individual carry that power to influence his mental construct of the ideal self. This is contingent upon environment and relationship with the others in his immediate environment. At the same time, this also poses a challenge to Cooley's conjecture about continuity of character because there are individual differences in how a person is perceived by others and there are individual differences in actions. A person might behave differently infront of his parents and teachers as compared to his friends, and all three groups of people might perceive the individual differently. This is in line with the central argument in Cooley's theory that self is to be found and conceptualized within social environment.

Socialization is the key behind formulation of attitudes, identities and self-concepts and maintained and enhanced by positive response to individual's actions coming from significant others. People are born into social world, where they arrive with certain roles, responsibilities already being attributed to them. In the process of growing up, people acquire attitudes and belief systems via socialization. Gender, class, caste are social realities that individuals are born into and one is expected to blend into this social reality. People are socialized in particular ways because there is an expectation of conformity, which feeds into an individual's social imagination of himself. In other words, individual looks at himself from others eyes, behaves as others would desire him to because they have been exposed by way of socialization to socially desired behaviors which are internalized.

The importance of inter-personal communication: Shame, conformity and self

People have a tendency to be what others think they are. In the same line of thought, Cooley was of the view that self develops by way of condemnation from others. At heart of a person's self is the value system they inherited through being around others and by observing them and undertaking efforts to appropriate their affection and approval. At the same time, discussions in the earlier sections have pointed out that it is particularly hard for an individual to change his values. Which brings one to question if and how individual's self-concept changes based on the views of others around them. Or does one completely change themselves on the basis of perceived opinions of others, especially those who are held in high regard.

The extent to which others' opinion can stimulate a person to reconsider his notion of self is contingent upon person's perception of how he fared as per standards laid out by others and his imagination of how he is perceived by them. Based on a person's interpretation of others' evaluation, individuals always find themselves in emotional states (Scheff, 1988, 2003). On

the basis of presumed evaluations, the affective states oscillate between pride and shame on a continuum. In the 'Cooley-Scheff conjecture', Scheff particularly draws attention towards feelings of embarrassment, humiliation, ridicule, incompetence which are brought on by perceived reception of a person's social performance. Actors themselves judge other people's actions as good or bad, so they assume that they too would be a subject to other people's evaluations. Imagination enables a person to be in other people's shoes and take it for granted that their actions are also being praised or condemned by others. when actors believe that their social performance reflects incompetence or fails to meet the standards set by the society, they experience shame and a desire to justify their actions to others.

Shaffer (2004) presents an interesting view of self as an organ of justification. What can be observed will be interpreted and evaluated. Social behavior particularly is available for public interpretation and evaluation. Cooley-Scheff conjecture predicts that in the process of imagining how they are being perceived by others, people also anticipate pride (if they feel others will consider their actions as justified) or shame (if in their imagination they will be ridiculed or condemned for their actions) at some level. In an attempt to avoid being at the receiving end of public ridicule and condemnation, an individual carefully considers the repercussions of their actions and the affective states they would generate and tend to take a course of action which is socially justifiable.

The concern for justification, thus, manifests itself even before actions are undertaken (Jackson, 1988). An individual is almost obsessed with his impression in the eyes of others and in an effort to improvise how he is perceived; they take actions which are socially justifiable. Behaviors acquire situated meanings. In a particular social setup, if one's conduct is interpreted to be different from what was intended, verbal and behavioral adjustments are made to achieve social suitability. Thus, in anticipation of pride and avoidance of condemnation (*a priori*) self improves for the better (or what's socially considered better).

Even with all the mental calculations involved, individuals often engage in 'inappropriate behaviors'. They often fall prey to their impulses, or fail to appropriately gauge how their actions will be interpreted by others. Since people are held accountable for their actions, they tend to repair the damage that their actions may have inflicted upon their social image by justifying their conduct with the help of tools provided by language. Using language actors tend to offer 'accounts' explaining their behaviors. These accounts, which take the form of motives or excuses or justifications, can be considered as a response to charge of wrongdoing imposed upon the individual and are also tested for their legitimacy.

Conversations centered around charges and accounts have three fundamental components. A 'reproach' where the action is classed as offensive and displeasure is communicated to the actor. An 'account' where the person charged with offensive act offers an explanation for their behavior. And an 'evaluation' where the accounts offered by the actor are accepted or rejected. Subsequently, if account is accepted, the actor convincingly escapes from a situation of being charged with wrongdoing and saves his image from being tarnished. If the account offered is not deemed to be a sufficient or acceptable explanation of behavior, repercussions for the same are to follow (Cody and McLaughlin, 1988).

Motives are specific terms which refer to the vocabulary of actions and adequate reason explaining why an actor behaved the way they did in particular situations (Mills, 1940; Shaffer, 2004). The actors are always mindful of the fact that they are being constantly evaluated and held accountable for their actions. Which is why, sometimes even without being prompted to do so, they tend to justify their behaviors by resorting to 'motive talk'. Often, the 'object of action' is cited as a reason for behaviors which are socially unacceptable so that the conduct can be defended.

In some circumstances, people offer 'excuses' for their behavior. Excuses serve as an acknowledgement that actions undertaken may be wrong or unacceptable, but the actor tries to deflect the responsibility for his or her actions. They are an attempt to diffuse the situation and prevent it from cracking down on the actor so that his social image is not tarnished. 'Justifications' for behavior is a class of responses wherein the actor assumes responsibility for his actions, but questions if his or her conduct should be deemed wrong at all by others. There is a sense of denial lingering to a justification which seeks acceptability for questioned behaviors under specific circumstances.

The taxonomy of accounts has been refined and extended by several researchers (Cody and McLaughlin, 1988; Schonbach, 1980). Without going into details the most important implication with pertinence to this research work is that in the process of rendering accounts for behavior, it becomes apparent that individuals are conscious of their social worlds, cognizant of the rules of the society around them and are mindful of being perceived favorably by others. It is indicative of power that social world exercises upon the individual and how this power has been internalized by him considering that individual feels the need to justify his conduct.

Formation of self is a process of justification, justifying your actions to yourself *a priori* and justifying them to others if they pose a threat to social image. A systematic effect of this process of justification is the opportunity for social control. This social control is not merely the authority that rests with institutions which act as guardians of society, the authority to issue rewards (punishments) for abiding (not abiding) by social norms. Because it is put into action only on rare occasions. But this pertains to the informal social control reflected in the self imposed sanctions that actor puts in place to abide by social rules. Scheff (2003) calls it the 'deference emotion system'.

The affective states of experiencing shame and pride are what run this deference emotion system. The intrinsic property of these affective states is that they are a reward or punishment in themselves. When an individual defers to societal norms, they exhibit conformity and in doing so, at some level, they experience the feeling of pride which is pleasant. In the least, they avoid feeling shame which is an unpleasant feeling to live with and can weigh down upon an individual. On a day to day basis, individual behavior is not monitored through institutions, but kept in check via a self monitoring system wherein, individual avoids engaging in behaviors which might defy established norms. Deference-emotion mechanism accounts for more conformity as compared to institutions which punish/reward individual behavior. By imagining oneself in the shoes of 'other', individual is engaged in his day to day pursuits to preserve his self-image, his impression in others' eyes and resultant affective states (Shaffer, 2004; Scheff, 2003).

Defining Self-Concept

Shavelson et al. (1976) define self as an individual's self-perception formed by means of interaction with and interpretation of his environment. It is a hypothetical construct, in line with the interactionist perspective, which is influenced by evaluations from significant others, reinforcements and attribution for one's own behavior (Marsh and O'Mara; 2008). Self concept is not just an outcome of social processes and individual's interpretation but also an important mediating variable, which explains other social outcomes. With pertinence to this research work, self concept is taken to be an important mediating variable when impact of incentives on individual motivation is being studied.

In the model presented by Shavelson and Marsh (1985), self concept is considered to be multifaceted wherein people categorize the information they have about themselves. It is considered to be hierarchically organized. At the base lie perceptions of behavior, then

inferences about self in specific areas (academic and non-academic) followed by inferences about self in general. General self concept is considered to be stable, but as one descends the hierarchy, self concept becomes increasingly situation specific and less stable. As one grows older, self concept becomes increasingly multifaceted. Self concept consists of descriptive as well as evaluative dimensions.

Baumeister (2003) draws a distinction between evaluative and descriptive dimensions of self perception stating that evaluative component of self perception is self-esteem and it should be distinguished from descriptive component which is self concept. Considering the philosophical underpinnings and psychological processes that have been discussed in previous sections pertaining to the development of the idea of self, such distinction appears to be an incongruous. Swann et al (2007) also conclude that there is a cognitive and affective component involved in the development of both- self esteem and self concept which questions the use of such a distinction.

Schafer and Keith (1985) point out that a major assumption of the symbolic interactionist view of the self is the process of role taking. A person puts themselves in other's shoes and regards their action and behavior from the point of view of other. Keeping in mind the emphasis which Cooley and others placed on 'perceived' response by individual, influence of others on an individual's self concept takes an indirect form. In continuation, not all reflected appraisals are taken into consideration by the individual because everybody one corresponds with is not equally significant. It is the significant others, who hold some credibility and have a real importance in subject's life.

This research work adopts the definition of self perception (self concept) as laid down by Carl Rogers (1959). Rogers laid down three components of self concept- self-image, self-esteem and the ideal self. Self image is the knowledge an individual has about himself and as per Laird (2007), this knowledge tends to be imperfect in nature. Self-esteem is the manner in which individual sees himself, evaluates himself and these evaluations incorporate comparisons with others and individual's perceptions of others' responses. The ideal self is the self an individual would like to be.

Rogers (1959) and Bem (1967; 1972) emphasized that self-image and the ideal self may overlap, in which case the individual will experience congruence and this in turn will enable self-actualization. But quite often, self-image and ideal self tend to be incongruent which creates a confusion and inner turmoil within the person. This state is referred to as cognitive

dissonance. If an individual holds two cognitions that happen to be inconsistent with one another, then the resultant aversive emotional state which individual will experience is called cognitive dissonance (Festinger, 1957). This state creates an internal pressure and a self-yielding demand to be resolved by either altering or removing one of the two dissonant cognitions.

Chapter Four

Rewards and punishments in principal-agent theory: Impact on motivation and self perception

The focus of principal-agent theory is to devise the most effective and feasible contract between the participating people given assumptions about people and their nature, organizations and their structure and information that is shared but also the information that's concealed. The relationship between principal and agent is considered to be riddled with information asymmetries of different types which bring along inefficiency in the working relationship. To counter these inefficiencies or to minimize their impact, the contract between the principal and agent needs to be resilient and carefully devised. A vital component of this contract is the incentive structure, which consists of several tangible and intangible elements, threats of punishment, attractions of reward; the purpose of which is to exact maximum possible effort from the agent.

With reference to this research work, principal agent model has been adapted to institutes of higher education, to understand the relationship between research scholars and their academic supervisors. The relationship is collaborative in nature, ideally, where the supervisor (who is assumed to be the principal) and research scholar (who is assumed to be the agent) work in unison to produce a good quality research work in a stipulated amount of time. Principal by virtue of experience has his academic expertise and several other resources at his disposal. Agent, has to undergo a careful selection procedure and demonstrate his capability to undertake and execute academic research.

In this chapter an attempt will be made to question the assumptions which establish the premise on which principal agent relationship unfolds. The assumptions about inherent nature of people who enter the agency relationship; the assumptions about the fundamental nature of this relationship and the description of information asymmetries will be pondered upon with particular reference to the discussions about human motivation and self perception as has been discussed in previous chapters. To evolve beyond the economic understanding of agency relationship as an exchange of resources between two participating individuals, the social interaction and mental interpretation of this social interaction will be emphasized upon.

Who is the principal and agent?

In this research work, an academic supervisor is assumed to be in the position of principal. He has several resources at his disposal, ones which his student can make use of. The most important amongst these resources is the academic expertise which he can offer to give a direction to the research work and determine its feasibility. This academic expertise comes with years of teaching experience, engagement in research works at an individual level, with an organization or by supervising other research scholars. Having spent a significant amount of time engaging in academia, the supervisor also has built a reputation for himself and professional contacts which have the potential to benefit his students. A research scholar is assumed to be in the position of agent, who undergoes a rigorous screening process which assesses his skills and caliber to pursue academic research; has a certain inclination towards the field of research and under the guidance of his supervisor, puts a certain amount of effort in order to complete his research work.

The research work itself is considered to be a collaborative exercise, one by engaging in which both, the principal and the agent, seek to enhance their skills and academic understanding. They work in tandem to produce a good quality of research and contribute to the field of academia by producing new knowledge. Both principal as well as agent have a vested interest in pursuit of such a task because principal looks to reaffirm his position as a vital member of academic community and the agent aspires to become one. In this manner, principal seeks an 'extension of self' by delegating work to the researcher (Coleman, 1990). Although the task is collaborative, researcher puts in more effort as compared to the principal but the reaps of his effort are borne by both the parties.

Generally, enquiries directed towards principal agent relationship look at economic analysis of cooperation between two rational parties, who are trying to maximize their payoffs. The agent is perceived to be opportunistic, with the intent of pursuing self interest with guile (Shapiro, 2005). It is assumed that if it was not for the watchful eyes of principal, agent would shirk or take advantage of the resources provided to him to achieve a separable outcome from the joint venture of principal and supervisor. But such analogy rests on the presumption that motivation on part of the agent exists only in the light of fear of being reprimanded by the principal or excitement of receiving some type of compensation (could be tangible or intangible) in lieu of his effort. That, left to his own device, agent does not have an interest in the joint venture.

This research work tries to shed light on how this assumption can be and needs to be reconceptualized. This exercise begins by taking inspiration from the Self Determination Theory proposed by Deci and Ryan (1985). It is acknowledged that the motivation of the agent in question should be understood rather than presumed. An agent can not only have different types but also varying levels of motivation. If an agent exhibits an innate desire to explore and understand, seeks pleasure from engaging himself in research, exercises his capabilities to accomplish something new, he is said to be intrinsically motivated to pursue research. On the other hand, if an agent engages in research for some separable outcome, if the behavior is motivated by external reinforcement of some kind or to avoid disapproval or punishment; the agent is said to be extrinsically motivated to pursue research.

The classical economic version of principal agent relationship in the light of incentives employed by the principal bear a close semblance to the Skinnerian conceptualization of Operant Conditioning. Causality of 'observable' behavior is understood to be in the light of reinforcements employed by the principal to incite and enable recurrence of desirable behavior. Huitt and Hummel (1998) identified four types of reinforcements- positive punishment, negative punishment, positive reinforcement and negative reinforcement. The locus of causality in intrinsically motivated behaviors is different from extrinsically motivated behaviors and a better understanding of both might provide the principal with new information which can further enable him or empower him in better management of the agent in question. This sets the premise to explore the importance of information which both parties have about each other.

A 'well informed' principal and a 'self-reflecting' agent

Benabou and Tirole (2003) present a mathematical account of how a change in incentive structure offered by the principal can bring about a change in effort level which the agent puts towards the research task. This account integrates the salient features of self determination theory by assuming that agent might be intrinsically motivated to pursue the task and is constantly reflecting on the incentives offered by the principal. In this model, which has been discussed in previous chapters, principal is assumed to have perfect knowledge pertaining to the difficulty of task as well as agent's performance abilities, whereas the agent has imperfect self knowledge. This assumption creates the need to discuss about the nature of information asymmetries and feasibility of attaining perfect knowledge on part of principal.

That the principal has perfect information about the task at hand is realistic. Owing to prior experience of being involved in research, having supervised other research scholars, it is credible to assume that the principal is aware of the difficulty of the task at hand. The principal may also contain more information about the resources at his disposal or resources which may be made available to the agent to aid his research as compared to the agent himself. But to assume that principal has perfect information about the agent's caliber, skill set and inclination towards research does not seem very appropriate.

The selection process through which students are inducted into research programs in various universities tends to be very competitive worldwide. It is often based on previous academic performance, written examinations, personal interviews, letters of recommendations from established academicians and other such qualifiers. All these qualifiers do tend to play an important role in establishing the first impression of the agent on principal. The principal assimilates this knowledge, some of which is privately communicated to him (for example letters of recommendation from other academicians and evaluations in written entrance examinations, the contents of which are not always accessible to the agent). On the basis of this knowledge principal presumes the agent to be a certain type of student.

But this presumption is at best an approximation of the skills and capabilities of a prospective student. It is not to discount that a principal is capable to gauge the pre existing capabilities from his prior performance. But it means to say that the nature of a research program tends to be different from undergraduate and postgraduate studies and there need not be a causal relationship between previous and future academic record. A research program tends to be more specialized and of a longer duration as opposed to degree courses. If sufficient space and opportunity is created for a student to voluntarily choose their area of interest and enough guidance is provided to equip the student with relevant skills, there is a possibility that the student might exceed the expectations of the supervisor.

And this assumes specific significance because in the mathematization of impact of incentive structure on effort level, Benabou and Tirole (2003) point out that principal takes this information and his preconceived notions about the agent into account while devising a suitable incentive structure to manage the agent. Further, the agent reflects on the choice of this incentive structure and it acts as a signal to inform the agent about how he is perceived by the principal. In the process of reflecting as to why the principal chose this particular method of dealing with me, the agent tries to see through the principal's motives and thus principal

unknowingly reveals his private perception about the agent. In this phenomenon, the principal's perception of the agent finds way into the agent's self conception.

The authors suggest that the possible channel through which this phenomenon of looking glass self has an impact on agent's effort level is mediated by agent's self confidence. An agent's self confidence is an aspect of his general self perception. This research work attempts to highlight that the interaction between principal and agent and in particular, the phenomenon of looking glass self as has been proposed by Cooley (1902) and others after him, has a crucial role to play in the formulation of agent's academic self perception. But Cooley's theory of self was not limited to the concept of looking glass self. The tenets of his larger theory of self that have been discussed in previous chapter demand that the mediating variable which is taken to be self confidence by the authors be broadened and more inclusive while giving due respect to the interaction between principal and agent.

As per the interactionist paradigm, an agent's self is a social construct which evolves with engagement in social activity. Self is not a static, fixed element situated within a person but product of an ever evolving process which includes interacting with others around us and reflecting on those interactions. Self is simultaneously the subject as well as the object of judgment of the individual in question. Individual self-reflects on his own actions from the point of view of 'generalized other', his action is self-regulated under the watchful eyes of 'an impartial spectator'. Formation of an idea of self is not a passive process but active process wherein individual's interpretation and imagination of perceived responses of others towards him and his actions constitute the backbone of the concept of looking glass self.

A large part of an individual's perception of himself comes from individual's perception of how others might think of him. He puts himself in the shoes of 'the other' and tries to look at himself from their point of view. At the same time, the nature of relationship with the other adds a significant weight to the value of their reactions as perceived by the individual. The personal significance of an interpersonal relationship to the individual also determines the extent to which individual will take into account his perception of their responses (Franks and Gecas, 1992). There is a social dependency in conceptualization of self and the most demanding amongst these are the relationships which are awarded a significance by the individual, the relationships which evoke emotional affectivity.

'Cooley's ([1922] 1964) next point about active or selective aspect of looking glass self is that the "…weight of that other, in whose mind we see ourselves, makes all the difference with our

feeling (p.184). Here Cooley is referring to the fact that it is only persons who are "significant others" to us (either by choice or by circumstance) who impact strongly on our self-feelings' (Franks and Gecas, 1992)

To define who a significant other is in context of this research work is important. The interpersonal relationship between academic supervisor and research scholar is considered to be one such significant relationship. The supervisor, by virtue of his expertise and experience, is situated upwards in the hierarchy as compared to research scholar. He exercises significant control over the resources which can be made available to his students over the tenure of research. He also exercises significant power over the academic exchange and direction that research work is taking. Considering that the two work in tandem, but principal is in a more dominant position; circumstances necessitate that he plays the role of significant other for the agent.

It is also possible that the agent chooses the principal to be a significant other because he thinks that principal has earned credibility in his field by demonstrating excellence in academic pursuits. Another possibility is that the agent accepts the dominant position of the supervisor in order to avoid trouble. Collaborative tasks are often accomplished with ease if the working relationship between the participating parties tends to be conducive. In order to make it appear more conducive, or to be politer, or to avoid hostility; an agent may concede to the dominant position of the supervisor so that it doesn't create any hindrances in his current as well as future prospects.

The active dimension of selectively sieving through opinions of others and choosing which opinion should be considered significant also indicates the desire to be autonomous. The process of self formation or formation of self perception is undoubtedly social. At the same time, individual retains certain autonomy and values relatedness through careful selection of significant others. A crucial aspect of academic exchange between supervisor and researcher is feedback or appraisals. Upon reflection; these appraisals from significant other tend to be a relevant dimension in self evaluation. The distance between actual response and perceived response is a complicated process, mediated by an agent's self esteem and self knowledge. Incentive structure employed by the principal needs to be reviewed in this light.

Revisiting the incentive structure: Information asymmetries and how to counter them

The literature on principal agent relationship identifies two types of information asymmetries that mar efficiency and productivity of outcomes- hidden action and hidden information

(Laffont and Martimort, 2008; Shapiro, 2005). In most of these accounts discussions center around information asymmetries from the point of view of principal with agent as the subject. For example, hidden action is defined as a situation wherein an agent can undertake action unobserved by the principal. Hidden information is defined as a situation where agent can conceal information pertinent to his abilities regarding the task from the principal. In this context, incentive structure is seen as a powerful tool which the principal carefully devises to disable the opportunities for an agent to default.

In a realistic context, information asymmetries can arise on part of both the participating parties. It is equally possible that the principal hides information regarding the feasibility of the task and availability of resources from the agent (a case of hidden information). Another probable situation is that principal is a shirker, and not the agent (a case of hidden action). Both, principal as well as agent can potentially be equal contributors towards the presence of information asymmetries in agency relationships. In fact, information asymmetries are a by product of social interaction of any kind, omnipresent in all interactions involving individuals. And this is because what can be conveyed to each other via language and gestures (which are the founding stone of social interaction) is a small part of human thought. The inability to capture one's own thoughts in language, and the inability to convey those thoughts in totality to the person one is interacting with are at the heart of conversations.

Against this premise, it appears but natural that certain information remains concealed, that information asymmetries are a part of the very nature of a thinking being. What transforms into observable action is a fraction of the information that is mentally processed by an individual. Conventionally, what the principal tries to modulate with the help of incentive structure is observable action. In the wake of rewards and punishments, verbal or non verbal, what is disciplined is an individual's observable action. Alongside, principal often installs information systems of various kinds to keep agent's activities under watch (Boly, 2012). It is considered that the agent is more likely to behave in the interests of the principal if the fear of being observed is induced in him (Barney and Ouchi, 1986).

A demanding question is that what is the principle trying to achieve through incentive structure and information systems? If the ultimate purpose is to improve the quality of outcomes, then why doesn't the same incentive structure yield similar results when presented to different individuals? This individual variability in response to similar incentives is an indication that observable behavior is not only a product of reinforcements, but also of mental processes which mediate external behavior and are not observable. If the principal desires to improve the quality

of outcome, then external mediation from him should be mindful of the psychological factors that underlie behavior.

According to the self determination theory, this variability in response is resultant of differences in underlying motivation and differences in seeking satisfaction for the psychological needs for competence, autonomy and motivation. On the basis of the concept of looking glass self, it can be inferred that a possible contributor towards individual differences in response to incentives can be individual differences in how same incentives are perceived differently by different individuals. The literature from organization behavior points out that the source of this individual variability lies in the uniqueness of their being. Every individual seeks satisfactions in two directions- internal as well as external and this balance is different for everyone, which grants them uniqueness.

If the principal desires to improve the quality of outcome, then he must take into account the psychological needs of the agent and attempt to foster them. In the process of carefully devising an appropriate incentive structure to encourage the student to exert more effort towards the research task, the possibility of individual differences in response must guide the principal to evaluate and understand the underlying motivations of the agent. As a social being who is constantly engaged in seeking to define oneself, the agent revises his self perception in the light of incentives provided by the principal. Since this research work adopts a broader definition of incentive structure which includes both rewards and punishments, tangible and intangible, verbal and non verbal; it becomes interesting to explore how the management and governing systems as perceived by the agents interact with their academic motivation and self perception.

Side-effects of reward contingencies: Impact on self regulation of behavior

External mediation by the principal in the form of reward contingencies and punishment mechanisms, installation of information systems to closely monitor the activities of the agent have a functional significance. External mediation can either have informational properties or controlling properties. The aspect which is more salient governs the impact on motivation (Sansone and Harackiewicz, 2000). What grants the significance and impacts the efficacy of external mediation depends on whether it is perceived by the agent as informational or controlling. For example, if the principal offers a performance contingent reward to the agent, it communicates and reaffirms agent's competence (informational aspect) and at the same time can be perceived as controlling (expectations to meet the targets as set by the supervisor).

Angyl (1965) posited that human motivation moves in two opposite directions. There is a desire to experience *homonomy* owing to which people desire to feel loved, interpersonal contact, aesthetic pleasure, religious values and fit into their environment to be a part of something larger than themselves. At the same time, people also desire *autonomy* owing to which they seek superiority, competence, exploration and achievement i.e. they wish to assimilate and master the world they are a part of. A 'well functioning' individual is able to strike a balance between their desire to experience both, autonomy and homonomy. The social world which one is a part of is an inseparable component of human motivation. it is in this world that one wishes to assimilate and it is against this world that one wishes to stand out.

Self determination theory assumes that individuals possess the inherent propensity to feel intrinsically motivated, to assimilate their social and physical worlds and to integrate externally imposed regulations into self regulating behavior (Ryan and Deci, 1985; 2000). These evolved actualizing tendencies work in conjunction with basic psychological desires to experience competence, relatedness and autonomy. If the social worlds provide the opportunity to successfully satisfy these three psychological desires, one moves towards greater autonomy and homonomy (Angyl, 1965). As a result, their experience of alienation reduces and this contributes to their overall well being.

It is of particular interest to this research work to explore the interaction between external mediation and the agent's desire to experience autonomy as well as homonomy. Certain behaviors and tendencies happen to be inherent in the organismic nature of individuals. To remain functional in a social world, self regulation of these tendencies is also exercised by the individual. Regulation of behavior can be consciously constructed or socially imposed. Behavioristic understanding of behavior exists in the light of reinforcements, with the promise of rewards to strengthen desirable behavior and threats of punishment to eliminate undesirable behavior. Usage of reward contingencies, punishments, monitoring of behavior by principal bears an uncanny similarity to usage of reinforcements by behaviorists.

It is a principal centric approach and the agent is the vehicle which principal operates to reach desirable outcome. The deficit of this approach lies in this very fact that its designed from the point of view of principal, to elicit behaviors as desired by the principal. If behavior is understood as an outcome of anticipated rewards and punishments, the scope to take into account actions which are undertaken of one's own accord is limited. This not only undermines the self initiation of desirable activities but also self regulatory propensities within individual. As a result, in a society which places premium on reinforcing behavior using reward

contingencies, individuals often engage themselves in activities which don't appeal to them naturally or which hold no personal value to the individual.

There is ample research which points out that reward contingencies cast a negative impact on intrinsically motivated behaviors (Frey, 2012; 1997; Frey and Oberholzer-Gee, 1997). The problematic nature of reward contingencies also breaks down the structural basis of self regulation of action by desensitizing individuals to their basic needs and disrupting awareness and choice. The individuals become less responsive to their innate desires and environment around them under the pressure created by rewards and punishments. The evolutionary ability and tendency of individuals to integrate the value and meaning of their actions are overridden. Especially in case of agency relationships, where two parties voluntarily agree to cooperate to accomplish a task, the importance of volition must not be undermined.

The Cognitive Evaluation Theory proposed by Deci and Ryan (1980) identifies the conditions that diminish and those that enhance intrinsic motivation. In this theory, rewards can either be perceived as controlling or as informational by recipients and the impact of rewards on intrinsic motivation will depend on which aspect of the reward is more salient for the recipient. Rewards can come across as controlling because the locus of causality of behavior is perceived to lie outside the self. At the same time rewards are also informational because they convey or affirm or support recipients' competence. According to Cognitive Evaluation Theory, events which support perceived autonomy or perceived competence enhance intrinsic motivation.

According to Cognitive Evaluation Theory, Extrinsic rewards are not a unitary concept (Ryan and Deci, 2000). They have several properties, dimensions and categories which interact with an individual's motivation in different ways. What determines the impact of rewards on intrinsic motivation is if they are informational, controlling and expected. Tangible rewards are predicted to be controlling whereas, verbal rewards are predicted to be informational. Expected rewards are predicted to undermine intrinsic motivation, whereas unexpected rewards don't. A typology of reward contingencies was proposed by Ryan et al. (1983). They identified three types of rewards- task non contingent rewards, task contingent rewards and performance contingent rewards.

Task non contingent rewards do not require the recipient to engage with the task to get the reward. Due to this they are neither informational nor controlling and hence are considered to have no influence on intrinsic motivation. Task contingent rewards are of two types. Engagement contingent rewards expect recipients to involve themselves with the task, whether

they complete it or not. These rewards do not convey much about competence to the recipient because irrespective of whether they complete the task or don't, they get a rewards due to engagement with the task. At the same time, engaging oneself with the task is necessary to get this reward because of which they are perceived as controlling. Since the rewards are controlling, but not informational; they are considered to have a negative impact on intrinsic motivation. Completion contingent rewards are offered to individuals who manage to complete the task. They are perceived to be controlling but also informational because they convey competence. Such rewards may have a negative impact on intrinsic motivation if the individual is unable to counter the negative effects they experience due to controlling aspect of the rewards. But if the individual finds the informational aspect of rewards more salient, such rewards can enhance intrinsic motivation (Ryan and Deci, 2000).

Performance contingent rewards are a complex category wherein recipients' performance determines the reward. An individual is expected to meet even higher standards as compared to task contingent rewards, so they are even more controlling. At the same time, if a person manages to meet a specific criteria of performance, they are rewarded for their excellence and this conveys their competence in the task at hand. The informational aspect of performance contingent rewards is as potent as the controlling aspect. Controlling and competence affirming aspects of rewards contend with each other trying to offset each other's impact on intrinsic motivation. In order to determine the overall impact on intrinsic motivation, other factors need to be taken into account (Ryan and Deci, 2000).

As per Deci and Ryan (1991), the interpersonal context in which rewards are offered influence individual's experience of autonomy, relatedness and competence. The social ambience and the style of administration of performance contingent rewards can either be perceived as controlling by the individual or non controlling. If the style and environment happen to be controlling, individuals feel a pressure to perform which might diminish the intrinsic motivation. If the rewards administered in a manner which is not very controlling, the negative impact on intrinsic motivation can be offset by the informational aspect of the rewards to some extent. Such style of administration and social setting will cause less damage to intrinsic motivation as compared to controlling rewards.

Performance contingent rewards not only have a controlling aspect but also informational aspect, which need not always convey positive feedback. If the individual receives a feedback which is positive and signifies excellent performance, it will enhance the intrinsic motivation. But if the individual performs poorly or fails to attain the expected parameters of performance,

the rewards will affect the individual and his intrinsic motivation negatively. There are counter forces that are at work here. The rewards depending upon the situation may be perceived as controlling (which diminishes intrinsic motivation) or may be perceived as conveying positive information (which counteracts the extent to which intrinsic motivation is hampered). At the same time, rewards can be administered in a conducive and supportive environment (which enhances intrinsic motivation) and convey negative information (which reduces the impact on intrinsic motivation). In case rewards are administered in a controlled social setup and convey negative information, the overall impact is expected to reduce intrinsic motivation.

Locus of causality in intrinsically motivated behaviors is considered to emanate from within a person. In the presence of rewards, the locus of causality is also affected because attention is drawn away from the inherent appeal of the task and towards the separable outcome which is the reward. Here as well, the intersectionality between tangibility, controlling and informational properties of reward and degree of expectation bring about a heterogeneity in response. For example, in comparison to tangible rewards, verbal rewards (positive feedback) have a tendency to enhance intrinsic motivation. This is because verbal rewards tend to be unexpected and enhance the feelings of competence i.e. their informational aspect is salient. Tangible rewards on the other hand promote an externally perceived locus of control.

According to Cognitive Evaluation Theory, there are several important caveats to this enhancement/ diminishment of intrinsic motivation because there is an indirect involvement of locus of control. Firstly, informational aspect of rewards which enhances perceived competence can have a positive influence on both intrinsic as well as extrinsic motivation. an individual must experience autonomy to some extent for this perceived competence to have a positive impact on intrinsic motivation. if the locus of causality is experienced by the individual to lie outside, informational aspect of the reward will not have a significant impact on intrinsic motivation (Ryan, 1982).

Gender and age have also appeared to be significant determinants in some studies pertaining to the impact of verbal feedback on intrinsic motivation. Kast and Connor (1988) found out that positive feedback enhanced intrinsic motivation amongst male college students while it undermined intrinsic motivation amongst female college students. Meta analyses of various studies found that with the use of verbal rewards, enhancement effect was observed amongst college going students but no such significant effect was observed amongst children (Ryan and Deci, 2000). Studies also indicate that efficacy of verbal rewards increases when they arrive unexpectedly. If subjects are aware that at the end of their task they will receive feedback on

their performance, they feel evaluated which has a negative impact on intrinsic motivation (Harackiewicz, Manderlink and Sansone; 1984).

Side effects of monitoring strategies and punishments

Human societies expend significant resources to install institutions and systems to ensure that members of that society comply with the established social norms. In case of defection, suitable punishment is advised to discourage anti social behavior and also to set it as an example to ensure by way of threatening that certain behaviors call for being reprimanded. Agency relationships are a reflection of this social arrangement. The principal offers rewards for desirable behaviors but also installs information systems and punishment mechanisms to ensure that the agent does not default. The understanding behind expending resources to monitor the agent lie in the premise that agent is construed to be self interest driven and there is a possibility of defection in his very nature.

This research work offers an alternative understanding of the agent as driven by specific motivations with a possibility that he willfully engages with the principal out of an intrinsic desire to satisfy his innate psychological needs for competence, autonomy and relatedness. It is not the desire of this research work to draw attention away from the possibility that the agent might default or shirk. But to suggest that in cooperative engagements, the credibility of punishments and threats might interact negatively and result in a controlling, hostile interpersonal context in which intrinsic motivation may not thrive.

Much of the discussion in previous sections has centered around the idea that rewards, indirectly, can be experienced as controlling and informational by the agent. Threats of punishment as a consequence to defection are directly controlling and also informational. Deterrence effect of punishment is a direct attack on volition, causality of behavior and hence intrinsic motivation. Particularly so because the agent is not mechanically acting in response to punishments and rewards. The agent mentally interprets the principal's usage of punishments and threats, just as he does in case of rewards, and tries to gauge the intentions of the principal in doing so. The phenomenon of looking glass self is at work in case of rewards as well as punishments. The agent is continuously trying to decipher how he must be perceived by the principal, his significant other with respect to the task at hand.

Information asymmetries on part of the agent bring about agency costs. Much of the literature supports the view that principal puts in place reward mechanisms, sanction systems and monitoring systems to ensure that agent does not defect and that the desired outcome is reached.

At the same time, significant resources and time and energy are expended by the principal in the process of keeping a watch on agent's activities (Shapiro, 2005; Fama, 1980). From the perspective of the agent, workers may find manipulation of behavior by incentives and punishments as alienating and dehumanizing (Etzioni, 1971). The problem is further compounded by the fact that locus of control in case of behaviors undertaken to avoid punishment shifts outside the individual. Since threats of punishment and sanctions are administered in a controlling environment, autonomy and experience of relatedness by the agent is limited which negatively impacts the intrinsic as well as extrinsic motivation to pursue the task.

How should the principal devise management strategy for the agent?

Rewards, punishments, monitoring are understood in principal agent relationship with respect to their instrumentality and functionality. But each of these have an informational as well as controlling aspect which, when reflected upon, cast an impact on agent's motivation level and self perception. The social context in which each of these is administered plays an important role. And from the agent's perspective, the desire to experience autonomy, relatedness and competence are equally important and determining factors in efficacy of these to achieve the behavior that principal desired. In conventional terms, principal is trying to achieve a higher quality of output and incite the agent to expend more effort towards the task.

Amongst rewards, verbal rewards are more efficient as compared to tangible rewards, unexpected are better than expected rewards, and rewards administered in a conducive and supportive interpersonal context are more effective as compared to rewards administered in controlling social contexts. Each reward carries an informational and controlling aspect which act as opposite forces trying to diminish each others' impact on intrinsic motivation. When principal is trying to convey information through rewards (for example in the form of verbal feedback), it would serve him well to be mindful of the fact that performance contingent rewards may be perceived as extremely controlling by the agent. If the feedback is positive, it has an enhancing effect on intrinsic motivation. But if the feedback is negative, it may diminish intrinsic motivation. In such cases, to offset the negative impact of informational aspect of reward, they should be administered as supportive interpersonal communication.

Sanctions and threats of punishment, by nature tend to be extremely controlling. The perceived locus of causality shifts outside the agent. As far as the informational aspect of sanctions and threats of punishment goes, the agent who is at the receiving end may experience alienation

from the task because his organismic ability to self regulate his own behavior is interfered with. Punishments convey that an agent has not lived up to the standards as expected by the principal which provides him negative information about his competence pertaining to the task. The agent may also experience a loss of autonomy and competence, alongside relatedness because informational aspect of punishments and sanctions tends to be negative. Considering this, its plausible that sanctions and threats of punishment have a negative impact on the agent's intrinsic motivation.

Further, the agent has a tendency to reflect upon the usage of punishments and sanctions by the principal. He puts himself in principal's shoes and constantly evaluates himself as an object to see how his actions must be perceived by the principal. Since monitoring, punishments and sanctions convey distrust and possibility of dishonesty, agent perceives that the principal must perceive him in a negative light, that the principal is basing his decisions on the basis of some negative information he has about the agent. In this process, an individual reevaluates his own self- perception, his self esteem is diminished. If the ultimate desire of the principal is to improve the quality and amount of effort agent puts in towards the task, punishments and sanctions might not be as effective in eliciting more effort and quality of work from the agent. Instead of this, principal may consider fostering a nurturing environment, which takes individual's psychological needs to experience competence, relatedness and autonomy into account, where the positive feedback is administered in a context which is not controlling, and criticism is delivered in a way that it appears more informational and constructive.

Chapter Five

Data Analysis and Results

The purpose of this research work was an attempt to establish that research scholars enrolled in a university have varying levels and types of underlying motivations with which they pursue research. During the tenure of research, they work in collaboration with a supervisor who yields a significant impact over the working dynamics of their association with one another. The relationship between the two has been understood with the help of theoretical paradigm of principal agent relationship wherein, the supervisor is assumed to be in the position of principal and the research scholar is assumed to be in the position of agent. In their interactions, academic and otherwise, principal employs several tactics to encourage the agent to put in more and better quality of effort towards the research task at hand.

In literature of principal agent relationship, the focus tends to be on external mediation on part of the principal in the form of rewards, punishment and monitoring. In this research work, these tactics employed by principal have been understood as 'incentive structure' employed by the principal which includes promises of reward, threats of punishment, but also the principal components of interaction between not just two economic agents, but two individuals. As important as tangible, expected rewards and punishments are in driving the agent towards the goal; verbal, intangible and unexpected affirmations or disapproval which agent receives from the principal are equally important in agent's motivation for the task.

The literature on Self Determination Theory as posited by Deci and Ryan (1985) suggests that satisfaction of the agent's psychological needs for autonomy, relatedness and competence is what governs the underlying motivation for this behavior. And on basis of this motivation, which may vary from individual to individual for the same task; the agent's response to incentive structure is also variable. Benabou and Tirole (2003) incorporate the element of interactionism in principal agent relationship and suggest that agent is a receptive, perceptive and introspective being who reflects on the choice of incentive structure by the principal. These reflections seep into his own perception of himself via the looking glass phenomenon.

With due importance to the essence of interaction between the research scholars and their supervisors, this research work attempts to understand the exchange between the parties involved not only as economic but also psychological. Supervisors' attitudes and contributions

towards research work, verbal and non-verbal interactions with the agent combined with agent's ability to reflect on these components of communication between them interacts with agents' self perception regarding their academic abilities and their motivation behind pursuing research. The instrument designed for this study attempted to explore the intricacies and relationship between agents' academic motivation and academic self perception in light of their relationship with supervisor. The results from data analysis have been presented and discussed in the forthcoming sections.

Background data

The survey received responses from 140 research scholars enrolled in M.Phil. and Ph.D. programs in Jawaharlal Nehru University. Of these respondents, 42.1% were male and 57.9% were females. 4.3% of respondents were less than 25 years in age, 60% were between 25 to 30 years, 32.1% were between 30 and 35 years and 3.6% were more than 35 years old. The hometown of 50% respondents was located in urban area, 22.9% was located in semi urban area and 27.1% was located in rural area. 76.6% respondents identified themselves as Hindu, 13.1% as Muslims, 2.2% as Christians, 0.7% as Sikhs and 7.3% as others. Regarding social category, 51.9% of respondents were General, 31.1% were OBC, 13.3% were Scheduled Castes and 3.7% were Scheduled Tribes. 82.9% of respondents were enrolled in Ph.D. and 17.1% were enrolled in M.Phil. course at JNU. Regarding parental annual income, 37.1% of respondents stated that it was more than 5 lakhs, 35.7% of respondents stated it was between 2 and 5 lakhs and 27.1% stated that it was up to 2 lakhs. In a question about highest educational attainment of parents, 31.4% stated that their parents were were post graduates, 42.1% stated that their parents were graduates, 22.1% stated that their parents had studied up to higher secondary and 4.3% stated that their parents had received vocational training. This data regarding social and economic background of participants is depicted in a tabular form below.

		Categorical variable	Number
Gender	Female	Female	81
	Male	Male	59

Age	25-30 yrs	25-30 yrs	84
	30-35 yrs	30-35 yrs	45
	Less than 25 yrs	Less than 25 yrs	6
	More than 35 yrs	More than 35 yrs	5
Location of Hometown	Rural area	Rural area	38
	Semi-urban area	Semi-urban area	32
	Urban Area	Urban Area	70
Social category			3
	General	General	70
	OBC	OBC	44
	SC	SC	18
	ST	ST	5
Religion			1
	Christian	Christian	3
	Hindu	Hindu	107
	Muslim	Muslim	18
	Other	Other	10
	Sikh	Sikh	1

Course	M.Phil.	M.Phil.	24
	Ph.D.	Ph.D.	116
Gender of professor	Female	Female	54
	Male	Male	86
Parent's annual income	2 to 5 lakhs	2 to 5 lakhs	50
	More than 5 lakhs	More than 5 lakhs	52
	Up to 2 lakhs	Up to 2 lakhs	38
Parent's highest education level	10+2 or below		31
	Graduation		59
	Post Graduation		44
	Vocational courses		6

Table 5.1 Background data of subjects

Motivation: Intrinsic, Extrinsic and Amotivation

On the basis of responses received for Academic Motivation Scale, intrinsic extrinsic and amotivation the sub types of intrinsic motivation were looked into. Intrinsic motivation to know and intrinsic motivation to experience stimulation were strongly correlated (r=0.789, p=0.000). Intrinsic motivation to know (M= 23.99, SD=4.30) was higher than intrinsic motivation to experience stimulation (M= 22.04, SD= 4.775); t_{139}= 7.735, p=0.000. Intrinsic motivation to know and intrinsic motivation to accomplish were strongly correlated (r=0.652, p=0.000). Intrinsic motivation to know (M= 23.99, SD=4.30) was higher than intrinsic motivation to accomplish (M= 19.99, SD= 4.99); t_{139}= 12.027, p=0.000. Intrinsic motivation to experience stimulation and intrinsic motivation to accomplish were strongly correlated (r=0.741, p<0.001). Intrinsic motivation to experience stimulation (M= 22.04, SD=4.775) was higher than intrinsic motivation to accomplish (M= 19.99, SD= 4.99); t_{139}=6.86, p=0.000. To sum up, intrinsic motivation to know was higher than intrinsic motivation to experience stimulation and

both were higher than intrinsic motivation to accomplish. These results are graphically depicted below.

Fig. 5.1 Intrinsic motivation and its subcategories

The sub types of extrinsic motivation were also similarly analyzed. Extrinsic motivation Identified and extrinsic motivation external regulation were strongly correlated (r=0.739, p=0.000). Extrinsic motivation Identified (M= 20.60, SD=5.049) was higher than extrinsic motivation external regulation (M= 17.92, SD= 5.663); t_{139}= 8.103, p=0.000. Extrinsic motivation Identified and extrinsic motivation introjected were correlated (r=0.374, p=0.000). Extrinsic motivation Identified (M= 20.60, SD=5.049) was higher than extrinsic motivation introjected (M= 15.47, SD= 6.383); t_{139}= 9.351, p=0.000. Extrinsic motivation external regulation and extrinsic motivation introjected were also correlated (r= 0.362, p=0.001). Extrinsic motivation external regulation (M= 17.92, SD= 5.663) was higher than extrinsic motivation introjected (M= 15.47, SD= 6.383); t_{139}= 4.245, p=0.000. In a nutshell, Extrinsic motivation identified was greater than extrinsic motivation external regulation and both were greater than extrinsic motivation introjected. These results are graphically depicted below.

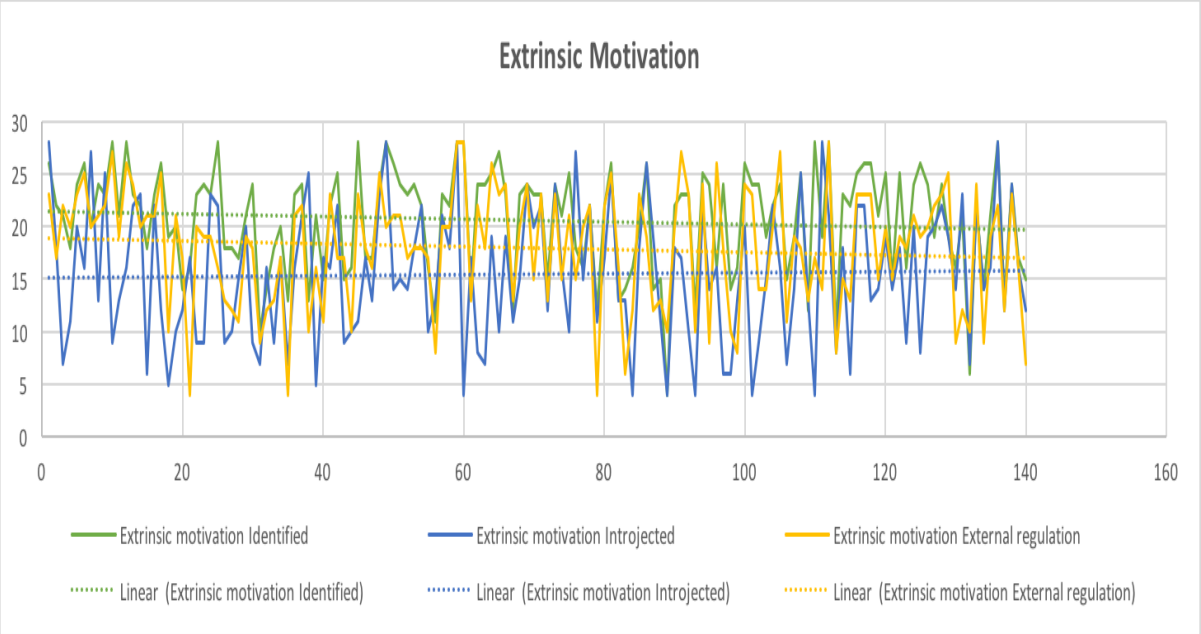

Fig. 5.2 Extrinsic motivation and its subcategories

Considering the correlations between subtypes of both, extrinsic and intrinsic motivation, the subtypes were merged together to assess the difference between total intrinsic, extrinsic and amotivation. Intrinsic motivation is a summation of the values assigned by respondents to the questions pertaining to intrinsic motivation to know, to accomplish and to experience stimulation. Similarly, extrinsic motivation is a digest score of values assigned to questions related to identified, Introjected and external regulation. There was no statistically significant correlation between extrinsic motivation and amotivation. Extrinsic motivation (M= 53.99, SD= 13.816) was higher than amotivation (M= 10.08, SD= 5.923), t_{139}=35.961, p=0.000. There was a negative correlation between intrinsic motivation and amotivation (r= -0.346, p=0.000). Intrinsic motivation (M= 66.01, SD= 12.731) was higher than amotivation (M= 10.08, SD= 5.923), t_{139}=41.911, p=0.000. There is a positive correlation between intrinsic motivation and extrinsic motivation (r= 0.407, p=0.000). Intrinsic motivation (M= 66.01, SD= 12.731) was higher than extrinsic motivation (M= 53.99, SD= 13.816), t_{139}= 9.818, p=0.000. As can be seen, the level of amotivation remains low throughout the sample whereas level of both, intrinsic as well as extrinsic motivation is very high.

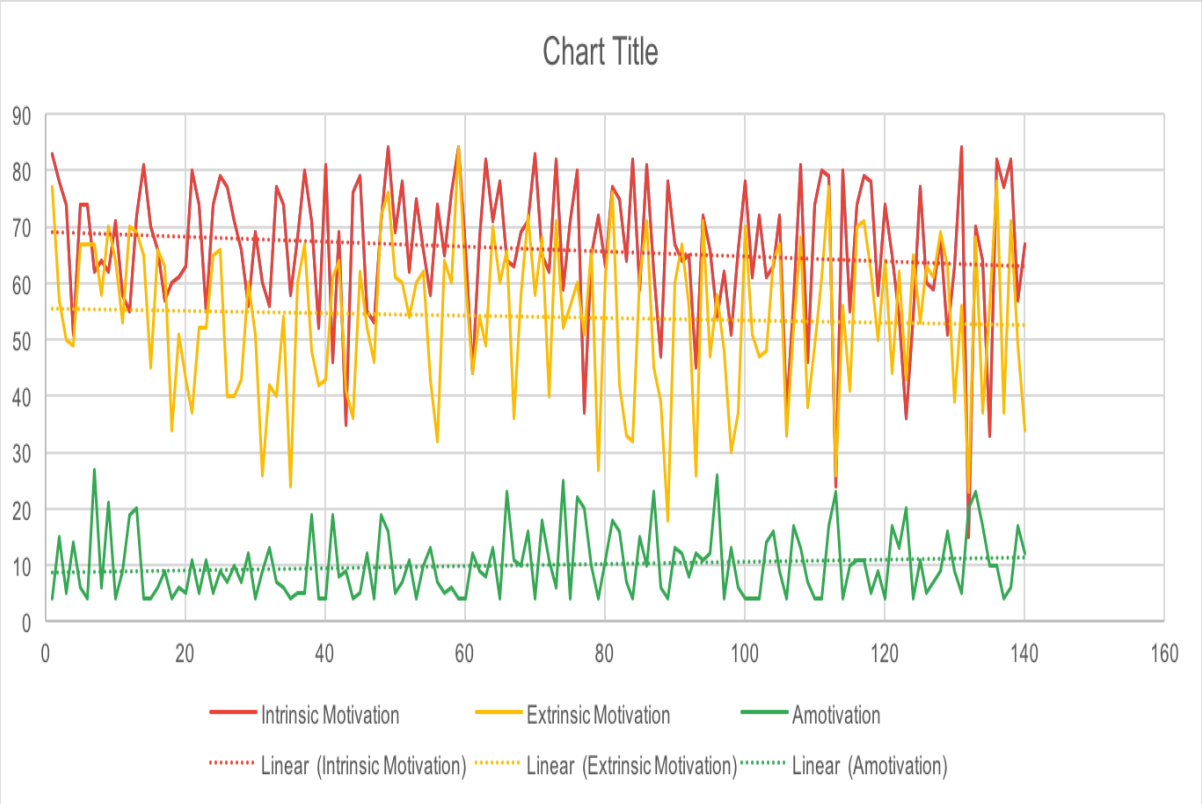

Fig. 5.3 Intrinsic, Extrinsic and Amotivation

In this data, the emergence of a correlation between extrinsic and intrinsic motivation combined with equally high levels of both deserves to be closely examined.

The psychological needs for autonomy, relatedness and competence

Intrinsic motivation was found to be positively correlated with autonomy (r_{138}= 0.309, p=0.000); relatedness (r_{138}= 0.241, p=0.004) and competence (r_{138}= 0.168, p=0.048). Intrinsic motivation to know was found to be positively correlated with autonomy (r_{138}= 0.314, p=0.000); relatedness (r_{138}= 0.279, p=0.001) and competence (r_{138}= 0.238, p=0.005). Intrinsic motivation to accomplish was found to be positively correlated with autonomy (r_{138}= 0.232, p=0.006). Intrinsic motivation to experience stimulation was found to be positively correlated with autonomy (r_{138}= 0.238, p=0.000) and relatedness (r_{138}= 0.259, p=0.002). Amotivation was found to be negatively correlated with autonomy (r_{138}= -0.274, p=0.001); relatedness (r_{138}= -0.374, p=0.000) and competence (r_{138}= -0.428, p=0.000). Extrinsic motivation was found to be negatively correlated with competence (r_{138}= -0.220, p=0.009). Extrinsic motivation external regulation was found to be negatively correlated with relatedness (r_{138}= -0.193, p=0.022). Extrinsic motivation introjected was found to be negatively correlated with relatedness (r_{138}= -

0.182, p=0.032) and competence (r_{138}= -0.305, p=0.000). The results are mentioned in a tabular form below.

	Autonomy	Relatedness	Competence
Intrinsic Motivation	0.309 (p=0.000)	0.241 (p=0.004)	0.168 (p=0.048)
IM to know	0.314 (p=0.000)	0.279 (p=0.001)	0.238 (p=0.005)
IM to accomplish	0.232 (p=0.006)		
IM to experience stimulation	0.238 (p=0.000)	0.259 (p=002)	
Extrinsic Motivation			-0.220 (p=0.009)
EM Introjected		-0.182 (p=0.032)	-0.305 (p=0.000)
EM External Regulation		-0.193 (p=0.022)	
Amotivation	-0.274 (p=0.001)	-0.374 (p=0.000)	-0.428 (p=0.009)

Table 5.2 Correlations between different types and categories of motivation and experience of autonomy, relatedness and competence

The impact of incentives on motivation

To consider the impact of incentive structure employed by the supervisor on different levels and types of motivation, two analyses were done. First, different levels and types of motivation were correlated with the six broad categories of incentives- verbal incentives, tangible incentives, expected incentives, unexpected incentives, controlling incentives and non-controlling incentives. Then it was correlated with eight subcategories based on the permutations and combinations of the above- tangible expected controlling, tangible expected non-controlling, tangible unexpected controlling, tangible unexpected non-controlling, verbal expected controlling, verbal expected non-controlling, verbal unexpected controlling and verbal unexpected non-controlling incentives.

Intrinsic motivation was found to be positively correlated with tangible incentives (r_{138}= 0.221, p=0.009), verbal incentives (r_{138}= 0.199, p=0.018), expected incentives (r_{138}= 0.263, p=0.002), unexpected incentives (r_{138}= 0.177, p=0.037). Intrinsic motivation to know was found to be positively correlated with tangible incentives (r_{138}= 0.181, p=0.032) verbal incentives (r_{138}=

0.196, p=0.020), expected incentives (r_{138}= 0.240, p=0.004). Intrinsic motivation to accomplish was found to be positively correlated with tangible incentives (r_{138}= 0.201, p=0.017), verbal incentives (r_{138}= 0.168, p=0.047), expected incentives (r_{138}= 0.229, p=0.007), controlling incentives (r_{138}= 0.190, p=0.024). Intrinsic motivation to experience stimulation was found to be positively correlated with tangible incentives (r_{138}= 0.216, p=0.010), verbal incentives (r_{138}= 0.178, p=0.035), expected incentives (r_{138}= 0.246, p=0.003), unexpected incentives (r_{138}= 0.167, p=0.048).

	Intrinsic Motivation	**IM to know**	**IM to accomplish**	**IM to experience stimulation**
Tangible	0.221 (p=0.009)	0.181 (p=0.032)	0.201 (p=0.017)	0.216 (p=0.010)
Verbal	0.199 (p=0.018)	0.196 (p=0.020)	0.168 (p=0.047)	0.178 (p=0.035)
Expected	0.263 (p=0.002)	0.240 (p=0.004)	0.229 (p=0.007)	0.246 (p=0.003)
Unexpected	0.177 (p=0.037)			0.167 (p=0.048)
Controlling			0.190 (p=0.024)	

Table 5.3 Correlations between main categories of incentives and intrinsic motivation

Intrinsic motivation was found to be positively correlated with tangible expected non-controlling incentives (r_{138}= 0.253, p=0.003), tangible unexpected non-controlling incentives (r_{138}= 0.221, p=0.009), verbal expected non-controlling incentives (r_{138}= 0.289, p=0.001), verbal unexpected controlling incentives (r_{138}= 0.199, p=0.019).

Intrinsic motivation to know was found to be positively correlated with tangible expected non-controlling incentives (r_{138}= 0.256, p=0.002) tangible unexpected non-controlling incentives (r_{138}= 0.203, p=0.016). Intrinsic motivation to accomplish was found to be positively correlated with tangible expected non-controlling incentives (r_{138}= 0.191, p=0.024), tangible unexpected non-controlling incentives (r_{138}= 0.180, p=0.034), verbal unexpected controlling incentives (r_{138}= 0.170, p=0.045). Intrinsic motivation to experience stimulation was found to be positively correlated with tangible expected non-controlling incentives (r_{138}= 0.244, p=0.004), tangible unexpected non-controlling incentives (r_{138}= 0.218, p=0.010), verbal expected non-

controlling incentives (r_{138}= 0.288, p=0.001), verbal unexpected controlling incentives (r_{138}= 0.211, p=0.012).

	Intrinsic Motivation	**IM to know**	**IM to accomplish**	**IM to experience stimulation**
Tangible Expected Non-Controlling	0.253 (p=0.003)	0.256 (p=0.002)	0.191 (p=0.024)	0.244 (p=0.004)
Tangible Unexpected Non-Controlling	0.221 (p=0.009)	0.203 (p=0.016)	0.180 (p=0.034)	0.218 (p=0.010)
Verbal Expected Non-Controlling	0.289 (p=0.001)			0.288 (p=0.001)
Verbal Unexpected Controlling	0.199 (p=0.019)		0.170 (p=0.045)	0.211 (p=0.012)

Table 5.4 Correlations between subcategories of incentives and intrinsic motivation

Extrinsic motivation was found to be positively correlated with tangible incentives (r_{138}= 0.167, p=0.049). Extrinsic motivation external regulation was found to be negatively correlated with verbal incentives (r_{138}= -0.177, p=0.036). Extrinsic motivation was found to be positively correlated with tangible, expected controlling incentives (r_{138}= 0.205, p=0.015). Extrinsic motivation introjected was found to be positively correlated with tangible expected controlling incentives (r_{138}= 0.172, p=0.043). Extrinsic motivation identified was found to be negatively correlated with verbal expected controlling incentives (r_{138}= -0.173, p=0.041). Extrinsic motivation external regulation was found to be positively correlated with tangible expected controlling incentives (r_{138}= 0.176, p=0.038) and negatively correlated with verbal expected

controlling incentives (r_{138}= -0.227, p=0.007) and verbal expected non-controlling incentives (r_{138}= -0.191, p=0.024)

	Extrinsic Motivation	**EM Introjected**	**EM Identified**	**EM external regulation**
Tangible	0.167 (p=0.049)			
Verbal				-0.177 (p=0.036)
Tangible Expected Controlling	0.205 (p=0.015)	0.172 (p=0.043)		0.176 (p=0.038)
Verbal Expected Controlling			-0.173 (p=0.041)	-0.227 (p=0.007)
Verbal Expected Non-Controlling				-0.191 (p=0.024)

Table 5.5 Correlations between different incentives and extrinsic motivation

Amotivation was found to be negatively correlated with verbal incentives (r_{138}= -0.252, p=0.003), expected incentives (r_{138}= -0.179, p=0.034) and non-controlling incentives (r_{138}= -0.194, p=0.022). Amotivation was found to be negatively correlated with tangible expected non-controlling incentives (r_{138}= -0.177, p=0.036), verbal expected non-controlling incentives (r_{138}= -0.336, p=0.000) and verbal unexpected non-controlling incentives (r_{138}= -0.258, p=0.002).

Amotivation

Verbal	-0.252 (p=0.003)
Expected	-0.179 (p=0.034)
Non-Controlling	-0.194 (p=0.022)
Tangible Expected Non-Controlling	-0.177 (p=0.036)
Verbal Expected Non-Controlling	-0.336 (p=0.000)
Verbal Unexpected Non-Controlling	-0.258 (p=0.002)

Table 5.6 Correlations between different incentives and amotivation

The results of impact of various incentives employed by the supervisor on research scholars' levels and types of motivation is summarized in the table below.

	IM	IMTK	IMTA	IMES	EM	EMId	EMIn	EMEr	AM
Tangible	+	+	+	+	+			-	-
Verbal	+	+	+	+					-
Expected	+	+	+	+					
Unexpected	+		+						
Controlling			+						
Non-Controlling									-
Tangible Expected controlling					+		+	+	
Tangible Expected Non-controlling	+	+	+	+					-

Tangible Unexpected Controlling								
Tangible Unexpected Non- controlling	+	+	+	+				
Verbal Expected Controlling					-		-	
Verbal Expected Non-controlling	+			+			-	-
Verbal Unexpected Controlling	+		+	+				
Verbal Unexpected Non- controlling								-

Table 5.7 Correlations between different incentives and subtypes of motivation

Academic motivation: A discussion about the results

A taxonomy of human motivation according to the Self Determination Theory (Deci and Ryan, 1985) categorizes motivation into three types- intrinsic, extrinsic and amotivation. For intrinsically motivated behaviors, locus of control lies within an individual and it has been further categorized into three levels- intrinsic motivation to know, to accomplish and to experience stimulation. For extrinsically motivated behaviors the locus of control lies outside an individual. They are subdivided into three categories- Identified, Introjected and External regulation respectively in order of decreasing autonomy and increasing control of external motives. Amotivated behaviors are defined as ones which display lack of intentionality and personal causation. The psychological needs for competence, autonomy and relatedness are particularly important in Self Determination Theory to decipher and analyze the level and type of motivation.

Results yielded that in the sample of 140 research scholars from Jawaharlal Nehru University, intrinsic motivation to know was higher than intrinsic motivation to experience stimulation and both were higher than intrinsic motivation to accomplish. Extrinsic motivation identified was greater than extrinsic motivation external regulation and both were greater than extrinsic motivation introjected. By definition, behaviors that represent identified regulation are also representative of high internalization and autonomous motives. These behaviors when located on the motivation continuum lie closest to intrinsically motivated behaviors. Considering the

strong and statistically significant correlations between the subcategories of both, they were merged together and two new variables were created- intrinsic motivation and extrinsic motivation and seen together with amotivation. Throughout the sample size, amotivation remains low. But the levels of intrinsic motivation to pursue research was found to be high amongst the research scholars. The results from the data collected from this research work can be placed on the motivation continuum as predicted by theory, representing that intrinsic motivation to pursue research was higher than extrinsic motivation and both were higher than amotivation. A minor anomaly lies in placing the subcategories of extrinsic motivation. extrinsic motivation with identified regulation was higher and closer to intrinsic motivation, but external regulation was found to be higher than introjected regulation whereas, theoretically, it should be opposite.

Theoretically, the movement of a person along the motivation continuum has been understood on the basis of perceived locus of control. For behaviors that are self initiated, the locus of control is perceived to lie within the individual (deCharms, 2013; Deci, et al., 1994; Ryan and Connell, 1989). For behaviors which come into effect due to external forces, the locus of causality is perceived to lie outside the individual. Alongside the locus of causality, the degree of internalization determines where an individual is located on the motivation continuum. In other words, higher the degree of internalization, higher are the chances that behavior will lie closer to or mimic intrinsically motivated behaviors.

An equally fascinating result was that extrinsic motivation was also high throughout the sample, almost as high as intrinsic motivation. Amabile (1993) proposes that with time, especially in the longer run, work environments which employ strong motivational structures could effect changes in a person's motivational orientation. Deci and Ryan (1985) suggest a dichotomy in the form of intrinsic and extrinsic motivation wherein the former is understood in relation with task engagement and latter is understood in relation with outcomes of engagement. But Amabile (1993) do not accept this dichotomy suggesting that focus on outcomes could very much be a part of intrinsic motivation if an individual accepts them as challenge and seek to reaffirm their competence by associating themselves with the task.

Amabile (1993) observes that there can be a certain synergy between intrinsic and extrinsic motivation, particularly when intrinsic motivation is high to begin with. This synergistic relationship between extrinsic motivation and intrinsic motivation can happen if the extrinsic motivators tend to convey information about individual's competence and enhance their feeling

of autonomy. If the extrinsic motivators tend to be controlling, then its unlikely that intrinsic and extrinsic motivation will act complementarily to each other.

Deci and Ryan (2017) also suggest that if the informational aspect of extrinsic rewards tends to outweight the controlling aspect, they will have a positive effect on intrinsic motivation. On the basis of typology of external rewards as suggested by Ryan (1983), it was found that there was a positive correlation between tangible, verbal, expected and unexpected rewards with intrinsic motivation. This implies that these if motivators conveyed information about competence to the research scholars, and enabled them to experience more autonomy and relatedness with respect to the task, they tended to have a positive impact on their intrinsic motivation.

With respect to extrinsic motivation, it was found that tangible rewards showed a positive correlation with extrinsic motivation. At the same time, verbal incentives displayed a negative correlation with external regulation in extrinsic motivation. A possible explanation for the same could be that the informational aspect of verbal incentives comprising of appreciation and acknowledgement or positive feedback tends to convey competence to the individual who receives them. Therefore, its likely that the negative correlation is representative of the individual being more motivated intrinsically towards the task as compared to engagement with the task on the basis of external regulation.

Considering that Self Determination Theory places the needs for autonomy relatedness and competence at the heart of human motivation, it was important to analyze the relationship between these three and types of motivation. Intrinsic motivation was found to be positively related to the needs for competence, relatedness and autonomy. Amotivation on the other hand was found to be negatively correlated with the needs for competence, relatedness and autonomy. These findings blend with the postulates of Self Determination Theory. They specifically suggest that if the research scholars' psychological needs for competence, autonomy and relatedness are met; they tend to be more inclined to pursue research of their own volition. And generally suggest that if these psychological needs are met, the individual tends to experience some sort of a stimulation and motivation to pursue research.

Theoretically, instructor behaviors have been classified into three clusters- autonomy supportive, competence supportive and relatedness supportive (Assor, Kaplan and Roth, 2002, Jang, Reeve and Deci, 2010). It has been found that autonomy supportive environment contributes not only towards towards higher academic achievement but higher self esteem

amongst students (Deci, Schwartz et al., 1981; Deci, Nezlac and Sheinman, 1981); greater conceptual understanding (Benware and deci, 1984; Boggiano et al., 1993) greater flexibility in thinking (McGraw and McCullers, 1979), greater creativity (Koestner et al.; 1984). All these qualities are desirable in a student, especially so in case of researchers.

Supervisors can provide a competence supportive environment to their students through continual guidance pertaining to achievement of desirable outcomes, clarity of information and task oriented feedback. Provision of such a structure has been found to enhance student experiences of competence (Jang, Reeve and Deci, 2010) which in turn promotes self determined behavior. With regard to relatedness supportive environments, it has been postulated that relatedness is an essential psychological need with respect to self determined behaviors (Deci and Ryan, 2002). At the same time, majority research has been directed towards the role of autonomy and competence in interpersonal relationship between students and teachers to provide empirical evidence regarding enhancement or decrease of self determined behaviors. Relatedness is more about the relationship that an individual shares with the task at hand but, feedback pertaining to performance at the task might enable an individual to relate to the task. Hackman and Oldham (1976) in their model of job enrichment suggest that jobs can be made more motivating by enhancing not only the competence but also relatability to the task.

An interesting finding in this research work was the negative correlation between extrinsic motivation and competence; extrinsic motivation introjected and competence and relatedness and extrinsic motivation external regulation and relatedness. A probable explanation for the same could be that as the psychological needs for competence and relatedness are met, the perceived locus of causality shifts and individual moves along the motivation continuum in the direction of intrinsically motivated behaviors. Especially when seen in conjunction with the above results pertaining to the positive relationship with intrinsic motivation and negative relationship with amotivation, and the high incidence of identified regulation in extrinsically motivated behaviors, this explanation seems viable.

Self perception: Ideal Self, Self Knowledge and Perception of supervisor's opinion

Six statements were chosen and with slight paraphrasing at different points in the questionnaire the subject was asked what their perception of an ideal researcher was, how they fared on these parameters and in their perception how would their supervisor rate them on these parameters. On a scale of 1 to 5 in order of agreeability, the statements corresponded to dedication towards

research, good academic performance in coursework, publications and participation in academic activities, ability to think and analyze critically, good command over English and the ability to produce ideas in writing and familiarity with literature and methodology relevant to one's field of study. The subject's rating for self was then contrasted with what they construed to be ideal and how they perceive themselves to be from the supervisor's point of view with the help of paired t test.

The first component assessed the subjects' passion towards their research work. It was found that there was a statistically significant difference between subjects' perception of ideal (M= 4.58, SD= 0.658) and subjects' perception of self (M= 3.93, SD= 1.070); t_{139}= 7.358 (p=0.000). Also, there was a statistically significant difference between subjects' perception of self (M= 3.93, SD= 1.070) and subjects' perception of supervisors' opinion about them (M= 2.39, SD= 1.284); t_{139}= 9.599 (p=0.000). The results are graphically depicted below.

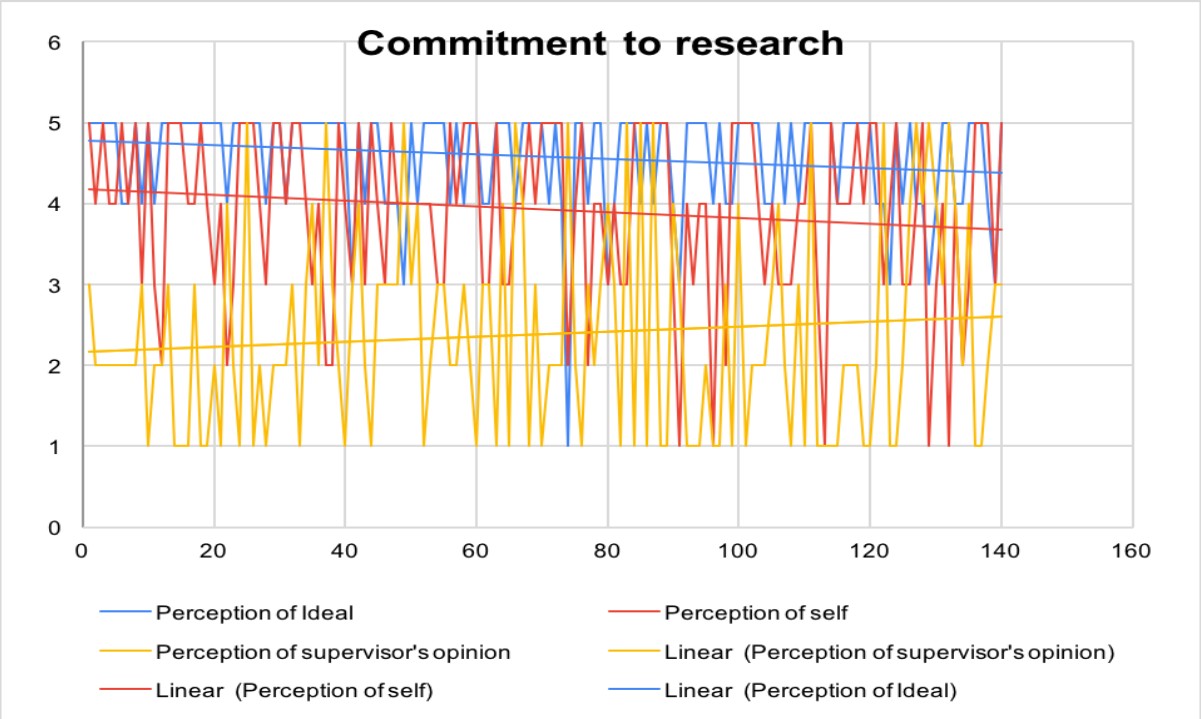

Fig 5.4 Differences between ideal, supervisor's opinion and self perception of commitment towards research

The second component assessed the subjects' performance in their coursework as reflected in the grades obtained.. It was found that there was a statistically significant difference between subjects' perception of self (M= 3.26, SD= 1.215) and subjects' perception of supervisors' opinion about them (M= 2.11, SD= 1.221) ; t_{139}= 7.588 (p=0.000). The results are graphically depicted below.

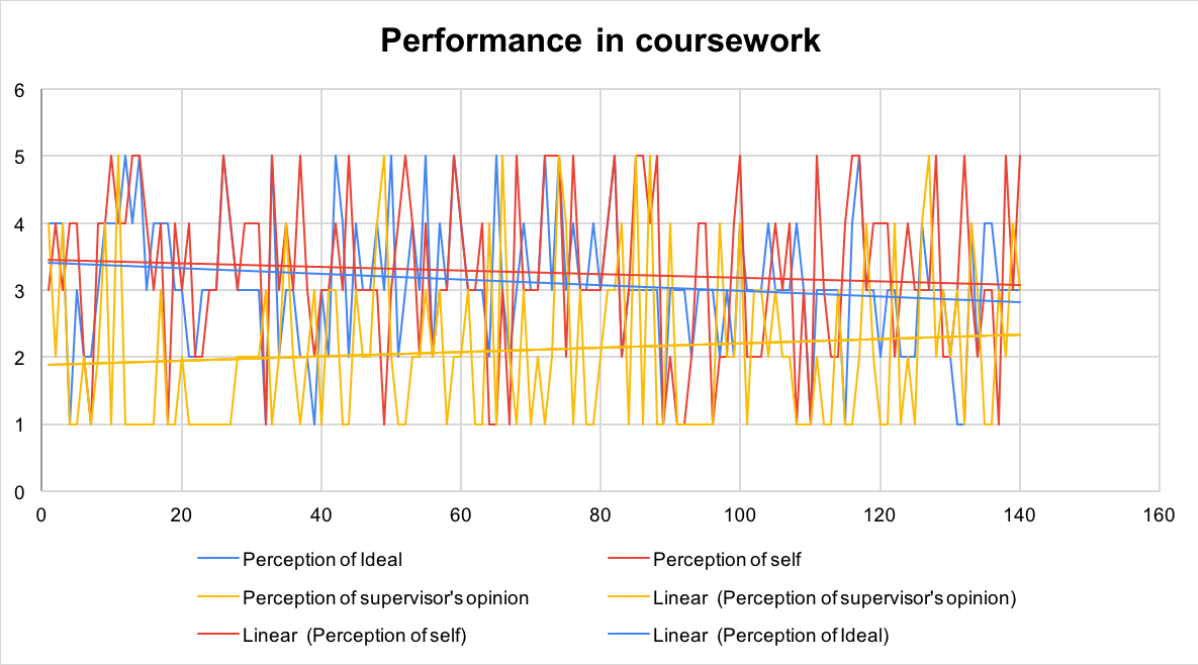

Fig 5.5 Differences between ideal, supervisor's opinion and self perception of performance in coursework

The third component assessed the subjects' involvement in academic activities such as seminars, symposiums and publishing of their research work. It was found that there was a statistically significant difference between subjects' perception of ideal (M= 3.82, SD= 0.976) and subjects' perception of self (M= 2.99, SD= 1.303); t_{139}= 6.903 (p=0.000). Also, there was a statistically significant difference between subjects' perception of self (M= 2.99, SD= 1.303) and subjects' perception of supervisors' opinion about them (M= 2.59, SD= 1.368) ; t_{139}= 2.131 (p=0.035). The results are graphically depicted below.

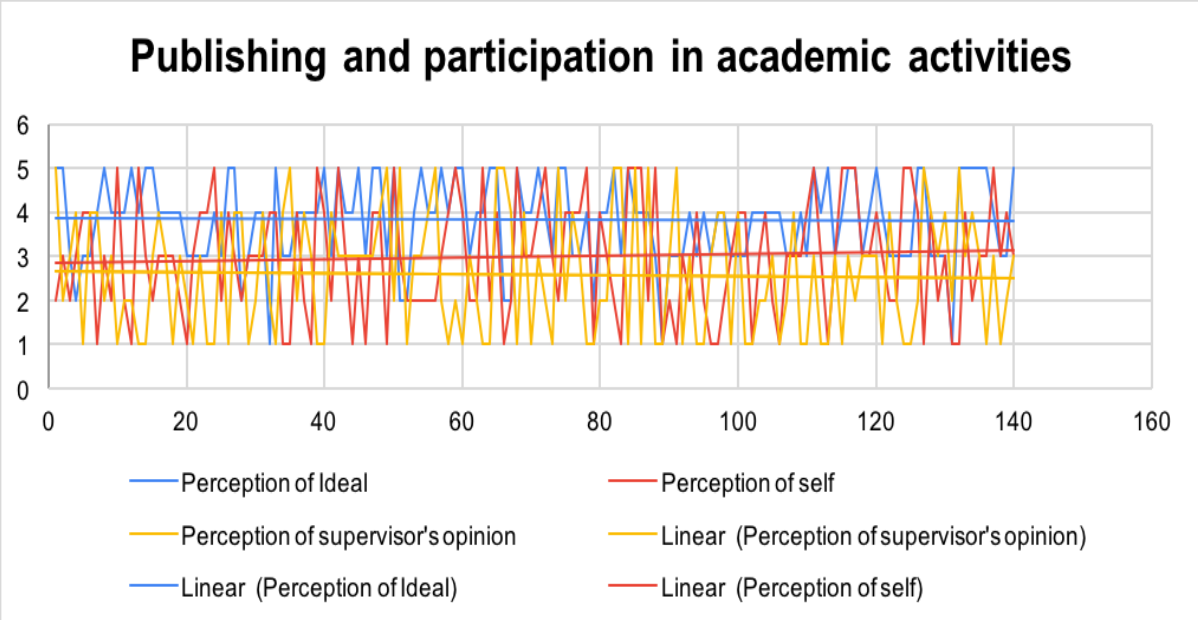

Fig 5.6 Differences between ideal, supervisor's opinion and self perception regarding publishing and participation in academic activities

The fourth component assessed the subjects' ability to critically think about and analyze their research work. It was found that there was a statistically significant difference between subjects' perception of ideal (M= 4.70, SD= 0.620) and subjects' perception of self (M= 4.14, SD= 0.931); t_{139}= 6.139 (p=0.000). Also, there was a statistically significant difference between subjects' perception of self (M= 4.14, SD= 0.931) and subjects' perception of supervisors' opinion about them (M= 2.09, SD= 1.205) ; t_{139}= 14.078 (p=0.000). The results are graphically depicted below.

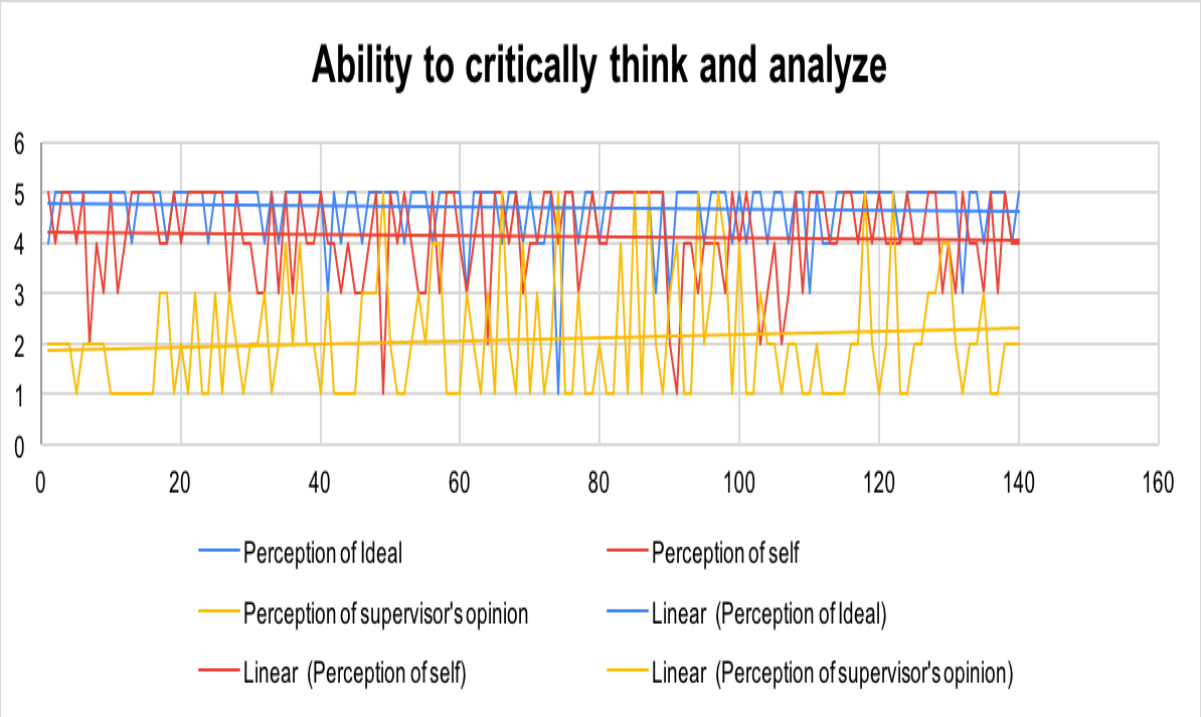

Fig 5.7 Differences between ideal, supervisor's opinion and self perception regarding ability to think critically and analyze

The fifth component assessed the subjects' command over English and ability to put their research work in writing. It was found that there was a statistically significant difference between subjects' perception of ideal (M= 2.58, SD= 1.126) and subjects' perception of self (M= 3.73, SD= 1.098); t_{139}= 9.694 (p=0.000). Also, there was a statistically significant difference between subjects' perception of self (M= 3.73, SD= 1.098) and subjects' perception

of supervisors' opinion about them (M= 2.00, SD= 1.206) ; t_{139}= 11.174 (p=0.000). The results are graphically depicted below.

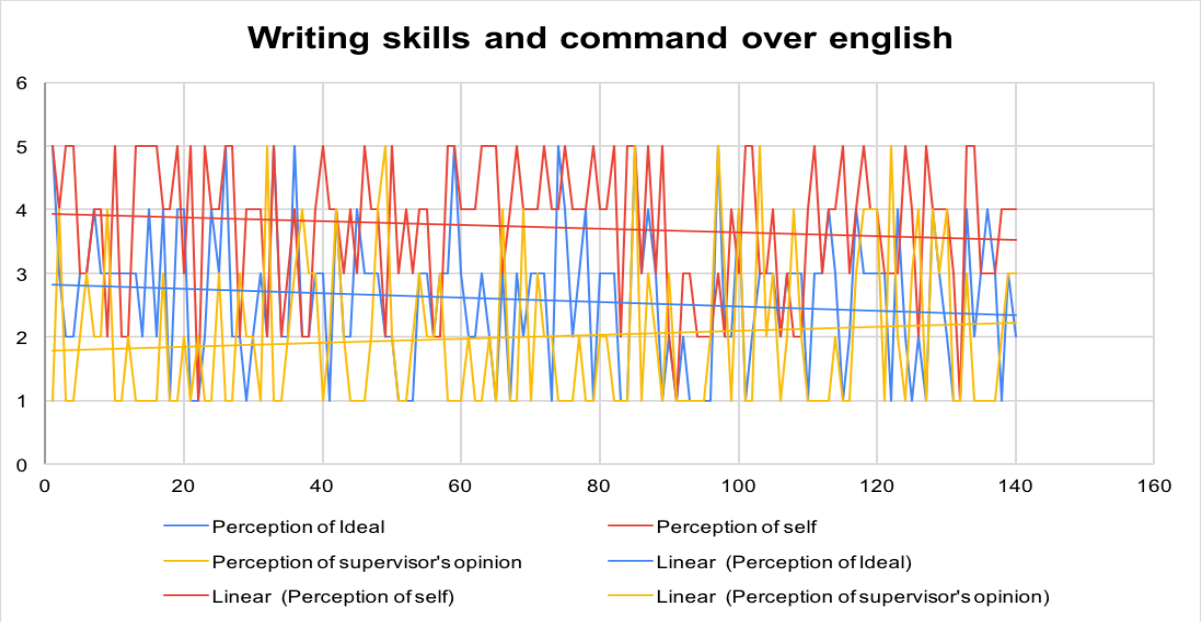

Fig 5.8 Differences between ideal, supervisor's opinion and self perception regarding writing skills and command over English

The sixth component assessed the subjects' acquaintance with literature and methodology relevant to their field. It was found that there was a statistically significant difference between subjects' perception of ideal (M= 4.51, SD= 0.673) and subjects' perception of self (M= 3.61, SD= 1.123); t_{139}= 8.649 (p=0.000). Also, there was a statistically significant difference between subjects' perception of self (M= 3.61, SD= 1.123) and subjects' perception of supervisors' opinion about them (M= 2.46, SD= 1.283) ; t_{139}= 6.830 (p=0.000). The results are graphically depicted below.

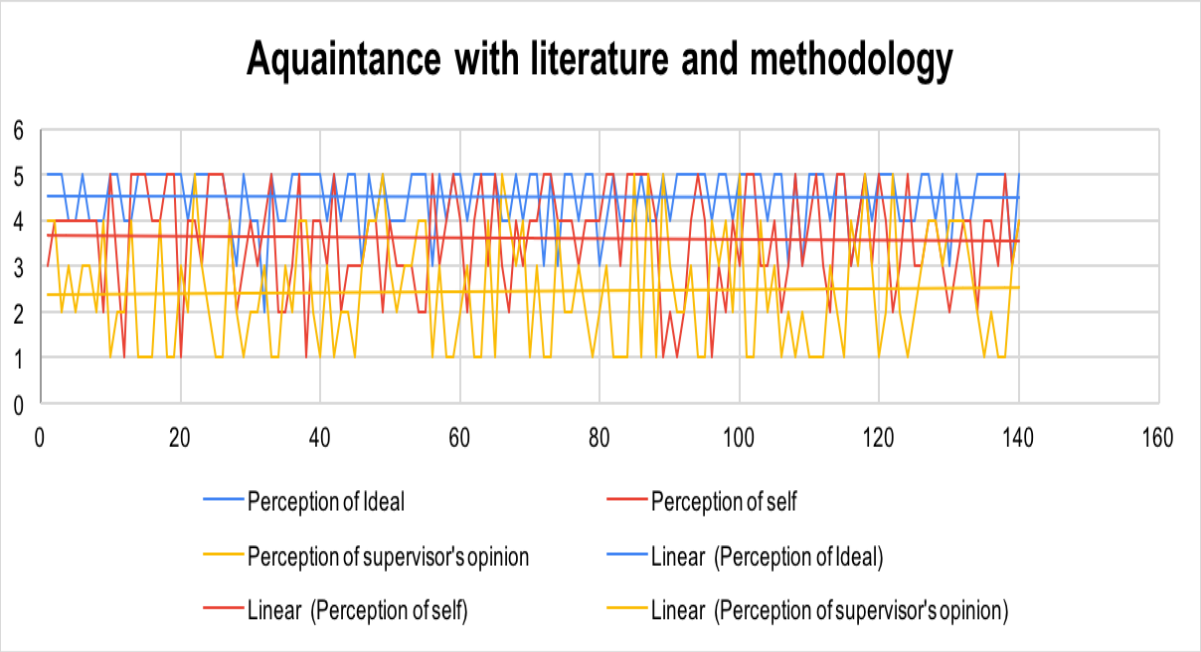

Fig 5.9 Differences between ideal, supervisor's opinion and self perception regarding acquaintance with literature and methodology

The idea of Self: Opinion about the supervisor and perception of supervisor's opinion

In the responses to questionnaire, it was found that 57.9% of respondents were females whereas, 42.1% respondents were male. At the same time, supervisors of 61.4 % respondents were male and for 38.6% of respondents were female. The theoretical discussions about self in the previous chapters pointed out that it was important to establish who the subject defines as significant other because the opinion of that person becomes important to the subject and leaves a remarkable impact on subject's conception of self. The subjects were asked to respond to a question where they had to choose whose opinion matters the most when it comes to their research work. Three options were given to the subject- their supervisor, their peer group and their family. Out of these three options, 81.4% respondents reported that their professor's opinion was the one which mattered the most in academic work. 17.9% respondents stated that it was their peer group and 1% respondents reported that their family's opinion was the most significant. The above information is depicted in the form of a pie chart below.

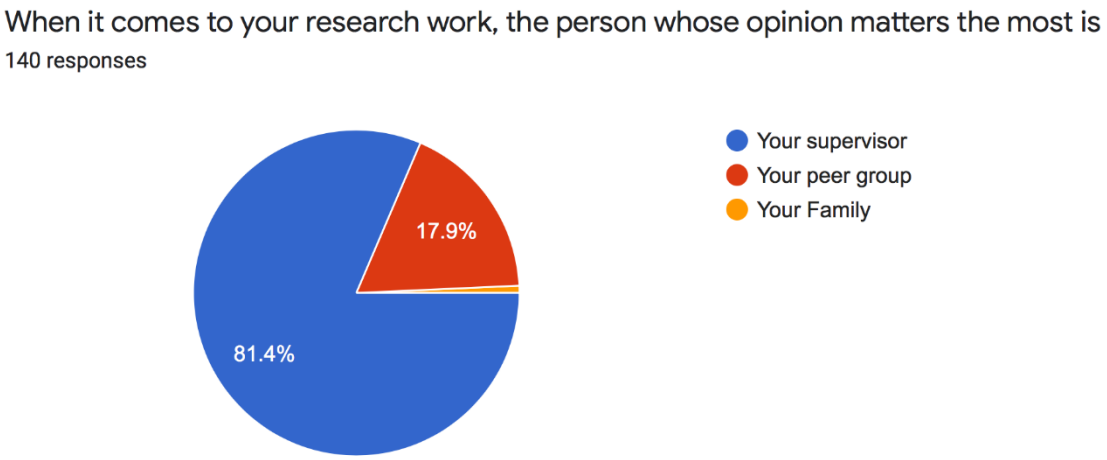

Fig 5.10 Respondents opinion about the most important person when it comes to their research work.

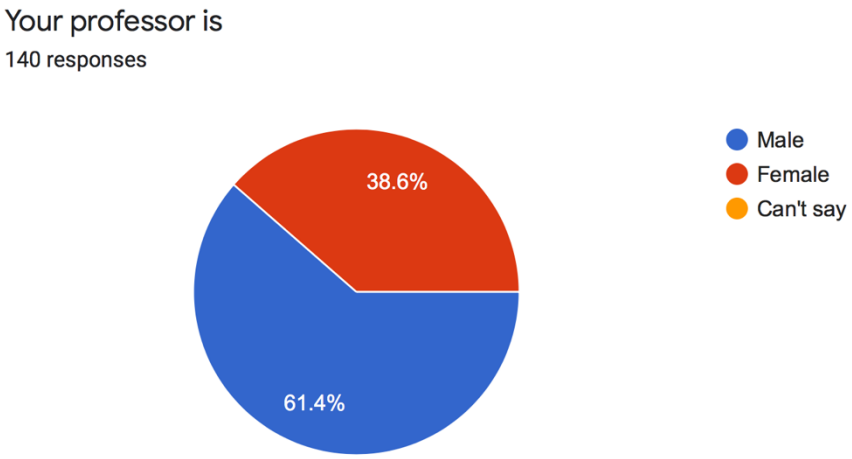

Fig 5.11 Gender of respondents' professor

It was of particular interest in this research work to analyze how opinion of the supervisor and perception of supervisor's opinion of oneself shape a research scholar's self perception of academic abilities. In the previous section, differences between ideal, self knowledge and perception of supervisor's opinion were analyzed. It was found that for all components which were taken into account, perception of supervisor's opinion was lower and statistically significant than one's perception of self as a researcher. With this in mind, a composite score

was generated that comprised of general self esteem and self knowledge of academic abilities. This score was assigned the name of self perception.

For self esteem, questions were designed to enquire if the subjects perceive themselves as talented, proactive in seeking opportunities to further their career in research, stability of interests, comparison to others in their field, importance attached to others' opinion about them and how they react to criticism and negative impressions that others have of them. The components used to gauge self knowledge about academic abilities were dedication towards research, good academic performance in coursework, publications and participation in academic activities, ability to think and analyze critically, good command over English and the ability to produce ideas in writing and familiarity with literature and methodology relevant to one's field of study.

Opinion about the supervisor was a composite score of responses received to statements about how subjects would rate their supervisors on a scale of 1 to 5 on the basis of their talent as an academician, amount of time they receive to discuss their work, to what extent supervisor takes interest in subjects' research, how helpful supervisor is when subject feels stuck in the journey of research, emotional support which supervisor lends through tough life situations and how fair their supervisor is in his conduct towards his students. The statements were asked from the point of view of the subject to establish what their perception is about their supervisor in general.

Perception of supervisor's opinion was a composite score based on subjects responding to questions from their supervisors' perspective. The questions were the same which attempted to assess subjects' self knowledge of academic abilities but asked from a supervisor's perspective. Individual components were- dedication towards research, good academic performance in coursework, publications and participation in academic activities, ability to think and analyze critically, good command over English and the ability to produce ideas in writing and familiarity with literature and methodology relevant to one's field of study.

It was found that respondents' academic self perception was positively related with perception of supervisor's opinion (r_{138}= 0.472, p=0.000) and opinion about the supervisor (r_{138}= 0.266, p=0.002). This means that the more favorably a student perceives their supervisor and their supervisor's opinion about them, the higher their self perception of academic abilities will be.

	Perception of supervisor's opinion	**Opinion about the supervisor**

Self perception of academic abilities	0.472 (p=0.000)	0.266 (p=0.002)

Table 5.8 Correlations between self perception of academic abilities, opinion about supervisor and perception of supervisor's opinion

It was also of interest in this research work to analyze how opinion of the supervisor and perception of supervisor's opinion of oneself interact with a research scholar's level and type of motivation. There was a positive relationship between intrinsic motivation and opinion about the supervisor (r_{138}= 0.213, p=0.012) and self perception of academic abilities (r_{138}= 0.267, p=0.001). This means that the more favorable a research scholar's self perception of academic abilities and opinion about the supervisor, the higher will be the possibility that research scholars are intrinsically motivated towards pursuing research. There was a negative relationship between amotivation and self perception of academic abilities (r_{138}= -0.415, p=0.000) and perception of supervisor's opinion about oneself (r_{138}= -0.329, p=0.000). This means that the more favorable a research scholar's self perception of academic abilities and perception of supervisor's opinion about them, the lesser will be the incidence of amotivation towards pursuing research.

	Self perception of academic abilities	**Perception of supervisor's opinion**	**Opinion about the supervisor**
Intrinsic motivation	0.267 (p=0.001)		0.213 (p=0.012)
Amotivation	-0.415 (p=0.000)	-0.329 (p=0.000)	

Table 5.9 Correlations between intrinsic and amotivation and self perception of academic abilities, opinion about supervisor and perception of supervisor's opinion

As suggested by Benabou and Tirole (2003), the incentives used by the supervisor and perception of supervisor's opinion impact the underlying motivation through the channel of self esteem. This research work and other theoretical constructions of the self as discussed in the previous chapters acknowledge self esteem to be a part of the larger self perception of the subject. Therefore, this research work also tried to analyze the relationship between academic self perception and use of incentives by the supervisor. Self perception of academic abilities

was found to be positively correlated with the use of tangible incentives (r_{138}= 0.296, p=0.000), verbal incentives (r_{138}= 0.318, p=0.000), expected incentives (r_{138}= 0.384, p=0.000), unexpected incentives (r_{138}= 0.257, p=0.002), controlling incentives (r_{138}= 0.257, p=0.002) and non-controlling incentives (r_{138}= 0.306, p=0.000).

To further explore and concretize the relationship between motivation, self perception and usage of incentives, the scores on scale for autonomy, relatedness and competence were correlated with the self perception of academic abilities. It was found that there was a positive correlation between self perception of academic abilities and autonomy (r_{138}= 0.258, p=0.002), relatedness (r_{138}= 0.304, p=0.000) and competence (r_{138}= 0.560, p=0.000). When these results are interpreted in conjunction with correlations with intrinsic motivation; it seems that when the psychological needs for autonomy, competence and relatedness are satisfied or affirmed with the use of incentives by the supervisor, a research scholar's self perception of academic abilities and their intrinsic motivation to pursue research are both enhanced.

Academic Self Perception: A discussion about the results

The theoretical framework regarding conceptualization of self which was adopted for this research work laid emphasis on three aspects- the construction of ideal, knowledge about self when seen against the ideal and perception of significant others' opinion about oneself. Against this premise, it was important to establish who the significant other was for the subjects who participated in this study. For 81.4% participants, their supervisor's opinion was the most important when it came to their research work. Especially, in context of this research, which attempts to analyze the interpersonal relationship between supervisors and supervisees in a university setup, this was supportive of the theoretical framework which was adopted.

In an educational environment, student faculty relationships are formative to knowledge exchange and production. Students routinely engage with the faculty, especially in case of classroom teaching (Steves, 2005). Existing research provides evidence that faculty can have profound impact on student learning and development (Umbach and Wawryzynski. 2005; Endo and Harpel , 1982; Pascarella and Terenzini, 2005; 1998). In case of a supervisor supervisee relationship, there is an increased amount of interpersonal interaction which takes place on a one-on-one basis (Knight, 2019; 2016). But this also happens to be a relationship of unequals owing to the fact that supervisors by virtue of their experience possess the skills that their supervisees hope to obtain and hone themselves as researchers.

Six dimensions were included in the instrument for this study to analyze the differences between perception of an ideal researcher, subject's perception of their own academic abilities and their perception of their supervisor's opinion about them. These dimensions were- dedication towards research, good academic performance in coursework, publications and participation in academic activities, ability to think and analyze critically, good command over English and the ability to produce ideas in writing and familiarity with literature and methodology relevant to one's field of study. It was found that for all these dimensions combined as well as individually, the perception of self abilities as an academician were lower than what was construed to be the ideal by the subject as well as the perception of supervisor's opinion about the subject.

The statistically significant difference between a subjects' self perception of academic abilities and their perception of their supervisor's opinion about the same is an interesting finding because it presents the scope to analyze how dependent is the subject's self perception on their perception of supervisor's opinion. In order to analyze this, composite score of subject's self esteem and self knowledge of academic abilities was used and was labelled self perception. Perception of supervisor's opinion was the composite score generated by combining the responses to the six dimensions which were used to assess the difference between self knowledge, real self and perception of supervisor's opinion. Along with this, subject's opinion about their supervisor was also taken into account.

Results revealed that subject's self perception of academic abilities was positively correlated with opinion about the supervisor and perception of supervisors' opinion about their academic abilities. Which means that the more favorably a supervisee perceives their supervisor's opinion about them to be, the higher will be their own academic self perception. This finding blends with the existing theoretical and empirical research in the field of education and other allied academic areas. Further, if the supervisee finds that their supervisor lends them adequate academic and emotional support, is well acknowledged and established as an academician, they tend to have a higher self perception of their own academic abilities. A possible reason for these findings could be that a nurturing and supportive work environment fosters an individual's self esteem and induces a positive attitude about the working relationship.

A discussion about the differences in academic motivation and self perception owing to categorical variables

The data collected for this research work also asked for information from the participants regarding their gender, age, social category, religion, location of hometown, parental annual income, parental educational background, gender of professor. The intention was to use this information as categorical variables to see if the variance in academic motivation and self perception could be attributed to the categorical variables. Unfortunately, ANOVA did not yield any statistically significant results. Some of the categories were grouped together to analyze the combined effect or interaction effect of the variables, but ANOVA again did not yield statistically significant results. It is likely to be a result of a small sample size or lack of the required number of respondents per category.

Although the data analysis did not indicate significant differences, the importance of a subject's socio-economic background in determination of their academic motivation and conceptualization of self cannot be discounted. Which is why in this section, some of the stark differences in averages pertaining to dependent variables of interest are being discussed. With respect to gender, female subjects (M= 67.57, SD= 10.334) were found to be more intrinsically motivated as compared to male subjects (M= 63.88, SD= 15.268). Also, female subjects (M= 55.16, SD= 13.012) were found to be more extrinsically motivated as compared to male subjects (M= 52.39, SD= 14.811). The incidence of amotivation was low and almost same across both the genders. Self perception of academic abilities was higher amongst female subjects (M= 50.27, SD= 10.280) as compared to male subjects (M= 49.41, SD= 8.101) but surprisingly, when the subjects were asked to rate themselves as researchers on a scale of 1 to 5, the average rating awarded by females (M= 3.432, SD= 0.706) was lower than average rating male subjects awarded to themselves (M= 3.593, SD= 0.697).

Gender of supervisor was also a variable of interest to analyze if there were differences in management styles of female supervisors as compared to male supervisors and if this could explain variability in dependent variables. It was found that subjects working under the supervision of female professors were less intrinsically motivated (M= 63.78, SD= 12.748) as compared to subjects working under the supervision of male professors (M= 67.42, SD= 12.591). The subjects working under the supervision of female professors were also less extrinsically motivated (M= 50.80, SD= 12.415) as compared to subjects working under the supervision of male professors (M= 56.00, SD= 14.334). the incidence of amotivation was higher amongst subjects who were supervised by female professors (M=11.26, SD= 6.241) as compared to those working with male supervisors (M=9.34, SD=5.625). Self perception of academic abilities amongst subjects supervised by female professors (M=49.98, SD= 9.226)

was higher than those being supervised by male professors (M=49.86, SD= 9.564). Self ratings amongst subjects working with female supervisors (M=3.611, SD=0.685) were also higher as compared to male supervisors (M=3.430, SD=0.7119).

Impact of social category on academic motivation and self perception was also of interest. On an average, students from general category (M= 67.54, SD= 11.252) were more intrinsically motivated as compared to students from OBC category (M= 65.45, SD= 12.643) and the least intrinsically motivated students belonged to SC/ST category (M= 62.85, SD= 16.101). in case of extrinsic motivation, the trend was reversed. The students from general category (M= 52.87, SD= 12.655) were least extrinsically motivated as compared to students from OBC category (M= 54.27, SD= 14.625) and the most extrinsically motivated students belonged to SC/ST category (M= 56.54, SD= 15.523). Self perception of academic abilities was highest amongst students from SC/ST category (M=51.62, SD= 8.490) as compared to those from general category (M= 50.27, SD=10.149) and OBC category (M=48.32, SD= 8.599). The subjects from general category awarded themselves highest self ratings (M=3.600, SD=0.769) followed by those from SC/ST category (M=3.462, SD=0.706) and least ratings were awarded by subjects from OBC category (M= 3.364, SD=0.574).

Annual family income was also considered as one categorical variable. On an average, subjects with familial income up to 2 lakhs (M=68.58, SD=9.394) were found to be more intrinsically motivated than those whose familial income was between 2 to 5 lakhs (M= 66.56, SD=13.123) followed by those whose family income was more than 5 lakhs (M=63.62, SD=14.184). The subjects with familial income between 2 to 5 lakhs (M= 54.92, SD=14.846) were found to be more intrinsically motivated than those whose familial income was more than 5 lakhs (M=53.63, SD=12.872) followed by those whose family income was up to 2 lakhs (M=53.26, SD=9.394). self perception of academic abilities was highest amongst subjects whose familial income was between 2 to 5 lakhs (M= 51.54, SD=9.123) followed by those whose familial income was more than 5 lakhs (M=49.13, SD= 10.460) followed by those whose family income was up to 2 lakhs (M= 48.82, SD=8.084).

With regards to parental educational background, subjects whose parents were graduates (M=67.17, SD=10.966) were more intrinsically motivated than subjects whose parents' education was lower than graduation (M=65.24, SD= 14.429) followed by those whose parents were post graduates (M=65.11, SD=13.574). Subjects whose parents were graduates (M=54.76, SD=13.076) were more extrinsically motivated than subjects whose parents education was lower than graduation (M=54.05, SD= 16.949) followed by those whose parents

were post graduates (M=52.91, SD=11.994). The incidence of amotivation was also higher amongst subjects whose parents were postgraduates (M=11.39, SD=6.742). self perception of academic abilities was again highest amongst subjects whose parents were graduates (M=50.97, SD=8.640) followed by those whose parents were post graduates (M=50.20, SD=10.639) followed by subjects whose parents' education was lower than graduation (M=47,86, SD= 8.920).

The impact of past academic achievements

An important query pertaining to this research work was to identify if there was any correspondence between past academic achievements and present motivation and self perception of academic abilities. It was found that, there was a positive correlation between grades obtained in the coursework and self perception of academic abilities (r_{138}= 0.172, p=0.042).

At the beginning of the survey, the subjects were asked to rate themselves on a scale of 1 to 5 as a researcher where 1 signified very poor and 5 signified very good. The same question was again asked at the end of the questionnaire to see if the responses of subjects changed, considering that the questionnaire was designed to make the subject reflect on their motives behind pursuing research, their experiences as a researcher and the relationship they shared with their supervisors. A paired t test revealed that there was no statistically significant difference between the self rating at the beginning and at the end of questionnaire. But the self rating shared some relationships with other variables which were of interest to the study.

There was a positive correlation between self ratings and total intrinsic motivation (r_{138}= 0.284, p=0.001); intrinsic motivation to know (r_{138}= 0.313, p=0.000); intrinsic motivation to accomplish (r_{138}= 0.226, p=0.007) and intrinsic motivation to experience stimulation (r_{138}= 0.238, p=0.005). No statistically significant correlations were observed with extrinsic motivation but there was a negative correlation with amotivation (r_{138}= -0.225, p=0.008). Further, with respect to academic self perception, it was found that self ratings exhibited a strong positive correlation with self knowledge (r_{138}= 0.493, p=0.000); with perception of supervisors' opinion (r_{138}=0.251, p=0.003) and self perception of academic abilities (r_{138}= 0.456, p=0.000). self ratings also exhibited a positive correlation with academic performance in the coursework (r_{138}= 0.273, p=0.001).

The theoretical and practical implications of establishing a causal ordering between academic achievement and academic self perception are numerous. Self enhancement model predicts that

prior academic self concept determines subsequent academic achievements (Calsny and Kenny, 1977). However, much of the recent research supports the view that there is a two way relationship between academic self concept and academic achievement which has been theorized as the reciprocal effects model (Marsh, 1990; 1993; Marsh, Byrne and Yeung, 1999). Meta-analytic studies by Valentine, Dubois and Cooper (2004) also lend empirical support in favor of reciprocal effects model.

The positive correlations between past academic achievements (Grades obtained in coursework) and self perception of academic abilities, and between self ratings and self perception of academic abilities can be explained with the help of 'Reciprocal Effects Model' (Guay, Marsh, Boivin; 2003). The model states that prior self concept affects subsequent academic achievements and prior achievements affect subsequent self concept. Prior academic achievements enhance an individual's feeling of competency, and experience of competence has been theorized to have a causal effect on autonomous behaviors (Guay, 2008). This would also help to explain the positive correlations between self ratings and intrinsic motivation and past academic performance and intrinsic motivation.

Relationship between Academic Motivation and Self Perception

Benabou and Tirole (2003), suggest that the incentives used by the principal (supervisor) and perception of principal's (supervisor's) opinion impact the underlying motivation of the agent (supervisee) through the channel of self esteem. This research work and other theoretical constructions of the self as discussed in the previous chapters acknowledge self esteem to be a part of the larger self perception of the subject. Therefore, this research work also tried to analyze the relationship between academic self perception and motivation amongst research scholars.

It was found that intrinsic motivation was positively correlated with an individual's self perception of academic abilities and opinion about the supervisor. Along with this, there was a negative relationship between amotivation and self perception of academic abilities and perception of supervisor's opinion. This indicates that if the supervisor manages to extend a supportive and sympathetic work environment to the research scholar then there is a greater chance that the research scholar will take interest in the collaborative exercise and be intrinsically motivated or in the least, find some motivation to expend time and effort towards the research task.

Several models have been proposed to suggest how work can be experienced as more meaningful for workers. Herzberg (1966) suggested a motivation hygiene model wherein he divided the motivating factors into two categories- 'motivators' which pertain to the work itself and the workers' relationship to it; and 'hygiene factors' which pertain to the work environment. According to Herzberg, the 'hygiene factors' primarily operate as demotivators i.e. the work environment is crucial to maintain the motivation level of the worker. Hackman and Oldham (1976) in their model of job enrichment suggest that jobs can be made more motivating by enhancing the competence and relatability to the task. And amongst other factors, increasing an individual's autonomy and providing positive feedback indicating the success of the work also enable individuals to experience more motivation at work places.

It has been well documented that in any stage of learning, the environment that a teacher manages to foster can have a significant impact on students' motivation (Reeve, 1996); self regulation (Schunk and Zimmerman, 2007), self efficacy (Bandura, 1993); critical thinking (Tsui, 2001) and engagement with the task (Kuh, 2001, 2003). Over the past four decades, substantial research has emerged in support of the argument that students tend to benefit from learning environment more when their instructors interact with them keeping in mind the psychological needs for autonomy, relatedness and competence (Reeve, 2002). Conversely, if the learning environment is created by instructors in a manner which thwarts the psychological needs for autonomy, relatedness and competence, students' learning and development, both tend to suffer (Bartholomew et al., 2011).

In order to extend more empirical support for these arguments with pertinence to this research work, it was found that subject's self perception of academic abilities was positively correlated with autonomy, relatedness and competence. The results till now are supportive of the theoretical assumptions that if the supervisor manages to foster an enabling work environment for the student and nurture their academic abilities with the help of appropriate incentives, and appeal to their psychological needs for autonomy, competence and relatedness; the research scholar's intrinsic motivation and academic self perception will both be enhanced. Although the data analysis did not venture into finding a causative relationship between academic self perception and motivation, evidence to suggest that the two move together was provided.

It was of interest to this research work to explore if self perception plays a mediational role in the impact of incentive structure on academic motivation. There have been studies in support of the argument that autonomous academic motivation i.e. intrinsically motivated behaviors predict subsequent academic achievement (Guay et al., 2018; Guay and Vallerand, 1997). But

this argument requires a longitudinal study to find empirical support for causality. The instrument designed for this study was not sufficient to obtain such evidence. There also has been empirical support that intrinsically motivated behaviors mediate the relationship between academic self concept and academic achievement (Marsh et al., 2008).

The data used in this research work is not sufficient to lend evidence in support of mediational role of either- academic self perception or academic motivation. But there is evidence that the two move in tandem. Prior academic achievement bears a positive correlation with both, autonomous motivation and academic self perception. And there is a positive correlation between autonomous behaviors and academic self perception. On this basis it can be inferred that, if a student exhibits autonomous inclination towards their academic endeavors, and the incentives provided by the principal tend to foster the experience of autonomy, relatedness and competence; the student's self perception of academic abilities will also improve. Likewise, if a student's competence is enhanced by their past academic achievements, and the principal employs incentives in a supportive and enabling manner, the students might exhibit a strong tendency towards autonomously driven behaviors.

Chapter Six

Case Study Of Supervisor- Student Relationship

"*Hierarchy agar raha toh aap seekh nahi sakte. Hierarchy agar raha toh aap humesha darr ke rahoge. darr se seekh nahi ho sakti. Darr se subservience hota hai. Subservience kabhi bhi ek muktchintan ke liye, freedom of thought ke liye khatarnaak hota hai. mere khyaal se ye darr nahi hona chahiye, respect hona chahiye. Aur ye koi ek tarfa respect nahi hota. Aap respect dete ho mujhe toh mujhse respect milega. Respect earn karna hota hai. Hierarchy aapko respect nahi deti.* "

A balanced power equation: The perspective of a supervisor

The above statements are an excerpt from a conversation with a professor (P1) at Jawaharlal Nehru University. He has been a part of the campus life since 1977, first as a student and later on as senior professor in one of the most reputed and largest social science programs in the university. In his capacity as a student, as a visitor and later on as a residential professor of the campus, he has been a witness to how the campus has evolved over the years. Alongside, having supervised more than 35 Ph.D. students and 70 to 80 M.Phil. students during his tenure as a professor, he has experienced and reminisces in the transformations that he has witnessed amongst his students in their journey as researchers. Throughout the conversation, he recounts his experiences as a student on the campus, with various students as a supervisor with a certain fondness.

This research work attempts to explore the intricacies of supervisor student relationship with special emphasis on the nature of social exchange between the two. The instrument designed to collect data for this purpose was based on themes which emerged from conversations with several students and professors who are a part of the campus. The data analysis supports the theoretical framework which was adopted for this research work. At the same time, experience cannot be quantified in its entirety. Conversations are complex in nature. Emotive response to those conversations is even more complex and exhibits individual variability. In order to highlight these complexities, this chapter with focus on audio interviews with students and professors.

The excerpt at the beginning of this chapter casts an impression that P1 is of the opinion that hierarchy between a supervisor and his supervisees tends to limit the extent of learning, a relationship which conventionally is understood as hierarchical. This brings us to consider once again, the reasons as to why the two cooperate to produce a research work (an M.Phil. or a

Ph.D.) and what are the terms and conditions of that cooperative arrangement. The theoretical framework adopted for this research work suggests that principal, by virtue of experience, and an established reputation in academia, guides the researcher to take up a path which would ensure that the research work reaches its apex, in terms of production of new knowledge and quality of work. The researcher takes advantage of the experience of his supervisor, but is there a slight possibility that this process of learning is not uni-dimensional?

"The biggest incentive for a teacher to be in a university like JNU.. you know.. it keeps you kicking.. It keeps you absolutely in the right place. You can't just not study..You just can't just go to the class without preparation. You can't just supervise a student without working as much as the student…. Its not that supervisor is somebody who is an extraordinary person. Yeah, he has a certain degree of experience, but what keeps you going as a supervisor as a teacher is the fact that these young minds they keep you charged, absolutely charged. They belong to a different generation. Catching up.. it was easier for my father to catch up with me, but it is very difficult for me to catch up with my students (laughs). because they are certainly very different, exposure being very different"

Even with 30 years of teaching experience at this university, P1 is of the opinion that he has to prepare himself and put in effort before he takes lectures and equally along with his research students. The process of learning seems to be just as crucial for the supervisor, as it is for the supervisee. The purposivity of this dyadic relationship lies in mutual learning, where the student has as much to gain from the exercise of doing research as the supervisor. The two of them work in collaboration towards a research work and the journey of ups and downs is a journey that both of them take together. And as a corollary, risk is also shared between the two. The following excerpt from the conversation with P1 highlights the same.

"you know starting the work together, you tumble down because she (a student) *is also tumbling down in the same place..you know (laughs)*"

In this research work, the focus has been to analyze the principal- agent relationship from the point of view of the agent (the supervisee) as opposed to the principal (the supervisor). In this chapter an attempt will be made to include the point of view of the principal as well and to understand relationship from the point of view of a supervisor. In order to do that, its important to delve into the significant life events which shaped the attitude of the supervisor. P1 comes from a family of teachers. His grandfather was a teacher and his father was a professor at college. Growing up amongst teachers, he had a significant exposure to their ethics and commitment towards the profession. P1 fondly recollects the following incident from his childhood.

"my grandfather was a headmaster of a school. and my father was a professor of commerce. so this is the spirit which is i don't know in the DNA or whatever. but my father would.. 4 baje raat mein uth ke, bihar ke ek chote se gaon mein, dhibri.. samajhti hain? dhibri ek lamp jismein kerosene ka tel bhar ke hum jalaate the. bijli nahi hoti thi. dhibri jalaake bachon ke assignments check karna. main kehta tha- papa main bhi college mein padhta hun, koi teacher aise assignments check nahi karta. kyun aankh ko itna ye kar rahe ho. wo kehte ki nahin main unko check nahi kar raha hun. main toh padh padh ke bohot kuch seekh raha hoon (laughs). kuch cheezein maine nahi padhi. toh mujhe laga ki ye kitna positive approach hai ki aap unko sudharne ke liye nahi padh rahe ho, aap unke saath chalne ki koshish kar rahe ho. 92 yrs ki umar tak ussi college mein wo padhate rahe. that was the spirit. i think main bohot khush hoon iss maamle mein."

P1 feels that the spirit of teaching, of learning from ones' students might have been hardwired into his DNA. As he fondly recalls his father's commitment towards his work and his students that he witnessed as a child, he exclaims and acknowledges the positivity of his work ethics. From the standpoint of developmental psychology, experiences from formative years play a significant role in determining how one's personality shapes up through adulthood. What constitutes practical experience transforms into cardinal learning experience (Janson, 2008). Especially when one assumes a leadership role in life, past experiences pertaining to leadership which stem from actual life events may become deeply entrenched in memory and guide future experiences.

The lifespan approach (Avolio & Gibbons, 1988) suggests that predispositions from one's family experience, contexts in which leadership was experienced and personal experiences pertaining to how one balances and deals with their span of emotions may be critical in fostering the conditions which encourage leadership development in an individual. The life stories approach (Shamir & Eilam, 2005) suggests that constitution of what is a 'formative' experience tends to be subjective. Individuals have a tendency to interpret and then ascribe meaning to their experience of events, as opposed to the facts of that event itself. Therefore, the formative impact of an event is constituted by the meaning which individual ascribes to it.

In his own words, P1 witnessed his own father's commitment towards lifelong teaching and learning from students, a tendency he finds to be 'positive' and something which, in his own accounts, he tries to practice with his own students. As opposed to a hierarchical arrangement, he prefers to look at his relationship with his students as a learning experience where the two learn and grow together. Just on account of being a teacher, an individual cannot gain respect unless they exhibit a commitment towards their duties.

"padd bhi aapko respect nahi dilati. main teacher hoon isliye aap mujhko respect karo. main class mein jata hun, kuch bhi nahi karta hun, aap kitne dino tak mujhko respect karoge. i have to

earn that respect. I've to earn my name every single day. i don't go prepared to the class, i have not earned the day. maine unke saath dagabaazi ki.. 40-50 bachon ke saath dagabaazi ki. 40 ghante barbaad kiye kisike. mere toh ek hi ghanta tha, unke 40 ghante the barbaad ho gaye. ye jo darr ke mahaul mein nahi ho skate. sabse pehla kaam jo mere ustaadon ne mujhe sikhaya, darna chodo. mere se baat karo!"

The experience of being taught, of learning during one's tenure as a student also has a formative role in determining how an individual shapes up as a teacher. One draws on the leadership experience from their own student days, when they used to be in the same position as their students are in the present. P1 takes us on his own journey as a research scholar and a student of JNU in the conversation and the following excerpt from the conversation highlights his own impression of his supervisor.

"once i remember it was the middle of the night.. look at the humility of the generation who taught me.. in the middle of the night.. i was in kaveri and my professor used to live in 29 DP.. and there was a knock at the door, it was summertime.. there was a knock at the door. i thought there was some hostel mate who had come. since i was working and facing the wall and here you had the table lamp and the door was this side. and i said "aa jao" and there was another knock and i said "aa phi jaiye" toh udhar se awaaz aayi ki "janaab zara nazrein inaayat idhar bhi kijiye". i heard my supervisor's voice and everything fell from my hand. you know.. and what was he.. why is he here. and he said- i am unable to understand this sentence my dear. you tell me ki ye kya likha tumne? (laughs)

12 baje raat mein chalke wo mere hostel aate hain. Wo pareshan hain ki ye bacha aise kaise soch raha hai? ye logically emerge nahi kar raha usse. jo aap argument build kar race ho, us mein karin gap hai. ya wo jo kehna chah raha hai shared ache tarah se nahi key pa raha hai. it troubled him. and he was a person who would go to bed at night. but he could not sleep and he thought ki let me go and ask. and he comes down to my room and says isko padhiye zara mujhe bataiye. fir maine bataya. and he said, iske liye fir ye ye cheez bhi develop karna padega. so working with people like my supervisor"

P1 reveals that in his own interaction with students, he often finds himself carrying his work home with him. *"its just that its not the office where you sit and talk business, it just goes on. and you carry the work all the time.. before going to bed you are thinking okay.. xyz ka ye karna hai. yahaan pe atka hua hai.. iska kya hoga"* there is an uncanny similarity between P1's experience as a research scholar and his experience as supervisor where he is trying to emulate his supervisor's management skills and commitment towards his students. He constantly draws on his personal experience of being supervised, and of witnessing a father who was committed to his profession, in his own management of students. P1 also reveals that his professors would often engage in pedagogical experiments and some of those practices continue till date in their center because they were found to be successful by alumni. Innovative teaching practices,

which were found to be beneficial for development of qualities in a researcher have been carried forward by the former students who work as professors presently.

Cooperative arrangements, such as the one between a supervisor and a supervise, often require conflict resolution and negotiation. Quantitative analysis of the data collected for this research work supported the claim that a congenial working relationship, where research scholars experience autonomy and freedom, tends to have a positive relationship with intrinsic motivation and self perception of academic abilities. Without the express use of coercion, if supervisors tend to manage their students with the help of verbal and tangible incentives, their experience of autonomy, relatedness and competence is heightened. To explore this dimension, P1 was asked to divulge about his relationship with his students and how he associates himself with their research work.

"ungli pakadna maine kabhi nahi kya. kissi ki bui zubaan, ye jo aap likhte hain, ye main kabhi theek nahi karta. i only see the logic. its your argument, you should own it up. i will only be a protector in that everything you write even if i disagree with it, if it has substance.. and i keep an involvement which i called detached involvement. I'm involved in your research but in a detached way. you will be my child who will write a phd under me but i'll maintain that distance because i don't want me to override your writing.

wo unka kaam hai, wo usko defend karega, ye uski zimmedaari badti hai. so you become much more responsible. so this is how i have been interacting with my students

the role of the supervisor is to walk with the student on the path that she or he thinks is the most appropriate one. my job is in fact layout the entire model, plan of action. this is what you want to do.. this will take you here, it may not take you there. okay? which one do you think is best. because if i am the guide then i'm going to take him or her on the path that i know the best. then there's no exploration. theres nothing new that you're going to find. then you're going to walk along my line and be a poor imitator. so why should i? so i'll encourage you to walk the line that you want and i'll walk with you. in the process, i learn, in the process we encounter difficulties and we try to overcome those difficulties"

This particular excerpt of the conversation assumes significance for several reasons. One, it highlights the delicate interplay between a supervisee's autonomy as opposed to the power which rests with a supervisor. In his capacity as a supervisor, P1 could have chosen to play a more dominant role in shaping up the research work, controlling the direction of it. But P1 chooses to rather let the ownership of the work rest with his supervisee. In a measured amount he guides his student by verifying the substantial base of arguments and helping them with resolving the difficulties they encounter, but ultimately, he allows the student to retain the ownership of their arguments and their usage of language to construct their arguments. By doing so, P1 confers upon the student a certain responsibility to hone their research work as per the standards deemed fit by them and also make them feel more associated with their work

than a situation where he would consciously modulate the research idea in favour of his own opinions.

P1's interpretation and impression of supervision of his students present some wonderful insights about the delicate balance of power in an otherwise hierarchical relationship. It appears that its crucial in P1's management strategy to relinquish his own power, and empower his students' autonomy and relatedness as far as their research work is concerned.

"har teacher, har supervisor ke liye uska student uska ek hissa hai. ye haath mera hai, lekin mera haath per ka kaam nahi karega. hai na? ye haath mera hi hai lekin iski apni koi swechha hai ki nahi, ye mujhe nahi pata. lekin wo jo swechha hai ki jis mein you dont tend to dominate, (pauses) in any way- socially, in terms of power relations, i don't think i can.. the moment i think that theres something like power entering into our relationship, i step back, rethink. i have always done it. and i'm very sensitive about this. i'm very sensitive about, i hate any relationship which is hierarchical. i hated it even as a child."

At the same time, much of this research work has emphasized that supervisees in their capacity as interpretive, intuitive and reflective beings tend to derive information from the management style of the supervisor. In order to see how P1's strategy was experienced and interpreted by his own students, one of his supervisees (S1) was also interviewed. The following section will discuss about excerpts from a conversation with S1and contrast it with the claims of P1.

Balance in power equation: A student's perspective

S1 is a third year female Ph.D. student working under the supervision of P1. She defines herself as a quiet person who likes quiet surroundings. If she happens to find people who are similar to her, she says she does open up. She further states that she is at times impulsive, but also has a tendency to take calculated decisions, which may or may not work in her favor. It seems that her initial decision to pursue research also stemmed from one of such calculated decisions. Having pursued her graduation from one of the most reputed colleges in the country, she was initially interested in pursuing preparation for civil services examinations. Some of her classmates went on to pursue higher education from reputed universities. S1 recollects their experience and explains how the experiences of her peer group helped her make an informed choice about her academic career.

"*what happens is that i think if you always have the option of going for a job, maybe we would. but given that we really don't have, atleast i didn't have too much of exposure in.. or the network that i could actually tap into and go into for example a think tank or an NGO.. at that point i didn't have. so the necessary this thing.. and also a few of my fellow people who had actually gone to do their masters from LSE and stuff, so eventually they all returned to india because its not easy getting a work passport there. so when they came back, they started working. the amount that they were actually receiving while working, which was like close to 25-30 was a not.. they all actually come from very good families, so its not like it was not like a case of basically student debt. but*

whatever, like (tch) 25-30 is nothing for a place like delhi. and so if i was getting my JRF which was 25 and it was giving me the opportunity to learn more and explore more before deciding on which field i actually want to go in"

S1 mentions in her conversation that its important to have a network which one can tap into to find work in academia. She cites the example of her friends, who went abroad to pursue their masters in order to highlight the technical difficulties associated with pursuing higher education from foreign universities. The difficulty in obtaining work permit necessitated that her friends return post completion of their courses and find work in India. However, the pay scale at which they were working was equivalent to the amount of scholarship that S1 would draw while being a student of an Indian university. In her opinion, in the absence of a network and a lucrative pay scale, it was a more reasonable decision to pursue a research degree on scholarship.

On the outset it seems that the practical concerns pertaining to employment opportunities and pay structure were the initial push for S1 to begin exploring the field of research in an academic institution. The external motives tend to play a strong role in determining the opportunity cost of continuing education. To place such a student on the motivation continuum, one would tend to lean towards defining them as extrinsically motivated. But, the beauty of a research course as opposed to an undergraduate and postgraduate degree course lies in the amount of time that is invested and the opportunity to pursue a field to one's liking. So, a possibility emerges that with all the practical considerations, journey of a subject in the field of academic research is transformative. In order to explore this possibility, the subject was asked to divulge her opinion about research and how she perceives herself as a researcher.

"I'd say that till the time i stepped into JNU, I did not want to become an academic or a researcher even for that matter. i came to delhi because i wanted to go for UPSC. and that is what i did for the first 3 yrs of my bachelors. like... i never took coaching but i started reading sociology for fun. sort of.. ki acha kuch taiyyari side by side chalta rahe. and then when time comes, you make a move. so when JNU as an option opened up then i came here. and then i started actually realising that there are many different ways of studying the field that i am studying which is not.. if you see any other department that offers geography it doesn't happen. so.. and then interacting with my classmates, not all of them but some of them who are equally inquisitive about things, who want to do things differently and professors who would always tell us to do things differently. To think differently and not give into a herd mentality"

S1 in her account reveals that a career as an academician or a research fellow was not something she envisioned for herself prior to becoming a part of JNU. When she started her journey as a student in this university, she already had a credible academic record behind her. Also, considering that the process of getting into JNU is competitive in nature, one which requires that a student be familiar and have a good grasp on the subject they wish to study. But the

pedagogy of the campus reintroduced her to her own subject by opening up multiple dimensions to study what she was interested in. In her own words, this was something peculiar to this course at this university because she did not consider the programs offered by other reputed universities in the country at par. Interaction with her classmates who were inquisitive about their field of study, interaction with professors who would encourage their students to look at things differently had an influential role in driving S1 into the field of academia.

When one is operating in an environment which is competitive, driven by the desire to explore, to think differently; one has to strive for excellence themselves. A key point pertaining to self conceptualization in this research work was that the environment plays a crucial role in determining how they evaluate themselves. Deriving from this environment, an individual creates a hypothetical 'ideal' for themselves. And against this ideal, they evaluate themselves. The self becomes an object of one's own judgment. An individual continues to strive to meet this ideal and as these efforts bring one closer to the level of excellence they aspire for, their concept of self is enhanced. S1 was asked to describe what in her opinion constitutes an ideal researcher.

"i think, it all boils down to whether or not you want to see multiple truths. whether or not you actually want to be..open and.. open yourself to a very vulnerable situation where you probably at times will have to go against the very grain of what you know for so long. so i think that is what makes a researcher. like.. up for challenges, up for... earning less definitely (laughs) but being okay with it. like.. nothing comes easy to us. so you should be ready that you have to do things unconventionally and you're up and about for that. because i think.. that would sort of sum it up.. that you should be willing to push yourself and push the boundaries of what you know to be true. so i think that would be what ideally be considered a researcher. but then again.. we have different kind of researchers (laughs)."

For S1, a crucial quality of being a researcher is about being receptive and acknowledging about multiplicities of truth and pushing the boundaries of one's own knowledge and thought process to look at things unconventionally. It appears to be a very demanding exercise because when new knowledge stands in contradiction to old knowledge, one finds themselves in a situation which is emotionally conflicting and taxing. To undo, unlearn or even reconsider experience, knowledge and beliefs which have been gathered over years is challenging and puts one in a vulnerable situation. To answer this question, S1 was asked to tell how she resolves this internal conflict.

"i think that subjectivity would always remain. because you as a person would come with a certain baggage of your experiences. and your privileges of course. so that would be there. but i think if you really want to..... for me that would probably be..... (long pauses)... i think... negotiating with oneself, understanding that you are not the end of this process of research. that it is somewhere out

there and you're doing it because you would want to not only understand the world better but also be empathetic to people who do not have the same kind of privileges that you have. so end of the day, you would, without trying to be a saviour or being patronizing, you would want to be somebody else's voices who did not have the same privileges that you have. so i think that would make you.. that should go into.. atleast that informs my decision of going into my field of research or my field of work."

The journey of a researcher seems to be woven into a web of internal conflict arising in the face of new knowledge and emotional turmoil of negotiating with one's pre existing knowledge and beliefs. But this journey, is not something the research scholar takes alone. Considering that a supervisor and a supervisee work in tandem to ensure the research work at hand is completed, its important to know what role a supervisor plays when his supervisee finds himself in this state of doubt. The question begins by enquiring S1 what her expectations are from her professor, regarding mentorship and emotional support.

"academically of course, you should be in a position where you.. where your supervisor would know what you should know actually.. the area you're researching. that is like the best thing that can happen in the world. but then thats not like the ideal situation which happens. in that case i think, the emotional support that a supervisor a supervisor can give is tremendous. because a lot of people will not know that what you're working on, the field you're working in, but you have been assigned to that person and the supervisor may actually refuse to acknowledge the fact that they actually work in your field and then make your life hell. so i think both as like, academically if it matches- very good. in that case you make actually avoid a lot of the emotional burden that comes with doing research or Ph.d. or whatever. in both cases i think its extremely important. because unless you have some body like at some level you have to like.... there has to be some common denominators with which you'll have to agree. like unless those like core things of your life don't match with your supervisor, i think its very difficult. like whether its academically or the emotional aspects of doing research. "

S1 is of the opinion that if the supervisor and the supervisee have some commonality, it can impede the amount of emotional distress which is associated with undergoing the process of research itself. If the supervisor's interests in terms of research inclination bear some semblance with supervisee's, it acts as a lubricant in the process of academic exchange. Contrarily, if the supervisor and supervisee don't work in the same area, there can be a possibility of conflict where academic disagreements arise. These problems are magnified in case of a hierarchical arrangement, where the supervisor, by virtue of power which his post grants him in the relationship, may try to impose his ideas, vision and ideology upon the supervisee and attempt to control the direction of research, in which case, the autonomy of a supervisee is compromised because they are situated lower in the hierarchy.

Considering, that S1 is a student of P1, it would be interesting to compare and contrast how the two of them perceive conflicts as they arrive and are resolved. P1, as has been discussed in the previous sections, is a firm believer of relinquishing his powers in a dominant position. And attempts to empower his students by encouraging them to have ownership of their work and playing as assistive role in resolution of academic differences in opinion. Revisiting P1's account of management of his students, the following excerpt clarifies his position.

"the wonderful thing is that i've always had disagreements with my students. always.. i never got a yes sir kind of a student.. no no.. and thats precisely because i never treated them as one. i think that because they always had this freedom to walk into my office, sit in my room, make use of my computer, whatever. theres absolutely no restriction.. no absolutely none. my job is to keep their morale high, keep appreciating them- yes, you've done good. main unki angrezi pe kabhi comment nahi karta. kaunsi meri zubaan hai. jitna ho sakta hai thoda bohot sudhar data hoon nahi toh kehta hoon ki jao bhai angrezi editor ko dikhao nahi toh mere zubaan aa jaayegi issmein. kya faayda? aur zubaan ka jo masla hai wo bohot aham hai kyunki har koi apne tareeke se rakhne ki koshish karta hai. you have a certain way of developing your argument. which may be very different from how i do it. so if i start meddling with your way, i'll have to rewrite the whole thesis (laughs). i wouldn't do that. that is what helps the student develop that confidence that yes what he or she has done, written.. it is.. i have seen them grow like anything. hats off to them"

In P1's strategy, the growth of his supervisees lies in the fact that he encourages them to reason and build arguments on their own. He chooses to not meddle in this process out of fear that if he does actively modulate the work, his own language and reason might creep into the research and tend to over power what his student might have been trying to say. In his experience, active engagement on his part is limited to ensuring that arguments have a solid base, as and when students require presenting alternative solutions to the problems. But the choice to incorporate those changes in their work rests with the students. And from what he feels, and how he has seen his students journey through their lives; P1 feels that this exercise was crucial in building their confidence and helping them bloom as researchers. The following excerpt is from the conversation with S1 who has been supervised by P1 for more than five years.

"I really haven't had conflicts as such. like the one time that i had, which is the first year of my Ph.D. when he gave me certain ideas and i rejected it outright, he was actually quite cool with it. he was like, as long as you can bring me something better, i am okay with it. i did i think bring something better or at least he thought of it as something which was feasible and which was not completely callous and uncritical. so he was okay with it. so right now.. but if.. i think the best way forward for me has been to go straight up to him and tell him "this is not working".
so as long as i think you're giving him that the logic and your arguments are in place, he doesn't go around pushing you and shoving it. he doesn't take it to his ego. if he understands that even without this portion of the work, this scholar's work is reaching the end that we had envisaged, he doesn't go about like pushing and shoving and doesn't taking it to his ego ki "arre maine bola tumne nahi kiya". he doesn't do it"

S1's account of her experience with her supervisor is in agreement to the claims made by her supervisor. She feels that her supervisor gives her the autonomy and space to disagree with his ideas. At the same time, she also feels a sense of responsibility towards her work and her supervisor to come up with an innovative idea which is at par with his suggestion. By expecting this, the supervisor conveys to his student that he demands a certain rigor and quality of work. In the wake of these expectations, the supervisor has successfully enabled his student to think deeply and differently about her work and reinforced her feeling of competence about her capabilities as a researcher. The dynamics of this working relationship lie in the intricacies and subtleties with which a situation which could have been volatile, is not only diffused but becomes a source of creativity.

P1 believes that his purpose as a supervisor is to keep the morale of his students high, acknowledge and appreciate them for their effort and producing a good quality research. Pre existing research on academic motivation and self perception emphasize that verbal and non verbal appreciation from teachers tend to have a positive impact on intrinsic motivation and self perception of academic abilities. In this context, S1 was asked about if and the ways in which she receives encouragement from her supervisor.

"i think that comes from mostly what i hear from people who interact with my supervisor when he goes in other universities. where he would particularly say that S1 has been doing a wonderful work.. that i really don't need to look after her. i know that when she brings something to me, i have to only make slight changes because she has the ability to get her work done. like uhh.. of course he also mentions in the same breath that S1 is very lazy (laughs) but he would always i don't know whether he does it intentionally because i know that there are sometimes.. he doesn't do it for everybody. that also i know for a fact. because.. i think he reads his students very well. like he knows what his students.. he has 25 people and he would exactly know what those 25 people are upto. even though we don't meet him. like i meet him on a regular basis. i know probably 5 other people who meet him on a regular basis. but the rest 15 of his students would not meet him. but sir still knows where they are, what they're doing. like from whatever sources.. like whether he will ask me whether you have seen xyz in the past few days, did you have a talk with her. and then he actually.. so if he knows that i am close to somebody, at times he will be like, you know xyz has been working on this and i think its a good work. because he knows that probably reach xyz through me that "sir toh aapke baare mein bol rahe the, apna kabhi kaam dikha dena because he asked.. he told me about it".

so there are various ways he ensures, even if its not a very direct way of saying that S1, i really like your work, he will ensure that. this was 2 or 3 people I've heard it from. they are like pass outs. so, how i got to know from them, later on when they came to meet me or when i bump into them they would tell me "sir was talking about you when he was here"

Following excerpt from S1's account reflects the manner in which she receives information about herself from her professor in an indirect manner. Her supervisor tends to publicly appreciate her work in front of others, his previous students or on occasion when he goes to interact with other people in academia. There are two advantages to this approach. One, the supervisor builds a credibility and reputation for the supervisee by publicly acknowledging the quality of her work.

And two, the information reaches the supervisee not directly, but by word of mouth and conveys how her competence and efficiency is perceived by her own supervisor. A positive feedback, even when it arrives indirectly, is reflected upon by the individual and it affirms her feeling of competence. In his direct communication wit S1, P1 has a very different approach.

or sometimes he would also take digs like "S1 tum magnum opus likh rahi ho. itna time kya laga rahi ho kaam karne mein. likho aur do. so there are these weird when he will say that ache "so we had discussed this. i know its there. i know you can give it to me in one week. give me a write up in one week" so that way. or sometimes he goes like, he will bring up like.. wherever possible he will be "acha theek hai, this is one place where this person has asked me to write on something so why don't you write it instead" so those are various ways whereby he ensures that.. a the work gets done.. and b, student feels motivated enough and understands that her work is being valued"

The supervisor is creating opportunities for the researcher to exhibit her expertise. By asking her to write up on his behalf, the supervisor conveys to his student a certain trust in her capability and regard for her opinion. At the same time, with the use of humor, the supervisor also sets feasible deadlines for the supervisee. These deadlines can also be considered as a management strategy employed by the supervisor wherein he assures that the student is in a capacity to meet the set deadline, but requires a nudge from him to meet it. While creating a nurturing and emotionally supportive work relationship with his students, P1 also ensures that the student is recognized for his or her caliber. S1 was asked about her opinion regarding these verbal and indirect appreciations that she gets to hear about herself. To which her response was,

"all of us want validation. like as humans we would want validation.. like.. i think it comes from.. i think its the kind of upbringing we have. i think its also a very female thing it could be gendered wherein you're always.. wherein like.. a-your self doubt is much more and b- you'd always seek validation from people you look upto. like whether they are your parents, teachers. because i still have my school year book where like my teachers had written stuff about me and i think when i feel really bad i actually open those and look at them. like.. if as a 17 yr old, your teachers would say this about you, they probably saw something in you.? so, i think since kids we have been taught to always seek validation. so of course the validation when it comes in verbal and acknowledgement and something that i don't know if its with others but i think as a person, in all your relationships don't you seek validation? whether its from your personal life, whether its your parental validation or whatever, you'd always seek validation right."

The conversations with P1 and S1 reveal a supervisor supervisee relationship which is built on trust and mutual understanding. The management skills of P1 concentrate on empowering his student, building their confidence and enabling them to take responsibility for their own work and accordingly, produce good quality work. He continues to provide support by keeping their morale high and helping them uncover different ways in which they can possibly look at their own research problem. Then again, he doesn't impose his ideas upon his students. In fact, he challenges his

students to come up with different idea if they disagree with his. According to him this strategy has worked wonderfully in case of his students, past or continuing, because it helps them evolve into more confident and academically sound researchers. The following section is a discussion about a conversation with another research scholar (S2, who is not a student of P1), but it presents an account which is quite different from what S1 experiences in her relationship with her supervisor.

The Middle Ground: Negotiating one's space in a supervisor-supervisee relationship

"I'm a very passionate researcher. i feel that doing field work is the most important part of doing research. because jab tak aap apne field se connected nahi hoge, so you can't really sit back in your room and develop a theory of certain things. and probably that passion becomes a little problematic to handle at some level because when you become too passionate about something, you kind of become a little biased towards it. so that is what my research work has always been like. and its kind of influenced by the fact that i have always fought for things that I've wanted to do."

S2 is a female research scholar in the third year of her Ph.D. in Jawaharlal Nehru University. She defines herself as a passionate and emotive person who has always been inclined towards creative expression of her emotions. She says that her emotional journey has always been an integral part of her life with her peer group, her family or anything that she is attached to. As she talks about her journey as a researcher in JNU, her body language and expression exhibit passionate and emotional attachment to her work. In her own words, this passion is what drives her but can become problematic to handle as it makes her opinion biased. S2 was asked to reveal how her academic journey began and what pushed her into research.

"i actually fought with my whole family to take up humanities. i had scored a very good number in science and everybody in my school and everywhere wanted me to take up science. but i always wanted to do humanities because initially wanted to be a journalist. i was pretty much influenced by certain factors in my life. but then i thought that probably i was not.. i don't have the skill set for becoming a journalist so i chose geography which i liked as subject and yeah... so because i.. what i wanted even when i wanted to be a journalist was to be on field and discover life on the streets and thats what probably pushed me towards research in life as well."

S2 has been a student with an excellent academic record through her school and college. She initially wanted to pursue a career as a journalist. But her inhibitions came in the way of her dreams. She felt that she did not have the requisite skill set to be a good journalist. Instead, she opted to pursue her studies in a subject of her liking and once she enrolled herself in a research course, she opted to make her initial interests, her fascination with cities and everyday life on the streets as her area of study. In a way, she did not pursue journalism but she found an outlet for her fascination with journalism in her research career. Which is why she places particular emphasis on the necessity of field work for a researcher in general, and particularly for her. This passion for field

work and exploration also became a point of contention in her journey with her supervisor which was revealed in later parts of the conversation and it resurfaced time and again.

S2 revealed that prior to coming to JNU, she had spent her life at home, surrounded by family at all times. The opportunity to pursue her higher education in a different city also opened up the possibilities for her to explore a city and a life apart from what she had known which was her home town. Coming to Delhi was a conscious decision on her part to move away from the protective environment she had grown up in, to experience life outside of it. but once she became a part of JNU, the institution, the pedagogy and in particular, the research oriented outlook of her professors played a transformative role in bolstering her interest towards research.

"so i wanted to experience a different city, a different life. and i have always been at home, surrounded by family members and all. and I've never experienced a life out of it. and also delhi specifically the institution that I've come to, it kind of catered to the ideas that i wanted to develop as a student. and thats why i took up MA here. because i was really influenced by the syllabus that they teach here. then i got into masters and the best part about it is what i feel.. this institution has shaped me a lot.. and if i have chosen to do research is precisely because the institution has nurtured me that way. and my professors are very research oriented because they always have this idea that.. they are into research. precisely why i think i was influenced by my teachers and the way the work is being done here and thats why i went into research. and i wanted to do things. and i enjoy it.. its a very enjoyable part of my life. id not do anything other than research probably. "

S2 reveals that prior to coming to this campus, she had not envisioned herself as a researcher. But her time on campus, and the time and effort she put towards her research task have become a way of life for her.

"now yeah. i think it has just become a part of my life. since i have spent so much time in research work.. and i love reading, and i love exploring and it helps me being on the field on the streets. its not monotonous for me. for certain people it might be monotonous but its not for me. its not monotonous for me because i like to explore and i like to explore the everyday life of cities. because cities have attracted me from my childhood. i wanted to explore the everyday life of people and thats what research has given me a platform to. if something else would have given me the platform to do that, probably some research organisation i would've done that also. but i feel that i didn't know 4 yrs back that i wanted to do research but now i'm so sure about doing research. and i wouldn't do anything other than research now. so yeah it is an integral part of me.. "

But this journey into the life as a researcher has not been an easy one for her. Even with all her passion for research, especially for her field of study, S2 had to overcome numerous bureaucratic hurdles and conflicting situations. S2 had always been fascinated by a particular female professor who taught her during her masters. Her area of interest to pursue research was in sync with the specialization of the professor and they both were excited about the prospects of working with one another.

"i wanted to work on a specific topic which is gender. and we had one specialist researcher in our centre who was willing to take me. and.. so, i was pretty sure that i was going to go under her and do my research under her because she had at some level, she is kind of shaped my idea about the topic that i wanted to do in my M.Phil. and so i.. uhhh. she taught me in my masters. and i thought that i would get her and i would be able to carry on my research work very peacefully. but then, something happened. one of the professors in our centre who was incharge at that moment, she screwed up.. she screwed up big time! regarding my topic, the way it was spelt out in the meeting. and somebody else picked me up from the list. and i didn't get her. so it was a huge.. long emotional turmoil.. professional and emotional turmoil since i wanted to work under her. and i didn't want to work with this particular supervisor"

Officially, S2 was asked to work with a male supervisor, as opposed to the female supervisor she had in mind. Although she held the male professor in high regards, and liked him as a teacher, she was of the opinion that it would not be a conducive arrangement with the male professor since the area that she wished to work on was not his area of expertise. S2's initial inhibitions about having a supervisor whose area of interest does not match with the supervisee's is not entirely unfounded. In the previous section, in a conversation with S1, it had emerged that a lot of research scholars face problems when they are assigned supervisors with whom they cant find academic compatibility. Although she had no personal experience of being in such a situation, she had seen some research scholars from her peer group struggle academically and undergo distressing situation because their supervisors' research interests did not align with theirs.

Given that this phenomenon is not uncommon, S2's initial apprehensions about being assigned a supervisor whose research interests did not match hers appear understandable. Given that S2 identifies herself as an emotional being, combined with her attachment to her field ofstudy, it was interesting to know how she responded to this arrangement initially.

"i fought.. and somewhere i was a pretty demotivated. and at that point i probably wanted to leave research and i felt that i should take a break and not do it because you have these moments in your life when you start questioning your.. questioning your decisions rather. but then yeah.. i fought and she became my co supervisor. and the other person became my supervisor. so it was a little difficult. and i literally did not talk to him for the first 6 months. i did not visit him or make any form of communication. although he was..i used to communicate with him a lot on a daily basis"

S2, true to her personality, responded very emotionally to an arrangement which did not fit into her scheme of things. The very fact that she was considering quitting research, a field she was so fascinated with that she thought she was perfectly suited for it, is a testimony to the emotional upheaval that a research scholar might undergo if he or she is asked to work with a supervisor, who they perceive to be an ill fit for supervision. In cooperative arrangements, especially one which is of a longer duration such as a research task, a congenial opinion about each other and trust in each others' abilities to do the needful is paramount. That being said, it should also be noted that S2 did

not have an adverse opinion about the male supervisor. She was just finding it hard to accept the arrangement and give it a try.

S2's apprehensions were holding her back from not only pursuing research, but also from working under the supervision of a professor, who she otherwise admired. The very possibility that it may work out with this professor was inconceivable to her mind, a judgment which might not have been very rational, but was definitely driven by her emotions.

"so, after 6 months when he shoots me a mail saying that i am your supervisor and you're supposed to meet me and discuss your subjects with me. then i started going to him. and i would do anything which was completely opposite to what he would ask me to do. because i always knew she is behind me and she is going to support me because she is also my co supervisor. so, uhhh... that particular semester i started talking to him and what i wanted to do. and then after a 6 month long break, when i had to submit a synopsis and i was going back home for my summer vacations, we started talking about the topic.

so both my supervisors were there. so we started talking about it and the female supervisor she was pretty simple and one line oriented and she wanted me to do some data work and get it done with. and the other person who i didn't expect much from, he was pretty different in what he was trying to get out of me. and he asked me to read certain things and the best part was something somewhere attracted me to that particular proposal and i started developing on it. and i had never.. i had always criticised the way the data system works in our centre and and i always wanted to do something different like.. in the qualitative field and which i was trained in my masters. not trained but yeah.. i read a lot on qualitative methodologies and i wanted to explore. i didn't want to stick to the numbers and i felt when you're talking about my field numbers are too restrictive. the best part was.. the interesting part was that i became more close to my second supervisor because he could understand what i wanted to do and probably he gave me that window that you could do whatever you wanted to do whereas my other supervisor who was a lot more experienced wanted me to follow a certain set pattern."

S2 struggled with the system and found an arrangement, wherein, the male professor assumed the role of a co-supervisor, and the female professor she originally planned to work with became the main supervisor for the duration of her M.Phil. But her experience of working with both turned out to be very different from what she had envisaged it to be. The female professor, who was an expert in the field she was trying to study turned out to be set in her ways, and was imposing her point of view of looking at the field onto the supervisee. Whereas, the male professor, a person she believed was not a good fit for supervision with respect to her field was relatively open about experimentation and would encourage S2 to follow her ideas. The attitude of her female supervisor, was unexpected and again, demotivating for S2. But even to her surprise, the working relationship with her co-supervisor turned out to be more conducive.

"i was a little depressed at that point of time. because i felt like oh my god, if she doesn't sign my papers then what i am going to do?but then he came to my rescue and said- "do whatever you want to do! you have the full window to do". i don't know how did that work out. probably he was my co supervisor, thats why he thought he can take the risk of allowing me to do certain things. and probably he related it to it as well. so yeah i came out with a thesis which was entirely my own

and surprisingly i didn't get any input from the person i expected the most from because other than grammatical editing she did not help me out with any specific argument. that was her forte and i thought i'd get to learn a lot from her. whereas, from the other person i did get a lot of arguments not related to my field but somewhere around what i was trying to do. and he did shape my research which she could not. which i felt was an important eye opener for me. because you know i was doing my research for the first time. and i was expecting somebody to help me structure it."

It was an eye opener for S2, that she could in fact share a conducive working relationship with her male supervisor, probably more conducive than what she shared with the female supervisor. Her co-supervisor was encouraging, shared her belief of exploring her field differently and enabled her to take academic risks, which her main supervisor discouraged her from. But by the time S2 began her Ph.D. her female supervisor had retired. And by rule, her co- supervisor, the male professor became her main supervisor. But as this change materialized, the working relationship between S2 and her male supervisor also transformed into something different from what they shared during the course of her M.Phil.

"when i was trying to figure out my Ph.D. topic, i had a lot of problem and the amount of time i took to decide my topic was precisely he was guiding the way i should think about things. and the worst part was he doesn't have an idea about what i'm trying to do and he has been very restrictive about the field that i wanted to choose, the way i wanted to proceed. see.. that what happens i feel. when he was a co supervisor he was more open to ideas. he did try to guide the way i wanted to do my research but that actually worked in my favour. so i took it. but in this case, he has kind of restricted my field actually. because the phenomenon that i wanted to study was a very big phenomenon in a city like bombay. okay? but, he was very insistent that i work on delhi. his idea was that delhi is going to become a global city in a few yrs and i should be the one working on it. that would give me a lot of advantage. but the point was it should be phenomenon specific, right? if i wanted to work on bombay, precisely because i had a reason to work on bombay and my work was much more precise and specific in that place. he had a problem with me working in my own home state. he said you can't work there. you only have to work in delhi. ya.. so he had kind of.. and somewhere that has restricted the way i am designing my synopsis. because yeah i am keeping it to delhi. because he has not given me the permission to work on bombay."

It is quite surprising that the same professor, who was open to experimentation in his role as co-supervisor became restrictive in his approach as he became the supervisor. It might have been resultant of a decreased appetite for risk taking behavior as one assumes a more dominant position in the relationship. Or, it could also be a result of the dominant position itself. In the role of a supervisor, an individual can exercise a lot of control over a supervisee's research life. From signing the scholarship forms to passing a supervisee's synopsis, a supervisor plays a mediating role between the research scholar and administration. All the administrative requirements that a researcher is obligated to fulfill and all the benefits that a researcher can avail of from the university require an approval from the supervisor.

P1, in his position as a supervisor consciously averted the possibilities that the relationship become hierarchical. But the supervisor in case of S2 did exercise control over her choice of field and attempted to modulate her research design. By design, the relationship between a supervisor and supervisee is in fact hierarchical because the university assigns a more dominant position to the supervisor and grants him more power. But the decision to exercise that power or conversely, to uphold a student's autonomy rests with the supervisor. And as the supervisor makes this choice, the student anticipates about the choice, agonizing about the repercussions if the supervisor would choose to play a dominant position. The following excerpt from the conversation with S2 highlights the emotional turmoil of this anticipation and decision.

"i had a lot of emotional turmoil. and probably that was probably why i had to go and seek for professional help. at a counselling centre because i was not able to figure out a middle way. and i was distressed, depressed for a long period of time. because one he was not listening to what i was trying to say, he was very over powering when i'm trying to say something. i did not have anybody else to go to. because he holds a very powerful position in the centre in terms of his relationship with other professors. so even if i wanted to go for a second opinion, i think it would not have worked in my favour. so yeah.. i had to give in. It is a very big stress factor.. because if somebody is so restrictive about certain things and certain ideas, then it is a stressful factor because then you have to find out ways, break your head about how can you fit in your own idea because you don't want to give up on your own idea. because that is your baby.. that is your research idea..that is your conception. how can you just let go of it just because your supervisor doesn't want you to work in that particular area. so yeah, its so stressful!

Isn't Ph.D. all about conceptualising your own research idea, your own research methods? i mean thats the freedom we want as a research student. and if we are not given that freedom and that too without any explanation that your supervisor is just imposing on you that you just can't work in that area. i'm not going to let you work in that area. if you are working in that area, then you have to work on some other topic other than the one that you're thinking of right now. how does it work? how does it work if i am not allowed to work on my own research idea? (laughs) i mean the field i have chosen is precisely because i wanted to work on that idea."

S2 in effect, has the experience of working under not two, but three supervisors. The female professor in the role of main supervisor, the male supervisor when he was in a co-supervisory position and male supervisor when he was in a primary position. These experiences relate the tale of a certain power dynamic which finds its way into the relationship between supervisor and supervisee where the researcher has had to mold her research idea according to the suitability of the supervisor. The suggestions provided by the supervisors, were not an example of guidance or mentorship, but imposition. The power dynamic becomes much more apparent with the change in attitude of the male supervisor as he moved to a more dominant position in the relationship.

As a co-supervisor, the male professor was accommodating and open to ideas. In the position of main supervisor, the male professor was dismissive and conservative about her approach towards her own research idea. Even though S2 had academic reasons to choose a different city for her field

work because it would have been much more vibrant for the purpose of her research, the male professor dismissed her proposition without citing any academic reasons as to why she would not be allowed to work in the city of her choice. The process of negotiation between the two was not based on reasoning with the student, but imposing upon her. The effective choices with S2 were to either accommodate her research idea or to quit. S2 considered seeking opinion from other professors in her center with a hope that she would find some way or external mediation from others to support her choice. But given that her professor shared a good professional relationship with others in the center, she was a little hesitant to pursue this line of thought. She was operating under fear. She was not given the space or opportunity to reason with her professor. And she feared that if she approached others seeking their help, it could either backfire or they would refuse to mediate. In either case, she might have to face the repercussions in her working relationship with her own supervisor.

Fear impedes learning. The data analysis for this particular research work revealed that when a research scholar is given the opportunity to exercise their autonomy over the direction that their research work is taking, their intrinsic motivation to pursue research and their self perception of academic abilities are both enhanced. Conversely, when the autonomy of a research scholar is under attack, not for academic reasons or feasibility, but because the professor chooses to exercise a more dominant position in the relationship, it would have a negative impact on the student's experience of autonomy, intrinsic motivation to pursue research and their self perception of academic abilities.

"in terms of demotivating somebody, a lot of conflictual situations that we have come across, been into, in terms of negotiating about our research, completely denying the idea without listening to you, over powering with his voice is something that i feel is very demotivating to me. because i kind of loose my ground. because i'm also trying to do something new here. and i'm not an experienced person. and when he tries to shut me up by saying that you can't work on it, i actually fumble. and i feel that oh shit! then i'm not doing anything innovative. i'm not doing anything concrete. is it really that bad? and then he also says that i'm not going to learn anything new from your research. you just doing a plain simple topic. that also kind of demotivates me. i don't know whether he uses these kind of things intentionally or not but he comes across as pretty overpowering in terms of these statements which kind of hampers the way i think about my research"

In the face of a conflict, S2 had to concede to the dominant position of her supervisor. She eventually had to accept that her supervisor was not willing to agree with her choices regarding her field of study, an opinion which she couldn't reason with and couldn't situate in terms of academic reasons which guided it. S2 had to submit to power. She continues to pursue her field work in the city which her supervisor wanted her to explore, but in the process of negotiating with him in vain, S2 not only lost out on one and a half years of her research time, but had to undergo emotional

distress and self doubt regarding her capabilities as a researcher, her spirit as an incumbent in the area of research. Other events in her experience with her supervisor didn't help mitigate her self doubt, but magnified it.

"he was not giving me that attention as a supervisor which he should have given me. he should have at least taken me or taken consideration that she can also work as a research student. and because of the fact that i already expressed that i wanted to work in one of his projects on performance specifically. which he did not pay heed to and he did not even consider. so, and then there were a lot of occasions where he felt that i do not need money. whereas another person on the same project needed money though we were on the same platform in terms of getting a JRF and also in terms of our family support. so, in one of the situations, he actually mentioned that " I'd help your friend in the project and get her some money out of it because she doesn't have money but i'd not help you because you travel to your home on a flight. which means you have money". just because i express, i tell him that i travel by flight doesn't mean my friend doesn't travel on a flight. she does..! Twice a month! (exclaims). and that just never surfaces in the conversation. and she gets a higher point saying that she needs money and i don't. so yeah, i have always felt that..

and also at one point of time which i want to mention.. i don't know whether.. i did write three four pages for him on a particular topic, in which i had almost gone through 150 youtube videos and i did write concentrating on a theoretical framework and the sad part is i think my name was not given there. i don't know whether it has come out or not, because he mentioned that whatever you have written i have changed. so i felt that it didn't probably suit the research framework. but when he sent me back asking me to do the bibliography for it, i saw that the words were exactly mine because i had a copy of it in my mail. and uhhh... i don't know its going to get published or not. but yeah.. i had contributed to it and i don't think i am going to get any recognition out of it. so, thats one thing that i felt was extremely wrong on his part because he didn't even acknowledge the fact that i had written and he had used my thing."

S2 finds herself in a very conflicted state of mind with regards to her relationship with her supervisor. In the past he existed in an assistive role, encouraging her for taking risks and innovative research design. But in the present, he is impeding her creativity she feels, and also superimposing his own vision over and above her express desires. In her interactions with other students, she feels discriminated against. The opportunity to work with her supervisor on his projects which she wants to avail of are not provided to her. She feels the discrimination happens on a personal level, where people from her peer group who are in the same financial situation as her are being provided more resources and work experience than what she deserves.

Considering that S2 has had a turbulent journey with her supervisor, she was asked if and how he has contributed positively in her journey as a researcher. The following excerpt from the conversation was found to be helpful.

"its not about the money you see, its about the experience as well and thats what i keep talking to him about. its not that i want money out of the project. its just that i want sort of an experience where i get to work with my own supervisor on a project which is not related to my thesis, which is something different, which interests me. and so, i don't know whether my personal information has

coloured his opinion or not but yeah, at some level it does i feel. it does. but he has been supportive also. i'd not say that he has not been supportive. especially during my M.Phil viva, he has been pretty supportive. he has been a major factor in calming me down and how to go about it, how to present it.

he appreciates the work that i do sometimes. which he feels that is very different than what his other students are doing. and that he is going to learn along with me. which is a kind of a motivation factor because you feel that you both are working on it. but that doesn't materialise on all levels. but yeah, he is appreciative of the fact that you're trying to do something different. and the best part is that he kind of sells it out in front of his other friends, other teachers where he says that oh she is doing something very different. oh i'm very impressed because your external said that a centre like yours could not have done something so qualitative, so innovative in M.Phil level. that it was a perfect thesis. which i feel is not but yeah my external said so. and my supervisor was very motivating on that fact that you did a great job and its really good. and these are certain things and he has also.. when i have kind of told him about my personal crisis he has been motivating and on certain fronts he has always tried to motivate me through certain statements like- don't worry! you'd be able to find a good job! you're that talented.. you would not have a problem in finding a job ever. so these are the motivation factors he uses in terms of all his students i have seen."

S2 is in a confusing situation with regards to her supervisor. And so is anyone who reads an account of her journey as a research scholar. Her supervisor enabled her to make bold choices at one point of time, but presently he chooses to act conservatively, even though the bold decisions helped her produce a dissertation which was appreciated for its quality and newness. Her professor appreciates the work that she does from time to time, acknowledges it for being different as compared to his other students; but does not extend opportunities for employment which he has available and which lie in the same domains as her areas of research. Her professor entrusts her with developing theoretical frameworks and doing background research for his own publications, but does not provide her co authorship. He provides her with emotional support and encouragement to help her cope with personal situations in life, but uses the personal information against her and as a justification to his own inaction. S2 continues to thrive as a research scholar, under the supervision of this professor but has to settle for less on many fronts. She strives to find the middle ground with her professor and negotiate with him to arrive at a manageable work equation.

Discussion

According to Richer and Vallerand (1995), research on the impact of supervisory styles on subordinate's level and type of motivation has mainly focused on three types of supervisory styles- autonomy supportive, non-punitive controlling and punitive controlling. In academic environments, an autonomy supportive teaching style led to heightened intrinsic motivation and self esteem amongst students (Deci, Nezlec and Sheinman, 1981). Amongst school children, research indicates that if teachers and school principals were perceived to be

autonomy supportive by children (or objectively determined so by the researchers) children experienced enhanced feelings of competence and intrinsic motivation (Ryan and Grolnick, 1986; Vallerand and Fortier, 1995; Vallerand et al., 1994). In work related context where subordinates were older adults, similar findings were reported (Harackiewicz and Larson, 1986).

In the light of conversations with supervisors and supervisees which have been discussed in the previous sections of this chapter, two supervisory styles emerge. On one hand was a supervisor (P1) who strives to foster an environment for his supervisees by granting them more autonomy and relinquishing some of the control he can exercise. His supervisees in his experience, and going by their account (S1) become more competent and skilled researchers. On the other hand, is the example of supervisors in case of S2, who comparatively exercise more control. As a result of which, S2 confesses that she experiences emotional turbulence and self doubt in her capability as a researcher. Based on this information, it appears that a non-controlling work environment contributes towards fostering an individual's motivation towards the task as well as self perception of abilities. These conjectures are consistent with preexisting research as well as the quantitative data analysis which was discussed in preceding chapter.

The process of fostering an autonomy supportive work environment requires an initiative from the supervisor. Literature on leadership lends theoretical and empirical support for the argument that predispositions from one's family experience, contexts in which leadership was experienced and personal experiences pertaining to it may be critical in fostering the conditions which encourage leadership development in an individual (Avolio & Gibbons, 1988; Shamir & Eilam, 2005). In the conversation with P1, it was discovered that his reflections upon the teaching experience of his father and his experience of being supervised in a liberal and autonomy supporting environment as a researcher, influenced the manner in which he chooses to conduct himself with his supervisees.

In the social order of things, every relationship tends to carry an innate power dynamic. The relationship between a teacher and a student, is no exception to this rule. Conventionally, in student teacher relationships the metaphor of knowledge transfer from teacher to the student is employed to establish or characterize that student is in a passive role (Saljo, 2000). The theory of transactional distance (Moore, 2007) proposes that the transaction between a student and teacher is dependent on two variables- 'dialogue' and 'structure'. Dialogue is theoretically assumed to be vital in bridging the transactional distance between the two in the process of teaching and learning (Moore, 1991; 2007). Structure on the other hand determines the degree

of independence in the extent to which students can draw their own interpretations of what is being taught to them. With a loose structure, students have greater opportunities for making their own interpretations (Bergstrom, 2010).

What makes the relationship between a supervisor and a supervisee unique, as compared to the typical arrangement between a teacher and a student, is that interaction happens on an individual basis. In one way, this brings more opportunity for the exercise of power to become even more concentrated as compared to a traditional teacher student relationship because of the fewer number of people involved. But, both supervisor and supervisee move forward from the exercise of teaching and being taught and assume roles in which they work in tandem to produce a certain quality of research work. The knowledge transfer is not unidirectional but a dialectic process. As the process evolves, the relationship can ideally diffuse the concentration of power partially, because both work together, learn together.

Research provides an opportunity to the supervisor to look at the field of research from a fresh perspective, the point of view of their supervisee. In case the supervisor's research interests are different from the research scholars, it provides the supervisor an opportunity to learn and explore a new domain. The supervisee is an incumbent. The opportunity to learn exists everywhere for him or her. Learning can happen with academic reading, explorations of the field, discussions with peer group, and from working alongside an academician who may or may not be working in the field of interest, but definitely has more experience in doing research. The two take this journey together, collaborate and share information, ideas and can learn from each other. But the presence of power asymmetry in this relationship has the potential to disrupt the process of learning for both the parties.

In a collaborative arrangement, power asymmetry translates into one party having more power at their disposal than the other. In case of the supervisor supervisee relationship, the university vests certain powers with the supervisor in relation to their conduct with the supervisee. the supervisor acts as the medium of communication between the university and the research scholar. The university demands that the supervisor approves of any academic or administrative decisions that research scholar undertakes. Scholarship forms, approval of research proposal, semester registrations, leave applications, permission for field study, participation in seminars, symposiums, exchange programs are examples of the activities which pertain to everyday life of the research scholar, but require the approval of their supervisor.

The supervisor thus becomes the instrument through which university exercises power over the lives of research scholar. The research scholar's actions and intentions require the stamp of approval from the supervisor. If the supervisor is in agreement with his supervisee, then it definitely makes it easier for the supervisee to go through the proper administrative channels for processing their request. But if there is disagreement between the supervisor and the supervisee, the supervisor may choose to exercise his powers and decline consent for what is proposed by the supervisee. The notion of control may be looked at as a balance between independence power and support (Garrison and Baynton, 1987). Independence may refer to the freedom in learning, power deals with the question of being responsible for one's own learning, and support arrives from the role of the teacher, who in this research work is the supervisor (Bergstrom, 2010).

Disagreements and conflicts are part and parcel of every relationship, personal or professional. Conflict is considered to be an important aspect of effecting personal as well as social change, which involves expression and subsequently resolution of conflict (Deutsch, 1971; Jamieson and Thomas, 1974; Coser, 1956). Jamieson and Thomas (1974) present an interpersonal model of conflict in dyads according to which there are five events within a conflict episode- one party's frustration, party's conceptualization of the conflict, party's conflict behavior, other party's reaction, and an outcome. In this interpersonal model, the party (or individual) who experiences conflict, makes an effort to change the situation in which conflict and subsequent dissatisfaction arose.

But a key factor in resolution of conflict is the relative power of the parties (Kahn, 1964). If one party tends to be relatively less powerful as compared to the other party, it is likely that they would avoid confrontation. On the other hand, when both parties have relatively equal power, there is more scope to negotiate and adjudicate interpersonal differences (Chesler and Lohman, 1971; Walton, 1969). Two individuals at par may choose to resolve their differences amicably by understanding each others' point of view. But power muddles with this channel of resolution of conflict with communication. It grants the superiority to one person over the other and interferes with the other person's autonomy in decision making. It provides an opportunity to the person in a dominant position to exercise control over those who are placed lower than him in the hierarchy and impose his decision and vision over them.

Academic organizations are not immune to opportunities of conflict. In the educational system, the student often have less power which puts them at a disadvantage in situations where conflicts arise (Chesler and Franklin, 1968; Miles, 1967). When students wish to communicate

their differences or confront the conflicts, they have fewer channels and forums to openly voice their opinions as compared to teachers or administrators (Jamieson and Thomas, 1974). And even if the differences are communicated, it is likely that either they will be dismissed or will have repercussions for their academic career. Consequently, if the differences are not resolved, the student might find themselves in an untenable situation, and might even function with lower levels of productivity and efficiency. More so, the emotional distress of functioning in such an environment may have a negative impact on their motivation and self perception. With pertinence to this research work, the supervisor is the interface through which the supervisee interacts with the education system. The education system (University) grants certain power to the supervisor legitimizing their superiority over the supervisee in the form of resources that are possessed, controlled or mediated by him.

French and Raven (1992) and Raven (1974) identify six kinds of social power based on the resources present with the person in an influential position which hold special significance with reference to this research work. First of these is the *reward* power, where the supervisee believes or expects that their supervisor would mediate rewards for him if they comply. Second, *coercive* power where the supervisee believes that their supervisor is in a position to mediate punishments for them in case of non compliance. Third, *legitimate* power wherein the supervisee internalizes that the supervisor has a legitimate right to prescribe the 'right' behavior to him. Fourth, *referent* power, wherein the supervisee identifies with the supervisor and wishes to maintain a compatible relationship with him. Fifth, *expert* power, where the supervisee believes that the supervisor has expertise in the area of research and his opinion counts. Lastly, *informational* power which is based on the communication from the supervisor to the supervisee (Jamieson and Thomas, 1974).

In an organizational setup, superiors have greater access to reward, coercive and legitimate power by virtue of their role. But expert and referent power become incremental power sources if the person in the superior position works towards their attainment (Student, 1968; Kahn et al. 1964). If and when exercised by the supervisor, reward, coercive and legitimate power also become the medium using which not only the supervisor but also the university controls the autonomy of its students.

The predominant supervisory styles which were uncovered by way of conversation analysis in this chapter were autonomy supportive and controlling. In the former, the supervisor is willing to let go of his reward coercive and legitimate power but strives for expert and informational power with his supervisees by working along with them and upholding their autonomy. His

interpersonal relationship with his supervisees is based on mutual respect as opposed to authority and his students respond well to this supervisory style. The findings are consistent with empirical studies which have investigated student's perception of power relationships with their supervisors, especially at higher levels of education (Jamieson and Thomas, 1974).

The other supervisor, who is perceived to be controlling by his supervisee resorts to exercise of coercive and legitimate power to impose his decisions upon his supervisee leaving little scope for resolution of conflict or negotiation. An interesting aspect of this case study was that the management style of this individual relied more upon coercive and legitimate power as he moved from a co-supervisory position to the position of a lone supervisor. As a co-supervisor, he was perceived as a supportive and communicative by his supervisee but as a supervisor he was perceived to be dominating and non-communicative. It is possible that initially as a co-supervisor, he had to compromise his authority in the interaction space with his supervisee and share it with another person. With the university legitimizing his position, he felt he could exercise more control. In response to his authoritarian mode of influencing, his supervisee reports that she undergoes sporadic engagement with research work, demotivation and emotional burden.

Autonomy for any individual is an important experience. Autonomy in decision making, enables an individual to take ownership of their actions and assume responsibility for the consequences. As an individual experiences autonomy, their motivation and self perception are heightened. With reference to this research work, theory and data both proposed that an individual's experience of autonomy is positively correlated with their intrinsic motivation towards research and self perception of academic abilities. A possible reason for the same could be that autonomy induces an individual to carefully weigh their choices and make a decision that's in their best interest.

But surviving in a power structure, any power structure, impedes autonomy. In an academic environment, which thrives on creativity, the imbalance in power might have an undesirable impact on learning, creativity and performance. At the same time, power is only as strong as the choice and desire to implement it. The power vested in him by the university is interfering only when a supervisor chooses to employ it. In this chapter the focal point of discussion were the conversations with professors and students which revealed various styles of managing a student over the duration of research course and how students responded to these styles.

On one hand was a professor who bore a disdain for hierarchy and attempted to construct his relationship with students on a level where he was not imposing on them and he ensured that they were not submitting to him out of fear owing to his superiority. The professor chose to let the student decide the direction that his research work should take and stayed in an assistive role, helping the student with academic difficulties and offering solutions which the students could accept or decline. In doing so, the supervisor's main intention was to empower and enable his students to think differently, to be academically sound and most importantly feel responsible for their work. He was of the opinion that his students evolved as much better researchers owing to this liberal approach and his sentiments were shared by his students.

It is not to say that supervisor and supervisees are at par in this relationship. By design, the relationship is hierarchical. The supervisor has years of academic and research experience over and above his supervisees. Despite this experience, the supervisor continues to learn with his students and venture into their research from their perspective. The relationship is founded on mutual respect. The professor earns respect not as a by product of his positioning in the hierarchy but due to his humility and continual commitment to the teaching and learning process. In turn, the supervisee internalizes the expectations of their supervisor and strive for academic rigor.

On the other hand, was a supervisor who exercised control over the direction that his student's research work was taking, over riding their autonomy and imposing upon them his vision for their research project. This student flailed between self doubt, emotional turmoil and on occasion, a desire to quit her research career. In terms of management strategy, a more liberal approach enabled learning, innovativeness and confidence amongst research scholars. Considering that this journey as research scholars in a university are the formative years of shaping up how well the students perform in academia, a supportive role played by the supervisor tends to have a positive impact on their self perception of academic abilities. If the goal of a research program is to train students into becoming capable researchers, then providing them an environment which enables them to think differently, to experiment and substantiate their experimentations with academic rigor might be a more productive technique. And the supervisor has a crucial role in fostering such an environment, not at the cost of his respect but by using his power with restraint.

Conclusion

This research work attempted to look into the academic motivation and self perception of research scholars enrolled in a university with special emphasis on the relationship they share with their supervisor. The theoretical framework which was employed to understand it was the principal agent model wherein the principal (the supervisor) and agent (the supervisee) work in tandem towards the task at hand (a collaborative research work). The supervisor provides a research scholar with necessary resources, expertise and guidance which are required to ensure that the task be successfully completed and new knowledge is contributed by the two of them, in collaboration, to academia. The research scholar employs these resources and provides continuous effort and devotes time towards completion of his research work.

In the theoretical frameworks which expound on the principal agent relationship, the emphasis tends to be on information asymmetries on account of the agent owing to which this relationship is riddled with inefficiencies. In order to counter or mitigate the occurrence and outcome of such inefficiencies, principal employs incentives to entice the agent to produce an optimal level of effort and to ensure that the agent does not defect. But these discussions tend to be written from the point of view of the principal. The agent is portrayed in a suspicious light as someone who wouldn't supply effort unless its in exchange for the rewards, or under the threat of punishments or with fear that he is under constant surveillance and his activities are being monitored by the principal.

This research work has tried to contribute to the existing body of work by looking at the principal agent relationship by including the point of view of agent. It begins by taking into account that the agent associates himself with the task for a purpose. And there can be varying types and levels of motivation with which agent begins collaborating with the principal. Self determination Theory posits that there can be three types of motivation- intrinsic extrinsic and amotivation which are further divided into subcategories. Categorization of intrinsic motivation is done on the basis of the desire to know, to accomplish and to experience stimulation. Extrinsic motivation is categorized into Identified, Introjected and external regulation on the basis of a decreasing locus of control and descending level of internalization respectively. Amotivated behaviors are the ones for which there is no discernable reason or outcome for which engagement with the task can be explained. By taking into account an

agent's motivation, principal can also equip himself with more information when it comes to devising a suitable incentive structure for the agent.

Secondly, this research work employed the term 'incentive structure' in a holistic fashion. With the help of literature pertaining to the use of incentives in the field of organization behavior (Tead, 1951; Barnard, 1968; Dimock and Dimock, 1964) it was gathered that there are multiple dimensions to what can be construed as incentives. On the outset, monetary rewards are the most commonly available and employed type of incentives, not only in theory but also in practice. But by engaging oneself in a task, one is not only seeking monetary remuneration for his time and effort but also satisfaction in several directions. Actions of individuals are often guided by their value systems, their innate desires and the need for social acknowledgement. Effectively, individual actions are directed to seek satisfactions for their own self and to experience integration in the world around them. Therefore, as important as monetary rewards are, incentives must also acknowledge and appreciate the actions of an individual for being guided by forces greater than money, reasons which can't be equated in terms of money.

Further, an individual seeks appreciation and acknowledgement at some level from those around him. He is especially mindful of impression management with regard to people who hold a certain significance in his life. By virtue of his sociality and being born into a social world, an individual finds it difficult to conceptualize himself without using society as a reference point. In the search for self, individual finds others and is constantly evaluating his own actions and behavior from the reference point of others. He puts himself in others' shoes and becomes the object of his own judgment as others would evaluate him or as he would evaluate others.

When analyzed from this angle, social interaction presents an opportunity to widen the horizon of the other dimensions which can be construed as incentives for an individual. Verbal and non verbal feedback, gestures, attitudes and other components of everyday communication have a social meaning attached to them. An individual seeks more information about himself by analyzing these components, especially in communication with significant others, and attempting to decipher how others perceive him. A favorable perception of others' opinion about himself also tends to have a positive impact on individual's perception of himself because human beings are socially conditioned to appropriate the affections of those around him, especially significant ones.

By adopting this definition, this research work also attempted to effect a change in the construction of agent. An agent is not a mechanistic entity who passively supplies effort in exchange of rewards from the principal or by acting out of fear of punishments and monitoring. An agent, in fact, is an active participant who is at the receiving end of these incentives but by interpreting the meaning of these incentives, he is trying to gauge what the principal's opinion of him might be. From the point of view of principal, incentives are instruments to exact maximum possible effort from the agent despite the presence of or to diminish the negative impact of information asymmetries. But from the point of view of agent, incentives are a peek into the frame of mind of the principal, the private information which the principal may not have explicitly expressed but his choice of incentives do.

This research work has tried to evaluate the working relationship between principal and agent (supervisor and supervisee) not just from an economic angle; but also by giving due importance to the aspect of interpersonal interaction between the two. The term 'incentive structure' when used in this research work also accordingly took the reflective, interpretive aspect of an agent into account. Dimensions from academic and non academic interaction between the collaborative parties which could be accounted for as incentives were tangible and intangible rewards; verbal and non verbal acknowledgement and appreciation for one's work; provision of resources, guidance and opportunities. On the basis of typology of rewards as suggested by Ryan (1983) incentives were broadly categorized as- tangible, verbal, expected, unexpected, controlling and non controlling.

The data analysis for this research work revealed that intrinsic motivation to pursue research surpassed extrinsic and amotivation. Intrinsic motivation to know was higher than intrinsic motivation to experience stimulation and both were higher than intrinsic motivation to accomplish. Extrinsic motivation identified was greater than extrinsic motivation external regulation and both were greater than extrinsic motivation introjected- representative of high internalization and autonomous motives. But, one of the most interesting findings was that extrinsic motivation was almost as high as intrinsic motivation. There appears to be a synergistic relationship between intrinsic and extrinsic motivation.

In order to explore this finding, relationship between all types of motivation, incentive structure employed by the supervisor and experience of autonomy, relatedness and competence was analyzed. It was found that intrinsic motivation exhibited a positive correlation with the subjects' experience of autonomy, relatedness and competence whereas, amotivation exhibited a negative correlation with the same. Another interesting finding emerged in the form of a

negative correlation of extrinsic motivation with the experience of competence and extrinsic motivation introjected and external regulation with relatedness.

The results pertaining to intrinsic and amotivation are in line with postulations of Self Determination Theory. A possible explanation for the negative relationship with extrinsic motivation could be seen in conjunction with the finding that incidence of identified extrinsic behaviors was higher than others. This means that with pertinence to their involvement in research, the locus of causality for the subjects emanated to a great degree from within them as opposed to externally. Even if subjects were pursuing research in order to attain some separable outcomes, there might have been a high degree of internalization of those motives due to which extrinsic behaviors shifted on the motivation continuum and bore a close semblance to intrinsically motivated behaviors.

This explanation becomes all the more plausible when its seen in conjunction with the positive correlations of intrinsic motivation with tangible, verbal, expected, unexpected incentives. An inference can be drawn that external mediation by the supervisor was enabling for intrinsically motivated behaviors. Incentives, when interpreted by the individual can either be perceived as informational or controlling. Theoretical explorations predict that intrinsically motivated behaviors ideally, bear no correspondence with external incentives or reinforcements. In fact, it has been suggested that incentives might hamper intrinsic motivation because they interfere with the subjects' capability to self regulate and engage in activities out of pure interest; by habituating them to separable rewards. But, its also likely, that informational aspect of external mediation by the supervisor conveys competence, enhances a student's experience of autonomy, and encourages them to relate with the task.

Another question which was central to the study was to explore the relationship between self perception of academic abilities and academic motivation in the light of incentives offered by the principal. The nature of academic and non academic exchange between the two was considered and carefully deliberated upon. As per this interactionist understanding of exchange between the two, supervisor attempts to modulate behavior of his supervisees with the help of incentives, and supervisees in their capacity to reflect and mentally interpret the meaning of these incentives, attempt to gauge what their supervisors' opinion might be about them.

The data revealed statistically significant differences between what the agents perceive to be qualities of an ideal researcher, how they fare on these parameters and how they perceive their supervisors' opinion about them in relation to same parameters. The statements corresponded

to dedication towards research, good academic performance in coursework, publications and participation in academic activities, ability to think and analyze critically, good command over English and the ability to produce ideas in writing and familiarity with literature and methodology relevant to one's field of study. The subject was also asked to rate themselves on a scale of 1 to 5 on their abilities as a researcher. An ideal researcher is a hypothetical construct, representative of an individual's aspiration. Against this hypothetical construct, an individual contrasts and compares his own abilities as a researcher. An individual's perception of the opinion of a significant other (supervisor in case of this research work) feeds into his own self perception of academic abilities.

The data supported the aforementioned theoretical proposition. It was found that a favorable perception of significant other and their opinion about oneself, tends to have a positive relationship with self perception of academic abilities. It was also found that self ratings exhibited a strong positive correlation with self knowledge; with perception of supervisors' opinion, self perception of academic abilities and academic performance in the coursework. With the help of reciprocal effects theory, the synergy between academic performance and academic self perception was also discussed; where prior academic self perception influences future academic performance and prior academic performance influences future academic self concept.

The theoretical framework adopted for this study also discussed about the theoretical possibility that the channel through which incentives impact motivation is by influencing agent's self perception (Benabou and Tirole, 2003). The data revealed that there was a positive correlation between self ratings and total intrinsic motivation, intrinsic motivation to know, to accomplish and to experience stimulation. No statistically significant correlations were observed with extrinsic motivation but there was a negative correlation with amotivation. There was a positive relationship between intrinsic motivation and opinion about the supervisor and self perception of academic abilities and a negative correlation with amotivation.

On the basis of results, the causality between self perception and academic motivation could not be traced, but it appears that the two move in tandem. The higher an individual's self perception of academic abilities, higher are the chances that they tend to be intrinsically motivated towards their academic endeavors. In this exercise, extrinsic motivators employed by the supervisor need not only be relevant for extrinsic motivation but can have an enabling effect on intrinsic motivation as well when devised carefully and implemented in a non controlling manner so as to appeal to the subjects' psychological needs for autonomy,

relatedness and competence. If the interpersonal relationship between supervisors and supervisees tends to be favorable, nurturing and enabling, supervisees tend to be inclined from within with their research tasks.

Implications of the study

This research work was an attempt to explore how the interpersonal relationship between research scholars and their academic supervisors impacts the academic motivation and self perception of research scholars. The data collected for this research work supported a large body of pre existing literature which emphasizes that healthy, enabling and nurturing work relationships tend to have a positive impact on self perception and on the intrinsic motivation to engage with the task. Further, verbal and tangible incentives when offered in an informational manner, while being sensitive of an individual's needs for competence, autonomy and relatedness tend to have a positive impact on an individual's motivation and self perception.

The framework adopted for this research work is applicable not only in educational institutes but also in other workplaces to improve the relationships between two collaborative parties. The paradigm of principal agent relationship is dynamic and befitting to understand many instances of social exchange between collaborating parties. In an educational institute it could be teacher student relationship, in other work places it could be employer employee relationship. But when the dynamics of this working relationship are theorized, it is often done from the point of view of the person situated upwards in hierarchy. Information asymmetries, design of incentives is driven by the motives of the power structure to extract maximum possible output from the person who is subordinate.

This research work however, attempts to draw attention to the fact that if work environments are cultivated from the point of view of agents (students, employees) there is a higher chance that productivity will be improved. As opposed to the behavioristic understanding of acquiring socially acceptable behavior with appropriate reinforcements or punishments, or the economic understanding of modelling and driving behavior with the help of incentives, it might be more effective to take into account the psychological needs and desires of the agent. If the work environment is fostering, and an agent feels that he has the autonomy to engage with the task freely, can find reasons to engage with the task beyond being reimbursed for his time and effort, can feel competent at the task and the principal supports his quest, there is a higher probability that learning and work output will improve.

Directions for future research

In this research work the working dynamics of the relationship between supervisors and supervisees was understood using the lens of principal agent relationship. At the same time, both supervisors and supervisees are operating within the structure of a university. The supervisees have obligations towards their supervisors but also towards the university. Similarly, the supervisors are academicians who are managing research scholars but are also answerable and bound by contract to the university which employs them. A multiple hierarchical system emerges wherein agency relationships can be situated within larger agency relationships.

Just as a supervisor provides academic expertise and guidance to the research scholar, by virtue of being enrolled in a particular university a research scholar can avail of many opportunities and resources. The brand name of the university, its global outreach, the quality of academic staff which it employs, the academic environment which it provides, access to library and funding are competitive characteristics which may become potential extrinsic motivators in attracting competent and driven students to pursue their education. These factors were outside the purview of current research work. But for a holistic understanding of production of new knowledge in a university space, alongside the relationship with supervisors these components pertaining to association with the university need to be accounted for.

Another dimension which can be and needs to be further explored is the engagement of academicians with universities. This is another agency relationship wherein, the two are bound to each other by contract. The academicians are indispensable resources for any university, for they not only contribute immensely to the academic culture of a university but also the brand name. An academician in a university space is provided by several incentives in the form of funding, accessible academic resources and opportunities for professional networking to further the university's purpose of creating new knowledge for the perusal of policy makers and society. At the same time, there are administrative obligations involved. This agency relationship which would have the university as a principal and its professors as agents is a promising field to further the understanding of a university space.

Another plausible direction for future research can be to understand how peer group can impact a research scholar's academic motivation and self perception. The data from this research work reveals that for 17.9% of the participants, the opinion of their peer group matters the most when it comes to their research. If the peer group is awarded the position of significant other, a

research scholar's motivation and self perception can be analyzed from a different angle. Also, the socio-economic divisions on the lines of caste and class and family background and the impact they have on conceptualization of self can be explored further in addition to the impact of incentives and interpersonal elements of relationship with supervisors.

In this research work, an attempt was made to include demographic variables such as gender, caste, religion, age, parental education level and financial status and to see if they have effect on academic motivation and self perception when accounted for as categorical variables. Although the results did not yield statistically significant research, but the author assumes full responsibility for being unable to uncover their contribution in the conceptualization of self for an individual.

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Appendix 1

Hello!

This survey is a part of my Ph.D. thesis. The questions pertain to your experience as a research scholar enrolled in JNU and might make you reflect on your journey as a Ph.D. or M.Phil. student. The nature of some of these questions might be personal. I would request you to answer them as truthfully as possible. It will take around 20 minutes to complete the survey. I assure that none of the questions will explicitly ask you to reveal your identity and all information shall remain anonymous. With your consent, we can proceed to the survey. If you have any doubts, do not hesitate to ask me.

- Gender: Male/Female/Other
- Age: Less than 25y/ 25-30y/ 30-35y/ More than 35y
- Area from which you come: Rural/ Semi-urban/ Urban
- Course: M.phil/ Ph.D
- Grades received in M.phil/ Ph.D coursework
- Amount of scholarship received:
- On a scale of 1 to 7, where do you think you stand as a researcher?
- When it comes to my research work, the person whose opinion matters the most is My supervisor/ My peer group/ My family
- Your professor is: Male/ Female/ Can't say
- Which religion do you belong to: Hindu/ Muslim/ Christian/ Sikh/ Other
- Which Social category do you belong to: General/ OBC/ SC/ST

Parental annual income slab (Please tick) :

- Up to 2 lakhs
- 2 to 5 lakhs
- More than 5 lakhs

Parental educational background:

- 10+2 and below
- Vocational courses (ITI)
- Graduation
- Post graduation and above

Please read the following statements carefully. On a scale of 1 to 5 please assign a number for each statement

Completely disagree				**Completely agree**
1	**2**	**3**	**4**	**5**

1. A good researcher feels passionate about his/her work.
2. A good researcher obtains good grades in his/her coursework.
3. A good researcher publishes his/her work extensively and participates in academic symposiums and seminars.
4. A good researcher possesses the ability to think critically.
5. A good researcher has good command over English language and can express his/her ideas fluently
6. A good researcher is well versed in literature and methodology which is relevant to his/her field.

WHY ARE YOU PURSUING RESEARCH IN JNU?

Using the scale below, indicate to what extent each of the following items presently corresponds to one of the reasons why you are pursuing research?

Completely Disagree						**Completely Agree**
1	**2**	**3**	**4**	**5**	**6**	**7**

WHY ARE YOU PURSUING RESEARCH IN JNU?

1. Because it will help me in finding a high-paying job later on.	1	2	3	4	5	6	7
2. Because I experience pleasure and satisfaction while learning new things.	1	2	3	4	5	6	7
3. Because I think that a research degree will help me better prepare for the career I have chosen.	1	2	3	4	5	6	7
4. For the intense feelings I experience when I am communicating my own ideas to others.	1	2	3	4	5	6	7
5. Honestly, I don't know; I really feel that I am wasting my time in JNU.	1	2	3	4	5	6	7
6. For the pleasure I experience while surpassing myself in my studies.	1	2	3	4	5	6	7
7. To prove to myself that I am capable of completing my Research degree.	1	2	3	4	5	6	7
8. In order to obtain a more prestigious job later on.	1	2	3	4	5	6	7
9. For the pleasure I experience when I discover new things never seen before.	1	2	3	4	5	6	7
10. Because eventually it will enable me to enter the job market in a field that I like.	1	2	3	4	5	6	7
11. For the pleasure that I experience when I read interesting authors.	1	2	3	4	5	6	7

12. I once had good reasons for coming to JNU however, now I wonder whether I should continue. 1 2 3 4 5 6 7

13. For the pleasure that I experience while I am surpassing myself in one of my personal accomplishments. 1 2 3 4 5 6 7

14. Because of the fact that when I succeed in college I feel important. 1 2 3 4 5 6 7

15. Because I want to have "the good life" later on. 1 2 3 4 5 6 7

16. For the pleasure that I experience in broadening my knowledge about topics which appeal to me. 1 2 3 4 5 6 7

17. Because this will help me make a better choice regarding my career orientation. 1 2 3 4 5 6 7

18. For the pleasure that I experience when I feel completely absorbed by what certain authors have written. 1 2 3 4 5 6 7

19. I can't see why I am enrolled in research and frankly, I couldn't care less. 1 2 3 4 5 6 7

20. For the satisfaction I feel when I am in the process of accomplishing difficult academic activities. 1 2 3 4 5 6 7

21. To show myself that I am an intelligent person. 1 2 3 4 5 6 7

22. In order to have a better salary later on. 1 2 3 4 5 6 7

23. Because my research work allows me to continue to learn About many things that interest me. 1 2 3 4 5 6 7

24. Because I believe that a few additional years of education will improve my competence as a worker. 1 2 3 4 5 6 7

25. For the "high" feeling that I experience while reading about various interesting subjects. 1 2 3 4 5 6 7

26. I don't know; I can't understand what I am doing in school. 1 2 3 4 5 6 7

27. Because research allows me to experience a personal satisfaction in my quest for excellence in my studies. 1 2 3 4 5 6 7

28. Because I want to show myself that I can succeed in my studies. 1 2 3 4 5 6 7

Please tell us something about your journey as researcher in JNU? On a scale of 1 to 5 mark the following statements in order of agreement.

Completely disagree				Completely agree
1	2	3	4	5

1. My supervisor signs my scholarship forms only if he/she is convinced that I have devoted enough time towards my research work.
2. My supervisor provides me adequate guidance and resources to acquaint myself with relevant research work.
3. My supervisor might arrange funding opportunities to help my research work if he/she feels I am talented.
4. My supervisor forwards calls for publications and major seminars and encourages me to take part
5. When my professor evaluates my written work, his/her criticism is not constructive
6. My professor gives me positive feedback on my written work and suggests ways for improvement
7. My professor publicly appreciates my capabilities as a researcher in front of other professors, academicians and other research scholars.
8. Sometimes, I have informal interactions with my professor but I find his attitude to be negative about my personal and academic opinions.
9. I feel I control the direction my research work is taking.
10. I feel my professor dismisses my academic opinions in favour of his
11. I feel I have the freedom to consult other professors for discussions about my research work.
12. I feel a personal connection to my research work.
13. I feel my research topic was more influenced by my supervisor's interests than mine
14. I think I fare poorly as a researcher in comparison to my peer group
15. I think I need to invest more time as compared to my peers to understand my subject

Tell us something about your supervisor. On a scale of 1 to 5 mark the following statements in order of agreement.

Completely disagree				Completely agree
1	2	3	4	5

1. My supervisor is a talented academician
2. My supervisor gives me adequate time to discuss my work.
3. My supervisor takes interest in my research work.
4. My supervisor tends to extend help when I am stuck in my research work
5. My supervisor extends emotional support when I am in tough life situations.
6. My supervisor is fair in his conduct towards all his students
7. My supervisor is an understanding person.

Tell us something about yourself. On a scale of 1 to 5 mark the following statements in order of agreement.

Completely disagree				Completely agree
1	2	3	4	5

1. I feel I am fully committed to my research work.
2. I feel I obtained a good GPA in my coursework which reflects my academic capability as a researcher
3. I feel I have actively published my work and participated in seminars/symposiums
4. I feel I possess the skills to critically analyze and think about my research work.
5. I feel happy with my command on English and how I produce my ideas in writing.
6. I feel I have devoted adequate time to appraise myself with relevant literature and methodology to produce good research work.
7. I feel I am not cut out for research
8. I feel my supervisor doubts my dedication and commitment to my research work.
9. I feel my supervisor is dissatisfied by my grades in coursework and feels I should have performed better academically
10. I feel my supervisor thinks I don't possess the academic skills necessary to be a good researcher.
11. I feel my supervisor thinks I don't do enough to publish my work and interact in academic circles.
12. I feel my supervisor is unhappy with my writing skills and command over english.
13. I feel my supervisor thinks I don't read enough literature and need to train myself better in methodology
14. I think of myself as a talented person
15. I work hard to establish myself in the field of research
16. I feel I take initiative when suitable opportunities arrive.

17. I feel my interests keep fluctuating.
18. I feel inferior as compared to others in my field
19. I feel I value others opinion more than mine
20. It is important to me that people have a positive opinion of me.
21. If others' opinion of me is negative, I feel disturbed by it
22. I take criticism lightly

How would you rate yourself as a researcher (End)

Very Good				**Very Poor**
1	**2**	**3**	**4**	**5**

Over the course of research, we all share a working and non working relationship with our supervisors. Our interactions are not only academic, but we become emotionally involved and affected in our conversations with supervisors. Please describe your relationship with your supervisor.

Appendix 2

A2.1 Paired T test results for intrinsic motivation and its sub categories

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Intrinsic motivation to know	23.99	140	4.300	.363
	Intrinsic motivation to experience stimulation	22.04	140	4.775	.404

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Intrinsic motivation to know & Intrinsic motivation to experience stimulation	140	.789	.000

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Intrinsic motivation to know - Intrinsic motivation to experience stimulation	1.950	2.983	.252	1.452	2.448	7.735	139	.000

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Intrinsic motivation to accomplish	19.99	140	4.999	.422
	Intrinsic motivation to experience stimulation	22.04	140	4.775	.404

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Intrinsic motivation to accomplish & Intrinsic motivation to experience stimulation	140	.741	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Intrinsic motivation to accomplish - Intrinsic motivation to experience stimulation	-2.043	3.524	.298	-2.632	-1.454	-6.860	139	.000

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Intrinsic motivation to know	23.99	140	4.300	.363
	Intrinsic motivation to accomplish	19.99	140	4.999	.422

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Intrinsic motivation to know & Intrinsic motivation to accomplish	140	.652	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Intrinsic motivation to know - Intrinsic motivation to accomplish	3.993	3.928	.332	3.336	4.649	12.027	139	.000

A2.2 Paired T test results for extrinsic motivation and its sub categories

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Extrinsic motivation Introjected	15.47	140	6.383	.539
	Extrinsic motivation External regulation	17.92	140	5.663	.479

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Extrinsic motivation Introjected - Extrinsic motivation External regulation	-2.450	6.829	.577	-3.591	-1.309	-4.245	139	.000

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Extrinsic motivation Identified	20.60	140	5.049	.427
	Extrinsic motivation External regulation	17.92	140	5.663	.479

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Extrinsic motivation Identified & Extrinsic motivation External regulation	140	.739	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Extrinsic motivation Identified - Extrinsic motivation External regulation	2.679	3.911	.331	2.025	3.332	8.103	139	.000

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Extrinsic motivation Identified	20.60	140	5.049	.427
	Extrinsic motivation Introjected	15.47	140	6.383	.539

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Extrinsic motivation Identified & Extrinsic motivation Introjected	140	.374	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	Extrinsic motivation Identified - Extrinsic motivation Introjected	5.129	6.489	.548	4.044	6.213	9.351	139	.000

A2.3 Paired T test results for intrinsic motivation, extrinsic motivation and amotivation

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Extrinsic Motivation	53.99	140	13.816	1.168
	Amotivation	10.08	140	5.923	.501

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Extrinsic Motivation & Amotivation	140	.105	.217

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	Extrinsic Motivation - Amotivation	43.914	14.449	1.221	41.500	46.329	35.961	139	.000

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Intrinsic Motivation	66.01	140	12.731	1.076
	Amotivation	10.08	140	5.923	.501

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Intrinsic Motivation & Amotivation	140	-.346	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Intrinsic Motivation - Amotivation	55.936	15.791	1.335	53.297	58.574	41.911	139	.000

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Intrinsic Motivation	66.01	140	12.731	1.076
	Extrinsic Motivation	53.99	140	13.816	1.168

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Intrinsic Motivation & Extrinsic Motivation	140	.407	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Intrinsic Motivation - Extrinsic Motivation	12.021	14.487	1.224	9.601	14.442	9.818	139	.000

A2.4 Correlations between motivation and autonomy, relatedness and competence

Correlations

		Intrinsic Motivation	Autonomy	Relatedness	Competence
Intrinsic Motivation	Pearson Correlation	1	.309**	.241**	.168*
	Sig. (2-tailed)		.000	.004	.048
	N	140	140	140	140
Autonomy	Pearson Correlation	.309**	1	.512**	.119
	Sig. (2-tailed)	.000		.000	.161
	N	140	140	140	140
Relatedness	Pearson Correlation	.241**	.512**	1	.268**
	Sig. (2-tailed)	.004	.000		.001

	N	140	140	140	140
Competence	Pearson Correlation	.168*	.119	.268**	1
	Sig. (2-tailed)	.048	.161	.001	
	N	140	140	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

		Intrinsic motivation to experience stimulation	Autonomy	Relatedness	Competence
Intrinsic motivation to experience stimulation	Pearson Correlation	1	.298**	.259**	.143
	Sig. (2-tailed)		.000	.002	.091
	N	140	140	140	140
Autonomy	Pearson Correlation	.298**	1	.512**	.119
	Sig. (2-tailed)	.000		.000	.161
	N	140	140	140	140
Relatedness	Pearson Correlation	.259**	.512**	1	.268**
	Sig. (2-tailed)	.002	.000		.001
	N	140	140	140	140
Competence	Pearson Correlation	.143	.119	.268**	1
	Sig. (2-tailed)	.091	.161	.001	
	N	140	140	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Intrinsic motivation to accomplish	Autonomy	Relatedness	Competence
Intrinsic motivation to accomplish	Pearson Correlation	1	.232**	.126	.085
	Sig. (2-tailed)		.006	.137	.318
	N	140	140	140	140
Autonomy	Pearson Correlation	.232**	1	.512**	.119
	Sig. (2-tailed)	.006		.000	.161
	N	140	140	140	140
Relatedness	Pearson Correlation	.126	.512**	1	.268**
	Sig. (2-tailed)	.137	.000		.001
	N	140	140	140	140
Competence	Pearson Correlation	.085	.119	.268**	1
	Sig. (2-tailed)	.318	.161	.001	

	N	140	140	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Intrinsic motivation to know	Autonomy	Relatedness	Competence
Intrinsic motivation to know	Pearson Correlation	1	.314**	.279**	.238**
	Sig. (2-tailed)		.000	.001	.005
	N	140	140	140	140
Autonomy	Pearson Correlation	.314**	1	.512**	.119
	Sig. (2-tailed)	.000		.000	.161
	N	140	140	140	140
Relatedness	Pearson Correlation	.279**	.512**	1	.268**
	Sig. (2-tailed)	.001	.000		.001
	N	140	140	140	140
Competence	Pearson Correlation	.238**	.119	.268**	1
	Sig. (2-tailed)	.005	.161	.001	
	N	140	140	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Amotivation	Autonomy	Relatedness	Competence
Amotivation	Pearson Correlation	1	-.274**	-.374**	-.428**
	Sig. (2-tailed)		.001	.000	.000
	N	140	140	140	140
Autonomy	Pearson Correlation	-.274**	1	.512**	.119
	Sig. (2-tailed)	.001		.000	.161
	N	140	140	140	140
Relatedness	Pearson Correlation	-.374**	.512**	1	.268**
	Sig. (2-tailed)	.000	.000		.001
	N	140	140	140	140
Competence	Pearson Correlation	-.428**	.119	.268**	1
	Sig. (2-tailed)	.000	.161	.001	
	N	140	140	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Extrinsic motivation External regulation	Autonomy	Relatedness	Competence
Extrinsic motivation External regulation	Pearson Correlation	1	-.113	-.193*	-.145
	Sig. (2-tailed)		.182	.022	.087
	N	140	140	140	140
Autonomy	Pearson Correlation	-.113	1	.512**	.119
	Sig. (2-tailed)	.182		.000	.161
	N	140	140	140	140
Relatedness	Pearson Correlation	-.193*	.512**	1	.268**
	Sig. (2-tailed)	.022	.000		.001
	N	140	140	140	140
Competence	Pearson Correlation	-.145	.119	.268**	1
	Sig. (2-tailed)	.087	.161	.001	
	N	140	140	140	140

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Extrinsic motivation Introjected	Autonomy	Relatedness	Competence
Extrinsic motivation Introjected	Pearson Correlation	1	-.069	-.182*	-.305**
	Sig. (2-tailed)		.420	.032	.000
	N	140	140	140	140
Autonomy	Pearson Correlation	-.069	1	.512**	.119
	Sig. (2-tailed)	.420		.000	.161
	N	140	140	140	140
Relatedness	Pearson Correlation	-.182*	.512**	1	.268**
	Sig. (2-tailed)	.032	.000		.001
	N	140	140	140	140
Competence	Pearson Correlation	-.305**	.119	.268**	1
	Sig. (2-tailed)	.000	.161	.001	
	N	140	140	140	140

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

A2.5 The impact of incentives on intrinsic, extrinsic and amotivation

Correlations

		Intrinsic Motivation	Tangible Incentives	Verbal Incentives	Expected incentives	Unexpected Incentives	Controlling Incentives	Non Controlling Incentives
Intrinsic Motivation	Pearson Correlation	1	.221**	.199*	.263**	.177*	.161	.137
	Sig. (2-tailed)		.009	.018	.002	.037	.057	.106
	N	140	140	140	140	140	140	140
Tangible Incentives	Pearson Correlation	.221**	1	.507**	.809**	.765**	.845**	.728**
	Sig. (2-tailed)	.009		.000	.000	.000	.000	.000
	N	140	140	140	140	140	140	140
Verbal Incentives	Pearson Correlation	.199*	.507**	1	.719**	.814**	.707**	.707**
	Sig. (2-tailed)	.018	.000		.000	.000	.000	.000
	N	140	140	140	140	140	140	140
Expected incentives	Pearson Correlation	.263**	.809**	.719**	1	.604**	.822**	.661**
	Sig. (2-tailed)	.002	.000	.000		.000	.000	.000
	N	140	140	140	140	140	140	140
Unexpected Incentives	Pearson Correlation	.177*	.765**	.814**	.604**	1	.787**	.812**
	Sig. (2-tailed)	.037	.000	.000	.000		.000	.000
	N	140	140	140	140	140	140	140
Controlling Incentives	Pearson Correlation	.161	.845**	.707**	.822**	.787**	1	.583**
	Sig. (2-tailed)	.057	.000	.000	.000	.000		.000
	N	140	140	140	140	140	140	140

Non Controlling Incentives	Pearson Correlation	.137	.728**	.707**	.661**	.812**	.583**	1
	Sig. (2-tailed)	.106	.000	.000	.000	.000	.000	
	N	140	140	140	140	140	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

		Intrinsic Motivation	Tangible Expected Controlling Rewards	Tangible expected Non controlling Rewards	Tangible Unexpected Controlling Rewards	Tangible unexpected Non controlling Rewards	Verbal Expected Controlling Rewards	Verbal Expected Non controlling Rewards	Verbal Unexpected Controlling Rewards	Verbal Unexpected Non Controlling Rewards
Intrinsic Motivation	Pearson Correlation	1	.113	.253**	.035	.221**	.049	.289**	.199*	.035
	Sig. (2-tailed)		.182	.003	.682	.009	.565	.001	.019	.685
	N	140	140	140	140	140	140	140	140	140
Tangible Expected Controlling Rewards	Pearson Correlation	.113	1	.245**	.119	.106	-.046	.013	.195*	-.169*
	Sig. (2-tailed)	.182		.003	.162	.211	.587	.875	.021	.046
	N	140	140	140	140	140	140	140	140	140
Tangible expected Non controlling Rewards	Pearson Correlation	.253**	.245**	1	.494**	.534**	.335**	.564**	.392**	.178*
	Sig. (2-tailed)	.003	.003		.000	.000	.000	.000	.000	.035
	N	140	140	140	140	140	140	140	140	140
Tangible Unexpected	Pearson Correlation	.035	.119	.494**	1	.470**	.211*	.343**	.460**	.095

Controlling Rewards	Sig. (2-tailed)	.682	.162	.000		.000	.012	.000	.000	.267
	N	140	140	140	140	140	140	140	140	140
Tangible unexpected	Pearson Correlation	.221**	.106	.534**	.470**	1	.274**	.511**	.536**	.188*
Non controlling Rewards	Sig. (2-tailed)	.009	.211	.000	.000		.001	.000	.000	.026
	N	140	140	140	140	140	140	140	140	140
Verbal Expected	Pearson Correlation	.049	-.046	.335**	.211*	.274**	1	.376**	.192*	.371**
Controlling Rewards	Sig. (2-tailed)	.565	.587	.000	.012	.001		.000	.023	.000
	N	140	140	140	140	140	140	140	140	140
Verbal Expected	Pearson Correlation	.289**	.013	.564**	.343**	.511**	.376**	1	.573**	.289**
Non controlling Rewards	Sig. (2-tailed)	.001	.875	.000	.000	.000	.000		.000	.001
	N	140	140	140	140	140	140	140	140	140
Verbal Unexpected	Pearson Correlation	.199*	.195*	.392**	.460**	.536**	.192*	.573**	1	.273**
Controlling Rewards	Sig. (2-tailed)	.019	.021	.000	.000	.000	.023	.000		.001
	N	140	140	140	140	140	140	140	140	140
Verbal Unexpected	Pearson Correlation	.035	-.169*	.178*	.095	.188*	.371**	.289**	.273**	1

Non Controlling Rewards	Sig. (2-tailed)		.685	.046	.035	.267	.026	.000	.001	.001	
	N		140	140	140	140	140	140	140	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

		Extrinsic Motivation	Tangible Incentives	Verbal Incentives	Expected incentives	Unexpected Incentives	Controlling Incentives	Non Controlling Incentives
Extrinsic Motivation	Pearson Correlation	1	.167*	-.087	.044	.047	.087	.029
	Sig. (2-tailed)		.049	.307	.604	.584	.308	.734
	N	140	140	140	140	140	140	140
Tangible Incentives	Pearson Correlation	.167*	1	.507**	.809**	.765**	.845**	.728**
	Sig. (2-tailed)	.049		.000	.000	.000	.000	.000
	N	140	140	140	140	140	140	140
Verbal Incentives	Pearson Correlation	-.087	.507**	1	.719**	.814**	.707**	.707**
	Sig. (2-tailed)	.307	.000		.000	.000	.000	.000
	N	140	140	140	140	140	140	140
Expected incentives	Pearson Correlation	.044	.809**	.719**	1	.604**	.822**	.661**
	Sig. (2-tailed)	.604	.000	.000		.000	.000	.000
	N	140	140	140	140	140	140	140
Unexpected Incentives	Pearson Correlation	.047	.765**	.814**	.604**	1	.787**	.812**
	Sig. (2-tailed)	.584	.000	.000	.000		.000	.000
	N	140	140	140	140	140	140	140
Controlling Incentives	Pearson Correlation	.087	.845**	.707**	.822**	.787**	1	.583**
	Sig. (2-tailed)	.308	.000	.000	.000	.000		.000
	N	140	140	140	140	140	140	140
Non Controlling Incentives	Pearson Correlation	.029	.728**	.707**	.661**	.812**	.583**	1
	Sig. (2-tailed)	.734	.000	.000	.000	.000	.000	
	N	140	140	140	140	140	140	140

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Extrinsic Motivation	Tangible Expected Controlling Rewards	Tangible expected Non controlling Rewards	Tangible Unexpected Controlling Rewards	Tangible unexpected Non controlling Rewards	Verbal Expected Controlling Rewards	Verbal Expected Non controlling Rewards	Verbal Unexpected Controlling Rewards	Verbal Unexpected Non Controlling Rewards
Extrinsic Motivation	Pearson Correlation	1	.205*	.096	.046	.113	-.139	-.081	.082	-.127
	Sig. (2-tailed)		.015	.260	.591	.185	.101	.339	.335	.136
	N	140	140	140	140	140	140	140	140	140
Tangible Expected Controlling Rewards	Pearson Correlation	.205*	1	.245**	.119	.106	-.046	.013	.195*	-.169*
	Sig. (2-tailed)	.015		.003	.162	.211	.587	.875	.021	.046
	N	140	140	140	140	140	140	140	140	140
Tangible expected Non controlling Rewards	Pearson Correlation	.096	.245**	1	.494**	.534**	.335**	.564**	.392**	.178*
	Sig. (2-tailed)	.260	.003		.000	.000	.000	.000	.000	.035
	N	140	140	140	140	140	140	140	140	140
Tangible Unexpected Controlling Rewards	Pearson Correlation	.046	.119	.494**	1	.470**	.211*	.343**	.460**	.095
	Sig. (2-tailed)	.591	.162	.000		.000	.012	.000	.000	.267
	N	140	140	140	140	140	140	140	140	140
Tangible unexpected Non controlling Rewards	Pearson Correlation	.113	.106	.534**	.470**	1	.274**	.511**	.536**	.188*
	Sig. (2-tailed)	.185	.211	.000	.000		.001	.000	.000	.026
	N	140	140	140	140	140	140	140	140	140
Verbal Expected Controlling Rewards	Pearson Correlation	-.139	-.046	.335**	.211*	.274**	1	.376**	.192*	.371**
	Sig. (2-tailed)	.101	.587	.000	.012	.001		.000	.023	.000
	N	140	140	140	140	140	140	140	140	140
Verbal Expected Non controlling Rewards	Pearson Correlation	-.081	.013	.564**	.343**	.511**	.376**	1	.573**	.289**
	Sig. (2-tailed)	.339	.875	.000	.000	.000	.000		.000	.001

	N	140	140	140	140	140	140	140	140	140
Verbal Unexpected Controlling Rewards	Pearson Correlation	.082	.195*	.392**	.460**	.536**	.192*	.573**	1	.273**
	Sig. (2-tailed)	.335	.021	.000	.000	.000	.023	.000		.001
	N	140	140	140	140	140	140	140	140	140
Verbal Unexpected Non Controlling Rewards	Pearson Correlation	-.127	-.169*	.178*	.095	.188*	.371**	.289**	.273**	1
	Sig. (2-tailed)	.136	.046	.035	.267	.026	.000	.001	.001	
	N	140	140	140	140	140	140	140	140	140

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Intrinsic motivation to know	Tangible Incentives	Verbal Incentives	Expected incentives	Unexpected Incentives	Controlling Incentives	Non Controlling Incentives
Intrinsic motivation to know	Pearson Correlation	1	.181*	.196*	.240**	.154	.090	.160
	Sig. (2-tailed)		.032	.020	.004	.070	.291	.059
	N	140	140	140	140	140	140	140
Tangible Incentives	Pearson Correlation	.181*	1	.507**	.809**	.765**	.845**	.728**
	Sig. (2-tailed)	.032		.000	.000	.000	.000	.000
	N	140	140	140	140	140	140	140
Verbal Incentives	Pearson Correlation	.196*	.507**	1	.719**	.814**	.707**	.707**
	Sig. (2-tailed)	.020	.000		.000	.000	.000	.000
	N	140	140	140	140	140	140	140
Expected incentives	Pearson Correlation	.240**	.809**	.719**	1	.604**	.822**	.661**
	Sig. (2-tailed)	.004	.000	.000		.000	.000	.000
	N	140	140	140	140	140	140	140
Unexpected Incentives	Pearson Correlation	.154	.765**	.814**	.604**	1	.787**	.812**
	Sig. (2-tailed)	.070	.000	.000	.000		.000	.000
	N	140	140	140	140	140	140	140
Controlling Incentives	Pearson Correlation	.090	.845**	.707**	.822**	.787**	1	.583**
	Sig. (2-tailed)	.291	.000	.000	.000	.000		.000
	N	140	140	140	140	140	140	140
Non Controlling Incentives	Pearson Correlation	.160	.728**	.707**	.661**	.812**	.583**	1
	Sig. (2-tailed)	.059	.000	.000	.000	.000	.000	
	N	140	140	140	140	140	140	140

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Intrinsic motivation to know	Tangible Expected Controlling Rewards	Tangible expected Non controlling Rewards	Tangible Unexpected Controlling Rewards	Tangible unexpected Non controlling Rewards	Verbal Expected Controlling Rewards	Verbal Expected Non controlling Rewards	Verbal Unexpected Controlling Rewards	Verbal Unexpected Non Controlling Rewards
Intrinsic motivation to know	Pearson Correlation	1	.042	.256**	.013	.203*	.009	.353**	.156	.055
	Sig. (2-tailed)		.624	.002	.876	.016	.914	.000	.066	.520
	N	140	140	140	140	140	140	140	140	140
Tangible Expected Controlling Rewards	Pearson Correlation	.042	1	.245**	.119	.106	-.046	.013	.195*	-.169*
	Sig. (2-tailed)	.624		.003	.162	.211	.587	.875	.021	.046
	N	140	140	140	140	140	140	140	140	140
Tangible expected Non controlling Rewards	Pearson Correlation	.256**	.245**	1	.494**	.534**	.335**	.564**	.392**	.178*
	Sig. (2-tailed)	.002	.003		.000	.000	.000	.000	.000	.035
	N	140	140	140	140	140	140	140	140	140
Tangible Unexpected Controlling Rewards	Pearson Correlation	.013	.119	.494**	1	.470**	.211*	.343**	.460**	.095
	Sig. (2-tailed)	.876	.162	.000		.000	.012	.000	.000	.267
	N	140	140	140	140	140	140	140	140	140
Tangible unexpected Non controlling Rewards	Pearson Correlation	.203*	.106	.534**	.470**	1	.274**	.511**	.536**	.188*
	Sig. (2-tailed)	.016	.211	.000	.000		.001	.000	.000	.026
	N	140	140	140	140	140	140	140	140	140
Verbal Expected Controlling Rewards	Pearson Correlation	.009	-.046	.335**	.211*	.274**	1	.376**	.192*	.371**
	Sig. (2-tailed)	.914	.587	.000	.012	.001		.000	.023	.000
	N	140	140	140	140	140	140	140	140	140
Verbal Expected Non controlling Rewards	Pearson Correlation	.353**	.013	.564**	.343**	.511**	.376**	1	.573**	.289**
	Sig. (2-tailed)	.000	.875	.000	.000	.000	.000		.000	.001

	N	140	140	140	140	140	140	140	140	140
Verbal Unexpected Controlling Rewards	Pearson Correlation	.156	.195*	.392**	.460**	.536**	.192*	.573**	1	.273**
	Sig. (2-tailed)	.066	.021	.000	.000	.000	.023	.000		.001
	N	140	140	140	140	140	140	140	140	140
Verbal Unexpected Non Controlling Rewards	Pearson Correlation	.055	-.169*	.178*	.095	.188*	.371**	.289**	.273**	1
	Sig. (2-tailed)	.520	.046	.035	.267	.026	.000	.001	.001	
	N	140	140	140	140	140	140	140	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

		Intrinsic motivation to accomplish	Tangible Incentives	Verbal Incentives	Expected incentives	Unexpected Incentives	Controlling Incentives	Non Controlling Incentives
Intrinsic motivation to accomplish	Pearson Correlation	1	.201*	.168*	.229**	.158	.190*	.089
	Sig. (2-tailed)		.017	.047	.007	.062	.024	.294
	N	140	140	140	140	140	140	140
Tangible Incentives	Pearson Correlation	.201*	1	.507**	.809**	.765**	.845**	.728**
	Sig. (2-tailed)	.017		.000	.000	.000	.000	.000
	N	140	140	140	140	140	140	140
Verbal Incentives	Pearson Correlation	.168*	.507**	1	.719**	.814**	.707**	.707**
	Sig. (2-tailed)	.047	.000		.000	.000	.000	.000
	N	140	140	140	140	140	140	140
Expected incentives	Pearson Correlation	.229**	.809**	.719**	1	.604**	.822**	.661**
	Sig. (2-tailed)	.007	.000	.000		.000	.000	.000
	N	140	140	140	140	140	140	140
Unexpected Incentives	Pearson Correlation	.158	.765**	.814**	.604**	1	.787**	.812**
	Sig. (2-tailed)	.062	.000	.000	.000		.000	.000
	N	140	140	140	140	140	140	140
Controlling Incentives	Pearson Correlation	.190*	.845**	.707**	.822**	.787**	1	.583**
	Sig. (2-tailed)	.024	.000	.000	.000	.000		.000
	N	140	140	140	140	140	140	140
Non Controlling Incentives	Pearson Correlation	.089	.728**	.707**	.661**	.812**	.583**	1
	Sig. (2-tailed)	.294	.000	.000	.000	.000	.000	
	N	140	140	140	140	140	140	140

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Intrinsic motivation to accomplish	Tangible Expected Controlling Rewards	Tangible expected Non controlling Rewards	Tangible Unexpected Controlling Rewards	Tangible unexpected Non controlling Rewards	Verbal Expected Controlling Rewards	Verbal Expected Non controlling Rewards	Verbal Unexpected Controlling Rewards	Verbal Unexpected Non Controlling Rewards
Intrinsic motivation to accomplish	Pearson Correlation	1	.140	.191*	.052	.180*	.110	.157	.170*	.038
	Sig. (2-tailed)		.099	.024	.540	.034	.196	.064	.045	.658
	N	140	140	140	140	140	140	140	140	140
Tangible Expected Controlling Rewards	Pearson Correlation	.140	1	.245**	.119	.106	-.046	.013	.195*	-.169*
	Sig. (2-tailed)	.099		.003	.162	.211	.587	.875	.021	.046
	N	140	140	140	140	140	140	140	140	140
Tangible expected Non controlling Rewards	Pearson Correlation	.191*	.245**	1	.494**	.534**	.335**	.564**	.392**	.178*
	Sig. (2-tailed)	.024	.003		.000	.000	.000	.000	.000	.035
	N	140	140	140	140	140	140	140	140	140
Tangible Unexpected Controlling Rewards	Pearson Correlation	.052	.119	.494**	1	.470**	.211*	.343**	.460**	.095
	Sig. (2-tailed)	.540	.162	.000		.000	.012	.000	.000	.267
	N	140	140	140	140	140	140	140	140	140
Tangible unexpected Non controlling Rewards	Pearson Correlation	.180*	.106	.534**	.470**	1	.274**	.511**	.536**	.188*
	Sig. (2-tailed)	.034	.211	.000	.000		.001	.000	.000	.026
	N	140	140	140	140	140	140	140	140	140
Verbal Expected Controlling Rewards	Pearson Correlation	.110	-.046	.335**	.211*	.274**	1	.376**	.192*	.371**
	Sig. (2-tailed)	.196	.587	.000	.012	.001		.000	.023	.000
	N	140	140	140	140	140	140	140	140	140
Verbal Expected Non controlling Rewards	Pearson Correlation	.157	.013	.564**	.343**	.511**	.376**	1	.573**	.289**
	Sig. (2-tailed)	.064	.875	.000	.000	.000	.000		.000	.001

	N	140	140	140	140	140	140	140	140	140
Verbal Unexpected Controlling Rewards	Pearson Correlation	.170*	.195*	.392**	.460**	.536**	.192*	.573**	1	.273**
	Sig. (2-tailed)	.045	.021	.000	.000	.000	.023	.000		.001
	N	140	140	140	140	140	140	140	140	140
Verbal Unexpected Non Controlling Rewards	Pearson Correlation	.038	-.169*	.178*	.095	.188*	.371**	.289**	.273**	1
	Sig. (2-tailed)	.658	.046	.035	.267	.026	.000	.001	.001	
	N	140	140	140	140	140	140	140	140	140

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Intrinsic motivation to experience stimulation	Tangible Incentives	Verbal Incentives	Expected incentives	Unexpected Incentives	Controlling Incentives	Non Controlling Incentives
Intrinsic motivation to experience stimulation	Pearson Correlation	1	.216*	.178*	.246**	.167*	.150	.129
	Sig. (2-tailed)		.010	.035	.003	.048	.078	.129
	N	140	140	140	140	140	140	140
Tangible Incentives	Pearson Correlation	.216*	1	.507**	.809**	.765**	.845**	.728**
	Sig. (2-tailed)	.010		.000	.000	.000	.000	.000
	N	140	140	140	140	140	140	140
Verbal Incentives	Pearson Correlation	.178*	.507**	1	.719**	.814**	.707**	.707**
	Sig. (2-tailed)	.035	.000		.000	.000	.000	.000
	N	140	140	140	140	140	140	140
Expected incentives	Pearson Correlation	.246**	.809**	.719**	1	.604**	.822**	.661**
	Sig. (2-tailed)	.003	.000	.000		.000	.000	.000
	N	140	140	140	140	140	140	140
Unexpected Incentives	Pearson Correlation	.167*	.765**	.814**	.604**	1	.787**	.812**
	Sig. (2-tailed)	.048	.000	.000	.000		.000	.000
	N	140	140	140	140	140	140	140
Controlling Incentives	Pearson Correlation	.150	.845**	.707**	.822**	.787**	1	.583**
	Sig. (2-tailed)	.078	.000	.000	.000	.000		.000
	N	140	140	140	140	140	140	140
Non Controlling Incentives	Pearson Correlation	.129	.728**	.707**	.661**	.812**	.583**	1
	Sig. (2-tailed)	.129	.000	.000	.000	.000	.000	
	N	140	140	140	140	140	140	140

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Intrinsic motivation to experience stimulation	Tangible Expected Controlling Rewards	Tangible expected Non controlling Rewards	Tangible Unexpected Controlling Rewards	Tangible unexpected Non controlling Rewards	Verbal Expected Controlling Rewards	Verbal Expected Non controlling Rewards	Verbal Unexpected Controlling Rewards	Verbal Unexpected Non Controlling Rewards
Intrinsic motivation to experience stimulation	Pearson Correlation	1	.118	.244**	.027	.218**	.007	.288**	.211*	.003
	Sig. (2-tailed)		.165	.004	.754	.010	.933	.001	.012	.969
	N	140	140	140	140	140	140	140	140	140
Tangible Expected Controlling Rewards	Pearson Correlation	.118	1	.245**	.119	.106	-.046	.013	.195*	-.169*
	Sig. (2-tailed)	.165		.003	.162	.211	.587	.875	.021	.046
	N	140	140	140	140	140	140	140	140	140
Tangible expected Non controlling Rewards	Pearson Correlation	.244**	.245**	1	.494**	.534**	.335**	.564**	.392**	.178*
	Sig. (2-tailed)	.004	.003		.000	.000	.000	.000	.000	.035
	N	140	140	140	140	140	140	140	140	140
Tangible Unexpected Controlling Rewards	Pearson Correlation	.027	.119	.494**	1	.470**	.211*	.343**	.460**	.095
	Sig. (2-tailed)	.754	.162	.000		.000	.012	.000	.000	.267
	N	140	140	140	140	140	140	140	140	140
Tangible unexpected Non controlling Rewards	Pearson Correlation	.218**	.106	.534**	.470**	1	.274**	.511**	.536**	.188*
	Sig. (2-tailed)	.010	.211	.000	.000		.001	.000	.000	.026
	N	140	140	140	140	140	140	140	140	140
Verbal Expected Controlling Rewards	Pearson Correlation	.007	-.046	.335**	.211*	.274**	1	.376**	.192*	.371**
	Sig. (2-tailed)	.933	.587	.000	.012	.001		.000	.023	.000
	N	140	140	140	140	140	140	140	140	140
	Pearson Correlation	.288**	.013	.564**	.343**	.511**	.376**	1	.573**	.289**

Verbal Expected Non controlling Rewards	Sig. (2-tailed)	.001	.875	.000	.000	.000	.000		.000	.001
	N	140	140	140	140	140	140	140	140	140
Verbal Unexpected Controlling Rewards	Pearson Correlation	.211*	.195*	.392**	.460**	.536**	.192*	.573**	1	.273**
	Sig. (2-tailed)	.012	.021	.000	.000	.000	.023	.000		.001
	N	140	140	140	140	140	140	140	140	140
Verbal Unexpected Non Controlling Rewards	Pearson Correlation	.003	-.169*	.178*	.095	.188*	.371**	.289**	.273**	1
	Sig. (2-tailed)	.969	.046	.035	.267	.026	.000	.001	.001	
	N	140	140	140	140	140	140	140	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

		Extrinsic motivation Introjected	Tangible Expected Controlling Rewards	Tangible expected Non controlling Rewards	Tangible Unexpected Controlling Rewards	Tangible unexpected Non controlling Rewards	Verbal Expected Controlling Rewards	Verbal Expected Non controlling Rewards	Verbal Unexpected Controlling Rewards	Verbal Unexpected Non Controlling Rewards
Extrinsic motivation Introjected	Pearson Correlation	1	.172*	.122	.089	.063	.037	-.043	.060	-.097
	Sig. (2-tailed)		.043	.150	.296	.458	.662	.616	.480	.255
	N	140	140	140	140	140	140	140	140	140
Tangible Expected Controlling Rewards	Pearson Correlation	.172*	1	.245**	.119	.106	-.046	.013	.195*	-.169*
	Sig. (2-tailed)	.043		.003	.162	.211	.587	.875	.021	.046
	N	140	140	140	140	140	140	140	140	140
Tangible expected Non controlling Rewards	Pearson Correlation	.122	.245**	1	.494**	.534**	.335**	.564**	.392**	.178*
	Sig. (2-tailed)	.150	.003		.000	.000	.000	.000	.000	.035
	N	140	140	140	140	140	140	140	140	140
Tangible Unexpected Controlling Rewards	Pearson Correlation	.089	.119	.494**	1	.470**	.211*	.343**	.460**	.095
	Sig. (2-tailed)	.296	.162	.000		.000	.012	.000	.000	.267

	N	140	140	140	140	140	140	140	140	140
Tangible unexpected Non controlling Rewards	Pearson Correlation	.063	.106	.534**	.470**	1	.274**	.511**	.536**	.188*
	Sig. (2-tailed)	.458	.211	.000	.000		.001	.000	.000	.026
	N	140	140	140	140	140	140	140	140	140
Verbal Expected Controlling Rewards	Pearson Correlation	.037	-.046	.335**	.211*	.274**	1	.376**	.192*	.371**
	Sig. (2-tailed)	.662	.587	.000	.012	.001		.000	.023	.000
	N	140	140	140	140	140	140	140	140	140
Verbal Expected Non controlling Rewards	Pearson Correlation	-.043	.013	.564**	.343**	.511**	.376**	1	.573**	.289**
	Sig. (2-tailed)	.616	.875	.000	.000	.000	.000		.000	.001
	N	140	140	140	140	140	140	140	140	140
Verbal Unexpected Controlling Rewards	Pearson Correlation	.060	.195*	.392**	.460**	.536**	.192*	.573**	1	.273**
	Sig. (2-tailed)	.480	.021	.000	.000	.000	.023	.000		.001
	N	140	140	140	140	140	140	140	140	140
Verbal Unexpected Non Controlling Rewards	Pearson Correlation	-.097	-.169*	.178*	.095	.188*	.371**	.289**	.273**	1
	Sig. (2-tailed)	.255	.046	.035	.267	.026	.000	.001	.001	
	N	140	140	140	140	140	140	140	140	140

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Extrinsic motivation Identified	Tangible Expected Controlling Rewards	Tangible expected Non controlling Rewards	Tangible Unexpected Controlling Rewards	Tangible unexpected Non controlling Rewards	Verbal Expected Controlling Rewards	Verbal Expected Non controlling Rewards	Verbal Unexpected Controlling Rewards	Verbal Unexpected Non Controlling Rewards
Extrinsic motivation Identified	Pearson Correlation	1	.146	.152	.013	.150	-.173*	.046	.118	-.075
	Sig. (2-tailed)		.086	.074	.880	.077	.041	.591	.164	.379
	N	140	140	140	140	140	140	140	140	140
Tangible Expected Controlling Rewards	Pearson Correlation	.146	1	.245**	.119	.106	-.046	.013	.195*	-.169*
	Sig. (2-tailed)	.086		.003	.162	.211	.587	.875	.021	.046
	N	140	140	140	140	140	140	140	140	140
Tangible expected Non controlling Rewards	Pearson Correlation	.152	.245**	1	.494**	.534**	.335**	.564**	.392**	.178*
	Sig. (2-tailed)	.074	.003		.000	.000	.000	.000	.000	.035
	N	140	140	140	140	140	140	140	140	140
Tangible Unexpected Controlling Rewards	Pearson Correlation	.013	.119	.494**	1	.470**	.211*	.343**	.460**	.095
	Sig. (2-tailed)	.880	.162	.000		.000	.012	.000	.000	.267

	N	140	140	140	140	140	140	140	140	140
Tangible unexpected Non controlling Rewards	Pearson Correlation	.150	.106	.534**	.470**	1	.274**	.511**	.536**	.188*
	Sig. (2-tailed)	.077	.211	.000	.000		.001	.000	.000	.026
	N	140	140	140	140	140	140	140	140	140
Verbal Expected Controlling Rewards	Pearson Correlation	-.173*	-.046	.335**	.211*	.274**	1	.376**	.192*	.371**
	Sig. (2-tailed)	.041	.587	.000	.012	.001		.000	.023	.000
	N	140	140	140	140	140	140	140	140	140
Verbal Expected Non controlling Rewards	Pearson Correlation	.046	.013	.564**	.343**	.511**	.376**	1	.573**	.289**
	Sig. (2-tailed)	.591	.875	.000	.000	.000	.000		.000	.001
	N	140	140	140	140	140	140	140	140	140
Verbal Unexpected Controlling Rewards	Pearson Correlation	.118	.195*	.392**	.460**	.536**	.192*	.573**	1	.273**
	Sig. (2-tailed)	.164	.021	.000	.000	.000	.023	.000		.001
	N	140	140	140	140	140	140	140	140	140
Verbal Unexpected Non Controlling Rewards	Pearson Correlation	-.075	-.169*	.178*	.095	.188*	.371**	.289**	.273**	1
	Sig. (2-tailed)	.379	.046	.035	.267	.026	.000	.001	.001	
	N	140	140	140	140	140	140	140	140	140

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Extrinsic motivation External regulation	Tangible Incentives	Verbal Incentives	Expected incentives	Unexpected Incentives	Controlling Incentives	Non Controlling Incentives
Extrinsic motivation External regulation	Pearson Correlation	1	.079	-.177*	-.091	-.007	.001	-.037
	Sig. (2-tailed)		.353	.036	.287	.935	.988	.663
	N	140	140	140	140	140	140	140
Tangible Incentives	Pearson Correlation	.079	1	.507**	.809**	.765**	.845**	.728**
	Sig. (2-tailed)	.353		.000	.000	.000	.000	.000
	N	140	140	140	140	140	140	140
Verbal Incentives	Pearson Correlation	-.177*	.507**	1	.719**	.814**	.707**	.707**
	Sig. (2-tailed)	.036	.000		.000	.000	.000	.000
	N	140	140	140	140	140	140	140
Expected incentives	Pearson Correlation	-.091	.809**	.719**	1	.604**	.822**	.661**
	Sig. (2-tailed)	.287	.000	.000		.000	.000	.000
	N	140	140	140	140	140	140	140
Unexpected Incentives	Pearson Correlation	-.007	.765**	.814**	.604**	1	.787**	.812**
	Sig. (2-tailed)	.935	.000	.000	.000		.000	.000
	N	140	140	140	140	140	140	140
Controlling Incentives	Pearson Correlation	.001	.845**	.707**	.822**	.787**	1	.583**
	Sig. (2-tailed)	.988	.000	.000	.000	.000		.000
	N	140	140	140	140	140	140	140
Non Controlling Incentives	Pearson Correlation	-.037	.728**	.707**	.661**	.812**	.583**	1
	Sig. (2-tailed)	.663	.000	.000	.000	.000	.000	
	N	140	140	140	140	140	140	140

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Extrinsic motivation External regulation	Tangible Expected Controlling Rewards	Tangible expected Non controlling Rewards	Tangible Unexpected Controlling Rewards	Tangible unexpected Non controlling Rewards	Verbal Expected Controlling Rewards	Verbal Expected Non controlling Rewards	Verbal Unexpected Controlling Rewards	Verbal Unexpected Non Controlling Rewards
Extrinsic motivation External regulation	Pearson Correlation	1	.176*	-.039	.000	.070	-.227**	-.191*	.027	-.133
	Sig. (2-tailed)		.038	.646	.999	.409	.007	.024	.751	.117
	N	140	140	140	140	140	140	140	140	140
Tangible Expected Controlling Rewards	Pearson Correlation	.176*	1	.245**	.119	.106	-.046	.013	.195*	-.169*
	Sig. (2-tailed)	.038		.003	.162	.211	.587	.875	.021	.046
	N	140	140	140	140	140	140	140	140	140
Tangible expected Non controlling Rewards	Pearson Correlation	-.039	.245**	1	.494**	.534**	.335**	.564**	.392**	.178*
	Sig. (2-tailed)	.646	.003		.000	.000	.000	.000	.000	.035
	N	140	140	140	140	140	140	140	140	140
Tangible Unexpected Controlling Rewards	Pearson Correlation	.000	.119	.494**	1	.470**	.211*	.343**	.460**	.095
	Sig. (2-tailed)	.999	.162	.000		.000	.012	.000	.000	.267
	N	140	140	140	140	140	140	140	140	140
Tangible unexpected Non controlling Rewards	Pearson Correlation	.070	.106	.534**	.470**	1	.274**	.511**	.536**	.188*
	Sig. (2-tailed)	.409	.211	.000	.000		.001	.000	.000	.026
	N	140	140	140	140	140	140	140	140	140
Verbal Expected Controlling Rewards	Pearson Correlation	-.227**	-.046	.335**	.211*	.274**	1	.376**	.192*	.371**
	Sig. (2-tailed)	.007	.587	.000	.012	.001		.000	.023	.000
	N	140	140	140	140	140	140	140	140	140
Verbal Expected Non controlling Rewards	Pearson Correlation	-.191*	.013	.564**	.343**	.511**	.376**	1	.573**	.289**
	Sig. (2-tailed)	.024	.875	.000	.000	.000	.000		.000	.001
	N	140	140	140	140	140	140	140	140	140

Verbal Unexpected Controlling Rewards	Pearson Correlation	.027	.195*	.392**	.460**	.536**	.192*	.573**	1	.273**
	Sig. (2-tailed)	.751	.021	.000	.000	.000	.023	.000		.001
	N	140	140	140	140	140	140	140	140	140
Verbal Unexpected Non Controlling Rewards	Pearson Correlation	-.133	-.169*	.178*	.095	.188*	.371**	.289**	.273**	1
	Sig. (2-tailed)	.117	.046	.035	.267	.026	.000	.001	.001	
	N	140	140	140	140	140	140	140	140	140

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Amotivation	Tangible Incentives	Verbal Incentives	Expected incentives	Unexpected Incentives	Controlling Incentives	Non Controlling Incentives
Amotivation	Pearson Correlation	1	-.062	-.252**	-.179*	-.141	-.016	-.194*
	Sig. (2-tailed)		.466	.003	.034	.097	.853	.022
	N	140	140	140	140	140	140	140
Tangible Incentives	Pearson Correlation	-.062	1	.507**	.809**	.765**	.845**	.728**
	Sig. (2-tailed)	.466		.000	.000	.000	.000	.000
	N	140	140	140	140	140	140	140
Verbal Incentives	Pearson Correlation	-.252**	.507**	1	.719**	.814**	.707**	.707**
	Sig. (2-tailed)	.003	.000		.000	.000	.000	.000
	N	140	140	140	140	140	140	140
Expected incentives	Pearson Correlation	-.179*	.809**	.719**	1	.604**	.822**	.661**
	Sig. (2-tailed)	.034	.000	.000		.000	.000	.000
	N	140	140	140	140	140	140	140
Unexpected Incentives	Pearson Correlation	-.141	.765**	.814**	.604**	1	.787**	.812**
	Sig. (2-tailed)	.097	.000	.000	.000		.000	.000
	N	140	140	140	140	140	140	140
Controlling Incentives	Pearson Correlation	-.016	.845**	.707**	.822**	.787**	1	.583**
	Sig. (2-tailed)	.853	.000	.000	.000	.000		.000
	N	140	140	140	140	140	140	140
Non Controlling Incentives	Pearson Correlation	-.194*	.728**	.707**	.661**	.812**	.583**	1
	Sig. (2-tailed)	.022	.000	.000	.000	.000	.000	
	N	140	140	140	140	140	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

		Amotivation	Tangible Expected Controlling Rewards	Tangible expected Non controlling Rewards	Tangible Unexpected Controlling Rewards	Tangible unexpected Non controlling Rewards	Verbal Expected Controlling Rewards	Verbal Expected Non controlling Rewards	Verbal Unexpected Controlling Rewards	Verbal Unexpected Non Controlling Rewards
Amotivation	Pearson Correlation	1	.101	-.177*	-.001	-.111	-.105	-.336**	-.048	-.258**
	Sig. (2-tailed)		.233	.036	.990	.194	.216	.000	.575	.002
	N	140	140	140	140	140	140	140	140	140
Tangible Expected Controlling Rewards	Pearson Correlation	.101	1	.245**	.119	.106	-.046	.013	.195*	-.169*
	Sig. (2-tailed)	.233		.003	.162	.211	.587	.875	.021	.046
	N	140	140	140	140	140	140	140	140	140
Tangible expected Non controlling Rewards	Pearson Correlation	-.177*	.245**	1	.494**	.534**	.335**	.564**	.392**	.178*
	Sig. (2-tailed)	.036	.003		.000	.000	.000	.000	.000	.035
	N	140	140	140	140	140	140	140	140	140
Tangible Unexpected Controlling Rewards	Pearson Correlation	-.001	.119	.494**	1	.470**	.211*	.343**	.460**	.095
	Sig. (2-tailed)	.990	.162	.000		.000	.012	.000	.000	.267
	N	140	140	140	140	140	140	140	140	140
Tangible unexpected Non controlling Rewards	Pearson Correlation	-.111	.106	.534**	.470**	1	.274**	.511**	.536**	.188*
	Sig. (2-tailed)	.194	.211	.000	.000		.001	.000	.000	.026
	N	140	140	140	140	140	140	140	140	140
Verbal Expected Controlling Rewards	Pearson Correlation	-.105	-.046	.335**	.211*	.274**	1	.376**	.192*	.371**
	Sig. (2-tailed)	.216	.587	.000	.012	.001		.000	.023	.000
	N	140	140	140	140	140	140	140	140	140
	Pearson Correlation	-.336**	.013	.564**	.343**	.511**	.376**	1	.573**	.289**

Verbal Expected Non controlling Rewards	Sig. (2-tailed)	.000	.875	.000	.000	.000	.000		.000	.001
	N	140	140	140	140	140	140	140	140	140
Verbal Unexpected Controlling Rewards	Pearson Correlation	-.048	.195*	.392**	.460**	.536**	.192*	.573**	1	.273**
	Sig. (2-tailed)	.575	.021	.000	.000	.000	.023	.000		.001
	N	140	140	140	140	140	140	140	140	140
Verbal Unexpected Non Controlling Rewards	Pearson Correlation	-.258**	-.169*	.178*	.095	.188*	.371**	.289**	.273**	1
	Sig. (2-tailed)	.002	.046	.035	.267	.026	.000	.001	.001	
	N	140	140	140	140	140	140	140	140	140

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

A2.6 Differences between Ideal self, self perception and perception of supervisor's opinion on six components

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	A good researcher feels passionate about his/her work	4.58	140	.658	.056
	I feel I am fully committed to my research work.	3.93	140	1.070	.090

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	A good researcher feels passionate about his/her work & I feel I am fully committed to my research work.	140	.345	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	A good researcher feels passionate about his/her work - I feel I am fully committed to my research work.	.650	1.045	.088	.475	.825	7.358	139	.000

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean

Pair 1	I feel I am fully committed to my research work.	3.93	140	1.070	.090
	I feel my supervisor doubts my dedication and commitment to my research work.	2.39	140	1.284	.109

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	I feel I am fully committed to my research work. & I feel my supervisor doubts my dedication and commitment to my research work.	140	-.299	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	I feel I am fully committed to my research work. - I feel my supervisor doubts my dedication and commitment to my research work.	1.543	1.902	.161	1.225	1.861	9.599	139	.000

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	I feel I obtained a good GPA in my coursework which reflects my academic capability as a researcher	3.26	140	1.215	.103

	I feel my supervisor is dissatisfied by my grades in coursework and feels I should have performed better academically	2.11	140	1.221	.103

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	I feel I obtained a good GPA in my coursework which reflects my academic capability as a researcher & I feel my supervisor is dissatisfied by my grades in coursework and feels I should have performed better academically	140	-.097	.255

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	I feel I obtained a good GPA in my coursework which reflects my academic capability as a researcher - I feel my supervisor is dissatisfied by my grades in coursework and feels I should have performed better academically	1.157	1.804	.152	.856	1.459	7.588	139	.000

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	A good researcher publishes his/her work extensively and participates in academic symposiums and seminars	3.82	140	.976	.083
	I feel I have actively published my work and participated in seminars/symposiums	2.99	140	1.303	.110

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	A good researcher publishes his/her work extensively and participates in academic symposiums and seminars & I feel I have actively published my work and participated in seminars/symposiums	140	.235	.005

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	A good researcher publishes his/her work extensively and participates in academic symposiums and seminars - I feel I have actively published my work and participated in seminars/symposiums	.836	1.432	.121	.596	1.075	6.903	139	.000

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	I feel I have actively published my work and participated in seminars/symposiums	2.99	140	1.303	.110
	I feel my supervisor thinks I don't do enough to publish my work and interact in academic circles.	2.59	140	1.368	.116

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	I feel I have actively published my work and participated in seminars/symposiums & I feel my supervisor thinks I don't do enough to publish my work and interact in academic circles.	140	-.383	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	I feel I have actively published my work and participated in seminars/symposiums - I feel my supervisor thinks I don't do enough to publish my work and interact in academic circles.	.400	2.221	.188	.029	.771	2.131	139	.035

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	A good researcher possesses the ability to think critically	4.70	140	.620	.052
	I feel I possess the skills to critically analyze and think about my research work.	4.14	140	.931	.079

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	A good researcher possesses the ability to think critically & I feel I possess the skills to critically analyze and think about my research work.	140	.059	.492

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	A good researcher possesses the ability to think critically - I feel I possess the skills to critically analyze and think about my research work.	.564	1.088	.092	.383	.746	6.139	139	.000

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean

Pair 1	I feel I possess the skills to critically analyze and think about my research work.	4.14	140	.931	.079
	I feel my supervisor thinks I don't possess the academic skills necessary to be a good researcher.	2.09	140	1.205	.102

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	I feel I possess the skills to critically analyze and think about my research work. & I feel my supervisor thinks I don't possess the academic skills necessary to be a good researcher.	140	-.281	.001

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	I feel I possess the skills to critically analyze and think about my research work. - I feel my supervisor thinks I don't possess the academic skills necessary to be a good researcher.	2.043	1.717	.145	1.756	2.330	14.078	139	.000

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean

Pair 1	A good researcher has great command over English and can express his/her ideas fluently	2.58	140	1.126	.095
	I feel happy with my command on English and how I produce my ideas in writing.	3.73	140	1.098	.093

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	A good researcher has great command over English and can express his/her ideas fluently & I feel happy with my command on English and how I produce my ideas in writing.	140	.204	.016

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	A good researcher has great command over English and can express his/her ideas fluently - I feel happy with my command on English and how I produce my ideas in writing.	-1.150	1.404	.119	-1.385	-.915	-9.694	139	.000

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	I feel happy with my command on English and how I produce my ideas in writing.	3.73	140	1.098	.093
	I feel my supervisor is unhappy with my writing skills and command over english.	2.00	140	1.206	.102

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	I feel happy with my command on English and how I produce my ideas in writing. & I feel my supervisor is unhappy with my writing skills and command over english.	140	-.261	.002

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	I feel happy with my command on English and how I produce my ideas in writing. - I feel my supervisor is unhappy with my writing skills and command over english.	1.729	1.830	.155	1.423	2.034	11.174	139	.000

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean

Pair 1	A good researcher is well versed with literature and methodology relevant to his field	4.51	140	.673	.057
	I feel I have devoted adequate time to appraise myself with relevant literature and methodology to produce good research work.	3.61	140	1.123	.095

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	A good researcher is well versed with literature and methodology relevant to his field & I feel I have devoted adequate time to appraise myself with relevant literature and methodology to produce good research work.	140	.146	.084

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	A good researcher is well versed with literature and methodology relevant to his field - I feel I have devoted adequate time to appraise myself with relevant literature and methodology to produce good research work.	.893	1.221	.103	.689	1.097	8.649	139	.000

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean

Pair 1	I feel I have devoted adequate time to appraise myself with relevant literature and methodology to produce good research work.	3.61	140	1.123	.095
	I feel my supervisor thinks I don't read enough literature and need to train myself better in methodology.	2.46	140	1.283	.108

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	I feel I have devoted adequate time to appraise myself with relevant literature and methodology to produce good research work. & I feel my supervisor thinks I don't read enough literature and need to train myself better in methodology.	140	-.386	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	I feel I have devoted adequate time to appraise myself with relevant literature and methodology to produce good research work. - I feel my supervisor thinks I don't read enough literature and need to train myself better in methodology.	1.157	2.005	.169	.822	1.492	6.830	139	.000

A2.7 Relationship between self perception of academic abilities, opinion about the supervisor and perception of supervisor's opinion

Correlations

		Selfperceptionofacademicabilities	Opinionaboutsupervisor	Perceptionofsupervisorsopinion
Selfperceptionofacademicabilities	Pearson Correlation	1	.266**	.472**
	Sig. (2-tailed)		.002	.000
	N	140	140	140
Opinionaboutsupervisor	Pearson Correlation	.266**	1	.280**
	Sig. (2-tailed)	.002		.001
	N	140	140	140
Perceptionofsupervisorsopinion	Pearson Correlation	.472**	.280**	1
	Sig. (2-tailed)	.000	.001	
	N	140	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Selfperceptionofacademicabilities	Opinionaboutsupervisor	Perceptionofsupervisorsopinion	IntrinsicMotivation	Amotivation
Selfperceptionofacademicabilities	Pearson Correlation	1	.266**	.472**	.267**	-.415**
	Sig. (2-tailed)		.002	.000	.001	.000
	N	140	140	140	140	140
Opinionaboutsupervisor	Pearson Correlation	.266**	1	.280**	.213*	-.123
	Sig. (2-tailed)	.002		.001	.012	.148
	N	140	140	140	140	140
Perceptionofsupervisorsopinion	Pearson Correlation	.472**	.280**	1	.127	-.329**
	Sig. (2-tailed)	.000	.001		.136	.000
	N	140	140	140	140	140
IntrinsicMotivation	Pearson Correlation	.267**	.213*	.127	1	-.346**
	Sig. (2-tailed)	.001	.012	.136		.000
	N	140	140	140	140	140
Amotivation	Pearson Correlation	-.415**	-.123	-.329**	-.346**	1
	Sig. (2-tailed)	.000	.148	.000	.000	
	N	140	140	140	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

		Selfperceptionofacademicabilities	TangibleIncentives	VerbalIncentives	Expectedincentives	UnexpectedIncentives	ControllingIncentives	NonControllingIncentives
Selfperceptionofacademicabilities	Pearson Correlation	1	.296**	.318**	.384**	.257**	.257**	.306**
	Sig. (2-tailed)		.000	.000	.000	.002	.002	.000
	N	140	140	140	140	140	140	140
TangibleIncentives	Pearson Correlation	.296**	1	.507**	.809**	.765**	.845**	.728**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	140	140	140	140	140	140	140
VerbalIncentives	Pearson Correlation	.318**	.507**	1	.719**	.814**	.707**	.707**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000
	N	140	140	140	140	140	140	140
Expectedincentives	Pearson Correlation	.384**	.809**	.719**	1	.604**	.822**	.661**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	140	140	140	140	140	140	140
UnexpectedIncentives	Pearson Correlation	.257**	.765**	.814**	.604**	1	.787**	.812**
	Sig. (2-tailed)	.002	.000	.000	.000		.000	.000
	N	140	140	140	140	140	140	140
ControllingIncentives	Pearson Correlation	.257**	.845**	.707**	.822**	.787**	1	.583**
	Sig. (2-tailed)	.002	.000	.000	.000	.000		.000
	N	140	140	140	140	140	140	140
NonControllingIncentives	Pearson Correlation	.306**	.728**	.707**	.661**	.812**	.583**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	140	140	140	140	140	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Selfperceptionofacademicabilities	Autonomy	Relatedness	Competence
Selfperceptionofacademicabilities	Pearson Correlation	1	.258**	.304**	.560**
	Sig. (2-tailed)		.002	.000	.000
	N	140	140	140	140
Autonomy	Pearson Correlation	.258**	1	.512**	.119
	Sig. (2-tailed)	.002		.000	.161
	N	140	140	140	140
Relatedness	Pearson Correlation	.304**	.512**	1	.268**
	Sig. (2-tailed)	.000	.000		.001
	N	140	140	140	140
Competence	Pearson Correlation	.560**	.119	.268**	1
	Sig. (2-tailed)	.000	.161	.001	
	N	140	140	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

4.2.8 Impact of past academic achievements on academic self perception and motivation

Correlations

		Selfperceptionofacademicabilities	GPAincourse work
Selfperceptionofacademicabilities	Pearson Correlation	1	.172*
	Sig. (2-tailed)		.042
	N	140	140
GPAincoursework	Pearson Correlation	.172*	1
	Sig. (2-tailed)	.042	
	N	140	140

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

		Onascaleof1to5wheredoyouthinkyoustandasaresearche	Intrinsicmotivationtoknow	Intrinsicmotivationtoaccomplish	Intrinsicmotivationtoexperiencestimulation	IntrinsicMotivation
Onascaleof1to5wheredoyouthinkyoustandasaresearche	Pearson Correlation	1	.313**	.226**	.238**	.284**
	Sig. (2-tailed)		.000	.007	.005	.001
	N	140	140	140	140	140
Intrinsicmotivationtoknow	Pearson Correlation	.313**	1	.652**	.789**	.890**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	140	140	140	140	140
Intrinsicmotivationtoaccomplish	Pearson Correlation	.226**	.652**	1	.741**	.891**
	Sig. (2-tailed)	.007	.000		.000	.000
	N	140	140	140	140	140
Intrinsicmotivationtoexperiencestimulation	Pearson Correlation	.238**	.789**	.741**	1	.932**
	Sig. (2-tailed)	.005	.000	.000		.000
	N	140	140	140	140	140
IntrinsicMotivation	Pearson Correlation	.284**	.890**	.891**	.932**	1
	Sig. (2-tailed)	.001	.000	.000	.000	
	N	140	140	140	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Onascaleof1to5wheredoyouthinkyoustandasaresearche	Amotivation
Onascaleof1to5wheredoyouthinkyoustandasaresearche	Pearson Correlation	1	-.225**
	Sig. (2-tailed)		.008
	N	140	140
Amotivation	Pearson Correlation	-.225**	1
	Sig. (2-tailed)	.008	
	N	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Onascaleof1to5wheredoyouthinkyoustandasaresearche	GPAincourse work	SelfKnowledge	Perceptionofsupervisorsopinion	Selfperceptionofacademicabilities
Onascaleof1to5wheredoyouthinkyoustandasaresearche	Pearson Correlation	1	.273**	.493**	.251**	.456**
	Sig. (2-tailed)		.001	.000	.003	.000
	N	140	140	140	140	140
GPAincoursework	Pearson Correlation	.273**	1	.154	.123	.172*
	Sig. (2-tailed)	.001		.068	.149	.042
	N	140	140	140	140	140
SelfKnowledge	Pearson Correlation	.493**	.154	1	.353**	.819**
	Sig. (2-tailed)	.000	.068		.000	.000
	N	140	140	140	140	140
Perceptionofsupervisorsopinion	Pearson Correlation	.251**	.123	.353**	1	.472**
	Sig. (2-tailed)	.003	.149	.000		.000
	N	140	140	140	140	140
Selfperceptionofacademicabilities	Pearson Correlation	.456**	.172*	.819**	.472**	1
	Sig. (2-tailed)	.000	.042	.000	.000	
	N	140	140	140	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

4.2.9 Background data

Gender

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
IntrinsicMotivation	Male	59	63.88	15.268	1.988	59.90	67.86	15	84
	Female	81	67.57	10.334	1.148	65.28	69.85	36	84
	Total	140	66.01	12.731	1.076	63.89	68.14	15	84
ExtrinsicMotivation	Male	59	52.39	14.811	1.928	48.53	56.25	18	78
	Female	81	55.16	13.012	1.446	52.28	58.04	26	84
	Total	140	53.99	13.816	1.168	51.68	56.30	18	84
Amotivation	Male	59	10.05	5.588	.727	8.59	11.51	4	25
	Female	81	10.10	6.190	.688	8.73	11.47	4	27
	Total	140	10.08	5.923	.501	9.09	11.07	4	27
Autonomy	Male	59	11.53	2.431	.316	10.89	12.16	5	15
	Female	81	11.62	2.723	.303	11.02	12.22	3	15
	Total	140	11.58	2.595	.219	11.14	12.01	3	15
Relatedness	Male	59	8.15	1.789	.233	7.69	8.62	3	10
	Female	81	7.91	2.007	.223	7.47	8.36	2	10
	Total	140	8.01	1.915	.162	7.69	8.33	2	10
Competence	Male	59	6.07	2.007	.261	5.54	6.59	2	10
	Female	81	6.65	2.409	.268	6.12	7.19	2	10
	Total	140	6.41	2.260	.191	6.03	6.78	2	10
Selfperceptionofacademicabilities	Male	59	49.41	8.101	1.055	47.30	51.52	29	69
	Female	81	50.27	10.280	1.142	48.00	52.54	21	69
	Total	140	49.91	9.401	.795	48.34	51.48	21	69
Onascaleof1to5wheredoyouthinkyoustandasaresearche	Male	59	3.593	.6977	.0908	3.411	3.775	2.0	5.0
	Female	81	3.432	.7060	.0784	3.276	3.588	2.0	5.0
	Total	140	3.500	.7046	.0595	3.382	3.618	2.0	5.0

Gender of professor

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
IntrinsicMotivation	Male	86	67.42	12.591	1.358	64.72	70.12	15	84
	Female	54	63.78	12.748	1.735	60.30	67.26	33	83
	Total	140	66.01	12.731	1.076	63.89	68.14	15	84
ExtrinsicMotivation	Male	86	56.00	14.334	1.546	52.93	59.07	18	84
	Female	54	50.80	12.415	1.689	47.41	54.18	26	77
	Total	140	53.99	13.816	1.168	51.68	56.30	18	84
Amotivation	Male	86	9.34	5.625	.607	8.13	10.54	4	27
	Female	54	11.26	6.241	.849	9.56	12.96	4	26
	Total	140	10.08	5.923	.501	9.09	11.07	4	27
Autonomy	Male	86	11.79	2.426	.262	11.27	12.31	7	15
	Female	54	11.24	2.835	.386	10.47	12.01	3	15
	Total	140	11.58	2.595	.219	11.14	12.01	3	15
Relatedness	Male	86	8.19	1.752	.189	7.81	8.56	3	10
	Female	54	7.74	2.138	.291	7.16	8.32	2	10
	Total	140	8.01	1.915	.162	7.69	8.33	2	10
Competence	Male	86	6.26	2.357	.254	5.75	6.76	2	10
	Female	54	6.65	2.094	.285	6.08	7.22	2	10
	Total	140	6.41	2.260	.191	6.03	6.78	2	10
Selfperceptionofacademicabilities	Male	86	49.86	9.564	1.031	47.81	51.91	21	69
	Female	54	49.98	9.226	1.255	47.46	52.50	27	68
	Total	140	49.91	9.401	.795	48.34	51.48	21	69
Onascaleof1to5wheredoyouthinkyoustandasaresearche	Male	86	3.430	.7119	.0768	3.278	3.583	2.0	5.0
	Female	54	3.611	.6845	.0931	3.424	3.798	2.0	5.0
	Total	140	3.500	.7046	.0595	3.382	3.618	2.0	5.0

Social Category

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
IntrinsicMotivation	SC or ST	26	62.85	16.101	3.158	56.34	69.35	15	84
	OBC	44	65.45	12.643	1.906	61.61	69.30	24	84
	General	70	67.54	11.252	1.345	64.86	70.23	33	84
	Total	140	66.01	12.731	1.076	63.89	68.14	15	84
ExtrinsicMotivation	SC or ST	26	56.54	15.523	3.044	50.27	62.81	23	84
	OBC	44	54.27	14.625	2.205	49.83	58.72	24	78
	General	70	52.87	12.655	1.513	49.85	55.89	18	76
	Total	140	53.99	13.816	1.168	51.68	56.30	18	84
Amotivation	SC or ST	26	10.92	5.741	1.126	8.60	13.24	4	20
	OBC	44	9.77	5.685	.857	8.04	11.50	4	23
	General	70	9.96	6.184	.739	8.48	11.43	4	27
	Total	140	10.08	5.923	.501	9.09	11.07	4	27
Autonomy	SC or ST	26	10.77	2.487	.488	9.76	11.77	6	15
	OBC	44	11.91	2.351	.354	11.19	12.62	6	15
	General	70	11.67	2.749	.329	11.02	12.33	3	15
	Total	140	11.58	2.595	.219	11.14	12.01	3	15
Relatedness	SC or ST	26	7.85	1.891	.371	7.08	8.61	5	10
	OBC	44	8.05	1.791	.270	7.50	8.59	4	10
	General	70	8.06	2.021	.242	7.58	8.54	2	10
	Total	140	8.01	1.915	.162	7.69	8.33	2	10
Competence	SC or ST	26	6.35	1.765	.346	5.63	7.06	4	10
	OBC	44	6.07	1.922	.290	5.48	6.65	2	10
	General	70	6.64	2.593	.310	6.02	7.26	2	10
	Total	140	6.41	2.260	.191	6.03	6.78	2	10
Selfperceptionofacademicabilities	SC or ST	26	51.62	8.490	1.665	48.19	55.04	39	67
	OBC	44	48.32	8.599	1.296	45.70	50.93	35	69
	General	70	50.27	10.149	1.213	47.85	52.69	21	68
	Total	140	49.91	9.401	.795	48.34	51.48	21	69
Onascaleof1to5wheredoyouthinkyoustandasaresearche	SC or ST	26	3.462	.7060	.1385	3.176	3.747	2.0	5.0
	OBC	44	3.364	.5743	.0866	3.189	3.538	2.0	4.0
	General	70	3.600	.7690	.0919	3.417	3.783	2.0	5.0
	Total	140	3.500	.7046	.0595	3.382	3.618	2.0	5.0

Family income

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
IntrinsicMotivation	Upto 2 lakhs	38	68.58	9.394	1.524	65.49	71.67	45	82
	2 to 5 lakhs	50	66.56	13.123	1.856	62.83	70.29	33	84
	More than 5 lakhs	52	63.62	14.184	1.967	59.67	67.56	15	84
	Total	140	66.01	12.731	1.076	63.89	68.14	15	84
ExtrinsicMotivation	Upto 2 lakhs	38	53.26	13.961	2.265	48.67	57.85	18	78
	2 to 5 lakhs	50	54.92	14.846	2.100	50.70	59.14	24	77
	More than 5 lakhs	52	53.63	12.872	1.785	50.05	57.22	23	84
	Total	140	53.99	13.816	1.168	51.68	56.30	18	84
Amotivation	Upto 2 lakhs	38	9.89	6.071	.985	7.90	11.89	4	27
	2 to 5 lakhs	50	9.34	5.073	.717	7.90	10.78	4	21
	More than 5 lakhs	52	10.92	6.547	.908	9.10	12.75	4	26
	Total	140	10.08	5.923	.501	9.09	11.07	4	27
Autonomy	Upto 2 lakhs	38	11.95	2.640	.428	11.08	12.82	3	15
	2 to 5 lakhs	50	11.40	2.763	.391	10.61	12.19	6	15
	More than 5 lakhs	52	11.48	2.413	.335	10.81	12.15	5	15
	Total	140	11.58	2.595	.219	11.14	12.01	3	15
Relatedness	Upto 2 lakhs	38	8.05	2.026	.329	7.39	8.72	3	10
	2 to 5 lakhs	50	8.08	1.782	.252	7.57	8.59	5	10
	More than 5 lakhs	52	7.92	1.989	.276	7.37	8.48	2	10
	Total	140	8.01	1.915	.162	7.69	8.33	2	10
Competence	Upto 2 lakhs	38	6.16	2.073	.336	5.48	6.84	2	10
	2 to 5 lakhs	50	6.34	2.144	.303	5.73	6.95	2	10
	More than 5 lakhs	52	6.65	2.504	.347	5.96	7.35	2	10
	Total	140	6.41	2.260	.191	6.03	6.78	2	10
Selfperceptionofacademicabilities	Upto 2 lakhs	38	48.82	8.084	1.311	46.16	51.47	30	69
	2 to 5 lakhs	50	51.54	9.123	1.290	48.95	54.13	27	69
	More than 5 lakhs	52	49.13	10.460	1.451	46.22	52.05	21	68
	Total	140	49.91	9.401	.795	48.34	51.48	21	69
Onascaleof1to5wheredoyouthinkyoustandasaresearche	Upto 2 lakhs	38	3.553	.6450	.1046	3.341	3.765	2.0	5.0
	2 to 5 lakhs	50	3.460	.6764	.0957	3.268	3.652	2.0	5.0
	More than 5 lakhs	52	3.500	.7796	.1081	3.283	3.717	2.0	5.0
	Total	140	3.500	.7046	.0595	3.382	3.618	2.0	5.0

Family education

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
IntrinsicMotivation	Less than graduation	37	65.24	14.429	2.372	60.43	70.05	15	84
	Graduation	59	67.17	10.966	1.428	64.31	70.03	35	84
	Postgraduation	44	65.11	13.574	2.046	60.99	69.24	24	84
	Total	140	66.01	12.731	1.076	63.89	68.14	15	84
ExtrinsicMotivation	Less than graduation	37	54.05	16.949	2.786	48.40	59.71	18	84
	Graduation	59	54.76	13.076	1.702	51.36	58.17	24	77
	Postgraduation	44	52.91	11.994	1.808	49.26	56.56	26	71
	Total	140	53.99	13.816	1.168	51.68	56.30	18	84
Amotivation	Less than graduation	37	9.49	4.694	.772	7.92	11.05	4	20
	Graduation	59	9.47	5.900	.768	7.94	11.01	4	27
	Postgraduation	44	11.39	6.742	1.016	9.34	13.44	4	26
	Total	140	10.08	5.923	.501	9.09	11.07	4	27
Autonomy	Less than graduation	37	11.32	2.944	.484	10.34	12.31	3	15
	Graduation	59	11.64	2.598	.338	10.97	12.32	6	15
	Postgraduation	44	11.70	2.309	.348	11.00	12.41	7	15
	Total	140	11.58	2.595	.219	11.14	12.01	3	15
Relatedness	Less than graduation	37	8.16	1.772	.291	7.57	8.75	3	10
	Graduation	59	8.02	1.824	.237	7.54	8.49	4	10
	Postgraduation	44	7.89	2.170	.327	7.23	8.55	2	10
	Total	140	8.01	1.915	.162	7.69	8.33	2	10
Competence	Less than graduation	37	6.00	2.068	.340	5.31	6.69	3	10
	Graduation	59	6.37	2.348	.306	5.76	6.98	2	10
	Postgraduation	44	6.80	2.278	.343	6.10	7.49	2	10
	Total	140	6.41	2.260	.191	6.03	6.78	2	10
Selfperceptionofacademicabilities	Less than graduation	37	47.86	8.920	1.466	44.89	50.84	29	69
	Graduation	59	50.97	8.640	1.125	48.71	53.22	27	65
	Postgraduation	44	50.20	10.639	1.604	46.97	53.44	21	69
	Total	140	49.91	9.401	.795	48.34	51.48	21	69
Onascaleof1to5wheredoyouthinkyoustandasaresearche	Less than graduation	37	3.486	.6921	.1138	3.256	3.717	2.0	5.0
	Graduation	59	3.542	.6778	.0882	3.366	3.719	2.0	5.0
	Postgraduation	44	3.455	.7611	.1147	3.223	3.686	2.0	5.0
	Total	140	3.500	.7046	.0595	3.382	3.618	2.0	5.0