



“Opening the Black box: Exploring How Intrinsic Motivation Shapes Teachers’ Performance”

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Abstract

In the last few years, intrinsic motivation has received relatively more attention in individual and organisational psychology/behaviour. The forces that influence motivation occur within the individual as well as externally to the individual. This research work was carried out to make one value addition in this direction. This study is an effort to estimate the effect of intrinsic motivational factors of teachers on their academic performance, in which the samples were taken from various colleges of Dr. APJ Abdul Kalam Technical University, India. The empirical analysis was performed with PLS SEM analysis. A significant effect of intrinsic motivational factors was observed on the academic performance of teachers. It is also suggested that ‘Creativity’ was the most significant predictor of teachers’ academic performance. Although this research makes claims about its contributions, it is not free from limitations. Data has been collected from the teachers serving in the colleges of the affiliating university. Certainly, there

could be variation in the working environment and regional, cultural and socioeconomic bias of the respondents, which could be considered as a limitation of this study. The research contributes to the educational services where teachers, students and institutions jointly ensure the success and growth. The most significant practical implication of research findings is that institutions may think in this direction and implement measures that can address intrinsic drives positively for the benefit of all.

Keywords: Intrinsic motivation, Academic performance, Creativity, Teacher

1. Introduction

Quality has become a key concern in higher education. It is said that quality is a continuous journey, not a destination. In today's scenario, improving the quality is the prime challenge for the higher education system. Ensuring quality education is the right way to ensure growth and development in the education system. A teacher plays a very significant role in the effective teaching learning process, which further contributes to ensuring quality education. For an effective learning environment and active participation of the students, a teacher should be motivated. Motivation is considered a dynamic process that is driven by socio-psychological, contextual and personal factors which work together. Those causes which encourage motivation occur inside the individual and externally to him. Ryan & Deci [35] mentioned in SDT that various motivation types can be categorized on the basis of the reasons that lead to a particular action. The base categorization includes extrinsic and intrinsic motivation. Extrinsic motivation involves engaging in an activity due to external reasons and getting divisible desired outcomes or avoiding undesired outcomes. [35]. Intrinsic motivation refers to performing an activity due to its inherent interest to feel pleasure and contentment naturally in the

activity itself. These kinds of activities are gratifying and purposeful and performed for intrinsic reasons rather than as a separable object of value [33]. This study has been conducted with a view to the intrinsic motivation having a significant contribution to the academic performance of teachers.

2. Review of Literature

The literature available regarding the proposed study improves the theoretical foundation of the researcher in that aspect, and it also helps in identifying the gap for further research. At the initial stage, for identifying the constructs, various resources were scanned. The purpose of scanning was to select a pattern and identify factors that are frequently expressed. Hence, the idea was to investigate these frequently expressed variables, with a hypothesis that the interaction of these variables within a person has the possibility to trigger better performance irrespective of the environment in which he/she perform. The literature review considers different views of eminent thinkers and researchers about the dependent variable (Academic Performance) & independent variable (Intrinsic Motivation factors: “Personal vision”, “Optimism”, “Personal value” (commitment), “Self-efficacy”, “Achievement motivation”, and “Creativity”) identified for this research work. Motivation can be either in extrinsic forms or intrinsic forms. Intrinsic motivation is a significant construct that reflects the innate human inclination to learn and incorporate, whereas teachers’ performance (academic) is the way they contribute to the learning and teaching process. The overall aim of this literature review is to identify the progress in this study area, how far both areas are linked, and what can be explored through research as a new dimension in this relationship.

Denhardt [12] stated that direct observation of motivation is not easy. It is an inner condition that causes individuals to act in a specific manner to realise predefined goals. Motivation occurs within people's hearts and minds. Deci and Ryan [11] defined an intrinsically motivated behaviour as "the behaviour which is performed in the absence of any apparent external contingency". The research study conducted by Tripathi et. al [41] indicates that the intrinsic motivation of the teachers significantly affects their academic performance. Guay et al. [16] concluded that intrinsic motivation is strongly connected to intrinsic value. In the research conducted, Afzal et al. [2] found a positive and mutually causal relationship between students' motivation and their performance in academics. The R-square value was 80% which shows a high strength between students' motivation and their performance in academics. Mundhra [30] analysed the relationship between intrinsic motivation and the performance of officers working in the service sector in India. The study indicated a strong connection between the satisfaction of intrinsic motivators and employees' performance. Taylor et al. [40] stated a potentially significant role of intrinsic motivation factors in predicting positive academic outcomes. The research confirmed that it is only intrinsic motivation that is constantly linked with positive academic outcomes, undoubtedly.

‘Personal vision’ was one motivational construct selected in this study. Different studies expressed ‘Personal vision’ as an inherent human factor that motivates individuals intrinsically. Harness [18] stated that when you try to succeed without having a clear vision about what you wish to achieve, it leads to moving around in circles and finally gives up in disappointment. Vision develops within, from the subconscious or spirit. Each one has its own vision. The difficulty arises in understanding our personal vision

as well as in what way it is applicable to our motivational plan. If we find our vision first, it will guide and motivate us on our way to success and the achievement of life goals. For developing our vision, we must look inside ourselves. As per Boyatzis [8], Personal vision is the primary means of self-regulation and an individual's intrinsic motivation. Buse and Bilimoria [9] analysed how the personal vision of an individual enhances work engagement as well as retention in the engineering profession. They selected 495 women with engineering degrees for the study, and they found that women with personal vision are capable of overcoming the barriers, biases and discrimination in the workplace. Studies focused on 'Personal vision' as an intrinsic factor that motivates an individual to perform in the direction of goals.

The next motivational factor was 'Personal value (Commitment)' selected in this study. Maxwell [28] mentioned that when Commitment is based on values, it survives. The link between commitment and personal values of an individual is the only way to sustain commitment. When the basis of commitment is an individual's personal values, that person will not have any issue in sustaining it. Kanter [21] expressed that through the Commitment process, people develop a willingness to contribute their energy and loyalty to a specific social system, as that specific system is "expressing the needs and nature of the person". Thus, the commitment is realised as being simultaneously psychological and social, indicating an intrinsic association with one specific social structure. It was determined by Meyer and Herscovitch [29] that commitment has worked as a key research construct to investigate the links that connect an individual to one specific occupation in any related organisation. Even though numerous distinctive commitment dimensions have been explored, all those denote a binding force that inspires

people to the events significant to the organisation as well as individuals. Chan Kwok-wai [10] conducted a research study to identify the relationship between teachers' motives and teaching commitment. In the study, three motive factors: “intrinsic/altruistic”, “extrinsic/job condition”, and “influence from others”, were identified for selecting teaching as a career option. The results revealed that the "intrinsic/altruistic" motive has a significant relation to the commitment in the teaching profession.

‘Optimism’ was another intrinsic factor considered in this study. Hoy et al. [20] research work explored that the latent construct named as teachers’ academic optimism reflects an individual’s psychological state. The optimism intrinsically motivates an individual to get involved in a particular assignment. It was also defined by Smith and Crabbe [39] that optimism produces positive moods, as well as acts as a tool of motivation. The research conducted by Singh and Jha [38] on medical and engineering students revealed that optimism & academic achievement are positively and significantly related to each other. Luthans [27] mentioned that optimistic individuals are naturally motivated to put in hard work and reveal better goal-directed behaviour. Optimistic individuals have the capacity to continue in rigorous conditions and also have a common tendency to be positive, joyful and physically & mentally energetic.

The next intrinsic factor chosen in this research was ‘Self-efficacy’. “Self-efficacy” is defined as the confidence that an individual has enough capacity to exercise their own control over their behaviour, emotions and thinking. Bandura [6] explained the link between self-efficacy and individual behavior. Human beings, who are confident about their capabilities, handle complex assignments as challenges that should be mastered, not as threats to be avoided. He stated that self-efficacy beliefs play a major role in the

self-control of individual motivation. Fives [14] also mentioned self-efficacy of teachers as a motivational construct, which reflects teachers' beliefs and perceptions about teaching specific activities. Therefore, with this emphasis, teachers' efficacy was considered as a major impact factor for teaching outcomes, rather than the surroundings. Randhawa [34] conducted a study on "Work Performance and its correlates". The research study found a significant and positive correlation between individuals' "self-efficacy" and their "work-related performance". The results confirmed that job-specific "self-efficacy" plays a significant role in defining the level of performance in employees; it means higher self-efficacy leads to higher performance. De Young [13] highlighted the role of self-efficacy as intrinsic reinforcement and indicated that when individuals feel that they have the ability to carry out a certain behaviour, they realise intrinsic fulfilment and increased motivation level coming out from their own judgments regarding competence, and it promotes choice and the generalisation of new behavior as well as personal growth.

The next motivational factor was 'Creativity' selected in this study. Arthur Schawlow was a Nobel Prize winner. Schawlow's [36] inputs regarding creativity emphasise the significance of intrinsic motivation; the inner motivation to do some work as it is stimulating, interesting, fulfilling, or challenging. He stated that individuals' creativity is their own innate quality, mostly coming through the factors intrinsic in nature, and it affects the outcomes. As per APA's Board of Education Affairs, Learner-Centred Work Group, Curiosity, creativity, and flexibility are key contributors to the learners' intrinsic motivation. The componential creativity theory indicated that intrinsic motivation prompts individuals to put their efforts into creative mechanisms (Amabile) [4]. Anwar et al. [5] conducted a survey of Secondary school students to examine and found a

significant correlation between Students’ creative thinking and their academic achievement.

‘Achievement motivation’ was the next intrinsic factor considered for the research study. Ali [3] investigated the relation between achievement motivation and academic performance of students (Zambia). A positive and significant relationship was observed between achievement motivation and students’ academic performance. On the basis of research work, Shia [37] created an inventory of “Academic Intrinsic Motivation” which was composed of 06 factors, including four extrinsic and two intrinsic factors. Intrinsic motivational factors included: need for achievement and mastery goals. As per the opinion based on research, Shia [37] indicated that a major scope is available regarding applied research in the field of extrinsic and intrinsic motivation. As per Parker and Johnson [32], the achievement motive of an individual may be observed as a personality trait. As per them, high achievers can be classified as self-driven and competitive in nature, and they strive for success. On the other hand, low achievers can be viewed as losers, non-participative and failures. In their research work, Goodman et al. [15] examined the significant and positive relationship between “motivation” and the “academic performance of students”.

3. Objective and Hypotheses

The research study aims to explore the relationship of academic performance and inner drives of individuals, e.g., academicians, irrespective of the work culture in which he or she operate. The research question may be formulated as “Do the intrinsic factors of motivation of management teachers affect their academic performance?”

3.1 Hypotheses

The major hypothesis of this research study is mentioned below:

H1: “Intrinsic motivation factors significantly affect the academic performance of Management teachers”.

3.2 Sub-Hypotheses:

H1₍₁₎: “Personal vision” significantly affects the academic performance of teachers in management education.”

H1₍₂₎: “Personal value (Commitment)” significantly affects the academic performance of teachers in management education.”

H1₍₃₎: “Optimism” significantly affects the academic performance of teachers in management education.

H1₍₄₎: “Self-efficacy” significantly affects the academic performance of teachers in management education.”

H1₍₅₎: “Creativity” significantly affects the academic performance of teachers in management education.”

H1₍₆₎: “Achievement motivation” significantly affects the academic performance of teachers in management education.”

4. Methods

The overall research design was Explanatory causal research. Explanatory research explains the phenomenon [22], whereas causal research governs the nature of the relationship between causal variables and their impact on the dependent variable to be predicted. Hence, the idea is to investigate frequently expressed independent variables (i.e. “Personal value (commitment)”, “Personal vision”, “Self-efficacy”, “Optimism”, “Achievement motivation” & “Creativity”) with a hypothesis that, interaction of these

variables within a person has a possibility to trigger better academic performance (dependent variable of the study) in irrespective of the environment.

As the scope of this research is limited to inner drives of individuals and does not include the environment, an attempt was made to select the target group that, by and large, operates in a similar environment. The research study was performed in different institutions (“Dr. A.P.J. Abdul Kalam Technical University, India”) of NCR, India, with respect to teachers in Management education.

The data was collected through a questionnaire from 300 Management teachers working in different colleges of this university. The cluster sampling method, followed by random selection of the respondents, is used in this study. The teachers were selected from each cluster with relevant weightage in the target total population. A total of 280 questionnaires (completely filled) were finalised for statistical analysis, and twenty questionnaires were incomplete and discarded.

4.1 Measures

A questionnaire was formed to efficiently utilise the survey method for data collection. For developing a questionnaire, valid scales of related factors were utilised in this research study. In the research questionnaire, a “Likert scale” (five-point) ranging from “strongly disagree” to “strongly agree” (1 to 5) was considered to measure the teachers’ responses.

4.1.1 Independent Variables

Relevant reviewing of literature supports, six different and frequently expressed intrinsic motivation factors, which has been identified for this research, that is, (1) “Personal vision” (2) “Personal value” (commitment), (3) “Optimism” (4) “Self-efficacy” (5)

“Creativity” and (6) Achievement motivation. In the questionnaire, six different items were used to measure ‘Personal vision’ of an individual, and the sample item was “I am aware of my life purpose and it directs me in my decisions”. ‘Personal value (Commitment)’ was measured by six items, and the sample item was “By and large, I tend to stay with a task, long enough to achieve my goals”. A total of five items were used in the questionnaire to measure ‘Optimism’, and the sample item was “I rarely count on good things happening to me”. A total of five items were considered to measure ‘Self-efficacy’, and the sample item was “I can usually handle whatever comes my way”. A total of seven items were taken in the research instrument to measure ‘Creativity’, and the sample item was “I am engaged in creative type work on a regular basis to improve myself”. Measurement of the ‘Achievement motivation’ factor was done by seven items, and the sample item was “Generally, I want to know how well I have been doing, and use the feedback to improve myself”.

4.1.2 Dependent variable

For measuring Academic performance (Teaching Learning Activities) of teachers, a scale developed and validated by Betsy Binkley Henry [19] was considered in this research work. Based on teaching learning activities generally performed by teachers, different items were included in the questionnaire, and the sample item was “Coverage of the curriculum is the primary influence on my lesson plans”.

“Cronbach’s alpha” was used for evaluating the “internal consistency reliability” of the variable/construct selected for the study. If Cronbach’s alpha is greater than 0.7, the instrument is considered reliable, as indicated by [31]. At the first level of testing, for some factors, the Cronbach’s alpha was less than 0.7. Accordingly, some changes have

been made in the questionnaire and in the final research instrument, the value was finally more than 0.7, and it was considered reliable for the research study.

5. Results

PLS-SEM algorithm was performed to measure and understand the measurement and structural model.

5.1 Kinetic Analysis:

All six constructs identified in this research work are conceptually linked to each other. The association among the constructs was measured and analysed by using the partial least squares (PLS) path modelling algorithm. In the research, the measurement as well as the structural model were examined, and interpretation was done in two different phases.

5.2 Measurement model

PLS algorithm was applied to analyse the relationship between the performance constructs and intrinsic motivation factors selected in this study (“Personal vision”, “Personal value” (Commitment), “Self-efficacy”, “Optimism”, “Creativity” and “Achievement motivation”). The loading values and path coefficients are presented in Figure 1. A descriptive PLS-SEM result is presented in Figure 1.

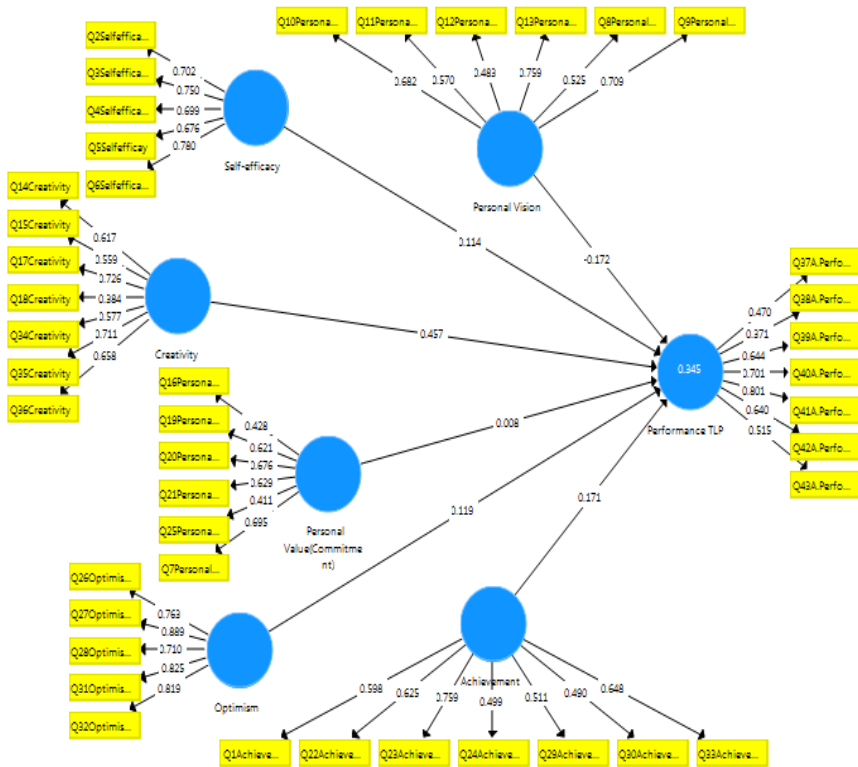


Figure 1: A descriptive PLS SEM result

5.3 Preliminary Observations

5.3.1 Explanation of the variance of the endogenous variable:

The value of R^2 (“coefficient of determination”) is 0.345 for the teaching learning performance of teachers, considered as an endogenous latent variable in the research study. This shows that the six latent variables, namely “Self-efficacy”, “Personal value” (commitment), “Personal vision”, “Achievement motivation”, “Creativity”, & “Optimism”, moderately explain 34.5% of the alteration in academic performance of the teachers in management education.

5.3.2 Explanation of Inner /Outer model coefficient sizes & significance:

As suggested in the structural model, ‘Creativity’ has the strongest effect on teachers’ performance (0.457), which is followed by Personal vision (0.172), Achievement motivation (0.171) and then Optimism (0.119), Self-efficacy (0.114), and Personal value (commitment) (0.008). In case of Personal value (commitment) and performance, the path coefficient is less than 0.1 and not statistically significant. Therefore, it can be decided that creativity (0.457), followed by Personal vision (0.172) and Achievement motivation (0.171) and then Optimism (0.119), Self-efficacy (0.114) are moderately strong predictors of academic performance of teachers, but Personal value (commitment) (0.008) does not predict academic performance directly.

5.3.3 Internal consistency reliability

In Table 1, “Composite reliability values” are presented, which are greater than 0.6, indicating a high level of “internal consistency” and “reliability”, which is demonstrated in all six reflective latent variables.

Table 1: Internal consistency reliability

	“Cronbach's alpha”	“rho_A”	“Composite Reliability”	“Average Variance Extracted” (AVE)
“Achievement motiva- tion”	0.708	0.710	0.791	0.556
“Creativity”	0.722	0.745	0.804	0.677
“Optimism”	0.861	0.865	0.900	0.645
“Performance”	0.709	0.744	0.795	0.669
“Personal value” (Com- mitment)	0.623	0.600	0.753	0.545
“Personal vision”	0.715	0.751	0.793	0.696
“Self-efficacy”	0.772	0.780	0.845	0.522

5.3.4 Convergent validity and Discriminant validity:

As per the results indicated in Table 1, the “Average variance extracted (AVE)” fluctuated from 0.522 to 0.696. It shows that various scales used for intrinsic motivation factors and academic performance (Teaching Learning Activities) possessed convergent validity. All the constructs are reflecting an AVE loading of more than 0.5, which clearly indicates adequate discriminant validity.

5.4 Structural Path Significance in Bootstrapping

By using the Bootstrapping procedure, T-statistics can be generated through Smart PLS-SEM, which can be used for testing of inner and outer models. If the “T-statistic” is greater than 1.96, the path coefficient is significant at 5% level of significance. In case of this research study, it can be seen that only the “personal value” (commitment) T-statistic value (0.112) is not significant. In the inner model, all other path coefficients are statistically significant (Table 2). The value of self-efficacy is 1.364, which is

considerable on the basis of earlier findings of its strong connection reflected in the path coefficient and internal consistency reliability.

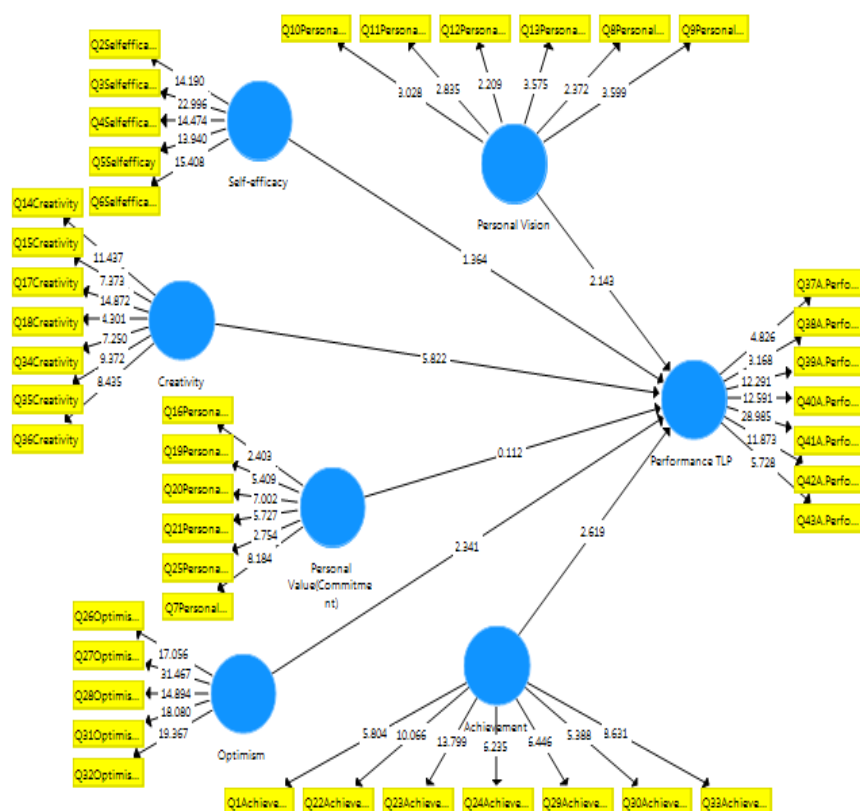


Figure 2: Path significance in Bootstrapping

Table 2: T- Statistics

	“Original sample” (O)	“Sample mean” (M)	“Standard deviation” (STDEV)	“T Statistics”
Achievement motivation -> Performance TLP	0.171	0.169	0.065	2.619
Creativity -> Performance TLP	0.457	0.457	0.078	5.822
Optimism -> Performance TLP	0.119	0.122	0.051	2.341
Personal Value(Commit- ment) -> Performance TLP	0.008	0.021	0.073	0.112
Personal Vision -> Perfor- mance TLP	-0.172	-0.119	0.080	2.143
Self-efficacy -> Perfor- mance TLP	0.114	0.097	0.084	1.364

5.5 Kinetic analysis summary

In the structural model, the paths used to connect the measures support the hypothesis that “Intrinsic factors of motivation significantly affect the academic performance (Teaching-Learning) of the Management teachers”. Creativity explained 45.7% of the variance in performance of the teaching fraternity (shown by analysis of inner model). It is a significant finding as it suggests that there are some other factors that process owners, teachers and institutional mechanisms should consider when exploring teachers’ performance in future research.

5.6 Discussion

The research study concluded that Management teachers are significantly affected by “Self-efficacy”, “Creativity”, “Achievement motivation”, “Optimism” and “Personal vision”, with loadings of 0.114, 0.457, 0.171, 0.119 and 0.172, respectively. In terms of teaching learning activities, they are good indicators of Academic performance. Educational institutions and teachers must not overlook these essential fundamentals of intrinsic motivation, because the performance of faculty members is significantly important for the overall growth and development of students and the nation at large. Meanwhile, it is also revealed that improvement in areas of Personal value (commitment) does not significantly affect the performance due to its weaker effect (0.008) in the linkage. “T-values” (Table 2) also support the significant relationship. Thus, the hypothesis “Intrinsic factors of motivation significantly affect the academic performance (Teaching-Learning) of the Management teachers” is accepted. All the sub-hypotheses are also accepted as showing significant relationships. This finding was supported by different researchers in this field. Lemos & Verissimo [25] explored the relation between extrinsic and intrinsic motivation and their impact on academic achievement. Research outcomes supported that both motivations can exist as they are not contradictory. The research suggested that intrinsic motive was more connected to better achievement in academics. The observation was also supported by the research findings of Lee [26] related to the students. Abah et al. [1] conducted research to examine the relation between intrinsic motivation to learn mathematics and the academic performance of students in mathematics. The study indicated a significant relation between inherent motivation to learn mathematics and their academic performance in mathematics, irrespective of the environment in which he is operating [1].

6. Limitations

Although this research makes a lot of claims about its contributions, it is not free from limitations. The environment in which management educators of “Dr. A.P.J. Abdul Kalam Technical University”, India, are serving is somehow constant. This is one of the perilous assumptions of this work. Certainly, there may be variation in the working environment. Secondly, this research survey was conducted across the different campuses of “Dr. A.P.J. Abdul Kalam Technical University”, India, in N.C.R. (National Capital Region). The response might have some influence of the regional, cultural and socioeconomic bias.

7. Practical Implications

The present findings suggest that different factors of intrinsic motivation play a significant role in accomplishing one's desired performance. The estimation of the structural model reflects that the “Creativity factor” explained around 46% of the variance in the academic context of the teachers in management education. It is a significant result as it suggests that there are some other factors that process owners, teachers, and institutional mechanisms should consider when exploring teachers' performance in future research. The research contributes to the educational services where teachers, students and institutions jointly ensure the success and growth. This study explains and empirically estimates the positive relationship between the academic performance of management teachers and the motivation they feel internally. Institutions can think in this direction and implement those measures that may address intrinsic drives positively for the benefit of all.

8. Conclusion

Intrinsically motivated teachers can contribute towards ensuring quality education by their knowledge sharing and learning oriented approach. The purpose of this manuscript is to explain the impact of the inherent motivation aspects of teachers in management education on their academic performance. A significant relationship has been observed between intrinsic factors of motivation and the academic performance of Management teachers. The structural model clearly indicates that the “creativity factor” significantly explains around 46% variance in the academic performance of teachers in Management education. Each intrinsic drive could be a subject in itself for further study. These findings also add an important dimension in other applied research in that they verify the importance of these factors for performance enhancement and success.

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