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Crowding out or Crowding In! Analysing the effects of External Motivation in Higher Educational Institutions through PLS SEM

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Abstract

Faculty engagement is a crucial element that significantly impacts both student outcomes and the overall performance of educational institutions. Recognizing faculty as key assets, institutions must focus on strategies that enhance engagement, thereby improving their competitive advantage. The motivation of faculty members, which is influenced by both internal and external variables, is essential for promoting engagement. This study seeks to investigate whether faculty engagement levels vary, based on intrinsic versus extrinsic motivation through PLS SEM. It also aims to explore the potential crowding-out or crowding-in effect of extrinsic factors on intrinsic motivation, assessing whether the presence of external rewards diminishes or enhances intrinsic engagement. The findings of this study will provide insights for private higher education institutions on how to develop effective measures that enhance faculty engagement, either intrinsically or extrinsically. The findings suggested that the Private Higher Educational Institutions, by simply adding extrinsic rewards may not be able enough to meaningfully change faculty members' engagement levels. Organizations may need to focus on providing extrinsic rewards that are perceived as supportive, non-controlling, and aligned with the faculty's sense of autonomy and competence. It is important to balance extrinsic rewards to ensure they do not overshadow intrinsic motivation, promoting a sustainable and cohesive approach to faculty engagement.

Keywords: Faculty engagement, Intrinsic Motivation, Extrinsic Motivation, Private Higher Educational Institutions, Crowding

Introduction

In India's private higher education sector, institutions compete with one another much like industries, with faculty and their innovative teaching methodologies serving as foundational pillars of the educational framework. Faculty play a proactive role in imparting education, wisdom, and values to the next generation of students. To elevate the standards within this sector, faculty members must be recognized as key contributors. Institutions should therefore implement policies, practices, and a conducive work culture that support the retention of talented faculty who possess exceptional competencies and skills, thereby achieving a competitive advantage.

Faculty engagement is a critical aspect of higher education that involves active participation and commitment from academic staff in various institutional activities. It encompasses teaching, research, service, and administrative responsibilities, as well as fostering connections with students and colleagues Students' success depends on faculty who are emotionally and psychologically invested in what they do. (Marken,2021). Effective faculty engagement can lead to improved student outcomes, enhanced institutional reputation, and increased innovation in teaching and research practices (Artates, 2023). Engaged faculty are generally more committed and

productive in comparison to their less engaged or disengaged counterparts. (Marken, 2021) Thus, institutions should focus on motivating and empowering engaged faculty, enabling them to provide meaningful guidance to students in shaping their future careers. S.T. Janetius et al. (2016) in their study identifies key elements that contribute to faculty engagement, such as motivation, institutional support, and the alignment of personal and institutional goals. In order to enhance engagement, faculty motivation—which is influenced by both internal and external factors—is essential. Li & Khattak (2023) in their studies in Chinese Higher Education context also suggested that salary, promotion opportunities and job security are the important external motivators but its impact is often less significant compared to intrinsic drivers. The various authors have shown different perspectives through empirical researches that internal motivation and external motivation individually or as a balance of both are important in motivation of employees in different industries. This study seeks to investigate whether faculty engagement levels vary, based on intrinsic versus extrinsic motivation through PLS SEM. This research paper wants to explore about the same in the educational industry especially in Private higher educational Institutions of India considering that whether the presence of external motivators undermine the effect of internal motivators in faculty of these private higher educational Institutions.

Literature Review and Propositions

Motivation and Engagement: According to Ryan and Deci's (2000) research on self-determination theory, employees are motivated by three essential psychological needs: relatedness, competence, and autonomy. People are more likely to exhibit intrinsic motivation—doing things for their own sake—when these criteria are accomplished, which promotes performance and well-being. Singh (2016) in his studies emphasised that intrinsic motivators, such as personal satisfaction and enjoyment derived from meaningful work, play a significantly more important role in motivating employees than extrinsic motivators like financial rewards. Zeng et al. (2022) in their studies described that intrinsic motivation significantly enhances employee engagement. When faculty is given autonomy and flexibility in their teaching methodology, it corelates with more engagement and better outcome of the students. (Fong et al. 2019) Faculty members who have a high level of intrinsic motivation, driven by a genuine passion for teaching, research, or learning, are more likely to pursue innovative practices. Internal factors like personal fulfilment and intellectual curiosity are strong motivators for innovation. (Al-Mansoori and Koc, 2019). Anderson et al. (2024) in their studies found out that faculty who are more intrinsically motivated, driven by personal satisfaction and passion for student success are more engaged and adopt learning pedagogies. Thus, many studies have found out that intrinsic motivation and faculty engagement are corelated and intrinsic motivation enhances faculty engagement. (Goel & Rashmi, 2023).

Hypothesis 1: Intrinsic motivation significantly affects Faculty Engagement

According to extrinsic motivation, an employee's motivation to work is impacted by their workplace and surroundings. These can include peer pressure, monetary requirements, rewards promise, and societal conventions, among other things. Accordingly, focusing on the benefit of the activity rather than the activity itself is what it means to be extrinsically motivated (Deci and Ryan, 1985). In her research, Legault (2020) investigates the continuum of motivation, ranging from absolutely self-determined (intrinsic) to non-self-determined (external). Extrinsic motivation is fuelled by outside forces such as incentives or penalties, but intrinsic motivation is the result of doing things because they make you happy. In private sectors extrinsic motivation plays an important role in driving individuals to perform their jobs in an excellent way, with the expectation of receiving tangible rewards, such as monetary bonuses, promotions, or foreign trips etc. Companies often utilize strategies like weekend trips or gift vouchers to incentivize employees toward achieving specific goals. Research has consistently shown that extrinsic motivation enhances productivity in the workplace, particularly when reinforcement through rewards is effectively implemented. This is also seen in educational sectors to a certain extent. Financial incentives also play a major role as some academicians are motivated by monetary benefits. (Atta-Owusu & Fitjar, 2021). Bouwma-Gearhart (2011) in his article emphasised that the faculty members are more likely to participate in teaching professional development when there are external rewards such as promotions or recognition. Watt et al. (2017) in his studies explore the motivators that influence the professional outcome and commitment of teachers in global context. He found out that job stability, work life balance and the compensation are major external factors for motivation.

Hypothesis 2: Extrinsic motivation significantly affects Faculty Engagement

Motivation Crowding theory

The motivation crowding effect proposes that external interventions, such as monetary rewards or punishments, can diminish i.e. crowd out or though under certain identifiable conditions, they can also enhance i.e. crowd in intrinsic motivation (Frey & Jegen, 2001). There is many conflicting experimental evidence from sociology, psychology and economics where monetary incentives have both crowd in and crowd out effects. Gneezy and Rustichini (2000) in their studies found out that at when a monetary fine was imposed on parents for picking up their children late from daycare, the incidence of late pickups increased rather than decreased. This was counterintuitive, as the fine was intended to reduce tardiness. The research provided evidence for the motivation crowding effect, where external interventions, such as fines or monetary incentives, can undermine intrinsic motivation. In this case, the fine shifted the parents' perception of tardiness from a social responsibility to a transactional relationship, where they were willing to pay for the convenience of being late. In contrast to the above studies Liu et al. (2022) demonstrated in his studies that external incentives can undermine or reinforce internal drives depending on how they are perceived by the individual. Heyman and Ariley (2004) in their study found out that larger monetary incentives increased effort, demonstrating that, under certain conditions, extrinsic rewards can crowd in motivation. Deci et al. (1999) looked at the impact of extrinsic rewards on intrinsic motivation using a thorough meta-analysis of 128 research. He discovered that extrinsic rewards—especially material ones—can erode intrinsic motivation by drawing attention away from the intrinsic pleasure of a task and toward the external reward. According to the study, depending less on extrinsic rewards and more on promoting autonomy, competence, and relatedness (in keeping with self-determination theory) can increase intrinsic motivation. Rommel et al. (2015) in his study conducted an experiment which was designed to test whether external incentives such as information, monitoring, and rewards would crowd out intrinsic motivation to engage in pro-environmental behaviours, such as reducing junk mail. The findings from their study showed that there was no significant evidence of crowding out effects. Cameron and Pierce (1994) in their meta-analysis found out limited evidence that extrinsic rewards consistently crowd out intrinsic motivation. They argued that tangible rewards had a minimal negative effect on intrinsic motivation, particularly when rewards were contingent on task completion rather than task performance. Their studies also indicated that external rewards do not universally crowd out intrinsic motivation. The effect largely depends upon the nature of the task, type of reward and how the reward was perceived by the individual whether informative or controlling. Bénabou and Tirole (2006) identify specific conditions when crowding out is likely to occur, such as when incentives undermine the self-respect or social reputation of the individual, leading to net reductions in prosocial actions. Georgellis et al. (2010) in their studies strongly support the motivation crowding theory which was focused on UK ‘s higher education sector and National Health services of U.K. Watt et al. (2017) has also mentioned in his research that external motivator like job security, work life balance and compensation though are important, but likely to sustain the long-term commitment if intrinsic motivations were low. Given the diverse conclusions from various studies on the relationship between intrinsic and extrinsic motivation, this research paper will explore whether the introduction of extrinsic incentives affects the intrinsic motivation of faculty engagement within private higher education institutions. Specifically, it will assess if external rewards, such as monetary bonuses or recognition, potentially "crowd out" the intrinsic motivations that drive faculty members' commitment to teaching and student success. The aim is to understand if extrinsic rewards diminish faculty's internal desire for engagement, or if they can coexist, fostering a more productive and motivated academic environment.

Hypothesis 3: The impact of intrinsic motivation on employee engagement gets affected in presence of extrinsic motivation.

Research Methodology

This research paper is the key component of the author’s doctoral dissertation, with the variables and the factors examined in the study are carefully selected based on the extensive literature survey.

Employee engagement means that employees exhibit high energy, resilience, a sense of significance, enthusiasm for their work, and deep concentration and enjoyment in their tasks. (Schaufeli et al., 2002). These three streams were expanded upon by him who also distinguished these into three dimensions of the pathways i.e. Vigor, dedication and absorption. There are various dimensions of employee engagement. Personal involvement behaviours are categorized into three job channels by Kahn (1990): physical, cognitive, and emotional activities. According to Gallup, engaged employees are those who are emotionally invested in their work and actively contribute to their organization's success Ultimately, the factors identified for the variable faculty engagement are vigor, dedication and absorption. For measuring faculty engagement Gallup’s Q12 survey was referred and it was

modified by the author according to educational perspective. It comprises questions that cover a range of engagement-related topics, like feel happy when working intensely, enjoys teaching without being drained, takes pride in the accomplishment of the students and other faculty team etc.

Self-determination theory is the main theory applied to the relationship between intrinsic motivation and employee engagement. Theoretically, intrinsic motivation promotes employee engagement by meeting fundamental psychological requirements including the need for relatedness, competence, and autonomy. The characteristics of tasks that are intrinsic to a work, such as intellectual stimulation, sentiment, and appreciation, are known as intrinsic determinants of job satisfaction (Herzberg,1986). Duffy and Dik (2013) examine the concept of career engagement and its influence on job outcomes, finding that higher levels of career engagement are positively associated with job satisfaction, organizational commitment, and overall well-being. Deloitte, (2017) report emphasizes the importance of a strong organizational culture, meaningful work, and opportunities for development as key drivers of engagement. The interaction of these three components—the work itself, an experience of balance, and the sense of self—is necessary for meaningful labour. Ultimately, the factors identified for the intrinsic motivation are Intellectual stimulation, autonomy, and meaning fulness. For measuring intrinsic motivation, Intrinsic Motivation Inventory (IMI) developed by Richard M. Ryan and Edward L. Deci (1991) was referred and it was modified by the author according to educational perspective. It assesses intrinsic motivation across several domains like flexibility and empowerment, perceived competence, effort/importance.

Working conditions as one of the most important extrinsic motivators for faculty (Eddy and Mary 2008). Studies by Grawitch et al. (2019) and Parker et al. (2021) emphasize that favourable working conditions, such as a safe and comfortable physical environment, access to necessary resources, and a reasonable workload, can enhance employees' motivation levels. These conditions contribute to a sense of security and well-being, allowing employees to focus on their tasks without distraction or stress. Furthermore, the rewards that the firms decide to give their staff members for reaching the objectives serve as an external incentive for them to work hard and do their best work. David J. Hicks (2012) in his study found out faculty who were evaluated on the basis of metrics were more likely to publish in high-impact journals and to receive more citations. From the above literature review, the three factors identified for extrinsic motivation for this study are salary and benefits, Publication and citation metrics, working conditions. Items for extrinsic motivation are referred from the Extrinsic and Intrinsic Motivation Scale (WEIMS), and were modified according to the study. A 5-point Likert scale was used to gauge responses (*1 = strongly agree, and 5 = strongly disagree)* for all the variables. The PlS Model for the study of first two hypothesis is shown in Figure 1.

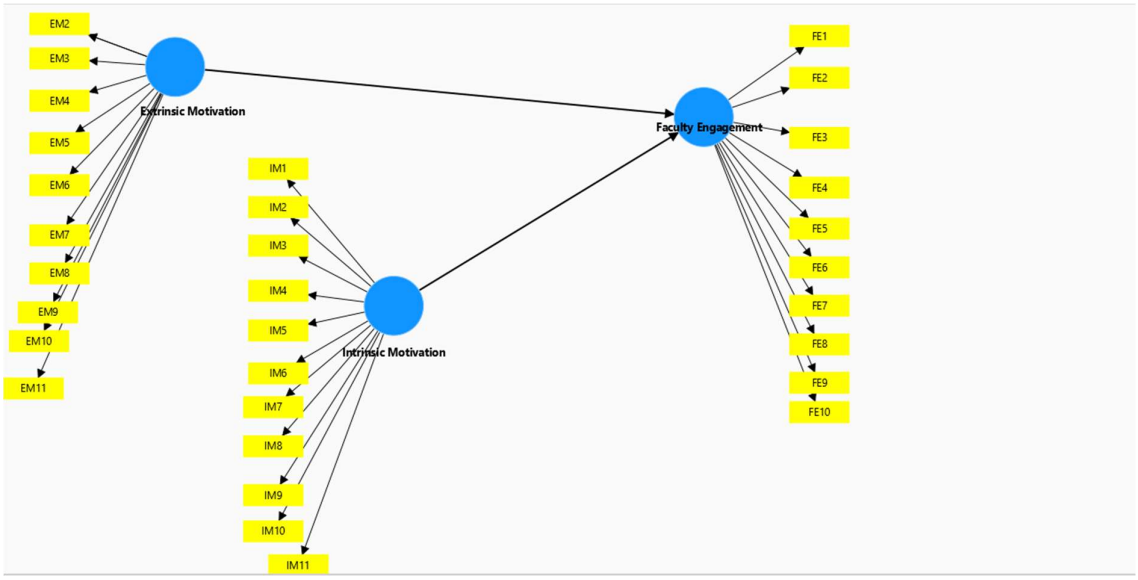

FIGURE-1

PREPARED BY AUTHOR

SAMPLING: The data were collected through online structured questionnaires shared with faculty members of different private Higher Educational Institutes (HEI) of Delhi National Capital region (NCR) (India). The sampling method adopted was convenience sampling. The faculty who was known to the researcher shared with their peers and other known faculty. In this way, 150 complete questionnaires were filled by the faculty of private HEI of Delhi NCR. The analysis was done using PLS SEM.

Analysis and Findings

Structure Equation Modelling (SEM) was performed using a two-step process, measurement model analysis and structural model analysis, for verifying the relationship between constructs. Measurement model analysis was done to establish the quality criteria for internal consistency, reliability & validity of constructs. This is Confirmatory Factor Analysis (CFA). The structural model was tested after establishing the measurement model, though boot strapping the significance and relevance of the structural model has been established based on testing of hypothesis.

Measurement model analysis establishes the relationships between indicators and constructs while ensuring the model's quality. It evaluates reliability (using Cronbach's alpha or composite reliability), convergent validity (via AVE), and discriminant validity (using the Fornell-Larcker criterion). This step is critical for confirming the model's validity before proceeding to structural model analysis. The first step in measurement model analysis is to ascertain the indicator loading. It is observed that the indicator loading of 0.708 and above is acceptable since the "constructs can explain more than 50% of the variance of indicators," (Hair et al., 2017) . In the present study, almost all indicators showed up to acceptable limit as shown in below Table 1.

	EXTRINSIC MOTIVATION	FACULTY ENGAGEMENT	INTRINSIC MOTIVATION
FE1		0.791	
FE2		0.786	
FE3		0.854	
FE4		0.821	
FE5		0.871	
FE6		0.724	
FE7		0.713	
FE8		0.745	
FE9		0.724	
FE10		0.714	
EM1	0.739		
EM2	0.831		
EM3	0.756		
EM4	0.828		
EM5	0.887		
EM6	0.878		
EM7	0.894		
EM8	0.756		
EM9	0.745		
EM10	0.747		
EM11	0.789		
IM1			0.718
IM2			0.756
IM3			0.789
IM4			0.883
IM5			0.831
IM6			0.745
IM7			0.828
IM8			0.596

IM9			0.603
IM10			0.627
IM11			0.739

Table 1- OUTER LOADINGS OF THE CONSTRUCT

The outer loadings are all significantly high (greater than 0.7), indicating excellent construct validity. All indicators reflect their respective constructs strongly. Since loadings are all high, it suggests that the measurement model is robust and likely provides accurate insights into the relationships between the constructs and their indicators. The internal consistency reliability assessment of the constructs shows that all values for Cronbach's alpha, composite reliability, and Average Variance Extracted (AVE) are high and are in the standard thresholds as shown in Table 2.

	Cronbach's Alpha	**Composite reliability (rho_a)**	**Composite reliability (rho_c)**	**Average variance extracted (AVE)**
EXTRINSIC MOTIVATION	0.800	0.811	0.794	0.668
FACULTY ENGAGEMENT	0.811	0.835	0.813	0.770
INTRINSIC MOTIVATION	0.818	0.829	0.813	0.734

Table 2 – INTERNAL CONSISTENCE RELIABILITY

Discriminant validity is checked through Heterotrait- Monotrait ratio of correlations (HTMT). In this case, most HTMT values are well below the 0.85 threshold, indicating good discriminant validity. For Hypothesis testing the path coefficient and p values are considered which is given below in Table 3. In Table 3The sample mean for intrinsic motivation (0.520) is higher than the original sample mean (0.507), indicating a positive effect of intrinsic motivation on faculty engagement. The relatively low standard deviation (0.084) suggests that the data points are close to the mean, indicating consistency in faculty engagement scores related to intrinsic motivation. T statistic of 6.017 is quite high, indicating a significant difference between the sample mean and the original sample mean. The p-value of 0.000 indicates a statistically significant result This means we reject the null hypothesis, concluding that intrinsic motivation positively affects faculty engagement. For extrinsic motivation the sample mean (0.292) is slightly higher than the original sample mean (0.282), suggesting that extrinsic motivation also has a positive impact on faculty engagement, though the effect may not be as strong as intrinsic motivation. The standard deviation (0.106) is higher than that of intrinsic motivation, indicating more variability in faculty engagement scores related to extrinsic motivation. T statistic of 2.653 is moderate, showing a significant difference, but less pronounced than that for intrinsic motivation. The p-value of 0.008 is also below the threshold of 0.05, indicating a statistically significant result. Thus, we reject the null hypothesis, concluding that extrinsic motivation positively affects faculty engagement as well. So, both first and second hypothesis are true.

	Original sample (O)	**Standard deviation (STDEV)**	**T statistics (|O/STDEV|)**	**P values**
INTRINSIC MOTIVATION -> Faculty Engagement	0.507	0.084	6.017	0.000
Extrinsic Motivation -> Faculty Engagement	0.282	0.106	2.653	0.008

Table 3- Path Coefficient

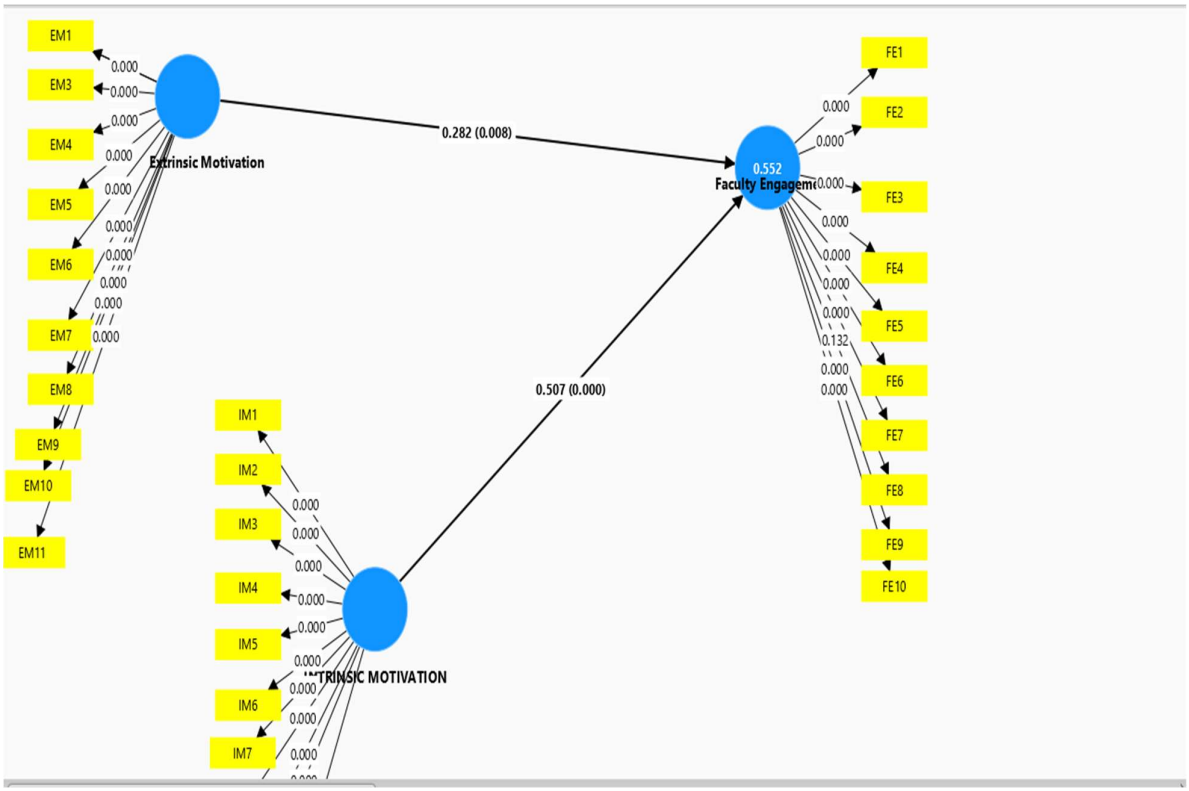

FIGURE-2
SOURCE- PREPARED BY AUTHOR

We proposed that the presence of extrinsic rewards may either diminish (crowd out) or enhance (crowd in) intrinsic motivation. To test Hypothesis 3, a new model will be developed using the same items for each construct. In this model, extrinsic motivation will be introduced as a moderating variable to assess its impact on the relationship between intrinsic motivation and faculty engagement. The model and the p coefficient values are shown below in the Figure 3 and table 4. From the table it can be analysed that the sample mean is negative, which suggests that when extrinsic motivation is included as a moderator, it slightly decreases faculty engagement. This indicates a potential crowding-out effect. However low T statistic (0.166) and a high p-value (0.869) show that this negative effect is not statistically significant. This suggests that while extrinsic motivation might have the potential to crowd out intrinsic motivation and reduce engagement, the data here doesn't provide strong evidence for this effect in this specific scenario.

The insignificant effect could imply that extrinsic rewards neither strongly crowd out nor crowd in intrinsic motivation in these studies. The interaction term (Extrinsic Motivation x Intrinsic Motivation) has a small positive sample mean (0.148), suggesting that extrinsic motivation as a moderator, in combination with intrinsic motivation, might have a slight positive effect on faculty engagement. However, the T statistic (0.308) and the p-value (0.758) indicate that this interaction is not statistically significant. Thus, the data does not provide strong evidence that extrinsic motivation (as a moderator) enhances the relationship between intrinsic motivation and faculty engagement. This suggests that extrinsic rewards do not seem to crowd in intrinsic motivation in a way that leads to meaningful improvements in faculty engagement. The extrinsic motivators may not be perceived as sufficiently supportive or complementary to intrinsic motivation, meaning they neither enhance nor diminish the effect of intrinsic motivation on engagement in a significant way.

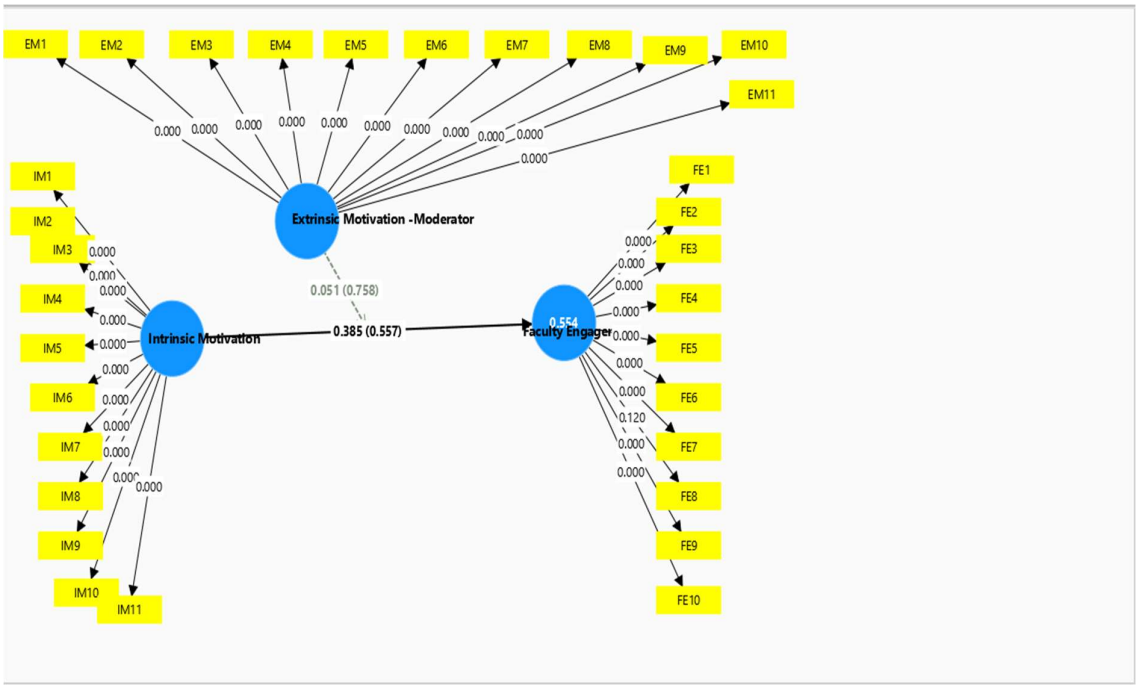

FIGURE-3
SOURCE- PREPARED BY AUTHOR

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Extrinsic Motivation - Moderator -> Faculty Engagement	0.118	-0.285	0.711	0.166	0.869
Intrinsic Motivation -> Faculty Engagement	0.385	0.008	0.657	0.587	0.557
Extrinsic Motivation - Moderator x Intrinsic Motivation -> Faculty Engagement	0.051	0.148	0.165	0.308	0.758

Table-4

Discussion

The findings reveal that both intrinsic and extrinsic motivation significantly influence faculty engagement, though intrinsic motivation has a stronger impact. Faculty members benefit greatly from autonomy in their pedagogical approaches, the freedom to make decisions regarding their schedules, and meaningful work that allows them to positively impact students' lives and society. Intellectual stimulation further enhances their energy, vigour, and dedication. While earlier research emphasized the effectiveness of extrinsic motivators, such as promotions and salary benefits, in improving performance, more recent studies show that intrinsic motivators—such as personal interest and intellectual fulfilment—are more effective for tasks requiring higher-order cognitive skills.

When intrinsic and extrinsic motivators are examined together, there is no strong evidence to support either the crowding out or crowding in of intrinsic motivation by extrinsic factors. The weak effects and high p-values observed in this model suggest that extrinsic motivation does not significantly alter the influence of intrinsic motivation on faculty engagement. Therefore, focusing on intrinsic factors like autonomy, intellectual growth, and meaningful work may be more effective in enhancing faculty engagement than relying solely on extrinsic rewards.

Implications for Practice

In terms of faculty engagement, this suggests that simply adding extrinsic rewards may not be enough to meaningfully change faculty members' intrinsic motivation or engagement levels. To avoid crowding out and to encourage crowding in, organizations may need to focus on providing extrinsic rewards that are perceived as supportive, non-controlling, and aligned with the faculty's sense of autonomy and competence. For Indian educational institutions, these results suggest a shift in focus is needed. Rather than relying solely on external rewards such as, salary and other benefits, institutions should focus on fostering a more engaging and stimulating academic environment. Encouraging faculty part in collaborative research, providing opportunities for leadership roles, and offering meaningful feedback can all help to increase intrinsic motivation, leading to greater engagement. To enhance the meaningfulness of work, institutions should recognize faculty achievements through awards and public acknowledgments, involve them in community engagement projects, and provide leadership roles. Promoting a supportive environment with open communication, work-life balance resources, and a collaborative culture can also increase job satisfaction. Clear career progression paths, combined with opportunities for personal and professional development, help faculty feel valued and motivated in their roles. These interventions lead to a more engaged and productive faculty, ultimately benefiting the institution's academic excellence and reputation.

Limitations and Conclusion

Further research is required, as the findings on the crowding in or crowding out of intrinsic motivation by extrinsic rewards remain inconclusive. This study found no evidence that extrinsic rewards either diminish or enhance intrinsic motivation among faculty. Importantly, the current research focused solely on faculty engagement from an individual perspective. Future studies could incorporate the employer's perspective to provide a more holistic understanding of motivation in educational institutions.

Additionally, this study was conducted in private higher educational institutions, which limits the scope of generalization. Future research could compare faculty engagement across both private and government institutions, taking into account the unique benefits and considerations in public sector institutions. A comparative study could provide deeper insights into how intrinsic and extrinsic motivators vary across different types of higher education environments.

Private educational institutions can engage their faculty by balancing intrinsic motivators like autonomy, intellectual stimulation, and meaningful work with extrinsic factors such as competitive compensation, recognition, and clear career advancement paths. Allowing faculty, the freedom to design their courses and pursue their research interests fosters a sense of ownership, while providing opportunities for professional growth keeps them intellectually stimulated. When faculty feel that their work positively impacts society, they are more likely to feel energized and dedicated. At the same time, offering competitive salaries, benefits, and regular recognition for achievements ensures that basic financial and emotional needs are met. A transparent career progression system gives faculty a clear path for growth, further motivating them to perform well. By fostering a supportive environment that promotes work-life balance and involves faculty in decision-making processes, institutions can keep their faculty engaged, satisfied, and loyal. Balancing both intrinsic and extrinsic motivators leads to a more productive and committed faculty body.

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