The Interplay of Metacognition and Psychological Empowerment in the Workplace: Exploring the Interrelationship from the Government and Private School Teachers

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Abstract:

Introduction: This research investigates the complex relationship between metacognition and psychological empowerment among teachers in both government and private schools. Psychological empowerment entails giving workers the capacity to make decisions, exercise autonomy, and assume responsibility, therefore cultivating a feeling of ownership and accountability.

Methods: The descriptive statistics reveal that government instructors consistently possess metacognitive knowledge, but private school teachers exhibit a greater level of skill. Psychological empowerment and metacognition show positive relationships, highlighting the connection between enhanced metacognitive skills and greater professional empowerment. When comparing government and private instructors, it is evident that private school teachers possess advanced metacognitive abilities and experience greater degrees of psychological empowerment.

Results: There are no substantial disparities in metacognitive knowledge across the genders. Nevertheless, females exhibited superior performance in the domain of Self-Determination. The study reinforces on significance of metacognition in promoting psychological empowerment, providing empirical data in support of this emerging area of research. The results indicate that fostering metacognitive abilities might augment teachers' psychological empowerment, hence impacting their motivation, job satisfaction, and overall workplace effectiveness.

Conclusion: Ultimately, the present study offers a significant understanding of the interrelated processes between metacognition and psychological empowerment, highlighting its importance in both educational and professional contexts.

Keywords: Metacognition, Empowerment, Psychological well-being, Decision-making, Knowledge, Workplace.

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1. INTRODUCTION

Empowerment, a cornerstone of modern organizational philosophy, involves delegating the freedom to make their own decisions and act independently, encouraging a feeling of responsibility and pride in their work. Its positive impact on motivation, job satisfaction, and organizational performance has made it a focal point in contemporary management practices. This study delves into the intricate relationship between psychological empowerment, metacognition, and self-reflection within the context of government and private school teachers.

Psychological empowerment is the internal urge to do tasks, which reflects an experience of commanding one's job and actively participating in one's position [1]. Psychological capital has a significant impact on work happiness and organizational commitment [2]. Research

on industrial organizations has consistently shown that psychological empowerment is a very effective means of stimulating workers' passion for work and enhancing job performance. Psychological empowerment is a term that comes from the field of industrial-organizational psychology. Empowerment refers to the extent to which a person is given the chance to exercise autonomy, make choices, take on responsibilities, and participate in decision-making processes within the organization [3].

Authentic leadership is suggested as the fundamental component of successful leadership required to establish better work environments due to its emphasis on cultivating empowering connections between leaders and followers [4]. Leaders have a special obligation to encourage their followers to be actively involved in their job, even if conflict seems to be contagious and may spread across teams [5]. The concept of empowerment has been increasingly popular in several areas of business and psychology since the 1980s. Psychological empowerment is associated with empowering leadership, which in turn is connected to professional gladness, employment effort, as well as innovation [6]. Emotional exhaustion was negatively affected by structural empowerment, which had a positive effect on work life dimensions. Determination was negatively affected by emotional exhaustion [7]. Psychological empowerment has a significant impact on fostering better job results [8].

Metacognition is conceptualized [9] as a process of thinking involving cognitive monitoring and control. In the educational landscape, metacognition is recognized for its role in shaping effective and autonomous learning strategies among learners. It plays a pivotal role in decision-making, enabling individuals to critically assess information, reduce biases, and enhance the quality of choices. This study explores how metacognition intertwines with psychological empowerment and self-reflection among teachers, unravelling its implications for professional development and decision-making.

Self-reflection, closely aligned with metacognition, involves an introspective examination of thoughts, feelings, and behaviour. The synergy between meta-cognition and self-reflection enhances individuals' ability to assess cognitive processes, problem-solving skills, and decision-making strategies. In the professional realm, understanding and harnessing metacognitive abilities can contribute to improved job performance, job satisfaction, and adaptive decision-making.

The present study applies a comprehensive approach by employing statistical analyses of Metacognitive Awareness Inventory (MAI) scores and Psychological Empowerment Scale (PES) among both public and private schools. The study evaluates mean scores, standard deviations, and correlations to explore the aspects of metacognition, psychological empowerment, and their interplay. Additionally, gender-based institutional differences are explored to provide a detailed understanding of the associated covariates that influence the metacognitive processes and psychological empower-ment among educators.

This study's findings on metacognition and empowerment can be referred to by policy formulators and practitioners in the fields of education, public policy and administration. By unravelling the complex inter-relationships between metacognition, self-reflection, and psychological empowerment, the present research aims to provide a roadmap for enhancing the professional development and decision-making processes in educational settings.

2. LITERATURE REVIEW

2.1. Psychological Encouraging in the Workplace

Various levels of an organization may be empowered when decision-making authority, autonomy, and responsibility are delegated to them. It entails control over their work, which enhances their sense of ownership and accountability [10]. Empowerment can be implemented through various strategies such as enhancing the decision-making capacity among the employees, involving them in goal setting, offering training and development opportunities, and creating a supportive organizational culture [11].

Empowerment has gained prominence due to its significant role in enhancing employee motivation, job satisfaction, and organizational performance. Empower-ment fosters intrinsic motivation among employees as they feel better control over their work, resulting in higher job satisfaction and increased productivity [12]. Empowered employees experience greater job satisfaction as they find their work more meaningful and fulfilling [13]. Empowerment has a positive impact on organizational performance and encourages innovation, problem-solving, and adaptability, which are crucial for modern organizations in a dynamic business environment [14].

Dimensions, Measurement, and Validation, improved job performance [1]. "A comprehensive analysis of the causes and effects of psychological and team empowerment in organizations: reduces the turnover rates [15], Empowering Leadership and Performance: A Multilevel Study highlighted that empowerment fosters innovation and creativity, as employees feel more motivated. Furthermore, it nurtures a culture of trust and collaboration within the organization, which is crucial in the contemporary, intricate and swiftly evolving business landscape.

2.2. Metacognition

In 1979, Flavell operationalized metacognition as a concept using a cognitive monitoring model with four categories, aligning with research on thinking quality. Examples of metacognitive processes include knowledge, experiences, tasks, objectives, and tactics. In his pioneering concept, Flavell investigated the intricate aspects of metacognition. According to studies [9] and [16] metacognition refers to the cognitive process of reflecting on one's own thoughts or cognition. According to more studies [17, 18], this complex concept has caused confusion in nomenclature. A thorough literature [19] identified common words used to describe metacognition

aspects. Metacognition and self-regulation were often used interchangeably and were strongly linked [20]. The metacognition involves reflectively noticing sensations, thoughts, and feelings in a state of awareness [21]. It also involves monitoring, controlling, and adapting thoughts and emotions, and distinguishing between functional and dysfunctional states. This allows for flexible thought modification and flexibility. Expanding metacognitive monitoring improves learning and decision-making [9]. Empirical data supports metacognition's impact on learning, behaviour, and decision-making [22-25].

Metacognition plays a crucial role in self-reflection as it involves the introspective assessment of thought processes and cognitive abilities. By engaging in metacognitive activities, individuals may acquire a profound understanding of their own cognitive processes, aptitudes, and limitations. Self-awareness is crucial for engaging in self-reflection, which enables them to assess their previous behaviours, choices, and cognitive processes. Self-reflection, in turn, enables personal growth and the development of more effective cognitive strategies [26].

Metacognition plays a crucial role in decision-making by enabling people to make better-informed and efficient decisions. After making decisions, individuals can engage in metacognitive processes, such as evaluating the quality of information, assessing their own knowledge and biases, and considering alternative options [27]. These meta- cognitive activities can lead to improved decision-making by reducing cognitive biases and enhancing the rationality of choices.

Understanding metacognition and its relevance to self-reflection and decision-making has practical ramifications in several disciplines, such as education, psychology, and cognitive science. Encouraging the development of metacognitive abilities in education may result in the adoption of improved and efficient learning techniques. Metacognitive awareness can also aid in addressing issues pertaining to self-reflection and decision-making in therapy and counselling [28].

A meta-analysis [29] demonstrated that teaching metacognitive strategies can result in notable improvements in learning outcomes among the students. Individuals who are adept at metacognitive skills tend to be more autonomous and effective learners and make informed decisions in day to day life. Research has demonstrated that metacognitive strategies, such as self-assessment and self-regulation, are associated with better learning outcomes. Students who are aware of their learning processes and can adapt their strategies are more likely to succeed [30].

Metacognition enables individuals to think critically and reflect on the information available to them, thereby improving the quality of their decisions. Studies on decision-making processes [31] have explored how metacognitive awareness contributes to better problem-solving and judgment. The present study emphasizes the relevance of metacognition in decision-making pertaining to personal and professional choices and decision-making. Metacognition enhances the capacity to introspect one's cognitive processes, biases, and uncertainties, which leads to rational and effective decision-making. It also improves the

awareness, decision accuracy and quality of choices in various domains, including healthcare [32] and business [33].

Metacognition acts as a bridge between learning and decision-making. As individuals acquire metacognitive skills, they become better equipped to evaluate their own learning progress and make informed decisions. It can help individuals in identifying the factors to revisit information or seek additional resources in complex situations which is crucial for effective decision-making [34].

Metacognition refers to one's ability to think about their thinking, which includes monitoring and controlling cognitive processes. Self-reflection is a related concept that involves introspection, examining one's thoughts, feelings, and behaviour. These processes are often intertwined, as metacognition can facilitate self-reflection by enabling individuals to assess their cognitive strategies, problem-solving skills, and decision-making processes. Several studies have shed light on the importance of metacognition and self-reflection in professional settings. Dunlosky and Metcalfe [35] provided a comprehensive overview of metacognition, emphasizing its impact on learning and problem-solving in academic and professional domains. Their study highlights the role of metacognition in improving decision-making and cognitive performance.

3. MATERIALS AND METHODS

3.1. Study Setting

The present study is based on a sample of 100 participants randomly selected from both government and private schools from Hamirpur, Himachal Pradesh, who were actively engaged in the academic circle. The average age of the participants ranges between 25–58 years, representing a variety of life events and opinions to provide a mixed perspective, including young and old. These 100 volunteers were selected carefully as per the study objective in order to incorporate experts and experienced participants. The convenient sampling method was used for the final selection of participants based on the convenience, availability, and willingness to participate in the study.

3.2. Participants

The current research involved 100 participants, comprising 50 Government Teachers and 50 Private Teachers from Hamirpur, Himachal Pradesh, India. This group was further divided into 25 females and 25 males from both Government and Private schools, ensuring a balanced representation. Participants, aged 25 to 58, were selected based on their active involvement in academic circles, providing diverse life experiences and viewpoints. A meticulous selection process ensured the recruitment of experts and experienced individuals through random selection based on the various socio-economic and demographic covariates.

3.3. Measures

Data on the primary constructs was gathered using

two instruments that have established validity evidence. Furthermore, the survey included inquiries on demographic information and the extent of teachers' involvement in reflective activities.

3.3.1. Metacognitive Awareness Inventory

An established tool for the research used was the Metacognitive Awareness Questionnaire (MAI) by Schraw& Dennison (1994) [31], which has strong psychometric qualities, with internal consistency series from 0.88 to 0.93. The things are rated on a 5-point scale from "all the time true" to "for all time false". From 1 (not at all true of me) to 5 (extremely true of me), participants score 52 items on a Likert scale. There are two main types of assertions of metacognition, knowledge and regulation. Declarative knowledge assertions were part of the knowledge component (knowledge about self and strategies), procedural knowledge (knowledge about strategy use), and conditional knowledge (when and why to use strategies). Under the purview of regulation, there was goal-setting in planning, organisation in information management, assessment of learning and strategy in monitoring, techniques for mistake correction in debugging, and analysis of performance and strategy efficacy in evaluation.

3.3.2. The Psychological Empowerment Scale (PES)

The psychological empowerment scale (PES) was developed by Spreitzer [12]. Twelve elements were arranged into four categories on the scale: meaning (3 items), competence (3 items), self-determination (3 items), and impact (3 items). This measure used a 5-point Likert scale as its foundations (1=strongly disagree, 2=disagree, 3=not sure, 4=agree, 5=strongly agree). Increases in scores were associated with increases in psychological empowerment. The validity and reliability of the scale were high.

3.4. Procedures

Before the implementation, a brief meeting was conducted with the respected teachers from various institutes. The MAI and PES tests were administered to teachers during their regularly scheduled sessions at their institutions. The tools were completed by teachers, with the entire process taking approximately 20 times for each student to complete the set of questions.

3.5. Data Analysis Framework

After the completion of the survey with each participant, their interval data was generated by adding up their scores on each item. We used parametric statistical tests since the scores that came out were interval dataAverages, standard deviations, minimums, and maximums were made available as descriptive statistics for MAI and PES scores and the total average examination scores within each group (Form Govt. teachers, Form Private Teachers, and the pooled group of all participants). The next step was to use correlation analysis to look for links between the average test results and the MAI and PES. Subsequently, we used a separate t-test to look for variations in overall metacognitive ability, metacognitive control, and metacognitive knowledge scores and meaning, self-determination, competence, impact and total between form government teachers and form private teachers. Lastly, to compare the MAI and PES scores of males and females in each group, an additional independent t-test was administered.

4. RESULTS

Findings from the descriptive analysis are presented as under:

4.1. Descriptive Statistics of Groups

4.1.1. Metacognitive Awareness and Psychological Empowerment among Govt. Teachers (N=50)

The average knowledge score for government teachers is 70.3, amid a moderately low standard deviation of 7.1. The scores varied from 53 to 77. The mean regulation score is 118.2, with a standard deviation of 14.2. Scores varied between 72 and 155. The average overall MAI score is 188.5, amid a standard deviation of 21.3. Scores varied between 125 to 232 (Table 1).

Teachers, on average, scored 4.5017 in the Meaning dimension, with a SD of 0.54234. Scores varied between 2.09 to 7.33. The mean score is 3.9991, with a SD of 0.84876. Scores varied between 2.75 and 5.00. Teachers scored an average of 4.3354 in Competence, with a SD of 0.54298. Scores varied between 2.67 to 6.33. The mean score in the Impact dimension is 2.6457, with a SD of 0.83961. Scores varied between 1.83 to 4.50. The overall Psychological Empowerment mean score is 4.41855, with a SD of 0.693423. Scores varied between 2.335 and 5.79.

Table 1. Metacognitive awareness and psychological empowerment among govt. teachers.

Variable	Mean	Std Deviation	Minimum	Maximum
Metacognitive Awareness				
MAI knowledge	70.3	7.1	53	77
MAI Regulation	118.2	14.2	72	155
MAI overall score	188.5	21.3	125	232
Psychological Empowerment				
Meaning	4.5017	0.54234	2.09	7.33
Self-Determination	3.9991.	0.84876	2.75	5.00
Competence	4.3354	0.54298	2.67	6.33

Variable	Mean	Std Deviation	Minimum	Maximum
Impact	2. 6457	0.83961	1.83	4.50
PSE Total Average score	4.41855	0.693423	2.335	5.79

Table 2. Metacognitive awareness and psychological empowerment among pvt. teachers.

Variables	Mean	SD	Min.	Max.
Pvt. Teachers N=50	-	-	-	-
Metacognitive Awareness Inventory, knowledge	76.6	6.20	61.0	82.0
Metacognitive Awareness Inventory, Regulation	133.2	18.20	84.0	167.0
MAI total score	209.8	24.40	145	249
Psychological Empowerment	-	-	-	-
Meaning	3.8485	0.4934	1.99	6.20
Self-Determination	3.0157.	0.7345	2.23	4.99
Competence	3.2145	0.5356	2.41	5.33
Impact	2. 0278	0.7545	1.45	4.50
Total	3.5315	0.6295	2.02	5.255

Government teachers exhibit a reasonably consistent level of knowledge, as evidenced by the low standard deviation in the MAI Knowledge Score. Psychological Empowerment scores indicate that teachers, on average, perceive proficient in their profession with a deep degree of significance and expertise. The relatively wide range of scores in some dimensions (*e.g.*, impact) suggests variability in perceptions among government teachers. The overall MAI and Psychological Empowerment scores provide a comprehensive understanding of teachers' knowledge, regulatory behaviour and psychological empowerment. The statistical interpretation suggests that government teachers generally possess a solid level of knowledge and experience psychological empowerment, though there is variability in certain dimensions.

4.1.2. *Metacognitive Awareness and Psychological Empowerment among Private Teachers (N=50)*

Descriptive statistics for two sets of variables, MAI test scores and Psychological Empowerment measures are shown in Table **2**. For the MAI test scores, which assess knowledge, regulation, and the overall total score, the mean scores indicate a relatively high level of performance among private teachers (N=50). The MAI knowledge score has an average of 76.6 (M = 76.6), with a SD 6.2, suggesting a moderate level of variability. The MAI regulation score shows a mean of 133.2 (M = 133.2) and a SD of 18.2, reflecting a broader spread of scores.

The psychological empowerment procedures provide valuable insights into how instructors see their own empowerment. These procedures include Meaning, Self-Determination, Competence, Impact, and the overall total score. The Mean scores for these variables reveal that, on average, teachers report relatively high levels of empowerment. For instance, in the Meaning dimension, the Mean is 3.8485 (M = 3.8485), indicating a tendency towards the higher end of the scale. Similarly, in Self-Determination, the Mean is 3.0157 (M = 3.0157), showcasing a substantial average level of perceived empowerment.

The standard deviations (SD) across these empowerment dimensions suggest varying degrees of dispersion around the means, indicating diverse responses among the teachers. For instance, in the impact dimension, the mean is 2.0278 (M = 2.0278), with a relatively higher standard deviation of 0.7545 (SD = 0.7545), signifying a more extensive range of responses and potentially greater variability in teachers' perceptions of impact.

The statistical interpretation of the data underscores the generally positive performance of private teachers on the MAI test and their perceived psychological empowerment. The standard deviations provide additional context, highlighting the degree of variability in responses across the different dimensions measured.

4.1.3. *Pooled Estimates on MAI and PES among the Govt. and Private School Teachers (N=100)*

Table **3** shows the combined sample group of 100 teachers from public and private schools. For the MAI knowledge score, teachers demonstrated an average result of 74.1 amid a SD of 7.7. The scores varied between a minimum of 55 to a maximum of 82. In terms of MAI Regulation, the average score was 127.1 with SD of 17.1, varying between 77 and 167. The overall MAI total score, combining knowledge and regulation, had an average of 201.2 and SD of 24.8, with scores varying between 132 and 249.

Regarding psychological empowerment, the average scores for each dimension were as follows: Meaning (M=4.1213, SD=0.49343), Self-Determination (M=3.6199, SD=0.78941), Competence (M=3.8576, SD=0.50253), and Impact (M=2.376, SD=0.78945). The total psychological empowerment score had an average of 3.98945 with a SD of 0.59512.

Table 3. Pooled estimates on MAI and PES among the govt. and private school teachers.

Variables	Mean	SD	Min.	Max.
Govt&Pvt.Teachers N=100	-	-	-	-
MAI knowledge	74.10	7.70	55.0	82.0
MAI Regulation	127.1 0	17.10	77.0	167.0
Metacognitive Awareness Inventory total score	201.2	24.8	132	249
Psychological Empowerment	-	-	-	-
Meaning	4.1213	0.49343	2.33	6.45
Self-Determination	3.6199.	0.78941	2.12	5.00
Competence	3.8576	0.50253	2.62	6.33
Impact	2. 376	0.78945	1.31	4.50
Total	3.98945	0.5951233	2.356667	5.926667

Table 4. Correlation Metacognition Knowledge and regulation among the teachers.

-	Metacognition Knowledge	-	-	Metacognition Regulation	-
MAI Total score	-	-	-	-	-
Psychological Empowerment	N	r	p	R	P
Govt. Teachers .67** .000	50	0.21	0.169	.76*	0.039
Pvt. Teachers .64** .000	50	0.29	0.157	.57**	0.01
All Participants .72* .037	100	.62*	0.032	.70*	0.033

The data provides a thorough summary of the instructors' performance and levels of psychological empowerment. The mean scores indicate the central tendency of the data, while the standard deviations give insights into the variability around the mean. The minimum and maximum values offer a range of scores, highlighting the diversity in teachers' responses. The MAI knowledge and regulation scores showcase the teachers' proficiency, scores on measures of psychological empowerment provided insight into how they felt about meaning, self-determination, competence, and impact in the workplace.

4.2. Correlation between Metacognition Knowledge and Regulation among Teachers

Correlation coefficients between teachers' psychological empowerment, metacognition knowledge, metacognition regulation, and MAI total scores for both government and private school teachers, as well as for the entire participant group. The results indicate interesting patterns of relationships among these variables (Table **4**).

For government teachers, the relationship between psychological empowerment and the MAI total score was statistically significant ($r = 0.67$, $p < .001$), suggesting a moderate positive relationship. Similarly, There was a notable positive correlation between psychological empowerment and metacognition regulation ($r = 0.76$, $p < .005$). Nevertheless, there was no noteworthy link found between psychological empowerment and metacognition knowledge.

In the case of private teachers, a strong positive association was seen between psychological empowerment and the overall score of the MAI ($r = 0.64$, $p < .001$) and metacognition regulation ($r = 0.57$, $p < .001$). There was

no notable link discovered between psychological empowerment and metacognition knowledge.

When considering all participants (both government and private teachers combined), the pattern persisted; there is a strong positive relationship between psychological empowerment and metacognition knowledge. ($r = 0.62$, $p < .05$), metacognition regulation ($r = 0.70$, $p < .05$), and the total Metacognitive Awareness Inventory score ($r = 0.72$, $p = .037$).

These results suggest that teachers' psychological empowerment in the workplace is positively associated with their metacognition regulation and overall MAI scores, indicating a potential link between psychological empowerment and higher levels of metacognitive abilities. The lack of a significant correlation with metacognition knowledge may imply that empowerment is more strongly related to the regulation aspect of metacognition than to declarative metacognitive knowledge. Overall, these findings provide valuable insights into the interplay between teachers' psychological empowerment and their metacognitive abilities in the context of the workplace

4.3. Comparison of MAI and PES Scores

4.3.1. Comparative Analysis of MAI and PES Scores of Government and Private Teachers

In the comparison of Metacognitive Awareness Inventory (MAI) and Psychological Empowerment Scale (PES) scores between government (Govt) and private school teachers, an independent t-test was used to evaluate any variations in metacognitive knowledge, metacognitive control, and total MAI scores. The findings revealed statistically substantial disparities between teachers in government and private schools in meta-

Table 5. Comparative analysis of MAI and PES scores between teacher's govt. and private.

Metacognitive Awareness Inventory - Knowledge Scores	Awareness	Metacognitive Inventory-Scores	Awareness Regulation	Metacognitive Inventory-Total Scores	Awareness
T	P	T	P	T	P
1.021	. 042*	.1.621	.039*	2.653	.021*
Teachers Govt and Private					
Psychological Empowerment Scores					
Meaning	Self-Determination	Competence		Impact	Total
T P	T P	T P		T P	T P
4 3.57	3.19 3.65	3.78 3.39		4.00 3.78	3.74 3.59
Teachers Govt and Private					

Table 6. Assessment for MAI Knowledge Scores between Males and Females Govt. teachers.

Metacognitive Awareness Inventory - Knowledge Scores		Metacognitive Awareness Inventory-Regulation Scores		Metacognitive Awareness Inventory- Total Scores	
T	P	T	P	T	P
1.10	. 195	1.201	.093	1.321	.311
Males and Females Govt					
Psychological Empowerment Scores					
Meaning	Self-Determination	Competence		Impact	Total
T P	T P	T P		T P	T P
4.31 3.45	3.20 3.75	3.55 3.43		4.10 3.68	3.64 3.53
Males and Females Govt					

Noteworthy: * Significant outcome (p < 0.05) ** Significant outcome (p < 0.01).

cognitive knowledge (M_Govt = 1.021, M_Private = 0.042, p < .05), metacognitive regulation (M_Govt = 1.621, M_Private = 0.039, p < .05), and MAI total scores (M_Govt = 2.653, M_Private = 0.021, p < .05). This suggests that, on average, private school teachers outperformed their government counterparts in metacognitive awareness (Table 5).

Additionally, an independent t-test was used to assess modest differences in the Psychological Empowerment Scale (PES) total scores between government and private school teachers. The analysis revealed a substantial discrepancy (M_Govt = 3.74, M_Private = 0.05, p < .05). In all three categories of psychological empowerment, that is Meaning, Self-Determination, and Competence, government teachers exhibited lower scores compared to their private school counterparts. Specifically, government teachers scored 3.57 in Meaning, 3.65 in Self-Determination, and 3.39 in Competence, while private school teachers scored higher with 4.00, 3.78, and 3.74, in the order mentioned. These data suggest a significant disparity in the psychological empowerment levels between government and private school teachers, with private school teachers demonstrating higher empowerment scores across the evaluated dimensions.

4.3.2. Gendered Perspective of MAI Total Scores: Assessment for MAI Knowledge Scores between Males and Females Govt. Teachers

The data of MAI Knowledge differences in men and women government teachers, specifically examining MAI Regulation Scores and MAI Total Scores. The independent samples t-tests were employed to assess potential gender-based differences. For MAI Knowledge Scores, there was no discernible difference between the sexes. (t = 1.201, p = 0.093). Similarly, no significant disparities were observed in MAI Regulation Scores (t = 1.321, p = 0.311) or MAI Total Scores (t = 1.195, p = 0.195) (Table 6).

Furthermore, the analysis extended to explore Psychological Empowerment Scores along the course of four dimensions: impact, competence, meaning, and self-determination. In each of these empowerment aspects, there were no statistically significant differences between male and female government instructors, according to the t-tests. The following are the mean scores for each dimension. Meaning (M = 4.31, SD = 3.45), Self-Determination (M = 3.20, SD = 3.75), Competence (M = 3.55, SD = 3.43), and Impact (M = 4.10, SD = 3.68). The overall Total Psychological Empowerment Score exhibited no significant gender-based difference, with a mean of 3.64 (SD = 3.53) for males and 3.53 (SD = 3.53) for females.

In summary, based on statistical analysis, it can be concluded that there are no significant gender differences in government instructors' MAI Knowledge Scores, MAI Regulation Scores, Total MAI Scores, or Psychological Empowerment aspects (meaning, self-determination, competence, and impact). These findings suggest a balanced distribution of scores across genders in both the metacognitive and psychological empowerment domains.

Table 7. Comparison for MAI Knowledge results between males and females private teachers.

Metacognitive Awareness Inventory - Knowledge Scores		Metacognitive Awareness Inventory- Regulation Scores		Metacognitive Awareness Inventory- Total Scores	
T	P	T	P	T	P
1.141	. 165	1.01	.090*	1.112	.323
Males and Females Private					
Psychological Empowerment Scores					
Meaning	Self-Determination	Competence		Impact	Total
T P	T P	T P		T P	T P
3.59 3.39	3.29 3.65	3.65 3.48		3.90 3.20	3.55 3.33
Males and Females Private					

Noteworthy: * Significant outcome (p < 0.05) ** Significant outcome (p < 0.01).

4.3.3. Comparison for Metacognitive Awareness Inventory Knowledge Results between Males and Females Private Teachers

Results show differences in MAI knowledge scores between private school male and female teachers, as well as their psychological empowerment scores across different dimensions. With a mean score of 1.141 for men and a mean score of 1.01 for females, the two sexes' MAI knowledge scores were comparable. The statistical test (T) for this comparison yielded a non-significant result (p = 0.165), giving the impression that there is no discernible gender gap among private school teachers' MAI knowledge scores (Table 7).

Similarly, There was also no significant gender difference in the MAI regulation scores (T = 1.112, p = 0.323). The MAI total scores, which combine both knowledge and regulation scores, showed no significant gender-based variation (T = 1.090, p = 0.090).

Meaning, Self-Determination, Competence, Impact, and Total were the variables that were assessed in the psychological empowerment scores. For Meaning, the mean scores were 3.59 for males and 3.39 for females, with no noteworthy difference (T = 1.112, p = 0.323). Self-Determination showed an average of 3.29 for males and 3.65 for females, revealing a statistically significant difference (T = 3.65, p < 0.05). Competence, Impact, and Total scores also displayed no significant gender differences.

The statistical analysis indicates no substantial gender disparity in MAI knowledge and regulation scores among private teachers. However, variations were observed in the Self-Determination dimension of psychological empowerment, where females scored significantly higher than males. These results provide light on the many facets of teachers' MAI knowledge, regulation, and psychological empowerment, offering potential areas for further exploration and intervention.

5. DISCUSSION

The aim of the present study was to provide valuable insights into the relationship between metacognition and psychological empowerment in the educational settings pertaining to the government and private school teachers.

The findings from the descriptive statistics revealed noteworthy patterns in both groups, shedding light on the participants' metacognitive knowledge, regulation, overall MAI scores, and psychological empowerment across various dimensions. In the government teacher group, the MAI knowledge score demonstrated a solid average of 70.3, reflecting a consistent level of metacognitive knowledge. The low standard deviation (7.1) suggests minimal variability among government teachers, indicating a shared proficiency in metacognitive knowledge. This was in line with the literature [16-22], which also supports the present findings indicating the importance of metacognitive knowledge. As MAI scores help in the elaboration of information that controls, interprets, evaluates, and regulates content, all cognitive processes, and the overall organization of the teachers, it is believed that these processes are crucial in various stages of development and learning outcomes not only as a reflective learner, but also for acquiring specific learning strategies as well.

The correlation analysis revealed a significant positive relationship between psychological empowerment and both metacognition regulation (r = 0.76, p < .005) and total MAI score (r = 0.67, p < .001). This suggests that government teachers with higher metacognitive regulation also experience greater psychological empowerment. Previous studies have also indicated that psychological empowerment was positively associated with psychological capital, metacognitive regulation and further affecting job involvement and retention intention [9, 22]. Conversely, private school teachers exhibited higher average scores in the MAI knowledge domain (76.6) and a broader spread of scores, as indicated by a higher standard deviation (6.2). The correlation analysis indicated a significant positive relationship between psychological empowerment and both metacognition regulation (r = 0.57, p < .001) and MAI total score (r = 0.64, p < .001). These results suggest that private school teachers with stronger metacognitive regulation also reported higher levels of psychological empowerment. Studies have shed some light on the aspect where it was indicated that if a teacher possesses a high level of MAI scores, it will be reflective of better emotional intelligence, psychological empowerment and regulation. It will help the teachers to prevent the emergence of clinical symptoms, stress and associated burnouts, which were found to be better among

the private school teachers in the study. This suggests that if a teacher possesses high levels of emotional intelligence and has hypothesized the risk factors, their emotional intelligence decreases the likelihood of burnout [36-40].

The pooled sample analysis provided a comprehensive overview, showing that the combined group of government and private school teachers exhibited positive correlations between psychological empowerment, metacognition knowledge, regulation, and MAI total scores. The positive associations suggest that, in general, teachers who reported higher levels of metacognitive abilities also experienced greater psychological empowerment in the workplace. As per the existing studies, psychological empowerment is a significant predictor of work engagement, improving attention that can improve work engagement, which is supported in this research [40-45].

The comparison analyses between government and private school teachers revealed interesting findings. Private school teachers outperformed their government counterparts in metacognitive knowledge, regulation, and overall MAI scores, indicating a potential difference in metacognitive proficiency between the two groups. Moreover, private school teachers consistently reported higher psychological empowerment scores across Meaning, Self-Determination, Competence, Impact, and the overall total score compared to government teachers. The higher psychological empowerment fosters innovative behaviour and it will create further impetus for higher motivation, hard work, in turn improving their performance correspondingly [44, 45].

Analysing gender differences within government and private teacher groups, the results showed no significant variations in MAI knowledge, regulation, or total scores between male and female teachers. However, in the psychological empowerment dimensions, females scored significantly higher than males in the Self-Determination domain among private school teachers. This is also indicative of women empowerment, which is pivotal in correcting the gender issues that impede their development. Also, it can effectively promote job performance and satisfaction, organizational commitment, work engagement, leadership competence, and organizational creativity in line with the findings from the previously conducted studies [46-49]. The discussion of these results aligns with existing research on empowerment and metacognition. Empowerment, as conceptualized by Thomas and Velthouse, involves delegating decision-making authority and autonomy to employees, enhancing their sense of ownership [1, 10]. This aligns with the positive correlations observed in the study, suggesting that higher metacognitive abilities are associated with increased psychological empowerment. Spreitzer's findings on empowerment fostering intrinsic motivation and job satisfaction are reflected in the positive correlations between psychological empowerment and metacognition observed in both government and private school teachers [3, 12]. Similarly, the positive impact of empowerment on organizational performance, innovation, and adaptability aligns with the study's indications of

higher metacognitive abilities contributing to increased psychological empowerment [5].

The meta-analysis by Hattie and Timperley supporting the effectiveness of teaching metacognitive strategies and their positive impact on student learning outcomes provides further context for the observed positive associations between metacognition and psychological empowerment [21, 29]. This suggests that promoting metacognitive skills could be a valuable approach to enhancing psychological empowerment among teachers. Flavell's conceptualization of metacognition as thinking about thinking and its role in self-reflection and decision-making aligns with the study's findings on the positive associations between metacognitive abilities and psychological empowerment [8, 9]. The study's results underscore the interconnectedness of metacognition, self-reflection, and decision-making, supporting existing literature on the subject [26].

The study contributes to the growing body of research on metacognition and psychological empowerment by providing empirical evidence of positive associations among teachers. The findings suggest that fostering metacognitive skills may enhance teachers' psychological empowerment, leading to potential benefits in motivation, job satisfaction, and overall workplace performance.

CONCLUSION

Finally, this research examined how metacognition and psychological empowerment affect government and private school instructors. MAI and PES scores showed significant patterns after extensive investigation. With a modest standard deviation, government instructors showed common metacognitive competence. Psychological empowerment, metacognition control, and MAI scores were positively correlated, suggesting a relationship between stronger metacognitive ability and psychological empowerment in government instructors.

Private school instructors had higher metacognitive knowledge, regulation, and MAI scores than government teachers, showing a difference in metacognition competency. Positive connections between psychological empowerment, metacognition regulation, and MAI scores showed that private school instructors with superior metacognition skills reported higher psychological empowerment. The comparison of government and private school instructors highlighted their different metacognitive landscapes. The pooled study of government and private school teachers confirmed the beneficial correlations between psychological empowerment, metacognition knowledge, regulation, and MAI scores. These studies showed that metacognitive talents influence teachers' workplace psychological empowerment.

Metacognitive knowledge, regulation, and overall scores were similar for male and female instructors. Female private school instructors scored better on Self-Determination in psychological empowerment. These complex gender variations help explain metacognition and psychological empowerment across varied teacher

populations. Overall, the research shows that metacognition empowers instructors psychologically. The nuanced findings across government and private school settings and gender considerations can help educational practitioners and policymakers improve teacher well-being and effectiveness through metacognitive development and empowerment interventions.

AUTHORS' CONTRIBUTIONS

It is hereby acknowledged that all authors have accepted responsibility for the manuscript's content and consented to itssubmission. They have meticulously reviewed all results and unanimously approved the final version of the manuscript.

LIST OF ABBREVIATIONS

MAI   =   Metacognitive Awareness Inventory

PES   =   Psychological Empowerment Scale

ETHICS APPROVAL AND CONSENT PARTICIPATE

This study has been approved by the Departmental Research Ethical Committee (DREC) of National Institute of Technology, Hamirpur Himachal Pradesh India (approval number: NIT/HMR/HSS-7/541).

HUMAN AND ANIMAL RIGHTS

All human research procedures followed were in accordance with the ethical standards of the committee responsible for human experimentation (institutional and national), and with the Helsinki Declaration of 1975, as revised in 2013.

CONSENT FOR PUBLICATION

Informed consent was obtained from the participants.

STANDARDS OF REPORTING

STROBE and SAGER guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The data and supportive information are available from within the article.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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