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Role of Meaningful Work in Interpreting the Connections between Motivational Mechanisms and Innovative Behaviour

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Abstract:
Research has shown that innovative behaviour is influenced by motivation. However, little is known about the effect of motivational mechanisms on teachers' innovative work behaviour; or the role meaningful work plays in such a relationship between motivational mechanisms and innovative behaviour. It is against this development that this study examined the unique impact of meaningful work in the association between innovative behaviour and the numerous motivational mechanisms. Therefore, using a quantitative approach and a survey research design, consisting of a randomly selected sample of 309 teachers from Federal Colleges in North-Eastern Nigeria, the study was carried out. The data was analysed using Partial Least Square – Structural Equation Modelling (PLS-SEM). The effect of motivational mechanisms on teachers' innovative behaviour was more significant when teachers have high self-belief in their ability to produce creative outcomes. A positive and significant effect was also found when teachers showed the desire to expend efforts to benefit others rather than engage in activities primarily because the job was fascinating. The results also revealed that a perceived sense of meaningfulness at work exerts a robust mediating effect on the motivational mechanisms influencing teachers' innovative behaviour

Keywords: Innovative behaviour, motivational mechanisms, meaningful work, education system

1. Introduction

Employee innovative work behaviour has been a very significant attribute that the modern work environment desires in their employees [1]. Employees' ability to generate ideas, solve problems, and think imaginatively has become an explicit demand required of innovative personnel. This trend of modern workplaces seeking creative and innovative persons to fill up job roles is expected to soar in the future, thereby enabling organisations to effectively preserve their competitive advantage by nurturing their employees' innovative behaviour [2]. Binnewies and Gromer [3] argue that employees' innovative work behaviour is an essential performance outcome that enables organisations to take advantage of opportunities, initiate new strategies, and adjust to changing environmental conditions. With the emergence of the global knowledge society, Messmann, Mulder [4] also argues that for-profit and non-profit organizations, including educational institutions, need to innovate. They explained that the environment in which educational systems operate also changes rapidly due to schools' changing societal expectations and the expanding knowledge fields [5].

Therefore, given the emergence of the modern economy and the emphasis placed on people and associations, the cruciality of nurturing teacher's innovative behaviour

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cannot be overemphasized [6]. Numerous researchers have argued that innovative behaviour is a competitive weapon in the workplace [7]. It is responsible for creating approximately 80% of the novel ideas implemented in organisations [8]. Hence, researchers have focused on the predictors and antecedents of innovative behaviour [7, 9, 10].

Research has shown that creativity, which is creating novel and useful ideas, is triggered by one's motivation (Amabile, 1996; Liu *et al*., 2016). One such motivational mechanism which influences innovative work behaviour is intrinsic motivation. Intrinsic motivation is defined as the internal drive that stimulates an individual's desire to be continuously engaged or committed to a job [11]. Yidong and Xinxin [12] found a positive association between intrinsic motivation and innovative behaviour. Similarly, Devloo, Anseel [7] reported that intrinsic motivation positively influences innovative behaviour. Current theoretical work on intrinsic motivation presents a compelling case that "motivation is not just intrinsic but has other manifestation" [13]. Hence, Liu *et al*. (2016) sought to understand the motivational underpinnings of creativity by investigating the effect of three motivational mechanisms, i.e. intrinsic motivation [14], creative self-efficacy [6] and prosocial motivation [15] on creativity.

Using an integration of the componential theory of creativity, social cognitive theory, and prosocial motivation theory, Liu *et al*. (2016) established that intrinsic motivation, creative self-efficacy, and prosocial motivation positively impact creativity. Although innovation research draws from the creativity literature, creativity and innovative work behaviour are essentially different. While creativity is the creation of novel and useful ideas (Amabile, 1996), teachers' innovative work behaviour, according to Baharuddin *et al*. (2019), is the ability of teachers to creatively produce, introduce and apply new ideas in their job as well as contribute to positive outcomes for their educational institutions. This implies that Liu *et al*. (2016) investigations may only apply to creativity rather than innovative work behaviour. However, innovative studies draw from creativity studies. There is still the issue that creativity deals with generating novel ideas. In contrast, innovation deals with the generation and application of novel ideas. Furthermore, several studies have contributed to the literature on innovation; however, these studies have not highlighted the effect of the motivational mechanisms on innovative work behaviour in a single study, especially in teachers' innovative work behaviour.

The job characteristics theory proposes that motivational and social work characteristics lead to meaningful work experience, which affects work-related outcomes such as performance, satisfaction, turnover, etc.; however, it is unknown whether meaningful work may impact innovative work behaviour. An increasing amount of research literature highlights the role of meaningful work as a predictor of desirable outcomes, for example, commitment [16] and work engagement [17]. However, its role as a mediator in the relationship between motivational mechanisms and innovative work behaviour is unknown. Furthermore, research literature has shown the association between intrinsic motivation, creative self-efficacy, prosocial motivation and creativity. However, it is yet to be determined from an empirical perspective if intrinsic motivation, creative self-efficacy, and prosocial motivation affect teachers' innovative work behaviour and the role meaningful work plays in such a relationship. Therefore, this study examines the role of meaningful work in the relationship between three motivational mechanisms (i.e. intrinsic motivation, creative self-efficacy, prosocial motivation) and teachers' innovative work behaviour.

2. Literature Review and Hypotheses Development

2.1 *Innovative Work Behaviour*

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Innovation has been reflected as human behaviour since research on innovation extended from administrative, communication, and anthropological sciences to psychology and sociology in the 1980s [18]. Innovative work behaviour is defined as an added role or behaviour essential for organisations to function successfully [19]. The innovative work behaviour (IWB) of employees is defined as individuals' actions focused on developing, processing, and applying fresh ideas. Typically, such ideas are about novel ways of undertakings, comprising new products, technologies, procedures, or work processes to increase organisational procedures' efficiency and accomplishment [20]. Innovative behaviour is explained as presenting and implementing new opinions, products, processes, and procedures to a person's workplace roles, operational units, or organisations (Darvishmotevali, 2019). In contrast, Scott and Bruce [21] conceptualise innovative behaviour as a self-initiated activity that seeks to generate new or improve existing ideas to change conditions.

However, for innovation to be fully realised, organisations typically depend solely on individuals at work to innovate. Individuals are the primary source of ideas and are responsible for introducing and implementing ideas, which are the basic requirements for innovation [22]. The benefits and advantages of innovative behaviour include improving individuals and organisations [23]. It also includes providing social benefits for employees such as work engagement, job satisfaction, role performance, high morale and commitment [24, 25]. Over the years, researchers have placed significant emphasis on private organisation or, precisely, for-profit organisations. Issues affecting people's innovative work behaviour have been extensively investigated [5]. However, Klaeijsen, Vermeulen [9] argued that only a few studies focus on the public sector, specifically on teachers' innovative behaviour and its factors. Many existing studies on innovative behaviour are mainly focused on the service, industrial, and manufacturing industries [26], which is essentially the private sector. Besides, Thurlings, Evers [5], [27] established that research on innovative behaviour among teachers has not hitherto received the thoughtful attention it merits in developing countries.

Earlier studies identified opportunity exploration, idea generation, championing and application as vital constructs of innovative work behaviour [21, 24, 28]. Other scholars like Kaur and Gupta [29] maintained that the instrument developed by Messmann and Mulder [30] is more suitable for measuring innovative behaviour, especially for teachers. It means that being innovative and reflecting on teaching practices enables teachers to find their strengths, weaknesses and improve their capabilities [31, 32]. This implies that teachers can implement changes or improve their teaching practices by reflecting on their classroom experiences. Therefore, the need for reflection as the fifth dimension is imperative in this research. This approach can increase the innovative performance of teachers in terms of efficiency and effectiveness. Consequently, it is against this development that this study explored the innovative behaviour among teachers, whose duties and responsibilities are designed to nurture students with essential knowledge and skills for the future.

2.2 *Motivation*

Motivation in the workplace is an extensively researched subject. The concept of motivation examines the psychological aspects required to understand and explain human behaviour [33]. The term motivation has been defined in different ways. According to Forgas, Williams [34], motivation was hitherto regarded as an entity that binds a person to action. However, current researchers have suggested diverse explanations of motivation. Heckhausen and Heckhausen [35] viewed motivation as a predisposition for one to act in a purposive way to accomplish specific needs or the internal

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drive to satisfy [36, 37]; or the will to attain an unfulfilled need [38]. Even though there are some disagreements on the meaning of motivation, there is an agreement regarding the fundamental notion that it is an individual sensation [39]. According to [40]motivation is an intentional and multifaceted ideology [41].

Furthermore, it is maintained that the purpose of motivational theories is to forecast behaviour. Therefore, the definition developed by the Society for Human Resource Management (SHRM) in 2010 was adopted in this study. [42]considered motivation as the psychological forces that govern the manner of exertion and perseverance an individual requires to accomplish a given assignment [43, 44].

In this regard, people who are internally motivated to perform their duty are usually self-applied without any noticeable external rewards such as pay or bonuses [45]. Consequently, this study focuses on the internal factors of motivation, namely: creative self-efficacy, intrinsic motivation, and prosocial motivation. Therefore, intrinsic motivation is a measure of how people are involved in an activity mainly to determine if it is exciting, pleasing or inspiring [46]. Creative self-efficacy was derived from Bandura's general concept of self-efficacy [47]. Self-efficacy is one of the essential ideas in psychology research [48]. It is described as judging people's abilities to accomplish selected tasks or attain a particular performance level [49]. On the other hand, the origins of prosocial motivation could be traced to the 1980s, when Batson [50] described it as the eagerness to benefit others through spending energies. Grant [51] improved the Batson definition by describing prosocial motivation as the yearning to influence other people or social cooperatives voluntarily significantly.

2.2.1 Motivational Mechanisms and Innovative Behaviour

Numerous motivational researchers have maintained that internal motivational mechanisms underlie innovative behaviour [13, 52]. Based on the self-determination theory, Devloo, Anseel [7] investigated the relationship between intrinsic motivation and innovative work behaviour over time. Besides, the facilitating role of intrinsic motivation in connecting the fundamental needs of satisfaction and innovative work behaviour was examined. The findings revealed that intrinsic motivation mediates the relationship between the fundamental needs of satisfaction and innovative work behaviour. Notably, Gorozidis and Papaioannou [53] confirmed that intrinsic motivation is essential for teachers. The authors found that high levels of intrinsic motivation influence teachers' positive attitudes and implement an innovative curriculum. However, researchers such as Fidan and Oztürk [54] found that private school teachers in the Ankara province have higher intrinsic motivation levels and are more creative than the teachers in public schools. Similarly, Klaeijsen, Vermeulen [9] observed that teachers' intrinsic motivation is not suggestively connected to innovative behaviour. Nevertheless, these empirical studies are related to the present research. They seek to examine the connection between intrinsic motivation and teachers' innovative behaviour. Therefore, it is hypothesized that:

H1: *There is a significant relationship between intrinsic motivation and innovative behaviour among teachers.*

Conversely, individuals can have high intrinsic motivation levels in their work or are prosocially motivated to help others by initiating new ideas. Bandura [55] argued that individuals might fail to effect change in behaviour without self-efficacy beliefs, which affects their abilities to execute the courses of action required to achieve a goal. Given this, there is evidence from empirical studies showing that creative self-efficacy is associated with innovative behaviour. Recently, Klaeijsen, Vermeulen [9] examined the motivational processes (i.e. intrinsic motivation and occupational self-efficacy) that contribute to teachers' innovative behaviour. The findings

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revealed that occupational self-efficacy strongly supports the innovative behaviour of teachers compared to intrinsic motivation.

Similarly, Ng and Lucianetti [56], Tierney and Farmer [6] and Malik, Butt [57] found that high levels of self-efficacy stimulate the innovative behaviour of individuals (i.e. in idea generation, dissemination and implementation). Previous studies have been conducted in several contexts, including different countries using different populations, sample sizes, methods and statistical analysis. However, these studies are relevant to the present study. They show the link between creative self-efficacy and the innovative work behaviour of teachers. Hence, it hypothesized that:

H2: *There is a significant relationship between creative self-efficacy and innovative behaviour among teachers.*

Prosocial motivation is still an emerging construct given the limited studies that have explored the connection between prosocial motivation and innovative work behaviour. Nonetheless, previous studies from diverse cultures have linked prosocial motivation to creativity. For instance, Grant and Berry [15] examined the connection between intrinsic motivation and creativity, along with the moderating role of prosocial motivation. The study's findings revealed that the connection between intrinsic motivation and creativity is supported by prosocial motivation. However, the correlation between creativity and prosocial motivation is corroborated by Li and Bai [58]. Furthermore, Jaekel [59] observed that prosocial motivation positively impacts civil servants' innovative behaviour in Russia. Based on these findings, it is hypothesized that prosocial motivation will have a unique contribution to teachers' innovative work behaviour.

H3: *There is a significant relationship between prosocial motivation and innovative behaviour among teachers.*

2.3 *Meaningful Work*

Work accounts for a substantial part of an individual's routine. Therefore, it is impossible to isolate work from the rest of humanity [60]. Suppose there is any essential personal transformation that would occur in an individual. In that case, it is more likely to occur at work [61]. Today, employees seek more than just economic compensation (money) for their work [62]. Some workers want their work to have meaning rather than just a way of making money [63].

Consequently, work is an essential context where workers engage in goal-oriented activities that provide meaning in their lives [64]. Meaningful work is described as employees' perceptions that a specific job is valuable and worthwhile. Meaningful work, therefore, means an inclusive state of being and a medium by which people derive meaning and purpose through the respective jobs that comprise most of their wakening hours [16]. Hence, meaningful work is any work that is not trivial or valuable but somewhat evocative.

2.3.1 *Meaningful Work as a Mediator*

The core state of psychology is a critical factor that features prominently in job design theory [65]. It is also evident in the cognitive element of empowerment [66], psychological condition for job engagement [67], and the fundamental motivation for identity construction [68]. The meaningful work construct was previously identified as an actual psychological state within itself. According to Steger, Dik [62], meaningful work is a predictor of desirable work outcomes. For example, job satisfaction [69], work engagement [17], job satisfaction [69], work engagement [17], decrease in absenteeism [61] and reduction in staff turnover [70]. However, when employees experience an absence of personal meaning in the workplace, adverse outcomes such as stress [71] and cynicism are exhibited [72].

However, researchers have not empirically examined the effect of meaningful work and the mechanisms of motivation on teachers' innovative behaviour. Numerous

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studies have discovered the mediating part of meaningful work using different variables in various sectors and contexts based on theoretical contributions. For example, Pradhan and Jena [73] observed that meaningful work positively meditated the affiliation between transformational leadership and innovative work behaviour. Similarly, Nawrin [74] revealed that meaningfulness ultimately facilitates the connection between trustworthy leadership and unselfish behaviour. Sagnak and Kuruöz [75] reported that the connections linking a job, personal resources, and work engagement were partly facilitated by meaningful work. However, the outcomes connecting meaningful work and the changes that occur in the workplace have highlighted the relevance of the research findings. Based on the findings, attaching meaning to work and motivation may likely boost an individual to engage in extra-role activities and perform beyond expectations, demonstrating innovative behaviour. The experience of meaningful work includes a person's discernment of benefitting from a superior-good [76]. The skill could also increase teachers' preparedness to use their capabilities and energies to invent new teaching policies that will motivate them to learn. Also, teachers may be more likely to engage in innovative activities to benefit the students and the school at large by finding significance and purpose in their teaching jobs. Therefore, it is hypothesized that meaningful work mediates the relationship between motivational mechanisms and teachers' innovative work behaviour. It can be hypothesised that:

H4*: Meaningful work mediates the relationship between intrinsic motivation and teachers' innovative work behaviour.*

H5*: Meaningful work mediates the relationship between creative self-efficacy and teachers' innovative work behaviour.*

H6*: Meaningful work mediates the relationship between prosocial motivation and teachers' innovative work behaviour.*

H7: *There is a significant relationship between meaningful work and teachers' innovative behaviour.*

3. Research Methods

3.1 Measures

The study examined the mediating role of meaningful work in the relationship between motivational mechanisms and teachers innovative work behaviour. Hence, the exogenous variable is motivational mechanism. In contrast, the endogenous variable is teachers' innovative work behaviour, while the intervening variable is meaningful work. The instrument used to measure these variables was an adaptation of scales developed by Messmann and Mulder [30], Ryan and Deci [77], Karwowski [78] and Grant [79]. Eighteen (18) items were used to measure teachers' innovative behaviour developed by Messmann and Mulder [30]. Intrinsic motivation was measured using a seven (7) item scale developed by Ryan and Deci [77]. Creative self-efficacy was measured using a six (6) item scale developed by Karwowski [78]. On the other hand, prosocial motivation was measured using a four-item scale developed by Grant [79]. A ten (10) item scale was used to measure meaningful work developed by [62]. The questionnaire scales were structured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Although the questionnaire for data collection in this study was adapted from previously validated measures, the researcher still pilot-tested the instrument to ensure that the modified variant was consistent with their original measures.

3.2 Sample and Sampling Procedure

This study's target population were teachers from Federal Colleges (also referred to as public secondary schools). in north-eastern Nigeria. The researcher utilised stratified random sampling to select a representative sample from the target population; respondents were first divided into strata. Each stratum represented a state in the north-eastern region of

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Nigeria. Hence, a total of 378 teachers constituted the sample for this study. A detailed list of respondent's information was obtained from the principals of each Federal College and was used to randomly select respondents according to the sample proportion for each stratum. After that, the researcher, with five fieldwork assistants, packaged and distributed 378 questionnaires to the selected Federal Colleges. A total of 336 questionnaires were returned upon completing the data collection exercise. Of those, 27 questionnaires were later removed during the data screening process. As a result, 309 questionnaires were used for the data analysis, indicating an 82% response rate. The identity of the respondents and confidentiality of data were both protected and assured *ab initio.* Table 1 shows the demographic profile of respondents in the study

Table 1: Demographic Profile of Respondents

Demographic Profile	Classification of variables	Frequency	Percentage (%)
Gender	Male	214	69.3
	Female	95	30.7
Age	Below 29 years	27	8.7
	30 – 39 years	104	33.7
	40 – 49 years	128	41. 4
	50 years and above	50	16.2
Educational Level	Teacher Certificate Grade II	6	1.9
	Nigerian Certificate of Education	68	22.0
	Bachelor's Degree	211	7.8
	Master's Degree	24	10.1
Years of Experience	Less than 2 years	35	11.3
	3 years – 6 years	63	20.4
	7 years – 10 years	93	30.1
	11 and above years	118	38.2

The respondents' average age was 35.5 years, while about 69.3% were male participants and 30.7$ females. Approximately 75% of the target group had an undergraduate degree. The participants had taught students for seven years and above, on average.

4. Data Analysis and Results

4.1 Measurement Model

This study utilized the partial least squares (PLS) methodology with Smart PLS 3.0 to test the proposed model and the hypothesized relationship between the variables. PLS was considered appropriate given the sample size (n=309), the focus on each path coefficient, and the focus on variance explained rather than overall model fit [80]

Confirmatory factor analysis was carried out to examine the construct validity (i.e. convergent and discriminant validity) and the reliability of the study's items. Convergent and discriminant validity was computed using the average variance extracted (AVE) and composite reliability (CR). The factors were determined using [81] criterion where CR > 0.70 and AVE > 0.50 are considered to have met the minimum threshold for establishing convergent validity. The results show that CR and AVE for the study's parameters were significantly greater than 0.70 and 0.50, respectively. Besides, the coefficient of Cronbach's alpha was regarded as satisfactory for the parameters based on the realized threshold coefficient accepted in social science research as shown in Table 2.

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Table 2: Items, Factor Loadings and Construct Validity Results

Items	Factor Loadings	t-value	AVE	CR	Cα
Teachers' Innovative Behaviour			0.507	0.930	0.919
I promote new ideas for the administrator to gain active support.	0.686**	16.375			
I promote the application of the new solution within the school.	0.732**	22.236			
I make plans on how to put an idea into practice.	0.727**	18.388			
I introduce colleagues to the application of a developed solution concerning teaching and learning.	0.729**	19.724			
I analyse evolving solutions on unwanted effects when putting teaching activities into practice.	0.704**	17.330			
I express personal evaluations of a problem regarding teaching.	0.682**	19.654			
I address issues related to teaching practices that must change.	0.694**	17.040			
I express new ideas concerning teaching and learning in school.	0.716**	18.803			
I suggest improvements in expressed ideas in the school.	0.701**	16.037			
I keep myself informed about new concepts within my professional field.	0.682**	13.894			
I assess the progress of students while putting ideas into teaching practices.	0.737**	23.400			
I reflect on my teaching experiences from the classroom to improve my shortcomings.	0.742**	23.274			
I identify triggers for change in the school.	0.720**	18.634			
Intrinsic Motivation (Ryan & Deci, 2000)			0.645	0.926	0.906
I enjoy my work as a teacher.	0.837**	42.214			
I would define working as a teacher as very interesting.	0.855**	44.954			
Teaching is a fun job.	0.631**	12.801			
Teaching is an exciting job.	0.858**	41.796			
Teaching as a job is quite enjoyable.	0.851**	47.550			
While I am teaching students in the classroom, I was thinking about how much I enjoyed it.	0.724**	19.040			
Teaching as a career holds my attention	0.837**	44.060			
Creative Self-Efficacy			0.565	0.886	0.846
I can solve problems efficiently, even complicated problems.	0.770**	19.993			
I trust my creative abilities.	0.715**	15.327			
Compared to my friends, my ideas are outstanding.	0.737**	17.832			

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Many times, I proved I can find at least one solution for any difficult situation.	0.818**	28.755			
I can deal with problems requiring creative thinking.	0.767**	21.601			
I am good at proposing original solutions to problems solutions.	0.697**	17.406			
Prosocial Motivation (Grant, 2008)			0.692	0.900	0.851
I get energized with teaching when I have the potential to benefit students.	0.816**	27.531			
I do my best in teaching when my job contributes to the well-being of students.	0.877**	56.444			
My teaching job allows me to have a positive impact on my students.	0.856**	37.963			
I need to do good for students through my work.	0.776**	22.847			
Meaningful Work (Steger *et al.*, 2012)			0.598	0.926	0.912
My teaching serves a greater good.	0.751**	20.816			
My teaching profession makes a difference in the world.	0.685**	14.742			
Am aware my teaching job makes a positive difference in the world.	0.753**	23.875			
I view my teaching career as contributing to my personal growth	0.764**	20.866			
My teaching job helps me better understand myself.	0.791**	31.549			
My teaching job helps me make sense of the world around me.	0.751**	22.659			
I have found a meaningful job	0.704**	18.334			
I understand how my teaching job contributes to my life's meaning.	0.784**	32.339			
I have a good sense of what makes my teaching job meaningful	0.713**	18.684			
I discovered teaching as a satisfying purpose.	0.766**	28.874			

Note: all items are structured on a 5-point Likert scale

Furthermore, the results also show that the innovative behaviour of teachers had factor loadings between 0.686 and 0.742; intrinsic motivation had loadings ranging 0.631 to 0.858; creative self-efficacy had loadings between 0.697 to 0.818; prosocial motivation had loadings 0.776 to 0.877, and meaningful work had loadings ranging from 0.685 to 0.791. The results indicate that all the factor loadings were considered significant as they were greater than the threshold value 0.5, whereas items with factor loadings < 0.4 were removed from the model in line with Hair et al. (2014) recommendation. The model converged after small iterations below the suggested 300 maximum requirement [82]. Therefore, based on the results obtained, the measurement models in this study achieved convergent validity.

Table 3 shows the results of the Fornell and Larker Criterion test used to assess discriminant validity. When determining discriminant validity, the square root of the variance for each construct should be greater than the correlation estimates between any two

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constructs. The bold and shaded columns shown in Table 3, demonstrates that all values meet the recommendations for establishing discriminant validity. This implies that the constructs are distinctively different from one another.

Table 3: Discriminant Validity using the Fornell and Larker Criterion

	CSE	IBC	IM	MMW	PM
CSE	**0.752**				
IBC	0.741	**0.712**			
IM	0.643	0.648	**0.803**		
MMW	0.669	0.727	0.724	**0.747**	
PM	0.694	0.719	0.626	0.696	**0.832**

Note IBC – Teachers' innovative behaviour, IM – Intrinsic motivation, CSE – Creative self-efficacy, PM – Prosocial motivation and MMW – Meaningful work.

4.2 Structural Model

The structural model represents the causal relationship between the constructs in the hypothesized model. The researcher tested several structural models: *H1, H2, H3, H4, H5, H6* and *H7*. In *H1*, we tested the direct relationship between intrinsic motivation and teachers innovative work behaviour.

Table 4: Structural Model Results

Paths	Beta Value (β)	Standard Error	T-Statistics	P-Values	Decision
Direct Path					
IM -> IBC	0.081	0.052	1.566	0.117	Not Supported
CSE -> IBC	0.336	0.067	5.051	0.000	Supported
PM -> IBC	0.244	0.055	4.425	0.000	Supported
IM -> MMW	0.408	0.056	7.318	0.000	Supported
CSE -> MMW	0.194	0.061	3.181	0.001	Supported
PM -> MMW	0.306	0.059	5.194	0.000	Supported
MMW -> IBC	0.274	0.066	4.150	0.000	Supported
Indirect Specific Effects					
IM -> MMW -> IBC	0.112	0.032	3.473	0.001	Supported
CSE -> MMW -> IBC	0.053	0.021	2.482	0.013	Supported
PM -> MMW -> IBC	0.084	0.026	3.190	0.001	Supported

Note: IBC – Teachers' innovative behaviour, CSE – Creative self-efficacy, PM – Prosocial motivation, IM – Intrinsic motivation, and MMW – Meaningful work.

Based on the data shown in Table 4, the study found the following direct effect. Intrinsic motivation negatively affects teachers' innovative behaviour (β=0.081; t=1.566;

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p=0.117). The results show that the t-statistics and *p*-value are below and above the required threshold of 1.96 and 0.05. However, both creative self-efficacy (β=0.336; t=5.051; and *p*=0.000) and prosocial motivation (β=0.244; t=4.425; and *p*=0.000) has a positive and significant effect on teachers' innovative behaviour. Similarly, meaningful work showed a positive and significant impact on teachers' innovative behaviour (β=0.274; t=4.150; *p*=0.001). Furthermore, the study found that the three motivational mechanisms directly and significantly impact meaningful work. This included the effect of intrinsic motivation on meaningful work (β=0.408; t=7.318; *p*=0.000), creative self-efficacy on meaningful work (β=0.194; t=3.181; *p*=0.001), and prosocial motivation on meaningful work PM (β=0.306; t=5.194; p=0.000). The result shows that hypothesis H1 was not supported. Intrinsic motivation negatively affects teachers' innovative work behaviour. Furthermore, Hypotheses H2, H3, and H7 were all supported as the results showed that creative self-efficacy, prosocial motivation and meaningful work had a positive and significant effect on teacher's innovative work behaviour.

Conversely, the study found that all three indirect effects were positive and significant. Meaningful work mediates the relationship between intrinsic motivation and teachers innovative work behaviour (β=0.112; t=3.473; *p*=0.001). The relationship between creative self-efficacy and teachers' innovative work behaviour was mediated by meaningful work (β=0.053; t=2.482; *p*=0.013). Meaningful work also mediates the relationship between prosocial motivation and teachers' innovative work behaviour (β=0.084; t=3.190; *p*=0.001). Overall, the findings validate and support hypotheses H4, H5 and H6, indicating that meaningful work positively and significantly influences the three motivational mechanisms that can influence the development of teachers' innovative work behaviour.

5. Discussion

In this study, only two motivational mechanisms, creative self-efficacy and prosocial motivation, directly impacted teachers' innovative behaviour compared to intrinsic motivation. The present study's findings are consistent with Tierney and Farmer [6] and Grant and Berry [15]. The researchers note that when individuals have a high level of belief in their creative ability and desire to help others, they are more likely to engage in innovative behaviour than those who just find the job interesting. Likewise, this study corroborates Fidan and Oztürk [54] that indicated intrinsic motivation is not significantly linked to teachers' innovative behaviour in public schools.

Moreover, meaningful work was found to mediate the three motivational mechanisms (i.e. intrinsic motivation, creative self-efficacy and prosocial motivation) on teachers' innovative behaviour. When the feeling of meaningfulness or purpose on the job is high, intrinsic motivation significantly influences teachers' innovative behaviour. In comparison, the direct link between intrinsic motivation and teachers' innovative behaviour resulted in a negative effect. Therefore, the results confirm that teachers with a high sense of purpose or those who find their jobs valuable and worthwhile are more likely to have a higher interest in the job. Lastly, confidence in the teachers' creative abilities and the desire to benefit others to engage in innovative behaviour also feature prominently.

5.1 Theoretical Contribution

The present study has made several noteworthy contributions to the current literature in terms of determining the impact of meaningful work and the connections between the mechanisms of motivation and innovative behaviour. The present study makes many remarkable contributions to knowledge. First, this study makes a theoretical contribution by examining the combined effect of three motivational mechanisms on teachers' innovative behaviour in an education context. By exploring whether

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each of the three motivational mechanisms made a unique contribution to teachers' innovative behaviour, the research responds to researchers' call to examine how the three motivational mechanisms influence creative and innovation outcomes at work [13]. Although previous studies have examined how one or a few motivational mechanisms encourage individuals at work to exhibit higher levels of creativity and innovative behaviour. These studies explored the roles of intrinsic motivation [83], rewards [84], and creative self-efficacy [8] among others in the development of n individual's innovative behaviour. However, the present study is the first to examine whether the three motivational mechanisms have a combined effect on individuals' innovative work behaviour.

Secondly, while prior studies have demonstrated that different motivational mechanisms are useful for developing an individual's innovative behaviour [7], they have not yet investigated the importance of meaningful work in stimulating individuals with high levels of intrinsic motivation, creative self-efficacy and prosocial motivation to achieve an optimal level of innovativeness. Therefore, the present study addressed this challenge by initially testing the multiple motivational tools and their connections to forecast teachers' innovative behaviour. In doing so, the present study identified key factors at the individual level that fosters the creation and application of ideas within job roles; thus responding to the call for more researchers to examine the mediation effect of meaningful work and how this establishes the relationship between motivational mechanisms and innovative behaviour [52].

This study applied the job characteristics theory as the basis for understanding the motivational underpinnings of individual innovative behaviour among teachers in federal colleges in Northeast Nigeria. Accordingly, this study adds to the literature by extending the existing the Job Characteristics Model [85] to highlight the important roles of prosocial motivation and creative self-efficacy, in addition to intrinsic motivation for individual innovative behaviour as well as the important role of meaningful work as an intervening variable between internal work motivations and behavioural outcomes.

This study, therefore, makes a significant contribution to the educational management literature by identifying the motivational predictors for teachers' innovative behaviour. Building on the study that examined the direct impact of intrinsic motivation on teachers' innovative behaviour [9]; the researchers recommend that it is imperative to consider the meaning and purpose teachers attach to their jobs when determining how effective internal motivational mechanisms are likely to be and not to assume it will generally be or universally influential for all teachers.

5.2 Practical Contribution

Organisations are consistently calling for individuals to be more innovative in their job roles. Considering that monetary incentives are not readily available, particularly in the public sector, schools, policymakers, stakeholders, and researchers are eager to highlight the mechanisms that can effectively boost teachers' innovative behaviour. The present study outcomes serve as a tool to provide information to practitioners and researchers about the influence creative self-efficacy, prosocial motivation, and intrinsic motivation has on innovative behaviour. Schools can draw on the insights from the componential theory of creativity and innovation [52], social cognitive model [55] and prosocial motivation [15] to propose mediation policies to fuel all the motivational mechanisms. This researchers also recommend that encouraging job autonomy is effective in stimulating intrinsic motivation. However, an interesting or multifaceted job can increase creative self-efficacy while providing supportive leadership that can enable prosocial motivation. This is because teachers will

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potentially and positively respond to the school administrators' support and reassurances. Ultimately, this notion will initiate imaginative solutions and aid them in discovering opportunities identified within the teaching jobs. Therefore, the degree to which these factors can influence innovative behaviour are measured, so school administrators are encouraged to keep track of the changes in teachers' motivation.

5.3 Limitations and Recommendations

A few limitations must be addressed in future research. Although the researchers adopted similar techniques reported in previous literature for data collection and eliminated any prejudices likely to impact the overall results, future research should consider gathering data from multiple sources to evaluate teachers and principals' innovative behaviour. Secondly, the study is cross-sectional; hence, the results' oversimplification makes it difficult to establish causation. Accordingly, it is suggested that future research should deliberate on performing a parallel survey to evaluate the motivational mechanisms and their impacts on teachers' innovative behaviour over time. Likewise, since the study was carried out in Federal Colleges in North-Eastern Nigeria, this could limit the potential to generalise the results. Therefore, it is recommended that future research accounts for various segments of the Nigerian school community. Moreover, future research could consider examining other variables such as psychological empowerment or extrinsic motivational factors to add credence to the findings. In conclusion, future research could also re-examine the outlined restrictions, simultaneously performing experimental studies on the connection between motivational mechanisms and teachers' innovative behaviour in the Nigerian context.

6. Conclusions

The present study examined whether meaningful work mediates the relationship between three motivational mechanisms and teachers' innovative behaviour. Using a survey research design and a sample of 309 teachers from federal colleges in Northeastern Nigeria, the researchers examined the role of meaningful work in the combined effect between three motivational mechanisms and teachers' innovative work behaviour. The results revealed that intrinsic motivation negatively influences teachers' innovative work behaviour; whereas creative self-efficacy and prosocial motivation positively influence teachers' innovative work behaviour. Furthermore, it was shown that meaningful work mediates the relationship between the three motivational mechanisms and teachers innovative work behaviour. Therefore, it is recommended that when teachers perceive their work as meaningful (i.e. when meaningful work is high), their level of intrinsic motivation, creative self-efficacy, and prosocial motivation will better influence their ability to innovate. Thus, the researchers note that school administrators are responsible for providing a conducive work environment where teachers can attach meaning, purpose, and significance to their jobs. Such conditions may inspire high intrinsic motivation, creative self-efficacy, and prosocial motivation in teachers to engage in innovative work. Lastly, the conditions can encourage the teachers to exploit and identify opportunities, initiate new ideas, and implement novel strategies for active learning.

7. Declaration of Conflicting Interests

The authors declare that there are no potential conflicts of interest.

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