UNIVERSITY OF CAPE COAST

# TRANSFORMATIONAL LEADERSHIP AND INNOVATIVE WORK BEHAVIOUR OF NURSES AT CAPE COAST METROPOLIS: THE MODERATING ROLE OF PUBLIC SERVICE MOTIVATION

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# TRANSFORMATIONAL LEADERSHIP AND INNOVATIVE WORK BEHAVIOUR OF NURSES AT CAPE COAST METROPOLIS: THE MODERATING ROLE OF PUBLIC SERVICE MOTIVATION

BY

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A thesis submitted to the Department of Management of the School of Business, College of Humanities and Legal Studies, University of Cape Coast, in partial fulfillment of the requirements for the award of Master of Philosophy in Public Policy and Management.

MAY 2022

# DECLARATION

## Candidates' Declaration

I hereby declare that this thesis is the result of my original research and that no part of it has been presented for another master's degree in this University or elsewhere**.**

Candidate's Signature…… Date…….

Name: Gabriel Afum

## Supervisor's Declaration

I hereby declare that the preparation and presentation of the thesis were supervised following the guidelines for supervision of thesis laid down by the University of Cape Coast.

Supervisor's signature……. Date……

Name: Dr. Nick Fobih

## ABSTRACT

The study aimed to research the results of Transformational Leadership and Innovative Work Behaviour of Nurses at Cape Coast Metropolis: The Moderating Role of Public Service Motivation. The study followed the positivism approach. The target population was nurses inside Cape Coast Metropolis and 581 were sampled. Stratified sampling techniques were utilized in the choice of the study respondents. Questionnaires were adopted by the researcher to gather data from the respondents within the hospitals. From the findings, it was found out that transformational leadership made a significant improvement in nurses' innovative work behaviours. Transformational leadership accounts for a considerable improvement in innovative work behaviours of nurses in Cape Coast Metropolis. Also, Public service motivation moderates significantly and positively on the impact of transformational leadership on innovative work. In the sight of this, recommended that those hospitals within Cape Coast Metropolis ought to adopt and apply transformational leadership and innovative work behaviours. The constraints of the study were that the study was also limited to only public nurses at cape Coast metropolis and that comprehensive analysis needs to be done across the country.

**KEYWORDS**

Transformational leadership

Leadership

Leadership innovation

Nurses' innovation

Innovative work behaviours

Public service motivation

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It is an arduous task to embark on an academic exercise such as this. The names of great men they say are not written in books but printed with indelible ink in the hearts and minds of people. In this regard, I owe a debt of gratitude to all those who helped in miscellaneous ways in producing this thesis especially Mr. Lawrence Kusi, Mrs. Joan ark-Manu Agyapong, and Mr. Douglas Okai Akuffo.

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## DEDICATION

To my elderly brother, Mr. Frederick Aboagye

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| | |
|---|---|
| TL- | Transformational leadership |
| ICO- | Individualised consideration |
| IMO- | Individualised motivation |
| INF- | Idealised influence |
| IST- | Intellectual stimulation |
| IWB- | Innovative work behaviour |
| PSM- | Public service motivation |

# CHAPTER ONE

# INTRODUCTION

The issue of public leadership in administration is not a new topic in public management literature (Boin et al., 2016) and in Ghana, it represents a subject matter as an emblem of the efficiency of the public sectors. Nurses care has become one of the core components of medical services. Nursing care quality could heavily influence innovation of nursing patient outcome in the health care system (Weng et al., 2015). To improve care quality, many managers encourage their nurses to develop innovation and use innovation product, service, technology and method that may enhance nursing outcome (Asurakkody et al., 2018). In a care system, nurses provide up 80% of care quality are thus well positioned to contribute to the area of innovation. The leadership style of managers greatly influenced innovation work behaviour of nurses (Ahmed et al., 2019). Nurses' innovative behaviour is influence by the public Service motivation that is perceived by nurses. Leadership may be a key factor in stimulating healthcare workers toward more innovative work behavior (Cummings et al., 2010; Shirey, 2016) and will therefore be the focus of this research. Public service motivation may contribute to preventing the negative side effects of employees' innovation, but this applies only to public and non-profit workers.

## Background to the Study

In today's competitive and complex world, innovation is a very important component of organisational performance. Within public services, the influence of workers on leadership effectiveness, innovation and creativity is increasing (Zaharee, Lipkie, Mehlman & Neylon, 2018). The growing scholarly

interest in innovation settings is reflected in transformational leadership, which has emerged as a widespread emerging social trend. In addition to learning, workplace innovation is critical for workers, companies, and communities, and as such, it is an important part of the globalisation and knowledge-based societies' public service agenda (Grošelj, Černe, Penger & Grah, 2020).

Nurses' work engagement, innovation and commitment to their jobs are vital to the quality of healthcare services provided around the world. While research has shown that leadership benefits individuals, teams and organisations, it is less clear whether transformational leadership encourages nurses to be more innovative and engaged at work (Zhou, Wang, Yang, Lin, & Luo, 2019). Changes in labour pool and job characteristics and dwindling resources are forcing governmental institutions and agencies around the world to improve their ability to recruit, retain, and motivate workers (Shafi, Lei, Song & Sarker, 2020). Nurses innovative work behaviour are driven to influence the lives of others positively and such prosocial motives affect nurses' employees' performance in the health care system, as such, these have taken a different approach, concentrated the motivation and improved bureaucratic clout (Hamedduddin & Engbers, 2021).

Transformation leadership is among the important theories of organisational behaviour for over 30 years (Berkovich, 2016). Transformational leaders guide, influence and motivate employee behaviour by raising employee consciousness on the benefit of corporate ideals, which occurs within public services, as opposed to leaders who are focused on nurses' benefits and the sharing of incentives for performance (Manzoor et al., 2019). Transformative leaders do so by activating the employees' needs for higher order needs and

motivate those needs to channel their interest to the organisation's interests and its clienteles (Bro & Jensen, 2020).

Transformational leadership spells out a range of behaviours formulated by leaders and comprises four dimensions: intellectual stimulation (e.g., challenges to the status quo and approaches to the problem), charisma or idealised influence, individualised motivation (e.g., energetic following by expressing a compelling); or individualised consideration (i.e., supporting, mentoring and developing followers) (Wang, et al.., 2015). Afsar and Masood (2018), discovered that transformative leadership influences nurse innovative work behaviour significantly. The result followed previous studies that identified a clear correlation between innovative working behaviour and transformation leadership in practices (Wang et al., 2015**).**

Public service motivation (PSM) research is increasingly focused on how public service motivations affect success and innovation, rather than simply understanding what motivates public servants. While previous research on public management has frequently concentrated on the challenges faced by public organisational objectives (Pandey & Rainey 2006), those having the same goal can present the opportunity to motivate and inspire workers. The term PSM points to the notion that peoples are motivated to work in the public service as a result of altruism, a desire to serve, or a wish to have an impact on society. It is closely associated with the idea of public service ethos, which is rooted in an understanding that public service is different from the private sector, both because of the tasks it performs and the behaviours it expects of its employees (Ritz, Neumann & Vandenabeele, 2016).

Although not every nurse in public organisations is motivated intrinsically, some individuals who become members of public organisations are extrinsically motivated and can make more profound contributions to the overall organisational innovation than others (Kim, 2005; Pandey, Wright & Moynihan, 2008). The pathway to the Ghanaian health sector is more related to safety considerations than to intrinsically motivate public service. In this context, several factors improve public service motivation (PSM) among Ghanaian public employees especially in the healthcare sector from the perspective of public management and also PSM induces healthcare workers to be innovative and also exhibit innovative work behaviours.

The definition, implementation, and scope of PSM have all been the subject of debate. According to Perry et al., (2010); Zhu and Wu (2016), was the first to suggest the idea of PSM, and the term PSM points to the notion that peoples are motivated to work in the public service as a result of altruism, a desire to serve, or a wish to have an impact on society. Early research centered on the public healthcare sector, and it was thought the motivation for government services is somewhat more widespread throughout the government sector than those in the corporate companies (Al-edenat, 2018).

According to Afsar et al. (2014), having workers who are innovative and conscious is the best method for an organisation to nurture successful innovation in the public sector. Piccolo and Colquitt (2016) observed the critical role of transformational leaders in persuading workers to engage in innovative behaviours on a personal level. Because transformative leadership is necessary for emotional and active relations between leaders and followers (Zhu et al.,

2011), they were able to inspire and motivate people in the accomplishment of the task that was more than they were expected to do (Manzoor et al., 2019).

Motivation in the public service is one of the main factors that have been postulated to affect nurses' (both male and female) innovative responses and improve organisational effectiveness (Piccolo & Colquitt, 2016). The significant characteristic of public service motivation is that it is related to a variety of positive organisational attitudes and behaviours, such as organisational innovation and invention (Crewson, 1997), organisational behaviour, organisational achievement (Kim, 2005), the motive to stay (Stern, 2008; Bright, 2008), and career fulfillment (Bright, 2008). PSM is linked to a person's success and the facilitation of organisational shift of institutions in health organisations (Perry & Wise, 1990). PSM, according to many researchers, can increase employees' support for change, which leads to them working harder and becoming more innovative (Wright, 2007), they are also more likely to be high performers. There is also evidence that PSM encourages good citizenship outside of the business. Brewer (2010), indicates that people are more inclined to have high PSM be "socially altruistic and innovative," while Houston (2006), connects PSM to volunteer work in public organisations and there are gender disparities in innovative work behavior nurses.

Health care managers who encourage their nurses to be innovative and modify nurses' attitudes and loyalty to suit organisation's purpose usually have some features or behaviours (Trottier, Van wart & Wanng, 2008; Paarlberg & Lavigna, 2010), for instance, inspire male and female workers differently by articulating a compelling vision for the company's future (Balyer, 2012). However, getting a vision isn't more. The nurse also needs to be inspired,

motivated and enabled their leaders to work towards that vision, as well as challenge them to be innovative in achieving the organisation's goals. As a result, the next related characteristics of transformative leadership also explain that transformational leadership functions and serves as information sources to idealised influence (showing behaviors that are compatible with the declared goal) and increasing nurses' trust and dignity and self-respect in the company (Al-edenat, 2018).

Transformational leaders' third aspect is that they aid nurses in accomplishing their job by way of encouraging them wisely (intellectually) to rethink long-held assumptions about organisational challenges and procedures Therefore, the very interpretations of such transformative behaviours or characteristics signify that much of the success of transformative management is due to the tendency of the organisation is to increase nurse mission valence by expressing simple and catchy visions of its mission. Thus, leaders modify nurse views on the importance and clarity of objectives (Kindarto et al., 2020).

**Statement of the Problem**

The recent call for innovation in public organisations has captured the attention of public and private sector scholars and managers for decades around the globe (Bro & Jensen, 2020). This interest has been spurred by transformational leadership's link to innovative work behaviours of public sectors. For public managers and scholars as well as in developed and developing countries, attention to innovation is also prompted by the New Public Management movement's focus on improving performance and responsiveness of government organizations. Theses enhanced public sector

innovativeness and improving the delivery of public services (Kindarto et al., 2020).

As a result of numerous national crises and public demand for healthcare, public healthcare agencies in developing countries especially in Ghana must change their services to meet these demands by empowering and motivate employees to demonstrate innovation behaviours in order to deliver public service effectively and efficiently. Amid these reforms, the government of Ghana has made significant efforts to pour resources into health care services, specifically to those centered on acute hospital care, which cannot be equated with good health and also motivate transformational leaders to be innovative (Darzi, 2018). However, attempts to improve public health care in Ghana have failed due to recent problems in the health sector, as public nurses continue to show a lack of responsibility and capacity (Jaussi & Dionne 2016). Also, hospital administrators, managers and nurses lack innovative ideas (Hughes et al., 2018). This allows us to understand what researchers are doing to influence nurses' innovative work behaviours. Many kinds of research have been undertaken on leadership and innovation (Afsar & Masood, 2018; Hughes et al., 2018).

So far, little has been done to study the basis for assessment of connections transformational leaders have in the promotion of innovative work behaviour of nurses and the effect that public service motivation plays in this relationship in the Ghanaian health care sector. Although many research results support the positive role of the project of hospital administrators, managers and leaders have in encouraging innovative work behaviour among nurses (Labrague et al., 2020; Siyal et al., 2021). Nonetheless, there is incoherence in

the empirical results on leadership and innovation relationships, where employees within public services are not satisfied with the motivation of the organisation (Bro & Jensen, 2020; Crossan & Apaydin, 2010).

Also, there is lack of consistency in previous research results (Bottomley et al., 2016) and others which also reporting contradictory results (Jaussi & Dionne, 2003; Kahai et al., 2003). The is mainly influence by moderating factor (Choi et al., 2016). Variables such as public service motivation, employees' incitement, and followers' stimulation have a major impact on this. Managers' influence on nurses' innovation behaviour is moderated by their involvement and engagement in public policymaking and their contribution to the public interest (Sarros, Cooper & Santaro 2008). According to transformative leadership theory, the primary role of transformational leadership is to promote creativity and innovation. Transformational leadership is a powerful tool for motivating team members to demonstrate their ability to innovate (Kindarto et al., 2020). However, just a couple of reports on the impact of managers' transformational leadership on nurses' innovation behaviors (Manzoor, et al., 2019).

Even though a moderating factor such as public service motivation critically plays a vital role in transformational leadership and nursing relationship innovative work behaviour, few research (Moynihan & Pandey, 2007; Davis & Stazyk 2013; Shim & Faerman, 2017) attempts have been made to investigate this topic. These studies provide more evidence to support the perception that the public sector is not innovative and is commonly held in developing countries. Employees' innovative work behaviours are influenced by the public service motivation that is perceived by workers especially in the

healthcare sector in Ghana. When nurses are highly motivated, the nurses are more ready to change their innovative ideas to innovative outputs in the organisation.

Leadership innovation literature (Darzi, 2018; Paarlberg & Lavigna, 2010) reviewed two main issues. Firstly, lack of systematic attention to the impact of TL on employees' IWB is especially surprising, giving that; ideas are useless unless used (Paarlberg & Lavigna, 2010), that is employees innovation and its particularly in the healthcare system, which is widely recognized as being critical to the effectively and efficiently delivery of public services to achieve growth and competitiveness of organisation. Secondly, it very critical to undertand follower's motive that translate leader behaviour into actions.

Transformational leadership seems to be an effective way to motivate co-workers in the healthcare sector to show their innovative behaviours. Cape Coast Metropolis in the Central Region of Ghana, is part of the various metropolis in the Ghana where there are few public hospitals, hospital administrators motivate nurses to the role of leadership in healthcare system to tackle diseases and activities individualism that are doomed to failure because of its increased dependence on the medical model and the market ethos. Afsar and Masood (2018), found transformational leaders' support was positively correlated with public servants' innovation. However, how transformational leaders especially in the healthcare sectors affect innovative work behaviors (IWBs) of nurses and the effect that the public services motivation has on innovative work behaviours were not considered.

While researchers examined the connection between nurses' perceptions of transformational leadership as the first phase of innovation (Hyypia &

Parjanen, 2013; Malloch, 2014), little attention was paid to the aspects of the public service motivation and its influence on IWB of nurses, public service motivation plays a major role in attempting to close the gap between transformational leaders and the influence of innovative behavior of health workers. Given the fact that transformational leadership is contextual, as researchers and scholars activities lead to particular behaviours and perception and in line with the earlier arguments, this study therefore, sought to fill the gaps identified and contribute to the literature by examining public service motivation's role on four transformational leadership dimensions and their effect on innovative work behaviour among nurses at Cape Coast Metropolis.

**Purpose of the Study**

As innovative work behavior in healthcare becomes more important, and as research suggests that nurses who engage in innovative work (e.g., working in an innovative setting such as creating new ideas and processes to attain the organisational goal), improve public service performance and motivation, this study aims to look into the influence of transformational leadership on nurses' behaviours and how public service motivation strengthen the relationship of these in nurses environmental certain.

**Objectives**

The objectives of the study are to:

1. Assess the effect of transformational leadership and innovative work behaviours of nurses at the Cape Coast Metropolis.
2. Examine how public service motivation moderates the relationship between transformational leadership and innovative work behaviours of nurses at the Cape Coast Metropolis.

**Research Questions**

1. What is the effect of transformational leadership and innovative work behaviours of nurses at the Cape Coast Metropolis?
2. How does how public service motivation moderate the relationship between transformational leadership and innovative work behaviours of nurses at the Cape Coast Metropolis?

**Research Hypothesis**

**Base on objective one, the following hypotheses were tested:**

H1a: Idealized influence has a positive effect on nurse innovative work behaviours.

H1b: Individual consideration has a positive effect on nurses' innovative work behaviours

H1c: Intellectual stimulation has a positive effect on nurse innovation behaviour

H1d: Inspirational motivation has a positive effect on nurse innovation behaviour.

**Base on objective three, the following hypotheses were tested:**

H2a: PSM moderates the relationship between idealized influence and nurses' innovative work behaviours.

H2b: PSM moderates the relationship between individual consideration and nurses' innovative work behaviours

H2c: PSM moderates the relationship between intellectual stimulation and nurses' innovative work behaviours

H2d: PSM moderates the relationship between inspirational motivation and nurses' innovative work behaviours.

H3: Transformational leadership has significant positive on nurses' innovative work behaviour

**Significance of the Study**

The study offers important insights phenomenon of how public service motivation moderates the transformational leadership influence on innovative work behaviours. Providing transformational leadership in public services, there is an appropriate time to review transformation leadership boundaries in innovative work environments. These findings make a significant contribution to the writings on transformational and innovative working behaviour, particularly in the field of public health care in the developing countries. The outcome of this research will help to determine transformational leadership as being one of the major factors that affect the innovation and competition of nurses in public healthcare. Researchers in the field of supervisors also learn that public interest dedication seems to be another major priority that has made a significant contribution to employee innovative behaviour.

By moderating the relationship between innovative and transformational leadership behaviours, we can establish how public service motivation affects the strength and direction of the relationship between transformational leadership from the perspectives of the nurses in public health care and innovative work behaviours. Researchers and students will find the findings of this study useful as it will serve as a material for empirical literature for them to rely on for further studies in the subject area. The study will operationalize some key concepts to fit the situation of the Ghanaian public health care sector and will likely emphasis innovative behaviours give cognizance to transformational leadership and public service motivation. Based on the results at the end of the

study, the study will suggest areas that can be exploited by students and researchers alike in terms of further studies. Gap identified but not filled by this study can also be a fertile ground for exploitation among researchers.

The output will provide evidence for hospital administrators on the positive effects of PSM. This will give evidence to healthcare sectors to know that high PSM nurses exhibit higher levels of innovativeness. The results from this study could help transformational leadership in public service organisations to innovations that are closely linked to the production of improved performance and effectiveness as to how public service innovation helps leaders and employees to be innovative. The outcomes of this survey will help the healthcare system to meet the incentives of healthcare professionals to develop innovation and apply innovative methods for creating, and drawing on innovation, methodologies, ideologies that may enhance nursing outcomes and work productivity.

**Delimitations**

This study was restricted to only nurses within public hospitals at the Cape Coast Metropolis, although there are many nurses in the public organisation across Ghana. Also, instead of using all the antecedents as were stipulated by Perry and Wise in 1990, the study considered only the antecedents that were reviewed in the dimensional analysis by Afsar and Masood (2018). The proximity of some selected public hospitals, particularly the UCC Hospital, Ankaful Teaching and Psychiatric Hospital, and Cape Coast Teaching hospital was an advantage, given time and resource constraints.

**Limitation**

The study employed the use of a questionnaire in collecting data which did not allow the respondents to express themselves freely. Therefore, the study did not probe into the various constructs. Some of the respondents were not willing to cooperate since they thought it was a waste of time. The study uses a single data source (nurses from the public hospitals within Cape Coast metropolis). Data from single source can be affected with the potential presence of common method bias and this can affect the results of the study. This necessitated using statistical to test for bias. Again, the study focused on only public hospitals within Cape Coast Metropolis and did not consider other public hospitals in the Central Region hence, the findings could not be generalized to other hospitals in the Central Region or Ghana. Finally, not all questionnaires given to the study participants were responded to.

**Organisation of Study**

The output of the study is arranged into five chapters. This first chapter provided the introduction and background to the entire research, problem statement at hand and the objectives that guided the study, the research questions and the hypotheses formulated, the delimitations and the limitations of the research, and the definition of terms that guided the research. The second chapter covers the literature review, the theory underpinning this study, the conceptual framework regarding the issues bothering transformational leadership, innovative work behaviours and public service motivation. It presents the transformative leadership and correlation its effect on the moderating influence of public service motivation on innovation behaviour. Also, the concept and nature of transformational leadership, innovative work

behaviours, and public service motivation were discussed and the empirical review of the study. The third chapter dealt with research methodology which deals with the methods and instruments used in the study. Chapter Four discusses the research results and discussion. And finally, Chapter Five addresses the summary, conclusions, suggestions for further studies.

# CHAPTER TWO

# LITERATURE REVIEW

## Introduction

This chapter provides a review of the theoretical and the empirical framework on the transformational leadership, public service motivation and nurses innovative work behaviour. The review also shows these constructs relate in healthcare system. This chapter is based on the study's research problem, research objectives, research questions and research hypotheses. The purposes of the study were to determine the influence of transformational leadership on nurses' innovative work behaviour and the role of public service motivation in moderating such a nexus. The first section presents the theoretical framework underpinning the study. The next section considers key concepts and variables of the study and the third section reviews relevant empirical literature.

## Theoretical Review

Theoretical postulations or justifications are required for the evaluation of connections between the different factors in the investigation. The study investigated transformational leadership, public service motivation and innovative work behaviours of nurses in the Cape Coast Metropolis.

## Transformational Leadership Theory

The transformational leadership theory defines the mechanisms by which a person communicates with one another and can build a strong connection based on trust, which will later increase motivating both leaders and adherents (nurses) intrinsically and extrinsically (Tekleab et al., 2020). "Leaders transform their followers (nurses) through their inspirational nature and compelling personalities, according to transformational theories" (Buil et al.,

2019). Group norms guide the development of rules and regulations. These characteristics provide the followers (nurses) a sense of belonging because they can easily identify with the leader and his or her mission.

The most appropriate theory rooted in this study is that of transformational leadership theory as used by Siangchokyoo et al. (2020). In a highly challenging global market (in the health care sector), the innovative work behaviour of nurses is key to the survival of the health sector (Nazir et al., 2018). However, behaviour of nurses' innovation is highly affected by the leadership style that the leaders in the health sectors have adopted. According to Sarros et al, (2008), there is a direct positive correlation that exists between transformational leadership style and organisational innovative work behaviours. A transformational leader can affect nurses by linking their self-design for said goals of the health sector (Caniëls, et al., 2018). This will lead to nurses becoming self-expressive which will translate into the expression of greater willingness to contribute to the overall organisational objectives (Darzi, 2018).

According to Tekleab, et al., (2020), "transformational leaders in the health sector articulate and present a clear vision, demonstrating enthusiasm and enthusiasm for the vision, as well as the ability to encourage and motivate nurses working hard to get this vision." Transformational leadership necessitates a leader's ability to motivate others and forge a common vision to help them become innovative in health services (Al-Husseini & Elbeltagi, 2016).

**Perry and Wise theoretical framework**

Public Service Motivation -PSM theory (Perry & Wise, 1990), originates from beliefs that the motives of public servants are systematically

different from their private sector counterparts because of the nature of public institutions. Thus, the term PSM points to the notion that peoples are motivated to work in the public service as a result of altruism, a desire to serve, or a wish to have an impact on society. It is closely associated with the idea of public service ethos, which is rooted in an understanding that public service is different from the private sector, both because of the tasks it performs and the behaviours it expects of its employees (Ritz et al., 2016)

The measurement of PSM has been comprehensively discussed. Perry and Wise (1990), initiated the theoretical framework underpinning PSM and divided PSM into four measurement four dimensions: public policy attraction, commitment to the public interest, self-sacrifice and compassion. Furthermore, Perry (1996), designed a 24-item scale according to the four dimensions. Subsequently, a large number of scholars have conducted confirmatory, commentary, improvement and application studies into this four-dimensional structure (e.g., Alonso & Lewis, 2001; Coursey & Pandey, 2007; Kim & Vandenabeele, 2010; Wright & Grant, 2010).

However, due to the elusiveness of individual service motivation itself and the high complexity of its variables, extensive research into the concept and the structure or other aspects of PSM have not been agreed upon (Alonso & Lewis, 2001), but remain affected by Perry's four-dimensional structure. Most scholars have revised or simplified Perry's 24-item scale, with some choosing to reduce the number of dimensions. For example, considering the overlap between Self-Sacrifice and Compassion, the two have been merged into a single dimension (Moynihan & Pandey, 2007). Also, attraction to the public policy-making dimension has been removed because of cultural differences (Perry &

Hondeghem, 2008). Some hold the four dimensions unchanged, only reducing the number of items included in each of the dimensions, such as the 14-item scale of Coursey and Pande (2007), the 15-item scale of Perry et al. (2008), and the 12-item scale of (Kim, 2009).

In Ghana, most scholars have adopted Perry's original 24-item scale, but there has been simplification or localization in terms of language and description. Bao and Li (2016), developed a short version of the PSM with an 8-item scale, while Kim & Vandenabeele (2010) selected a 12-item scale based on Perry's 24-item scale and modified the language to be more appropriate for the Chinese cultural context, a scale verified through empirical testing. Wright and Grant (2010), explored a global measure that has only a single dimension with a 5-item scale and found a similar strength of relationship with PSM. Consequently, the measurement has been frequently utilized due to its simplification (Boyd et al., 2017).

**Transformational leadership**

Without micromanaging, transformational leaders in the public sector motivate and promote their employees (nurses) and trust skilled workers to them develop employees (Luu et al., 2019). It is a leadership style that promotes flexibility, pursuing forward-thinking and finding innovative solutions to problems (Pradhan & Pradhan, 2019), via employees on the leadership track will be prepared to become transformational leaders peer support for oneself and preparation (Sims et al., 2021). In the health sector, transformational leadership is mostly seeking possible motivation in its adherents, to bring attention to higher aspirations and to convert self-interests into collective ones (Afsar & Umrani, 2019). Transformational leadership is an aware, moral and

spiritual mechanism that provides an entity with growth trends through reliable equal power leadership. Lack of public service motivation can demotivate workers and be a discouraging factor for public managers (hospital administrators) and employees (nurses) who are still trying to be innovative (Terry, 2015).

Healthcare leaders dedicate time and energy to assisting nurses in becoming innovative and adapting to change, as well as dealing with the confusion that comes with it in terms of employment, communications, roles, relationships, and skills (Jones et al., 2008). Transformational leadership refers to leaders who seek to create ideas and thoughts to steer the organisation in a new direction, prosperity and development (Jonyo, 2018). They mobilise the organisation's members to make fundamental dynamics within the organisation's foundations and the foundations to be ready and develop the necessary capabilities for venturing into new territory directions and achieving higher ideal performance peaks by cultivating enthusiasm, engagements and loyalty between and among staff and leaders.

Transformation leadership is a style of leadership that seeks to promote, encourages, and motivates individuals to work and enhance so that the company can prosper and influence its future success (Alrowwad & Abualoush, 2020). Leaders and managers that set a good example and fully comprehend management style, the responsibility of employees and the autonomy of workplaces to achieve this. Public managers serve as successful leaders in shifting environments as they affect the dynamics of human interactions, paying attention to individuals, relationships and identity according to Karp and Helg∅ (2008). The leadership of public managers is critical to the development of

innovation within public sectors. Innovative leadership is a task to look towards a brighter future, towards being courageous throughout confronting a situation and also to make caregivers innovative and able to do just that.

Nurses are motivated to achieve greater mutual objectives, dreams, and missions that go beyond one's interests express enticing visions through transformational leadership, which emphasises the growth and intellectual motivation of nurses (Casida & Parker, 2011). Besides, change is mainly focused on transformational leadership, and in the healthcare sector, transformational leadership introduce change and cope, innovate and modernise new things in the public sector (Firth-Cozens & Mowbray, 2001). According to Cherry (2010), leaders enthuse followers by forming a joint and energising vision and challenging objectives, and leaders and followers help each other to achieve higher morality and encouragement levels.

Wong and Cummings (2007), discovered that transformational leaders in public health administrators positively affect innovative work behaviours in the public sector. Four dimensions have been explored in terms of substance transformational leadership: intellectual stimulation, inspirational motivation, idealised influence and individualised consideration (Piccolo & Colquitt, 2006; Casida & Parker, 2011). Inspirational motivation, idealized influence, intellectual stimulation, and individualised consideration are all part of the traditional definition of transformational leadership (Bass, 1985).

The act of articulating a captivating and inspiring possible vision for followers is known as inspirational motivation. This is referred to as inspirational motivation when a leader exudes and shows greatness and take time to really and honestly concentrate on the value of the individual, and the

mission at hand as a result of motivation (London, 2001). Aside from being able to define a vision and objective, transformational leaders can communicate emotionally with others and understand what makes them "tick." By employing voices, actions, doing things differently, and precisely timed incentives for jobs well done, a strong leader pushes staff to achieve greatness and oftentimes outstanding standards of performance (Corpuz, 2021). The greatest inspiring motivators, for example, are business people and leaders or top management who lead by example. They have been in your shoes and developed and learned from the experience.

According to studies (Terry, 2015), motivated and inspiring motivators can be manufactured rather than born. You, as the leader, inspire individuals by unlocking habits and latent potentials for achievement, as well as striving for transparency in decision-making and outcomes (Jayamaha, 2020). The most influential and recognized leaders demonstrate continued dedication to inspiring others through the mastery of the four I's of Leadership by making symbolic gestures and living as an example of being the best version of yourself while setting high expectations for others around you (Johnson & Hackman, 2018).

***Idealised influence**:* Idealized influence is linked to charismatic acts and modeling behaviour, which leads to followers identifying with their leader. The term "idealised influence" describes transformational leaders who operate as role models for their followers (Balyer, 2012). These individuals look up to, trust, and support these leaders. Followers idealise their leaders and desire to be like them. One of the things that leaders do to earn this honor is to put others' needs ahead of their own (Church, 2020). Leaders share risks with their followers and are predictable rather than erratic in their behaviour (Bannay,

Hadi & Amanah, 2020). They should do the right thing, follow strong ethical and moral values, and desist from abusing power for personal gain.

Female leaders, according to Daft and Marcic (2008), have a more idealized impact, provide more inspirational motivation and are more personally considerate, provide more intellectual stimulation than male leaders. Supporters acknowledge leaders who are respected and would like to imitate their values, uphold high expectations and are seen as powerful regardless of what he or she does (Hay, 2006). A lot of studies have been done in the field of medicine to assist transformative leadership, including idealised influence. The use of "idealised influence" serve as a key component of transformative leadership. Example, McGuire and Kennerly (2006), conducted a study of Caregivers and staff nurses from 21 Midwest United States quasi hospitals. According to the study, nurse managers outperformed staff nurses in terms of implementing idealised control and defining the good outcome and job satisfaction from this transformational leadership element (Abdelhafiz et al., 2016).

***Intellectual stimulation***: Intellectual stimulation entails eliciting ideas from followers and challenge them to challenge the old theories and look at problems from new angles. Intellectual stimulation is evaluated and the results of leaders who promote innovation and creativity and also critical thoughts and solutions to the problems (Sánchez-Cardona et al., 2018). Nurses' minds and imaginations are piqued, as is their ability to discover and solve issues in unique ways when they are exposed to intellectual stimulation (Cheung & Wong, 2011). During the COVID-19 pandemic, there were several examples of forward-thinking companies diverting money to produce face masks, ventilators, and protective equipment for front-line healthcare staff (Jain et al.,

2020). Food service companies have raised thousands of dollars in donation money from their clients to prepare and distribute meals to hospitals, reinvigorating their businesses and giving them a renewed sense of purpose (Hossain, 2021).

Leaders widen and elevate their employees' interests through intellectual stimulation, which encourages people to be innovative in fresh ways. Leaders see their employees' uniqueness and collaborate with them to attain professionalism (Abualrub & Alghamdi, 2011). Simply put, not only is transformational leadership a way to improve patient outcomes, but it's also a type of successful innovation leadership. Nurses' innovative behaviour is positively affected by transformational leadership. In the process of leadership influencing nurses' innovative work behaviours, public service motivation plays an important role (Bos-Nehles et al., 2017).

Finally, ***individual consideration*** comprises coaching, monitoring, and other comparable efforts to attend to each follower's requirements (Mathews, 2019). If a leader teaches, facilitates, mentors, coaches, and encourages effective communication, and feedback in two-way, this is known as individualised consideration. The individually considerate leader, according to Bass and Avolio (1994), listens effectively and delegate tasks as a means of developing followers. The pandemic of 2020 has brought mental health to the forefront, as well as a radical change in job arrangements. With millions of people working from home out of necessity rather than choice, leaders and teams are under increased personal and professional pressures (Osland et al., 2020). When individuals find themselves in new situations, balancing family

commitments with job goals, leaders must demonstrate greater compassion and consideration.

The sum of these four dimensions of leaders, as viewed by public sector leaders, may be used to assess transformational leadership. The willingness to serve as a paradigm of role model, in which the leader is admired, revered, and trusted, is known as idealized influence (Nusair, et al., 2012). The transformational leader's ability to build an inspiring, compelling, and appealing vision is referred to as inspirational motivation. The opportunity to increase followers' consciousness of issues and acceptance of their views and values is known as intellectual stimulation. Individualised consideration is a leadership characteristic in which the leader pays special attention to each of his followers, taking into account their differences (Bos-Nehles et al., 2017). Employee's respect and trust managers who use idealised control to the point that they want to emulate them. Leaders who inspire their workers try to make their jobs challenging for them.

In summary, transformational leadership and provision of public service motivation will stimulate nurse' innovative work behaviour.

**Conceptual Review of Transformational Leadership, Public Service Motivation and Nurses' Innovative Work Behaviours**

This section seeks to provide an extensive discussion and enhanced knowledge with respect to the constructs in this study. How the various concepts are operationalized in literature will be discussed. Innovative work behaviour will initially be addressed followed by the operationalisation of innovative work behaviour. In addition, operationalization of innovative work behaviour will be discussed followed by the discussion between

transformational leadership and innovative work behaviours, and then, innovative work behaviour in public sector organisation will be discussed. Again, nurses innovative work behaviour will be discussed followed by the link between public service motivation and innovative work behaviours. And finally, the moderating role of public service motivation will be discussed.

**Conceptualisation of IWB**

The innovative behavior in work, according to Janssen (2000), is delineated in a responsibility, actively involved in the project to positively impact role performance, team or organisation, as the new methodology, initiation and use of new ideas is defined here as innovative work behavior. IWB, as defined by Dorenbosh, Van Engen, and Verhagen (2005), refers to individual employees' willingness to contribute to on-the-job innovation, such as the upgrading of working methods, communication with immediate coworkers, device or use of new services or industrial applications. The purpose of deliberately introducing and using thoughts, procedures or processes only within concerned authority of adoption only within the role, association of persons to benefit substantially the employee, team or organisation or public at large (Reuvers et al., 2008).

Innovative behaviours, according to Saunders (2012), represent the production of something new or distinct. Innovative behaviour, according to Widmann, Mulder and König (2019), defines an innovative as cross-process where an individual recognises and works to endorse innovative solutions, and to build momentum for them and to encourage them to generate a proof of concept or model relevant besides the use and receive the support of either an

organisation, or segments of it. Tuominen and Toivonen (2011) are two finish names for the same person.

Innovative work behaviour (IWB) is an interpretative attribute for nurses' workers providing value to the innovation process and would be the result of cognitive innovation models in the entire organisation as a two-phase process that involves an innovative process for identifying and generating new ideas at the individual level (Morris, 2010; Oldham & Cumming, 1996). Using these models as a basis, the IWB build combines both phases as a collection of tasks and activities needed for innovation growth (Firdaus, Ahman & Suryadi, 2021). Activities can be physical or cognitive, and they can be done alone or in a group (Messmann & Mulder, 2011).

Innovation growth requires four operations based on a study into creative and innovative behaviour (Widmann et al., 2019; Echebiri et al., 2021): Opportunity *exploration* is the process of identifying and understanding challenges and needs in one's workplace that can lead to change and progress. *Idea generation* involves beginning the innovation phase by generating and proposing new, relevant, and components or procedures of great promise need for addressing the defined opportunities (Widmann et al., 2019. *Idea promotion* involves persuading the social community to support the proposed innovative behaviours and forming a rebel group to assume responsibility as well as the documentation, tools and resources are required (Dudouet, 2013). According to Prajogo and Ahmed (2006), testing with yourself concepts, developing a mental or physical prototype of innovation, evaluating and enhancing its adaptability, and preparing in the long run incorporation into organisational implements are all part of *idea realization*. The work builds on each other in the part (e.g.,

suggestions should indeed address opportunities; the advancement and sudden realisation rely on the already-generation ideas), but conformational changes are also interconnected. Individuals may participate simultaneously in the finalisation of one or more tasks in various ways, thus creating an innovation model that is dynamic, recursive and non-linear Echebiri et al., 2021).

Since innovation focuses on human behaviours and is developed in a particular working environment, IWB also has dynamic and contextual characteristics (Dudouet, 2013). It's adaptable even though because of the intricate linkages that exist between past work actions and outcomes, as well as current and future activities, all of which influence the innovation behaviour process and employee professional growth. It is context-bound because contextual factors affect work activities and outcomes (Widmann et al., 2019), and work activities and outcomes become important simply because of the features of the text. The consequences of IWB's complex and context-bound existence, on the other hand, might not always be obvious.

As a result, reflection on the innovation creation process becomes the fifth essential innovation mission. Muller, Herbig, and Petrovic (2009) found that focusing on concepts, strategies, practices, and results helps the entire process of innovation development. Employees may also regulate and enhance their innovative behaviours by focusing on job practices and outcomes (Van Woerkom, 2004). Employees, for example, may develop their awareness and expertise for similar future tasks by focusing on the results of current activities. Similarly, current practices may be carried out by focusing on similar past activities (Bannay, Hadi & Amanah, 2020).

**Operationalisation of innovative work behaviours (IWB)**

According to earlier research (de Jong & Den Hartog, 2007), or above and a theoretical conceptualisation for IWB operationalisation demands specifications of working activities to accomplish each of these innovative behaviours. *Exploring opportunities* necessitates being mindful of individual job environments and keeping up with current affairs. Changes in organisational frameworks, events in other organisations, and new perspectives in one's area of work are all examples of this. *Idea generation* entails openly addressing significant work-related issues, objectively analysing prevalent views, and sharing and debating proposals for necessary improvements in response to these issues. Exhibiting the help of colleagues and managers, keeping them updated about the process, negotiating with key players about permission and resources and disseminating ideas both within and outside of one's work context are all part of *idea promotion.*

*Idea realization* necessitates creating hands-on models or examples of innovative work behaviours, familiarising others with its specifics, analysing results for negative consequences and preparing its realistic implementation in the workplace. Examining the progress of innovation growth, measuring practices and results against performance metrics, reviewing one's progress during innovation development and improving actions plans for future situations are all examples of *reflection*.

**Transformational leadership (TL) and innovative work behaviours (IWB)**

According to Gumusluoglu and Illsev (2009), there is an increasing interest in the effect of transformational leadership on innovation and creativity. Transformational leadership has become a widespread new social trend (Cha et

al., 2019), and a golden leader requirement as a result of the growing scholarly engagement in innovative settings. The attention of researchers, as well as scholarly interest, is growing. In the health sector, workplace innovation is vital for workers, companies, and communities, and as such, it is a significant part of the public service strategy of globalisation and knowledge-based societies. In addition to transformational leadership, researchers in the field of public management have discovered that engagement is another important factor that has a direct impact on employee innovative conduct (Hakimian, Farid, Ismail & Nair, 2016).

The term transformational leadership refers to a leadership style that affects followers' morale, ideals, and values to motivate employees to perform better than expected (Nusair, Ababneh, & Bae, 2012). According to Nemanich and Keller (2007), TL was examined in a variety of methods, with an emphasis on idealised influence, individual motivation, individual consideration and intellectual stimulation. Idealised influences depict leaders as most admirable trustworthy and respectful, reflects the qualities of vision-setting and articulating the vision to achieve it and stimulates employees' innovative behaviours (Bannay, Hadi & Amanah, 2020). One of the most significant factors influencing creativity and innovation, according to the researchers, is leadership style (Gumusluoglu & Ilsev, 2009).

Furthermore, by inspiring approaches, inspirational motivation increases employee morale, which leads to improved employee performance. In particular, inspiring motivation refers to how leaders empower their workers to achieve a common goal by raising individual and team morale (Bass et al., 2003). Focusing on intellectual stimulation, Van Woerkom (2004), shows how

leaders harness inspiring energy without opprobrium, to support organisations, blunders, and employee complaints. Instead of criticising each other or concentrating on their interests, transformational leadership helps workers build a relationship-based working atmosphere. Thus, every employee value individual consideration of one another, resulting in an atmosphere that fosters creativity. In conclusion, TL provides workers with a once-in-a-lifetime opportunity to improve learning and cooperative skills, resulting in enhanced individual and organisational innovation (Widmann, Mulder & König, 2019).

On contrary, a person's ability to create innovative ideas, try to come up with new perspectives and then test the effects of these ideas to enhance outcomes (Grant, 2000). The philosophical basis of innovativeness is a multi-stage procedure identifying problems, developing ideas, gaining support for ideas, and implementing those ideas (Scott & Bruccoli, 2004). Individual motivation, personality, and initial awareness, as well as organisational supporting structures, all influence the above-mentioned innovation process (Barron & Harrington, 1981). A leader's behaviour has a significant impact on these individual attributes, particularly innovative behaviour.

Transformational leaders are not always successful min motivating their following. On the other hand, it has been discovered that transformative leaders will only be successful if they can go beyond rhetoric and turn their vision into reality (Nusair, Ababneh, & Bae, 2012). What might be done to reinforce a leader's vision? Leaders can make their followers a significant impact in the lives of others is a successful approach, according to a study (Thompson & Bunderson, 2003).

**Innovative work behaviour in Public Sector Organisation**

Economic expansion is a necessity throughout, when public institutions around the world are dealing with a more uncertain operating environment when public sector employees need to do more with less, innovation becomes crucial to providing successful services to people (Bernier, Hafsi & Deschamps, 2015). In the public sector, innovation differs from invention in that it must be implemented, and it differs from recurring improvement in that it goes beyond simple adjustments and adaptations (Widmann, Mulder & König, 2019). According to Piliavin and Charng (1990), the prevailing perception of until recently, government innovators were viewed. As a result of the fact that risk-taking and bureaucracies' flexibility runs contrary to regulation transparency resulting in failure, consumer rights violations, favoritism, or corruption and the legitimacy of innovation in public administration has also been challenged.

Unauthorised innovation (such as skunkworks projects that do not adhere to established protocols) is generally considered inappropriate (Halachmi, 2002). More laws, controls, and restrictions that restrict civil servants' permissible conduct are often considered a solution in the case of performance deficiency, rather than innovation (Kelman, 2008). However, due to changes in public policy and preferences, public agencies must adjust periodically (Adler et al., 2017). Innovative procedures can assist agencies and organisations in addressing developments and stakeholder desires, as well as offer credibility to the government as a public-value-creating agency (Moore, 2014). Since there is no competition mechanism to eradicate organisations that do not conform to their task setting, debunks the myths the misconception that public organistions are not innovative (e.g., Damanpour & Schneider, 2009).

Research has focused on policy (Balyer, 2012), organisational innovation (Kelman, 2008), and project-level innovation (Moore, 2014).

Individual employees' innovative behaviours have gotten even less attention (de Vries, Bekkers & Tummer, 2016). Though, since innovation is so important in the public sector especially in the healthcare sector, employers are increasingly expecting their workers to contribute. Following the previous findings on public organisations and entities, employees' innovative behaviours may be defined as the innovation and execution of novel and valuable ideas by public sector employees (Bysted & Hansen, 2015). Individual innovation is a multistage process that begins with the identification of an issue and the generation of solutions, either internally or through the implementation of external methods (Fernandez & Wise, 2010). In the next step, a creative person attempts to convince others in the company to follow his or her ideas. Finally, innovative behaviour involves making preparations and schedules for bringing new ideas into motion so that they can be put to good use (Widmann, Mulder & König, 2019).

**Nurses innovative work behaviours**

Nurses' innovation behaviour is described as a process in which nurses promote the process of generating, establishing, evaluating, and implementing new ideas. Healthcare entails doing something differently to make significant improvements in efficiency nurses' activities (Mcsherry & Douglas, 2011). Health care workers, investigations, and hospital managers are just a few of the areas in which nursing staff, educational study, clinical procedures, administration, technology, public health, and policies are all examples of nurse innovation behaviours. Innovation, technology, public health, and strategies are

all examples of this (Kelman, 2008). The motivation of practitioners to make utilisation of what individuals' expertise and skills to innovate and establish hence the need for innovatively, drawing on technology, processes, ideas, and related stakeholders that could further improve, assess and the promotion health care that may be called innovative behaviour in nursing practice.

Weng, Huang, Chen and Chang (2015), define nursing innovation behaviour as the extent to which nurses participate in the advancement of themselves, motivate and getting everyone else to partake in and recognise the task advancement. The involvement of nurses in work improvement, encouraging everyone to get involved, and adoption of the task are all examples of innovative behaviour (Weng, Huang, Chen & Chang, 2015). Nursing innovation is the implementation that applies imagination to observable results, behaviour, goods or processes (Tsimane & Downing, 2020). According to Knol and van Linge (2009), nursing innovation requires the creation, implementation, and realisation of novel concepts, as well as the recognition of innovation outcomes and the solicitation of others' support for innovative activities.

**Public Service Motivation**

In Public Management research, the concept of public service motivation (PSM) has often been used as an approach to explaining other-regarded behaviour of mainly public officials (Ritz, Brewer &Neumann, 2016). PSM originates from beliefs that the motives of public servants are systematically different from their private sector counterparts because of the nature of public institutions (Perry et al., 2010; Zhu & Wu, 2016). Thus, the term PSM points to the notion that peoples are motivated to work in the public service as a result of altruism, a desire to serve, or a wish to have an impact on

society. It is closely associated with the idea of public service ethos, which is rooted in an understanding that public service is different from the private sector, both because of the tasks it performs and the behaviours it expects of its employees (Ritz, Neumann & Vandenabeele, 2016).

Public service refers to the service provided to the public or the service authorised and funded by the government (Denhardt & Denhardt, 2015). Motivation is the need or desire that drives a person to act. Putting the two concepts together, Van Witteloostuijn, Esteve and Boyne (2017) noted that public service motivation is the desire for an individual to serve the public interest and offers an explanation for the reasons why public service activities take place. The earliest articulation of PSM was offered by Rainey and Steinbauer (1999) in an investigation objected of public and private managers. The authors found that the managers from the public organisations scored prominently higher on an interest in "engaging in meaningful public service" than their counterparts from the business sector. Rainey accordingly stated that this motivation is an elusive concept, as it refers to a type of motivation individuals can achieve through activities carried out for the public interest.

Expanding on the construct, Perry and Wise (1990) were first to formalise the definition and theory thereof, that this became a concept well renowned in literature. According to Perry and Wise (1990), PSM is an individual's predisposition to respond to motives grounded primarily or uniquely in public institutions and organisations; where motives mean the psychological deficiencies or needs that an individual feels some compulsion to eliminate. Following the work of Perry and Wise (1990), other early scholars (Brewer & Selden, 1998; Rainey & Steinbauer, 1999; Vandenabeele, 2007)

offered several slightly different definitions, but these definitions have a common focus on motives and action in the public domain that are intended to do good for others and shape the well-being of society (Perry & Hondeghem, 2008).

For instance, Rainey and Steinbauer (1999) offered a more global definition of PSM by indicating that PSM construct is associated with altruism which measures the general altruistic motivation of the individual to serve the interests of a community of people, a state, a nation or humankind. Rainey and Steinbauer's definition is similar to Brewer and Selden (1998, p. 417), who defined the concept as ''the motivational force that induces individuals to perform meaningful public, community, and social service''. PSM is also studied as a public service ethic or a public service value, and the construct has been referred to as a calling, a commitment to the public good, a sense of duty and contribution, implying an ethic exists in public service that motivates individuals to self-select themselves into public sector employment (Simeone, 2004; Zhu & Wu, 2016).

According to Vandenabeele (2007), PSM is the belief, values and attitudes that go beyond self-interest and organisational interest, that concern the interest of a larger political entity and that motivate individuals to act accordingly whenever appropriate. Pandey et al. (2008) asserted that employees with high PSM are good "organisational citizens" who are considerate to their coworkers and are more likely to help them to achieve organisational objectives. Chen, Hsieh and Chen (2013) averred that, although PSM is influenced by public employees' organisational experiences, it is frequently described more as an individual's orientation influenced by factors such as parental

socialisation, religious orientation, professional identification, and political ideologies. Moreover, PSM is expected to be closely related to prosocial orientation since altruism is one of the core components of PSM, leading PSM scholars to speculate that public employees with a high level of PSM will have more compassion and demonstrate more initiative in engaging in prosocial behaviours (Davis & Stazyk 2013; Moynihan & Pandey, 2007; Shim & Faerman, 2017).

Perry and Wise (1990) conceptualised that an individual's PSM may be attributed to a blend of rational, norm-based and affective motives. Whereas rational motives refer to behaviours that are based on individual utility maximisation; normative motives refer to behaviours engendered by efforts to comply with norms; and affective motives involve behaviours that are based on individual emotional responses to different social contexts (Perry & Wise, 1990). In lieu of these motives, Perry (1996) developed a scale that consists of four dimensions: attraction to the public-policy formation, commitment to civic duty and public interest, compassion, and self-sacrifice to measure PSM.

While attraction to public-policy measures rational motives (desire to participate in formulation of public policy which reinforces one's image of self-importance), commitment to civic duty and public interest (attachment to ideas of civic duty and social justice) measures normative motives, and both compassion (desire to protect citizens, attachment to the patriotic values) and self-sacrifice (a strong desire to protect and work for the good of the public) measure affective motives (Perry, 2000).

The growing use of Perry's (1996) measure of PSM has raised some specific concerns regarding the generalisability of the framework in other countries. Although some international scholars have provided evidence that the four original dimensions must be supplemented with culturally specific dimensions (Cerase & Farinella, 2009; Giauque et al., 2011; Vandenabeele, 2008), others have suggested that some of the dimensions developed in the United States must be omitted (Leisink & Steijn, 2009; Liu, Tang & Zhu, 2008) or even combined (Ritz & Waldner, 2011; Vandenabeele, 2008) when researching in other countries. Others have suggested that commitment to public interest dimension needs to concentrate more on a personal disposition to pursue public values (Castaing, 2006; Leisink & Steijn, 2009; Taylor, 2007), and the items of compassion do not always represent affective motives (DeHart-Davis, Marlowe & Pandey, 2006; Moynihan & Pandey, 2007). Using lessons from past research, Kim et al. (2013) have recently proposed several changes to the current multidimensional measures of PSM that would address its weaknesses and support the development of a more universal measure that can be used globally.

**Public service motivation (PSM) and Innovative work behaviour (IWB)**

Analysing public service reasons, Perry and Wise (1990), noted that motivated workers are likely to spontaneously partake but also show additional steps in the name of the organisation. Although studies have demonstrated the connection of PSMs and other success factors of the person employed (Crewson, 1997), there seems to be little attention in literary works to the effect of the PSM on their innovative behavior (Ritz, Brewer, & Neumann, 2016). The general connection between PSM and employee innovation behaviours, for

instance, has only rarely been reviewed by researchers in how far the PSM of leaders motivates or leads employees to adhere to innovative ideas.

Nurses who score high on self- sacrifice factors were more likely to be motivated to innovate and endorse organsiational change, according to Wright, Christensen and Isett (2013). They hypothesised as a result; these nurses may not be as particularly worried about changes that have an adverse influence. The effect of nurses' public service motivation on innovative work behaviours, on the other hand, has yet to be thoroughly investigated. The antecedents that decide public service motivation have been studied; Ritz et al., (2016), proposed to investigate the impact of organistional factors on PSM.

In Wright (2004), the specificity and difficulties of objectives can account for just over half the variance in the motivation of work, whereas Bright (2005), advocated that public service motivation be closely related to gender, education, the hierarchy of levels and individual currency incentives likes and dislikes. A spectrum of many other important variables was examined in other studies, for example, Camilleri (2006), states the degree to which employees see their manager also influences their interpersonal and procedural commitment, which would adversely impact their public service motivation and can foster employee's innovation. In the following year, Camilleri (2007), also ascertained those main predictors of the public service motivation for the public servants especially in the healthcare sectors are the relationship between nurse employees, occupational and health characteristics of the health administrators and the perception that their employees are in their hospital. Employee motivation in the public sector, according to Grant (2008), can be boosted by demonstrating the benefits to users.

While the existing studies have focused on the extent to which existence of or support for organisational change or reform from leaders are associated with higher employee PSM (Moynihan & Pandey, 2007; Wright et al., 2013), we suspect that PSM may also incentivise healthcare supervisor's encouragement of nurses' innovation. Public healthcare sector innovation can result in changes that improve inefficient work processes and delivery of public services so that public needs are better met (Damanpour & Schneider, 2009). Therefore, healthcare supervisors who place a high value on public service and the proper performance of duties are more likely to encourage the innovative behaviors of their nurses.

**Moderating impact of public service motivation (PSM)**

For the last two decades, researchers in public service motivation (PSM) have carefully examined "motifs based solely or mainly on public organisations, agencies and institutions" (Perry & Wise, 1990). PSM is the values, attitudes and convictions in a way that goes well beyond individuality organisational interests and that affect the wider political entity's intrigue as described by Vandenabeele (2007). This idea has to do with the philosophy of transformative management that inspires supporters to go beyond their self-interest in the interests of the team, organisation or greater government (Shamir, House & Arthur, 1993).

Transformational leadership is based on an employee presumption that runs in contradiction to the theory of agencies (Moynihan & Pandey; 2010), which is that people are an altruistic "knight" (Le Grand et al., 2006). Instead of contradicting many of the values of the public and being able to turn knights into "knaves", through intrinsic or pro-social motives, TL may constitute a

superior match for high-leveled PSM workers" (Moynihan & Pandey, 2010). Motivation describes a particular reason for acting or behaving a particular way.

This is particularly true of public organisations, as their employees tend to be motivated by more service than employees in the private sector (eg., Pandey & Stazyk, 2008). Based on previous work of the theoretical team of Paarberg and Lavigna (2010), we expect transformational leadership to improve nursing's innovative behaviour, not only by infants who have a stronger public service motivation but also by infants with lower PSM, to be more likely to increase (Wright, Moynihan & Pandey, 2012). Higher PSM employees are more concerned with doing work that is beneficial for others.

High PSM employees can share their position and fulfill their ideals for the benefit of others by providing motivational messages that motivate their adherents to go beyond the consciousness of themselves. Intellectual incentive literature, Individual consideration, idealized influence and inspired motivation make the nursing staff more willing to make the effort needed to innovate effectively when the values of their employment are heir to them (do Adro & Leitão, 2020). The study therefore, expect the employees of healthcare professionals with a stronger PSM to improve or improve the process alone by expressing and achieving their goal of helping others. With the evidence that public service motivation is a part of correlations between transformational leadership and innovative work behaviours, as studied its moderating effect in this write up. The study hypothesizes that:

PSM has significant relationship on nurses' innovative work behaviour.

**Empirical review**

The empirical reviewed was developed in line with the specific objectives of the study. The contributions of transformational leadership and public service motivation on nurses' innovative work behaviours have been acknowledge in literature.

**Transformational leadership and innovative work behaviours**

Transformation must motivate subordinates to establish relationships and create a group view (Burns & Beck, 1978). Oldham and Cummings (1996), found that staff produces more innovative work in supportive, uncontrolled ways. The analysis showed that transformative leadership and innovative behavior are positive and significant. In addition, the manager's relationship was moderated by gender, which shows employees report more innovative behaviour when male leadership of transformation in comparison with female managers is presented, which confirms the assumption of our sexual orientation. The interaction of transformational leadership, manager gender and staff gender were not found to have any significant effect.

Pradhan and Jena (2019), researched on the topic; "Does meaningful work explain the association between transformational leadership and innovative work behaviour?" Executives from an aero production facility and an iron production facility were used in the study. The results of the evaluation show that Sample I and Sample II both demonstrate that transformation leadership significantly influences the innovative behaviours of employees. In addition, the study finds significant control between transformational leadership and employee innovation in part (both samples I and II).

The topic 'the impact of transformative leadership on innovation: evidence from Labanese banks' has been investigated, by Al Ahmad, Easa &Mostapha (2019). The study examined the correlation between transformation and innovation with explanatory and quantitative analysis using Structural Equation Model (SEM) with AMOS 20. The data were collected using an investigation method. The sample results were determined with the probability sampling techniques stratified at 270 sites in Lebanon of around 310 employees. The study found that the relationship between innovation and transformative leadership in the banking sector has been positive.

In Ghana, Manoppo (2020), carry out a study in the banking industry, Choudhary and Khan (2021), examined their research in South Africa. In light of the above, the research on organisational innovation and the transformational leadership in Ghana, transformational and organisational innovation has yet to be implemented to the service sector, to the best of knowledge based on the empirical literature reviewed thus far. Employees' innovative workplace behaviours are heavily influenced by their interactions with their colleagues, superiors, subordinates, and customers, according to previous research (Anderson, de Dreu & Nijstad, 2004; Zhou & Shally, 2003). Employees' work behaviours, especially their innovative behaviours, are heavily influenced by their leaders (Yukl & Chavez, 2002).

Leadership has been identified as a key predictor of employees' innovative behaviour in previous studies (Jung, Wu, & Chow, 2008). According to many leadership experts, transformational leadership contributes to above-average success through aligning employees' self-concept with the organisation's purpose and encouraging subordinates to think beyond the box

and demonstrate innovative behaviour. While it is reasonable to conclude that transformational leaders will often have a positive impact on employees' innovative behaviour at work (Eisenbeiss, Van Kinippenberg & Boemer, 2008), prior research has shown mixed results. De Jong and Den Hartog (2007), for example, discovered no evidence of a connection between transformational and team innovativeness.

A study conducted by Indian software engineers, Pradhan and Pradhan (2015), discovered that transformational leaders can hardly generate innovation and motivate employees to play an active role in innovative behavior in two scenarios. First, when followers await leadership's direction and motivation. If one or both of these prerequisites weren't met, transformational leadership could find it incredibly difficult to promote innovativeness among his followers. In addition, leaders complain that individualised consideration is the lesser developed and unknown component of transformational (Al Ahmad, Easa & Mostapha, 2019).

This study repeats the testing of the relationship between the Focal construct (Transformational leadership and IWB) in an Indian context as suggested by Nuzzo (2014). While stronger employee-supervisor relationships driven by a supervisor’s perceptions of employee competence and motivation can help establish the conditions under which the supervisor is more likely to support employee innovation, supervisors are also more likely to encourage innovation when they place a higher value on the potential outcomes of innovation (Reuvers et al., 2008). It is therefore imperative to test how transformational leadership leads nurses to be more innovative within the Ghanain healthcare system. The study hypothesizes that:

*H1a: Idealized influence has a positive effect on nurse innovative work behaviours.*

*H1b: Individual consideration has a positive effect on nurses' innovative work behaviours.*

*H1c: Intellectual stimulation has a positive effect on nurse innovation behaviour.*

*H1d: Inspirational motivation has a positive effect on nurse innovation behaviour.*

**Transformational leadership and public service motivation**

In a study conducted by Afjahi et al. (2013) on the impact of transformational leadership on dimensions of public service motivation has been investigated among employees of 78 branches of banks in Semnan Province in Iran. Based on random sampling method, 286 employees completed multi-dimensional questionnaire of leadership measuring leadership style and a reviewed version of Perry & Wise (1990) questionnaire of public service motivation. The analysis of correlation analysis using SPSS software showed that there is a relationship between elements of transformational leadership and 3 dimensions of commitment to public interest, compassion, and self-sacrifice. Among elements of transformational leadership, 2 elements of inspirational leadership and individualized consideration had a more significant relationship with dimensions of public service motivation. Based on multiple regression results, 52 percents of changes in indexes of public service motivation is predictable by the elements of transformational leadership.

Public service motivation may contribute to preventing the negative side effects of transformational leadership, but this applies only to the leaders in the

public and non-profit workers. In addition to its potential to improve service provision, recent research also suggests higher PSM-earning employees may be more supportive of organisational since they have the willingness to accept health costs or uncertainty that is mostly associated with innovations and advancements in their work.

Genenaro (2018) conducted study on transformational leadership public service motivation in organisational behaviour perspective that could provide useful analysis tools to understand the behaviour of public leaders working in changeable and uncertain context. The main contribution of this study was in taking into account the agency of public managers in reaction to wider changes in their political context. It was a theoretical study that considered sudden changes in government from a behavioral perspective, analyzing an extreme case of political and organizational turnover. It was found out that public managers, when faced with constant change, act as transformational leaders and have the objective of leverage on intrinsic motivations in order to make the change accepted and, more so, to make it perceived as an advantage for the administration.

**Public Service Motivation and Innovative Behavior**

Jain et al. (2015) wrote a seminal article on innovation work behaviour and public service motivation in Indian journal of industrial relation. This article attempts to synthesize the results of previous research on innovative behavior at work that appeared scattered and integrate such results into a cohesive whole. The proposed framework is a multi-component construct which provides holistic view of various factors that affect employee innovative behaviour. In their seminal article analyzing the motivational bases for public service, Perry

and Wise wrote that "committed employees are likely to engage in spontaneous, innovative behaviors on behalf of the organization" (1990, 371).

While the positive relationship between PSM and commitment has been established (Crewson, 1997), the influence of employees' PSM on their innovative behavior has received surprisingly limited attention in the literature despite the fact that research has found a link between employees' PSM and other measures of performance (Ritz, Brewer, and Neumann 2016). Researchers have only very recently begun to examine the general relationship between PSM and innovation, for example, by analyzing the extent to which managers' PSM facilitates innovative behavior among their employees (Hatmaker, Hassan & Wright, 2014) or causes them to adopt innovative ideas themselves (Hsu and Sun 2014). Wright, Christensen, and Isett (2013b) found that employees who scored high on the self-sacrifice dimension of PSM were more likely to support organizational change, and they suggested that this may be because such employees are less likely to be concerned with change that adversely affects them personally. However, the impact of employees' PSM on their innovative behavior has not yet been examined in detail. In the following sections, we highlight the importance of psychological empowerment as a mechanism that links both.

**The moderating role of PSM**

The study by Afsar and Masood (2019), the theme transformational leadership role in public health groups, teamwork and collective motivation in public service innovation. Their investigation has explored the influence of transformational leadership on the innovative behaviour of Vietnamese public-health teams. They were asked to participate in their survey at 24 hospitals in

Ho Chi Minh City, Vietnam. Starting in mid-2017, the two-wave data collection process. Their first-wave survey (T1) harvested the data on charismatic leadership and collective PSM from clinicians.

Clinical teamwork data was collected from clinicians in the second wave of the survey (T2) two months after T1, including the 2-wave collection period, for at least one year. They also collected the variables of information control in the T2. The survey included 874 employees. Their study shows that the motivation of collective government services positively reduces the relationship between charism and teamwork so that when public service motivation is higher the relationship is stronger. And collective PSM also moderates transformational leadership's indirect effect on creativity through workflows.

In Vogel and Masal's study (2015), once again, misleading supervision, motivation for public servants, and employee deviation: the moderating role of the labour market through PSM. Research on the selection of employees was found to focus for a long time on identifying candidates who might be involved in desirable work conduct. The study contributed to a more recent research stream, which deals with unwanted, deviant behaviours at work that harm organisational performance more and more. The results demonstrate that both supervisors and subordinates must prevent these behaviours. Public service motivation may contribute to preventing the negative side effects of deviant conduct, but this applies only to public and non-profit workers. PSM is also positively linked to deviant behaviors in the profit-seeking organisation.

In Hamburg, Germany, Asseburg (2017), carried out a study in the department of socioeconomics, Universität of Hamburg, Hamburg, Germany on the topic; Environmental leadership fitness and motivation for the public

service: test evidence of public sector intentions for employment. The study employs the mediating role of environmental fit and moderated the effect of public service motivation (PSM) to check for the relationship between recruiting and perceived person organisation (PO) messages conveying (a) a rational organisational mission and (b) a stronger relationship with high PSM candidates is fitting. And PSM moderates the relationship between (a) inspiring and (b) efficient tasks of work and perceived job (PJ) messages so that this is stronger concerning candidates with high levels of PSM. In this context, PSM is more sensitive. The study used structural equation modeling (SEM) with moderated mediated analysis (Hayes & Wood, 2013). It was concluded in his study that out of the eight hypotheses formulated, only two find partial support of the dimensions of PSM has a moderating effect.

The study thus hypothesizes that:

*H2a: PSM moderates the relationship between idealized influence and nurses' innovative work behaviours.*

*H2b: PSM moderates the relationship between individual consideration and nurses' innovative work behaviours*

*H2c: PSM moderates the relationship between intellectual stimulation and nurses' innovative work behaviours*

*H2d: PSM moderates the relationship between inspirational motivation and nurses' innovative work behaviours.*

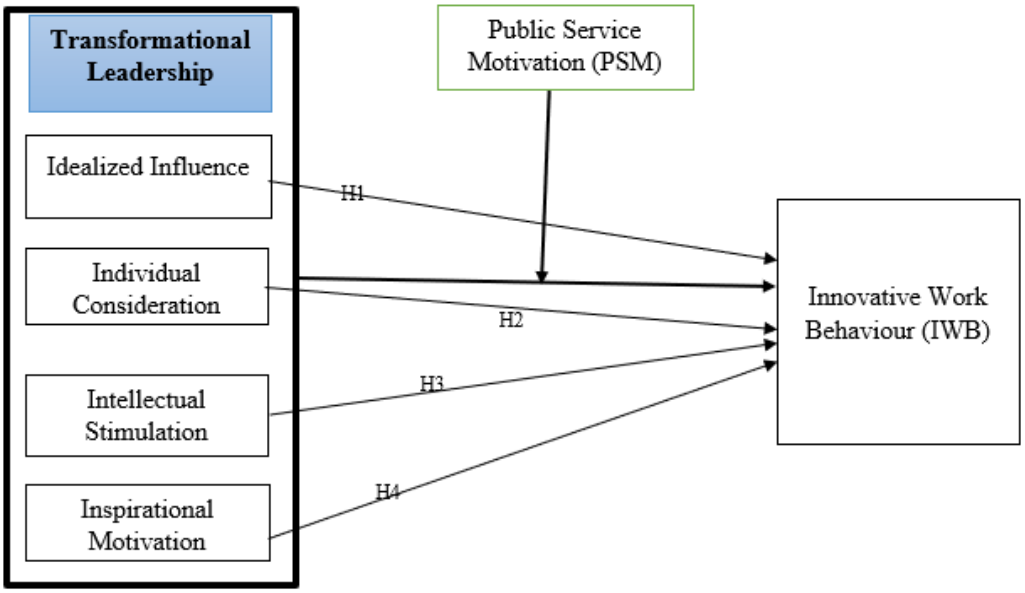


*Figure 1*: Conceptual Framework

Source: Researcher's construct, 2021

**Lessons from Empirical Review**

Several lessons were learned from the empirical review that collectively influenced the conduct of this empirical study. Most of the studies relied on empirically validated scales for the measurement of their constructs, this study also adopted this approach to enhance the validity of the scales that were used to measure the constructs (Atouba, 2021). The study equally adopted structured questionnaires for the primary data collection because the empirical studies similarly approached their data collection.

Measurement of the opinions of the respondents in respect of the items in the various subscales that were used to measure the constructs from the perspective of this study was done on a 7-point Likert scale. This was the approach employed by most of the empirical studies (Sen, Mert & Abubakar, 2021). Self-administration of questionnaires as means for the primary data collection was informed by the fact that online data collection methods yielded

a low response rate (Minbaeva, 2013; McDermott & Stock, 1999), hence this method was adopted to improve the response rate in the context of this study.

The scope of the study shows none of the empirical studies examined the interplay of empirical relationships among the three constructs-Transformational leadership, public service motivation and Innovative work behaviour-in a single study. This gap improves the state of originality of this study in the context of improvement in the health care sector in Ghana. Again, none of the studies was carried out in the context of the health sector in Ghana, hence the justification to examine how these factors are affecting the overall improvement of innovative work behaviour of nurses in question.

Most of the studies (Pradhan & Jena, 2019; Al Ahmad, Easa & Mostapha, 2019; Manoppo 2020); used SEM as the application for their data processing and analysis. Following these studies, the study equally utilised SEM and SEM process macro for the data processing and analysis of the formulated research objectives given the higher level of applicability of these techniques in the context of the study. Innovative work behaviour measures were mainly based on employees' self-assessment of their work behaviours. The role of public service motivation dimensions has not been fully assessed, even though support for innovation differs from resource supply. Indicating the need for further research on the concept. The review also indicated that cross-sectional and quantitative designs were mainly used in the study, with a stratified simple random sampling.

## Chapter Summary

The review of related literature revealed that nurses' employees within the healthcare organisation tend to put up positive innovative behaviour and attitudes if they are highly motivated. Employees' work behaviours, especially their innovative behaviours, are heavily influenced by their leaders. Employees who place a higher value on public service and the proper performance of duties are likely to initiate, support and even encourage innovation as a way to improve service processes and outcomes. This is to say that, an improvement in the support incentives from the organisation would lead to improved positive outcomes. Even though certain inconsistencies existed on the part of some outcomes of nurses' innovative behaviour, it is strongly believed that the progress of every institution largely relies on the people who are innovative and work within the institution and as such, needs to be highly motivated. This is evidenced by the literature that has been reviewed and the theory underpinning the study.

# CHAPTER THREE

# RESEARCH METHODS

## Introduction

The previous chapter provided information in respect of the literature reviewed under the context of this study. The purposes (general objective) of the study are to examine the influence of transformational leadership on nurses' innovative work behaviour; the moderating role of public service motivation at Cape Metropolis. This chapter discusses the methodology employed in the study. It comprises the research design, study area, population, sample size, sampling procedure, data collection instruments, and data collection procedures. It further discusses data processing, the pre-test of data collection instruments, and the method of data analysis.

## Research Paradigm

As a result of the positivist research paradigm, the study aims to gain a better understanding of the topic by using descriptive casual (Yilmaz, 2013). This approach, according to proponents of the positivism paradigm, is the one that happens to involve conducting a study into an observable social observation to make inferences (Cooper & Schindler, 2008). As a result of this paradigm, data is collected, analysed by using statistically significant tests, and the results are presented quantitatively.

Empirics is the main characteristic of positivism, which argues that there is the existence of objective universal reality as factual universal laws and mechanisms and thus, such objective reality is factual sensed by human senses in the environment (Kankam, 2019). There's a lot of attention paid to the researcher's rationality and length when it comes to the hypothesis or theoretical

model in the positivism paradigm, which emphasises structure (Kankam, 2019). This design is adopted because the study involves the collection of data on transformational leadership and innovative work behaviours: the moderating role of public service motivation of nurses in Cape Coast Metropolis. These data are further analysed to test for the relationships between variables at hand (transformational leadership, innovative work behaviours and the moderating effect of public service motivation) through the formulated research questions and the hypotheses.

**Research Approach**

Research can be carried out in three different ways: qualitatively, quantitatively or a combination of both. The study adopted a quantitative research approach. Quantitative study as elucidated by Tashakkori, Abbas and Teddlie (2003), is a formal, objective, precise procedure to depict and test interrelations as well as examining the cause and effects interactions among variables. Tuli (2010) argues that the quantitative research approach measures social events through the collection and analysis of data involving numbers. Saunders (2012), advanced that the objective of the quantitative study method is to present generalisable results by asking how much and how many questions. Hence, to accomplish the aims of this research, quantitative research method was used.

The nature of the research purpose and its objectives and questions necessitated the use of this approach. Creswell (1994) asserted that the quantitative approach deals with highlighting phenomena by gathering data which deals with numbers that are processed using arithmetic-based techniques. This approach typically starts with data gathering built on theory and it is

accompanied by the use of illustrative or deductive statistics (Tashakkori, Abbas & Teddlie, 2003). Quantitative techniques are regularly classified as analytical in identity, in the sense that conclusions are reached based on evidence and reasoning from examinations of statistical hypotheses leading to overall deductions about features of a population.

The study adopted the quantitative method because it helps in comprehensive coverage. Furthermore, data collected through a quantitative research approach are objective and measurable. Quantitative research permits the researcher to be exposed to the abstraction to be analysed and give rise to hypotheses to be examined (Corbin & Strauss, 2014). This study used quantitative research from a positivist perspective which was based on logic, reality and truth. This is because the study intends to establish the cause and effect.

A structured questionnaire was used for the collection of the primary data that was relied on for the analysis to obtain results for the formulated objectives. Coding was done numerically in the SPSS application and this made it possible for the analysis of the research objectives with appropriate statistical techniques quantitatively (Park et al., 2020). The usage of the quantitative research approach made data analysis easy and more objective compared with the qualitative research approach (Goertzen, 2017). The quantitative research approach is however criticised for leading researchers to overlooking broader themes and relationships in data gathered (Savela, 2018).

**Research Design**

The researcher's research design is crucial in directing the study through data collection, study and interpretation. It looks at how research questions, results and analysis are related. The research design is, according to Yin (2003), a logical sequence that combines empirical evidence with the initial research questions of the study and then ultimately the conclusions of the study. Until data collection or analysis may begin, social research requires a design or structure. The type of design used by the researcher is usually determined by the nature of the research issue (Kirshenblatt-Gimblett, 2006). The research design is the general technique used to combine consistently and logically the different components of the study and to ensure that the researchers can effectively address the research problem; it is the plan for data collection, analysis and interpretation (Creswell, 2014; Sekaran & Bougie, 2016). The information gathered was based on the research objectives. The interpretation of the data set was aided by the unit of analysis (themes) and logic linking to research objectives. To this end, the study collected data and analysed it using a quantitative approach.

The study employed the explanatory research design to assess hoe PSM affect the relationship between transformational leadership and nurses innovative work behaviour at the Cape Coast metropolis. Explanatory research is a typical predictive-oriented experimental study where changes in some phenomena are attributed to changes in another phenomenon (Pradhan & Pradhan, 2015). Since the study by nature is the quantitative method, it became necessary for the constructs to be numerically measured to facilitate their

subjecting to statistical manipulation through structural equation modeling (Nyarku et al., 2018).

The study treated innovative work behaviour as the dependent variable (latent exogenous variable) whilst transformational leadership which included individualised consideration, inspirational motivation, intellectual stimulation and idealised influence were also treated as the predictors (latent endogenous variable) whilst public service motivation was treated as moderating variables. In explanatory studies, hypotheses are specified in respect of the nature, strength and directions of connection existing between or among variables or construct being studies (Birru, Runhaar, Zaalberg, Lans & Mulder, 2019).

**Profile of the Study Area**

The focus of this research would seem to be on several public hospitals, particularly the Cape Coast Metropolis, in the Central Region of Ghana. The hospitals under the study includes Central Regional Hospital, University of Cape Coast Hospitals and Ankaful Leprosy/General and Psychiatric Hospital. The Central Regional Hospital, presently known as the Cape Coast Teaching Hospital, is a 400-bed referral hospital in the northern area of Cape Coast and has a total number of 560 professional nurses (Brief history, 2020). The University of Cape Coast Hospital is on the University of Cape Coast's campus. The hospital provides services to both the university and the neighboring regions. The Outpatient Department (OPD), the Medical Laboratory, the Male and Female Wards, and the Children's Ward are all components of the hospital. And finally, Ankaful Leprosy/General and Psychiatric Hospital provide 24/7 mental health treatments to everyone with various forms of mental disease as one of the premier psychiatric hospitals in the country and the sub-region.

Ankaful Leprosy/General and Psychiatric Hospital provide high-quality care from their skilled professionals and nurses. In addition to mental health care, they also offer General Medical Services, which are available 24 hours a day, seven days a week. They ensure the best diagnosis and treatment with our cutting-edge labs.

**Population**

Any group of people who share one or more characteristics and are of interest to the researcher is referred to as a population (Creswell & Creswell, 2005). Therefore, the target population of the study consisted of all public health sector organisations especially all public hospitals (such as Cape Coast Teaching Hospitals, University of Cape Coast Hospitals and Ankaful Leprosy/General and Psychiatric Hospital) in the Cape Coast Metropolis in the Central Region of Ghana. The focus group of the study covered all public nurses within Cape Coast Metropolis (especially nurses in Cape Coast Teaching Hospital, University of Cape Coast Teaching hospital and Ankaful Leprosy/General and Psychiatric Hospital). As nurses constitute the largest professional group in the healthcare sector There are 1236 nurses from the three selected hospital (namely: Cape Coast Teaching Hospital, University of Cape Coast Teaching hospital and Ankaful Leprosy/General and Psychiatric Hospital).

**Sampling Procedure**

As it was rarely possible to access the whole population, a survey usually involves obtaining responses from a sample of the available population. In the context of this research, a stratified random sampling technique was used because of the relatively divisions of the nurses made up of different sections in

different organisations. Stratified sampling is a method of probability sampling in which the target population is divided into homogenous (strata) segments and a simple random sample from each segment is taken (stratum). Then the samples are combined into one single sample from each stratum. The population is accurately representatively represented by stratified random samples, also known as "quota Random Sampling". This is because researchers stratify the whole population before using random methods. That is, it ensures the proper representation in the sample of each subgroup of the population. This increases the population coverage of stratified random samples as the researchers have more control over the subgroups and can ensure that all of them are integrated into the sample (Kraut, 1996).

Before selecting and contacting respondents for the study, it became necessary for an appropriate representative sample size to be determined from the sampling frame. A sample size of 581 nurses in Cape Coast was randomly selected to participate in the study. The determination of the sample for the conduct of the survey was influenced by power analyses as recommended for PL SEM analysis (Hair, Hult, Ringle & Sarstedt, 2016). Since the overall model had four independent variables, with four arrows pointing at the dependent variable, the determination of the sample size was based on a computer application (http://www.raosoft.com/samplesize.html). A minimum 581 sample size was considered appropriate for the primary data analysis at 95% confidence interval, at 5% significant level, at an estimated 0.05 effect size. Since the population was made up of different strata in terms of different hospitals, a stratified sampling technique was employed to select the respondents. Thus, the respondents were fairly represented given cognizance to the equivalent

representation in the population (Zhao et al., 2019). Table 1 shows the distribution of the sample size per representation of each stratum in the total population.

**Table 1: Population-sample size matrix**

| Classification of Nurses in various Hospitals | Population | Sample |
|---|---|---|
| "Cape Coast Teaching hospital" | 560 | 228 |
| "Ankaful Psychiatric hospital" | 430 | 203 |
| "University of Cape Coast Hospital" | 246 | 150 |
| Total | 1236 | 581 |

Source: Field Survey, Afum (2021)

**Data collection instruments and Procedures**

Given the goals of this investigation and the reliability of data, a primary data source was utilised to gather information. Primary data is chosen because it suggests new ideas and creates unique information for the study (Easterby-Smith, 2012). Kothan et al., (2004), opined that primary data are collected from an unknown source. Easterby-Smith (2012) argued that researchers have to collect primary data that are relevant, accurate, current and unbiased to a study. Primary data are normally collected through observations, interviews, questionnaires among others. In this regard, a questionnaire was considered the most suitable instrument in collecting the primary data for the study.

A structured questionnaire was developed as a data collection instrument for this study. Bryman (2011) submitted that more often than not, quantitative research uses surveys and questionnaires as the procedure for data collection. The questionnaire was chosen for this type of study because it is a self-reported measure that ensures confidentiality and therefore is more likely

to elicit truthful responses from respondents about the information needed. A structured questionnaire also helps avoid interviewer bias. It ensures consistency of reactions in closed-ended questions and guarantees anonymity. It is easy to administer to respondents dispersed over a bigger zone. This enabled the study to obtain a wide range of information about the problem under discussion. Also, such an instrument is relevant when respondents can read and write. The respondents for this study have the capability of reading and writing. Structured questionnaires also reduce the bias that is associated with interviews. The questionnaire offers respondents' satisfactory chance to offer critically examined responses (Kothan et al., 2004).

This questionnaire was made up of four (4) sections with scales adapted from literature. The first section (A) dealt with demographics which included gender, age, educational qualification and current job position of the respondent. The second section (B) looked at questions on transformational leadership, which were categorized into various antecedents or components. Section (C) also concentrate on public service motivation, which was also categorized into various dimensions. The final section (D) concentrated on nurses' innovative work behaviours (see Appendix A). The structured self-administered questionnaires were in the form of close-ended questions and were distributed to the nurses of the study. The respondents answered the questionnaires rated on a 7-point Likert scale. A Likert scale was used because it uses a universal method of collecting data and makes it easy to understand and simple for respondents when answering the questions. Questions on transformational leadership, public service motivation and employee innovative work behaviour were asked. The survey was administered on 7th May 2021 and collected on 19th

June 2021. Data gathered from this research instrument were then computed for interpretation.

**Common Method Bias**

Common method bias occurs when many constructs (Schaller, et al., 2015) are quantified to use the same method, and so it usually leads to false algorithm variation which might predict the connections encountered between constructs. In this specific situation, the study pertains to survey questions errors which included the wording, guidelines, and/or response typeface (Podsakoff et al., 2012). Common method bias was controlled through the addition of psychological separation of the independent variables (transformational leadership).

Thus, after measuring transformational leadership, public service motivation was then measured before innovative work behaviour was measured. Again, the response format (criteria for measurement) was different for each of the constructs. To eliminate ambiguity, the items were worded in a simple clear-cut manner which helps eliminate the possibility of respondents relying on systematic response tendencies such as extreme or midpoint responses in filling the questionnaire (Podsakoff et al., 2003). Reverse items in the questionnaire can also help reduce the incidence of common method bias (Liu et al., 2015). Common method bias was measured through collinearity statistics for each of the structural model figured (Afum et al., 2019). The information obtained showed no signs of biasness, as per results.

**Measurement of variables**

In light of writing, the survey was planned to utilise scales that have been approved in past investigations. Section B estimated transformational

leadership with a setup scale adjusted from Northouse (2001). This scale contained 30 items, estimated on a 7-point Likert scale going from Very Strongly Disagree (1) to Very Strongly Agree (7). Section C (Public Service Motivation) was estimated utilizing a 14-item scale adjusted from Kim and Vandenabeele (2010) on a seven (7) point Likert scale running from very strongly disagree (1) to very strongly agree (7). Section D (Innovative work Behaviours) was estimated utilizing a 29-item scale adjusted from Messmann and Mulder (2012) on a seven (7) point Likert scale running from very strongly disagree (1) to very strongly agree (7).

**Pre-Testing**

According to Zikmund (2012) "Any small-scale exploratory research technique that involves sampling but does not apply stringent standards" is how the pre-testing procedure is defined. Pre-tests, according to Pallant (2016), are required before the main survey. This procedure aids in the clarity of instructions, queries, and scale items. They also assist potential respondents in comprehending the questions and providing proper responses. Based on the approval of the questionnaire by the department, the study engaged in pilot testing on twenty-five (25) nurses at Doctor in Service (DIS) at Abura. This sample size was deemed appropriate at it conforms to Saunders et al.'s (2016) minimum criteria of 10 for pilot studies by students. The length of the questionnaire items was the only concern raised during the pilot research. The statements were summarized as a result, and a preface was included to encourage responses.

**Table 2: Questionnaire items and their reliability coefficients**

| Variable | Questionnaire Items | Sample | Cronbach's Alpha |
|---|---|---|---|
| Individualized influence | 8 | 25 | 0.804 |
| Intellectual stimulation | 7 | 25 | 0.776 |
| Inspirational motivation | 8 | 25 | 0.749 |
| Idealized influence | 8 | 25 | 0.702 |
| Public service motivation | 14 | 25 | 0.908 |
| Innovative work behaviour | 29 | 25 | 0.818 |

Field survey, Afum (2021)

Based on the criteria of Pallant (2016) and Henseler (2017) all items showed a high level of reliability

**Reliability and Validity of the Instrument**

Reliability alludes to the degree to which information assortment methods or examination methodology will yield reliable discoveries (Saunders et al., 2007). It tends to be accomplished when keeping results at a predictable level despite changes of time and place (Bowling, 2009). When an instrument can accurately measure a variable precisely and produce comparable findings over an undefined period, it is reliable. In any case, unwavering quality is influenced by arbitrary blunders and a pre-trial poll can assist with distinguishing the most probable wellspring of mistakes and react to them before the genuine examination.

Reliability of the scale was measured with rho_A although Cronbach's Alpha (≥0.6) and Composite Reliability (≥0.6) were also computed. The reliability measure rho_A is an estimate for the squared correlation of the PLS

construct score with the (unknown) true construct score. It must have a minimum of 0.6 (Hulin, Netemeyer & Cudeck, 2001). The rho_A is therefore recognized as the "most important PLS reliability measure (Dijkstra & Henseler 2015), which is currently the only consistent reliability measure of PLS construct scores (Henseler, 2017).

**Validity**

Content validity was ensured through constant review of literature in line with main constructs. The items that were used to measure the construct were obtained through validated scales. Furthermore, the researcher subjected the items to strict scrutinization before final acceptance. Convergent validity was measured with the Average Variance Extracted. Convergent validity measures the level of correlation of multiple indicators of the same construct there agree (Ab Hamid, Sami & Sidek, 2017). Furthermore, Benitez et al., (2020), also explain that convergent validity measures the extent to which indicators belonging to one latent variable measure the same constructs. It was measured with the AVE (Ringle et al., 2015). AVE values must be 0.5 or above before convergent validity could be properly measured.

Discriminant validity was measured with Heterotrait-Monotrait Ration (should be less than 0.9 or 1). The subjective individuality on its latent variable for each indicator represents discriminatory validity (Afum et al., 2019), thus, it measures the degree to which a concept distinguishes itself from other constructs (Kassem et al., 2020). Heterotrait-Montrait Ratio (HTMT) represents the geometric mean of the heterotrait-heterommethod correlation divided by the average of the monotrait-heteromethod (Garson, 2016; Benitez et al., 2020) and best measures discriminant validity in the reflective model than Fornell-Larcker

Criterion and factor Loadings (Garson, 2016). This justifies why these indices were not reported in the context of this study.

Because reflective models are subject to bias and failure (Afum et al., 2019), a review of the collinearity statistics test and a piece of information have been essential (Hair, et al., 2016). The VIF measurements were performed. This is the acknowledged instrument for assessing bias in reflective models (Garson, 2016). Generally, as a rule of thumb, VIF needs to have a score of 5 or lower to avoid multicollinearity problems (Hair et al., 2012), particularly such as factor-based PLS-SEM algorithms, where algorithms integrate quantification errors (Kock, 2015). The VIF is also used to measure common method bias (Afum et al., 2019). Common method bias was measured with Collinearity Statistics (VIF≤5).

Otherwise known as assessment charges, standardized path weights are indeed the variables that link the variables with the indicator and range from 0-1. Loads should be considerable (Garson, 2016). Path loads should be greater than 0.70 (Ringle, 2000; Henseler et al., 2012), by convention for a well-fitting reflective model. Individuals can be retained with a maximum of 0.5 loadings. Threshold items below 0.7 have been kept since they cannot be deleted in improving CA and CR (Hair et al., 2014). In general, the bigger the load, the stronger the measuring model and the more reliable.

Path-coefficients (unstandardized beta) were used to access the contributions of the predictors (Both direct and indirect) to the variance in the dependent variable (Schberth et al., 2018). The beta coefficient value represents the power of latent structures between exogenous and endogenous constructs (Kasssem et al., 2020). Effect size ($f^2$) was used to quantify the contributions of

the predictors to the changes in the dependent variable (Ringle et al., 2015). Effect size values above 0.35, 0.15, and 0.02 can be interpreted as strong, moderate and weak (Cohen, 1988) respectively.

The predictive relevance of the direct effect in the model was measured with the $Q^2$. The $Q^2$ values were obtained by way of the blindfolding procedure which omits as part of the data matrix, estimates the model parameters and predict the omitted part by using the previously computed estimates (Ringle et al., 2020). It was categorized as follows: $0.02 \leq Q^2 \leq 0.15$ as a weak effect: $0.15 \leq Q^2 > 0.35$ as moderate effect and $Q^2 \geq 0.35$ as strong effect (Becker et al., 2013; Akter, et al., 2011; Henseler et al., 2009). The predictive capacities of the models were assessed with the coefficient of determination ($R^2$). The R-square is the most common effect size measure in path models (Benitez et al., 2020). The $R^2$ provides insights into a model's in-sample predictive power (Becker et al., 2013).

The $R^2$ makes the research future-proof because the new model selection criteria can still be calculated ex-post as long as the $R^2$ values are given (Benitez et al., 2020). The prescribed tentative cut-off points (Kassem et al., 2020; Garson, 2016) for describing R-square are as follows: Results above 0.67 (substantial), 0.33 (moderate) and 0.19 (weak). The findings were presented in tables and figures for easy understanding and reporting.

Validity is the reality of findings from a study and whether the findings are actually what they seem to be (Saunder et al., 2007). An instrument is considered valid when it serves its intended purpose. This questionnaire was given to my supervisors for assessment before giving it out to respondents. Their recommendations were implemented accordingly to guarantee clearness and no

unimportant inquiries were remembered for the study. In light of the setting of this investigation, construct validity was inspected by examining the composite reliability and average variance extracted from the individual personal value structure.

All composite lists should be 0.7 or higher to achieve construct validity (Bagozzi & Yi, 1988). Chin (1998) submitted that perhaps the average variance extracted should be 0.5 or greater with construct validity to be confirmed. The square root of the average variance extracted within every latent variable can be used to establish discriminating validity to confirm discrimination (Fornell & Larcker, 1981). This is also possible if the value of the average variance extracted between different inactivated factors is higher than that of the covariance matrices. As such, the absence of validity in the evidence indicates that the study's results cannot be established and do not represent the actual necessary (Kennedy & Tuckman, 2013).

**Data Processing and Analysis**

For data processing, SMART PLS 3.2.8 was also used even though coding and entering data have always been done with the Social Science Statistical Package (SPSS version 25.0). Before being imported into the SMAT PLS app for model configuration the ready-made data file was then transformed into "CSV" comma-delimited format (Browne et al., 2019; Kumar Baradiya, 2019; Lew et al., 2019). The Smart PLS application is well noted for modeling in marketing-oriented studies (Hair et al., 2006), particularly for estimating hypothesized model (Ahrholdt et al., 2019; Ringle et al., 2015) as well as for handling complex predictive-models (Hair et al., 2018).

It is robust in nature as well as being a typical inferential statistical tool (Ringle et al., 2015). Among variance-based estimators, PLS path modeling is the most developed, as it is embedded with the capacity to model both factors and composite, prediction-oriented PLS-SEM analyses and test robustness (Sarstedt, et al., 2020). The set-up of the PLS tool for the formulation of the model was as follows. Calculation (Analysis) for the path model was based on Consistent Algorithm and Consistent Bootstrapping with 500 maximum iterations. This is because the study was predictive-oriented (Nikitina et al., 2019; Ramli et al.,2019). Case-wise deletion was configured for missing values (Ringle et al., 2015), although there were no missing values in the data. A 95% confidence interval with a correspondent 5% level of significance was set for the reflective model.

The model configuration treated transformational leadership with sub-constructs such as idealized influence, intellectual stimulation, individualized consideration and inspirational motivation as exogenous latent variables whiles innovative work behaviour was treated as a composite and an endogenous latent variable in the context of the study (objective 1). Public service motivation was treated moderating variable (objective 2) and it was treated as a composite variable.

Due to the non-disciplinary nature of the specific objectives a two-tailed hypothesis test was configured. To upgrade the measurement model, all indicators have been eradicated with external loads below 0.7 (not statistically significant). Many consistent algorithms were performed to arrive at the correct model and a consistent bootstrap. These options are meant for reflective path models.

The analytical procedure of the data collected during the initial phase of the research was presented in a descriptive statistic of mean and standard deviation to describe the responses. The quantitative data collected were organised based on the research objectives. It was coded and inputted in the computer for the computation of descriptive statistics. The SPSS in data analysis helped the computation of descriptive statistics and this helped in testing the discrepancies in the level of innovative work behaviour between the male and female workers. Field and Lo (2009), argued that SPSS provides robust quantitative models and accepts applications for complex statistical methodology.

Information testing is the process to change, cleanse, modify as well as give information to gain valuable information, recommendation, purposes, and interactive support (Easterby-Smith, 2012). The reactions from the surveys would be coded and altered utilizing Statistical Package for Social Science (SPSS version 25.0). The information would be dissected and deciphered utilizing unmistakable measurable strategies, for example, mean, standard deviation, recurrence check and rates (Nikitina et al., 2019). These techniques were used whenever appropriate. Pearson's correlation analysis and hierarchical multiple regression were the main analytical tools employed for this study. Pearson's correlation analysis centered on finding the connection between the independent factor (transformational leadership) and the dependent factor (public service motivation and nurses' innovative work behaviours). Pearson correlation analysis was utilized to examine the strength and direction of the relationship between the independent variable and the dependent variable. Hierarchical multiple regression was utilized to inspect the effect of

autonomous variable (transformational leadership) on the reliant variable (nurses' innovative work behaviours).

Again, Hierarchical multiple regression analysis was carried out to test the moderating effect of public service motivation in the proposed predictive inter-connection between the independent variable and the dependent variable. The findings were presented in Tables and Figures and were chronologically presented in Chapter Four to reflect the order of the specific objectives considered in the study.

**Ethical consideration**

The study assured respondents with utmost confidentiality of information they provide. A letter was requested from the Department of Management and presented to the Human Resource Manager of the various hospital of the study. Subsequently, a meeting was held with the Human Resource manager of the hospitals to brief them on the reason for the study and also gave assurance that data acquired will not cause any harm to anyone and their responses were reported accurately and used for academic purposes only. All scholarly works are acknowledged in this study. The study made sure that the following ethical considerations were in mind. First, a verbal explanation of the study was provided to each respondent upon meeting. Secondly, each respondent was required to give verbal permission to participate in the study. Also, these respondents were made to understand his or her role in the completion of the study. Issues of confidentiality, anonymity and privacy were also well adhered to.

**Chapter Summary**

This chapter explained how the study's primary data was gathered, arranged, evaluated, and presented for easy comprehension. This chapter also includes material on the study's nature and scientific approach to data requirements, methodological methods, and systematic inquiry into the investigation under consideration.

# CHAPTER FOUR

# RESULTS AND DISCUSSIONS

## Introduction

This chapter presents the research findings from the study. This study sought to examine the influence of transformational leadership on Innovative Work Behavior of Nurses the role of public service motivation in moderating such nexus. In line with the purpose of the study, the chapter is divided into two main parts. The first part presents and discusses the profile of the respondents used for the study. The second part assesses the measurement and structural models for the study and test hypotheses. Specifically, issues pertaining to indicator loadings, CR (Composite reliability) AVE (Average variance extracted) and DV (Discriminant validity) were considered for the measurement models. Thus, this chapter provides information on the findings and discusses the findings in light of their supervisory, realistic, and theoretical consequences, as well as contemplating empirical stance by some previous empirical studies.

## Demographic Information

This section contains information about the respondents' demographics and activities. Descriptive statistics, such as frequency and percentage, were used to quantify the demographic characteristics. The demographic characteristics of the respondents and their respective activities are presented in Table 3. It can be seen that most of the respondents were female (50.8%) whilst the remaining 49.2% were male.

**Table 3:Demographic Information**

| Variable | Category | Frequency | Percent |
|---|---|---|---|
| Sex | Female | 274 | 50.8% |
| | Male | 265 | 49.2% |
| Age | Up to 20 years | 27 | 5.0% |
| | 21-30 | 223 | 41.4% |
| | 31-40 | 224 | 41.6% |
| | 41-50 | 34 | 6.3% |
| | Above 50 | 31 | 5.8% |
| Educational level qualification | | | |
| | Up to SSS/SHS | 77 | 14.3% |
| | Diploma | 102 | 18.9% |
| | Bachelor | 201 | 37.3% |
| | Masters | 140 | 26.0% |
| | Ph.D. and above | 19 | 3.5% |
| Religiosity | Christianity | 372 | 69.0% |
| | Muslim | 139 | 25.8% |
| | Others | 28 | 5.2% |
| Marital status | Married | 210 | 39.0% |
| | Single | 328 | 61.0% |
| Respondent having children | Yes | 168 | 31.2% |
| | No | 371 | 68.8% |
| Total work experience | Up to 5 yrs. | 236 | 43.8% |
| | 6-10 | 69 | 12.8% |
| | 11-15 | 84 | 15.6% |
| | 16-20 | 79 | 14.7% |
| | Above 20 yrs. | 71 | 13.2% |
| Current Job Position | Administrator | 60 | 11.1% |
| | Doctor | 14 | 2.6% |
| | Nurse | 272 | 50.5% |
| | Paramedic | 59 | 10.9% |
| | NSP and Intern | 134 | 24.9% |
| Work night shifts | Yes | 328 | 60.9% |
| | No | 211 | 39.1% |

Source: Field Survey, Afum (2021)

This notwithstanding provides input from both sexes given the nature of the constructs and variables under consideration. Most of the participants were female (50.8%) whilst the remaining 49.2% were males. The age category of

the respondents show that 27 respondents (5.0%) were up to 20 years, 223 respondents (41.4%) were within 21-30, 224 respondents (41.6%) were within 31-40, 34 respondents (6.3%) were within 41-50 and finally, 31 respondents (5.8%) were above age 50. Base the educational qualification of the respondents, it was discovered that 77 respondents (14.3%) were having educational qualifications up to SHS, 102 respondents (18.9%) were having a diploma, 201 of the respondents (37.3%) were bachelor's degree holders, 140 respondents (26.0%) have masters' degree and 19 respondents (3.5%) have Ph.D. and above as their educational qualification.

Regarding respondent's religiosity, 372 respondents (69.0%) were Christians, 139 respondents (25.8%) were Muslims and others constitute 28 respondents (5.2%) belong to other religions apart from Christianity and Muslim. Also, 210 respondents representing 39.0% were married people and the unmarried respondents were 329 (61.0%). Again, 168 respondents (31.2%) were having children whiles 371 respondents representing 68.8% were not having children. On the job position of the respondents, 60 respondents (11.1%) were administrators, 14 respondents (2.6%) were doctors, 272 respondents (50.5%) considered as the highest were nurses, 59 respondents (10.9%) were paramedics and 134 respondents (24.9%) were National Service Personnel and Intern. Regarding the working schedules, it was discovered that most of the respondents (328) corresponding to 60.9% accepted that they work night shifts whilst the remaining 211 respondents corresponding to 39.1% don not work on a night shift.

Lesson from the demographic characteristics shows the nurses' workforce structure in the Cape Coast metropolis is female-dominated and this

situation could be attributed to the relatively caring nature of the females in the work field and the innovative activities they perform. The health sector seems to be dominated by those in the age bracket within 31-40 years. This means that these nurses have equally stayed in the healthcare sector for long and they fall within the energetic workforce in the healthcare sector. Furthermore, a closer look at the educational qualification of the nurses also reveals that those with bachelor's degrees are dominating followed by those with Master's degrees. This also shows that the majority of the nurses within the healthcare sector have the medium educational qualification needed in the healthcare sector and they are within the workforce category who can potentially bring innovation in the healthcare sector.

A closer look at the respondent's marital status and respondent having children also reveal that majority of the nurses are single and most are not having children. This justify the claim that nurses who are single and do not have children are more exposed to innovative thinking and are more willing to bring innovative ideas (Turner, Chur-Hansen & Winefield, 2014). Assessment of the respondent's job position reveals nurses who were the target for the study accounted for the most respondents. This means that in the healthcare sector, current job positions are dominated by nurses in Ghana and they are pushing into innovative ideas for promotion (Sarstedt, al., 2020). Though administrators and doctors are more innovative and have work experience in the healthcare sector. To increase nurse's innovation in the public sector, nurses within the public service need to be motivated.

The public health care system in Ghana is being advised to encourage leadership to motivate their nurses to exhibit innovative work behaviours in the

healthcare system. Leaders within the health sector should be imagined as a better destiny for nurses and have challenge the status quo by empowering nurses to be innovative, inventive, and resourceful especially those within the age bracket of 21-30 and 31-40 years.

***Objective 1*: To Assess the Effect of Transformational Leadership (TL) on nurses' Innovative Work Behaviours**

This section focuses on the measurement models for the study. The section begins with the measurement model, internal consistency reliability (Composite reliability), Convergent validity (AVE-Average variance extracted) and Discriminant validity (HTMT). A consistent PLS algorithm was run to generate indicators for the assessment of the measurement model. The results are presented in the subsequent tables.

**Measurement Model**

In a mono reflectively test specification, the study sought to determine whether transformational leadership (individual consideration, intellectual stimulation, individual motivation, and idealized influence) could force a shift in nurses' innovative work behaviours in Cape Coast Metropolis. It was a reflectively specified and assessed model, according to acknowledged processes for the evaluation of reflective models. The measurement model includes an assessment of the reliability and validity of the scales and data. The assessment of reflective outer model involves examining the reliability of the individual items [indicator reliability], reliability of each latent variable otherwise internal consistency [Cronbach Alpha, Composite Reliability, rho_A], Construct Validity- Convergent validity [Average Variance Extracted] and Discriminant

Validity [HTMT Ratio] (Ringle et al., 2015; Garson, 2016). The findings are presented as follows:

**Table 4: Construct Reliability and Validity**

| | Cronbach's Alpha | rho_A | Composite Reliability | AVE |
|---|---|---|---|---|
| Idealised influence | 0.759 | 0.763 | 0.839 | 0.511 |
| Individual consideration | 0.876 | 0.882 | 0.910 | 0.670 |
| Individual motivation | 0.838 | 0.894 | 0.889 | 0.630 |
| Innovative work behaviour | 0.934 | 0.938 | 0.944 | 0.605 |
| Intellectual stimulation | 0.770 | 0.776 | 0.868 | 0.687 |
| Public service motivation | 0.913 | 0.929 | 0.931 | 0.660 |

Source: Field Survey, Afum (2021)

Cronbach Alpha and Composite Reliability are the most common measurements for internal consistency (Ringle et al., 2015). In terms of unidimensionality, the alpha of Cronbach evaluates the relativity of the items in many scale items. In particular, it measures how positive all of the variables inside the scale are with one another (Afsar & Masood, 2018). A careful examination of the alpha value of Cronbach (Table 4) indicates that an internally coherent value exceeds the 0.7 minimum cut-off point, since the CA value of all of the items re o

0.7 and above (Hair et al., 2016). The facts are as follows: Idealised influence (CA=0.759); Individual consideration (CA=0.876); Individual motivation (CA=0.838); Innovative work behaviour (CA=0.934); intellectual stimulation (CA=0.770) and Public service motivation (CA=0.913).

Composite reliability is regarded to have been a pre-preferred option to evaluate convergent validity in reflexive designs in Cronbach, according to Henseler, Rongle and Sarstedt (2012). Conabach's Alpha may overload or underestimate the reliability of scales. Direct monitoring also demonstrates that all the constructs were reliable, since they had composite reliability values above 0.7 (Afum et al., 2019; Ringle et al., 2015; Garson, 2016; Hair et al., 2014). These are the facts: Idealised influence (CR=0.839); Individual consideration (CR=0.910); Individual motivation (CR=0.889); Innovative work behaviour (CR=0.944); Intellectual stimulation (CR=0.868) and Public service motivation (CR=0.931). It is however argued that even though the values of the composite reliability are somehow very high, this may signal some design problem, however, the indicators were representative of the desired constructs and simply correlate highly and were therefore considered acceptable (Garson, 2016).

Both Cronbach's alpha and composite reliability refer to sum scores, not composite scores (Henseler, 2017). The rho_A is therefore cognized as the most important PLS reliability measure (Dijkstra & Henseler, 2015), which is currently the only consistent reliability measure of PLS construct scores (Henseler, 2017). The reliability measure rho_A is an estimate for the squared correlation of the PLS construct score with the (unknown) true construct score. It must have a minimum score of 0.7 (Afum et al., 2019; Henseler, 2017). From the findings, all the constructs had rho_A higher than 0.7. These are the facts: Idealised influence (rho_A=0.763); Individual consideration (rho_A=0.882); Individual motivation (rho_A=0.894); Innovative work behaviour

(rho_A=0.938); Intellectual stimulation (rho_A=0.776) and Public service motivation (rho_A=0.929).

Convergent validity was measured with the Average Variance Extracted [AVE]. Convergent validity measures the level of correlation of multiple indicators of the same construct that are in agreement (Ab Hamid et al., 2017). AVE values must be or exceed 0.5 before they can adequately measure convergent validity (Ringle et al., 2015). Close observation for the AVEs for the constructs, therefore, proves that they accurately measured the convergent validity. Thus, these confirm the claim: Idealised influence (AVE=0.511); Individual consideration (AVE=0.670); Individual motivation (AVE=0.630); Innovative work behaviour (AVE=0.605); intellectual stimulation (AVE=0.687); and Public service motivation (AVE=0.660).

**Discriminant Validity**

**Table 5: Heterotrait-Monotrait Ratio for the constructs**

| | Idealised influence | Individual consideration | Individual motivation | Innovative work behaviour | Intellectual stimulation | Public service motivation |
|---|---|---|---|---|---|---|
| Idealised influence | | | | | | |
| Individual consideration | **0.707** | | | | | |
| Individual motivation | 0.753 | **0.493** | | | | |
| Innovative work behaviour | 0.885 | 0.644 | **0.564** | | | |
| Intellectual stimulation | 0.583 | 0.497 | 0.618 | **0.647** | | |
| Public service motivation | 0.516 | 0.299 | 0.541 | 0.545 | **0.512** | |

Source: Field Survey, Afum (2021)

Discriminant validity, the interpretive freedom on the latent variable of each criterion (Afum et al., 2019). Heterotrait-Montrait [HTMT] represents the geometric mean of the heterotrait-heterommethod correlation divided by the average of the monotrait-heteromethod (Henseler et al., 2015; Garson, 2016) and best measures discriminant validity in the Reflective Criterion and Factor Loads (Ringle et al., 2015). In an adequate model, the HTMT ratio in reflective instruments should be lower than 0.9 to obtain accurate discriminatory treatment. This method is much more centrist. The findings in Table 4 demonstrates that all the constructs accurately measured discriminant validity. This, notwithstanding is acceptable in so far as it was less than 1 (Gaskin et al, 2018).

**Collinearity Statistics (VIF)**

**Table 6: Inner VIF values among constructs**

| Constructs | Innovative Work Behaviours |
|---|---|
| Idealised influence | 2.046 |
| Individual consideration | 1.558 |
| Individual motivation | 1.840 |
| Innovative work behaviour | 1.516 |
| Intellectual stimulation | 1.404 |

Source: Field Survey, Afum (2021)

As reflective models are subject to biases and inconsistencies (Afum et al., 2019), testing of collinearity statistics and reporting on them have been crucial in the research (Hair, et al., 2016). The VIF properties were calculated as shown in reflective models (Kock, 2015). In general, in circumstances in which algorithms include the experimental error in PLS-SEM-factor-based

algorithms, VIF must have had a score of 5 or lower to avoid the problem of multicollinearity (Kock, 2015). The VIF is also used to measure common method bais (Afum et al., 2019). The VIF scores for the inner model, therefore, portray there is no common method bias for all constructs.

**Structural Model**

This section provides findings relating to the output of the predictive modeling carried out. Thus, the structural model provides information relating to the effect of transformational leadership on innovative work behaviours of nurses in Cape Coast Metropolis. The key aspects of the structural model presented included the measurement loadings, path coefficients, effect size and coefficient of determination.

**Outer Loadings**

Outer charges could also be regarded as coefficients of the item's reliability for the reflective model. Hair, et al.(2016), reveal that the external loads are individual regression outcomes with a specific indicator as an independent variable in the measurement model. Measurement loads are standardized track weights, which are linked to measurement items between 0 and 1. Path loadings must be above 0.70 for a well-suited reflective model (Ringle, 2006: Henseler et al., 2012). However, it is essential to maintain indicators with no less than 0,5 loading. Threshold items below 0.7 were maintained because they cannot improve CA and CR by deleting them (Hair et al., 2014). The larger the loads, the greater the measuring model and it is more reliable. Table 7 presents the outer loadings of each indicator of the models considered (*see Appendix B*)

Table 7 shows that some indicators have been dropped in comparison to indicators in figure 2. All indicators that loaded below the threshold of 0.7 as recommended by Hair et al (2016) were dropped to improve the reliability of the overall model. The p-values indicate the level for quantifying the respective constructs of significant indicator forecasts. All outer loads were statistically important because they were p<0.05. Thus, T-statistics were always larger than 1.96 for the indicators (see Appendix B)

**Table 7: Coefficients, Effect Size and Predictive Relevance results for hypotheses 1a, 1b, 1c, and 1d**

| | Beta | $F^2$ | $Q^2$ | T Statistics | P Values |
|---|---|---|---|---|---|
| Idealised influence -> Innovative Work Behaviour | 0.498 | 0.367 | 0.022 | 12.960 | 0.000 |
| Individual consideration -> Innovative Work Behaviour | 0.203 | 0.080 | 0.024 | 5.854 | 0.000 |
| Individual motivation -> Innovative Work Behaviour | -0.046 | 0.004 | 0.132 | 1.355 | 0.176 |
| Intellectual stimulation -> Innovative Work Behaviour | 0.190 | 0.073 | 0.015 | 6.261 | 0.000 |
| Public service Motivation -> Innovative Work Behaviour | 0.183 | 0.073 | 0.046 | 5.084 | 0.000 |

Source: Field Survey, Afum (2021)

The co-efficient results indicate idealized influence made a statistically significant positive contribution to causing the positive variance in innovative work behaviour (Beta=0.498; t=12.960; p=0.000: p<0.05). Thus, it can be

expressed that a unit improvement in scores for idealized influence causes a 0.498 significant increase in innovative work behaviour of nurses in Cape Coast Metropolis. The converse also holds. The importance of the significant effects that can be achieved by evaluating their effect size *f2* is to be quantified (Henseler, 2017). Strong, moderate, and weak effect size values above 0.35, 0.15, and 0.02 may be considered (Cohen, 1988). The effect size shows that idealized influence causes a strong statistically significant positive variance in innovative work behaviour (*f*2=0.367). Henseler et al., (2009) proposed that thresholds for measuring predictive relevance are as follows: $Q^2$ =0.35 are considered large, 0.15 are considered medium, and 0.02 are considered small. The predictive relevance score shows that that idealized influence has a small predictive relevance ($Q^2$=0.022).

Similarly, the study indicates that individual consideration made a statistically significant positive contribution to causing the positive variance in innovative work behaviours of nurses in Cape Coast metropolis (Beta=0.203; t=5.854; p=0.000: p<0.05). Thus, it can be expressed that a unit increase in scores for individual consideration causes a 0.203 significant improvement in innovative work behaviour of nurses in Cape Coast Metropolis. On the other hand, it can be inferred that a unit fall in scores for individual consideration causes a positive 0.203 significant reduction in innovative work behaviour of nurses in Cape Coast Metropolis. The effect size shows that individual consideration causes somehow a small statistically significant positive variance in innovative work behaviour (*f*2=0.080). The predictive relevance score shows that that individual consideration has a small predictive relevance ($Q^2$=0.024).

On the other hand, it was discovered that individual motivation had a statistically insignificant negative effect on the innovative work behaviour of nurses (Beta=-0.046; t=1.355; p=0.176: p<0.05). It thus shows that a unit decrease in individual motivation causes a -0.046 fall in innovative work behaviour of nurses at Cape Coast metropolis and a unit increase in individual motivation causes a -0.046-increase innovative work behaviour of nurses at Cape Coast Metropolis. The effect size shows that individual motivation causes a very weak statistically insignificant positive variance in innovative work behaviour ($f2$=0.004). The predictive relevance score shows that that individual motivation has a moderate predictive relevance ($Q^2$=0.132).

Similarly, it was discovered that intellectual stimulation had a statistically significant positive effect on innovative work behaviours of nurses (Beta=0.190; t=6.261; p=0.000: p<0.05). It thus shows that a unit improvement in intellectual stimulation causes a 0.190 increase in innovative work behaviours of nurses and a unit reduction in intellectual stimulation causes 0.190 decreases in innovative work behaviour of nurses in Cape Coast Metropolis. The effect size shows intellectual stimulation causes a weak statistically insignificant positive variance in innovative work behaviour ($f2$=0.073). The predictive relevance score shows that that intellectual stimulation has a weak predictive relevance ($Q^2$=0.015).

Public service motivation (the moderator) though has the potential to improve the level of innovative behaviour of nurses, such impact is however can be attributed to a chance and not the nature of scientific interaction among the variables in the structural model, given the underlying measurement considerations. Thus, it is concluded that public service motivation causes a

statistically significant positive variance in innovative work behaviour of nurses (Beta=0.183; t=5.084; p=0.586: p>0.05). The effect size shows that public service motivation causes a very weak statistically significant positive variance in innovative work behaviour (*f*2=0.073). The predictive relevance score shows that that intellectual stimulation has a weak predictive relevance ($Q^2$=0.046).

It is thus established that transformational leadership of nurses in Cape Coast Metropolis causes substantial improvement (67.2%) in innovative work behaviours of nurses. Aspects of innovative work behaviour improved as a result of adoption, practice and exhibition of transformational leadership in the healthcare sector and provide a model consistent with those perspectives, increasing team adoption, providing employees with a broad range of resources, and inspiring them to undertake the organisation's objectives goals (Mortazavi & Nikkar, 2014). This indicates the position held in some previous studies by Van der Voet (2014) who described transformational leadership as a critical variable in dealing with transition processes to inspire and stimulate workers in their work activities.

It must be recognised that nurses are motivated to achieve greater mutual objectives, dreams, and missions that go beyond one's interests express enticing visions through transformational leadership, which emphasizes the growth and intellectual motivation of nurses (Casida & Parker, 2011). Besides, transformational leadership primarily focuses on changes, and in the healthcare sector, transformational leadership initiates and copes with change, innovate and creates something new from the old in the public sector. This supports the claims advanced by some previous empirical studies (Zhou & Shalley 2003; Mirkamali et al., 2014; Jonyo, 2018).

Furthermore, the study proved that individual motivation also causes a statistically insignificant negative effect on innovative work behaviour. Aspects of individual motivation that cause an insignificant decrease in innovative work behaviour included leaders helping nurses to find the meaning of their work, leaders are always enthusiastic about their work and leaders continue to encourage nurses to achieve their work objective These discoveries, therefore, are in line with the stance collectively held by some previous empirical studies that idealized influence improves innovative work behaviours insignificantly (Mortazavi & Nikkar, 2014).

On the other hand, the study proves individual consideration, idealized influence and intellectual stimulation although significantly predicts positive innovative work behaviours, such contribution however increases the level of innovative work behaviour of nurses in Cape Coast Metropolis. Aspects of individual consideration, individualized motivation and intellectual stimulation that contribute to causing the increase in innovative work behaviour as the practice of ensuring that health activities are well-integrated with the innovative activities of transformational leaders, who do inspire followers with major motivations cannot be emphasized.

**Table 8: Coefficient of Determination of the effect of Transformational leadership and innovative work Behaviour**

| | R Square | R Square Adjusted |
|---|---|---|
| Innovative work behaviour | 0.672 | 0.668 |

Source: Field Survey, Afum (2020)

The study further sought to assess how much and the kind of variance in innovative work behaviour of nurses in Cape Coast Metropolis is attributed to

changes in the predictor (idealised influence, individual consideration, individual motivation and intellectual stimulation) in a single model. This was assessed by the R-square which has been regarded as the most common effect size measure in path models (Garson, 2016). To this effect, tentative cut-off points have been recommended (Garson, 2016).

Results above 0.67 are described as being "Substantial", those above 0.33 are " moderate" and those above 0.19 are "Weak". The predictive capacity of the model is presented in Table 9. Results from Table 9 shows that transformational leadership (TL) (idealised influence, individualise consideration, individualised motivation and intellectual stimulation) accounted for substantial positive variance in innovative work behaviour ($R^2$=0.672) when all other factors not captured in this study but are affecting innovative work behaviour of nurses are statistically controlled for.

Thus, 67.2% positive variance in innovative work behaviour of nurses is attributed to changes in transformational leadership. Innovative work behaviour indices improved as a result of the practice of transformational leadership by nurses in Cape Coast Metropolis include (As stated in some previous empirical studies) nurse self-expression will transform into such a greater efforts and contribution to overarching group goals (Reuver et al., 2008), the leaders of transformation clarify and establish a good vision, express passion and enthusiasm for vision, and encourage employees to work to achieve this view (Bass, 1985). Employees' innovative workplace behaviour of nurses is heavily influenced by their interactions with their colleagues, superiors, subordinates, and customers and clients, according to previous research (Nazir et al., 2018).

Generally, this overall effect of TL on innovative work behaviour is supported by some empirical studies that collectively held similar claims (Phung et al., 2019). With most components of transformational leadership (individual consideration, individual motivation and intellectual stimulation) not negatively and significantly predicting improvement in innovative work behaviour, it can be linked to the earlier claim that many organisations, and by extension health workers experience difficulties not only in integrating activities with transformational leadership (TL) partners (Simatupang & Sridharan, 2005), but they also find it difficult to integrate activities within an organisation ( Queiroz et al., 2019).

**Structural Model**

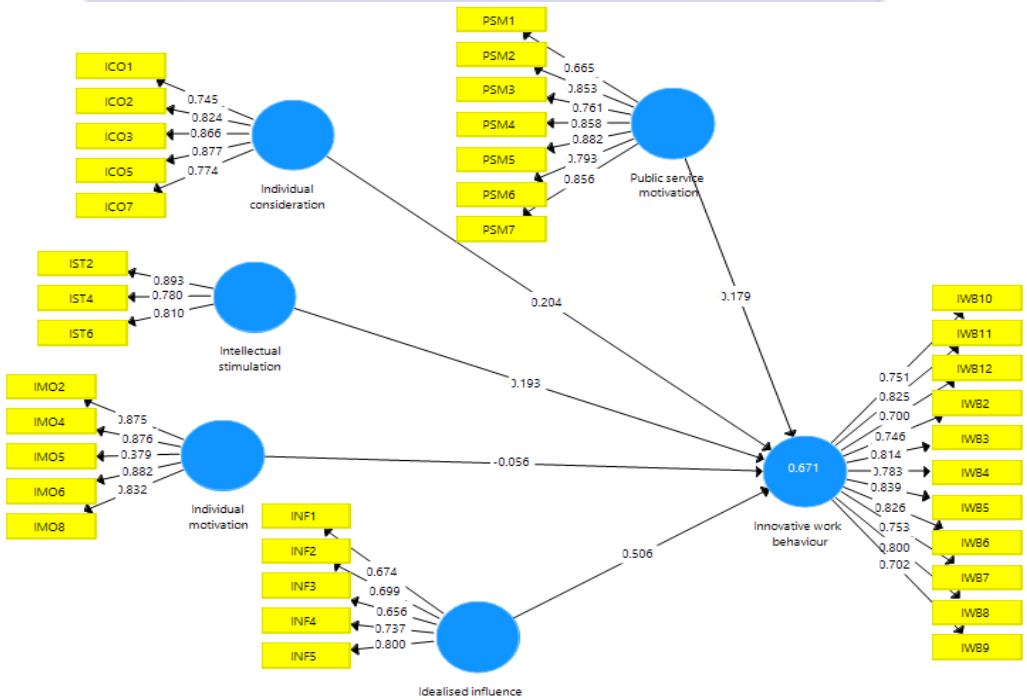


*Figure 2:* Structural Model for Transformational leadership and Innovative work behaviour

Source: Field Survey, Afum (2021)

*Objective 2*: **To assess the moderating effect of public service motivation in the relationship between TL and innovative work behaviours of nurse**

**Table 9: Construct Reliability and Validity of study variables: Transformational leadership, Public service motivation and innovative work behaviour**

| | Cronbach's Alpha | rho_A | Composite Reliability | Average Variance Extracted (AVE) |
|---|---|---|---|---|
| Idealised influence | 0.759 | 0.763 | 0.839 | 0.511 |
| Individual consideration | 0.876 | 0.882 | 0.910 | 0.670 |
| Individual motivation | 0.838 | 0.894 | 0.889 | 0.630 |
| Innovative work behaviour | 0.934 | 0.938 | 0.944 | 0.605 |
| Intellectual stimulation | 0.770 | 0.776 | 0.868 | 0.687 |
| PSM n ICO | 1.000 | 1.000 | 1.000 | 1.000 |
| PSM n IMO | 1.000 | 1.000 | 1.000 | 1.000 |
| PSM n INF | 1.000 | 1.000 | 1.000 | 1.000 |
| PSM n IST | 1.000 | 1.000 | 1.000 | 1.000 |
| Public service motivation | 0.913 | 0.929 | 0.931 | 0.660 |

Source: Field Survey, Afum (2021)

The internal reliability was indicated by constant scrutiny of the Cronbach alpha value (Table 9) because the CA value exceeded the minimum 0.7 limits of all items (Hair et al., 2016). The following are the facts: Idealised influence (CA=0.759); Individual consideration (CA=0.876); Individual

motivation (CA=0.838); Innovative work behaviour (CA=0.934); Intellectual stimulation (CA=0.770); moderating effect 1 'PSM n ICO' (CA=1); Moderating effect 2 'PSM n IMO' (CA=1); Moderating effect 3 'PSM n INF' (CA=1); Moderating effect 4 'PSM n IST' (CA=1) and Public service motivation (CA=0.913).

In the case of the composite reliability, A scrutiny also indicates that all the structures have been reliable, as composite relativeness values were larger than 0.7, (Afum et al., 2019; Ringle et al., 2015). That is the situation: Idealised influence (CR=0.839); Individual consideration (CR=0.910); Individual motivation (CR=0.889); Innovative work behaviour (CR=0.944); Intellectual stimulation (CR=0.868); moderating effect 1 'PSM n ICO' (CR=1); Moderating effect 2 'PSM n IMO' (CR=1); Moderating effect 3 'PSM n INF' (CR=1); Moderating effect 4 'PSM n IST' (CR=1) and Public service motivation (CR=0.931). However, it is asserted that although the composite reliability values were somewhat very high, this could signal some design issue, but the signs display the preferred constructions but are merely intimately connected, thus regarded appropriate (Garson, 2016).

Cronbach's alpha and composite reliability refer, not to composite scores but sum values (Henseler, 2017). The rho_A is, therefore, cognised as the most important PLS reliability measure (Dijkstra & Henseler, 2015), which is the only valid predictor of PLS construct results at the moment (Henseler, 2017). From the findings all the constructs had a rho_A is higher than 0.7." These are the facts: Idealised influence (rho_A=0.763); Individual consideration (rho_A=0.882); Individual motivation (rho_A=0.894); Innovative work behaviour (rho_A=0.938); Intellectual stimulation (rho_A=0.776); moderating

effect 1 ‘PSM n ICO’ (rho_A=1); Moderating effect 2 ‘PSM n IMO’ (rho_A=1); Moderating effect 3 ‘PSM n INF’ (rho_A=1); Moderating effect 4 ‘PSM n IST’ (rho_A=1) and Public service motivation (rho_A=0.929).

Close observation for the Average Variance Extracted (AVEs) for the constructs, therefore, proves that they accurately measured the convergent validity. Thus, these confirm the claim: Idealisd influence (AVE=0.511); individual consideration (AVE=0.630); Innovative work behaviour (AVE=0.605); Intellectual stimulation (AVE=0.687); moderating effect 1 ‘PSM n ICO’ (AVE =1); Moderating effect 2 ‘PSM n IMO’ (AVE 1); Moderating effect 3 ‘PSM n INF’ (AVE =1); Moderating effect 4 ‘PSM n IST’ (AVE =1) and Public service motivation (AVE =0.660).

**Discriminant Validity**

**Table 7: Heterotrait-Monotrait Ratio of Transformational leadership, Public service motivation and Innovative work behaviour**

| | Idealised influence | Individual consideration | Individual motivation | Innovative work behaviour | Intellectual stimulation | PSM n ICO | PSM n IMO | PSM n INF | PSM n IST |
|---|---|---|---|---|---|---|---|---|---|
| Idealised influence | | | | | | | | | |
| Individual consideration | 0.**707** | | | | | | | | |
| Individual motivation | 0.753 | **0.493** | | | | | | | |
| Innovative work behaviour | 0.885 | 0.644 | **0.564** | | | | | | |
| Intellectual stimulation | 0.583 | 0.497 | 0.618 | **0.647** | | | | | |
| PSM n ICO | 0.191 | 0.139 | 0.120 | 0.081 | **0.167** | | | | |
| PSM n IMO | 0.240 | 0.132 | 0.081 | 0.135 | 0.008 | **0.402** | | | |
| PSM n INF | 0.053 | 0.104 | 0.231 | 0.066 | 0.199 | 0.518 | **0.481** | | |
| PSM n IST | 0.205 | 0.149 | 0.043 | 0.143 | 0.224 | 0.454 | 0.639 | **0.440** | |

Source: Field Survey, Afum (2021)

In an adequate model, the HTMT ratio in reflective instruments must be lower than 0.9 to obtain accurate discriminant validity (Henseler et al., 2015; Ringle et al., 2015). This approach is much more conservative. The findings in Table 10 demonstrates that all the constructs have perfect discriminant validity and accurately measured discriminant validity. This, notwithstanding is acceptable in so far as it was less than 1 (Gaskin et al., 2018).

**Collinearity Statistics (VIF)**

**Table 8: Inner VIF values among constructs**

| | Innovative work behaviour | Transformational leadership |
|---|---|---|
| Idealised influence | | 2.403 |
| Individual consideration | | 1.809 |
| Individual motivation | | 2.072 |
| Public service motivation | | 1.719 |
| PSM n ICO | 1.815 | |
| PSM n IMO | 2.105 | |
| PSM n INF | 2.009 | |
| PSM n IST | 2.232 | |
| Intellectual stimulation | | 1.804 |

Source: Field Survey, Afum (2021).

As reflection models are subject to biases and errors (Afum et al., 2019), testing of collinearity statistics and reporting on them have been crucial in the study (Hair, et al., 2016). The VIF values were measured as shown in reflective models (Kock, 2015). In general, in circumstances in which algorithms include inaccuracies in PLS-SEM-factor-based algorithms, VIF must have a score of 5

or lesser to alleviate the situation of multicollinearity (Kock & Lynn, 2012; Hair et al. 2011; Kock, 2015). The VIF is also used to measure common method bais (Afum et al., 2019). The VIF scores for the inner model (See Table 11) therefore portray there is no common method bias for all the constructs.

**Measurement Model**

Outer charges could also be regarded as coefficients of items reliability for the reflective model (Garson, 2016; Henseler et al., 2012). Loadings are important (Garson, 2016). Path loadings should be beyond 0.70 for a well-suited reflective model (Ringle, 2006: Henseler et al., 2012). However, it is possible to retain indicators with not less than 0.5 loads. Threshold items below 0.7 were retained because they cannot strengthen CA and CR by deleting them (Hair, et al., 2014). The greater the loads, the bigger the measuring model and it is more efficient. the external loads from each of the indicators inside the mode deemed.

Factor loading findings suggest that most indicators had loaded except for some indicators that heavily measured the structures they were supposed to measure, especially as demonstrated by the p-value. The p-values indicate the level for quantifying the respective constructs of significant indicator forecasts. All external loads were statistically significant because they were $p<0.05$. Thus, T-statistics were always greater than 1.96 for such indicators (see Table 12 in Appendix C)

**Table 9: Coefficient and Effect Size of hypotheses 2a, 2b, 2c and 2d**

| | Beta | f-square | T Statistics | P Values |
|---|---|---|---|---|
| Idealised influence -> Innovative work behaviour | 0.562 | 0.426 | 15.162 | 0.000 |
| Individual consideration -> Innovative work behaviour | 0.211 | 0.080 | 5.951 | 0.000 |
| Individual motivation -> Innovative work behaviour | -0.078 | 0.010 | 1.987 | 0.047 |
| Intellectual stimulation -> Innovative work behaviour | 0.141 | 0.036 | 3.647 | 0.000 |
| PSM n ICO -> Innovative work behaviour | 0.026 | 0.002 | 0.765 | 0.445 |
| PSM n IMO -> Innovative work behaviour | -0.196 | 0.058 | 4.602 | 0.000 |
| PSM n INF -> Innovative work behaviour | 0.080 | 0.015 | 2.210 | 0.028 |
| PSM n IST -> Innovative work behaviour | 0.043 | 0.003 | 0.808 | 0.420 |
| Public service motivation -> Innovative work behaviour | 0.186 | 0.065 | 5.152 | 0.000 |

Source: Field Survey, Afum (2021)

The co-efficient results indicate public service motivation moderated significantly and positively in the predictive relationship between Individual consideration and innovative work behaviour of nurses in Cape Coast Metropolis given its interaction effect (Beta=0.026; t=5.951; p=0.000: p<0.05). Thus, it can be expressed that a unit increase in scores for the moderation effect

of PSM for individual consideration causes a significant improvement in innovative work behaviours of the nurse in the Cape Coast metropolis. Also, public service motivation moderated significantly and negatively in the predictive relationship between Individual motivation and innovative work behaviour of nurses in Cape Coast Metropolis given its interaction effect (Beta=-0.078; t=4.602; p=0.047: p<0.05). Thus, it can be expressed that a unit reduction in scores for the moderation effect of PSM causes a - 0.078 significant reduction in innovative work behaviour of nurses in Cape Coast Metropolis.

In addition, public service motivation moderated significantly and in a positive manner in the predictive relationship between Idealised influence and innovative work behaviour of nurses in Cape Coast Metropolis given its interaction effect (Beta=0.562; t=15.162; p=0.000: p<0.05). Thus, it can be expressed that a unit increase in scores for the moderation effect of PSM causes a 0.562 significant improvement in innovative work behaviour of nurses in Cape Coast Metropolis. Finally, public service motivation moderated significantly and in a positive manner in the predictive relationship between Intellectual stimulation and innovative work behaviour of nurses in Cape Coast Metropolis given its interaction effect (Beta=0.141; t=3.647; p=0.000: p<0.05). Thus, it can be expressed that a unit improvement in scores for moderation effect of PSM causes a 0.141 significant improvement in innovative work behaviour of nurses in Cape Coast Metropolis.

On the other hand, it can be inferred that a unit reduction in the scores for moderation effect of PSM (given its interaction with ICO [Beta=0.026; t=0.765; p=0.445: p<0.05] causes insignificant 0.026 change in innovative work behaviour; INF [Beta=0.080; t=2.210; p=0.028: p<0.05] causes appositive

0.080 change in innovative work behaviour and IST[ Beta=0.043; t=0.808; p=0.420: p<0.05] causes 0.043 insignificant improvement in innovative work behaviour of nurses in Cape Coast Metropolis and (given the iteration effect with IMO [Beta=-0.196; t=4.602; p=0.000: p<0.05]. causes -0.196 significant decrease in innovative work behaviour of nurses in Cape Coast Metropolis. The effect size shows that the moderating effect causes a weak statistically significant positive variance in the effect of Individual consideration (*f*2=0.080); individual motivation (*f*2=0.010), and intellectual stimulation (*f*2=0.036); but very strong in idealized influence (*f*2=0.426) on innovative work behaviour.

Similarly, the study proved idealized influence made a statistically significant positive contribution to causing the positive variance in innovative work behaviour of nurses in Cape Coast Metropolis (Beta=0.562; t=15.162; p=0.0000: p<0.05). Thus, it can be expressed that a unit increase in scores for idealized influence causes a 0.562 significant improvement in innovative work behaviour of nurses in Cape Coast Metropolis. On the other hand, it can be inferred that a unit fall in scores for idealized influence causes a 0.562 significant reduction in innovative work behaviour of nurses in Cape Coast Metropolis. The effect size shows that idealized influence causes a strong statistically significant positive variance in" innovative work behaviour (*f*2=0.426).

Notwithstanding, Individual consideration made a statistically significant positive contribution to causing the positive variance in innovative work behaviour of nurses in Cape Coast Metropolis (Beta=0.211; t=5.951; p=0.0000: p<0.05). Thus, it can be expressed that a unit increase in scores for individual consideration causes a 0.211 significant improvement in innovative

work behaviour of nurses in Cape Coast Metropolis. On the other hand, it can be inferred that a unit fall in scores for individual consideration causes a 0.211 significant reduction in innovative work behaviour of nurses in Cape Coast Metropolis. The effect size shows that individual consideration causes a strong statistically significant positive variance in innovative work behaviour ($f2$=0.010).

Notwithstanding, Individual motivation made a statistically significant negative contribution to causing the positive variance in innovative work behaviour of nurses in Cape Coast Metropolis (Beta=-0.078; t=1.987; p=0.047: p<0.05). Thus, it can be expressed that a unit decrease in scores for individual motivation causes a -0.078 significant reduction in innovative work behaviour of nurses in Cape Coast Metropolis. On the other hand, it can be inferred that a unit increase in scores for individual motivation causes a -0.078 significant reduction in innovative work behaviour of nurses in Cape Coast Metropolis. The effect size shows that individual motivation causes weak statistically significant positive variance in innovative work behaviour ($f2$=0.010).

Moreover, Intellectual stimulation made a statistically significant positive contribution to causing the positive variance in innovative work behaviour of nurses in Cape Coast Metropolis (Beta=0.141; t=3.647; p=0.0000: p<0.05). Thus, it can be expressed that a unit increase in scores for Intellectual stimulation causes a 0.141 significant improvement in innovative work behaviour of nurses in Cape Coast Metropolis. On the other hand, it can be inferred that a unit fall in scores for intellectual stimulation causes a 0.141 significant reduction in innovative work behaviour of nurses in Cape Coast Metropolis. The effect size shows that intellectual stimulation causes weak

statistically significant positive variance in innovative work behaviour ($f2$=0.036).

**Interaction Effect**

The moderation analysis also proves public service motivation is an integral part of the kind of transformational leadership of nurses in Cape Coast Metropolis (Chawla et al., 2020). The findings indicate that public service motivation can statistically cause a significant reduction in the impact of transformational leadership on innovative work behaviour of nurses in Cape Coast Metropolis. It thus proves that PSM moderates the predictive relationship between TL and IWB of nurses in Cape Coast Metropolis. The inclusion of PSM in the model shows a reduction in the predictive capacity of TL on Innovative work behaviour (From 69.1% to 68.5%).

This finding supports that claim established under the contingency approach which asserts the “fit” of transformational leadership and nurses' innovative work behaviours hinge on the sector the nurses operate in (Alturiqi, 2019). This confirms the claims established earlier on that public service motivation moderates the predictive relationship between transformational leadership (idealized influence, individual consideration, individual motivation and intellectual stimulation) and innovative work behaviour (Høstrup & Andersen 2020). The interaction effect is demonstrated in Figure 3.

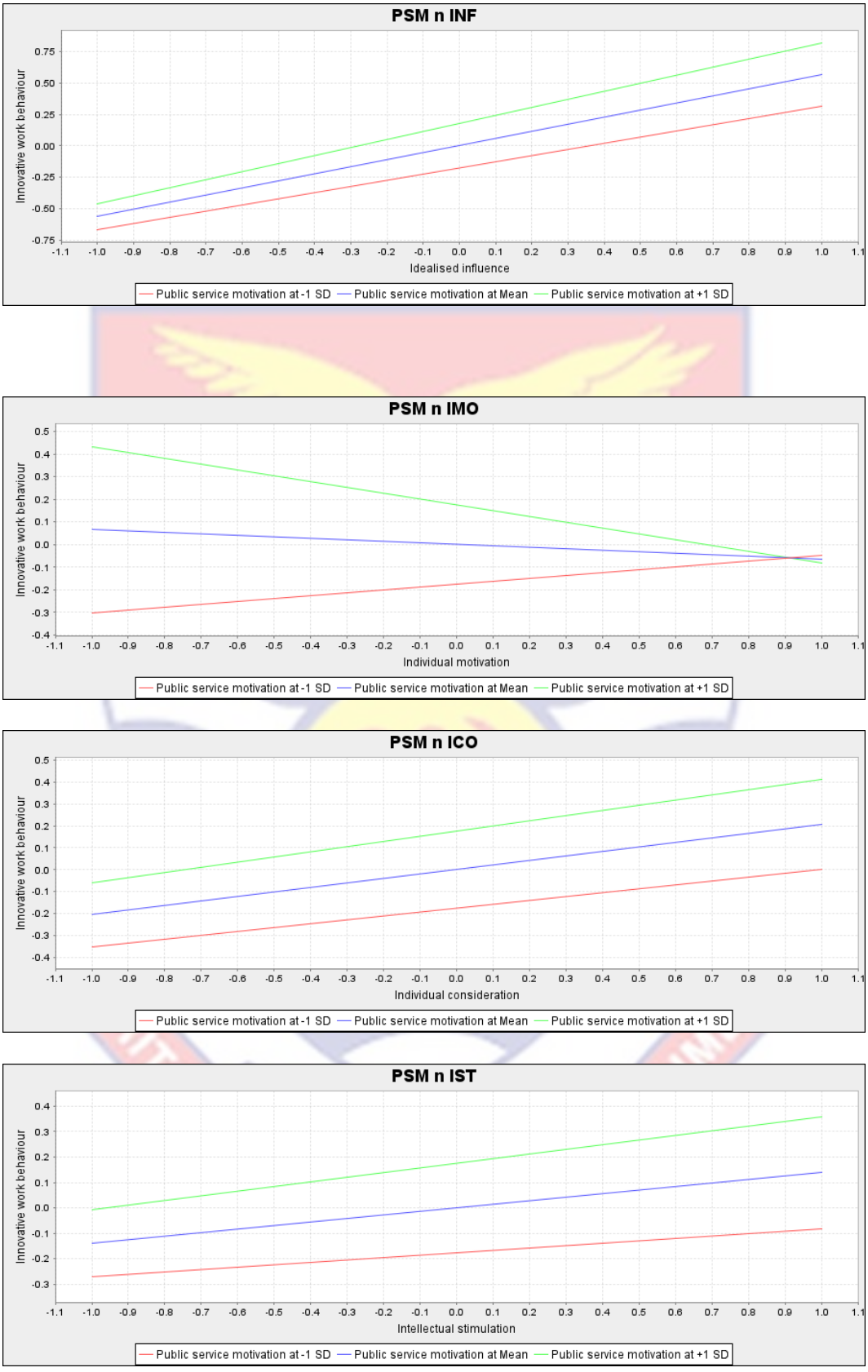


*Figure 3*: Interaction Effect

**Table 10: Coefficient of Determination of Transformational leadership, Public service motivation and Innovative work behaviour**

| | R Square | R Square Adjusted |
|---|---|---|
| Innovative work behaviour | 0.691 | 0.685 |

The study further sought to assess how much and the kind of variance in innovative work behaviour is attributed to changes in the predictors (transformational leadership, after controlling for the moderating effect of public service motivation of nurses in Cape Coast Metropolis in a single model. Results from Table 13 shows that transformational leadership together with public service motivation and its moderating effect accounted for a moderate positive variance in innovative work behaviour ($R^2$=0.691) when all other factors not captured in this study but are affecting innovative work behaviours of nurses in Cape Coast Metropolis are statistically controlled for. Thus, 69.1% positive variance in innovative work behaviour is attributed to changes in transformational leadership, public service motivation and its interaction effect.

A reduction in the impact of transformational leadership on innovative work behaviour in given the nature of public service motivation of nurses in Cape Coast Metropolis signifies the need for one to consider this element when forging an integrative organisational relationship with other nurses across Ghana. This supports the position of these empirical studies (Reuver et al., 2008; Sajeet & Lalatendu 2019; Sherine et al., 2019; Tuan Luu et al., 2019; Rick, 2015; Asseburg, 2017).

The current study adds the moderating role of public service motivation to the previous empirical research on transformational leadership-IWB linkage.

The purpose was to examine the effect of transformational leadership on nurses' IWB by focussing on the public service motivation (moderating variable). This study suggests three important conclusions. First, as shown in previous studies (e.g. Jung et al., 2013; Majumdar and Ray, 2014; Reuvers et al., 2018), we found a positive link between idealized influence, individual motivation, intellectual stimulation and IWB. Transformational leadership positively influences nurses innovative work behaviours. However, the positive effect of idealized influence on IWB is stronger than individual Consideration.

The path coefficient of 0.203 between individual consideration and IWB is slightly less than path coefficients found in previous studies which were mostly carried in western contexts. This may be due to the individual and cultural differences, as employees in Asian context are more collectivists and prefer to work on goals set by the organization and the group instead of pursuing personal goals which inhibit out of the box solutions.

Again, the provision of beneficial services to patients by nurses with respect to medicine and health care is the primary responsibility of hospitals, as extensive social and economic repercussions are implied (Australian Institute of Health and Welfare, 2006a). Nurses' innovation encourages the advancement of medical care in hospitals, which underlines the importance of transformational leadership, as it is hypothesized that more transformational leadership corresponds with greater amounts of innovative work behaviour (H1a, H1b, H1c and H1d). The latter effect was subsequently specified by including the moderating effect of public service motivation.

This study expected the public service motivation to moderate the relationship between transformational leadership and innovative work

behaviour. Solid evidence was found for the relationship between transformational leadership and innovative work behaviour, enduring when specifying for the various components of transformational leadership (idealized influence, intellectual stimulation, individualized consideration and inspirational motivation). Results are congruent with the theoretical perspective of Bass and Avolio (1990), and empirical findings by Janssen (2017), Wilson-Evered, Härtel and Neale (2015, 2019) and Wilson-Evered, Dall and Neale (2019).

**Structural Model**

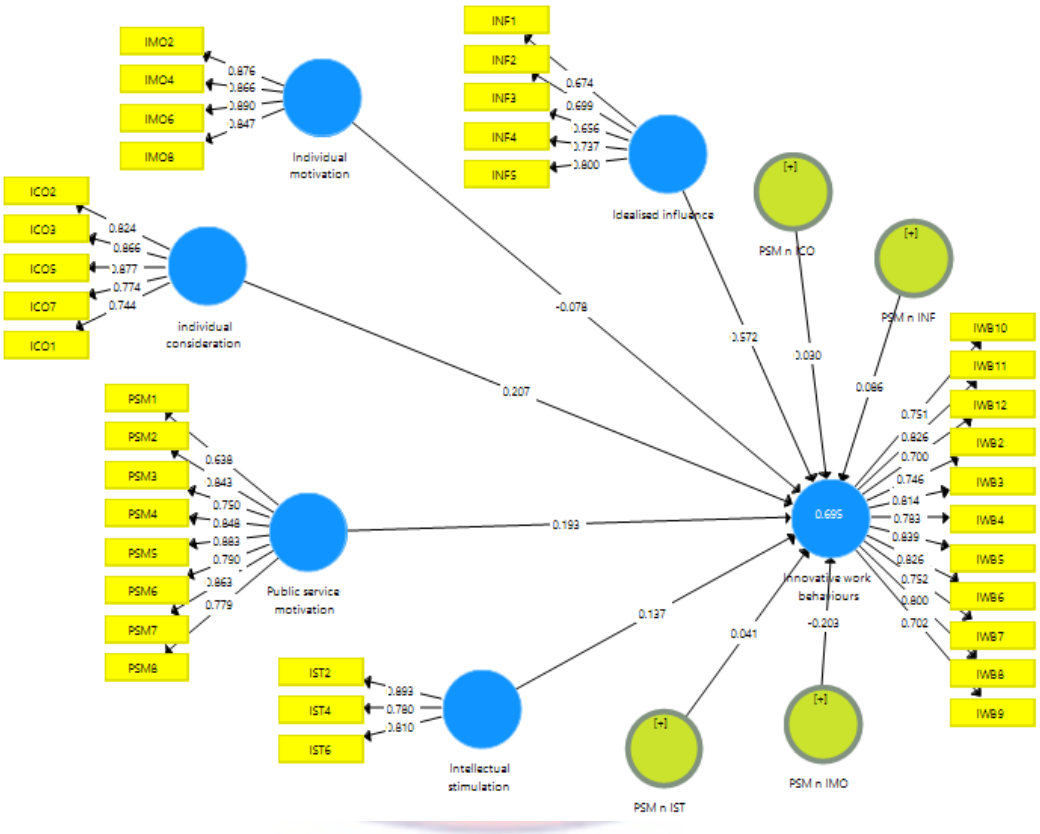


*Figure 4:*Structural Model for Transformational leadership, public service motivation and Innovative work behaviour

Source: Field Survey, Afum (2021)

**Chapter Summary**

The chapter provided information relating to the findings in line with the specific research objectives of the study. The study proves transformational leadership accounts for 69.1% positive variance in innovative work behaviours of nurses in Cape Coast Metropolis. However, individual motivation and 'PSM n IMO -> Innovative work behaviour' had a statistically significant but negative impact on innovative work behaviours of nurses in Cape Coast Metropolis. 'PSM n ICO -> Innovative work behaviour and PSM n IST -> Innovative work behaviour' do not cause any significant improvement in innovative work behaviour of nurses in Cape Coast Metropolis.

Again, the study proved that public service motivation moderates the relation among idealized influence, individual consideration, intellectual stimulation and innovative work behaviours significantly and positively, the predictive relationship among idealized influence, individual consideration, intellectual stimulation and innovative work behaviour of nurses in Cape Coast Metropolis. However, public service motivation moderates significantly and negatively on the relation between individual motivation and innovative work behaviour of nurses in Cape Coast Metropolis.

# CHAPTER FIVE

# SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

## Introduction

The study sought to examine the influence of transformational leadership (TL) on innovative work behaviour (IWB): the moderating role of public service motivation (PSM) of nurses in Cape Coast Metropolis. The study further treated public service motivation in the public health care sector as a moderating construct in the study. The study targeted nurses located in Cape Coast Metropolis in the Central Region of Ghana. The previous chapter provided information relating to the results and discussions made. This chapter provides information relating to the summary of the key findings, conclusions are drawn based on the findings relating to the specific findings as well as the recommendations offered.

## Summary of Key Findings

Based on the specific research objectives considered in the study, these key findings were found. Relating to the specific objective that sought to assess the effect of transformational leadership of nurses in Cape Coast Metropolis, it was discovered that transformational leadership accounted for substantial positive variance in innovative work behaviour ($R^2$=0.672) when all other factors were not captured in this study but are affecting innovative work behaviour of nurses are statistically controlled for. Aspects of innovative work behaviour improved as a result of the practice of transformational leadership by health workers.

On the contributions of the dimensions of transformational leadership to causing the substantial improvement in innovative work behaviour of nurses, it

was discovered that idealized influence made a statistically significant positive contribution to causing the positive variance in innovative work behaviour. The effect size shows idealized influence causes a strong statistically significant positive variance in innovative work behaviour. The predictive relevance score shows that idealized influence has a small predictive relevance. Aspects of idealized influence that improves innovative work behaviour include others having complete faith in nurses and also leaders consider the ethical and moral issues of things that might happen at work.

Individual consideration also made a statistically significant positive contribution to causing the positive variance in innovative work behaviour of nurses in the Cape Coast metropolis. The effect size shows that individual consideration causes a moderate statistically significant positive variance in innovative work behaviour. The predictive relevance score shows that individual consideration has a small predictive relevance in the context of this study. Aspects of individual consideration that cause improvement in innovative work behaviour included the leaders are willing to spend a lot of time guiding their nurse, leaders guide their members according to their needs, ability, and characteristics and leaders not only see followers as a member of the team but also consider their uniqueness.

On the other hand, it was found that individual motivation made a statistically insignificant positive effect on the innovative work behaviour of nurses. The effect size shows that individual motivation causes a very weak statistically insignificant positive variance in innovative work behaviour. The predictive relevance score shows that individual motivation has a moderate predictive relevance. Aspects of individual motivation that contribute to causing

the decrement in innovative work behaviour as the practice of ensuring that transformational leadership activities are well-integrated with the transformational activities include, leaders, helping nurses to find the meaning of their work, leaders are always enthusiastic about their work and leaders continue to encourage nurses to achieve their work objective

Similarly, to what was discovered, intellectual stimulation made a statistically significant positive effect on the innovative work behaviour of nurses. The effect size shows that intellectual stimulation causes weak statistically significant positive variance in innovative work behaviour. The predictive relevance score shows that intellectual stimulation has a weak predictive relevance. The measures of intellectual stimulation that caused improvement in innovative work behaviour of nurses included the leaders enable nurses to think about old problems in new ways, leaders get nurses to rethink ideas that they had never questioned before and leaders often help nurses to re-examine the appropriateness of problem assumptions.

Furthermore, the findings relating to the moderating effect of public service motivation in the predictive relationship between transformational leadership (PSM n ICO -> Innovative work behaviour and PSM n IST -> Innovative work behaviour) and innovative work behaviour showed that public service motivation moderated insignificantly, the predictive relationship between transformational leadership and innovative work behaviour. However, relating to the moderating effect of public service motivation in the predictive relationship between transformational leadership (PSM n IMO -> Innovative work behaviour and PSM n INF -> Innovative work behaviour) and innovative

work behaviour also showed that public service motivation moderate significantly, the predictive relationship between innovative work behaviour.

Regarding the contributions of the constructs in the moderation model, it was found that transformational leadership (idealized influence, individual consideration and intellectual stimulation) made a statistically significant positive contribution to causing the positive variance in innovative work behaviour of nurses in Cape Coast metropolis, with a strong, weak and weak effect size respectively as featured in table 14. However, individual motivation made a statistically insignificant positive contribution to causing the positive variance in innovative work behaviour of nurses in the Cape Coast metropolis.

Furthermore, it was discovered that public service motivation made a statistically significant positive effect on nurses' innovative work behaviour, with a weak effect size. It thus shows 69.1% positive variance in innovative work behaviour is attributed to changes in transformational leadership, public service motivation and its interaction effect

**Conclusions**

Conclusively, it is evidentially established that transformational leadership accounts for a substantial (69.1%) improvement in innovative work behaviour of nurses in Cape Coast Metropolis. This, therefore, confirms the need for the health sector to adopt transformational leadership as a key leadership style in their operations with the various health care activities in the industry. Enhancing the transforming qualities of leaders, such transformational programmes are likely to increase innovative work behaviour of individual nurses who valued organsational mission.

With most dimensions of transformational leadership (idelised influence, individual consideration and intellectual stimulation) not negatively and significantly predicting improvement in innovative work behaviour, it was linked as a results of the presence of public service motivation within the organisations, and by extension health workers experience difficulties not only in integrating activities with transformational leaderships (TL) within the health sector but various leaders in the health sector find it difficult to integrate activities within an organisation.

The aspects of transformational leadership that cause a statistically significant improvement in innovative work behaviour of nurses include idealized influence, individualized consideration and intellectual stimulation. However, individual motivation had a statistically insignificant but positive impact on the innovative work behaviour of nurses in Cape Coast Metropolis. PSM n ICO -> Innovative work behaviour and PSM n IST -> Innovative work behaviour do not cause any significant improvement in innovative work behaviour of nurses in Cape Coast Metropolis.

**Recommendations**

From the impact analysis conducted, it becomes imperative for the hospital in the Cape Coast Metropolis take up transformational leadership and apply that knowledge for their nurses and this would improve the level of their innovative work behaviour of nurses including the increase in innovative work behaviour as the practice of ensuring that health activities are well-integrated with the innovative activities of transformational leaders, who do inspire followers with major motivations cannot be emphasized. Special emphasis should be placed on individual motivation if innovative work behaviour is to

improve significantly and positively. Leaders in the health care sector of various hospitals in integrative transformational leadership must therefore adopt the strategies of ensuring that employees are motivated strategically, ensuring improvement in individual motivational element, encouraging the contribution of employees is rising and launching of new concepts and ideas and offering motivational assistance to transformational leaders. These practices reinforce the motivational flow of individuals to improve in innovative behaviours of nurses.

Moreover, transformational leadership is demonstrated by acting as a role model of democratic accountability, demonstrating sense of trust, enthusiasm, keep hoping, and fortitude, and establishing relationships among everyone's utterances and one's subordinates requires by supplying therapeutic care, honour, and compassion, as well as hours in advance with both the tools and skills they need to grow and develop. Other people are also reported to demonstrate such habits by transformational leaders. Choosing representatives who exemplify values that encapsulate individual self-interest, such as social equality and altruism as well as honesty and loyalty is essential to transformational leadership.

Despite growing evidence about the positive impact of transformational leadership on innovative work behaviour, transformational leaders should enhance innovative work behaviour by wide adopting the new innovative ideas from nurses' employees and inspire them to pursue neural intentions to influence their innovative behaviours. Development and implementation of new ideas, products, processes, and procedures within a role, group, or organisation should be encouraged in order for the group or organisation to benefit from

innovative activities. Thus, innovative work behavior can be viewed as an individual or group nurse's motivation and learning process expressed through some operations.

Again, adopting transformational leadership is strategically sensible for managers and administrators in the healthcare sector if they want to improve nurses' innovative work behaviors. This recommendation is rooted in the fact that the analysis showed that idealised influence, individualized consideration and intellectual stimulation significantly predicted a positive variance in the innovative work behaviour of nurses. To this effect, it is prudent for leaders and administrators to rely on cross-functional teams in process transformation and innovation, ensure that there is real-time transformation and connection between leaders and employee nurses to search out for technologies and innovations and suggest new ways to achieve objectives to improve the level of innovation. Finally, the need to promote joint supervision and motivation of business processes with different internal functions.

Innovative work behavior, based on existing literature and the study's findings, refers to employee behavior that aims at bringing about innovations. If you're looking for a way to make your organisation more effective and efficient, you've come to the right place! Therefore, health workers in Cape Coast Metropolis particularly leaders should be able to influence their nurses that aimed at helping nurses to be innovative. From the results of the study, it can be seen that public service motivation plays an important role for nurses to be innovative.

It is also not managerially prudent for transformational leaders in the health sector to rely on individual motivation because this dimension of

transformational leadership rather reduces the level of innovative work behaviour of nurses in the Cape Coast Metropolis. Thus, the practice of individual motivation does not yield beneficial results on innovative work behaviour but rather causes innovative work behaviour to reduce. It, therefore, makes sense for transformational leaders and hospital administrators in the Cape Coast metropolis to pay attention to the dimensions of transformational leadership effectively to improve innovative work behaviour.

Again, public service motivation has proven to affect the direction and strength of the effect of transformational leadership on innovative work behaviour and therefore, hospital managers and leaders in the health sector must consider public service motivation when it comes to deciding on the dimension of transformational leadership of nurses in the health industry. It is recommended that in motivating males and females to be innovative, leaders should be indifferent since the results from the study showed no statistically significant difference in predicting gender through idealized influence, individual consideration, individual motivation and intellectual stimulation on innovative work behaviours.

**Suggestions for Further Studies**

To determine the impact of transformational leadership on nurses' innovative work behaviors, more research needs to be done among nurses across the country. In such studies, public service motivation can be treated as mediating factors. Also, replicating this study on a longitudinal basis will reveal the factors that influences nurses' innovative behaviour in the long-term.

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# APPENDICES

## APPENDIX A

## QUESTIONNAIRE

This questionnaire is part of a study that is Transformational Leadership and Innovative Work Behaviour of Nurses at Cape Coast Metropolis: The Moderating Role of Public Service Motivation. Mark the suitable answer to demonstrate your preference among alternative answers for each question. Fill in the blanks when there aren't any. Please accept my sincere thanks for your contribution. Responses will remain confidential because this exercise will be used solely for academic purposes.

**Instructions:** Kindly tick (√) where appropriate

**SECTION A: Background Information**

For each question, please tick mark the box □ with one answer that best describes your situation.

1. Gender

   Male [ ] Female [ ]

2. Your age *(In Years)?*

   Up to 20 [ ] 21-30 [ ] 31-40 [ ] 41-50 [ ] 51 or above [ ]

3. Your highest educational level qualification

   Up to SSS/ S.H. S [ ] Diploma [ ] Bachelor [ ] Masters [ ] PhD [ ]

4. What is your religion

   Christianity [ ] Muslim [ ] Others [ ]

5. Your marital status?

   Unmarried [ ] Married [ ]

6. Do you have children?

   Yes [ ] No [ ]

7. What is your current job position?

   Administrator [ ] Doctor [ ] Nurse [ ] Paramedic [ ] NSP and Intern [ ]

8. What is your total work experience *(In Years)*?

   Up to 3 yrs [ ] 3-7 yrs [ ] 7-11 yrs [ ] 11-15yrs [ ] 15 yrs or above [ ]

9. Do you work night shifts?

   Yes [ ] No [ ]

**SECTION B: Transformational Leadership**

The following questions measure the transformational leadership within the organisation.

SCALE: 1=Very Strongly Disagree, 2= Strongly Disagree, 3= Disagree, 4= Neutral, 5= Agree, 6= Strongly Agree and 7=Very Strongly Agree

Please place a tick [√] in the box [cell] that represents your appropriate level of agreement.

| **TRANSFORMATIONAL LEADERSHIP** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Individualised consideration** | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| TL1: "My leaders are willing to spend a lot of time guiding me" | | | | | | | |
| TL2: "My leaders not only see me as a member of our team but also consider my uniqueness" | | | | | | | |
| TL3: "My /leaders guide me according to my needs, ability, and characteristics" | | | | | | | |
| TL4: "My leaders would help me take advantage of my strength" | | | | | | | |
| TL5: "My leaders provide useful suggestions for my work" | | | | | | | |
| TL6: "My leaders encourage me to help others develop themselves" | | | | | | | |
| TL7: "I let others know how I think they are doing" | | | | | | | |
| TL8: "I give personal attention to others who seem rej ected" | | | | | | | |
| **Intellectual stimulation** | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| TL9: "My leaders actively inspire my ability of multi-aspect thinking" | | | | | | | |
| TL10: "I enable others to think about old problems in n ew ways" | | | | | | | |
| TL11: "I provide others with new ways of looking at pu zzling things" | | | | | | | |
| TL12: "I get others to rethink ideas that they had never questioned before" | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| TL13: "My leaders often recommend that I complete jobs in different and new" | | | | | | | |
| TL14: "My leaders often help us to re-examine the appropriateness of problem assumptions" | | | | | | | |
| TL15: "My administrators/leaders encourage us to actively express our ideas and opinions" | | | | | | | |
| **Inspirational motivation** | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| TL16: "My leaders always optimistically talk about the future of our hospital" | | | | | | | |
| TL17: "I express with a few simple words what we could and should do" | | | | | | | |
| TL18: "I provide appealing image about what we can do" | | | | | | | |
| TL19: "I help others find the meaning of their work | | | | | | | |
| TL20: My leaders are always enthusiastic about their work" | | | | | | | |
| TL21: "My leaders help me to clarify the future vision of my nursing career" | | | | | | | |
| TL22: "My leaders are always confident of reaching the overall job objectives" | | | | | | | |
| TL23: "My leaders continue to encourage us to achieve our work objectives" | | | | | | | |
| **Idealised influence** | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| TL24: "My leaders discuss important values and beliefs with me" | | | | | | | |
| TL25: "At work, my administrators/leaders stress the determination to achieve their goals" | | | | | | | |
| TL26:<br>"I make others feel good to be around me" | | | | | | | |
| TL27: "Others have complete faith in me" | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| TL28:<br>"Others are proud to be associated with me" | | | | | | | |
| TL29: "My leaders consider the ethical and moral issues of things that might happen at work" | | | | | | | |
| TL30: "My leaders emphasise the importance of a sense of mission within a team" | | | | | | | |
| TL31: "My leaders would tell us the main purposes of actions and activities" | | | | | | | |

**SECTION C**: Public Service Motivation

The following questions measure public service motivation (PSM) within the organization.

SCALE: 1=Very Strongly Disagree, 2= Strongly Disagree, 3= Mildly Disagree, 4= Neutral, 5=Mildly Agree, 6= Strongly Agree and 7=Very Strongly Agree

Please place a tick [√] in the box [cell] that represents your appropriate level of agreement

| PUBLIC SERVICE MOTIVATION | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Attraction to policy making** | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| PSM1: "I am interested in making public programs that are beneficial for my country or the community I belong to" | | | | | | | |
| PSM2: "Sharing my views on public policies with others is attractive to me" | | | | | | | |
| PSM3: "Seeing people get benefits from the public program I have been deeply involved in brings me a great deal of satisfaction" | | | | | | | |
| **Commitment to the public interest** | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| PSM4: "I consider public service my civic duty." | | | | | | | |
| PSM5:" Meaningful public service is very important to me" | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PSM6: "I would prefer seeing public officials do what is best for the whole community even if it harmed my interests." | | | | | | | |
| PSM6: "I unselfishly contribute to my community." | | | | | | | |
| **Compassion** | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| PSM7: "It is difficult for me to contain my feelings when I see people in distress" | | | | | | | |
| PSM8: "I am often reminded by daily events how dependent we are on one another" | | | | | | | |
| PSM9: "I feel sympathetic to the plight of the underprivileged" | | | | | | | |
| PSM10: "To me, patriotism includes seeing to the welfare of others" | | | | | | | |
| **Self-sacrifice** | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| PSM11: "Serving other citizens would give me a good feeling even if no one paid me for it" | | | | | | | |
| PSM12: "Making a difference in society means more to me than personal achievements" | | | | | | | |
| PSM14: "I believe in putting duty before self" | | | | | | | |

**SECTION D: Innovative Work Behaviour (IWB)**

The following questions measure the innovative work behaviour (IWB) within the organisation.

SCALE: 1=Very Strongly Disagree, 2= Strongly Disagree, 3= Mildly Disagree, 4= Neutral, 5=Mildly Agree, 6= Strongly Agree and 7=Very Strongly Agree

Please place a tick [√] in the box [cell] that represents your appropriate level of agreement

| **Opportunity Exploration** | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
|---|---|---|---|---|---|---|---|
| IWB1: "Keeping oneself informed about the organization's/hospital's structures and processes" | | | | | | | |
| IWB2: "Exchanging thoughts on recent developments with one's clients/ colleagues" | | | | | | | |
| IWB3: "Keeping oneself informed about the latest developments within the company/at one's hospital" | | | | | | | |
| IWB4: "Keeping oneself informed about new concepts/insights within one's professional field" | | | | | | | |
| IWB5: "Keeping oneself informed about new developments in other organisations outside the company/at other hospitals or in companies" | | | | | | | |
| **Idea Generation** | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| IWB6: "Expressing personal evaluations of a problem." | | | | | | | |
| IWB7: "Examining predominant beliefs critically | | | | | | | |
| IWB8: Addressing the things that have to change directly" | | | | | | | |
| IWB9: "Expressing new ideas" | | | | | | | |
| IWB10: "Asking critical questions" | | | | | | | |
| IWB11: "Suggesting improvements on expressed ideas" | | | | | | | |

| **Idea Promotion** | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
|---|---|---|---|---|---|---|---|
| IWB12: "Addressing key persons who provide necessary permissions and resource allocation" | | | | | | | |
| IWB13: "Promoting new ideas to colleagues to gain their active support" | | | | | | | |
| IWB14: "Promoting new ideas to the supervisor to gain his/her active support" | | | | | | | |
| IWB15: "Promoting the application of the new solution within one's work context" | | | | | | | |
| IWB16: "Making plans on how to put an idea into practice" | | | | | | | |
| IWB17: "Reporting regularly on the progress of the realization of ideas. /Keeping colleagues informed about the progress of the realization of ideas" | | | | | | | |
| IWB18: "Convincing others of the importance of a new idea or solution" | | | | | | | |

| **Idea Realisation** | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
|---|---|---|---|---|---|---|---|
| IWB19: "Introducing colleagues to the application of a developed solution" | | | | | | | |
| IWB20: "Testing evolving solutions for shortcomings when putting ideas into practice" | | | | | | | |
| IWB21: "Analysing evolving solutions on unwanted effects when putting ideas into practice" | | | | | | | |

| Reflection | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| IWB22: "Identifying possible triggers for change" | | | | | | | |
| IWB23: "Assessing the progress while putting ideas into practice" | | | | | | | |
| IWB24: "Defining criteria of success for the realization of the idea" | | | | | | | |
| IWB25: "Systematically reflecting on recently made experiences" | | | | | | | |
| IWB26: "Naming newly acquired knowledge" | | | | | | | |
| IWB27: "Evaluating one's behaviour on basis of one's attitudes" | | | | | | | |
| IWB28: "Mentioning possible strategies of action for comparable future situations" | | | | | | | |
| IWB29: "Expressing how one's skills have improved through experiences" | | | | | | | |

## APPENDIX B

**Table 11: Outer Loadings for Transformational leadership and Innovative work behaviour**

| | Loadings | P-values |
|---|---|---|
| ICO1 <- Individual consideration | 0.745 | 0.000 |
| ICO2 <- Individual consideration | 0.824 | 0.000 |
| ICO3 <- Individual consideration | 0.866 | 0.000 |
| ICO5 <- Individual consideration | 0.877 | 0.000 |
| ICO7 <- Individual consideration | 0.774 | 0.000 |
| IMO2 <- Individual motivation | 0.875 | 0.000 |
| IMO4 <- Individual motivation | 0.876 | 0.000 |
| IMO5 <- Individual motivation | 0.379 | 0.000 |
| IMO6 <- Individual motivation | 0.882 | 0.000 |
| IMO8 <- Individual motivation | 0.832 | 0.000 |
| INF1 <- Idealised influence | 0.674 | 0.000 |
| INF2 <- Idealised influence | 0.699 | 0.000 |
| INF3 <- Idealised influence | 0.656 | 0.000 |
| INF4 <- Idealised influence | 0.737 | 0.000 |
| INF5 <- Idealised influence | 0.800 | 0.000 |
| IST2 <- Intellectual stimulation | 0.893 | 0.000 |
| IST4 <- Intellectual stimulation | 0.780 | 0.000 |
| IST6 <- Intellectual stimulation | 0.810 | 0.000 |
| IWB10 <- Innovative work behaviour | 0.751 | 0.000 |
| IWB11 <- Innovative work behaviour | 0.825 | 0.000 |

| | | |
|---|---|---|
| IWB12 <- Innovative work behaviour | 0.700 | 0.000 |
| IWB2 <- Innovative work behaviour | 0.746 | 0.000 |
| IWB3 <- Innovative work behaviour | 0.814 | 0.000 |
| IWB4 <- Innovative work behaviour | 0.783 | 0.000 |
| IWB5 <- Innovative work behaviour | 0.839 | 0.000 |
| IWB6 <- Innovative work behaviour | 0.826 | 0.000 |
| IWB7 <- Innovative work behaviour | 0.753 | 0.000 |
| IWB8 <- Innovative work behaviour | 0.800 | 0.000 |
| IWB9 <- Innovative work behaviour | 0.702 | 0.000 |
| PSM1 <- Public service motivation | 0.665 | 0.000 |
| PSM2 <- Public service motivation | 0.853 | 0.000 |
| PSM3 <- Public service motivation | 0.761 | 0.000 |
| PSM4 <- Public service motivation | 0.858 | 0.000 |
| PSM5 <- Public service motivation | 0.882 | 0.000 |
| PSM6 <- Public service motivation | 0.793 | 0.000 |
| PSM7 <- Public service motivation | 0.856 | 0.000 |

Source: Field Survey, Afum (2021)

## APPENDIX C

**Table 12: Outer Loadings of Transformational leadership. Public service motivation and innovative work behaviours**

| Factor loading | Loadings | P Values |
|---|---|---|
| ICO1 <- Individual consideration | 0.745 | 0.000 |
| ICO2 <- Individual consideration | 0.824 | 0.000 |
| ICO3 <- Individual consideration | 0.866 | 0.000 |
| ICO5 <- Individual consideration | 0.877 | 0.000 |
| ICO7 <- Individual consideration | 0.774 | 0.000 |
| IMO2 <- Individual motivation | 0.875 | 0.000 |
| IMO4 <- Individual motivation | 0.876 | 0.000 |
| IMO5 <- Individual motivation | 0.679 | 0.000 |
| IMO6 <- Individual motivation | 0.882 | 0.000 |
| IMO8 <- Individual motivation | 0.832 | 0.000 |
| INF1 <- Idealised influence | 0.674 | 0.000 |
| INF2 <- Idealised influence | 0.699 | 0.000 |
| INF3 <- Idealised influence | 0.656 | 0.000 |
| INF4 <- Idealised influence | 0.737 | 0.000 |
| INF5 <- Idealised influence | 0.800 | 0.000 |
| IST2 <- Intellectual stimulation | 0.893 | 0.000 |
| IST4 <- Intellectual stimulation | 0.780 | 0.000 |
| IST6 <- Intellectual stimulation | 0.810 | 0.000 |
| IWB10 <- Innovative work behaviour | 0.751 | 0.000 |
| IWB11 <- Innovative work behaviour | 0.825 | 0.000 |
| IWB12 <- Innovative work behaviour | 0.700 | 0.000 |
| IWB2 <- Innovative work behaviour | 0.746 | 0.000 |
| IWB3 <- Innovative work behaviour | 0.814 | 0.000 |
| IWB4 <- Innovative work behaviour | 0.783 | 0.000 |
| IWB5 <- Innovative work behaviour | 0.839 | 0.000 |
| IWB6 <- Innovative work behaviour | 0.826 | 0.000 |
| IWB7 <- Innovative work behaviour | 0.753 | 0.000 |
| IWB8 <- Innovative work behaviour | 0.800 | 0.000 |

| | | |
|---|---|---|
| IWB9 <- Innovative work behaviour | 0.702 | 0.000 |
| Idealised influence * Public service motivation <- PSM n INF | 1.196 | 0.000 |
| Individual consideration * Public service motivation <- PSM n ICO | 1.153 | 0.000 |
| Individual motivation * Public service motivation <- PSM n IMO | 0.987 | 0.000 |
| Intellectual stimulation * Public service motivation <- PSM n IST | 1.145 | 0.000 |
| PSM1 <- Public service motivation | 0.665 | 0.000 |
| PSM2 <- Public service motivation | 0.853 | 0.000 |
| PSM3 <- Public service motivation | 0.761 | 0.000 |
| PSM4 <- Public service motivation | 0.858 | 0.000 |
| PSM5 <- Public service motivation | 0.882 | 0.000 |
| PSM6 <- Public service motivation | 0.793 | 0.000 |
| PSM7 <- Public service motivation | 0.856 | 0.000 |