PSYCHOLOGICAL CAPITAL, JOB EMBEDDEDNESS, AUTHENTIC LEADERSHIP AND INNOVATIVE WORK BEHAVIOR AMONG EMPLOYEES IN PUBLIC UNIVERSITIES IN UGANDA

BY

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DECLARATION

Declaration by Candidate

I declare that this research work is my original research project and has never been before submitted for any academic award. No part of this work may be replicated or transmitted without prior authorization from the author, co-authors, and/or Moi University.

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DEDICATION

This work is dedicated to my lovely Parents Mr. Sowedi Wamboga and Mrs. Assa Nakusi, who taught me to always put God first in all my life accomplishments.

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ABSTRACT

The current changes in the education sector, such as new teaching methods, require Universities as knowledge institutions to enhance employee innovative work behavior in order to thrive. There is a dearth of knowledge on how employee innovative behavior can be enhanced in University settings. This study aimed to establish the mediating effect of job embeddedness on the relationship between psychological capital and innovative work behavior as conditioned by authentic leadership. The specific objectives of the study are to determine the effect of psychological capital on innovative work behavior, and to establish the effect of job embeddedness on innovative work behavior. The study also sought to examine the mediating effect of job embeddedness between psychological capital and innovative work behavior, to determine the moderating effect of authentic leadership on the relationship between psychological capital and job embeddedness and to establish the moderating effect of authentic leadership on the indirect relationship between psychological capital and innovative work behavior through job embeddedness. The study was premised on the Conservation of Resources Theory, Broaden and Build Theory, and Social Exchange Theory. Out of the 5591 academic and administrative staff, the study scientifically drew a sample of 384 respondents using the Conchrans formula for sample size determination. The study used a positivist research orientation. The study adopted a cross-sectional research design and data were collected using a structured questionnaire. The data were checked for validity using the Content Validity Index and reliability using the Cronbach Alpha coefficient. The data collected was entered in the SPSS, cleaned and analyzed for correlation, descriptive statistics and inferential statistics. The data collected was analyzed using regression analysis. The control variables were gender, age, educational level and tenure. The results showed that only the respondents' education level significantly predicted innovative work behavior ($\beta=0.17$, $p<.05$). Regarding study objectives, the findings of the study revealed that: psychological capital predicts innovative work behavior ($\beta=0.79$, $p<.05$); job embeddedness predicts innovative work behavior ($\beta=0.50$, $p<.05$); and that job embeddedness partially mediates between psychological capital and innovative work behavior ($\beta=0.39$, $p<.05$). The study findings also revealed that authentic leadership moderates the relationship between psychological capital and job embeddedness ($\beta= 0.16$, $p< .05$); and that authentic leadership moderates the indirect relationship between psychological capital and innovative work behavior through job embeddedness ($\beta=.07$, $p < .05$). It was concluded that authentic leadership conditions the indirect relationship between psychological capital and innovative work behavior through job embeddedness. The study recommends that Universities design psychological capital intervention strategies to increase innovation capacity. Further research could replicate this study using longitudinal research design in a private University setting.

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OPERATIONAL DEFINITION OF TERMS

Authentic Leadership	Is the array of leader's behavior that draws from and promotes positive organizational behavior characterized by high focus on ethical climate (Walumbwa *et al.,* 2008).
Balanced processing	Is defined as the extent to which the leader portrays the ability to take critical analysis of relevant data prior to decision making as well as collecting ideas that deeply held positions (Avolio & Walumbwa, 2014).
Fit	Is the degree of compatibility between the organization and the employee, employee skills and abilities and the organization's requirements, individual and organizational culture, individuals interests and the organization's rewards (Ng & Feldman, 2010).
Hope	Defined as the positive energy that stimulates an individuals' motivation, to successfully achieve goals (Fred Luthans and Youssef-Morgan, 2017).
Idea Championing	Refers to seeking support of the newly generated concept and building coalition of supporters (De Jong & Den Hartog, 2010)
Idea Exploration	Refers to searching for new ways of improving the current products, services or thinking about them in new ways (De Jong & Den Hartog, 2010).
Idea Generation	Refers to developing novel ideas and concepts regarding novel products, services, work procedure, how to penetrate new markets among

	others with the intension to improve on the current status (De Jong & Den Hartog, 2010).
Idea Implementation	Is the ability to develop, test and modify novel products, services, work procedures among others (De Jong & Den Hartog, 2010).
Innovative Work Behavior	Is the intentional behavior of an individual to initiate novel ideas, work procedure, or work role or organization Yuan & Woodman, 2010)
Internalized moral perspective	Is the degree of leaders capability to set highly ethical and moral standards of conduct and ability to guide actions using internal moral standards and values (Avolio & Walumbwa, 2014)
Job Embeddedness	Defined as the wide range of influences that determine retention of employees (Ng & Feldman, 2010)
Link	Is the broad range of the networks formed by individuals with colleagues, projects, groups and activities in the organization (Ng & Feldman, 2010)
Optimism	Defined as one's reaction and perception and readiness to focus on good things in the future rather than bad ones in life (Fred Luthans & Youssef-Morgan, 2017)
Psychological Capital	Refers to the positive energy that individuals possess manifested in one's ability to confidently pursue and invest in the required efforts to successfully achieve challenging goals (self-efficacy), having positivity in current and future success (optimism), determination and patience in one's determination to achieve goals and

	where necessary, devising different paths to goals (hope) to succeed; and the zeal to recover from down-fall or even beyond (resilience) when beset by problems (Fred Luthans & Youssef-Morgan (2017).
Relational transparency	Is defined as the extent to which a leader portrays his or her real self to others, open sharing of information, and articulates deeply inner real thoughts and feelings, emphasising openness among individuals which provides a platform to generate and shares ideas, trials and thoughts (Avolio &Walumbwa,2014).
Resilience	Is the positive energy that activates ones patience during difficult and uncertainty (Fred Luthans and Youssef-Morgan (2017).
Sacrifice	Is the degree at which one can easily break the links by leaving the job (Ng & Feldman, 2010).
Self-awareness	Defined as the individuals' ability to demonstrate cognition of the world, understanding his or her strengths, how others perceive him or her and how he implements actions (Avolio & Walumbwa, 2014).
Self-efficacy	Refers to an individuals perceived possession of the required competence to successfully achieve and accomplish goals (Fred Luthans & Youssef-Morgan, 2017)

ABBREVIATIONS AND ACRONYMS

AAU: Association of African Universities

ALQ: Authentic Leadership Questionnaire

COR: Conservation of Resources Theory

CVI: Content Validity Index

CVI: Content Validity Index

IAU: International Association of Universities

IWB: Innovative Work Behavior

MAR: Missing at Random

MAR: Missing Completely at Random

MUK: Makerere University Kampala

NCHE: National Council for Higher Education

OAG: Office of the Auditor General

PCQ: Psychological Capital Questionnaire

PSYCAP: Psychological Capital

S-CVI: Scale Level Content Validity Index

SET: Social Exchange Theory

VIF: Varimax Inflation Factor

CHAPTER ONE

INTRODUCTION

Chapter one entails the study background, problem statement, study objectives, research hypotheses, significance of the study, and the scope of the study.

1.1 Background of the Study

Changes in the education sector, such as new teaching methods, require knowledge institutions like Universities to enhance employees' innovative work behavior in order to thrive (Ahmad, 2020; IAU, 2020). This is because an organization's innovation capacity is manifested in its workforce, which is at the frontline of developing and executing innovative ideas at work place (Swaroop & Dixit, 2017; Montani, Courcy, & Vandenberghe, 2017). Innovative work behavior refers to the intentional employee behavior to develop, nurture and execute novel work ideas (Yuan & Woodman 2010; Luthans & Youssef-Morgan, 2017). Innovative activities in Universities involve the acceptance, development, and implementation of new services like research projects, new courses, and teaching resources, sound financial management, and improved skills and work processes such as generation and use of new technology (Al-Husseini & Elbeltagi, 2018). Universities are a think-tank for innovation, and therefore employees need to be innovative to keep up with educational innovation (De Rijdt et al. 2016).

Despite the urge for innovation in Universities, staff innovative capacity remains a challenge on the global scene. For example, despite having a highly innovative higher education system in Asia (Harvard Business Review, 2017, Li, Ye, & Wong, 2018), the Asian higher education system still faces innovative challenges due to resistance to change. In Africa, a plethora of evidence shows University staff's inability to demonstrate innovative behavior (WEF, 2018; Mohamedbhai, 2014). The Association

of African Universities Report (AAU, 2013) affirms that the ability of university personnel to adapt new work techniques, conduct research, develop new information, and adopt new methods of work execution is limited. This situation is not different in Uganda, as evidence shows that the innovative capacity of University staff in Uganda is shown to be inadequate, as demonstrated by limited research, generation of knowledge, and capacity for adoption (Kasule, Wesselink, & Mulder, 2016; Kasozi, 2019, Wadero, 2021). The increasing demand in the labor market for innovative workers requires Universities to have innovative staff capable of delivering innovative skills to graduates (Ahmad, 2018).

From a theoretical perspective, Hobfoll's (2002) Conservation of Resources Theory argues that innovative individuals need to acquire, retain and save cognitive personal resources, such as psychological capital, to succeed, since innovation is characterized by risks and challenges (Luthans & Youssef-Morgan, 2017; Hobfoll, Halbesleben, Neveu, & Westman, 2018). Psychological capital dimensions of hope (which is the determination and patience in one's determination to achieve goals and, where necessary, the developing different pathways to goals), self-efficacy (the ability to pursue and invest confidently in the efforts needed to achieve challenging goals), resilience (the zeal to recover from a downturn or even beyond), and optimism (having positivity in current and future success) are cognitive resources which enable the employees their ability to succeed in certain behaviors (Youssef & Luthans, 2007; Luthans, Youssef, & Avolio, 2015)

In line with the assertion of conservation of resources theory, findings by prior scholars acknowledge the antecedent role of psychological capital on activating innovative work behavior (Yan, Wen, Li, & Zhang, 2020; Wojtczuk-Turek & Turek, 2015;

Sameer, 2018; Akhtar, Khan, and Suleman, 2018; Lan, 2019; Yu, Li, Tsai, & Wang, 2019; Ozturk & Karatepe, 2019; Ziyae, Mobaraki & Saeediyoun, 2015). Innovative work behavior is characterized by uncertainty, and employees need personal psychological resources like resilience, self-efficacy, hope and optimism to energetically pursue innovative activities (Luthans & Youssef-Morgan, 2017). For example, when employees face uncertainties, psychological capital plays a role as a positive psychological resource that gives them positive energy. Therefore, psychological capital resources enable individuals to achieve innovative objectives (Hobfoll *et al.,* 2018).

Relatedly, the Conservation of Resources Theory postulates that individuals with high psychological capital poses more pleasant interactions with their coworkers and stronger organizational ties (Lan, 2019). Job embeddedness is an important relationship resource that influences innovative work behavior (Hobfoll, 2011). Conservation of resources theory argues that employees who have attained job embeddedness resources tend to protect the acquired resources by displaying extra-role behaviors like innovative work behavior to secure their stay in the organization. Job Embeddedness is an array of social, financial, and psychological factors that influence employees' retention within the organization (Kiazad, Holtom, Hom, & Newman, 2015). Since employees with high psychological capital have a higher job adoptability, more harmonious relationships with workmates and have deeper organisational links (Sunt, Zhao Yangi, Fan, 2012), they are embedded in the organisation by these factors and display innovative work behaviours in order to secure their stay in the organisation. The existing literature reveals a significant link between job embeddedness and the individual's level of innovativeness (Susomrith & Amankwaa, 2019; Shah *et al.,* 2020). For example, job

embeddedness facets of links (relationship resource), fit (compatibility of the career goals of the employee, organizational values with requirements at work, and the culture of the organizational), and sacrifice (a resource that protects loss of resources) are resources that employees protect by demonstrating innovative work behavior (Halbesleben & Wheeler, 2008).

Furthermore, based on the conservation of resource theory, leadership authenticity stimulates employees' inner motivation by enhancing close relationships and open communication, which are key to raising psychological capital (Mubarak & Noor, 2018). Authentic leadership is an array of leadership behaviors that draws upon and generates psychological capabilities and an ethical climate to nurture higher internalized moral perspective, relational transparency, balanced information processing, and self-awareness of leaders relating with subordinates, nurturing affirmative self-development (Avolio, Walumbwa, & Weber, 2009; Avolio, Wernsing, & Gardner, 2018). Authentic leaders activate employee psychological capital by providing a favorable environment for support, empowerment, recognition, fair treatment, and enabling employees to be authentic and innovative (Petersen, 2015). The favorable environment provided by an authentic leader is part of the organizational elements of employee job embeddedness. The Embedded employees exhibit innovative behavior to reciprocate the organization (through authentic leaders).

Although existing literature links psychological capital and individuals' ability to exhibit innovative work behavior, most studies were conducted on samples taken from different organizations with different innovative cultures. Yet, Hsu and Chen (2017) argue that innovative culture of the organization influences employees' innovative behavior. Besides, most of the studies focused on creative performance, which is only

part of innovative behavior (Abbas & Raja, 2015). More so, prior studies on antecedents of innovative work behavior have been focused in Western countries (Zhou & Velamuri (2018), and less focus is paid to service sectors such as public University settings (Lai, Lui, & Tsang, 2016; Javed, Naqvi, Khan, Arjoon, & Tayyeb, 2019; Thurlings, Evers, & Vermeulen, 2015; Roffeei, Yusop, & Kamarulzaman, 2018).

Luthans and Youssef-Morgan (2017) also argued that the link between psychological capital and innovative work behavior is still inconclusive and called for further explanation of the factors like authentic leadership that facilitate the relationship. This study responds to this call by establishing a link between psychological capital and innovative behavior through job embeddedness, conditioned by authentic leadership, a link that has not been established in the literature.

1.2 Statement of the Problem

The innovation capacity of University staff plays a vital role in shaping change in education and innovative practices (Ahamad, 2020). The University staff in Uganda are mandated to generate and advance knowledge through research and innovation and its application through teaching and publication (NCHE, 2017; Wadero, 2021).

However, University staff innovation skills in Uganda are low, characterized by low teaching quality, research and publication, knowledge generation and adoption capabilities, networking, and entrepreneurship (Kasule, 2015; Kasozi, 2019). Similarly, a survey by Sembetia (as cited in Kasozi, 2019) revealed that PhD holders' research capacity at Ugandan Universities is low. According to the recent survey of public and private Universities, the innovative capacity of Ugandan Universities remains low, which showed that even PhD graduates lack practical skills (Wadero, 2021).

This exposes the country to the risk of lagging behind since Universities are think tanks for innovation (Baryamureeba *et al.,* 2013; Bennewarth *et al.,* 2011; Kibwika, 2006). For instance, many employers in the CoBAMS (2011) Strategic Plan pointed out that the current graduates are not sufficiently hands-on despite impressive transcripts, which calls for another research study to establish measures to enhance staff's innovative behavior in public Universities in Uganda.

From an empirical perspective, studies have revealed that positive psychological capital stimulates innovative behavior (Yan *et al.,* 2020; Ozturk *et al.,* 2019; Agnieszke-Turek, 2015), but most studies on innovative work behavior are directed to profit-oriented organizations, and the education sector has been ignored (Thurling *et al.,* 2015; Javed, *et al.,* 2019). More so, the antecedents of psychological capital, like authentic leadership, need further exploration (Luthans & Youssef-Morgan, 2017). This study, therefore, responds to this call by examining the conditional effect of authentic leadership on the indirect link between psychological capital and innovative work behavior through job embeddedness.

1.3 General Objective

The research study sought to establish the influence of psychological capital, job embeddedness, and authentic leadership on innovative work behavior in public Universities in Uganda.

1.3.1 Specific Objectives

i. To examine the influence of psychological capital on innovative work behavior in public Universities in Uganda.
ii. To determine the effect of job embeddedness on innovative work behavior in public Universities in Uganda.

iii. To examine the mediating role of job embeddedness on the relationship between psychological capital and innovative work behavior in public Universities in Uganda.

iv. To establish the moderating effect of authentic leadership on the relationship between psychological capital and job embeddedness in public Universities in Uganda.

v. To determine the moderating effect of authentic leadership on the indirect relationship between psychological capital and innovative work behavior through job embeddedness in public Universities in Uganda.

1.4 Research Hypotheses

The study tested the following hypotheses to achieve the corresponding study objectives

H_{01}: Psychological capital has no significant effect on innovative work behavior

H_{02}: Job embeddedness has no significant effect on innovative work behavior

H_{03}: Job embeddedness has no mediating effect on the relationship between psychological capital and innovative work behavior

H_{04}: Authentic leadership has no moderating effect on the relationship between psychological capital and job embeddedness

H_{05}: Authentic Leadership has no moderating effect on the indirect relationship between psychological capital and innovative work behavior through job embeddedness

1.5 Significance of the Study

The findings of the study could be of significance to the following stakeholders.

To the National Council for Higher Education (NCHE), the study findings could help redesign and review the higher education curriculum to integrate the key aspects needed to be covered by the employees to execute their tasks innovatively and impart in students the necessary skills required for innovation.

To the management of public Universities, the study findings could act as a benchmark for human resource management decisions like recruitment, rewards management and promotion by focusing on university staff capability to create new work ideas.

To scholars, the study findings could help further scholars replicate the study's findings into other study settings. Theoretically, study findings could fill the literature gap regarding the moderating role of authentic leadership on the indirect relationship between psychological capital and innovative work behavior through job embeddedness. Such findings are likely to facilitate efforts to institute measures that maximize the benefits of embracing innovative work behavior and thus help the implementing organization to be more competitive than other firms in the similar industry.

To Policymakers, the study findings could be used to understand and eventually develop best practices regarding the role of higher learning institutions in Uganda in the development of the economy. Thus, this study may go a long way in contributing to future policy frameworks development.

1.6 Scope of the Study

The study scope was narrowed to examining the link between psychological capital, job embeddedness, authentic leadership and innovative work behavior. Psychological capital was studied as a four dimensional construct comprising of resilience, self-efficacy, optimism, and hope. Job embeddedness was studied as a three dimensional construct comprising of link, fit and sacrifice. Authentic leadership used the dimensions of internalized morel perspective, relational transparency, balanced processing, and self-awareness. Innovative work behavior was studied as a four dimensional construct comprising of idea exploration, generation, championing and implementation. Regarding the study population, the study targeted academic and administrative staff from the ten public Universities situated in different parts of Uganda. The justification for studying public Universities in Uganda is that they are the grand Universities in Uganda expected to be the first movers of innovation. However, they are currently facing the challenge of enhancing employee innovative performance (Wadero, 2021; Kasule, 2015). The respondents were employees with a full time recognized working employment with the respective University. The study took a period of three years (May 2019 and September 2020) because it is within this period that continuous reports have indicated the inadequate innovative capacity of public Universities in Uganda (Wadero, 2021).

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Chapter two entails the review of related literature in line the hypothesized relationships between the study variables. It examines the research on psychological capital, job embeddiness, authentic leadership, and innovative work behavior. The chapter includes a theoretical review of the theories that underpin the research variables, as well as the conceptualization of the study variables. The chapter also covers the literature relating psychological capital and innovative work behavior; job embeddedness and innovative work behavior. The chapter further reviews literature regarding the mediation role of job embeddedness on the relationship between psychological capital and innovative work behavior; the conditional effect of authentic leadership on the link between psychological capital and job embeddedness; and the moderating effect of authentic leadership on indirect relationship between psychological capital and innovative work behavior through job embeddedness.

2.2 Concept of Innovative Work Behavior

In congruence with De Jong and Den Hartog (2010); Yuan and Woodman (2010), and Janssen (2000), this study conceptualizes innovative work behavior as the advancement, introduction and execution of novel ideas for products or service, technology or manufacturing process and work procedures by employees. This study adopts the definition by Yuan and Woodman (2010), who defines innovative work behaviour as the intention to introduce or implement new work ideas, products and work processes by an employee while executing organizational work roles. In other words, innovative work behavior comprises an individual's deliberate development and

execution of novelties, whether generated within the organization or acquired from other sources, in order to improve their work tasks or work processes of the organization in general. These behaviors include problem solving, persuading others to support novel ideas, developing novel methods of conducting work, and exploring new methods of work and technologies.

Innovative work behavior refers to a collection of interconnected behaviours with distinct features. Employee creative work behavior involves both the invention and introduction of new ideas (whether original or borrowed from others), as well as the realization or execution of new work ideas (Yuan & Woodman, 2010). In line with De Jong and Den Hartog (2010), innovative work behavior was studied in the four dimensions of idea exploration (the process of seeking improvements to existing products, services, and work procedures or attempting to view them differently), idea generation (the process of developing concepts for novel products, services, work processes, the entry of new markets, and the like with the intention of improvement), and idea championing (the process of securing support and forming a coalition of support) and idea implementation (new products, services, work processes and such like are developed, tested and modified). Existent literature shows that different scholars have come up with varying definitions of innovative work behavior, and at times used interchangeably with the concept of creativity (Dorenbosch, Engen, & Verhagen, 2005).

While creativity and individual innovation appear to be synonymous (and often interchangeably used), innovation is more than creativity. Creative activity is seen as a subset of innovative behavior since it focuses exclusively on one's generation of novel work ideas (Amabile, 1988), while innovative work behavior emphasizes ability

to generate and execute novel ideas that have the potential to produce some value (Hammond, Neff, Farr, Schwall, & Zhao, 2011; Yuan & Woodman, 2010). Literature that discusses innovative work behavior often distinguishes innovation from creativity (e.g., Scott & Bruce, 1994). Typically, creativity is defined as the generation of unique, conceivably beneficial ideas (Yuan & Woodman, 2010). While employees may discuss the generated ideas colleagues, only when such unique and possibly valuable ideas are successfully applied that they are regarded innovative (Yuan & Woodman, 2010). Hence, creative behavior is a part in innovative work behaviour (Ma Prieto & Pe´rez-Santana, 2014). Innovative behavior is expected to result in innovative outcomes. In any case, it cannot be argued that it is limited to application alone because innovative behaviors involves all employee behaviors that are directed toward the creation of novel products or services, as well as unique work procedures (Farr & West, 1990; Scott & Bruce, 1994). As a result, creative behavior is included in innovative behavior, which is most evident in the early stages of innovation, when obstacles or performance gaps are identified and ideas are generated in response to a perceived need for innovation (West, 2002). Employee creativity is paramount to the organizational innovation progress, and creative individuals are more innovative (Hirst *et al.,* 2011). Furthermore, Yuan and Woodman (2010) claim that the ability to develop new ideas is a crucial component of innovativeness. The first step of innovation, according to Bear (2012) is creativity, which builds the groundwork for following stages of innovation. Hence, creative work behavior is a component of innovative work behavior where the employee recognizes and generates ideas which is manifested in the initial phase of innovative work behavior.

In line with Janssen (2000), many of the definitions of innovative work behaviour refer to it as a multi-dimensional process which involves the intentional behaviour by employees to introduce and execute new and valuable work ideas, products or procedures (Farr & Ford, 1990). It could therefore, be perceived as the ability of employees to come up with and execute Novatel ideas. According to Scott and Bruce (1994), Innovative work behaviour is a multi-stage process that encompasses idea generation, coalition building, and implementation. This innovative work behaviour perspective has progressed from a one-dimensional model (Janssen, 2000) to a bi-dimensional model advanced by Krause (2004) and Dorenbosch (2005), and a tri-dimensional model advanced by Reuvers et al. (2008). Scholars have identified a number of dimensions of innovative work behavior (Axtell *et al.*, 2000; Janssen, 2000; De Jong & Den Hartog, 2010). Researchers looked at four interrelated sets of behavioural acts to measure innovative work behaviour: problem recognition, idea generation, idea championing, and idea execution. The four behavioural dimensions (problem recognition, idea generation, idea championing, and idea execution) demonstrate an employee's potential to be creative and innovative (De Jong & Den Hartog, 2010).

2.3 Concept of Psychological Capital

The concept of ‘psychological capital’ comprises of two keywords; ‘psychology' and ‘capital'. The word ‘capital' is used to mean the skills and knowledge equipped by an individual employee expressed by their value to an organization. Psychology involves studying and understanding normal wellbeing of people, their productivity, ability to perform optimally, and the realisation of one's full potential (Seligman & Csikszentmihalyi, 2000; Fred Luthans, Avey, Avolio, & Peterson, 2010).

A combination of the words ‘psychology’ and ‘capital’ to form the term ‘psychological capital’. Psychological capital digs its roots optimistic psychology and is thus at times known as positive psychology (Niemiec, Shogren, & Wehmeyer, 2017; Gooty, Gavin, Johnson, Frazier, & Snow, 2009). Positive psychology concerns the use of scientific methods establish factors that facilitated growth and development of individuals, groups and communities (Fred Luthans *et al.,* 2010). Currently, psychological capital has been integrated into positive organizational behavior literature (Fred Luthans & Youssef, 2004).

Psychological capital is defined as an individual's positive cognitive state of mind that can be enhanced, which is best described by self-efficacy (belief in one's self ability to invest in the required effort to successfully execute challenging tasks); optimism (assigning positive expectation of success now currently and in the future); hope (persisting in uncertainty towards goal achievement); and resiliency (the ability to rebound from difficult situations and beyond to achieve success) (Fred Luthans, Youssef, & Avolio, 2015). Fred Luthans, Avolio, Walumbwa, and Li (2005) define psychological capital as "the fundamental psychological aspects of an individual's general positive character, which is accurately described as the positive state of mind to conform to the norms of positive organizational performance."

Psychological Capital in this study is defined in terms of hope, resilience, efficacy, and optimism as derived from research conducted by the prior scholars (Fred Luthans *et al.,* 2015). As in prior studies (e.g., Ziyae *et al.,* 2018; Agnieszka Wojtczuk-Turek, 2015; Sweetman *et al.,* 2011), this study first established the individual effects of the psychological capital dimensions (i.e., optimism, hope, resilience, and efficacy) on innovative work behaviour, and then established the synergetic effect of the composite

psychological capital on innovative work behaviour. Hope refers to the positive energy that drives an individual's motivation in order to attain goals (Avey, Reichard, Luthans, & Mhatre, 2011). Self-efficacy is referred to as the individual's perceived possession of the necessary competence to successfully achieve and complete goals (Avey *et al.*, 2011). Furthermore, optimism is the emotional and cognitive predisposition to assign and focus on good things rather than unpleasant things; (Richardson & Waite, 2002), and the perception of good things is more essential than the perception of negative things in life (Seligman, Steen, Park, & Peterson, 2005). Researchers have also identified resilience as a positive behaviour that increases one's tolerance for challenging conditions and anxieties such as overcoming adversity (Kim & Choi, 2010; Richardson & Waite, 2002).

The four dimensions of psychological capital examined in this study were; self-efficacy (belief in one's ability to invest in the required efforts to execute challenging tasks successfully); hope (persisting in the face of uncertainty in the pursuit of a goal); optimism (assigning positive expectations of success currently and in the future); and resiliency (the ability to rebound from difficult situations and go beyond to achieve success) (Fred Luthans *et al.*, 2015). Psychological capital, according to Fred Luthans and colleagues (2007), comprises of self-efficacy, resilience, hope, and optimism, which improves one’s ability to demonstrate innovativeness while executing work duties.

2.4 The Concept of Job Embeddedness

The concept of job embeddedness was advanced by Mitchell *et al.* (2001) to explicate the reason for people stay in the organization. Job embeddedness explains the degree of individual’s enmeshment in the organization or job (Sekiguchi, Burton, & Sablynski,

2008). Job embeddedness is used to refer to the collection of complex set of reasons that retain an employee on the job. Job embeddedness is a two-dimensional construct comprising of organizational and community embeddedness (Mitchell *et al*., 2001). The two dimensions are each sub categorized into three components of link, fit and sacrifice (Holtom, Mitchell, & Lee, 2006; Mitchell *et al*., 2001). According to the conceptualization by Ng & Feldman (2010), the concept of job embeddedness is synonymous with organizational embeddedness since the factors that embed an individual on the job eventually embed the individual in the organization.

Job embeddedness theory offers an understanding of the factors in an organization like rewards and growth opportunities and as well community factors that induce their stay in the organization. Organizational embeddedness factors are the influencing factors prevalent in the organization whereas community embeddedness factors are the one prevalent in ones community of residence (Mitchell *et al.,* 2001). As far as categorization of these two types of job embeddedness is concerned, "links" are the factors in the organization and community like relationships with colleagues and management, employee-organization ties and community ties that induce the employee stay in the organization. "Fit" is the perceived degree of compatibility between the employee's skills, aspirations and abilities and the organization's requirement and their community activities. While "Sacrifice" is the perceived loss the employee will get (in terms of job-related remuneration and community benefits) by leaving the organization. These influential factors are a web of components that improve the bond between the employees and organization as well as the community where they reside (Mitchel *et al.*, 2001).

An Individual's job embeddedness may result from fit, link and sacrifice emanating from living in their particular organizations or communities. The antecedent role of organizational embeddedness and community embeddedness may not necessarily be the same across the work behaviors (Harman, Blum, Stefani, & Taho, 2009). Existing literature reveals that irrespective of community embeddedness, organizational embeddedness predicts organizational outcomes (Lee et al., 2004; Allen, 2006), and hence this study focused on the organizational embeddedness.

In line with scholars like Kiazad *et al.* (2015) and Ng & Feldman (2007), Job Embeddedness is studied in terms of Links (organisational connections), fit (perceived match between the employee and the organisation) and sacrifice (perceived loss for leaving the organisation). In this study, job embeddedness is conceptualised as a complex array of factors in the organisation that influence employees' stay in the organisation.

The organisational embedding factors are links, fit and sacrifice, present at the employee's workplace (Kiazad *et al.*, 2015). According to Mitchell *et al.* (2001), organisational link refer to connections both formal and informal between person, groups and organisation. Fit is referred to as the degree to which the employee abilities and expectations are compatible with the organisation's demands, rewards and culture (Ng & Feldman, 2009). Organizational Fit occurs when an individual perceives him/herself to be compatible with the organization (Felps *et al.*, 2009).

Links are the connections both formal and informal that bond people, locations and groups in the organization (Ng & Feldman, 2009). When the individual and his or family is connected to the organization, it becomes hard to leave and such a person becomes embedded (Felps *et al.*, 2009). According to the concept of link, employees

strive to develop connections in the organization that are both formal and informal and job embeddedness increases with the increase in the connections (Holtom, Mitchell, & Lee, 2006).

Organizational Sacrifice is the perceived ease of breaking the sacrifices by leaving the job (Ng *et al.,* 2009; Kiazad *et al.,* 2015). Sacrifice is the physical and perceived psychological cost of quitting the job and the cost may be financial or social (Felps *et al.,* 2009). When the employee perceived cost is high, their embeddedness increases (Holtom *et al.,* 2006; Ng *et al.,* 2009). Sacrifice also encompasses the employees psychological and perceived cost of changing the job. For instance, the psychological costs include the cost of leaving friends, and favorable workplace conditions while financial costs include expenses associated with relocation (Fields, Dingman, Roman, & Blum, 2005). Sacrifice also means the employees perceived opportunity cost foregone which is the psychological convenience the employee sacrifices by quitting the current job (Park & Lee, 2004).

2.5 Concept of Authentic Leadership

The origin of authenticity is traced from the Greek philosophy that has remarkably secured a place in the philosophical writings and is referred to as "thine own self be true" (Gardner & Schermerhorn, 2004; Harter, 2002). Authenticity, according to scholars, is described as knowing oneself, accepting oneself, and keeping loyal to oneself (Avolio & Walumbwa, 2014).

Authenticity lies at the heart of the characteristics of true leadership (Peterson *et al.,* 2012). Authentic leadership entails more than being truthful to oneself according to the argument by (Walumbwa *et al.,* 2008). Scholars such as Walumbwa *et al.* (2008) defined authentic leadership as having four facets: balanced processing, relational

transparency, self-awareness, and internalized moral perspective. According to Walumbwa *et al*., Authentic leadership is "a sequence of leadership behavior that draws on and fosters both positive psychological capacities, and a positive ethical climate in order to promote greater self-awareness, an internalized moral perspective, balanced information processing, and relational transparency on the part of leaders working with followers, fostering positive self-development" (2008). Walumbwa *et al.* (2008), Authentic leadership comprises of self-awareness, internalized morality, relational transparency, and balanced processing which are Kernis' four components of authenticity .

Authentic leadership is a four-dimensional construct according to Walumbwa *et al.* 2008), comprising of self-awareness (the extent to a leaders awareness of his or her own weaknesses and strengths, others' perceptions of him or her, and the impact he or she has on others), balanced processing (the extent of s leader's ability to analyze relevant data before drawing conclusions), and influence (the extent to which the leader has the ability to influence others). The ability of a leader to create high moral and ethical standards, as well ability to express quality decision making and consistent behaviors with internalized ideals, are other essential considerations of authentic leadership. The current study used Walumbwa *et al*. (2008)'s authentic leadership definition, as well as the four components that have been empirically validated to be key to authentic leadership. Authentic leadership is a combination of the four components (Walumbwa *et al.,* 2010) The ability of a leader to know oneself and express self-truthfulness is pertinent to authentic leadership (McKenzie & May, 2003). The dimension of self-awareness means that the leader is cognizant of personal strengths, weaknesses and how the leader impacts others which mean that the leader continually examines these

strengths and how they affect others. This reexamination equips the leader continually about his limitations and weaknesses and they will try to modify themselves in order to correspond their individual preferences to the society demands and preferences (Gardner, Cogliser, Davis, 2011). Self-understanding, openness to objective self-recognition (e.g. appraising desirable and unattractive aspects of oneself), actions and interpersonal relationship orientation" are all characteristics of authentic leadership, which is concerned with how people develop their own sense of identity (Gardneret *et al.*, 2011).

Authentic leaders focus on moral and ethical considerations as guided by moral standards even when the ethical issues are contrary to organizational and group interests (Peus, Wesche, Streicher, Braun, & Frey, 2012). The authentic leadership component of relational transparency is the ability to communicate one's actual via valuing and achieving openness and sincerity in close encounters (Avolio & Gardner, 2005). The component of balanced processing is concerned with the indication of a fair decision-making process by analyzing information objectively.

2.6 Theoretical review

Theory provides a basis upon which to advance knowledge in a systematic way. Broaden-and-build, social exchange and conservation of resources theories provided the theoretical anchor for the research study. This section begins by discussing the conservation of resources theory and how it grinds the relationship between psychological capital, job embeddedness, authentic leadership and innovative work behaviour. It further articulates how Broaden-and-build theory grinds the relationship between psychological capital and innovative work behaviour. The section also discusses social exchange theory and how it links authentic leadership and innovative

work behaviour. Psychological capital and its interactions with job embeddedness, authentic leadership in relation to innovative work behavior among employees are then discussed in the light of the above theories.

In literature, the application of theory to enhance knowledge and its interpretation is highly praised. Because psychological capital as an antecedent is constantly changing, more empirical and theoretical evidence is needed to support its application in the ever-changing organizational environment. The conservation of resources theory (COR) by Hobfoll (1989) is used as the main theory of this study to explain the effects of psychological capital, job embeddedness, and authentic leadership on innovative work behavior. The broaden and build theory, componential theory of innovation, and social exchange theory are relied upon to expound the explaining the link between psychological capital, job embeddedness, authentic leadership and innovative work behavior.

Theory provides a basis upon which to advance knowledge in a systematic way. Since psychological capital is as an antecedent is always evolving, bringing more empirical and theoretical evidence to bear on innovative work behaviour is necessary in supporting its application. The theory of Conservation of resources, Broaden-and-build theory and social exchange theories provided the theoretical basis for this study. This section begins by discussing the conservation of resources theory, Broaden-and-build theory and social exchange theory. Psychological capital and its interactions with job embeddedness, authentic leadership in relation to innovative work behavior among employees are then discussed in the light of the above theories.

2.6.1 The Conservation of Resources Theory

The Conservation of Resources (COR) theory was developed by (Hobfoll, 1989). The theory contends that individuals are intrinsically driven to acquire, preserve and protect valuable resources and therefore seek to secure such resources for survival. Hobfoll (2018) argues that resources can be personal and therefore individual characteristics are also resources employees strive to acquire preserve and shield. Hobfoll (2011) argues the since personal psychological resources are personal characteristics, individuals therefore seek to obtain, preserve and protect these resources. The psychological resources of hope, self-efficacy, resilience and optimism are the resources individuals secure.

The theory argues that individuals tend to invest in psychological resources which internally and externally strengthens them towards a secure future and lessen a future loss. The Innovation process is characterized by nonlinearity, uncertainty and likely hood of losses, failure, and setbacks obstacles. Employees who have acquired a pool of psychological capital resources leverage these resources to overcome such setbacks and negative outcomes. Luthans and Youssef-Morgan (2017) argues that psychological capital resources can help employees during such decline and hence these psychological resources provide grounds for their investment in innovative work behavior.

The theory further posits that relationships form part of the available important resources, which explain individual's behavior (Hodfoll, 2002). Job embeddedness is a reflection of the relationship's employees have with the organization reflected in the collection of factors that that prevent the employees from quitting (Mitchell, Holtom, Lee, Sablynski, & Erez, 2001). The high level of organizational embeddedness implies high relationship between the employee and the organization and colleagues, marched

and adoptive working environment and high-perceived sacrifice for leaving the organization (Ng & Feldman, 2010). The employees with high job embeddedness will portray extra-role behaviors like innovative work behavior in a bid to protect their resources through employment security.

According to Hobfoll (2002) further contends that employees tend to invest in personal resources like psychological capital resources to prevent the loss of valuable benefits the employee gets from the organization like perks, salary and good leadership. This research argues that employee invest in their physical, emotional and psychological resources to protect loss of organizational valuable by exhibiting innovative behavior. Further, the employees who have acquired resources in the organization great perception of sacrifice when he/she quits the job and therefore invest their physical and psychological resources to obtain more valuable resources (Hobfoll *et al.,* 2018) which may result to the investment of more efforts to display innovative work behavior.

2.6.2 Broaden-and- build theory of positivity

The study was further anchored on Fredickson's (2001) broaden and build theory of positivity to explain the influence of psychological capital on innovative work behavior. Emotional positivity, according to the hypothesis, broadens people's thoughts and activities formed in their heads (Fredickson, 2001; Fredickson, 2004). Their ability to demonstrate innovative behaviors such as sharing unique ideas and suggestions for improving work procedures improves as their mindset broadens (Avey, Luthans, Youssef, 2010). Emotional positivity, according to the notion of boaden and build, broadens one's thinking attention patterns (Fredickson, 2001). Individuals' positive emotions are generated by self-efficacy, resilience, hope, and optimism, according to

Avey, Wernsing, and Luthans (2008) and Avey Reichard, Luthans, and Mhatre (2011), and these resources also produce positive feelings.

As a result, positive emotions are used by psychological capital resources such as hope, self-efficacy, resilience, and optimism to develop a bigger thought-action repertoire that is evident in the individual's innovative behavior. Because of their positive mind-set, psychological capital such as resilience, hope, self-efficacy, and optimism are useful in problem-solving and supporting innovative work behavior (Luthans *et al.*, 2015). Employees with a positive mindset can also solicit support of ideas from colleagues and turn such ideas into action (Luthans *et al.*, 2015). Individuals with psychological capital resources also have the motivational, cognitive, and decisional components (Bandura & Lockey, 2003) that enable them to carry out innovative work ideas. Employees that are psychologically positive also have the cognitive ability to regulate themselves (Hobfoll, 2002), which improves proactivity, initiative, and self-discipline, all of which are necessary for achieving innovative goals (Luthans, Luthans, & Luthans, 2004; Luthans & Doh, 2018).

It is argued in this study that psychologically positive employees who have self-efficacy, hope, optimism and resilience resources use positive emotions that broaden their thought and action inventories that are manifested in innovative work behavior. Given that positively minded people are creative, the broaden portfolio of psychological capital resources may enhance creative thinking and problem-solving capacities of individuals (Rego, Sousa & Marques, 2012). These positively minded people are having the ability to generate ideas, seek approval of the generated ideas from colleagues and implement their ideas.

2.6.3 Social Exchange Theory (SET)

The social exchange theory was advanced by Thibaut & Kelley (2008) to explain the nature of human relationships. The theory argues that individuals' relations depend on analysis of costs and benefits where humans reciprocate other parties based on the cost-benefit perception. The principle of reciprocity is central to the concept of social exchange theory and is one of the most fundamental rules controlling human conduct (Zoller & Muldoon, 2019). Authentic leaders engage in a transaction process with their followers based on reciprocity and value consistency, which is based on the social exchange theory, which increases good feelings and resources (Ilies, Morgeson, & Nahrgang, 2005). Based on the assertions of Ilies *et al.* (2005) and Ciftci and Erkanli (2020) this transaction generates an increase in psychological capital resources of followers.

The increase in followers' psychological capital makes them more optimistic, resilient and hopeful during difficulties (McDowell, Huang, & Caza, 2018; El Fath & Radikun, 2019; Schuckert, Kim, Paek, & Lee, 2018) which are internal resources which employees seek to accumulate, protect and according to conservation of resources theory. Employees who have acquired these resources get embedded due to the perceived match with the organisation and perceived loss of these resources by leaving the organisation (Hobfoll, 2002). It is also argued that the supportive environment provided by authentic leaders through the just and transparent style of management improve employee's psychological capital and as well forms part of the factors that embed employees in the organisation (Luthans, 2007; Erkutlu & Chafra, 2017). It is therefore argued that authentic leader's behaviour of transparency and just treatment of employees is part of the factors that embed employees in the organisation as well as increasing followers' psychological

resources which are also personal internal factors that enmesh employees in the organisation.

The social exchange theory posits that human relationships are a matter of costs and rewards that people use to evaluate the worth of a relationship (Abdullah *et al.*, 2012). Cost is part of a relationship where parties have to work and get exhausted. An example of the cost is the relational transparency and balanced processing by the leader to the employee. Balanced processing, for instance, is a cost because the leader has to make fair decisions putting into consideration the needs of the employees where all information is analyzed objectively. In line with the norm of cost-benefit analysis and reciprocity, the employees working with authentic leaders will leverage their acquired psychological resources (cost on part of the employee) and put in efforts to exhibit extra-role behaviours like innovative behaviour in a bid to reciprocate the organisation (through authentic leader) for the fair and just treatment. Furthermore, in a bid to protect the loss of these resources (psychological resources, just treatment from leaders etc.), employees will portray innovative behaviour to secure their stay in the organisation (resource protection).

2.7 Empirical Review of Literature

This chapter entails the empirical review of related literature. It reviews literature regarding the hypothesized relationship between the study variables. In line with the stated study hypothesizes, the empirical literature discusses the literature regarding the linkage between psychological capital and innovative work behavior, job embeddedness and innovative work behaviour, mediating effect of job embeddedness on the relationship between job embeddedness and innovative work behaviour, the moderating role of authentic leadership on the relationship between psychological

capital and job embeddedness, and the moderating role of authentic leadership on the indirect relationship between psychological and innovative work behavior through job embeddedness.

2.7.1 Psychological Capital and Innovative Work Behavior

Psychological capital digs its roots in the history of positive psychology (Luthans, and Youssef-Morgan, 2017). In the realm of positive organizational behavior, psychological capital is a relatively new concept (Fred Luthans & Youssef, 2004). Positive organizational conduct emphasizes an emphasis on an employee's abilities rather than their deficiencies (Nelson & Cooper, 2007). The central norm of positive organizational behavior is paying focus on positive side of the employee in terms of strengths as opposed to their weaknesses (Woods, Mustafa, Anderson, & Sayer, 2018).

Psychological capital is recognized in positive organizational literature as a construct constituting four dimensions of self-efficacy, hope, resilience and optimism (Luthans, & Youssef-Morgan, 2017). Self-efficacy is the belief in one's ability to successfully execute activities (Luthans *et al.*, 2015). Hope is the positive perception that energizes one's ability to achieve goals and devise alternative means to goal achievement (Luthans, & Youssef-Morgan, 2017). Optimism is the ability to expect good things in future rather that negative ones (Yan, Wen, Li, & Zhang, 2020).). Resilience is one ability to endure during challenging situations (Choi & Lee, 2014). Therefore, the construct of psychological capital reflected by the four dimensions of resilience, hope, self-efficacy and optimism is seen as the positive energy that defines the positive psychological state of development for individuals. Researchers like Fredickson (2001) and Hobfoll (2002) have revealed that psychological capital is a higher order variable that should not be studied in isolation but rather provide support for each other through

synergetic efforts. Scholars like Luthans, Avolio (2007) and Sweetman, Luthans, Avey, & Luthans, 2011) also support the notion that studying composite psychological capital predicts its outcomes better than its individual constructs.

Individuals rich with psychological capital poses the internal resources that intrinsically motivate them to perform innovative work behavior. Consistent with Conservation of Resources Theory, employees seek to secure and protect the loss of these resources they value (Hobfoll, 2002). According to the Conservation of Resources Theory, acquiring or protecting resources is an evolutionary human urge for survival (Hobfoll *et al.,* 2018). As a result, people work hard to acquire precious resources, particularly psychological resources that will help them avoid stress and improve their overall well-being. Psychological capital are positive measurable capacities that can be enhanced to achieve desired organizational out comes (Luthans, 2002) like innovative behavior.

Psychological capital has been shown established to have a significant effect on an individual's ability to be innovative (e.g. Ziyae *et al.,* 2015; Jafri, 2012; Avey *et al.,* 2010; Abbas & Raja, 2015; Rego *et al.*, 2012; Fred Luthans *et al.,* 2007). Psychological capital, according to Fred Luthans *et al.* (2007), encompasses self-efficacy, hope, optimism, and resilience, and it enables individuals to be more creative and innovative in their work. Avey *et al.* (2011) also noted that psychological capital can help people develop the resilience and optimism they need to be creative and innovative. As a result, determining an individual's psychological capital is seen as a crucial technique for promoting innovation (Jafri, 2012).

Individuals with high psychological capital derive new alternative pathways (hope) which enable them to achieve desired goals. The hopeful individuals have the confidence (self-efficacy) to reach the desired goals while utilizing the alternative paths

(hope). The same individuals have a positive association to future positive outcomes (optimism) and have the zeal to bounce back from setbacks (resilience) when beset by difficulty or failure while implementing the innovative work ideas ((Luthans & Doh, 2018).

Broaden and Build Theory posits that positive emotions broadens peoples thought and action repositories that come to their minds (Fredickson; 2001) which increases the potential for exhibiting innovative behavior like sharing creative ideas and proposing alternative ways of improving work (Ave *et al.,* 2010). Studies have revealed that psychological capital increase positive emotions. For instance studies by Avey *et al*. (2008) and Carmona–Halty, Salanova, Llorens, & Schaufeli (2019 revealed that psychological capital generates individual's positive emotions. It is therefore hypothetical that psychological capital resources leverage positive emotions to develop broader thought-action repertories that are manifested in innovative work behavior. Consistent with broaden and build theory, these positive psychological resources enable employees to portray innovative behavior by broadening the perceived availability of the options and enabling them exert the efforts to achieve goals using will power and way power amidst initial failures and setbacks (Abbas & Raja, 2015). Furthermore, the broadened resources of psychological may be leveraged in solving problems and increasing creativity since positive mindset employees are more creative (Luthans, Youssef, & Rawski, 2011, Rego *et al.,* 2012). In addition, to solving work problems, the positive minded employees may further be able to seek approval from colleagues to support their ideas and translate them into application.

This argument is consistent with existent literature on psychological capital and innovative work behaviour. For instance studies by Wojtczuk-Turek & Turek (2015),

Sameer (2018), Lan (2019), Hsu and Chen (2018), Ratnaningsih, Prasetyo and Prihatsanti (2016) revealed a significant relationship between psychological capital and innovative work behaviour. However, these studies were carried out on multi-source sample from different organisations whose innovation may be influenced by the innovative climate or culture of the organisation. Employees from start-up companies, for example, may be more creative than those from more established firms (Young, 2012). There is need to establish how psychological capital influences innovative behaviour from employees under the same organizational culture and under the influence of similar innovative climate.

Furthermore, studies on psychological capital and innovation have focused on creative behavior as opposed to innovative work behaviour (Ozturk & Karatepe, 2019; Yu *et al.,* 2019; Cai, Lysova, Bossink, Khapova, & Wang, 2019; Cai, Nwanzu and Babalola, 2019; Akhtar et al. 2018; Sweetman *et al.,* 2011; Zubair & Kamal, 2017; Zubair & Kamal, 2015; Abbas & Rajja, 2015). For instance, Sweetman *et al.* (2011) in his study that only focused on creative performance found a causal link between psychological capital and creative performance. Similarly, Zubair and Kamal (2015) established a positive relationship between psychological capital and creative performance of employees in soft ware houses in India. Another study by Ozturk & Karatepe (2019) established a positive relationship between psychological capital and creative performance of frontline employees. However, innovative ideas are implemented not just generated as the case in creative behavior and this study establishes how psychological capital influences innovative work behavior which comprises of creative behavior and implementation of the innovative ideas.

More so, studies linking psychological capital and innovative work behavior is focused in Developed Countries like United States (Zhou & Velamuri, 2018) and less effort was given in service sectors like University settings (Javed *et al.,* 2019; Thurling *et al.*, 2015). Most most studies are carried out in in industries, information technology organizations and in banks (Yan, Wen, Li, & Zhang, 2020; Hsu & Chen, 2018; Qiu, Yan, & Lv, 2015; Ziyae, Mobaraki, & Saeediyoun, 2015; Abbas & Raja, 2015). For example, Ziyae *et al.* (2015) in their study on employees in IT organizations established a significant effect of psychological capital on innovative work behavior. In another study by Qiu *et al.* (2015) on Professional Technical employees of a corporation in Beijing, revealed that psychological capital has a significant positive effect on the innovation performance.

Studies by Avey *et al*. (2010), and Wojtczuk-Turek and Turek (2015) posit that the influence of Psychological Capital changes with change in the context of activities that comprise Innovative Behaviour. For instance scholars like Avey *et al.* (2011) argue that the antecedent role of psychological capital on its outcomes is not uniform across settings as psychological capital is found to be more influential in US than other Countries and stronger in service sector that in Industrial sector. The dearth of studies regarding the link between psychological capital and innovative work behaviour in developing countries like Uganda in the context of a service sector like a University setting and more specifically Public Universities in Uganda justifies the need for the current study.

Scholars have also examined the transferability of positive culture across different cultures as the meaning and indicators of positivity vary across cultures (Fineman, 2006). What is positive in one culture may be viewed as arrogance and disrespect in

another. For example, confidence in some cultures may well be viewed as arrogance and disrespect in cultures that place a great importance on humility. There is need for further research in different cultural settings to cater for cultural differences to further understand the influence of psychological capital on innovative work behavior.

Furthermore, a few studies carried out in University settings have only focused on the academic staff like lectures (Supriyadi *et al.*, 2020; Sun & Huang, 2019; Baskaran & Rajarathinam, 2017). A University setting comprises of the academic and administrative staff who both need innovative skills and therefore the current study bridges this gap by focusing on how psychological capital influences the innovation behaviour of both the academic and teaching staff. Never the less, these studies have been conducted in China (Sun & Huang, 2019), India (Baskaran & Rajarathinam, 2017) and Indonesia (Supriyadi *et al.,* 2020) which are in different school cultural contexts. Scholars have revealed that School culture is a good predictor of Innovative work behaviour (Abdallah, 2016). Therefore, further studies in different school cultural contexts like Universities in Uganda is paramount. The current study bridges these gaps in literature by examining the influence of psychological capital and innovative work behaviour in a University settings and more specifically public Universities in Uganda.

2.7.2 Embeddedness and Innovative Work Behavior

The concept of job embeddedness theory was developed by Mitchell (2001) and is conceptualized as a wide range of factors with in the community and organization that influence the individual's stay in the organization. Job embeddedness centers on all factors that influence employee's decision to stay in the organization (Allen, Peltokorpi & Rubenstein, 2016). Job embeddedness theory identifies three broad category of factors that influence employee stay namely; link (which is the range of valuable relationships

the employee has with others); fit (which is the degree of compatibility between the employee's beliefs and organizational culture, compatibility between the employee skills and organizational expectation) and sacrifice (which is the perceived loss of the valuable things by quitting the organization) (Coetzer *et al.*, 2018).

Because the foundation of organizational innovation is the development of unique ideas by people who come up with them, share them, adapt them, and put them into practice (De jong & den hartog, 2010), research into the motivations for innovative work behavior among employees is critical (scott & Bruce, 1994).

Employees that are strongly embedded to their professions are more likely than their less embedded counterparts to engage in extra-role activities such as innovative work behavior (Ng & Feldman, 2010). Employee embeddedness was found to be positively connected to favorable organizational outcomes such as in-role, and extra-role performance (Lee, Mitchell, Sablynski, Burton & Holtom, 2004). Coetzer, Inma, Poisat, Redmond and Standing (2018) found that on-the-job embeddedness was positively and significantly associated with employees' innovative behaviors in a variety of firms. In a longitudinal research with a broad sample, job embeddedness was found to be positively and significantly connected with innovation-related behaviors (Ng, 2010). To keep their jobs, embedded workers see their performance as a necessity. Lee et al. (2004) found that job embeddedness was positively associated with both in-role and extra-role performance.

With resonance to Conservation of Resources Theory, Job embeddedness is seen as an abundance of resources that that employees invest into work effort theory (Hobfoll, 2002; Wheeler, Harris, & Sablynski, 2012). For instance, link is a relationship resource which employees seek to acquire and protect, fit is a resource of consistence of

employees career goals and values within the organization and sacrifice is a protective resource which prevents the loss of other resources (Ng & Feldman, 2013).

The conservation of resources theory argues that employees seek to acquire, retain and prevent the loss of resources (Lee *et al.*, 2004). Employees with high job embeddedness prevent the acquired resources loss by portraying extra-role behaviors so as maintain their stay in the organization. This is in congruence with Mitchell *et al.* (2001), who highlighted that job embeddedness implies the many acquired links and the employee is compatible with the organization and therefore perceives high sacrifice to quit the organization because of the perceived loss of the benefits and such employees strive to exhibit extra-role behaviors to sustain themselves in the organization (resource protection).

Since employees would want to retain resources, the may tend to develop constructive ideas when they perceive high degree of compatibility with the organization (Kwantes, Arbour, Boglarsky, 2007). The embedded employees may as well exhibit innovative behavior to secure their relationship with supervisors and colleagues due to the close ties between them. The embedded employees may also exhibit innovative behavior to retain their job to maintain the associated rewards and benefits due to the high-perceived level of sacrifice for leaving the job. These employees will enhance their job security by engaging in extra-role behavior so that the organization continues to succeed (Ng & Feldman, 2007).

Existent literature is in line with this argument and shows that highly embedded employees exhibit innovative work behavior (Shah *et al.*, 2020; Susomrith & Amankwaa, 2019; Haider & Akbar, 2017;, Coetzer *et al.*, 2018; Bibi & Jadoon, 2018; Ansari, Siddiqui, & Farrukh, 2018; Rafiq, 2019; (Rahimnia, Eslami, & Nosrati, 2019; Ng & Feldman, 2010;

Lee *et al.,* 2004) than less embedded ones. For instance, an empirical study by Lee *et al.* (2004) expressed that job embedddeness influences organisational outcomes like in-role and extra-role performance. Another study by Coetzer *et al.* (2018) among employee working in diverse organisations showed thet embdded employees exhibit innovative work behavior. A longtudinal study by (2010) also revealed that job embeddedness influences in-role and extra-role performance among employees from a divers sample.

Despite the important findings, the literature on the influence of job embeddedness on psychological capital is still in its nascent stages (Coetzer *et al.,* 2018). This is manifested in the fact that most of the studies are conducted in western countries like USA (NG and Feldman, 2010). There is still dearth of knowledge regarding the influence of job embeddedness and innovative behavior in developing countries like Uganda and more specifically in University setting. The only study, which studied innovative work behavior, focused on creative work behavior, which is only part of innovative behavior (Shah *et al.,* 2020). This study bridges these gaps in literature by establishing the effect of psychological capital on innovative work behavior in public Universities in Uganda, which is a developing Country.

2.7.3 Psychological Capital, Job Embeddedness and Innovative work Behavior

Regarding work quality and critical organizational outcomes like job performance, job embeddedness has been demonstrated to be a significant mediator (Holtom & Inderrieden, 2006). Employees' innovative work behavior is influenced by their job embeddedness, according to the literature. As a result, job embedding may have an impact on the link between psychological capital and innovative work behavior. Psychological Capital (Hope, Resilience, Optimism, and Self-efficacy), and Job

Embeddedness (JE) in Menoufia University Hospitals were shown to have a positive link, as was with Organizational Cynicism (OC) (Nafei, 2015). Internal marketing and staff innovation were also influenced by employees' on-the-job embeddedness (Haider, 2017). Coetzer *et al.* (2018) found that employees' innovative actions were positively and significantly linked to their level of on-the-job embeddedness. According to Rahimnia *et al.* (2019) the link between perceived work stability and creative behavior is influenced by the degree to which one is embedded in one's job. Parkistan hotel front-line service staff's innovative behavior and high-performance work practices were linked to job embeddedness (Ansari *et al.*, 2018). According to another research by Lan (2019) found that job embeddedness had an impact on the association between psychological capital and innovative work behaviors.

Job satisfaction, organizational commitment, and turnover intentions have been connected to psychological capital through employees' attitudes and behaviors (organizational citizenship behavior and job performance) (Avey *et al.*, 2011). An employee's decision to stay with a company because of organizational characteristics is known as "job embeddedness" (William Lee, Burch, & Mitchell, 2014). Employee behavior is influenced by both organizational and societal variables (relationships with peers and community). In order to keep employees committed to the company, Job Emdeddedness encourages them to participate in social activities. Embeddedness and innovative work-related activities were linked by Ng and Feldman (2010) in a longitudinal study. More job-embedded personnel are more likely to display IWB, and JE minimizes employee turnover. Job Embeddedness helps Innovative Work Behaviour since it reduces the risk of stopping (Widianto, Abdullah, Kautsar, & Meiyanti, 2012). As a whole, job embeddedness according to Mitchell *et al.* (2001) was used, but later studies have broken it down into its two main components, organizational and

community embeddedness (Jiang *et al.,* 2012; William Lee *et al.,* 2014). Individuals are more likely to feel a sense of purpose and belonging in their work if they are part of a group, as opposed to if they are more likely to feel a sense of purpose and belonging in an organization (Mitchell *et al.,* 2001).

Extra-role activities including organizational citizenship, (Lee *et al.,* 2004), and innovative work behavior are more likely to be performed by highly embedded individuals than those who are less embedded (Lev & Koslowsky, 2012b) (Ng & Feldman, 2010). Work embeddedness refers to the combination of factors that keep people from quitting their jobs (Yao, Lee, Mitchell, Burton, & Sablynski, 2004).

The phrase "job satisfaction" was coined by Mitchell *et al.* (2001) in a study on voluntary employee turnover (2001). While job embeddedness is not an explanation for why people leave a company, it focuses on the variables that urge them to do so (Mitchell *et al.,* 2001). On-the-job embeddedness and off-the-job embeddedness assessments look at how an individual feels about their employment in light of their work experiences and their social, psychological, and economic embeddedness within the community (Jiang *et al.,* 2012). There are several ways in which an employee's job is linked to where they work (on the job) and where they reside (off the job) (Lee *et al.,* 2004; Mitchell *et al.,* 2001).

As defined by Mitchell *et al.* (2001): "formal or informal relationships that exist between a person and organizations or other people." Relationships with family, friends, and other members of the community are referred to as "community links," whilst those in the workplace are referred to as "workplace links." Fit is only possible if employees are able to accurately judge their own suitability for both the company and the community in which they live (Lee *et al.,* 2004; Mitchell *et al.,* 2001). Having

a strong feeling of belonging might help employees feel more at home in their communities. Lastly, the term "sacrifice" refers to the monetary, social or psychological consequences connected with deciding to move on from a relationship (Lee *et al.*, 2004). Organizational and community losses are included in these losses, such as the loss of commuting distance to work and excellent daycare. Due to the enormous financial and psychological benefits that would be lost if one were to leave, Job Embeddedness is elevated (Mitchell *et al.*, 2001).

Research has shown that job embeddedness and community embeddedness may not always have the same relationships with attitudes and behaviors at work (Harman, Blum, Stefani, & Taho, 2009; Mallol, Holtom, & Lee, 2007). Because of this, it may be necessary to develop separate theories to explain the influence of job embeddedness and community embeddedness on innovation-related actions. Harman's friends and allies were involved in the investigation. It is crucial to note that this study, like others, places a priority on on-the-job embeddedness (rather than community embeddedness) as a mediator variable, which is especially relevant given the current study's concentration in workplace innovation-related behaviors. According to Lee *et al.* (2004), who conducted one of the few empirical studies to study the relationship between job embeddedness and job behaviors, high job embeddedness reflects (1) many links, (2) a strong match, and/or (3) consequential things that an employee loses by departing.

Strongly entrenched employees are more likely to exhibit extra-role performance because they have a good view of their work connection (fit). A strong sense of belonging in an organization's culture and a sense of being respected by (or similar to) other members of the firm, for example, makes employees more likely to provide

positive feedback than they would otherwise (Kwantes, Arbour, & Boglarsky, 2007). Deeply immersed employees, on the other hand, are more likely to perform productively because of their social ties to the organization (links). Employees may feel more compelled to meet or exceed the expectations of their coworkers and superiors as their ties to the firm become more interwoven. High levels of job embedding are also associated with extensive networks and strong ties among coworkers, making it easier and faster for new ideas to disseminate throughout the workforce. Additionally, employees who have a high level of job embeddedness are more likely to put forth their best efforts in order to keep their employment and the perks that come along with them (sacrifice). To avoid losing their employment, employees who are strongly integrated have a strong motivation to pursue innovation-related activities. They want to ensure the survival and growth of their businesses while also increasing their own job security within their current organization (Ng, Sorensen, & Feldman, 2007). From a motivational standpoint, it is reasonable to assume that work embeddedness has a positive effect on innovation-related behavior.

2.7.4 Psychological Capital, Authentic Leadership and Job Embeddedness

The construct of positive organizational behavior emphasizes the notion of capabilities, superiority, thriving, happiness, and achievement of individuals at workplace (Donaldson & Ko, 2010). Since psychological capital is drawn from positive organizational behavior, the theoretical anchor for positive organizational behavior derives an inspiration to the evolving concept of authentic leadership (Walumbwa *et al.,* 2008).

The authentic leadership construct theory has recently been adopted in the field of positive organizational behavior to achieve required work outcome (Avolio & Gardner,

2005). Authentic leadership is characterized with trust, honesty and easy to approach. Authentic leaders demonstrate the ability to process self-information for example about their values, feelings and beliefs and demonstrate ability to adjust their behavior (Avolio, Wernsing, & Gardner, 2018). Authentic leaders are truthful and portray behaviors consistent with their values and beliefs and are always open in their relationship with others (Avolio & Walumbwa, 2014). These leaders promote open communication, which motivate their subordinates to share information. Existing literature reveals that leadership promotes psychological capacities of employees, job satisfaction and retention (Alimo Metcalfe, Alban-metacalfe, Bradely, Malarthan & Samele, 2008). This points to the possible moderation effect of authentic leadership on psychological capital and job embeddedness. Authentic leadership draws on positive psychological characteristics and is considered to contribute to the development of psychological capital in the organization (Luthans & Avolio, 2003; Rego *et al.,* 2012).

Employees' psychological capital is influenced by authentic leaders, according to empirical research (Hystad, Bartone, & Eid, 2014). According to Hystad *et al.* (2014), authentic leadership and psychological capital of subordinates improves a positive work safety climate. There is a theoretical justification for the positive relationship between authentic leadership and psychological capital based on literature.

The current study argues that authentic leadership interacts with psychological capital to explain job embeddedness. Studies suggest that authentic leaders possess psychological capital (which is a job resource) and the psychological positivity of leaders promote followers psychological capital (Rego, Júnior & Cunha, 2015). The psychological resource (job resource) possessed by authentic leaders improve psychological capital of employees according to the postulation of conservation of

resources theory (Xu, Liu & Chung, 2017). The conservation of resources theory (Hobfoll, 2002) argues that a resource is anything valuable like job resources (including authentic leaders who are supportive) and personal resources (hope, resiliency, optimism and self-efficacy) and employees seek to retain obtain, protect and secure these resources (Lan, 2019; Hobfoll, Johnson, Ennis & Jackson, 2003). For example, the balanced processing of information by authentic leaders, relational transparency, and ability to present true self can enhance resilience and self-efficacy in workers.

The employees whose psychological capital is activated by authenticity of leaders now gain more resources generated by leader's authenticity and in a bid to protect, these resources become embedded in the organization. For instance, Barkhuizen *et al.* (2014) alludes that employees enriched with psychological capital resources have less intension to leave meaning that they are embedded. Woolley, Caza and Levy (2011) posits that authentic leaders create a positive climate through moral conduct and open communication which activates psychological resources of hope, resilience, efficacy and optimism which are psychological resources that embed employee in the organization.

Authentic leaders for instance enhance the positive psychological capacities of the followers by improving their psychological capital through creating trust in such employees (Ilies, Morgeson, & Nahrgang, 2005), raising their hope (Clapp-Smith, Vogelgesang, & Avey, 2009), resilience and optimism (Gardner & Schermerhorn, 2004). Authentic leadership and psychological capital are linked according to Zubair (2015). According to another study, real leadership was found to be positively associated with psychological capital in the workplace by Simeon Amunkete and Sebastiaan Rothmann (n.d) (ie experiences of hope, optimism, self-efficacy and

resilience). Credibility and employee respect are built over time by authentic leaders acting in accordance with their personal principles and convictions (Avolio & Gardner, 2005). Studies on the effects of psychological capital on job embeddedness and performance in nursing were conducted (Sun *et al.*, 2012).

To build a trusting environment in which employees can freely express new ideas, authentic leaders must be able to process information about themselves (e.g. their views, values, and feelings) and connect their preferences to the needs of their community (Gardner, Cogliser, Davis & Dickens, 2011). It has been found that authentic leaders create an environment that is morally and socially supportive, which has an impact on employees' sense of hopefulness and self-efficacy, as well as their reluctance to change. One of the factors that contribute to the success of an organization is a positive work environment.

Authentic leaders, according to Luthans *et al.* (2007) increases the psychological capital of their subordinates' employees by encouraging their growth through the observation of excellent leadership conduct and the receipt of constructive criticism. Barkhuizen, Rothmann, and Van de Vijver (2014) found that employees who self-report strong psychological capital are less likely to abandon their jobs and organizations, and they are more likely to endure in the face of adversity (Peterson, 2000). In addition, they are more likely to bounce back from unpleasant employment situations, which reduces their urge to quit (Avey, Luthans & Youssef, 2010). The effect is that they become further embedded into the company.

A positive organizational climate characterized by morality, open communication, and support, according to Woolley, Caza, and Levy (2011), is fostered by authentic leaders. Employees' feelings of hope, optimism, self-efficacy, and resilience are influenced by

a positive organizational climate, which contributes to their feeling of job embeddedness. Employees that have strong psychological capital are also more content with their employment, which means they are more likely to become ingrained in their jobs than those who do not.

Employee organizational job embeddedness is improved by the assistance of leaders and member-to-leader exchange (Harris, Wheeler & Kacmar, 2011). Genuine leaders act in accordance with their values and are honest and open in their interactions with followers (Gardner *et al.*, 2005; Avolio *et al.*, 2010; Walumbwa *et al.,* 2010). As a result, authentic leaders are trusted by their employees because they encourage open communication, follower engagement, and the sharing of critical informant of feelings and perceptions with coworkers, which results in a high level of follower's personal identification (Avolio *et al.*, 2004). A true social interaction, according to Blau's (1964) social exchange theory, is likely to result in reciprocated acts of kindness, even to the point where each side is eager to go above and beyond the call of duty (Konovsky & Pugh, 1994). According to a study done by Jung and Avolio (2000), leaders can improve their followers' trust by demonstrating individualized concern (by engagement) and respect (by encouraging a plurality of perspectives). Because authentic leaders uphold high moral standards, display personal integrity, and are truthful, their followers are more likely to have high expectations of them, boosting their trust and willingness to work with them for the organization's benefit.

As a result, authentic leaders encourage high-quality communication, which develops a sense of organizational fit among their subordinates (Erdogan *et al.,* 2004). This is because the subordinates who participate in high-quality exchanges benefit from the leader-member exchange connection. Employees who participate in high-quality

exchanges are thought to be more attached to their boss and the company than those who participate in low-quality exchanges (Sparrowe & Liden, 2005). As a result, subordinates with high-quality interactions are less likely to leave their companies since they would have to forego the benefits that come from their relationships with their supervisors (Liden, Sparrowe & Wayne, 1997). As a result, real leaders may provide subordinates with a multitude of perks and resources as a result of high-quality leader-member exchanges, resulting in job embedding within the organization.

The arguments presented above suggest that authentic leadership may have a moderating effect on the relationship between psychological capital and job embeddedness, based on the research by (Hayes, 2015).

Authentic leadership and psychological capital are anticipated to interact in a way that promotes job embeddedness, according to the theoretical underpinnings of conservation of resources theory (Hobfoll, 2003) and literature, and there is a theoretical justification for this relationship.

For instance, scholars have revealed the interaction of authentic leadership and psychological capital on innovative behavior (Rego *et al.*, 2015). For instance, Zubair and Kamal (2017) revealed that authentic leaders activate the positive psychological capital of employees. The actions of authentic leaders are in congruence with personal values that builds, trust, respect and credibility of employees (Avolio & Gardner, 2005). According to Woolley *et al.* (2011), authentic leaders create an environment that promotes supportive organizational climate and open communication that influences employees' self-efficacy, hope, optimism, and resilience. This environment forms part of the factors that embedded employees in an organization.

Authentic leaders enhance the positive psychological capacities of the followers by improving their psychological capital through creating trust in such employees (Ilies *et al.*, 2005), raising their hope (Clapp-Smith, Vogelgesang, & Avey, 2009) resilience and optimism (Gardner & Schermerhorn, 2004). A study by Zubair (2015) revealed that psychological capital and authentic leadership are related. Another study by Amunkete and Rothmann (2015) revealed that the psychological resources of hope, self-efficacy, resilience and optimism are activated by authentic leadership. Similarly, studies by Olaniyan (2017); Erkutlu and Chafra (2017) and Olaniyan and Hystad (2016) revealed that employees who perceive their leaders to be authentic reported high job embeddedness. Ramalu and Janadari (2020) also established that authentic leadership is an important resource for the enhancement of psychological capital resources. Based on the research works of Hayes (2012), the arguments presented above suggest that authentic leadership is hypothesized to have a moderating effect on the causal link between psychological capital and job embeddedness.

2.7.5 Psychological Capital, Authentic Leadership, Job Embeddedness and Innovative Work Behavior

Authentic leadership theory is integrated into the positive psychological behavior to explain how leaders conduct increase individuals' positive psychological resources (Walumbwa *et al.,* 2008). The psychological resources enhanced by leader's authenticity generates more resources, which embed employees in the organization. To protect the acquired resources, employee portray extra-role behaviors. The conservation of resources theory posits that psychological resources have the potential to generate other resources to enhance work out comes (innovative work behavior). The current study responds to the call by Carmeli, Gelbard, and Gefen (2010), and Rego *et al.*

(2012) for further research on the interaction of personal characteristics (psychological capital) and contextual factors (authentic leadership) on innovative work behavior indirectly through contextual factors (job embeddedness).

Scholars have revealed that authentic leadership (a job resource) activates psychological capital which are Personal resources (Ramalu & Janadari, 2020). Scholars agree that the psychological resources of hope, self-efficacy, resilience and resilience embed employees in the organization (Coertzer *et al.*, 2018). In line with conservation of resources theory, employees with abundance of these resources tend to protect them by exhibiting extra-role behavior (Hobfoll, 2003). Therefore, this study argues that authentic leadership interacts with psychological capital to create resources (which include job resource and personal characteristics of hope, resilience, optimism and resilience) that embed employees in the organization who protect the loss of these resources by exhibiting extra-role behavior like innovative work behavior.

Following the norm of reciprocity according to conservation of resources theory by Thibaut and Kelly (2008), authentic leaders facilitate reciprocity, which encourages a feeling of reciprocating the organization (through authentic leaders) for the fair and transparent relationship.

Because employees' innovative behavior is heavily influenced by their interactions with coworkers (e.g. Anderson *et al.*, 2004; Zhou & Shalley, 2003), argue that managers have a great degree of control over their employees' work habits. According to Anderson *et al.* (2004), leaders have a considerable influence on employees' work behaviour (Yukl, 2002). Leaders, of course, foster inventive behavior by assisting individuals in coordinating and integrating their various types through a process of

applied creativity that entails constantly identifying and defining new challenges, addressing those problems, and applying new solutions (Basadur, 2004)

Transformational positive psychological capacities, ethical and moral viewpoint, and other characteristics of authentic leadership are all present. These structures are conceptually extremely relevant to the process of creative thinking. According to past studies, transformational leadership has a favorable impact on creativity (Shin & Zhou, 2003). For example, a study by Sosik, Kahai and Avolio (1998) confirms this relationship. Peterson and colleagues (2012) found that authentic leaders increase the good emotions of employees by fostering positive, helpful, fair, and honest interactions, which in turn encourages people to be more creative. According to the findings of several studies, there is a beneficial association between an ethical and moral worldview and employee creativity (Valentine, Godkin, Fleischman, & Kidwell, 2011; Bierly, Kolodinsky, & Charette, 2009).

Creative thinking is promoted by authentic leadership components, according to Walumbwa *et al.* (2008) model (self-awareness internalized moral viewpoint, relational transparency, and balanced processing). For example, the relational transparency component fosters creativity by allowing people to express their views, challenges, and information in an open and honest manner. A close relationship between an authentic leader and his or her employees can be strengthened through relational transparency. When this type of relationship is established, employees are more likely to be willing to try new things (Fraley & Shaver, 2008).

In conformity with the current study, Rego *et al.* (2012) asserted that real leaders increase employees' sense of psychological safety and intrinsic drive, which in turn leads to their being more creative (Rego *et al.,* 2012). Psychological safety creates an

environment free of fear, and individuals who work in such an environment are more likely to be innovative. Authentic leaders demonstrate honesty with their employees, which helps to create a more secure and trustworthy environment for them. Authentic leaders foster a sense of belonging in the organization, which increases follower resilience through positive interpersonal relationships, which fosters social support during stressful times, and self-confidence by encouraging followers to feel good about themselves and their contribution to the organization.

More empirical research in recent years has demonstrated the value of authentic leadership in achieving desired work-related outcomes, such as the ability to innovate at work. Authentic leaders, according to Gardner and Schermerhorn (2004), can boost the intensity of their followers' constructive cognitive and emotional competencies, resulting in increased self-esteem (Kernis, 2003), inventive job performance (Fred Luthans & Avolio, 2003), and organizational trust (Clapp-Smith *et al.*, 2009). As evidenced by the following, authentic leaders demonstrate honesty and self-disclosure, which creates trust in the leader-follower relationship (Walumbwa *et al.*, 2008). Additionally, this trusting relationship encourages the flow of information as well as the expressing of genuine thoughts and feelings, which helps to lessen worries of failure and despair (Kernis, 2003).

Furthermore, employees believe that their true leaders are supportive and sympathetic of their distinctive and different ideas, which contributes to a work climate that fosters creativity and innovation (Zhou & George, 2003). Despite its tiny size, Pakistan has done a lot of work on the concept of authentic leadership in indigenous communities. For example, (Khan & Ziauddin, 2010) investigated the impact of authentic leaders on organizational performance and concluded that authentic leaders had a beneficial

impact on employee attitudes and behaviors, resulting in the organization achieving higher levels of success.

Abid and Bagram (2012) found that an entrepreneur who acts as an authentic leader can boost employee commitment and satisfaction in Pakistan's small and medium-sized businesses. The relationship between authentic leadership and ethical practices, according to Al Hassan *et al.* (2013), was investigated in order to understand how an authentic leader promotes an ethical work climate that emotionally binds followers to their organization in a collectivistic culture like Pakistan's.

Empirical research has established the effects of authentic leadership on psychological capital as well as a variety of other work-related outcomes. Authentic leaders contribute to the improvement of their followers' positive psychological capital by increasing their self-esteem (Fred Luthans, Avey, Avolio, Norman & Combs, 2006), hope (Clapp-Smith *et al.*, 2009), trust (Ilies *et al.*, 2005), resilience, and optimism (Ilies *et al.*, 2005). They are also significantly more resilient and capable of easily overcoming obstacles than other people (Gardner & Schermerhorn, 2004). Employees' workplace positivity also supports in the formation of flexible and productive cognitions, which encourages the development of creative thinking among employees, which is marked by experimentation and the risk of failure (Avolio & Gardner, 2005).

Individuals who exhibit authentic leadership behaviors demonstrate their true core values by being open and frequently employing self-disclosure, and as a result, this behavior builds trust in the leader-follower relationship, resulting in the sharing of information as well as genuine thoughts and feelings while minimizing the expression of inappropriate feelings (Giallonardo, Wong & Iwasiw, 2010; (Walumbwa *et al.*, 2008). Furthermore, followers perceive such a leader as encouraging their new ideas,

which increases employees' inherent inclination for creativity and innovation. Employee trust and respect are encouraged by a leader's sincerity, which allows staff to come up with unconventional ideas and bring in competing opinions without fear of repercussions (Clapp-Smith *et al.,* 2009). Genuine leaders also provide constructive feedback in a way that is reasonable, courteous, developmental, and educational (Ladkin & Taylor, 2010). Gong, Huang, and Farh (2009) discovered a positive association between a leader's morality and authenticity, as well as their employees' learning motivation, leader-member interchange, creative self-efficacy, and master orientation (Prabhu, Sutton, & Sauser, 2008). According to the research, authentic leadership has a moderated mediation effect on the relationship between psychological capital and innovative work behavior, which is achieved through job embeddedness.

2.7.6 Conceptual Gaps in Literature Reviewed

Following a literature review on innovative workplace behavior, the following conceptual research needs were discovered. Firstly, there is a dearth of studies on the link between psychological capital and innovative work behavior, as most studies have focused on the link between psychological capital and individual creativity (Cai, Nwanzu & Babalola, 2019; Akhtar *et al.*, 2018; Sweetman *et al.,* 2011; Zubair & Kamal, 2017; Zubair & Kamal, 2015; Abbas & Rajja, 2015). Sweetman *et al.* (2011), for example, looked at the association between psychological capital and creative performance, specifically ideation. Since innovative work behavior is a multi-dimensional discipline encompassing four phases (Yuan & Woodman, 2010; De Jong & Den Hartog, 2010; Janssen, 2000). Therefore, more research is needed to determine the impact of individual psychological capital dimensions on the four-dimensional concept of Innovative Work Behavior. Zubair and Kamal (2015), as well as Ozturk and

Karatepe (2019) looked at the link between psychological capital and employee creativity. As opposed to creative performance, which is limited to the generation of ideas, innovative work behavior encompasses both the generation and implementation of ideas, and hence earlier literature is limited to the generation of ideas. This research investigates how psychological capital affects innovative work behavior, which includes both creative behavior and the application of innovative ideas.

Existing research on psychological capital and innovative work behaviour has been conducted on a multi-source sample of employees from a variety of organizations whose invention is influenced by the innovative climate or organizational culture. Employees from new businesses, for example, may be more innovative than those from established businesses (Young, 2012). The current research investigates the impact of psychological capital on innovative behaviour among employees who share the same company culture and work in a similar inventive environment.

Furthermore, the impact of particular dimensions of Psychological Capital differs in the setting of different types of activity that make up Innovative Behaviour, according to the empirical literature examined (Avey *et al.,* 2010; Dong, Wang & Ying 2016; Wojtczuk-Turek & Turek, 2015). Avey *et al.* (2011), for example, found that the impact of psychological capital and its results is not always consistent across circumstances. Psychological capital, for example, tends to be more powerful in the US than in other nations, and it appears to be stronger in the service sector than in the industrial sector. The limited research regarding the effect of psychological capital and innovative work behaviour developing countries like Uganda in the context of a service sector like a university setting and more specifically Public Universities in Uganda justifies the need for this study since most of the studies were carried out in industries, information

technology organisations and in banks (Sweetman *et al*., 2011; Ziyae *et al.*, 2015; Ozturk & Karatepe, 2019; Abbas & Raja, 2015).

Although a growing body of literature about the implications of psychological capital on innovative work behavior exist, most of the studies measure innovative work behavior at organizational level (. Peterson *et al*., 2011; Wojtczuk-Turek, 2012; Hmieleski & Carr, 2007; Ziyae *et al*., 2015; Zubair, 2015) and only a few studies have measured Innovative Work Behavior at the individual level (Abbas & Raja, 2015). This study measured innovative work behaviour at the individual level to establish the effect of psychological capital on the innovative work behavior of individual employees.

Due to cultural differences in the interpretation and manifestations of positivity, positive psychology has been thoroughly examined for its applicability and transferability across cultures (Fineman, 2006). This is because what is considered positive in one culture may be considered negative in another culture (Fineman, 2006). (e.g., in the United States). In cultures where humility and modesty are highly valued, for example, a high level of confidence may be interpreted as a sign of arrogance and pride. To make matters more complicated, positivity is not universally valued. It is possible that in certain cultures, cynicism and sorrow may be seen as a sign of maturity or even a lack of interest in the world, while in others, same traits are seen as an indication of indifference. To gain a greater knowledge of how positivity can express and be leveraged across cultures, future research should take these cultural distinctions into mind as fascinating and worthwhile border conditions to be further studied. In a global market where a large number of employees, customers, and other stakeholders come from a diversity of cultural and educational backgrounds, this knowledge is vital for establishing a human-based competitive advantage.

Furthermore, studies on innovation in university settings are have focused on the academic staff like lectures (Supriyadi *et al.*, 2020; Sun & Huang, 2019; Baskaran & Rajarathinam, 2017). A University setting comprises of the academic and administrative staff who both need innovative skills and therefore the current study bridges this gap by focusing on how psychological capital influences the innovation behaviour of both the academic and teaching staff. Nevertheless, these studies have been conducted in China (Sun & Huang, 2019), India (Baskaran & Rajarathinam, 2017) and Indonesia (Supriyadi *et al.*, 2020) which are in different school cultural contexts. Scholars have revealed that School culture is a good predictor of Innovative work behaviour (Abdallah, 2016), and therefore, further studies should be conducted in different school cultural contexts like Universities in Uganda is paramount. The current study establishes the influence of psychological capital and innovative work behaviour in public Universities in Uganda.

Studies on job embeddedness and innovative work behaviour are conducted in western countries like USA (NG and Feldman, 2010). There is need to replicate these studies across cultures since the factors that embed employees in organisations vary cross-culturally. Studies on job embeddedness have also focused on both community factors and organisation embeddedness factors which does not provide a true picture of which factors (organisational or community factors) have influenced innovative work behaviour and have not studied the mediating role of job embeddedness on the relationship between psychological capital and innovative work behaviour.

Furthermore, some studies have revealed that Innovative Work behavior occurs in a specific context which includes conditions of facilitatory nature (Wojtczuk-Turek, 2012). The antecedents of psychological capital like Authentic Leadership need further

exploration (Fred Luthans & Youssef-Morgan, 2017), and therefore psychological and other positive key variables are key factors in shaping a person's inventory of positive resources (Hoffball, 2001). Due to limited research on the moderated mediation effect of authentic leadership on the relationship between psychological capital and innovative work behavior through job embeddedness, additional research is needed to examine the conditions and processes such as job embeddedness and authentic leadership that facilitate that linkage between psychological capital and innovative work behavior. Further research is also needed to examine the conditions and processes such as on-the-job embeddedness and authentic leadership that facilitate that linkage between psychological capital and innovative work behavior.

2.8 Conceptual Framework

Figure 1 depicts the hypothesized model linking psychological capital and innovative work behavior through job embeddedness. The suggested framework extends previous theory and literature by integrating job embeddedness concept as the mediator and authentic leadership as a moderator variable on the relationship between psychological capital and innovative work behavior. The model includes assessment of job Embeddedness as developed from reviewing literature by (Nafei, 2015; Avey *et al.*, 2011; Ng & Feldman, 2010; Lee *et al.*, 2004).

In this study, the concept of psychological capital according to Luthans *et al*. (2015) is studied in four dimensions; optimism, resilience, hope and self-efficacy (see; Luthans & Avey, 2011; Seligman *et al.*, 2005). Iinnovative work behavior is conceptualized in line with the works of Yuan and Woodman (2010), who studied it as a multidimensional construct composed of idea generation, idea exploration, idea implementation and idea championing.

The model also shows that the relationship between psychological capital is mediated by job embeddedness which is operationalized as fit, link and sacrifice (Lee *et al*., 2004; Lev & Koslowsky, 2012a; Ng & Feldman, 2010a). The proposed model is developed from aggregating literature by Hayes, 2017; Luthans *et al.,* 2010; Coetzer, *et al*., 2018 and Ng & Feldman, 2010b) According to Hayes, (2017), Mediation principally requires that there exists a positive relationship between psychological capital and innovative work behavior, and a positive relationship between job embeddedness and innovative work behavior.

Studies by Luthans and Avolio (2003) point to the fact that the influence of psychological capital on employee innovative work behavior can be both direct and indirect (see: Petersen, 2015). Employees who are embedded in the job are innovative. It is also conceived that the effect of psychological capital on innovative work behavior is enhanced when organizational leadership creates a conducive environment for the employees to exercise innovativeness and thus authentic leadership is studied as a moderator variable in the model and is conditioning variable for the effects of the independent variable (psychological capital) on the dependent variable (innovative work behavior) via the mediator variable (job embeddedness).

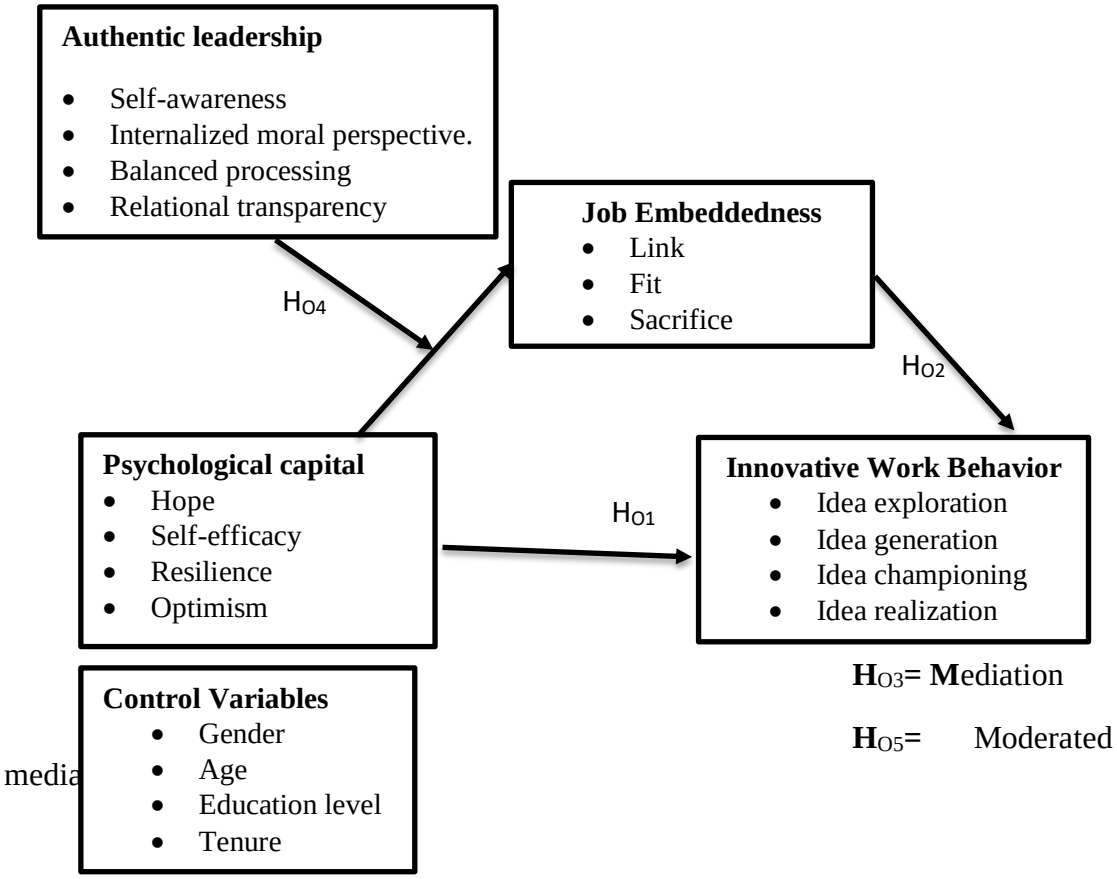

Figure 1: *Conceptual Framework*

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section highlights the philosophical basis for the study, the research design, area of study, study population, sample size, sampling design and sampling procedure, operationalization and measurement of variables, instruments of data collection, procedures for collecting data, validity and reliability tests, data analysis, and ethical considerations.

3.2 Philosophical Paradigm

Philosophical paradigm means the principal foundation upon which any scientific investigation is constructed (Krauss, 2005). Social science research is based on positivism and interpretivism as the two main philosophical approaches (Saunders, Lewis, & Thornhill, 2007). Positivism approach deals with observable phenomena which emphasize objectivism by putting forward explanations while interpretivism takes into consideration the element of subjectivism by focusing more on understanding phenomenon than explaining (Chapman & McNeill, 2005; Saunders *et al.*, 2007). Therefore, studies that are positivistic in nature are easily replicable in real life as compared to interpretivism studies. This study adopted a positivist paradigm since it intended to emphasize objectivism while investigating the hypothesized causal explanations and the positivism approach perceives the researcher as objective and value-free observer who establishes a causal relationship to identify causal effect of psychological capital on innovative work behavior. Besides, the positivist paradigm is based on the philosophy of determining the cause and effect relationships between the study variable (Cresswell, 2008).

This study equally took on structured assumptions of reality in terms of ontology and epistemology. Ontology denotes what reality exists out there and in what knowledge structure. Whereas epistemology defines how a researcher gets to know about the reality (ontology) which exists in the world out there (Krauss, 2005).

Epistemology is concerned with the creation of knowledge through explaining how to generate knowledge. A positivist attitude on epistemology perceives the researcher as objective and a value-free observer who establishes causal relationships (Chapman & McNeill, 2005). Studies that are positivistic in nature are easily replicable in real life compared to interpretivism studies. The ontological position that underpins this study is the belief that the concepts of variables represent phenomena in the empirical world, as they actually exist by focusing on the operationalization and measurement of the concepts.

3.3 Research Design

Research design is the overall strategy applied to coherently address the research problem under investigation (Cresswell, 2008; Fraenkel, Wallen, & Hyun, 2011; Nachmias & Nachmias, 2000). It also means a "blueprint" or roadmap that guides the study. The study adopted a Cross-sectional research design. Cross-sectional studies involve collecting data about the study variables at one point in time (Tabachnick & Fidel, 2013). The cross-section research design was appropriate for this study because it requires collecting data at snapshot, and it requires limited time to complete the study. Accordingly, Neuman and Dwyer (2011), cross-sectional design is sufficient to understand what has happened or what has been happening. This design, therefore, was reliable in providing information when making inferences concerning the direct and indirect effect of psychological capital on innovative work behavior.

3.4 The Study Area

The study considered all the ten public Universities in Uganda. The researcher's urge for Uganda is a response to Kasule (2016) who revealed that the staff in public Universities have low innovative skills and there is need for urgent intervention. Relatedly, Kasule *et al.* (2015) articulated that the teaching and administrative staff qualifications, work experience and work environment might not be the same across Universities, and therefore to get generalizable results and a true picture of innovative work behavior, this study considered the ten public Universities in Uganda. The rationale for selecting all the ten public Universities is that, Universities are at the heart of innovation and that any effort geared towards addressing the existing problem would create benefits for both the employees, organization and the country at large through generating and supporting policy that promotes innovative work behavior in the Country.

3.5 Target Population

Prior to data collection, it was necessary to establish the target population from which the sample was drawn. Target population is the complete set of individuals or elements upon which the researcher wishes to infer the study findings (Sekaran & Bougie, 2016). The target population of this study comprised of five thousand five hundred and ninety-One (5591) staff in the two categories of academic and administrative (See Appendix I) as obtained from the National Council of Higher Education reports which was synonymous with the records gotten from the Human Resource Directorate of the respective public Universities (See appendix III). There are three categories of staff in Public Universities in Uganda namely administrative, academic and support staffs (NCHE, 2020). The justification for choosing teaching and administrative staff is that

these two categories of staff are the ones whose roles require innovative performance since they are regarded influential agents in improving innovation in the education sector (Bakkenes, Vermunt & Wubbels, 2010).

3.6 Sample Size, Sampling Technique and Unit of Analysis

3.6.1 Sample Size

A representative sample size was determined from the study target population as a basis for drawing inferences prior to data collection. According to Sekaran and Bougie (2016), it is un realistic for a researcher to gather data from the entire population for reasons such as cost and time and therefore it is necessary to determine the sample population to get representative data. Sample size refers to actual number of respondents from which the researcher intends to collect data (Babbie, 2005). Table 3.1 below shows that the study targeted a population of Five Thousand Five Hundred and Ninety-One (5591) academic and administrative staff of Public Universities in Uganda, and representative sample size of Three Hundred and Eighty-Four (384) respondents were selected using the formula provided by Conchran (2007) as a basis for drawing inferences (*See Equation 1*). This sample size of this study was representative because according to Comfrey and Lee (1992), cross-sectional studies with a sample size between 300 and 400 is sufficient.

Equation 1: Conchran's *Formula for sample size determination*

$$n = \frac{Z^2 pq}{e^2}$$ ……..sample size determination (Conchran, 2007)

Where;

N: Represents the required sample size

Z: Represents the level of confidence of the sample size (set at 95%) thus Z=1.96

P and q are the population proportions (Each set to 0.5).

e : Sets the accuracy of the sample proportions (set to 0.05)

Therefore;

$n = \frac{(1.96)^2 (0.5)(0.5)}{0.05^2} = 384.16 = 384$

As suggested by Comfrey and Lee (1992) that a sample of 50-100 is very poor, 100-200-poor, 300-400-good, 400-500- very good and over 1000-excellent, the sample size of the current study was good.

Table 3:1. Study Sample

N0	University Name	Target Population	Sample Size Computation	Sample Size
1.	Busitema University	261	384/5591*261	19
2.	Gulu University	416	384/5591*416	28
3.	Kabale University	336	384/5591*336	23
4.	Kyambogo University	572	384/5591*572	39
5.	Makerere University	1803	384/5591*1803	124
6.	Makerere University Business School	969	384/5591*969	66
7.	Mbarara University of Science and Technology	694	384/5591*694	48
8.	Muni University	154	384/5591*154	11
9.	Soroti University	283	384/5591*283	19
10.	Lira University	103	384/5591*103	07
	Total	**5591**		**384**

Source: Computed Based on Data from NCHE Report (2015) University HR Records 2018

3.6.2 Sampling Technique

The researcher carried out sampling to identify the sub-group of the population from which to draw inferences. Sampling technique is a logical plan through which the researcher arrives at a set of individuals to take part in the study. The study adopted simple random sampling technique to arrive at the representative sample from the target population. simple random sampling refers to a sampling technique where all members have a known non-zero chance to take part in the study (Sekaran & Bougie, 2016).

3.6.3 Unit of Analysis

Before collecting data, it was imperative to delimit the unit of analysis to clarify the respondents from which to collect data. Unit of analysis is the component from which information is to be obtained (Kothari, 2004). Since the study aimed to clarify on the factors that enhance staff innovative work behavior in public Universities in Uganda, the unit of analysis was the individual employees serving in public Universities in Uganda in the two categories of academic and administrative staff.

3.7 Data Collection Instruments and Procedures

3.7.1 Data Collection Instruments

The study used a questionnaire as the data collection instrument. The justification for using the questionnaire as a data collection instrument was hinged on the fact that it is above the researchers variability which preserves the objectivity of the collected data, less costly in terms of money and can quickly be administered and highly convenient for the respondents as they can fill during their free time (Hair, Black, Babin, & Anderson, 2010).

A self- administered questionnaire is a data collection tools in which the questions are transcribed for the respondents to answer (Hair *et al.*, 2010). The respondents who were in the two categories of academic and administrative staffs of government Universities in Uganda where requested to provide responses by filling in a self-administered questionnaire. The questionnaires where personally administered to respondents by the researcher and his team of data assistants.

The particular questionnaire in this study comprised of two major sections, ‘A’ and ‘B’, besides the introduction section. The introduction part briefly familiarized the respondents with the contents of the questionnaire and assured respondents of

confidentiality of their information. Section ‘A’ collected data regarding the general background information of respondents. For example, respondent’s age, duration in service, and education level. Section ‘B’ of the questionnaire contained a series of statements, which aimed at obtaining data regarding all the study variables.

3.7.2 Data Collection Procedures

Prior to data collection, the researcher sought permission from the Uganda National Council for Higher Education (NCHE) to collect data from academic and administrative staffs of public Universities regarding psychological capital, job embeddedness, authentic leadership and innovative work behavior by presenting a letter from Moi University addressed to NCHE assuring that the research is purely for academic purposes. After obtaining authorization from NCHE, the researcher then proceeded to seek permission from the management of the respective public Universities to collect data.

The individual researcher and a team of research assistants who had attained Master degree in different fields and were University administrative staff, and this enabled collection of data within a short period. The researcher ensured quality of data collection by first briefing the research assistants about how to administer the questionnaires. In addition, the individual researcher also took active participation in the process of data collection.

The actual process of collecting data entailed issuing the questionnaires to the target respondents through their Head of Departments. The respondent filled in the questionnaire by way of ticking respective responses that are reflective of his/her opinion about the various statements in the questionnaire (Saunders *et al.*, 2007; Vagias, 2006). The researcher then collected the filled data questionnaires, which were subject

to further processing and analysis. Where a respondent was in a position to fill the questionnaire tool on spot, he/she was given a period of one month from the time he/she was given the questionnaire to fill in his responses. To encourage quick return of the filled questionnaires, the researcher sent remainders to respondents that were in form of phone calls and physical visits.

3.8 Measurement of Variables

Since the study intended to collect self-response data from respondents, the researcher considered the treatment of single source bias. Single source bias refers to the degree to which the relationship between two variables deviate from the true core correlation when using a single source (Podsakoff, MacKenzie, & Podsakoff, 2012) producing illusory correlation (chapman & McNeill, 2005). In line with existing studies e.g. (Karatepe & Kaviti, 2016; Podsakoff *et al.*, 2012), common method bias was minimized by interchanging the questions that measured the variables.

3.8.1 Control Variables

The control variables used in this study was age, gender, education level and tenure. Job tenure and age were of importance to IWB (Janssen, 2000). The employee age was measured through the analysis of the five categories of age. For example, those below the age 30, within 31-40 years, within 41-50, within 51-60 years, and those above the age of 60. The highest education level measures was doctorate, master, bachelors and diploma. The employee tenure was measured with the number of years spent in the organization. For instance, less than 5years, 5-10 years, 11-15 years, 16-20 years and those above twenty years.

The proposed questions concerning control variables were included in the personal information part of the questionnaire since control variables helps to mitigate the effect of confounding variables on the observable study variables. The effect of confounding variables in the study were controlled using hierarchical regression. This treatment involved holding the control variables constant as the researcher manipulates the independent variables, that is: the psychological capital, job embeddedness, and authentic leadership to assess their effect on the dependent variable.

3.8.2 Independent variable-Psychological capital

Table 3.2 indicates psychological capital as an independent variable in this study was measured by a 24-Item Scale Questionnaire (PCQ) by (Luthans, Avolio, Avey & Norman, 2007). The instrument measures psychological capital using the constructs of self-efficacy, hope, optimism and resilience. The example of the sample items are; 'When I am caught up in difficult, I get my way out of it', 'I enjoy a great deal of self-assurance when in this University', 'I quickly regain my normal mood after normal mood quickly after spiteful work events' and 'I always expect the best when I am uncertain of something'.

3.8.3 Mediator variable - Job embeddedness

The mediator variable job embeddedness as seen in Table 3.2 was measured by 10-Item Questionnaire by Crossley, Bennett, Jex, and Burnfield (2007), who measures job embeddedness into three facets of fit, sacrifice and link. Organizational embeddedness was used in the previous research of (Ng & Feldman, 2009). The Sample of the items include, 'I have a feeling of attachment to this University'.

3.8.4 Moderator variable -Authentic leadership

The moderator variable Authentic leadership as depicted in Table 3.2 was measured by a 16-Item Scale ALQ (Authentic Leadership Questionnaire) from version 1 of the ALQ (authentic leadership questionnaire) by Walumbwa *et al.* (2008). The 16-Item Scale measures authentic leadership as a four dimensional construct consisting of balanced processing, self-awareness, relational transparency and internalized moral perspective. The example of the items include; 'My leader declares what she or he accurately means', my leader shows beliefs consistent with actions'.

3.8.5 Dependent variable -Innovative work behavior

The dependent variable Innovative work behavior (IWB) as indicated in Table 3.2 was measured by a 10-Item Scale Questionnaire advanced and validated by (De Jong & Den Hartog, 2010). The scale measures innovative work behavior as a four-dimensional construct comprising of idea exploration generation, championing and implementation. Sample items include; 'I attend to issues different from my routine work'.

Table 3:2. Measurement of the Study Variables

Variable	Total Items	Source	Citations
Psychological capital	24-items PCQ	Luthans *et al.* 2007b	Luthans *et al.* 2007a
Job embeddedness	Eleven-items scale	Crossley *et al.* 2007	Ng & Feldman, 2009
Authentic leadership	12-items ALQ	Walumbwa *et al.* 2008	Walumbwa, Lawler, & Avolio, 2007
Innovative work behavior	10-items scale	Jeroen & Hartog, 2010	Jeroen & Hartog, 2010

Source: Secondary Data

3.9 Validity and Reliability of the Research Instruments

3.9.1 Validity of the Research Instrument

Before actual collecting data, we tested for validity and reliability of the research instruments. Validity refers to the degree to which the research instrument covers the concepts prevalent in what it intends to measure (Kimberlin & Winterstein, 2008). The research instruments were checked for face validity, external validity, construct validity and content validity to ensure that the collected data covers the intended area of investigation (Ghauri & Grønhaug, 2005).

Face validity measures weather the tested instrument appears to measure what it intends to measure. The researcher ensured face validity by inspecting the appropriateness of the concepts studied to reflect what it is intended to be measure. External validity means the extent to which findings of a study is generalizable to individual contexts and this was done by generalizing the findings from the study population across a wide variety of University settings among academic and administrative employees of Universities in Uganda.

Construct validity demonstrates the degree of hypothetical relationship between the study constructs based on theoretical underpinnings (Zikmund, Babin, Carr & Griffin, 2013), and this was determined by review of theories upon which the study constructs were drawn. Further, construct validity, convergent validity and discriminant validity were determined by testing correlations between study variables by looking at correlation matrix and inter-construct correlation. Variables are said to have convergent validity when the relationship between the hypothetical variables are actually related whereas discriminant validity is said to exist when it consist of a unique scale measure (Hair *et al.*, 2010) as opposed to reflecting other variables.

Content validity measures degree to which an instrument provides a suitable sample of items for the construct being measured (Newman, Lim, & Pineda, 2013). The rationale for assessing the content validity of research instruments was to guarantee that the items developed to operationalize a construct provide a sufficient and representative sample of all the items that measure the constructs (Kimberlin & Winterstein, 2008).

The content validity of the questionnaire was addressed by conducting a pilot study before the actual study as this helped to identify ambiguities of the items, vague questions or other difficulties participants may encounter with instrument items for improvement. The pretesting involved administering the questionnaire to respondents prior to the actual study (Neuman, 2007). The questionnaires were administered to fifteen administrative and fifteen academic staffs of Islamic University in Uganda which is a private University to avoid prior biasness in the actual respondents during the actual study. This exercise helped in identifying any possible anomalies or vagueness that could be existing in the questionnaire (Kothari, 2004). The ambiguities that were raised by the respondents were all addressed before using the tool for actual data collection.

3.9.2 Reliability of the Research Instrument

Prior to actual data collection, the researcher tested the data collection instruments for reliability. Reliability refers to the extent of consistence in results yielded by repeated trials (Neuman, 2007; Hair *et al*., 2010). The justification for testing reliability was to estimate the ability of the instrument to yield consistent results when carried out on the same individuals at different time interval (test-retest reliability) and the internal consistency which is the correlation between multiple items in a test that is intended to measure the same construct (Kimberlin & Winterstein, 2008).

Internal consistency estimates the correspondence of item sets from same test (Kimberlin *et al.*, 2008). Internal consistency reliability was tested using Cronbach Alpha test and those items that were found to have an alpha coefficient of 0.7 and above were accepted (Fraenkel *et al*., 2011).

Studies with α between 0.80 & 0.95 are considered to have very good reliability because it implies very minimal error hence the results are replicable (Saunders *et al*., 2009) although coefficients of .62 are acceptable in social science research (Hair *et al*., 2010).

3.10 Factor Analysis

Prior to data analysis, the study conducted factor analysis to reduce the number of redundant questionnaire items. Factor analysis considers the amount and description of basic items within a larger collection of data (Kerlinger, 1979). The justification for factor analysis was to reduce redundant questionnaire items (factors), and generate evidence of construct validity for self-reporting scales (Thompson, 2004). The researcher established the presence of univariate and multivariate normality, the lack of univariate and multivariate outliers, and the presence of a linear relationship between the factors and variables, as advised by (Tabachnick & Fidell, 2007).

The data's factorability was determined using Bartlett's sphericity test and the Kaiser-Meyer-Olkin (KMO) sample adequacy metric. The KMO index should range from 0 to 1, and Bartlett's test of Sphericity should be statistically significant at 0.05. Principal component analysis (PCA) was used to extract factors, and factors with Eigenvalues greater than one were chosen. Orthogonal rotation was chosen as the extraction method because it’s easily replicable in further studies since it is proved to have low sampling error and produces parsimonious results. The justification for orthogonal rotation is that

orthogonally rotated factors is much easier to interpret than factors that are obliquely rotated (Idinga, 2015).

3.11 Test for Assumptions of Multiple Regression

Multiple regression assumptions, according to Hair *et al.* (2010), are required to obtain findings that are representative of the sample. The tests for normality, linearity, homoscedasticity, and multi-collinearity are among the assumptions of multiple regression that be examined prior to regression analysis. The study tested for normality by using Kolmogorov-Smirnov test and Shapiro-Wilk Test. Kolmogorov Smirnov (K-S) tested the assumption of normality by drawing a sample from a population that was normally distributed. Normality is the distribution of data for individual variables that assume a bell sharped curve (Hair *et al.*, 2010). The justification for testing the assumption of normality was to confirm whether the collected data originated from a normally distributed population. The assumption was that residuals of variables are normally distributed. The test aimed at rejecting the hypothesis of normality at *P*-value less than or equal to alpha value (significance level set at 0.05). For example, where the Shapiro-Wilk Test values of significance were greater than 0.05, then it was concluded that the data is normal, and when it was found below 0.05 level of significance, the data was said to significantly deviating from normality.

Linearity is the degree to which two variables are correlated, and it is illustrated by a straight line (Tabachnick *et al.*, 2007). The linearity assumption assumes a straight relationship between study variables (Tabachnick & Fidell, 2007). It is difficult to establish the effect of the predictor variables on dependent variable when the predictor variables are highly correlated (Hair *et al.*, 2010). The study used Pearson's product-moment to measure the association between the criterion variables and the dependent

variable as recommended by Tabachnick and Fidell (2007). Pearson's correlation coefficients values range from ($^{-}$1.00 - $^{+}$1.00) which represents perfect relationships.

Homoscedasticity measures the degree of variance in the dependent variable which is explained by the independent variables and it assumes roughly equal variance across all continuous variables (Tabachnick *& Fidell.,* 2007). The study used Levene's test of homogeneity to establish if the variance in the dependent variable as explained by the independent variables is uniform and not concentrated on limited range of predictor variables (Hair *et al.,* 2010). In this study, the Levene's test of homogeneity tested whether the variability of innovative work behavior (dependent variable) was uniform across the values of psychological capital and job embeddedness (independent variables). The justification for Levene's test of homogeneity was to ascertain whether the variance in the dependent variable as being explained in the dependence relationship is not concentrated on only a limited range of the independent values (Hair *et al.,* 2010). Levene's test of homogeneity verified equal variance in the sample using the threshold of ($P > .05$), which means that in cases were ($P < .05$), then the results were said to be heteroscedastic which necessitated the transformation of the dependent variable scores prior to regression analysis (Tabachnick & Fidell, 2007).

Multicollinearity refers to the high degree of association between the dependent and independent variables (Hair *et al.,* 2010). Multi-collinearity causes high interrelationships between the study variables (Hair *et al.* 2010). Multi-collinearity was checked using Tolerance of Variance and Variance Inflation Factor (VIF). Tolerance of Variance is the amount of variance in a particular predictor variable which is not explained by other predictor variables (Leech & Onwuegbuzie, 2007). The VIF for a predictor variable establishes the degree of linear relationship between the independent

variable and the other predictors. The decision criteria for multi-collinearity is a tolerance value above 10 (Hair, Black, Babin, Anderson, & Tatham, 2006). The study confirmed no multi-colinearity between predictor variables since all the tolerance values were above the 10 thresholds.

3.12 Data Cleaning and Screening

Before data analysis, the researcher cleaned and screened data for missing values. Screening and cleaning of data helped in checking and addressing errors that could have occurred in the process of transferring data into the SPSS software (Tabachnick & Fidell, 2013). The process of data screening and cleaning started with entering the collected data into the SPSS software, and then cleaned for missing values and outliers using both missing value analysis (MVA) and Mahalanobis Distance (D^2) respectively (Tabachnick, Fidell, & Ullman, 2007). The cleaning and screening of data involves reading the original data against data entered in the computer, checking for inconsistencies, and missing responses to ensure accuracy and completeness since non-random missing data seriously affects the generalization of results while those that are random in nature pose less challenge as they are easy to be replaced.

3.13 Missing values and outlier Analysis

3.13.1 Missing values Analysis

The analysis of missing values were conducted as one of the conditions for multiple regression (Hair *et al.,* 2010). Missing data/values denotes the information where authentic figures on one or more items are not seen for evaluation (Hair *et al.*, 2010). Missing data occurs due to respondent's refusal to answer some sensitive questions like those relating to respondent's age and marital status (Barald & Enders, 2010).

In this study, data missing at random (MAR) was ignored as recommended by (Hair *et al*., 2010). Data MAR occurs when missing values of the dependent variable depends on the independent variable and not on the dependent variable (Hair *et al.*, 2010). This study considered data to be MAR where missing values of Innovative Work Behavior were reliant on the criterion variables. Data MAR was replaced by a series of means, except if the missing data would exceed 5% (Hair *et al.*, 2010).

List-Wise deletion was used to delete missing data completely at random (MCAR) especially in cases with missing values above 5% (Tabachnick & Fidell, 2007). Data MCAR occurs where missing values of the dependent variable (IWB) are not dependent on the criterion variables (Hair *et al.*, 2010). The justification for List-Wise deletion is that it is more accurate, relatively suitable for large samples and it does not contain inconsistent correlations (Hair *et al.*, 2010).

3.13.2 Outlier Analysis

Outliers are data points that markedly differ from others and identified as either univariate in which extreme scores are found on a single variable or multivariate in which scores deviate from the centroid of all scores involving predictor variables (Tabachnick & Fidell, 2007). Multivariate outliers in this study were detected through standardized scores which were outside the interval of (-3.0, 3.0) as recommended by (Howell, 2009). Multivariate outliers were tested using Mahalanobis Distance (D^2) which measures the distance a particular case deviates from the centroid (Tabachnick, 1936). Mahalanobis distance (D^2) measure was deemed appropriate in this study because it measures a multi-dimensional assessment of each observation across a set of variables (Hair *et al.*, 2010). The probabilities associated with computed Mahalanobis

values was calculated and arranged in ascending order and all values with probabilities below 0.001 were considered multivariate outliers (Saunders *et al*., 2007).

3.14 Data Analysis and Presentation

The study used SPSS software version 23 to analyze the collected data. Data analysis is described as to the process of bringing meaning to the collected data (Silva, 2008). Data analysis helps in transforming raw facts into meaningful and easily understandable information that assists in drawing conclusions concerning the stated research hypotheses. This study applied hierarchical regression in testing the direct effect relationship. In hierarchical regression, predictor variables are entered in a series of blocks and the effect of one predictor variable is manipulated to determine its effect on the outcome variable while holding the effect of other predictor variables contact. The direct effect hypotheses (H_{01} and H_{02}) tested for the direct effect of psychological capital on innovative work behavior and job embeddedness on innovative work behavior. The study further tested for the mediation effect of job embeddedness on the relationship between psychological capital and innovative behavior (H_{03}) using "Process Macro" (Model 4) version 3.4 by following the procedures for mediation analysis as developed by Hayes's (2017), Baron and Kenny (1986) and later harnessed by Hayes (2018). Likewise, "Process Macro" (Model 1) by Hayes's (2018) was applied in testing hypothesis for moderation (H_{04}) which stated that authentic leadership has no moderating effect on the relationship between psychological capital and job embeddedness. Moderated mediation hypothesis (H_{05}), which aimed at testing the moderating effect of authentic leadership on the indirect relationship between psychological capital and innovative work behavior through job embeddedness was

analyzed using Hayes's (2018) "Process Macro" (model 7), and the results of the study were presented using tables and figures.

3.14.1 Descriptive Statistics

Analysis of the respondents' descriptive statistics aimed at obtaining insights into the sample characteristics. Descriptive statistics is concerned with transformation of raw data into easily understandable form (Zikmund, Babin, Carr, & Griffith, 2010). Descriptive analysis was done to numerically describe and compare variables (Saunders, Lewis & Thornhill, 2009). Descriptive statistics was conducted to describe the demographic profile of respondents which included age, gender, education level and service tenure. The demographic results were then summarised and presented in tables. Descriptive statistics was further conducted to describe the interaction of control variables with the study variables (psychological capital, job embeddedness, authentic leadership and innovative work behaviour). This was done by cross tabulating the control variables against each study variable to establish the statistical difference between the control variables on each of the study variables. The determination of coefficient was *P* value less than 0.05, where the *P* value is less than 0.05 implied the existence of a statistically significant difference between the control variable and the study variable. Therefore, the conclusion was that a particular control variable influences the study variable in question. The results were reported using mean and standard deviation.

3.14.2 Correlation Analysis

The study conducted correlation analysis to establish the association between the criterion variables and the dependent variable. Correlation refers to the degree of association between the independent and dependent variables (Saunders & Lewis,

2010). The values of the correlation coefficients vary from a value of +1.00 to -1.00 which represents extremely perfect relationships. Highly correlated independent variables make it difficult to determine the effect of each independent variable on the dependent variable (Hair *et al.*, 2010).

3.14.3 Regression Analysis

Regression analysis is a statistical technique that explains the change in the dependent variable as a result of a change in the independent variable (Hair *et al.*, 2010). Hierarchical linear regression analysis was used to test the amount of variations (R^2 change) in the dependent variable as a result of each independent variable (Tabachnick & Fidell, 2007). Hierarchical regression is a method of entering the study variables in blocks and one at a time in each step, and then the dependent variable is regressed against the current set of the predictor variables. The first block involved entering the control variables to determine the effect of control variables on the dependent variable (innovative work behavior). Psychological capital was entered in the second block to determine its effect on innovative work behavior. Job embeddedness was entered in the third block to determine its effect on innovative work behavior. The hierarchical method was chosen to show how the prediction of the independent variables, improves the prediction (Leech *et al*., 2011). At each stage, the calculated (R^2) indicated the incremental change in variance accounted for in the dependent variable with the addition of a new predictor variable.

3.15 Model Specification

3.15.1 Model Specification for Control Variables

The test to determine the influence of the control variables on the dependent variables aimed at establishing how the control variables affected the dependent variable in

comparison with the direct effects (Tabachnick & Fidell, 2013). The level of significance should be *P*-value less than 0.05 to show that the control variable is a significant predictor of innovative work behavior as a dependent variable (Field, Miles, & Field, 2012). The following equation guided the analysis of control variables on the dependent variables:

Equation 2: *Model specification for control variables*

$Y=\beta_0+ \beta_1 (Gender) + \beta_2 (Age) + \beta_3 (Education) + \beta_4 (Tenure) +\varepsilon_1$ …….. (Equation 3.1)

Where:

Y: Represents the dependent variable (innovative work behavior)

$\beta 0_1$: Represents a Constant

B1- β4: Represents the coefficient of regression

ε_1: Represents the error term

3.15.2 Model Specification for Direct Effect Hypothesis Testing

The direct effect analysis intended to establish the effect of psychological capital on innovative work behavior (objective 1) and to determine the effect of job embeddedness on innovative work behavior (objective 2). The study used hierarchical regression for purposes of testing (*H_{01} and H_{02}).* Hierarchical regression is one of the data analysis methods used to manipulate the effect of a predictor variable on the dependent variable while holding other predictor variables constant in a series of blocks (Allison, 1999). The first block consisted of the control variables, followed by the independent variable (psychological capital). The third block consisted of control variables, independent variable (psychological capital) and mediator variable (job embeddedness).

The computed and derived test statistics included the coefficient of determination (R^2) and the (*P* -values). The *P*-value for each of the study variables should be significant at less than 0.05 to reveal a significant relationship between the predictor and the

dependent variable (Hair *et al.,* 2010; Field *et al.,* 2012). The direct effects were analyzed statistically using the specified linear equations (1) to (5) to test *H_01, H_02 and H_03* as shown in equation 3 below;

Equation 3: *Model specification for direct effect hypothesis*

$Y=\beta_{02}+ C + \varepsilon_2$ …….. (Equation 3.2)

$Y=\beta_{03}+C+ \beta_1X+ \varepsilon_3$…..……..…….…... (Equation 3.3)

$Y=\beta_{04}+C+ \beta_1X+ \beta_2M+ \varepsilon_4$ ……..……..…….…… (Equation 3.4)

Where:

Y: represents dependent (Innovative work behavior)

X: represents the independent variable (Psychological capital)

M: Represents the Mediator variable (Job embeddedness)

C: Represents the Control variables

$\beta 0_1$, $\beta 0_2$, $\beta 0_3$: Represents the Respective Y Constants

B1- β2: Represents the Coefficient of Regression

$\varepsilon_1 \ldots \varepsilon_4$: Represents the Respective error terms

3.15.3 Model Specification for Indirect Effect Hypothesis Testing

3.15.3.1 Model Specification for Mediation Hypothesis Testing

The study further tested the mediation role of job embeddedness on the relationship between psychological capital and innovative work behavior following the mediation models to establish the effect of the independent variable on the dependent variable through a third hypothetical variable (mediator) as recommended in the works of Baron and Kenny (1986) and later harnessed by (Hayes, 2017, 2018). The model for indirect hypothesis testing in equation 3.5 seeks to establish the effect of the independent variable (psychological capital) on the mediator variable (Job Embeddedness). In equation 3.6, the effect of the mediator variable (job embeddedness) on the dependent variable (Innovative Work Behavior), and equation 3.7 established the effect of the

independent variable (Psychological Capital) on the dependent variable (innovative work behavior). Equation 3.8 indicates the decision criteria meant to confirm the nature of mediation effect, which is the product of (a_1 and $b_{1)}$. According to Hayes (2018), a full mediation occurs when the inclusion of the mediator in Model equation 3.7, makes the relationship between independent variable and dependent variable equal to "Zero". That is the value of the direct relationship between independent variable and dependent variable in Model 3.7 turns to "Zero". On the other hand, if the direct effect of the independent variable on the dependent variable in Model 3.7 drastically reduces but remains significant and does not equal to "Zero", it implies that the mediator variable partially mediates the relationship between the independent variable and the dependent variable. The equation below depicts the three models of mediation analysis.

Equation 4: *Model for mediation hypothesis testing*

$M = a_{05} + C + a_1X + \varepsilon_5$ ..... (Equation 3.5)

$Y = b_{06} + C + b_1M + \varepsilon_6$ ..... (Equation 3.6)

$Y = C'_{07} + C + b_1M + C'_1X + \varepsilon_7$ ..... (Equation 3.7)

Where;

X: Represents the independent variable (Psychological Capital)

Y: Represents the dependent variable (Innovative Work Behaviour)

M: Represents the mediator variable (Job Embeddedness)

a_{05}, $b_{06,}$ C'07: Represents the Respective Y and M Constants

a_1: Represents the effect of slope coefficients denoting influence of the independent variable (psychological capital) on the mediator (Job Embeddedness)

Ć'$_1$: Represents the effect of slope coefficients denoting the influence of the independent variable (psychological capital) on the dependent variable (Innovative Work Behaviour)

$\varepsilon_5, \varepsilon_6, \varepsilon_7$: Represents the respective error terms

3.15.3.2 Model for Moderation Testing

The study used the model for moderation testing to determine the moderating effect of authentic leadership on the relationship between psychological capital and job embeddedness. Moderation implies an interaction effect where introducing a moderator changes the magnitude and direction of the relationship between the predictor variable and the outcome variable (Hayes, 2015). The research hypothesis (H_{04}) for moderation in this study tested the moderating effect of authentic leadership on the relationship between psychological capital and job embeddedness.

According to Hayes (2012), equation 1 is decisive to establish the interaction effect of the independent variable (psychological capital) and the moderator variable (authentic leadership) on the mediator variable (job embeddedness) (a_{1+} a_3W)

Equation 5: *Model for moderation testing*

$M=a_{08}+C + a_1X + a_2W + a_3XW+ \varepsilon_8$…….……(Equation 3.8)

Where;

M: Represents the mediator variable (Job Embeddedness)

a_{08}: Represents the mediator intercept.

a_1: Represents the effect of independent variable (Psychological Capital) on the mediator variable (Job Embeddedness)

a_2: Represents the effect of the moderator variable (authentic leadership) on the mediator variable (Job Embeddedness)

a_3: Represents the interaction effect of the independent variable (Psychological Capital) and the moderator variable (Authentic Leadership) on the mediator variable (Job Embeddedness.

X: Represents the independent variable (Psychological Capital)

W: Represents the moderator variable (Authentic Leadership)

XW: Represents the product of the interaction of the independent variable (psychological capital) and moderator variable (Authentic Leadership)

ε_{10}: Represents the respective error term

3.15.3.3 Model for Moderated Mediation Testing

Moderated mediation means the integration of moderation and mediation analysis to establish the conditional nature by which a variable transmits its effect on the other (Hayes, 2017). Moderated mediation model in this study aimed at testing hypothesis (H_{05}) which stated that authentic leadership has no moderating role on the indirect relationship between psychological capital and innovative work behavior through job embeddedness. In line with the works of Baron and Kenny (1986) and later harnessed by Hayes (2012) moderated mediation model involves running two equations. For example, Equations 1 establishes the effect of the interaction of the independent variable (psychological capital) and the moderator (authentic leadership) on the mediator (job embeddedness) (a_{1+} a_3W). Equation 2, establishes the conditional indirect effect of the mediator variable (job embeddedness) on the relationship between the independent variable (psychological capital) and the dependent variable (innovative work behavior) (a_{1+} a_3W)* b_1 as seen in equation 6 below.

Equation 6: *Model for Moderated Mediation Testing*

$M=a_{09}+C + a_1X + a_2W + a_3XW+ \varepsilon_8$**……..**(Equation 3.9)

$Y= B_{o10}+ C'X + b_1M + \varepsilon_{10}$ **…….……...……..……** (Equation 3.10)

Where;

M: Represents the mediator variable (Job Embeddedness)

B_{o10}: Represents the mediator intercept

a_1: Represents the effect of the independent variable on the mediator variable (Psychological Capital on Job Embeddedness)

a_2: Represents the effect of moderator variable (Authentic Leadership) on the mediator variable (Job Embeddedness)

a_3: Represents the effect of the interaction of independent variable (Psychological Capital) and Moderator variable (Authentic Leadership) on the mediator variable (Job Embeddedness)

X: Represents the independent variable (Psychological Capital)

W: Represents the moderator variable (Authentic Leadership)

XW: Represents the product of the interaction of independent variable (Psychological capital) and the moderator variable (Authentic Leadership)

B_{o11}: Represents the intercept of the dependent variable (Innovative Work Behavior)

C_1: Represents the effect of the independent variable (psychological capital) on the dependent variable (Innovative Work Behavior)

b_1: Represents the effect of the mediator variable (Job Embeddedness) on the independent variable (Innovative Work Behavior).

ε_{10} and ε_{11}: Represents the respective error terms

Following the scholarly work of Preacher, Rucker and Hayes (2007) and Hayes (2012), moderated mediation is conducted after establishing that job embeddedness (mediator variable) mediates the relationship between psychological capital (independent variable) and innovative work behavior (innovative work behavior). In this study, testing for moderation effect proceeded after confirming that job embeddedness significantly mediates the relationship between psychological capital and innovative work behavior. The choice of testing for moderated mediation rather than mediated moderation is in accordance with the views of Preacher *et al.* (2007) and Hayes (2012) who opined that moderated mediation is more applicable than mediated moderation although they can be interchangeably referred to. In this study, the interpretation of moderated mediation meant that authentic leadership conditions the influence of psychological capital on innovative work behavior through job embeddedness. The testing of moderated mediation of authentic leadership involved the use of Process Macro tool in the SPSS software Version 23. The default criteria for accepting or rejecting the moderated mediation hypothesis using Process Macro is the 95% confidence interval. Where the confidence interval generated on the basis of 0.05 includes Zero, then a decision of no relationship is concluded implying that we accept the null hypothesis and reject the alternative hypothesis (Hayes, 2015).

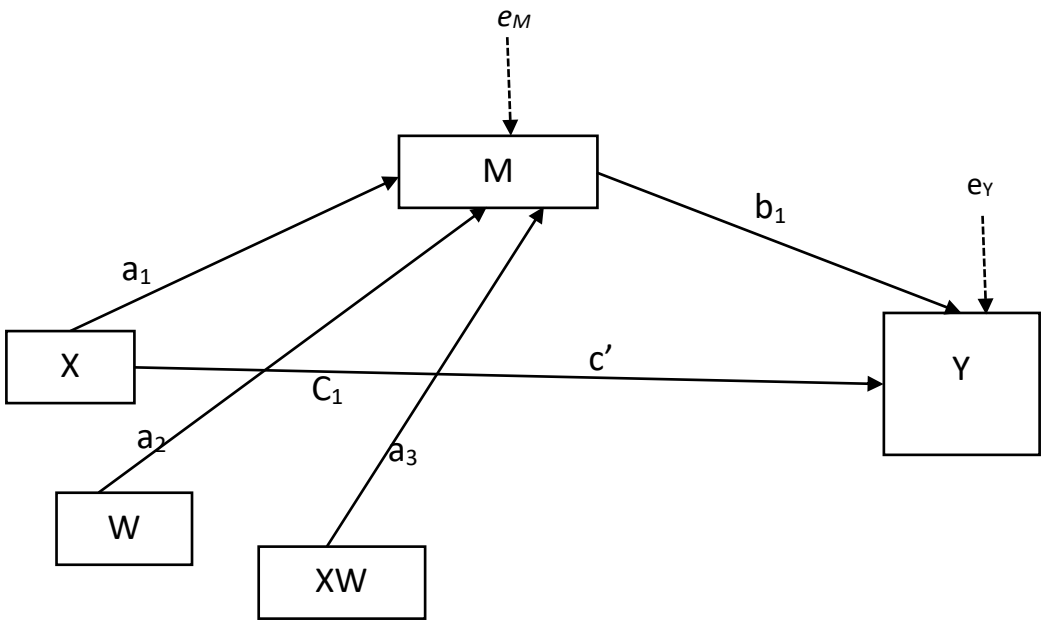

Figure 2: *Statistical model*
Source: Hayes (2017) Model 7.

Meaning of symbols used in modelling;

X: Represents the independent variable (Psychological Capital)

W: Represents the moderator variable (Authentic Leadership)

XW: Represents the interaction of the independent variable (Psychological Capital) and the moderator variable (Authentic Leadership)

M: Represents the mediator variable (Job Embeddedness)

Y: Represents the dependent variable (Innovative Work Behavior)

a_1: Represents the effect of the independent variable (psychological capital) on the mediator variable (Job Embeddedness)

a_2: Represents the effect of the moderator variable (Authentic Leadership) on the (Job Embeddedness)

a_3: Represents the effect of the interaction of the independent variable (psychological capital) and the moderator variable (Authentic Leadership) on the mediator variable (Job Embeddedness)

C_1: Represents the effect of the independent variable (psychological capital) on the dependent variable (Innovative Work Behavior)

b_1: Represents the effect of the mediator (Job Embeddedness) on the dependent variable (Innovative Work Behavior)

ε_m -- ε_y: Represents the respective error terms in each of the equations.

Table 3:3. Summary of hypothesis testing.

H_0	Hypothesis	Parameters	Decision
$H_0$1	Psychological Capital has no significant effect on IWB	β-Test ΔR^2	Accept or reject
$H_0$2	Job embeddedness has no significant effect IWB	β-Test ΔR^2	Accept or reject
$H_0$3	Job Embeddedness has no significant mediating effect between Psycap and IWB	Confidence interval ΔR^2	Accept or reject
$H_0$4	AL has no moderating effect between psycap and JE	Confidence interval	Accept or reject
$H_0$5	Authentic leadership has no moderating effect on the indirect relationship between Psycap and IWB through JE	Confidence interval	Accept or reject

Source: Survey data (2021)

3.16 Ethical Considerations

Schumacher & McMillan (1993) define ethical considerations in research as the principles the researcher should abide to while conducting research. The justification for ethical concern was to ensure that the researcher does not violate the ethics of conducting a research study. Therefore, the researcher considered a number of ethical considerations before execution of data collection, including getting consent and approval from the participants, encouraging voluntary participation, ensuring

anonymity and confidentiality and avoiding fraud. The researcher obtained a letter from the Uganda National Council for Higher Education (NCHE) requesting permission to conduct the study in Universities, then presented it to the heads of the respective public universities to provide the researcher permission to collect data. An introduction letter from Moi University accompanied the letter from (NCHE) and a copy of the questionnaire with a cover page explaining the importance of the study and expected findings. Respondents were asked to give their informed consent prior to participating in the study. In order to protect the confidentiality of the information provided by participants, the researcher did not identify any of the specific responses.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION OF FINDINGS

4.0 Introduction

This section presents the results of data analysis which was entered into SPSS software version 22 for analysis. The chapter presents results about the response rate, data cleaning and screening, demographic profile of respondents, descriptive statistics, validity and reliability of the research instruments, factor analysis of the study variables, correlation analysis, multiple regression of the study variables, testing assumptions, interpretation of the tested hypotheses and summary of the findings.

4.1 Response Rate

Response rate is the percentage of respondents who participated in the survey (Kothari, 2004). It is also known as the completion rate or return rate. The response rate is of significant concern in a scientific study because it ensures that the percentage of questionnaires collected are valid for data analysis (Sekaran & Bougie 2016; Hair *et al.*, 2010).

Table 4.1.below indicates that out of the 384 questionnaire that were distributed to respondents, 312 (representing 81.25%) were returned. While, in the 312 returned questionnaires, only 292 (76.04%) were valid and usable, 15 (3.9%) were incomplete and 05 (1.3%) were out liars and therefore excluded from further analysis. Excluding incomplete questionnaires and outlier cases helps to overcome the risk of distorting results like the mean values (Lindner & Wingenbach, 2002). This implies that the valid response rate was 292 (76.04%). According to Caslyn and Winter (1999), lower response rate is associated with non-response bias. To minimise non response bias

Lindner and Wingenbach (2002) opines that a study ought to achieve a minimum response rate of 50% to minimise non response bias. Relatedly, Sekaran and Bougie (2016) argue that even a response rate of 30% is acceptable for surveys. . Given that this study obtained a higher response rate of 76.04%, non-response bias is was not a matter of concern in this study.

Table 4:1. Response rate

Responses	**No.**	**Percentage**
Administered Questionnaires	384	100
Returned Questionnaires	312	81.25
Usable Questionnaires	292	76.04
Unusable Questionnaires	20	5.20

Source: *Survey data (2021)*

4.2 Data Screening and Cleaning

The process of data screening and cleaning helps in checking for and addressing errors that could have arisen as data was being entered into the software (Tabachnick & Fidell, 2013). Data screening and cleaning ensured that the data that is subjected to further statistical investigations is free of error and in position to provide useful inferences. Data screening and cleaning specifically comprised examination of missing values and dealing with outliers as elaborated below in sections 4.2.1 and 4.2.2

4.2.1 Missing Data Detection and Treatment

In social science study, it's not uncommon for missing values to be found (Hayes, 2012). Fichman and Cummings (2003) noted that missing values can have a significant impact on statistical analysis outcomes. As a result, researchers made an effort to limit the number of missing values. Data collected was analyzed for frequency and no cases were

found to be have missing values and therefore missing values were ignored as recommended by (Hair *et al*., 2010).

4.2.2 Outliers Detection and Treatment

Outliers are scores that are significantly different from the mean and may have an impact on the study's outcomes (Hair et al., 2010). Outliers can be caused by a mismatch in the measurement or entry of data, and they might signal possible experimental errors (Churchill & Laccobucci, 2006). Having a large number of outliers in your dataset increases the risk of inaccurate data analysis (Verardi & Croux, 2009). When looking for outliers, the Mahalanobis distance was used (d2). Using Mahalanobis distance, it can be determined how far a given example is from the center of the other cases (Hair et al., 2010). Multivariate outliers were removed from the dataset in Table 4.2 because they could affect results and conclusions taken from additional data analysis based on measures such as the mean, which are based on the distribution of the data (Tabachnick and Fidell, 2013).

Table 4:2. Mahalanobis distance.

	Minimum	**Maximum**	**Mean**	**Std. deviation**	**N**
Mahanobis distance	1.27	24.89	7.97	4.64	306

a. Dependent Variable: innovative work behavior

Source: Survey Data (2021)

4.3 Demographic Profile of Respondents

The demographic profile of respondents were described to understand the respondent's general information. The respondents' background characteristics were age, gender, education level and tenure.

The results in Table 4.3 below summaries respondent's demographic characteristics by indicating that with regard to respondents gender, the findings show that majority of the respondents 152 (52.1%) were males and 140 (47.9%) of the respondents were females. This implies that the information collected was from a balanced gender and therefore appropriate for drawing conclusion and generalize results to the whole population comprising of both sexes.

In addition, regarding respondents' age, the findings show that majority of the respondents 135 (46.2%) were in the age range of 31 to 40 years, 80 (27.4%) between 21 and 30, 73 (25.0%) were over 40 years and 04 (1.4%) were below 20 years. It is thus evident that the largest percentage (46.2%) of the respondents were between the age of 31 and 40 years while the least 04 (1.3%) were below 20 years. This implies that Public Universities mostly recruits staff who are above 30 years of age. This is so because University settings mostly recruit staff who have attained masters' level of education, which is related to age since it majorly deals in teaching.

As far as the respondents level of education is concerned, the findings show that majority of the respondents 128 (43.83%) had attained master degree, 74 (25.3%) had a first degree, 43 (14.7%) had diploma, 30 (10.3%) attained PhD, 12 (4.1%) were certificate holders while only 05 (1.7%) had obtained a post PhD degree. This implies that Public Universities in Uganda mostly recruit employees with masters. This is logical since Universities are mainly engaged in teaching and therefore need employees with higher qualifications. It was observed that there was a fair representation of different education level of respondents in this study. These results imply that all the respondents had the ability to respond to the questionnaire and thoughtfully provide

responses to each question item in the questionnaire since the attained education level could enable them to understand the questionnaire and respond to it.

In relation to job tenure, the findings show that majority 113 (38.7%) of the respondents had worked in their respective public Universities for less than 05 years, 95 (32.5%) had worked between 6 and 10 years, 56 (19.2%) had worked for a period between 11 and 15 years, 19 (6.5%) had works for 16 to 20 years while, 09 (3.1%) had worked for more than 20 years. Higher job tenure means more experience of the respondent in the organization and this enhances the value of the information from the respondents as it provides knowledge about the real contextual state of happenings in the University setting.

Table 4:3. Background characteristics of the respondents

Item	Categorization	Frequency	Percentage
Gender	Male	152	52.1
	Female	140	47.9
	Sub – Total	**292**	**100**
Age Bracket	Below 20 years	4	1.4
	21-30 years	80	27.4
	31-40 years	135	46.2
	Over 40 years	73	25.0
	Sub-total	**292**	**100**
	Certificate	12	4.1
	Diploma	43	14.7
Education Level	1st Degree	74	25.3
	Masters	128	43.8
	PhD	30	10.3
	Post PhD	05	1.7
	Sub – Total	**292**	**100**
Job Tenure	Less than 5 years	113	38.7
	6-10 years	95	32.5
	11-15 years	56	19.2
	16-20 years	19	6.5
	More than 20 years	09	3.1
	Sub- Total	**292**	**100**

Source: Survey Data (2021)

4.4 Descriptive statistics of the Study Variables

The purpose of the descriptive statistics for the study variables were to quantitatively present the main features of the information collected about each of the variables under the study. According to Tabachinch and Fiddel (2010), the descriptive statistics provide a simplified comprehension of the collected data by presenting the data in a more meaningful way that facilitates simplified interpretation.

This subsection presents findings on the descriptive statistics of psychological capital, job embeddedness, authentic leadership and innovative work behavior. The descriptives were presented in terms of mean and standard deviation. The mean values provide information about how respondents agreed or disagreed with given statements. The values of standard deviation provide information about how the respondent's views deviate from the centroid. Whereas minimum and maximum provide information about the least and the highest values regarding the responses.

4.4.1 Descriptive Statistics for innovative work behavior

Table 4.4 below presents the perception of respondents regarding innovative work behavior. The respondents indicated that they attend to issues different from their routine work (mean = 3.91, SD = 1.12). This implies that the employees exhibit extra-role behaviors by paying attention to issues beyond their required work. The standard deviation shows that the respondents' perceptions varied regarding this statement. The results show that the respondents were neutral regarding the statement they are curious about how to improve things in the University (mean = 3.57 (SD = 1.12). The standard deviation of 1.12 imply that the respondents had varying views about the statement. The respondents also showed that they discover novel methods to accomplish work tasks (mean = 3.85, SD = 1.21) since the mean value is close to 4 which indicates agree.

This implies that the employees are innovative since they look for novel approaches to execution of tasks. The standard deviation show a high variability of the respondents' perceptions.

Regarding the statement that 'I create novel solutions to challenges that arise in this University', the mean value is 3.77 which is close to 4 and this implies that the respondents were in agreement with this statement. The standard deviation was 1.18, which indicates the variability in the respondents' views. The results also indicate that the respondents agreed with the statements that 'I analytically present novel ideas into work practices' (mean = 3.75, SD = 1.20); 'I participate in the execution of novel ideas' (mean = 3.92, SD = 1.18) and 'I put exertion into the improvement of novel thing in this University' (mean = 3.70, SD = 1.28). On the other hand, majority of the respondents were neutral with the statements that 'I make key members of the organization to be passionate for new ideas' (mean = 3.63, SD = 1.21); 'I endeavor to persuade people to support innovative ideas' (mean = 3.38 (SD = 1.28).

Table 4:4. Descriptive Statistics for innovative work behavior

N=292	**Mean**	**Std. Deviation**
I attend to issues different from my routine work	3.91	1.124
I am curious about how to improve things in the University	3.57	1.339
I explore novel methods, techniques or instruments of work	3.87	1.198
I explore novel methods, techniques or instruments of work	3.77	1.181
I discover novel methods to accomplish work tasks	3.85	1.210
I make key members of the organization to be passionate for new ideas	3.63	1.219
I endeavor to persuade people to support innovative ideas	3.38	1.280
I analytically present novel ideas into work practices	3.75	1.206
I participate in the execution of novel ideas	3.92	1.183
I put exertion into the improvement of novel thing in this University	3.70	1.289

Source: Survey Data (2021)

4.4.2 Descriptive Statistics for psychological capital

This section presents the perceptions of respondents regarding their psychological capital. Table 4.5 below shows the extent to which respondents agreed or disagreed with the statements that measured psychological capital. From the findings, the respondents agreed that when they are caught up in difficult, they get their way out of it (mean = 4.28, SD = 1.00). This indicates that the employees have the positive energy to get alternative pathways to solve problems. The respondents also indicated that they are strongly driven to achieving their goals (mean = 4.32, SD = .94) which implies that the employees are hopeful of achieving their goals. The standard deviation of .94 show that the respondents had low varying perceptions regarding their hope to achieve goals.

The respondents also indicated that they have numerous approaches to resolve any work problem that may befall them (mean = 4.08, SD = 1.06). The standard deviation of 1.06 however show high variability in the respondents' responses. The respondents also showed that they are in the best mood, when actually in a challenging situation', mean = 4.05 (SD = 0.98); the results indicate that the employees have the positive energy to look for various solutions to solve work related problems. The respondents also indicated that they think of more than one way to achieve goals at the work place (mean=4.02, SD = 1.02). This implies that the respondents perceive the availability of several alternative to achieve workplace goals. The standard deviation however shows that the respondents had high varying perceptions regarding this statement. The respondents also indicated that they enjoy a great deal of self-assurance when in the University (mean = 4.01, SD = 1.01). This implies that the respondents have confidence at work. The standard deviation of 1.01 indicates that the respondents had varying perceptions about the statement. The standard deviation shows high variability of the

respondents regarding this statement. The respondents also showed that they accomplish their work in time instead of waiting until last moments (mean = 4.01 (SD = 1.06) the standard deviation of 1.06 show varying perceptions of the respondents about this statement. On the other hand, majority of the employees showed that they were neutral about the statement that 'Iam in the best mood, when actually in a challenging situation (mean=3.04 SD = 1.44). The respondents were also neutral about the statements that;' I feel that I have attained abundant victory in my career' (mean = 3.52, SD =1.32) with a high standard deviation showing high variability among the respondents; 'I encounter several challenges in this University and I can overcome them' (mean = 3.20, SD = 1.40)'; 'I desire independence at work place to discover a solution to problems' (mean = 3.43, SD = 1.36); 'I think that the current job gives me a right opportunity to achieve my goals (mean = 3.98, SD = 1.20).

Majority of the employees agreed with the statement that 'I quickly regain my normal mood after normal mood quickly after spiteful work events' (mean = 4.05, SD = .98). The results indicate that the respondents can bounce back after a challenge. The respondents also showed that they like dealing with novel and rare occasions (mean = 4.01, SD =1.06). Regarding the statements, 'I am always successful in forming positive influence about others at work place' (mean = 4.04, SD = .95); 'I like taking multiple approaches to goal achievement in this University (mean= 4.06, SD = 1.02); 'I like novel and puzzling work' (mean= 4.19, SD = .94); and 'I solve angry feelings that I may hold toward a specific individual while at the work place' (mean= 4.05, SD 1.11, majority of the respondents were in agreement with these statements. The standard deviation however shows some variability in the respondents' views about these statements.

The findings show that with regard to optimism, majority of the employees disagreed with the statements that 'I always expect the best, when I am uncertain of something', mean = 2.79 (SD = 1.47); 'I can simply feel comfortable while working in this University', mean = 3.53 (SD = 1.40); the employees according to the responses show that they are not sure with the statements that 'I delay the performance of my work for another time when I feel piqued, mean =3.23 (SD = 1.45); 'I am continually expectant about my future while working with this University', mean = 3.86 (SD = 1.19); 'I anticipate trials to guarantee steadiness in realizing my goals in this University', mean =3.85 (SD = 1.10); 'I presume pleasing outcomes, instead of unpleasing ones', mean = 3.86 (SD = 1.18).

Table 4:5. Descriptive statistics for psychological capital

N=292	Mean	Std. Deviation
When I am caught up in difficult, I get my way out of it	4.28	1.00
I am strongly driven to achieving my work goals	4.32	.94
I have numerous approaches to solve any problem that may befall me	4.08	1.06
I feel that I have attained abundant victory in my career	3.52	1.32
I am able to think of multiple ways to goal achievement	4.02	1.02
I have attained utmost goals I have pursued in this University	3.36	1.38
I enjoy a great deal of self-assurance when in this University	4.01	1.10
I'm in the best mood, when I'm actually in a challenging situation	3.04	1.44
I encounter several challenges in this University and I can overcome them	3.20	1.40
I desire independence at work place to discover a solution to problems	3.43	1.36
I think that the current job gives me a right opportunity to achieve life goals	3.98	1.20
I accomplish my work in time instead of waiting until last moments	4.01	1.15
I quickly regain my normal mood quickly after spiteful events	4.05	.98
I like dealing with novel and rare occasions	4.01	1.06
I am always successful in forming positive influence about others at work	4.04	.95
I like taking multiple approaches to goal achievement in this University	4.06	1.08
I like novel and puzzling work	4.19	.94
I solve angry feelings that I may hold toward a specific individual	4.05	1.11
I always expect the best when I am uncertain of something	2.79	1.47
I can simply feel comfortable while working in this University	3.53	1.40
I delay the performance of my work for another time when I feel piqued	3.23	1.45
I am continually expectant about my future	3.86	1.19
I anticipate trials to guarantee steadiness in realizing my goals	3.85	1.10
I presume pleasing outcomes, instead of unpleasing ones	3.86	1.18

Source: Survey Data (2021)

4.4.3 Descriptive Statistics for Job Embeddedness

Table 4.6 presents the perception of respondents regarding the employees' job embeddedness. The respondents agreed with the statement that; 'I am compatible with the organization's cultural values and beliefs' (mean = 4.02, SD = 1.07). This implies that the culture of the organization is in congruence with the employee's values and beliefs. The standard deviation of 1.07 show variations in the respondents' vies about this

statement. The respondents also showed that the projections for ongoing employment with this University are outstanding (mean =3.86, SD = 1.17). The mean value for the statement 'I have excessive liberty to make decisions on how to pursue my goals' was 3.49 and standard deviation 1.29 which implies that the respondents were neutral with this statement. The standard deviation shows that the respondents had varying views about this statement.

The respondents were as well in agreement with the statements that 'I feel that I am greatly respected by work place people' (mean = 3.73, SD = 1.15), 'My job optimally utilizes my skills and talents' (mean = 3.92, SD = 1.15), 'I feel that I am a good match for this University' (mean = 4.02 (SD = 1.02), 'I like the authority and obligation I have at this University' (mean = 3.87(SD = 1.15). and 'I like the members of my work group' (mean = 4.05 (SD = .91). On the other hand, respondents were neutral with the statements that 'The employee perks in this University are suitable' (mean = 3.16, SD = 1.41), 'My workmate are parallel to me' (mean = 3.55, SD = 1.19) and 'I would forego a lot if I left this job' (mean = 3.45, SD = 1.30). The standard deviations of 1.41, 1.19 and 1.30 respectively show that the respondents had varying perceptions about these statements.

Table 4:6. Descriptive Statistics for job embeddedness

N=292	Mean	Std. Deviation
I am compatible with the organization's cultural values and beliefs	4.02	1.07
The projections for ongoing employment with this University are outstanding	3.86	1.17
I have excessive liberty to make decisions on how to pursue my goals	3.49	1.29
I feel that I am greatly respected by work place people	3.73	1.15
My job optimally utilizes my skills and talents	3.92	1.11
I feel that I am a good match for this University	4.02	1.02
I like the authority and obligation I have at this University	3.87	1.15
The employee perks in this University are suitable	3.16	1.41
My workmate are parallel to me	3.55	1.19
I would forego a lot if I left this job	3.45	1.30

Sources: Survey Data 2021

4.4.4 Descriptive Statistics for Authentic Leadership

The study also analyzed the perceptions of respondents regarding the item measures for authentic leadership. The respondents agreed with the statements that 'My leader inspires everybody to express his or her mind' (mean = 4.22, SD = .85), 'My leader shows beliefs consistent with actions' (mean = 3.84, SD = 1.08), 'My leader encourages me to take positions that support my core values' (mean = 4.01, SD = 1.00), 'My leader makes hard decisions built on high morals conduct' (mean = 3.90, SD = 1.11), 'My leader collects opinions that test his or her intensely held positions' (mean = 3.98, SD =1.01), 'My leader scrutinizes required facts prior to decision making' (mean = 3.93, SD = 1.00), 'My leader carefully pays attention to different opinions prior to conclusions' (mean = 3.98, SD = 1.08), 'My Leader seeks reaction to mend relations with others' (mean = 3.95 (SD = 1.07); and 'My Leader demonstrates he or she knows the impact of specific actions on others' (mean = 4.42, SD = .76). On the other hand, the findings show that respondents were neutral with the statements that; 'My leader declares what she or he accurately means', mean = 3.68 (1.26) and 'My leader accepts mistakes made', mean = 3.55 (SD = 1.35); 'My Leader recognizes when

to re-evaluate his or her positions on key issues', mean = 3.61 (SD = 1.20) as depicted in table 4.7 below.

Table 4:7. Descriptive Statistics for authentic leadership.

N=292	Mean	Std. Deviation
My leader declares what she or he accurately means	3.68	1.26
My leader accepts mistakes made	4.15	.866
My leader inspires everybody to express his or her mind	4.22	.856
My leader shows beliefs consistent with actions	3.84	1.08
My leader encourages me to take positions that support my core values	4.01	1.00
My leader makes hard decisions built on high morals conduct	3.90	1.11
My leader collects opinions that test his or her intensely held positions	3.98	1.01
My leader scrutinizes required facts prior to decision making	3.93	1.00
My leader carefully pays attention to different views prior to conclusions	3.98	1.08
My Leader seeks reaction to mend relations with others	3.95	1.07
My Leader knows when to re-evaluate his or her positions on key issues	4.35	.792
My Leader shows he or she knows the impact of specific actions on others	4.42	.763

Source: Survey Data (2021)

4.5 Cross Tabulation of Employee Demographic Characteristics against the Study Variables

4.5.1 Employee Age against the Study Variables

Employee age was cross-tabulated against the study variables to establish its influence on the study variables. The findings in Table 4.8 below shows that there is no statistically significant difference between respondents' age and psychological capital ($F = 1.51$, $P > 0.05$). The results indicate that the age of employees does not influence their psychological capital. Regarding employee age and Job Embeddedness, the findings reveal that there is no statistically significant difference between age and Job Embeddedness ($F = 0.74$, $P > 0.05$). The findings thus indicate that employee age does not influence Job Embeddedness. The findings as well indicate that age does not

influence Authentic leadership (F = 1.90, *P* > 0.05). The results imply that change in employee age does not determine Authentic Leadership. Regarding age and Innovative work behavior, the findings reveal that there is no statistically significant difference between age and Innovative Work Behavior (F = 0.93, *P* > 0.05). The results imply that change in age does not cause a change in innovative work behavior.

Table 4:8. Cross Tabulation of Age against the Study Variables

			Descriptives		**ANOVA**	
Variable	**Years**	**N**	**Mean**	**Std. Deviation**	**F**	**Sig.**
Psychological Capital	Below 20 years	04	3.26	1.19	1.514	.21
	20-30 years	80	3.73	0.56		
	31-40 years	135	3.79	0.54		
	Over 40 years	73	3.82	0.57		
	Total	**292**	**3.78**	**0.57**		
Job Embeddedness	Below 20 years	04	3.29	1.09	.741	.52
	20-30 years	80	3.69	.74		
	31-40 years	135	3.677	.70		
	Over 40 years	73	3.73	.65		
	Total	**292**	**3.73**	**.71**		
Authentic Leadership	Below 20 years	04	3.56	1.12	.90	.44
	20-30 years	80	4.03	.60		
	31-40 years	135	4.03	.56		
	Over 40 years	73	4.05	.58		
	Total	**292**	**4.03**	**.58**		
Innovative Work Behavior	Below 20 years	04	3.65	.94	.93	.44
	20-30 years	80	3.74	.69		
	31-40 years	135	3.66	.65		
	Over 40 years	73	3.86	.63		
	Total	**292**	**3.73**	**.66**		

Source: Primary Data (2021)

4.5.2 Employee Gender against the Study Variables

This section analyses the statistical difference between employee gender and the study variables. The results in Table 4.9 below revealed that there is no statistically significant

difference between gender and psychological capital (F = 2.28, *P* > 0.05). The implication is that employee's psychological capital is not influenced by the employees' gender. The results also indicate no statistically significant difference between gender and Job Embeddedness (F = 0.07, *P* > 0.05). The results imply that employee's gender does not influence their embeddedness in their organization. This is because both gender are exposed to the same factors that embed them in the organization. The results as well reveal no statistically significant difference between gender and Innovative Work Behavior (F = 0.99, *P* > 0.05). The findings imply that the respondents' gender does not influence their ability to exhibit Innovative Work Behavior. As regards gender and Authentic Leadership, the findings reveal that there is a statistically significant difference between gender and Authentic Leadership (F = 4.47, *P* > 0.05). The findings imply that the gender of employees influence their perception regarding the authenticity of their leaders.

Table 4:9. Cross Tabulation of Employee Gender against the Study Variables

			Descriptives		**ANOVA**	
Variable	**Gender**	**N**	**Mean**	**Std. Deviation**	**F**	**Sig.**
Psychological Capital	Male	152	3.83	.53	2.28	.13
	Female	140	3.72	.60		
	Total	**292**	**3.78**	**.57**		
Job Embeddedness	Male	152	3.72	.66	.07	.79
	Female	140	3.75	.76		
	Total	**292**	**3.73**	**.71**		
Authentic Leadership	Male	152	4.10	.49	4.47	.03
	Female	140	3.95	.67		
	Total	**292**	**4.03**	**.58**		
Innovative Work Bevaviour	Male	152	3.68	.85	.99	.31
	Female	140	3.78	.83		
	Total	**292**	**3.73**	**.84**		

Source: Survey Data (2021)

4.5.3 Employee education level against the Study Variables

The study also sought to establish the statistical difference between respondents' education level and the study variables. As regards Psychological capital, the findings show that there is a statistically significant difference between respondents' education level and psychological capital ($F = 9.22$, $P < 0.05$). These findings indicate that an increase in education level leads to rise in psychological capital. This could be because of seniority of the employees who have high qualifications since they have gained dynamic knowledge in line with their work roles and such employees have high expectation to succeed and the will power.

The findings as well reveal a statistically significant difference between education level and Job Embeddedness ($F = 4.05$, $P < 0.05$). The results imply that employees with high level of education are highly embedded in the organization compared to employees with lower level of education. Education career forms part of the factors that embedded employees in the organization and employees with high education level feel that their qualification is compatible with their current job, and therefore they are embedded in the organization. The results on also reveal a statistically significant difference between education level and Innovative Wok Behavior ($F = 3.54$, $P < 0.05$). The results imply that the level of education for the employees influence their ability to innovative ideas. The results reveal no statistically significant difference between respondents' level of education and Authentic Leadership ($F = 1.97$, $P < 0.05$) as shown in table 4.10 below.

Table 4:10. Employee Education Level against the Study Variables

		Descriptives			ANOVA	
Variable	**Education Level**	**N**	**Mean**	**Std. Deviation**	**F**	**Sig.**
Psychological Capital	Certificate	12	3.01	.62	9.22	.000
	Diploma	43	3.67	.51		
	1st Degree	74	3.65	.59		
	Masters	128	3.87	.49		
	PhD	30	4.10	.54		
	Post PhD	05	4.01	.57		
	Total	**292**	**3.78**	**.57**		
Job Embeddeness	Certificate	12	3.08	.93	4.05	.000
	Diploma	43	3.63	.60		
	1st Degree	74	3.62	.81		
	Masters	128	3.85	.61		
	PhD	30	3.93	.66		
	Post PhD	05	3.80	.82		
	Total	**292**	**3.73**	**.71**		
Authentic Leadership	Certificate	12	3.69	.49	1.97	.08
	Diploma	43	3.96	.59		
	1st Degree	74	3.94	.62		
	Masters	107	4.10	.59		
	PhD	128	4.16	.51		
	Post PhD	05	4.10	.19		
	Total	**292**	**4.03**	**.58**		
Innovative Work Behavior	Certificate	12	3.01	.63	3.54	.000
	Diploma	43	3.46	.84		
	1st Degree	74	3.73	.77		
	Masters	128	3.84	.83		
	PhD	30	3.91	.93		
	Post PhD	05	4.02	.88		
	Total	**292**	**3.73**	**.84**		

Source: Survey Data (2021)

4.5.4 Employee Tenure against the Study Variables

The study established the tactical difference between tenure and study variables. The results in Table 4.11 below revealed that there is no statistically significant difference between tenure and psychological capital (F= .24, $P > 0.05$). The results imply that employee tenure has no influence on psychological capital. Still, the results reveal that there is no statistically significant difference between employee tenure and job embeddedness (F = 1. 12, $P > 0.05$). The findings imply that tenure does not determine the embeddedness of employees. Further still, the findings reveal that there is no

statistical difference between tenure and Authentic Leadership (F = 1. 29, $P > 0.05$). The findings imply that employee's tenure does not determine their perception about the authenticity of leaders. Finally, regarding Innovative Work Behavior, the findings real that there is no statically significant difference between employee tenure and Innovative Work Behavior (F = 0.72, $P > 0.05$). The findings imply that tenure does not have an influence on Innovative Work Behavior.

Table 4:11. Cross Tabulation of Employee Tenure against the Study Variables

			Descriptives		**ANOVA**	
Variable	**Tenure**	**N**	**Mean**	**Std. Deviation**	**F**	**Sig.**
Psychological Capital	Less than 5 years	113	3.75	.51	.24	.91
	6-10 years	95	3.77	.54		
	11-15 years	56	3.83	.67		
	16-20 years	19	3.74	.56		
	More than 20 years	09	3.85	.87		
	Total	**292**	**3.78**	**.57**		
Job Embeddedness	Less than 5 years	113	3.75	.66	.12	.97
	6-10 years	95	3.74	.68		
	11-15 years	56	3.75	.82		
	16-20 years	19	3.66	.69		
	More than 20 years	09	3.62	.93		
	Total	**292**	**3.73**	**.71**		
Authentic Leaderships	Less than 5 years	113	4.04	.51	1.29	.27
	6-10 years	95	4.05	.58		
	11-15 years	56	4.09	.57		
	16-20 years	19	4.75	..83		
	More than 20 years	09	3.93	.91		
	Total	**292**	**4.03**	**.58**		
Innovative Work Bevaviour	Less than 5 years	113	3.76	.76	.72	.57
	6-10 years	95	3.67	.86		
	11-15 years	56	3.79	.92		
	16-20 years	19	3.54	.92		
	More than 20 years	09	4.01	.93		
	Total	**292**	**3.73**	**.84**		

Source: Primary Data 2021.

4.6 Reliability of the research instrument

Reliability was determined using Cronbach alpha coefficient to assess the internal consistency of the research instrument (Zikmund, 2013). The findings in Table 4.12 below shows that the Cronbach alpha values for job embeddedness, authentic leadership, psychological capital and innovative work were above the accepted 0.7 threshold as recommended in the works of Tabachnick and Fiddel (2013). The obtained reliability index of the variables are adequate and implies any other researcher can do a similar study and obtain equivalent evidence or conclusions, using the same or a similar sample size as the original researcher.

Table 4:12. Reliability Statistics

Variable	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	NO of Items
Psychological capital	0.85	0.85	24
Authentic leadership	0.82	0.82	12
Job embeddedness	0.82	0.83	11
Innovative work behavior	0.87	0.87	10

Source: Survey Data (2021)

4.7 Factor Analysis for the Study Variables

Factor analysis was analysed to identify the latent variables in the data constructs and to prepare it for regression (Idinga, 2015). Factor analysis was tested using Exploratory Factor Analysis type (EFA). EFA was selected because it enables the study to explore the underlying factor structure (Idinga, 2015). Hence, exploratory factor analysis was conducted on all items used to measure independent variables (hope, self-efficacy, resilience, and optimism), mediator variable (job embeddedness), moderator variable (authentic leadership) and the dependent variable (innovative work behavior). Factorability was examined using the Bartlets test of sphericity and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (Bartlets test of Sphericity should be

statistically significant at 0.05, and the KMO index should range from zero to one) Principal Component Analysis (PCA) was used to extract the elements and factors with Eigen values greater than 1 were chosen. PCA was chosen as the most convenient method as it revealed the set of factors which accounted for all common and unique variances (Idinga, 2015). Orthogonal rotation was chosen as the extraction method because the results of an orthogonal rotation are more likely to be repeated in future studies and has less sampling error and yields more parsimonious. More so it is easier to interpret results that are orthogonally rotated because the factors are un-related to each other (Idinga, 2015).

4.7.1 Factor Analysis for Innovative Work Behavior

In Table 4.13 below, the results of factor analysis for IWB shows that all the factor loading results for Items measuring innovative work behavior were above the 0.5 threshold. Therefore, all the Items were retained for further analysis. The first factor accounted for 48.48% while the second factor accounted for 10.26% of the total variance in innovative work behavior. The Kaiser-Meyer-Olkin Measure value (0.88) that was above 0.5 hence acceptable. Also the Bartlett's Test shows that the obtained findings are significant ($\chi 2$ (45) = 1226.13, p-value < 0.000) as recommended in the works of (Tabachnick & Fidell, 2007).

Table 4:13. Factor analysis for innovative work behavior

Items	Factor Loadings 1	Factor Loadings 2
I discover novel methods to accomplish work tasks	0.64	
I make key members of the organization to be passionate for new ideas	0.78	
I put exertion into the improvement of novel thing in this University	.58	
I endeavor to persuade people to support innovative ideas	0.62	
I analytically present novel ideas into work practices	0.77	
I participate in the execution of novel ideas	0.59	
I attend to issues different from my routine work		0.67
I am curious about how to improve things in the University		0.86
I create novel solutions to problems that arise in this University		0.61
I explore novel methods, techniques or instruments of work		0.74
Total variance explained:		
Initial Eigenvalues	4.84	1.02
% of Variance	48.48	10.26
Cumulative %	48.48	58.74
KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.88	
Bartlett's Test of Sphericity, Approx. Chi-Square	1226.13	
Df	45	
Sig.	0.000	
Extraction Method: Principal Component Analysis.		
Rotation Method: Varimax with Kaiser Normalization.		

Source: Survey Data 2021

4.7.2 Factor Analysis for Psychological Capital

The findings in Table 4.14 below shows that the items used for measuring psychological capital significantly loaded on seven components. Out of the 24 Items that measured psychological capital, only one item ‘I have several alternatives to resolve any problem I may face while at work’ loaded below 0.5 threshold and was excluded from further analysis. Therefore, 23 Items were retained for further analysis.

Overall, the studied factors explain 59.51% of the changes in psychological capital. The results show that the sample used to arrive at the findings was adequate with Kaiser-Meyer- Olkin (KMO) of (0.777) which is greater than the threshold of (0.5). The

findings are also significant as seen by the Bartlett's Test ($\chi 2$ (276) = 2023.29, p-value < 0.000). The results imply that the factors captured above can be used to significantly explain changes in measuring Psychological capital.

Table 4:14. Factor analysis for Psychological capital

Items	Factor Loading 1	Factor Loading 2	Factor Loading 3	Factor Loading 4	Factor Loading 5	Factor Loading 6	Factor Loading 7
I'm in the best mood, when I'm actually in a challenging situation	0.68						
I always expect the best when I am uncertain of something	0.67						
I delay the performance of my work for another time when I feel piqued	0.60						
I encounter several challenges in this University and I can overcome them	0.53						
I desire independence at work place to discover a solution to problems	0.63						
When I am caught up in difficult, I get my way out of it		0.81					
I am strongly driven to achieving my goals		0.78					
I am able to think of multiple ways to goal achievement		0.53					
I am always successful in forming positive influence about others			0.59				
I like taking multiple approaches to goal achievement			0.74				
I like novel and puzzling work			0.60				
I solve angry feelings that I may hold toward a specific individual			0.66				
I quickly regain my normal mood quickly after spiteful work events				0.68			
I like dealing with novel and rare occasions				0.62			
I accomplish my work in time instead of waiting until last moments				0.65			
I can simply feel comfortable while working in this University					0.52		

I presume pleasing outcomes, instead of unpleasing ones					0.62		
I have attained utmost goals I have pursued in this University					0.64		
I enjoy a great deal of self-assurance when in this University					0.69		
I am continually expectant about my future						0.74	
I anticipate trials to guarantee steadiness in realizing my goals						0.81	
I think that the current job gives me chance to achieve my goals in life							0.57
I feel that I have attained abundant victory in my career							0.70
Total variance explained							
Initial eigine values	5.63	2.12	1.70	1.42	1.20	1.13	1.03
% of variance	23.48	8.86	7.11	5.93	5.02	4.74	4.32
Cumulative %	23.48	32.35	39.47	45.40	50.44	55.18	59.51
KMO and Bartlett's Test							
Kaiser-Meyer-Olkin Measure of Sampling Adequacy			0.777				
Bartlett’s Test of Sphericity, Approx. Chi-Square			2023.29				
Df			276				
Sig.			.000				
Extraction Method: Principal Component Analysis.							
Rotation Method: Varimax with Kaiser Normalization.							

Source: Survey Data 2021

4.7.3 Factor Analysis for Job Embeddedness

Table 4.15 below indicates that the results from the factor analysis for job embeddedness showed that the factor loading results were above 0.5 except one Item; I would sacrifice a lot if I left this job. Therefore, 09 factors that measured job embeddedness were retained for further analysis. In total, the three factors accounted for 58.68% of the total variance in job embeddedness. The Kaiser-Meyer-Olkin Measure value 0.84 that was above 0.5 hence acceptable. Also the Bartlett’s Test shows that the obtained findings are significant ($\chi 2$ (55) = 877.82, p-value < 0.000) as recommended in the works of (Tabachnick and Fidell, 2007).

Table 4:15. Factor Analysis for Job Embeddedness

Items	Factor Loadings 1	Factor Loadings 2	Factor Loadings 3
I am compatible with the organization's culture	0.54		
My job optimally utilizes my skills and talents	0.63		
I feel that I am a good match for this University	0.74		
I like my authority and obligation at this University	0.72		
The projections for ongoing employment are outstanding		0.63	
I have excessive liberty to decide how to pursue my goals		0.78	
The employee perks in this University are suitable		0.69	
I feel that I am greatly respected by work place people		0.56	
I like my workmates			0.61
My workmate are parallel to me			0.82
Total variance explained:			
Initial Eigenvalues	4.10	1.25	1.09
% of Variance	37.35	11.42	9.90
Cumulative %	37.35	48.77	58.68
KMO and Bartlett's Test			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.84		
Bartlett's Test of Sphericity, Approx. Chi-Square	877.82		
Df	55		
Sig.	0.000		
Extraction Method: Principal Component Analysis.			
Rotation Method: Varimax with Kaiser Normalization.[a]			
a. Rotation converged in 10 iterations.			

Source: Survey Data (2021)

4.7.4 Factor Analysis for Authentic Leadership

The findings in table 4.16 below shows the results from the factor analysis for authentic leadership showed that only one item, 'My Leader seeks reaction to mend relations with others' loaded below the 0.5 threshold. Therefore, 11 Items were retained for further analysis. In total, the three factors accounted for 57.59% of the total variance in

authentic leadership. The Kaiser-Meyer-Olkin Measurevalue (0.83) that was above 0.5 hence acceptable. In addition, the Bartlett's Test shows that the obtained findings are significant ($\chi 2$ (66) = 1092.88, p-value < 0.000) as recommended in the works of (Tabachnick & Fidell, 2007).

Table 4:16. Factor Analysis for Authentic Leadership

Items	**Factor Loadings 1**	**Factor Loadings 2**	**Factor Loadings 3**
My leader inspires everybody to express his or her mind	0.54		
My leader makes hard decisions built on high morals conduct	0.76		
My leader collects opinions that test his or her intensely held positions	0.83		
My leader carefully pays attention to different opinions prior to conclusions	0.73		
My leader scrutinizes required facts prior to decision making	0.79		
My leader declares what she or he accurately means		0.75	
My leader shows beliefs consistent with actions		0.63	
My leader encourages me to take positions that support my core values		0.54	
My Leader recognizes when to re-evaluate his or her positions on key issues			0.75
My Leader demonstrates he or she knows the impact of specific actions on others			0.78
Total variance explained:			
Initial Eigenvalues	4.39	1.29	1.22
% of Variance	36.66	10.76	10.16
Cumulative %	36.66	47.42	57.59
KMO and Bartlett's Test			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.83		
Bartlett's Test of Sphericity, Approx. Chi-Square	1092.88		
Df	66		
Sig.	0.000		
Extraction Method: Principal Component Analysis.			
Rotation Method: Varimax with Kaiser Normalization.[a]			

Source: Survey Data (2021)

4.8 Test of Assumption of Multiple Regression

Before conducting any regression analysis, the data to be used must meet the assumptions of multiple linear regression so as to ensure that meaning full results are obtained (Tabachnick & Fidell, 2001; Hair *et al.*, 2013). Accordingly, the data that was gathered for this study was subjected to the tests of linearity, test of normality, test of homoscedasticity and the test of Multi-collinearity as further detailed below;

4.8.1 Test of Linearity

The purpose of conducting test of linearity to ensure that there is a linear relationship between the criterion variable (innovative work behavior) and the independent variables (Psychological capital, job embeddedness and authentic leadership). If the data does not meet the condition of linearity, then it has to be transformed to run regression analysis (Tabachnick & Fidell, 2001). As seen from the findings in Table 4.17 below, there is linearity between the dependent variable (innovative work behavior) and the independent variables Psychological capital, job embeddedness and authentic leadership). The decision criteria used when interpreting the tabulated results, is that, a P-value less than 0.05 for linearity means that the variables are related. In addition, the rule established by Field (2009) to the effect that for data to be linear its associated F statistic should be greater than 2.7 at a significance of $P \leq .05$ was obeyed as all the F statistic values for linearity were above that established threshold.

The findings in table 4.17 show that there exists a linear relationship between the outcome variable (innovative work behavior) and the criterion variables (psychological capital, job embeddedness, authentic leadership) as all the p-values are less than the .05 threshold. The significant linear relationships explained above imply that the data is

linear and can be used in conducting multiple linear regression without making any transformations to the data.

Table 4:17. Test for Linearity

Interaction between groups		Sum of Squares	Df	Mean Square	F	Sig.	R
IWB * Psycap	(Combined)	91.94	59	1.55	3.11	0.00	0.54
	Linearity	61.53	1	61.53	122.87	0.00	
	Deviation from Linearity	30.40	58	0.52	1.04	0.39	
IWB * JE	(Combined)	92.08	32	2.87	6.42	0.00	0.60
	Linearity	75.41	1	75.41	168.32	0.00	
	Deviation from Linearity	16.66	31	0.53	1.20	0.22	
IWB * AL	(Combined)	59.67	32	1.86	3.25	0.00	0.40
	Linearity	33.93	1	33.93	59.21	0.00	
	Deviation from Linearity	25.74	31	0.83	1.44	0.06	

Legend: *IWB=Innovative work behavior, AL=Authentic leadership, PSYCAP= psychological capital, JE= job embeddedness*

Source: Survey Data (2021)

4.8.2 Testing for Normality

Normality was checked to ascertain that the data distribution symmetrically takes a bell shaped curve so that the distribution of errors in the prediction of Y are in such a way that approaches the normal curve (Ghasemi & Zahediasl, 2012). To test for normality, Kolmogorov-Smirnov test and Shapiro-Wilk test was used. According to Tabachnick and Fidell (2010), a value of Kolmogorov-Smirnov test and Shapiro-Wilk test p-value above .05 threshold indicates normality. Further still, the skewness and kurtosis values in the range of ±1.96 indicates normality Tabachnick and Fidell (2010).

The findings in Table 4.18 show that the variables violates the normality assumption, p-value > 0.05. The findings specifically reveal that the values of Kolmogorov-Smirnov test and Shapiro-Wilk test are below the threshold of 0.05, P-Value <.05. The findings also reveal that the skewness and kurtosis measures are not in the range of ±1.96, which

means the data is not normally distributed and therefore data transformation is done before running multiple regression as recommended in the works of Tabachnick and Fidell (2010).

Table 4:18. Test for Normality

Variables			Kolmogorov-Siminorv			Shapiro-Wilk		
	Skewness	**Kutorsis**	**Statistic**	**Df**	**Sig.**	**Statistic**	**df**	**Sig.**
Psycap	-0.47	0.09	0.05	292	0.01	0.98	292	0.00
JE	-0.68	0.09	0.09	292	0.00	0.96	292	0.00
AL	-1.08	1.22	0.14	292	0.00	0.92	292	0.00
IWB	-0.77	-0.03	0.12	292	0.00	0.93	292	0.00

Source: Survey Data (2021)

4.8.2.1 Normality Transformations

The data violated the assumption of normality and it was therefore transformed to normality as recommended by Tabachnick and Fidell (2007) and Howell (2007). Data was transformed using Logarithmic (Log 10). Howell (2007) recommends that substantially negative skewed data can be transformed using Log10. According to Howell (2012), the transformed values and the unconverted means should have similar values. The researcher converted the transformed values to the original unconverted values prior to further analysis. Subsequently, the Logarithmic transformed variables were used for further analysis. The Following equations were decisive for normality transformation of negatively skewed data as recommended by Tabachnick and Fidell (2007).

Equation 7: *Normality transformation*

NX= LG10(K – X)…….……..……...(1)

NY= LG10(K – Y)…….....……..……...(1)

NM= LG10(K – M)……..……...……(1)

NW= LG10(K – W)……..……..…..…...…(1)

Where;

NX: Represents normal psychological capital

NY: Represents normal innovative work behavior

NM: Represents normal job embeddedness

NW: Represents normal authentic leadership

K: Represents normal a constant from which each score is subtracted so that the smallest score is 1 (equal to the largest score + 1).

4.8.2.2 Re-testing Normality after transformation

After data was transformed to normality, it was re-checked for normality. Re-testing normality was done using Kolmogorov-Smirnov test and Shapiro-Wilk test (Tabachnick & Fidell, 2010). A value of Kolmogorov-Smirnov test and Shapiro-Wilk test p-value above .05 threshold indicates that the data has been transformed to normality. The study also used skewness and kurtosis values and where the values were in the range of ±1.96, the data was said to have been transformed to normality (Tabachnick and Fidell, 2010). The findings in Table 4.19 below shows that the data is normally distributed after transformation as the values of Kolmogorov-Smirnov test and Shapiro-Wilk test are above the threshold of 0.05, P-Value >.05. The results after transformations also show that the skewness and kurtosis measures are in the range of ±1.96 which means the data has been transformed to normal.

Table 4:19. Results for Normally transformed variables

Variables			Kolmogorov-Smirnova			Shapiro-Wilk		
	Skewness	**Kutorsis**	**Statistic**	**Df**	**Sig.**	**Statistic**	**df**	**Sig.**
Psycap	-.21	-.14	.062	292	.009	.994	292	.292
JE	-.04	-.39	.043	292	.200*	.991	292	.084
AL	.29	-.07	.085	292	.000	.986	292	.006
IWB	.09	-.70	.067	292	.003	.982	292	.001

Legend: Psycap= psychological capital, JE=job embeddedness, AL=authentic leadership, IWB=innovative work behavior

Source: Survey Data (2021)

4.8.3 Testing for Homoscedasticity

Testing for homoscedasticity was conducted with the purpose of ensuring that data is homoscedastic and not heteroscedastic. Homoscedasticity is said to exist when the variance of the residual terms are constant at all levels of the predictor variable (Schutzenmeister, Jensen & Piepho, 2012). The Levene test was used to test whether the variability of innovative work behavior (dependent variable) is uniform across values of the independent variables. Levene's test is used to verify equal variance in the sample using the threshold of (P >.05), which means that in cases were (p< .05), then the data is said to be heteroscedastic and would need to be fast subjected to transformation before applying it for running any regression models (Martin & Bridgmon, 2012).

As is seen in Table 4.20 below, the findings reveal that basing on Levene statistic, the data is homoscedastic and not heteroscedastic since all the test statistic values have a level of significance that is above 5% (p-value > .05). This means that the variability of innovative work behavior (dependent variable) is uniform across values of the independent variables and that the data can be can be used for running regression analysis.

Table 4:20. Test for homoscedasticity

Variables	Levene Statistic	df1	df2	Sig.
Psychological capital	1.12[f]	28	272	0.31
Job embeddedness	0.81[e]	28	271	0.74
Authentic leadership	1.07[g]	28	272	0.36

Source: Survey Data (2021)

4.8.4 Testing for Multi-collinearity

This test was purposely conducted to ensure that the study variables re not Multi-collinearly related. Multi-collinearity is the high correlations between two or more predictor variables (Cooper, Schindler & Sun, 2006). To test for multi-collinearity, tolerance and its reciprocal variance inflation factor (VIF) was used and the cutoff point is a tolerance value greater than 0.10 and a VIF value below 10 (Hair *et al.*, 2010).

As seen in Table 4.21 below, the VIF values were less than ten and the tolerance level of more than 0.10 implying absence of multi-collinearity. The foregoing results imply that the data can be subjected to multiple regression analysis as there exists no Multi-collinearity.

Table 4:21. Multicollinearity Test

Variable	Tolerance	VIF
Psychological capital	0.47	2.12
Job embeddedness	0.59	1.67
Authentic leadership	0.66	1.51

a. Dependent Variable: normal IWB

Source: Survey Data (2021)

4.9 Correlation Analysis of the Study Variables

The purpose of conducting correlation analysis was to measure the possibility of any existing linear association between the predictor variables and the dependent variable through determining the magnitude and direction of the possible relationships. In line with Hair *et al.* (2013) and Field, (2009), the study used Pearson Correlation coefficient to ascertain that the study variables are linearly related.

The findings in Table 4.22 revealed a positive and statistically significant association between psychological capital and innovative work behavior (r=0.54, p-value < .05). These results imply that there is 0.54 units chance that innovative work behavior increases with increase in psychological capital. The findings also show that the relationship between job embeddedness and innovative work behavior is positive and statistically significant (r=0.60, p-value < 0.05) meaning that there is 0.60 units chance that with increase in job embeddedness, employee innovative work behavior will also increase. Furthermore, the findings show that the association between authentic leadership and innovative work behavior is positive and significantly significant (r=0.40, p-value < 0.01). This suggests that increase in the authentic leadership is associated with 0.40 units increase in the innovative work behavior. The linearity findings imply that there is a possibility of a causal effect between the psychological, job embeddedness, authentic leadership and the criterion variable that is innovative work behavior. As such, the next level of analysis calls for executing regression models to prove such casual effects (Martin & Bridgmon, 2012; Hair *et al.*, 2013).

Table 4:22. Correlation for the study variables

Variables	**IWB (1)**	**PSY (2)**	**JB (3)**	**AL (4)**
1. Innovative Work Behavior	1			
2. Psychological Capital	.544**	1		
3. Job Embeddedness	.602**	.634**	1	
4. Authentic Leadership	.404**	.580**	.399**	1

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Survey Data (2021)

4.9.1 Testing for the effect of control variables on the Dependent Variable

Control variables were tested to establish the effect of the covariates on the dependent variable, and this was done to know how the controls affected the dependent variable in comparison with the direct effects (Creswell, 2008). The findings in the Table 4.23

revealed that 5% variation in IWB is predicted by employees' gender, age and education and tenure (R^2 = 0.05). The F value (4.12, $P < 0.05$) showed that the joint prediction is significant. Only level of education independently predicted innovative work behavior significantly. Given that these are only control variables, the coefficients do not have a causal interpretation.

Table 4:23. Control Variables effect on the Study

Model			**Beta**		
	Beta unstd	**Std.Error**	**std**	**t**	**Sig.**
(Constant)	2.92	0.27		10.49	0.00
Gender	0.10	0.09	0.06	10.04	0.29
Age bracket	0.03	0.06	0.03	0.57	0.56
Education level	0.17	0.04	0.22	3.78	0.00
Tenure	-0.03	0.04	-0.04	-0.70	0.47
Model summary statistics					
R			0.23a		
R square			0.05		
Adjusted R square			0.04		
Standard error of the estimate			0.82		
Change statistics	R square change		0.05		
	F change		4.121		
	Sig.		0.003		

a. Predictors: (Constant), Tenure, Education, Gender, Age

Source: Survey Data (2021)

4.10 Hypothesis Testing

The testing of hypothesis were classified into testing for direct effect hypotheses and testing for the indirect hypotheses. Testing for direct effect hypotheses involved testing effect of psychological capital on innovative work behavior. Direct effect also sought to test the effect of job embeddedness on innovative work behavior. Hierarchical regression was used to test the direct effect hypotheses. In hierarchical regression, variables are entered in a series of blocks and the effect of the predictor variable on the dependent variable is tested while holding other predictor variables costant (Tabachnick

& Fidel, 2010). Indirect hypothesis testing aimed at testing for the mediation effect of job embeddedness on the relationship between psychological capital and innovative work behavior. Indirect effect also tested the moderating effect of authentic leadership on the relationship between psychological capital on job embeddedness and the moderating effect of authentic leadership on the indirect relationship between psychological capital and innovative work behavior through job embeddedness.

4.10.1 Direct Effect Hypothesis Testing

Direct effect hypothesis testing involved testing hypotheses $H_0$1 and H02, which stated that psychological capital has no significant effect on innovative work behavior and that job embeddedness has no significant effect on innovative work behavior respectively. The direct effect relationship was tested using hierarchical regression in a series of hierarchical blocks.

In model one, control variables were entered which included gender, age, education level and tenure. This was aimed at testing the effect of the control variables on the dependent variable. In model 2, the independent variable (psychological capital) was entered to test its effect on the dependent variable (innovative work behavior) while controlling for the control variables. In model 3, the mediator variable (job embeddedness) was entered to test its effect on innovative work behavior while controlling for the effect of control variables and the independent variable (psychological capital). Table 4.24 below summarizes the results for hierarchical regression models. For instance, Model one shows that education level significantly predicted innovative work behavior (β =.17, $P < .05$). Apart from education, all the control variables which include age (β =.03, $P < .05$), gender (β = 0.10, $P < .05$), and tenure (β = -.03, $P < .05$) did not significantly predict innovative work behavior. The

R-Square in the first model is 0.05, which means that control variables accounted for 5.0% of variance in the innovative work behavior.

Model two, tested for hypothesis ($H_0$1) which stated that psychological capital has no significant effect on innovative work behavior. The results revealed that psychological capital has a statistically significant effect on innovative work behavior (β=0.79, *P<.05*). These results indicate that with each unit increase in psychological capital, innovative work behavior increases by 0.79 units. The R Square in model 2 changed from 0.05 to 0.31which means a change of 0.25 by the independent variable (psychological capital). The results confirm that psychological capital has a positive and significant effect on innovative work behavior. Therefore, hypothesis $H_0$1 was rejected.

Model three tested for hypothesis ($H_0$2) which stated that job embeddedness has no significant effect on innovative work behavior. The results reveal that job embeddedness has a statistically significant effect on innovative work behavior (β=0.50, *P* < .05). These results indicate that with each unit increase in job embeddedness, innovative work behavior increases by 0.50 units. The R Square in model 3 changed from 0.31 to 0.41, which means a change of 0.10. The results confirm that job embeddedness has a positive and significant effect on innovative work behavior. Therefore, hypothesis $H_0$2 was rejected.

Table 4:24. Hierarchical Regression for direct effect relationship

Model		B. Unstd	S.E	B. std	t	Sig.
1	(Constant)	2.92	.278		10.49	.000
	Gender	.10	.09	.06	1.04	.29
	Age	.03	.06	.03	.57	.56
	Education	.17	.04	.22	3.78	.000
	Tenure	-.03	.04	-.04	-.70	.47
2	(Constant)	.34	.34		1.00	.31
	Gender	.19	.08	.11	2.29	.02
	Age	.01	.05	.01	.27	.78
	Education	.03	.04	.04	.85	.39
	Tenure	-.03	.04	-.04	-.78	.43
	PSYCAP	.79	.07	.54	10.32	.000
3	(Constant)	.01	.32		.03	.97
	Gender	.12	.07	.07	1.52	.12
	Age	.01	.05	.01	.21	.83
	Education	.03	.03	.04	.87	.38
	Tenure	-.00	.03	-.00	-.07	.94
	PSYCAP	.39	.09	.27	4.37	.000
	JE	.50	.07	.41	7.05	.000

Model summary statistics

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	Sig. F Change
1	.23[a]	.05	.04	0.82	.05	4.12	.003
2	.55[b]	.31	.29	0.70	.25	106.51	.000
3	.64[c]	.41	.40	0.65	.10	49.70	.000

a. Dependent Variable: Innovative work behaviour

Legend: Psycap-psychological capital; JE-Job Embeddedness-AL-Authentic Leadership

Source: Survey Data (2021)

4.10.2 Indirect Effect Hypothesis Testing

4.10.2.1 Test for Hypothesized Mediation

The purpose for testing hypothesized mediation is to achieve objective three, which sought to establish the mediating effect of job embeddedness on the relationship between psychological capital and innovative work behavior. The postulating hypothesis H03 stated that job embeddedness has no mediating effect on the relationship between psychological capital and innovative work behavior. Regression was used to establish the mediating effect of job embeddedness on the relationship

between psychological capital and innovative work behavior while holding control variables constant. In line with the works of by Baron and Kenny (1986) as later harnessed by Hayes (2012), four causal step approach was followed to test the mediation effect. The test involved running a series of regression models (model I to model IV) as follows:

Table 4.25 summaries the results of 4 models of mediation. For instance, Model I: As the first condition requires that psychological capital (independent variable) significantly predict job embeddedness (mediator variable). The findings in model 1 (path a) revealed that psychological capital has a statistically significant effect on job embeddedness (β=0.78, $P < .05$). The results imply that with each unit increase in psychological capital, job embeddedness increases by 0.78 units. Furthermore, the coefficient of determination, R-square was 0.41 which indicates that psychological capital accounts for 41% of the variation in job embeddedness and the amount of variation is significant, ($F = 41.01$, $P < .05$). The results of model I imply that the first condition required for a mediation effect to occur was fulfilled.

Model II: The second condition requires that job embeddedness (mediator) significantly predict innovative work behavior (dependent variable) in the presence of psychological capital (the independent variable). Path 'b' presents the findings of Model II and shows that job embeddedness has a statistically significant effect on innovative work behavior, (β =0.50, $P<.05$). The results imply that with each unit increase in job embeddedness, innovative work behavior increases by 0.50 units. The coefficient of determination, R-square was 0.41 which indicates that job embeddedness accounts for 41% of the variation in innovative work behavior and the amount of variation is significant, ($F =$

33.45, $P<.05$). The results of model II imply that the second condition required for a mediation effect to occur has also been fulfilled.

Model III: The third condition is to establish the effect of independent variable (psychological capital) on the dependent variable (innovative work behavior) while controlling for mediator (job embeddedness). The results of Path 'c' presents the findings of Model III and shows that psychological capital has a positive and significant effect on innovative work behavior, (0.39, $P <.05$). The results imply that each unit increase in psychological capital, innovative work behavior increases by 0.39 units. The results of model III imply that the third condition required for a mediation effect to occur has been fulfilled.

Model IV: The fourth condition that is the decision criteria is aimed at establishing the nature of mediation in terms of partial mediation or a full mediation. The resulting indirect effect of psychological capital on innovative work behavior is a product of path 'a' and path 'b' which gives a value of 0.39 and this value is confirmed by the results of the upper and lower limit intervals of [.26, .54] that have non zero value between them. The Mediation test results above confirm that job embeddedness has a significant partial mediation effect on the relationship between psychological capital and innovative work behavior. Therefore, hypothesis H03 was rejected. In line with Hayes (2012), the above finding implies that job embeddedness is a partial mediator of the relationship between psychological capital and innovative work behavior.

Table 4:25. Testing for Hypothesized Mediation

Model		**Coeff**	**S.E**	**P**	**LLCI**	**LLCI**
I (path a)	constant	0.66	.26	.01	.14	1.18
	PSYCAP	.78	.05	.00	.67	.90
	gender	.14	.06	.02	.01	.27
	age	.00	.04	.83	-.07	.09
	Education	.00	.03	.90	-.06	.06
	Tenure	-.06	.03	.06	-.12	.00
	constant	.01	.32	.97	-.62	.64
II (Path C')	PSYCAP	.39	.09	.000	.21	.57
(path b)	JE	.50	.07	.000	.36	.64
	Gender	.12	.07	.12	-.03	.27
	Age	.01	.05	.83	-.09	.11
	Education	.03	.03	.38	-.04	.11
	Tenure	-.00	.03	.94	-.08	.07
III (path c)	constant	.34	.34	.31	-.33	1.02
	PSYCAP	.79	.07	.000	.64	.94
	gender	.19	.08	.02	.02	.36
	age	.07	.05	.78	-.09	.13
	education	.03	.04	.39	-.04	.11
	tenure	-.03	.04	.43	-.11	.04
Direct effect of PSYCAP on IWB						
	Effect	SE	T	P	LLCI	ULCI
	.39	.09	4.37	.000	.21	.57
Indirect effect of PSYCAP on IWB						
JE	Effect	SE			LLCI	ULCI
	.39	.07			.26	.54
Model summary statistics						
Model	R	R Square	MSE	F	P	
1	.64	.41	.29	41.01	.000	
2	.64	.41	.42	33.45	.000	
3	.55	.31	.50	25.81	.000	

Source: Survey Data (2021)

The above findings of the mediating effect of job embeddedness on the relationship between psychological capital and innovative work behavior can be summarized as in Figure 3 below;

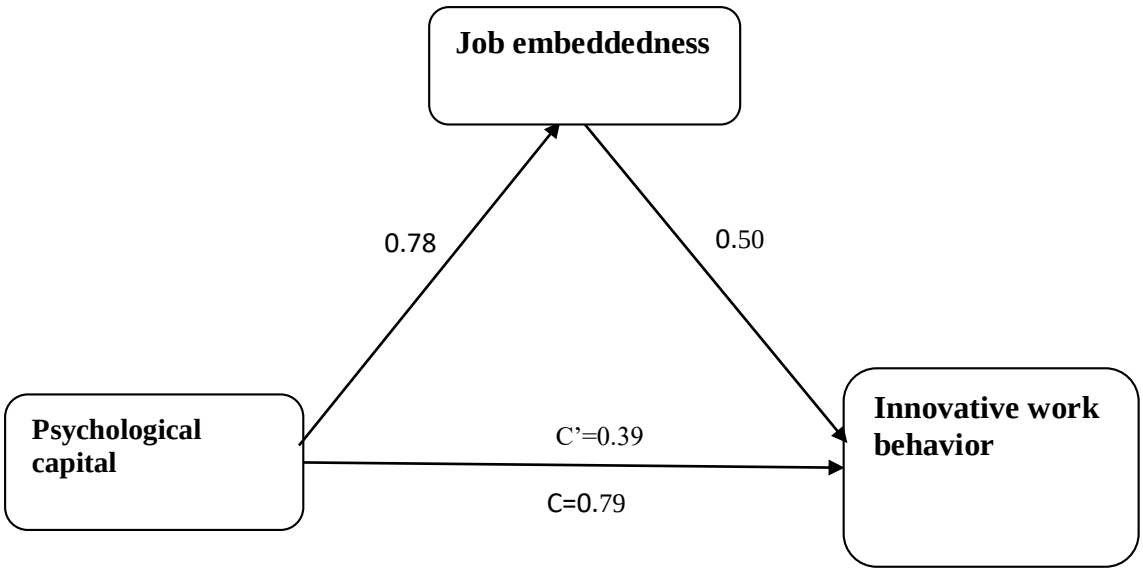

Figure 3: *Testing for hypothesized mediation*

4.10.2.2 Test for Hypothesized Moderation Effect

The purpose for conducting a test for hypothesized moderating effect was to test $H_0$4, which postulated that authentic leadership has no moderating effect on psychological capital and job embeddedness. In accordance with Hayes (2017), the test for moderation helps to reveal the contingent nature of the effect of the independent variable (psychological capital), on the outcome variable (job embeddedness). Moderation was analyzed using Hayes's (2018) Process Macro version 3.2 (Model 1). Testing for moderation using model I involves establishing the interaction effect of the moderator variable with the independent variable on the outcome variable (Hayes & Preacher, 2013; Hayes, 2017). In accordance with Shrout & Bolger (2002), testing of the moderation model is based on a bootstrap estimation approach with 5000 and the decision rule was based on lower and upper limit confidence intervals. Where the lower and upper limit confidence interval includes a zero, the decision is that moderation has not taken place but when the lower and upper limit confidence interval does not include a zero between them, the conclusion is that moderation has taken place.

In this study, the regression model tested the moderating effect of authentic leadership on the relationship between psychological capital and job embeddedness. As seen in the Table 4.26 below, the results reveal that authentic leadership significantly moderates the relationship between psychological capital and job embeddedness (β=0.16, $P < .05$) at CI=(0.09, 0.24). The R-square value was 0.45 which indicates that the model explains 45% of the variance. The control variables were also included and the results show that gender (β=0.09, $P < .05$) and tenure (β=-0.13, $P < .05$) were significant. Basing on the results, hypothesis $H_0$4 was rejected.

Table 4:26. Testing for hypothesized moderation effect

Variables	**Coeff**	**Se**	**t**	**p**	**LLCI**	**ULCI**
Predictors						
Constant	-.0981	.0496	-1.97	.04	-.19	-.00
Psychological capital	.6093	.0563	10.81	.000	.49	.72
Authentic leadership	.12	.05	2.12	.03	.00	.23
Interaction						
PSYCAP*AL	.16	.04	4.22	.000	.09	.24
Gender	.09	.04	2.02	.04	.00	.18
Age	.03	.04	.78	.43	-.05	.13
Education	.00	.04	.18	.85	-.08	.10
Tenure	-.13	.04	-2.70	.000	-.22	-.03
Model summary statistics						
R				0.67		
R-sq				0.45		
F				33.68		
P				0.000		
Conditional effect(s) of psychological capital on JE at values of the moderator:						
	AL	Effect	SE	P	LLCI	ULCI
	-1.00	.43	.04	.000	.30	.57
	0.00	.60	.04	.000	.49	.72
	1.00	.77	.05	.000	.64	.91

Source*:* Survey Data (2021)

To better understand the nature of the interaction between authentic leadership and psychological capital, the moderated results are presented on a moderation graph. This is in line with the recommendation of Aiken, West and Reno, 1991 (1991) who argued

that the nature of interaction should be established at different levels of the moderator to arrive to a more robust conclusion about the interaction effect. The degree of the interaction between authentic leadership and psychological capital was assessed at low, medium and high levels using graphical method. The results reveal that the interaction of the independent variable (psychological capital) and the moderator variable (authentic leadership) has stronger significance on the outcome variable (job embeddedness) at higher levels of the moderator (authentic leadership) than at the lower levels of the same. The slopes in the figure thus indicate that, at high levels of the authentic leadership, psychological capital was associated with stronger and significant job embeddedness as compared to when it is with medium and low authentic leadership as shown in Figure 4 below.

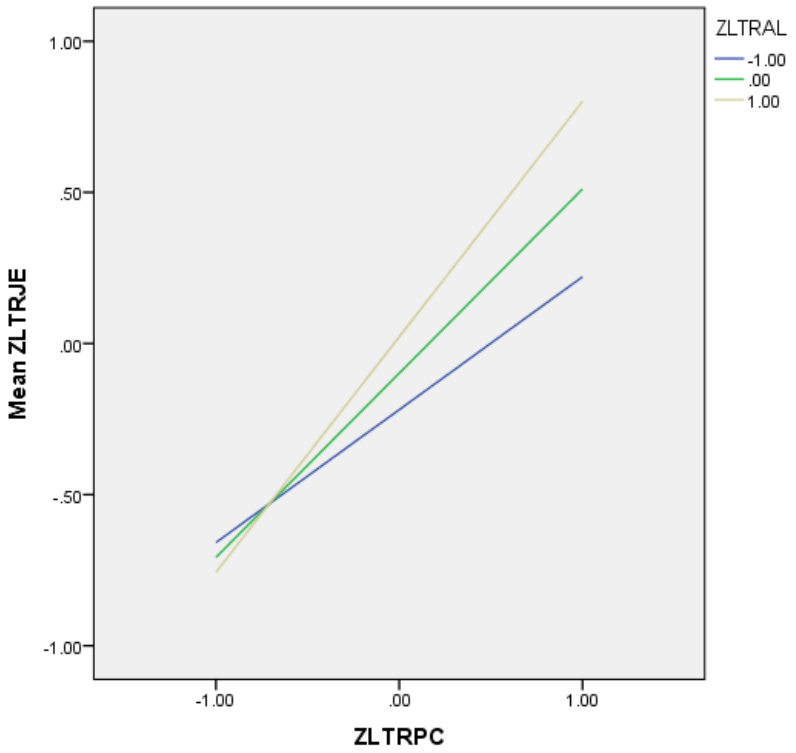

Figure 4: *Graphical representation of the moderating effect of authentic leadership on the relationship between psychological capital and job embeddedness*

Source: Survey Data (2021)

Legend: Zpsycap= Psychological capital, ZIWB= Innovative Work Behavior, ZJE= Job embeddedness.

4.10.2.3 Test for Hypothesized Moderated Mediation Effect

The purpose for conducting a test for hypothesized Moderated mediation effect was to test $H_0$5, which stated that authentic leadership has no moderating effect on the indirect relationship between psychological capital and innovative work behavior through job embeddedness. In accordance with Hayes (2017), the test for moderated mediation helps to reveal the contingent nature of the effect of the independent variable (psychological capital), on the dependent variable (innovative work behavior) through the mediator (job embeddedness), as conditioned by changes in the moderator (authentic leadership). Moderated mediation was analyzed using Hayes's (2018) PROCESS Macro version 3.2 (Model 7).

Table 4.27 shows the output of PROCCESS MACRO model 7 (Hayes, 2018) with psychological capital as independent variable, innovative work behavior as dependent variable, authentic leadership as moderator variable and job embeddedness as the mediation variable. In accordance with Shrout & Bolger (2002), the testing of the moderated mediation model is based on a bootstrap estimation approach with 5000 samples.

The procedure for testing moderated mediation effect using Hayes process Macro (model 7) above involves running two regression models (Hayes, 2017). The first regression model is meant to establish the interaction effect of the independent variable (psychological capital) and moderator variable (authentic leadership) on the mediator variable (job embeddedness). As seen in the Table 4.27, Path 'a' reveals that the interaction effect of psychological capital and authentic leadership is significant (β=.16, *P*=<.05) CI= (.09, .24). This finding means that there is a significant conditioned effect

of authentic leadership on the relationship between psychological capital (independent variable) and job embeddedness (mediator variable). This implied that the first necessary requirement for performing a moderated mediation was fulfilled and that the second regression model could be performed and meaningfully interpreted.

The second regression model was meant to establish and confirm the moderated mediation effect of authentic leadership (moderator) on the relationship between psychological capital (independent variable) and innovative work behavior (dependent variable) through job embeddedness (mediator variable). As seen in the table 4.27, the conditional indirect effect of authentic leadership on psychological capital on innovative work behavior via job embeddedness is statistically significant at low levels (β=.18, P<.05), average levels (β=.25, P<.05) and at high levels (β=.32, P<.05) levels of the moderator (authentic leadership). The overall index of the moderated mediation is .07 CI= (.03, .12) and it is as a result of multiplying (0.16*.41) as depicted in Table 4.27. The R-square value was 0.41, implying that the model explains 41% of the variance. The covariates were also included in the model and they were all insignificant. The confidence intervals associated with the above findings are different from zero and this means that authentic leadership significantly conditions the mediation effect of job embeddedness on innovative work behavior. Therefore, hypothesis H05 was rejected. The overall model implies that a positive change in authentic leadership by one unit, indirectly and significantly strengthens the change in innovative work behavior by 0.07 units.

Table 4:27. Test for hypothesized moderated mediation

Model		**Coeff**	**S.E**	**T**	**P**	**LLCI**	**LLCI**
I path a	Constant	-.09	.04	-1.97	.04	-.19	-.00
Psycap,AL	ZPSYCAP	.60	.05	10.81	.00	.49	.72
vs JE	ZAL	.12	.05	2.12	.03	.00	.23
	Int_1(psycap x AL)	.16	.04	4.22	.00	.09	.24
	Gender	.09	.04	2.02	.04	.00	.18
	Age	.03	.04	.78	.43	-.05	.13
	Education	.00	.04	.18	.85	-.08	.10
	Tenure	-.13	.04	-2.70	.00	-.22	-.03
	Constant	.00	.04	.00	1.00	-.08	.08
II path b	ZPSYCAP	.27	.06	4.37	.00	.14	.39
PSYCAP+JE	ZJE	.41	.05	7.05	.00	.30	.53
vs IWB	ZGender	.07	.04	1.52	.12	-.02	.16
	ZAge	.01	.04	.21	.83	-.08	.10
	ZEducation	.04	.04	.87	.38	-.05	.13
	ZTenure	-.00	.04	-.07	.94	-.10	.09

Conditional indirect effect(s) of PSYCAP on IWB at values of the moderator (AL):

	ZNAL	Effect	se	LLCI	ULCI
JE	-1.00	.18	.04	.10	.27
JE	.00	.25	.04	.16	.34
JE	1.00	.32	.05	.21	.44

********** INDEX OF MODERATED MEDIATION **********

	Index	SE	LLCI	ULCI
ZAL	.07	.02	.03	.12

Model summary statistics

Model	R	R Square	MSE	F	P
1	.67	.45	.55	33.68	.000
2	.64	.41	.59	33.45	.000

Source: Survey Data (2021)

The above findings of the moderating effect of authentic leadership on the indirect relationship between psychological capital and innovative work behavior through job embeddedness has been summarized in Figure 5 below.

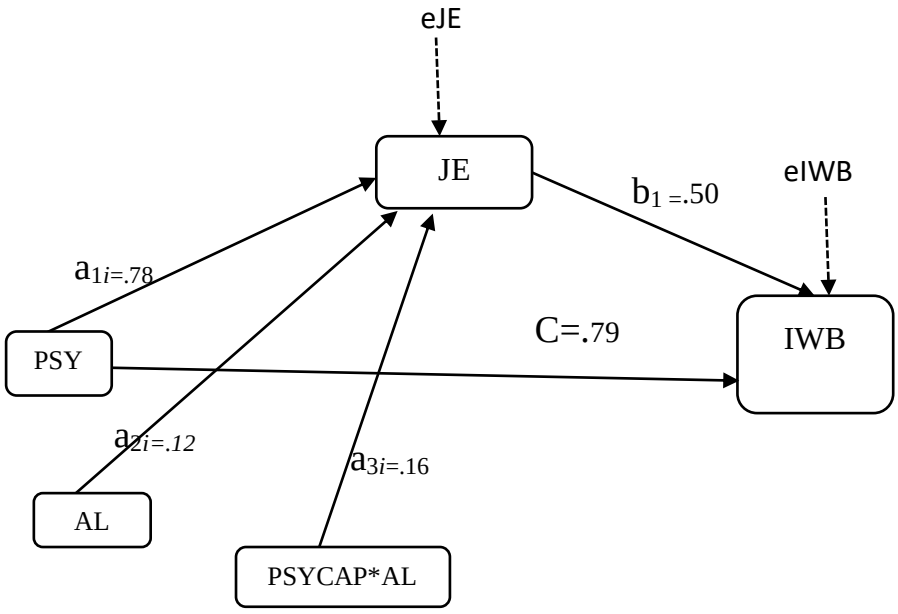

Figure 5: *Testing for hypothesized moderated mediation*
Key to symbols used;

PSYCAP: Represents the independent variable (psychological capital)

AL: Represents the moderator variable (authentic leadership)

PSYCAP*AL: Represents the product of the interaction of the independent variable (psychological capital) and the moderator variable (authentic leadership)

JE: Represents the mediator variable (job embeddedness)

IWB: Represents the dependent variable (innovative work behavior)

a_1: Represents the effect of the independent variable (psychological capital) on the Mediator (job embeddedness)

a_2: Represents the effect of the moderator variable (authentic leadership) on the mediator (job embeddedness)

a_3: Represents the effect of the interaction of the independent variable (psychological capital) and the moderator variable (authentic leadership) on the Mediator (job embeddedness)

C': Represents the effect of the independent variable (psychological capital) on the dependent variable (innovative work behavior) in the presence of mediator

b_1: Represents the effect of the mediator variable on the dependent variable

$(a_1 + a_3 * (AL)) * b_1$: Denotes the conditional indirect effect of PSYCAP on IWB

e: Represents the respective error terms

Table 4:28. Summary of Hypothesized Testing Results

Hypothesis		**Beta values**	**P values**	**Result**
$H0_1$:	Psycap has no significant effect on IWB	.79	.000	Reject
$H0_2$:	JE has no significant effect on IWB	.78	.008	Reject
$H0_3$:	JE has no mediation effect between Psycap and IWB.	.39	.000	Reject
$H0_4$:	AL has no moderation effect between PSYCAP and JE.	.16	.000	Reject
$H0_5$:	AL has no moderation effect on the indirect relationship between PSYCAP and IWB through JE	.07	.000	Reject

Source: Survey Data (2021)

CHAPTER FIVE

SUMMARY AND DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter contains a summary and discussion of the findings, inferences derived as a result of the findings, implications of the study in practice and theory, as well as the conclusions reached and recommendations made as a result of the conclusions. Last but not least, it makes recommendations for future research.

5.1 Summary and Discussion of Findings

The ability of an organization's workforce to generate innovative ideas is determines its organizational innovativeness. As a result, research that aim to improve the innovative work behavior of employees are quite important. The current study sought to determine if authentic leadership has a moderating effect on the indirect relationship between psychological capital and innovative work behavior, as measured by job embeddedness. In particular, the study determined the relationship between psychological capital and innovative work behavior, the relationship between job embeddedness and innovative work behavior, and the mediating effect of job embeddedness on the relationship between psychological capital and innovative work behavior. With the help of a sample drawn from administrative and academic staff at public universities in Uganda, the researchers were able to determine whether authentic leadership has a moderating effect on the relationship between psychological capital and job embeddedness, as well as whether authentic leadership has a moderating effect on the indirect relationship between psychological capital and innovative work behavior through job embeddedness. The study controlled for gender, age, education, and tenure. Scholars

universally acknowledge the need for Universities to emulate innovative behavior to succeed amidst dynamism in the education sector (Ahmad, 2020). Regarding control variables, the findings reveal that only education level significantly predicted innovative work behavior. The results revealed a significant joint prediction, which implies that gender, age, education level, and tenure jointly influence innovative work behavior.

5.1.1 Effect of Psychological Capital on Innovative Work Behavior

The first objective sought to determine the effect of psychological capital on innovative work behavior in public Universities in Uganda. The findings demonstrated that psychological capital has a statistically significant impact on innovative work behavior. As a result, psychological capital adds to employees' innovative work behavior in Ugandan public universities. The results imply that enhancement of employees' positive psychology of hope, efficacy, resilience, and optimism stimulate the employees' enactment of innovative work behavior. Consistent with previous studies, the results support the findings of Wojtczuk-Turek and Turek (2015), Sameer (2018), Hsu and Chen (2018), Taştan (2016), Nwanzu and Babalola (2019), Akhtar *et al.* (2018) and Ratnaningsih *et al.* (2016), who established a link between psychological capital and innovative work behavior. However, these studies drew a sample from multiple sources that involved employees from different organizations with varying innovative climates. For instance, Young (2012) opines that employees in new ventures may portray more innovative behavior compared to already established companies. The current study extends the knowledge on psychological capital and innovative behavior by considering public Universities with similar innovative climates.

The study findings are also in congruence with studies by Ozturk and Karatepe (2019); Yu *et al.* (2019); Cai *et al.* (2019); Sweetman *et al.* (2011); Zubair and Kamal (2017); Abbas and Rajja (2015) which revealed that psychological capital enhances creative performance. However, these studies were limited on creativity behavior that is only a part of innovative work behavior is. The current study extends on the existing studies by establishing how psychological capital influences innovative behavior, which includes the implementation of novel ideas to realize value.

Similarly, the findings of the study are in congruence with the findings by Hsu and Chen (2017), Qiu *et al.* (2015), Ziyae *et al.* (2015), Abbas and Raja (2015), which established a significant relationship between psychological capital and innovative work behavior but most of these studies were carried out in the developed nations like the United States and profit-oriented organizations. The current study extends knowledge in the existing literature by answering the call by Thurlings *et al.* (2015) to establish antecedents of innovative behavior in education settings. The current study also extends the literature on psychological capital and innovative work behavior by testing the theory of psychological capital developed and tested in western culture using a sample from an eastern setting and more specifically in a developing country.

In the University setting context, the findings of the study further support the findings by Supriyadi *et al.* (2020), Sun and Huang (2019), Baskaran and Rajarathinam (2017), which revealed that psychological capital enhances the innovative work behavior of academic employees. These studies however only focused on academic staff, ignoring administrative staff, yet both categories need innovative skills for a University to thrive. The current study bridges this gap in the literature by extending the literature on psychological capital on academic and administrative staff's innovative work behavior.

The study findings support the Conservation of Resources Theory contentions by Hobfoll (2002), which posits that people strive to secure and prevent loss of valuable resources like psychological capital resources of hope, resilience, efficacy, and optimism that enable them to achieve desired goals. This assertion is confirmed by later studies like Hobfoll *et al.* (2018), who assert that accumulating and protecting resources is a natural human need for survival. The findings in the current study affirm that employees with high psychological resources of hope, resilience, efficacy, and optimism are cognitive resources that help employees assess their ability to succeed in a certain behavior (innovative work behavior).

However, despite the theoretical attractiveness and importance in today's workplace, no previous study had explored the relationship between psychological capital and innovative work behavior in a university setting, and more especially in an Eastern culture, until now. This study tests psychological capital theory, which was developed and tested in a western setting, in an eastern setting, thereby developing external validity for the theory, which has not been tested in a western setting and has only been tested in profit-oriented organizations such as information technology companies and banks (Sweetman *et al.*, 2011; Ziyae *et al.*, 2015; Wojtczuk-Turek & Turek, 2015).

The study findings also affirm the assertions of broaden and build theory by Fredrickson (2001), which posits that positive emotions broaden people’s momentary thought-action origins and broaden people's chain of thoughts and actions. This assertion is supported by earlier psychologists Fredrickson (2001, 2004), Fredrickson and Joiner (2018), who contended that a positive mind broadens people's physical and cognitive thought-action tendencies. Based on research conducted by positive psychologist Barbara Fredrickson (1998, 2001, 2009), optimism expands thought-action tendencies,

which relate to behaviors that are taken in the form of physical as well as cognitive action (Fredrickson & Losada, 2005). Individuals' physical, intellectual, social, and psychological resources are increased as a result of this positivity-induced expansion of thought-action tendencies, and these new resources are made available to the individual for a long period of time after the initial positive experience has occurred (Fredrickson, 1998). In other words, positivity permits a person to accumulate psychological resources, such as those discovered in PsyCap that can be drawn upon to assist in problem solving and creative problem solving and innovation.

The current study reaffirms this assertion that employees with positive emotional resources of hope, efficacy, resilience, and optimism tend to have a broadened thinking pattern that is manifested in innovative behavior. The current study contributes to the understanding of psychological capital in the service sector by applying the widen and build theory, as no prior study had explained psychological capital and innovative work behavior in the service sector, such as universities, by applying this theory.

5.1.2 Effect of Job embeddedness on Innovative Work Behavior

The second objective was to determine the impact of job embeddedness on innovative work behavior in Ugandan public universities. Inferential statistics revealed a statistically significant relationship between job embeddedness and innovative work behavior in public universities in Uganda. Ansari *et al.* (2018), Rafiq (2019), Rahimnia *et al.* (2019), Ng and Feldman (2010), Susomrith and Amankwaa (2019), Haider and Akbar (2017), Coetzer *et al.* (2018), Bibi and Jadoon (2018), Ansari *et al.* (2018), Bibi and Jadoon (2018), Ansari and Rafiq (2019), Rafiq (2019), Coetzer *et al.* (2018), and NG and Feldman (2010) asserted that the literature on work embeddedness is still in its infancy because the majority of studies have been conducted in Western countries such

as the United States. As a result, this study contributes to the current body of literature and responds to the demand of Ng and Feldman (2010) by examining the relationship between psychological capital and innovative work behavior in public universities in Uganda, a poor country.

According to previous literature, employees who are deeply entrenched in their professions exhibit extra-role activities such as innovative work behavior (Ng & Feldman, 2010), whereas their counterparts who are less embedded do not. The outcomes of our study are likewise compatible with these findings. It was discovered, for example, in the key study of Lee, Mitchell, Sablynski, Burton, and Holtom (2004), that employee embeddedness is positively connected to favorable organizational consequences such as in-role and extrarole performance. Researchers Coetzer, Inma, Poisat, Redmond, and Standing (2018) discovered that individuals in organizations operating in a variety of industries were positively and considerably more likely to engage in innovative behavior on the job when they were embedded in the organization. The results of a longitudinal study with a broad sample revealed that work embeddedness was positively and significantly associated to innovation-related behaviors, according to the researchers (Ng, 2010). The findings of the current study contribute to the Job embeddedness hypothesis by demonstrating a positive association between on-the-job embeddedness and employee enactment of creative work behavior in public universities in Uganda, which is not previously known.

As predicted by Hobfoll's conservation of resources theory, the findings of this investigation are consistent with this theory (1989). In accordance with the conservation of resources hypothesis, the perceived loss of embeddedness increases the employees' motivation to engage in extra-role behaviors in order to protect the acquired resources

they have obtained via their participation in the organization's ongoing operations. This is supported by Lee et al (2004), who argued that high on-the-job embeddedness indicates that such employees have acquired many links, a good employee organization fit, and many perceived benefits that they would forego if they quit their jobs, and that as a result, such employees will strive to exhibit extra-role behavior in order to secure their continued employment with the company.

Because of the findings of this study, the conservation of resources theory has gained new empirical support, as seen by the discovery that factors that embed employees in public institutions in Uganda improve their motivation to demonstrate innovative behavior. Employees who have a large number of connections within the organization, a good fit with the organization, and significant things that they are likely to lose if they leave the organization are encouraged to perform creatively in order to keep their positions within the organization, according to the findings. As a result, the findings support the argument advanced by Ng and Feldman (2010), who reasoned that highly embedded employees will be motivated to enact innovative work behaviors in order to avoid the sacrifices associated with losing their jobs because they would want to contribute to the economic viability and competitive advantage of their organization in order to increase their own job security.

5.1.3 Mediating Effect of Job embeddedness on Psychological Capital and Innovative Work Behavior

The study's opening goal was to establish the mediation effect of job embeddedness on the link between psychological capital and innovative work behavior in Ugandan public universities. Job embeddedness partially mediates the association between psychological capital and innovative work behavior in Ugandan public universities,

according to the casual approach to assessing mediation. This implies that the impact of psychological capital on innovative work behavior is partially due to job embeddedness, which is represented in organizational variables that enmesh people in the organization. The findings suggest that individuals who are rich in the psychological resources of hope, efficacy, resilience, and optimism are rich in resources, which embed them in the organization, and who, in turn, safeguard these resources from loss by demonstrating innovative work behavior.

Sun, Zhao, Yang, and Fan (2012), Wageeh (2015), Rego *et al.* (2012), and Nafei (2015) found a positive relationship between psychological capital and job embeddedness. Other studies of Ng Feldman (2010a), Haider (2017) and Coetzer *et al.* (2018) found a positive relationship between job embeddedness and innovative work behavior. The mediating influence of job embeddedness on the relationship between psychological capital and employee enactment of Innovative work behavior is established in this study, which adds to the Job embeddedness theory.

Job embeddedness influenced the association between psychological capital and innovative work behavior, according to the current study (Lan, 2019). Lan's (2019) study, on the other hand, took into account both community and employment embeddedness, and a sample was recruited from various organizations with variable embedding elements. The current study adds to the literature on work embeddedness by examining a sample of Public Universities in Uganda, which share similar variables that embed employees in the business. The findings of the study back up those of Rahimnia *et al.* (2019), who found that job embeddedness plays a partly mediating function between perceived job stability and creative behavior. Job embeddedness was

a partial moderator of the association between high-performance work practices and innovative work behavior, according to Ansari *et al*. (2018) findings.

The study is theoretically consistent with Hobfoll's (1989) conservation of resources theory, which recognizes that the resources people strive to acquire, keep, and protect include personal attributes that may be internal (Hobfoll, 1989). Psychological capital is an internal resource that may be joined with other organizational resources to create a resource caravan. Employees that are immersed in the organization engage in the psychological capital resources of hope, efficacy, optimism, and resilience, making them more innovative than their non-embedded counterparts, according to this study. By revealing that embedded employees who have accumulated the psychological resources of hope, efficacy, resilience, and optimism accumulate other resources that form a resource caravan and become embedded in the organization because of these resources, the study findings support Hobfoll's (2002) Conservation of Resources Theory assertions. By demonstrating innovative work behavior, these individuals protect the loss of these resources.

5.1.4 Moderating Effect Authentic Leadership on Psychological Capital on Job embeddedness

The fourth objective sought to determine the moderating effect of authentic leadership on the relationship between psychological capital and job embeddedness in public Universities in Uganda. The study postulated that authentic leadership interacts with psychological capital to influence job embeddedness. The study findings revealed that authentic leadership moderates the relationship between psychological capital and job embeddedness. The results imply that authentic leaders promote followers' psychological capital, increasing their embeddedness.

Hystad *et al*. (2014) discovered that authentic leaders have an impact on employees' psychological capital. Other researchers such as Bartone *et al.* (2014) and Rego *et al*. (2012) discovered that authentic leaders have an impact on employees' psychological capital. The findings of the study corroborate those of Barkhuizen, Rothmann, and Vande Vijver (2014), who discovered that employees who have strong psychological capital have reduced intents to leave their positions and organizations, indicating that they are rooted in their organizations. The findings are also consistent with the findings of a study conducted by Simeon Amunkete and Sebastiaan Rothmann (2015), which found that authentic leadership was positively connected with psychological capital in the workplace (i.e. experiences of hope, optimism, self-efficacy and resilience). A new finding from the current study adds to the body of knowledge about psychological capital theory by demonstrating that authentic leadership influences the relationship between psychological capital and job embedding.

The study findings are also congruent with Woolley *et al.* (2011) who posit that authentic leaders promote employees' positive psychological resources through moral conduct and open communication that embed employees in the organization. The findings are also in agreement with the findings of Rego *et al.* (2015), Ramalu and Janadari (2020), Amunkete and Rothmann (2015), and Zubair & Kamal (2017), which reveal that authentic leadership activates the psychological capital of employees. The results also support Olaniyan and Hystad's (2017) and Erkutlu and Chafra's (2017) findings which reveal that employees who perceive their leaders to be authentic are embedded in the organization. However, these studies have not established the moderating effect of authentic leadership on the relationship between psychological capital and job embeddedness. This study extends the existing literature by establishing

the moderating role of authentic leadership on the relationship between psychological capital and job embeddedness. The study findings are in line with the postulations of componential theory of innovation and creativity by Nonaka, *et al* (1996) by revealing that Authentic leaders create a group innovative environment which induces employees' knowledge sharing behaviour (Edú-Valsania, Moriano, & Molero, 2016).

The findings support the social exchange theory by Thibaut and Kelly (1968), which holds that human interactions are founded on subjective cost-benefit analysis and the comparison of various options. According to Blau (1968) and Cropanzano and Mitchell (2005) conceptualization, the current study demonstrates that both employees and employers subjectively evaluate the benefit of each party in relation to the cost of the connection. Based on this research, it has been discovered that an organization, through its leaders, incurs the cost of practicing authenticity while interacting with its workers, which increases employees' psychological capital, and as a result, employees demonstrate innovative work performance as a form of exchange for the authenticity of the leader. The study findings also support the assertions of the Conservation of resources theory Hobfoll (2002), which asserts that a source is anything of value to the employee including authentic leaders who are supportive and the personal resources like psychological capital, which embed employees in the organization.

5.1.5 Moderating Effect of Authentic Leadership on the indirect relationship between Psychological capital and Innovative Work Behavior through Job embeddedness

Objective five sought to establish the moderating role of authentic leadership on the indirect relationship between psychological capital and innovative work behavior through job embeddedness. The study postulated that authentic leadership interacts

with psychological capital to influence innovative work behavior through mediating role of job embeddedness. In accordance with the casual approach for evaluating moderated mediation, the study's findings revealed that authentic leadership, through job embeddedness, moderates the indirect association between psychological capital and innovative work behavior.

The findings of the study corroborate those of Ramalu and Janadari (2020), who discovered that authentic leaders (a job resource) create psychological capital in their followers (Personal resources). Employees' psychological resources of hope, self-efficacy, resilience, and resilience are embedded in the organization, according to Coetzer *et al.* (2018). The findings of this study also support their theory. Additionally, the findings of the study are consistent with the findings of Luthans *et al.* (2007), who argue that authentic leaders influence the psychological capital of employees through fostering the growth of such people. In addition, the findings of Barkhuizen, Rothmann, and Van de Vijver (2014), who discovered that employees with high psychological capital are embedded in the organization and have a high propensity to persevere despite obstacles (Peterson, 2000), as well as being more resilient and likely to bounce back from negative events in the workplace (Avey, Luthans, & Youssef, 2010), and as a result, exhibit innovative behaviors. The findings of the study lend more support to the thesis made by Hobfoll *et al.* (2003) that employees who have an abundance of resources are more likely to defend them by engaging in extra-role behavior such as innovative work behavior (Hobfoll *et al.*, 2003). These research, on the other hand, did not look at authentic leadership in the role of moderator. According to the findings of this study, authentic leadership has an important role to play in mediating the

relationship between psychological support and innovative work behavior through job embeddedness, which adds to the body of existing knowledge.

Authentic leaders are a resource that helps to embed employees in their organizations and raise their psychological capital, according to the findings of the study. This supports the Conservation of Resources Theory (Hobfoll *et al.,* 2003), which states that authentic leaders are a resource that helps to embed employees in their organizations and raise their psychological capital. Employees' psychological capital resources are increased as a result of authentic leaders, according to the findings. When these resources of psychological capital are lost, the employees who have them guard against the loss of these resources and invest in them in order to build resource caravans. The employees who have developed a resource caravan will be embedded in the organization as a result of the generated resource caravan, and they will demonstrate innovative work behavior in order to prevent the loss of these resources by ensuring their continued employment with the company. Employees that have a lot of these resources get rooted in the business and demonstrate innovative work behavior in order to prevent the loss of these resources by ensuring their continued employment with the organization.

The study findings also support the assertions of Social Exchange Theory (Kelley, 1966) by affirming that authentic leaders increase positive feelings and resources that may enhance growth in psychological capital elements that followers have (Ciftci & Erkanli, 2020). Followers' psychological capital may increase their hope, optimism, efficacy, and resilience towards difficulties which are internal resources that employees seek to accumulate and protect according to the conservation of resources theory (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007; Othman & Nasurdin, 2011).

Employees who have acquired these resources are embedded in the organization due to the perceived compatibility with the organization and the perceived loss of these resources by leaving the organization (Hobfoll, 2002). The study also supports the notion of social exchange theory by reaffirming that employees will reciprocate the organization (through authentic leaders) by exhibiting innovative behavior.

5.2 Conclusion of the Study

The dynamism in the education sector and organizations at large requires enhanced employees' innovative behavior to thrive. Hence, understanding the antecedent role of psychological capital, job embeddedness, and authentic leadership in enhancing innovative work behavior is paramount. In empirical investigations, innovation has emerged as a recurring subject because it is critical to long-term organizational viability. The majority of scholarly study on innovation has been motivated by the need to encourage employees to engage in innovative job behavior. This is due to the fact that organizational innovation manifests itself in the innovation capability of the organization's employees. The purpose of the current study was to determine the relationship between psychological capital and innovative work behavior. With respect to each of the specific objectives of this study, the data were collected from a sufficient population and representative sample, which provided an appropriate statistical basis for establishing broad generalizations and drawing significant conclusions.

The overarching goal of the research was to determine whether authentic leadership has a moderated mediation impact on the link between psychological capital and innovative work behavior through job embeddedness. The findings of the statistical analysis indicated that authentic leadership has a statistically significant moderated mediation impact on the association between psychological capital and innovative work behavior

through job embeddedness on the relationship between these two variables. As a result, it is argued that individuals who work under real leaders and who have a high level of psychological capital and are deeply immersed in the organization are more likely to engage in innovative work behavior.

The first objective was to determine the relationship between psychological capital and innovative work behavior. As a result of the findings, it was found that individuals who have a high level of psychological capital are more likely than their counterparts to engage in innovative workplace behavior. When it comes to innovative work behavior, the impact of the psychological capital components is not consistent. Self-efficacy had the greatest impact on innovative work behavior, followed by resilience and then optimism, with hope having the least impact on innovative work behavior. As a result, it may be inferred that the degree of the effect of psychological capital on innovative work behavior varies across the four aspects of psychological capital.

For the second particular purpose, the researchers sought to determine the relationship between job embeddedness and innovative work behavior in public universities in Uganda. The findings of the statistical research indicated that workplace embeddedness has an impact on the ability to think creatively on the job. Consequently, it is inferred that employees with high embedding factors are more likely to exhibit additional role behaviors, such as innovative work behavior, than those with lower embedding factors. As a result, it was determined that employees who are emboldened by their jobs demonstrate innovative workplace behavior.

The researcher broadened the scope of the study's conceptualization beyond the direct relationship between the independent and dependent variables in order to examine both mediation and moderated mediation relationships involving psychological capital and

innovative workplace behavior. This was the impetus for the third purpose of the study, which was to determine whether job embeddedness had a mediating influence on the relationship between psychological capital and innovative work behavior. Results revealed that job embeddedness mediates the association between psychological capital and innovative work behavior in public universities in Uganda to a degree, according to the researchers. As a result, it is stated that job embeddedness accounts for why individuals with high psychological capital engage in innovative conduct.

It was the fourth goal of the study to determine whether authentic leadership has a moderating effect on the link between psychological capital and work embeddedness. Results revealed that authentic leadership in the marketplace moderates the association between psychological capital and job embedding in the workforce. As a result, the researchers came to the conclusion that authenticity in leaders influences the direction of employee psychological capital, which in turn influences innovative work behavior.

The fifth purpose of the study was to determine whether authentic leadership had a moderated mediation impact on the link between psychological capital and innovative work behavior through job embeddedness. The study had five objectives. The findings revealed that job embeddedness at public universities in Uganda, as evidenced by authentic leadership, moderates the relationship between psychological capital and innovative work behavior in public universities. As a result, it can be stated that job embeddedness can boost the effect of psychological capital on innovative work behavior, and that leader authenticity can influence the relationship between the two.

Basing on the study findings, the study concludes that employees with positive psychological capital exhibit innovative work behavior. The study also concludes that employees who have high embedding factors tend to exhibit innovative work behavior.

Further still, the study concludes that psychological capital partially influences innovative work behavior through job embeddedness. The study also concludes that authentic leadership moderates the relationship between psychological capital and job embeddedness and that authentic leadership conditions the indirect relationship between psychological capital and innovative work behavior through job embeddedness. Given the dearth of knowledge on the complementary role of psychological capital, job embeddedness, and authentic leadership on innovative work behavior, the current study fills this gap in the innovative behavior literature. This study provides a broader understanding of innovative work behavior drivers, specifically in public University settings. The findings provide essential insight into managers and employers in public University settings to focus on drivers of psychological capital, increase factors that embed employees in the organization, and integrate doctrines of leadership authenticity in human resource development to enhance innovative work behavior.

5.3 Implications of the Study

5.3.1 Implications to Knowledge

The current study findings contribute to the existing knowledge body especially regarding literature on psychological capital, job embeddedness, authentic leadership, and innovative work behavior: First, the current study expounds knowledge by establishing the role of psychological capital on influencing innovative work behavior using a sample from a service setting like Public Universities in Uganda since most literature has been focused on profit oriented industries as opposed to the service sector. Second, the study extends knowledge by establishing the mediation role of job embeddedness on the relationship between psychological capital and innovative work

behavior. The existent literature has presented fragmented literature that shows that psychological capital influences job embeddedness and that job embeddedness influences innovative work behavior. The current study deductively used proved procedures and went a step further to aggregate the views presented by previous scholars and established that job embeddedness is a partial mediator relationship between psychological capital and innovative work behavior. Third, the study extends the existing knowledge body by establishing the moderating role of authentic leadership on the relationship between authentic leadership and job embeddedness. Thus, the study enriches the knowledge body by revealing the leaders' authenticity interacts with psychological capital to form a caravan of resources that embed employees in the organization. Fourth, the study further expounds on the existing body of knowledge by establishing the moderating role of authentic leadership on the indirect relationship between psychological capital and innovative work behavior through job embeddedness. This study thus adds on the existing knowledge by advancing that the innovative work behaviour of employees can be enhanced through leader's authenticity when the employees have positive psychological capital. This is because leader's authenticity strengthens the conditioned effect of psychological capital on innovative work behaviour through job embeddedness. Fifth, the study gives more evidence from a developing economy perspective to support the Conservation of Resources, Broaden and build and Social exchange theories using a sample from a developing country.

The study confirms the assertions Conservation of Resources Theory by reaffirming that employees who have an abundance of resources like psychological capital resources get embedded in the organization and secure their stay in the organization by exhibiting innovative work behavior. The study further reaffirms the propositions of

broaden-and-build theory by reaffirming that psychological capital resources broaden people's thought-action repositories. The study also reaffirms the Social Exchange Theory by revealing that authentic leaders form part of the job resources that embed employees in the organization and interacts with psychological capital to form resource caravans that embed employees in the organization. Such employees exhibit innovative behavior to reciprocate the organization through authentic leaders.

5.3.2 Implications to Theory

In resonance with the doctrines Conservation of resources theory, Broaden-and-build theory of positivity, componential theory of creativity and innovation, and Social Exchange Theory, the current study holds various implications to theory. The study expounds on the conservation of resources theory focusing on job embeddedness as the mediator, which allows for a better understanding of the relationship between psychological capital and innovative work behavior. Psychological capital factors such as hope, self-efficacy, resilience and optimism are part of the internal resources that bind employees to an organization, as evidenced by this study. In order to save these resources, these personnel use innovative work practices to ensure their long-term employment in the company.

It was shown that there was a link between authentic leadership and an employee's innovative work behavior, which supports the social exchange hypothesis (Blau, 1964) by confirming the beneficial ties between authentic leaders and their employees. Understanding attitudes and behavior in companies is one of the most important tasks of the social exchange theory (Cropanzano, 2005), and relationships are founded on the subjective cost-benefit analysis (Cropanzano & Mitchell, 2005). Employees, like the rest of us, engage in reciprocal trade transactions that have both benefits and costs for

both parties (West & Turner, 2010). When an employer or leader does something nice for an employee, the employee does something nice back. For example, a leader's sincerity drives his or her staff, who reciprocate by engaging in new work practices. The theory of social exchange supports this position.

There is a cost and a reward in every human relationship, according to Hamid. People judge the value of their relationships based on these costs and benefits. Employees and their leaders have a social exchange relationship that is evident in this study's findings, which show a strong correlation with authentic leadership. Similarly, West and Turner (2010) argue that a social exchange connection is founded on the self-interest of each party, which indicates that it has a motive to enhance one's self as a result. As a result of this study, the employer increases their own innovation performance by encouraging their employees to engage in new work practices. The employee's personal well-being improves as a result of the leader's allowed authenticity.

This research supports Hobfoll's (1989) conservation of resources theory by demonstrating the link between psychological capital and innovative work behavior. In Hobfoll's view, resources can be found within an individual's own self. There are many different aspects of psychological capital that employees can tap into, such as hope, resilience, self-efficacy, and optimism (Feldman, 2004). As a result of this internal motivation, people seek out, acquire, maintain, and save resources they value in order to ensure their own existence. Using your own resources, you can establish a chain reaction that generates further resources and resource caravans (Bakker & Demerouti, 2017).

By investing personal resources, individuals can prevent the loss of tangible rewards and privileges, such as seniority and position within a job that are embedded at work,

from being lost. (Hobfoll & Shirom 2001). Psychological resources are used by employees who have them in this study in order to develop new resources and exhibit new behaviors. Thus, the current study contributes to theory by arguing that people who have a lot of psychological capital invest in these resources and create resource caravans in order to protect valuable job resources; that is, they invest their efforts in innovative behaviors in order to maintain current job resources. The study also deepens the broaden-and-build theory of positivity by revealing that psychological capital resources broaden people-thought action repositories. The study findings revealed that employees who possess the positive psychological resources of hope, self-efficacy, resilience, and optimism have a broadened mind and can 'think outside the box' to generate and implement novel work ideas. These results reaffirm the notion of Broaden and Build Theory that psychologically positive employees have a broadened think and action mind and go the extra mile to execute organizational roles innovatively.

The study further deepens the conservation of resources theory explanatory power in enhancing job embeddedness by establishing the role of interaction of authentic leadership and psychological capital to form a resource caravan. Based on the conservation of resources theory, this study establishes the interaction effect of psychological capital and authentic leadership on job embeddedness. The central notion of conservation of resources theory is that employees who have abundant resources seek to protect the loss of these resources. One way of protecting the loss of these resources is maintaining their stay in the organization. The study expands the notion of protecting the loss of resources inherent in the conservation of resources theory by revealing that authentic leadership is a job resource that interacts with psychological capital to form a resource caravan, and employees enriched with these resources get

embedded in the organization due to the perceived loss of these resources when they quit the job.

The study further contributes to the Conservation of Resources Theory by introducing the moderating role of authentic leadership on the relationship between psychological capital and innovative work behavior through job embeddedness. The conservation of resources theory postulates that employees protect the loss of their resources by portraying innovative work behavior to secure their stay in the organization. The study, therefore, expounds on the Conservation of resources notion of protecting resources by revealing the authentic leadership interacts with psychological capital to increase job embeddedness and the employees who become embedded portray innovative work behavior to secure their resources by staying in the organization.

The study findings support the norm of reciprocity prevalent in the Social Exchange Theory by revealing that authentic leadership interacts with psychological capital to increase job embeddedness. The embedded employees reciprocate the organization (through their leaders) for the embedding resources by portraying innovative work behavior.

5.3.3 Implications to Policy and Practice

The study findings provide a platform for insightful implications to managers since it identifies drivers of employee innovative work behavior. Basing on the study findings, managers should implement a variety of management interventions to activate employees' psychological resources of hope, efficacy, resilience, and optimism in order to foster innovative work behavior among employees. Employee psychological capital can be improved through targeted management interventions, according to scholars (Davidson, Feldman, & Margalit, 2012; Feldman & Dreher, 2012).

Consequently, managers should implement interventions that build psychological capital with the purpose of fostering employees' innovative work behavior. The following methods can be used to accomplish this: enabling individuals to choose more achievable goals, identifying alternative routes to reach goals and encouraging employees to build a supportive network of people around them, engaging employees in the process of setting goals, supporting employees in re-adjustment and re-designing goals, developing alternative means of goal achievement, and developing contingency plans in the event that the existing plans fail.

Managers should also emphasize on the psychological capital elements during the implementation of human resource practices like recruitment, job design, training and development. For instance, managers can acquire psychologically positive employees through recruitment practices like designing a job in a way that it fosters positive psychological resources and utilizing questionnaires containing questions that measure psychological capital and training the recruitment team on how to utilize the questions.

The findings of the study indicated that embedded employees engage in creative work practices on a regular basis. Organizational conducive factors that encourage employees to remain in the organization should be a primary focus for managers, who should devise strategies to enmesh employees in the organization while also establishing organizational conducive factors that encourage employees to remain in the organization. Relationships with peers and leaders, as well as perks and advantages, are examples of organizational and social aspects. William Lee, Burch, and Mitchell (2014) state that an employee's job embeddedness is the cause for his or her decision to remain in the company as a result of the organization's policies and procedures. Employees'

conduct is influenced by organizational variables as well as social factors (relationships with peers and the community).

More so, managers can also improve employee embeddedness by establishing centralized training sessions so that employees get more links by understanding themselves and their managers and understanding the organization's values. These learning sessions can also help employees better understand their roles in the organization and appreciate the organization's values and abilities to facilitate a better fit with the organization and make a fit between the employee behavior and the organization's expectations.

The study results also revealed that authentic leadership conditions the indirect relationship between psychological capital and innovative work behaviour through job embeddedness. Basing on the conditional indirect effect findings, managers should enhance supervisors' authenticity by re-designing leadership programs and management practices. This can be achieved by organizing training sessions for managers and supervisors to leaders and ensure that managers understand the doctrines of authenticity to enhance innovativeness among employees through the notion of reciprocity. It is imperative that leaders are trained on the principles of authentic leadership as a policy. This is compatible with Gouldner's (1960) position, which affirmed the universality of the reciprocity norm, which guides individuals' behavior in returning benefits given by others (e.g. authentic leaders).

5.4 Recommendations

The study findings revealed that employees enriched with positive psychological capital resources portray innovative work behavior. Therefore, this research recommends public Universities to enhance employees' psychological capacities

through targeted interventions like training sessions as a way of enhancing Psychological Capital among Employees so as to subsequently achieve employee innovativeness.

The management in public Universities in Uganda should also design a human resource development manual and periodical training sessions for supervisors to periodically orient them about the doctrines of authenticity. This would help enhance the psychological capital of employees through the authenticity of leaders.

Public Universities should also focus on the factors that embed employees in the organization, both financial and non-financial rewards to embed employees in the organization, and such employees portray innovative work behavior.

5.5 Limitations to the Study

The current study is not without limitations. First, the instruments adopted for measurement were primarily designed for studies in different geographical locations with different contextual factors, which could render them less appropriate for this particular study. However, the study obtained unbiased results since the data collection instruments were checked for validity and reliability for the specific study sample.

Second, the instrument used for data collection was a self-rated questionnaire, and the study might suffer from common method bias. The study however controlled common source bias by interchanging the order of the questions and assuring the participants of voluntary participation in line with the recommendations of Podsacoff (1986).

Third, the research design adopted for this study was cross-sectional, and the behavior of employees change over time, and so are the embeddedness factors and the study findings may restrict the applicability of the study findings as a longitudinal study could

give different results from the ones obtained in the current study. However, given that the study intended to collect views about multivariate variables that tap into employees' leaved experience as are constructed over time, it is plausible to use the data to forecast future trends as a reliable reference for drawing conclusions. Fourth, the study was conducted in public Universities in Uganda. The results may limit the generalization of study findings to private University settings as school culture greatly affects innovative work behavior.

5.6 Areas for Further Research

The study's findings serve as a springboard for future research. While the current study identified job embeddedness as a mediator of the relationship between psychological capital and innovative work behavior, the findings show that the mediation effect is partial rather than complete. This could point to the existence of additional mediators in the relationship between psychological capital and creative work behavior. As a result, more study is needed to determine the involvement of additional mediators in explaining the association between psychological capital and innovative work behavior. The findings of the study demonstrated that job embeddedness moderates the indirect association between psychological capital and innovative work behavior. Other characteristics that could diminish or strengthen the association between psychological capital and innovative work behavior, both directly and indirectly, should be investigated in future research. Authentic leadership has a considerable moderated mediation effect on innovative work behavior, according to the current study. Future research should look at the conditional influence of other leadership characteristics, such as member interchange among leaders, and the impact this has on the link between psychological capital and innovative work behavior.

The study conclusion was based on a sample drawn from public Universities in Uganda which may have different innovative climate from private universities. Studies by Young (2012) revealed that the school innovation climate influences innovation behavior of employees. Further research should carry out a study using empirical evidence from private Universities to establish whether the same conclusion can be drawn.

The research design used to collect data was cross-sectional, and since behavior of employees change over time, further studies ought to collect data using a longitudinal design so as avoid effects associated with time lags and causal relationships and to compare the influence of psychological capital on innovative work behavior across different time intervals.

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APPENDICES

Appendix I: List of Public Universities In Uganda

SN	UNIVERSITY NAME	ABBREVIATION	LOCATION
1	Makerere University	MK	Kampala
2	Busitema University	BU	Tororo
3	Mbarara University Of Science And Technology	MUST	Mbarara
4	Muni University	MN	Fortportal
5	Lira University	LU	Lira
6	Gulu University	GU	Gulu
7	Kyambogo University	KY	Kampala
8	Makerere University Business School	MUBS	Kampala
9	Soroti University	SU	Soroti
10	Kabale University	KU	Kabale

Source: NHE Report of 2018/2019

Appendix II: Introductory Letter

To whom it may concern

Dear Sir/Madam

REF: INTRODUCTION LETER

I am a Doctoral student in the School of Business and Management Studies at Moi University. As part of the requirement of the PhD program, I am required to conduct research related to my study. The main question in the research is '**Psychological Capital, Job Embeddedness, Authentic Leadership and Innovative Work Behavior in Public Universities in Uganda'.**

The purpose of the letter is to request you to take some minutes to answer the attached questionnaire. You have been selected because you have the required knowledge and information that is very vital for the research study. The information provided will be treated with utmost confidentiality and will be used solely for academic purposes. The information will be coded so that it can be anonymous, then analyzed, and the results will specifically be used to address research objectives.

Your participation will be highly appreciated

Thank you for your co-operation,

Yours faithfully,

Namono Rehema

Appendix IIIII: Questionnaire

Please tick the answer appropriate to you. All information given will be treated confidentially

SECTION A: DEMOGRAPHIC INFORMATION

Indicate your response to the items below by ticking in the boxes

a) What is your Gender: Male [1] Female [2]

b) What is your age bracket : Below20 years [1] 20-30 years [2]
31-40 years [3] over 40 years [4]

c) What is your Highest level of education attained

Certificate [1] Diploma [2] 1st Degree [3] Masters [4] PhD [5]

d) For how long have you worked in this University

Less than 5 years [1] 6-10 years [2] 11-15 years [3] 16-20 [4] more than 20 [5] years

SECTION B: PSYCHOLOGICAL CAPITAL

Tick the appropriate box in the table to show psychological capital

Kindly tick from 1=strongly agree, 2 = Agree, 3= neutral, 4=Disagree,

5=Strongly Disagree on how they relate to you

HOPE

		5	4	3	2	1
H1	When I am caught up in difficult, I get my way out of it					
H2	I am strongly driven to goal-achievement					
H3	I have numerous approaches to resolve any work problem that may befall me					
H4	I feel that I have attained abundant victory in my career					
H5	I am able to think of multiple ways to goal achievement					
H6	I have attained utmost goals I have pursued in this University.					

SELF-EFFICACY

		5	4	3	2	1
SE1	I enjoy unlimited deal of self-assurance when in this University					
SE2	I'm in the best mood, when I'm actually in a challenging situation					

SE3	I encounter several challenges in this University and I can overcome them.					
SE4	I desire independence at work place to discover a solution to problems.					
SE5	I think that I have a right opportunity to get my goals in life					
SE6	I accomplish my work in time instead of waiting until last moments					

RESILIENCE

		5	4	3	2	1
R1	I quickly regain my normal mood after normal mood quickly after spiteful work events					
R2	I like dealing with novel and rare occasions					
R3	I am always successful in forming positive influence about others at work place.					
R4	I like taking multiple approaches to goal achievement in this University.					
R5	I like novel and puzzling work.					
R6	I solve angry feelings that I may hold toward a specific individual while at the work place					

OPTIMISM

		5	4	3	2	1
OP 1	I always expect the best when I am uncertain of something					
OP 2	I can simply feel comfortable while working in this University.					
OP 3	I delay the performance of my work for another time when I feel piqued					
OP 4	I am continually expectant about my future while working with this University.					
OP 5	I anticipate trials to guarantee steadiness in realizing my goals in this University.					
OP 6	I presume pleasing outcomes, instead of unpleasing ones					

SECTION C; AUTHENTIC LEADERSHIP

Tick the appropriate box in the table below to show the extent to which you are authentic leadership

1 = strongly agree, 2 = Agree, 3= neutral, 4 = Disagree, 5 = Strongly Disagree

		5	4	3	2	1
AL1	My leader declares what she or he accurately means					
AL2	My leader accepts mistakes made.					

AL3	My leader inspires everybody to express his or her mind.					
AL4	My leader shows beliefs consistent with actions					
AL5	My leader encourages me to take positions that support my core values.					
AL6	My leader makes hard decisions built on high morals conduct.					
AL7	My leader collects opinions that test his or her intensely held positions.					
AL8	My leader scrutinizes required facts prior to decision making					
AL9	My leader carefully pays attention to different opinions prior to conclusions.					
AL10	My Leader seeks reaction to mend relations with others.					
AL11	My Leader recognizes when re-evaluate his or her positions on key issues.					
AL12	My Leader demonstrates he or she knows the impact of specific actions on others					

SECTION D; JOB EMBEDDEDNESS

Tick the appropriate box in the table below to show the extent to which you are job

1 = strongly agree, 2 = Agree, 3= neutral, 4 = Disagree, 5 = Strongly Disagree

		5	4	3	2	1
JE1	I am compatible with the organization's cultural values and beliefs					
JE2	The projections for ongoing employment with this University are outstanding					
JE3	I have excessive liberty to make decisions on how to pursue my goals					
JE4	I feel that I am greatly respected by work place people					
JE5	My job optimally utilizes my skills and talents					
JE6	I feel that I am a good match for this University					
JE7	I like the authority and obligation I have at this University					
JE8	The employee perks in this University are suitable					
JE9	My workmate are parallel to me					
JE10	I would forego a lot if I left this job					

SECTION E: INNOVATIVE WORK BEHAVIOR

In this section, the study is interested in your view of your employees innovative work behavior. Read each statement and answer by ticking in the suitable category that best fits your opinion.

1 = strongly agree, 2 = Agree, 3= neutral, 4 = Disagree, 5 = Strongly Disagree

		5	4	3	2	1
IB1	I attend to issues different from my routine work					
IB2	I am curious about how to improve things in the University					
IB3	I explore novel methods, techniques or instruments of work					
IB4	I create novel solutions to challenges that arise in this University					
IB5	I discover novel methods to accomplish work tasks					
IB6	I make key members of the organization to be passionate for new ideas					
IB7	I endeavor to persuade people to support innovative ideas					
IB8	I analytically present novel ideas into work practices					
IB9	I participate in the execution of novel ideas					
IB10	I put exertion into the improvement of novel thing in this University.					