BUSITEMA UNIVERSITY

FACULTY OF MANAGEMENT SCIENCES

DEPARTMENT OF ECONOMCS AND MANAGEMENT

PhD Thesis

INNOVATIVE WORK BEHAVIOR AMONG ACADEMIC STAFF IN PUBLIC UNIVERSITIES IN UGANDA

WANYANA MERCY MUGONOLA
REG. NO: BU/G21/PAM/11

THE THESIS IS SUBMITTED TO THE DIRECTORATE OF GRADUATE STUDIES, RESEARCH AND INNOVATIONS IN FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY IN BUSINESS ADMINISTRATION AND MANAGEMET OF BUSITEMA UNIVERSITY

OCTOBER, 2025

DECLARATION

I, Wanyana Mercy Mugonola, hereby declare that this Research Thesis is my own original work and that it has never been presented to any University or Institution for any award of degree.

Sign: …….. 28/10/2025

WANYANA MERCY MUGONOLA

APPROVAL

This is to certify that this thesis entitled "*Innovative Work Behavior among Academic Staff in Public University in Uganda*" has been submitted with our approval.

Signed ..... Date 31/10/2025

Prof. MPAATA Abdul Kaziba (PhD)

Signed: ..... Date 28/10/2025

Assoc. Prof. MUSENZE Ibrahim Abaasi (PhD)

ABSTRACT:

Higher education in underdeveloped countries like Uganda has changed over the past 20 years, and innovation is crucial to addressing these changes. Based on the combined theoretical perspective of: Social exchange theory, Denison's organizational cultural model and Spritzer's empowerment model, the present study examines the relationship between perceived organizational support (POS), servant leadership (SL), organizational culture (OC), and innovative work behavior (IWB) among academic staff in Uganda's public universities. Specifically, this study focused on examining the relationships between: i) POS and IWB ii) SL and IWB iii) OC and IWB iv) POS and psychological empowerment (PE) v) SL and PE vi) the mediating effect of PE on the relationship between POS and IWB vii) the mediating role of psychological empowerment on the relationship between SL and IWB. To achieve the study's objectives, a cross-sectional and mixed-method study approach- which combines quantitative and qualitative methods was adopted using a sample of academic staff from Uganda's public universities. Based on 308 valid observations, the quantitative data analysis included structural equation modeling, zero order correlations, and descriptive statistics using SPSS 19 and AMOS V.21$_{TM}$. For mediation analysis, the bootstrap approach using AMOS was used. The qualitative data was collected from 10 universities; the point of saturation was reached after 28 senior managers and analysed using the Gioia methodology with the aid verbatim quotes to account for the emerging themes. The findings of direct effects confirmed a positive relationship between POS, SL, OC and IWB. The findings also established that the relationship between POS, SL and IWB is positively and partially mediated by PE. This study concludes that the alternative path to improvements in IWB integrates individual (perceived organizational support, servant leadership, and psychological empowerment) and organizational perspectives (organizational culture), especially in public university setting. The results provide support to the theoretical grounding of this research. Based on the study's findings, policymakers- that is, the NCHE, the Ministry of Education, and Sports, as well as other relevant government agencies, ought to prioritize development of IWB. To accomplish this, governments and organizations can foster a psychologically enabling environment, promote collaboration and information exchange, provide employees with development and growth opportunities, and reward and acknowledge creative thinking. Innovation can also be further stimulated by encouraging open communication, accepting different viewpoints, and questioning assumptions. From the theoretical viewpoint, this study emphasizes the role of the individual level factors in IWB studies, and the mediating influence of PE in explaining the relationship between POS and SL with IWB. This study is not without limitations. First, it was based on cross-sectional research design. Since cross-sectional studies are inherently prone to common methods bias, a longitudinal approach in the replication of the study is advised to explore the development of IWB construct over time. Also, this study solely considered POS, SL, OC and PE as factors explaining IWB. We suggest that other factors and dimensions should be the focus of future studies.

Keywords: *Perceived Organizational Support, Servant Leadership, Organizational Culture, Psychological Empowerment, Innovative work Behavior*

ACKNOWLEDGEMENT

All glory be to God, the Most Merciful and the Most Compassionate, for providing me with the ability, endurance, patience, and inspiration to finish my thesis.

I want to express my gratitude to the Management of Busitema University led by Professor, Paul Waako – The Vice Chancellor, for providing me with a scholarship and crucial financial assistance during my journey of this study.

I am also indebted to Professor Kaziba Abdul Mpaata and Associate Professor Musenze Ibrahim Abaasi for their tireless efforts, attention to detail, and passion for this endeavor. Their insightful opinions, recommendations, and most importantly, their faith in my abilities, have given me confidence and a strong sense of purpose from the start of my studies, I wouldn't be where I am now without their expertise, advice and assistance.

I would want to express my gratitude to my lovely husband, Professor Basil Mugonola, my daughter Sharon and my son Timothy, for their prayers, patience, support, and words of encouragement that kept me going till the very end of this voyage.

Lastly, but just as significantly, I want to thank Dr. Nangobi Racheal, Mr. Tom Mayende and all of the academicians from public universities who participated in the study. The success of our study today would not be possible without their genuine engagement.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

No	Name	Abbreviations
1	Innovative Work Behavior	IWB
2	Institutions of Higher Learning	IHL
3	Perceived Organizational Support	POS
4	Servant Leadership	SL
5	Organization Culture	OC
6	Psychological Empowerment	PE
7	Social Exchange Theory	SET
8	National Development Plan III	NDPIII
9	Common Method Variance	CMV
10	Mahalanobis	MAH_1
11	Variance Inflated Factor	VIF
12	Composite Reliability	CR
13	Average Variance Extracted	AVE
14	Uganda National Council for Science and Technology	UNCST
15	Uganda Registration Services Bureau	URSB
16	The National Information Technology – Uganda	NITA-Uganda

LIST OF PUBLICATIONS AND MANUSCRIPTS

The following list includes journal articles published, manuscripts under review

Journal articles published

Wanyana, M. Kaziba A Mpaata; Ibrahim A Musenze (2025). Effect of Psychological Empowerment on Innovative Work Behavior Amongst Academics of Public Universities in Uganda. *International Journal of Applied Research in Business and Management*, *06*(02). https://doi.org/10.51137/wrp.ijarbm.2025.mwet.45846

Wanyana, M. Kaziba A Mpaata; Ibrahim A Musenze (2025). Determinant Factors that Drive Innovative Work Behavior of Public University Academic Staff in Uganda. *International Journal of Applied Research in Business and Management (ISSN: 2700-8983); Volume: 06* Issue: 02
https://doi.org/10.51137/wrp.ijarbm.2025.mwdt.45898

Manuscript Under Review:

Wanyana, M. Ibrahim A Musenze; Kaziba A Mpaata. (2025). Perceived Organizational Support and Innovative Work Behavior: The mediating role of Psychological Empowerment .
Journal of Economics and Administrative Science by Emerald.

Wanyana, M. Ibrahim A Musenze; Kaziba A Mpaata (2025). Servant Leadership and Innovative Work Behavior: Does Psychological Empowerment Matter?
Public Organization Review by Springer

LIST OF APPENDICES

CHAPTER ONE:

INTRODUCTION

1.1 Background to the study:

As a result of the recent global developments, the higher education sector is currently under constant pressure to maintain its market share, find a workforce that contributes more value, and increase supply while maintaining quality (Abidi et al., 2022; Alshathri, 2020). This problem is made worse by increased competitiveness and digital transformation (Tanveer et al., 2022; Aboobaker et al., 2021). Consequently, it becomes extremely vital to manage innovative work behavior (IWB) in institutions of higher learning (IHL) (Ibus et al., 2020; Dan et al., 2020).

Over the past two decades, the theme - IWB has consistently gained significant attention from both scholarly and business spheres due to its relevance not only for gaining a competitive edge (Tanveer et al. 2022), adaptability to societal changes (Johari, Wahat, and Zaremohzzabieh 2021), increased client satisfaction (Ibus, Wahab, and Ismail 2020) but also in promoting organizational viability (Sadry, Zeerak, and Popalzai 2022). This implies that IHL, specifically Universities need to manage academic staff's innovative behavior to adapt to a world that is evolving rapidly, update instructional technologies, and get fresh perspectives, cultivate students' innovative thinking and maintain competitiveness (Zeng & Xu, 2020; Tanveer et al., 2022; Wao et al., 2022). IWB is defined as the contribution of individuals and groups within an organization to the implementation of new duties, services, goods, or concepts related to the workplace to produce desired results (Tanveer et al., 2022).

Research indicates that although IHL is a major force behind economic growth and social development, as well as a center for knowledge and innovation, job creation, and poverty alleviation, their rate of innovation is insignificant (Osano, 2021; Ardianti et al., 2024; Kruger &

Steyn, 2024). In most IHL, the lack of innovation capacity among academic staff continue to emerge as a significant challenge (Liao & Zhu, 2021; Rahmawati et al., 2020; Supriyadi et al., 2020; Phuong et al., 2021). Scholars show that most organizations and specifically IHL fail to develop unique solutions and novel concepts (Carvalho et al., 2023; Kusmaryani, 2022). For instance, a survey carried out in Australia and New Zealand found that only 3% of creative ideas were generated by university staff (Arundel, Bowen-butchart, and Gatenby-Clark 2016). In south America, in a survey of public and private universities in Brazil, only 3% of academic staff were considered innovative (Claudia Beatriz 2018). Asia presents relatively a similar picture. For example, a study done in Philippines revealed that only 22.6% of university faculty staff were able to innovate (Arangote 2021). In East Africa, Wao et al., (2022) contends that only 10% of student research projects in Kenya and Uganda are tied to societal issues, demonstrating that academics lack the entrepreneurial abilities to generate, promote, realize, and execute ideas.

Specific to Uganda, research and innovation received a paltry 21% rating in the NDPIII Innovation and Technology Report, (2020). Moreover, according to the NDPIV Report, (2025), innovation is still not being utilized or funded sufficiently to generate the momentum required for value addition, industrialization, and socioeconomic change. In addition, due to few avenues for efficient knowledge transfer and commercialization, more than 70% of research and innovation outputs from universities stagnate at the prototype stage and are not commercialized (NDPIV Report, 2025).

Furthermore, the majority of Ugandan employees still demonstrate inadequate IWB, as evidenced by their incapacity to create demand-driven programs to satisfy the nation's pertinent and constantly shifting labour market demands, their failure to embrace online delivery technologies, and their lack of innovative skills (Namono et al., 2021; Basemera et al., 2016).

Despite the growing research attention on innovation (Morales et al., 2024; Phuong et al., 2021) there are limited studies about how innovation might be encouraged at the individual level (Hashim, 2020; Bos-Nehles et al ., 2017; Musenze et al., 2022; Bos-Nehles et al., 2019; Morales et al., 2024). Existing studies on IWB have thus assumed an organizational perspective to innovation (Jankelová, Joniaková, and Mišún 2021). These studies argue that process, service and product innovations might be promoted by organizations (Chongvisal 2020). This approach ignores the assertion that organizations do not have ideas, yet individuals who work within organizations do (Zreen, Farrukh, and Kanwal 2021). Moreover, as argued by Hari (2021), individuals' contribution to the innovation process cannot be separated from organization-wide innovation since employees hold the ability to develop unique solutions and novel concepts (Ayadi 2021). Similarly, the capacity of IHL to innovate largely depends on the extent of employees' IWB capabilities (Kundu et al., 2020; Mozie & Mahadi, 2024). Despite this, limited studies on creative work practices and behaviors in the higher education industry exist (Tesfa & Walia, 2019; Etikariena & Widyasari, 2020; Ardianti et al., 2024; Pokhrel, 2024). Moreover, employees' IWB are crucial not only because of the increasingly developed technologies for teaching and learning purposes(Zainal and Matore 2019), but also due to the roles academic staff play in supporting educational change and development.

Numerous research has also recognized the significant connection between organizational culture (OC) and work outcomes like IWB (Khan et al., 2020; Gautam, 2020; Aboramadan et al., 2020). An organization's collection of various values, norms, and beliefs (Hamid and Durmaz 2020), direct employees' thoughts, emotions, and behavior (Aryani and Widodo 2020), and equally influence how individuals behave (IWB). Further, studies show that perceived organizational support (POS) (Akhtar et al., 2019; Mustika et al., 2020; Kwahar et al., 2021) and Servant

Leadership (SL) (Olaleye and Solanke 2021) are related to IWB. In accord with the Social Exchange Theory (SET), when employees view assistance favorably, they reciprocate those impressions (Blau, 1964) by improving their IWB. Similarly, studies have established significant association between psychological empowerment (PE) with IWB (Maan et al., 2020; Jiwon & Kim, 2022). Employees feel psychologically empowered, important at work, competent, influential, and autonomous when cared for, valued, and given support in the form of rewards, training opportunities, among others, by their respective organizations.

Importantly, despite findings by scholars indicating the positive and significant effect of POS and SL on IWB (Wiggins, 2021; Zeng & Xu, 2020; Wahyu et al., 2024), other empirical studies (Amin et al., 2022; Jiwon et al., 2022) show conflicting results. Given these inconsistent results, it is possible that there is an intermediary component that explains the POS, SL- IWB relationship. Scholars have argued that in the face of contradictory results, it is important to integrate a process variable with a definitive role as either a mediator or moderator to account for the aforementioned relationship (Namaz, 2016; Pokhariyal, 2019; Kouam, 2024). Biased or insufficient conclusions may result from research studies' inadequate incorporation of mediating variables (Kouam, 2024; Pokhariyal, 2019). Prior scholars have revealed that PE mediates the association between POS, SL, and IWB (Jiwon & Kim, 2022; Faraz et al., 2019). Despite these interesting findings, PE mediation models have received relatively little empirical attention in literature (Jiwon Park & Kim, 2022; Faraz et al., 2019). Thus, this study argues that PE may be the underlying mechanism to account for the SL, POS-IWB relationship, particularly in the context of Uganda's IHL.

Furthermore, prior studies have employed a single-theoretical approach (Muhammad et al., 2020; Abdullah & Salam, 2022; Akram et al., 2024). No single theory, however, can fit all contexts, rather, depending on the context and time, single theory may have more explanatory power (Mahmud 2020). The multi-theoretic approach served as the basis for this study for theoretical triangulation (using elements from several theoretical perspectives) and complementary (to produce a range of insights) purposes (Cairney, 2013; Vivek et al., 2023). This was predicated on two models and one theory. A theory is a body of knowledge that seeks to explain robust phenomena; models, on the other hand, are instantiations of theories, often more concrete and narrower in scope, usually applied to a specific aspect of a given theory, offering a more local description or understanding of a phenomenon (Fried 2020). According to the above perspective, theoretical models are condensed depictions of reality (Martens 2020). Thus, models and theories aim to depict the real nature of the world and its underlying processes. This strategy was used to integrate the Spreitzer Empowerment Model (1995), Denison's OC Model (Denison, 2000), and the SET (Blau, 1964). Based on these theories, the actions involved in managing IWB are associated with POS and servant leadership (Blau, 1986), OC (Denison, 2000) and PE (Spreitzer, 1995).

Therefore, constructs of OC, POS, SL and PE were developed and integrated for the purpose of deeper understanding of IWB in IHL. The SET (Blau1964) creates a reciprocal rapport between behavior and the work surrounding (Mustika et al., (2020). Maan et al., (2020) argues that employees' attitudes towards the fundamental procedures that make up their organization- of which POS and servant leadership are among, have an impact on the way they behave. However, this theory reduces social interaction to economic transactions and views human behavior as an exchange (Zafirovski, 2014; Homans & Blau, 2023). This claim ignores the attitudes, values, and

behaviors that impact how individuals behave within an institution. It is crucial to remember that people's reciprocation is influenced by the cultural orientations and social norms that regulate social exchange (Ahmad et al. 2023).

According to Denison's OC Model (Denison, 2000), OC can inspire innovation and creativity among staff members as it pushes them to adopt it as a guiding principle (Aboramadan et al. 2020). However, the four characteristics listed by Denison (1990): mission, consistency, adaptability and involvement are ignores employees' psychological aspects, yet these are crucial for IWB (Buhumaid 2022). Also, this model has restrictions in that it does not indicate an organization's capacity to enable individuals to conform to its culture (Abane, Adamtey, and Ayim 2022). Yet, employees must believe that they have a voice in decision-making, that their opinion is heard, and that organizational goals directly relate to their work to effectively contribute to IWB (Spreitzer, 1995), hence the need for PE.

Consistent with the Employee Empowerment Model (Spritzer, 1995), employees who perceive PE view themselves as more influential, independent, proactive and capable of producing innovative solutions (Kustanto et al. 2020). Considering this, this research made a unique contribution by developing an alternative IWB model based on the above definite theories. Generally, given that Uganda's IHL have a momentous influence in the country's social-economic development (Muhammad et al., 2021), it is reasonable to argue for a distinct inquiry into employees' IWB.

1.2 Statement of the Problem

Despite Government initiatives to improve academic staff IWB, such as funding for innovation, raising salaries, and enacting laws (such as The National Science, Technology, and Innovation Policy 2009), low IWB still persists (Namono et al. 2021). This is demonstrated by a lack of inspiration to innovate, inadequate adoption of online collaborations, and failure to integrate digital technology and artificial intelligence (AI) platforms into teaching (Bwire et al., 2020; Mugizi et al., 2023) and 79% of faculty members have failed to used online Learning Management Systems (LMS) (EILU et al. 2024).

Prior research on IWB has taken the organizational perspective (innovative processes and systems) while ignoring the individual contribution to the process, despite the fact that both individual and organizational perspectives are essential for successful innovation processes (Wao et al. 2022). Individual creativity determines new ideas and opportunity recognition (Hock-Doepgen et al. 2025), and employee behavior determines innovation in organizations ((Ayoub, Almahamid, and Al Salah 2023). Additionally, its individuals who create, initiate, and implement new ideas at work (Namono et al., 2021). As a result, the inclusion of individual perspectives provided a unique and expanded understanding of IWB to the present body of knowledge.

Also, existing studies on POS, SL and Organizational Culture (Kwahar, 2021; Khan, et al., 2022; Muhammad et al., 2020) are limited and thus, perpetuated the problem. Scholars reveal that IWB is influenced by Servant leadership (Aboramadan et al., 2022) and Perceived organizational support (Jiwon & Kim, 2022). However, these studies have not integrated psychological empowerment as underlying mechanism through which Perceived organizational support and Servant leadership affect IWB, thus, rendering such relationships unexplored. This study intended to bridge this gap by investigating employee IWBs in Uganda's public universities.

1.3 Purpose of the study

The study sought to examine the relationship between perceived organizational support, servant leadership, organizational culture, psychological empowerment and innovative work behavior among academic staff in public universities in Uganda.

1.4 General Objective of the study:

The study aimed at examining the relationship between Perceived organizational support, Servant Leadership, and organizational culture with innovative work behaviors, and how the relationship between Perceived organizational support and SL with IWB is mediated by psychological empowerment among Uganda's public universities.

1.5 Specific Objectives of the study:

The objectives of the study were:

1) To investigate the relationship between perceived organizational support and innovative work behavior among academic staff in public universities in Uganda.
2) To examine the relationship between servant leadership and innovative work behavior among academic staff in public universities in Uganda.
3) To determine the relationship between organizational culture and innovative work behavior among academic staff in public universities in Uganda.
4) To investigate the relationship between perceived organizational support and psychological empowerment among academic staff in public universities in Uganda
5) To investigate the relationship between servant leadership and psychological empowerment among academic staff in public universities in Uganda

6) To investigate whether psychological empowerment mediates the relationship between perceived organizational support and innovative work behavior among academic staff in public universities in Uganda.

7) To investigate whether psychological empowerment mediates the relationship between servant leadership and innovative work behavior among academic staff in public universities in Uganda.

8) To examine the relationship between psychological empowerment and academic staff innovative work behavior in public universities in Uganda.

1.6 Research Questions

The following research questions were addressed by the current study in light of the research gaps listed in the problem statement:

a) How has the innovative work behavior been perceived by academic staff in public universities of Uganda?

b) What factors, practices and processes drive innovative work behavior among academic staff of public universities of Uganda?

c) What are the constraints to the innovative work behavior among the academic staff in public universities of Uganda?

1.6 Research Hypotheses

The research hypotheses are included in table 1.1 below

Table 1.1 Objectives and Hypotheses

S/N	Objectives		Hypotheses
1	To investigate the relationship between perceived organizational support and innovative work behavior among academic staff in public universities in Uganda.	**H1**:	Perceived organizational support has a positive and significant relationship with innovative work behavior.
2	To examine the relationship between servant leadership and innovative work behavior among academic staff in public universities in Uganda.	**H2**:	Servant leadership has a positive and significant effect on innovative work behavior.
3	To determine the relationship between organizational culture and innovative work behavior among academic staff in public universities in Uganda.	**H3**:	Organizational culture has a positive and significant impact on innovative work behavior.
4	To investigate the relationship between perceived organizational support and psychological empowerment among academic staff in public universities in Uganda	**H4**:	Perceived organizational support has a positive and significant impact on psychological empowerment.
5	To investigate the relationship between servant leadership and psychological empowerment among academic staff in public universities in Uganda	**H5**:	Servant leadership has a positive and significant impact on psychological empowerment.
6	To investigate whether psychological empowerment mediates the relationship between perceived organizational support and innovative work behavior among academic staff in public universities in Uganda.	**H6**:	Psychological empowerment mediates the relationship between Perceived organizational support and innovative work behavior.
7	To investigate whether psychological empowerment mediates the relationship between servant leadership and innovative work behavior among academic staff in public universities in Uganda.	**H7**:	Psychological empowerment mediates the influence of SL on innovative work behavior.
8	To examine the relationship between psychological empowerment and academic staff innovative work behavior in public universities in Uganda.	**H8**:	Psychological empowerment has a significant and positive impact on innovative work behavior.

1.8 Significance of the study:

This study made several scholarly and managerial contributions. First, by detailing numerous theoretical and practical methods for fostering IWB in public universities. In general, this research had theoretical value since it illustrated how the SET can be used to explain how servant leadership, POS and IWB interact within a single model. Also, by shedding light on significant models like the Spritzer Employee Empowerment Model (1995) and the Denison OC Model (2000) that place an emphasis on people's distinctive work practices, this work increased academic understanding. It indirectly changed the direction of study on the elements that predict IWB in the environment of public universities.

Our study's findings had practical implications for businesses and managers who value employees' innovative work behavior. We suggested that PE mediates the link between POS, SL, and employees' IWB in the current study. Organizations can therefore enhance their workforce's feelings of ownership, perceptions of encouragement, and attention to management innovative practice. Employees voluntarily devote themselves to innovation and actively look for new solutions when they regard it as their own responsibility and mission (You et al. 2022).

Individual characteristics can affect the innovation process (Ilham et al. 2022), therefore, fostering an innovative culture improves innovative attention. To improve social welfare and gain an advantage in regional and global competition, it is crucial to instill a culture of innovation in countries through education(Tura and Akbasli 2022). This implies that for such a culture to emerge, these behaviors must exist in the workplace. As a result, it was anticipated that the fresh empirical findings of this study would inspire university management to encourage innovative culture among staff. Therefore, to facilitate the implementation of suitable solutions and raise university rankings, this study highlighted more novel insights into IWB.

According to the current literature review, IHL continue to disregard the concept of IWB as a core research field (Tesfa and Walia 2019). The study's findings focused on how to encourage staff at public universities to engage in IWB. It was expected that human resource policies and initiatives would be developed, reviewed, and put into action based on the study's findings to improve academic staff innovation in the Ugandan education sector.

1.9 Scope of the Study:

1.9.1 Content Scope:

This study was about employee innovative work behavior. The study specifically sought to determine the relationship between perceived organizational support, servant leadership style, organizational culture, and innovative behavior of public universities.

1.9.2 Geographical Scope:

The academic staff of ten (10) public universities in Uganda—Makerere University, Kyambogo University, Mbarara University, Gulu University, Busitema University, Muni University, Lira University, Kabale University, Soroti University, and Mountains of the Moon University—were the focus of this study. The decision to focus on academic staff is congruent with research findings that demonstrate the importance of academic staff members' inventive capabilities to organizational success(Tura and Akbasli 2022). Furthermore, earlier studies found that public university academic staff played a major role in achieving institutional goals like innovative and sustainable national development (Ardianti et al., 2024; Ibus et al., 2020) Nevertheless, they are strategically important to the institution's operations, and their ability to innovate has a noteworthy influence on educational standards, so the study of this group is pertinent.

CHAPTER TWO:
THEORETICAL AND CONCEPTUAL FRAMEWORK

2.0 Chapter overview

A theoretical framework is a collection of ideas with logical connections developed from one or more theories (Varpio et al. 2020). It provides the basis for research, reflecting the study's hypothesis (Muwani et al., 2020). A theoretical framework explains linkages between existing knowledge and previously held beliefs about complex phenomena (Collins and Stockton 2018). Based on SET (Blau, 1964), Denison's' organizational culture model (Denison, 2000) and Spritzer Employee Empowerment Model (Spritzer, 1995), the study's purpose was examining the relationship between POS, SL and IWB through PE. Further the study will investigate the relationship between OC and IWB.

In view of social exchange and the reciprocity standard, POS encourage employees to exhibit positive attitudes and behaviors (Blau, 1964). Accordingly, academic staff will feel psychologically empowered to complete their tasks, which will have a positive influence on their IWB, if they perceive that their institutions support them in their research and teaching (Wiggins 2021). Therefore, psychologically empowered employees actively embrace their professional responsibilities, take ownership of their work-related behaviors, and positively influence their workplace (Jiwon & Kim, 2022). By empowering and encouraging individuals to take risks, servant leadership improves IWB (Faraz et al. 2019). Organizational culture significantly affects employee behavior, particularly IWBs (Abid et al., 2019). Despite their limitations in applicability, the three theories used in this study provided a better explanation of IWBs.

2.1 Theoretical Background

2.1.1 Social Exchange Theory (Blau 1964)

This research was informed by the SET (Blau1964), which creates a reciprocal association between behavior and the work environment (Mustika et al. 2020). The SET asserts that people make rational decisions in order to optimize positive social connections (Arsawan et al. 2020). Thus, it is possible to conceptualize the relationship between managers and staff as one of social exchange (Gao and Liu 2021). Leaders that show their support for their team members typically see positive work attitudes and novelty in return (Wang et al., 2022). According to the reciprocity rule, employees must act accordingly to their expectations of how they would be treated (Blau1964).

Maan et al. (2020) explained that employees' attitudes towards the fundamental procedures that make up their organization- of which POS is one, have an impact on how they behave (IWB). According to Li et al., (2022), employees are motivated by organizational support to work towards achieving organizational goals as a method of contributing to the organization. In addition, SET stipulates that psychological obligations that result from feeling as though the organization is supportive and caring might lead to creative thinking (Inam et al. 2021). Thus, IWB is significantly impacted by POS. POS refers to employee's assessment of the institution's concern for their wellbeing and appreciation of their work (K'osuri et al., 2020).

The SET (Blau 1964) and the reciprocity principle state that when workers believe their leaders are important and exhibit traits such as emotional healing, empowering, conceptual skills, ethical behaviors, consideration for subordinates' growth and success and create benefit to the community (Liden et al., 2015), they respond by contributing innovatively(Liao and Zhu 2021). The attitudes and behaviors of subordinates in respect to innovation are greatly influenced by

servant leadership practices as highlighted above on an individual basis (Sawan 2020), based on trust and reciprocity between parties (Aboramadan et al. 2022). When leaders practice servant leadership, their actions are positively and innovatively correlated (Mardhayiska, Bagus, and Surya 2021).

Since social connections are governed by social rule systems, especially norms, and because SET views human behavior as an exchange and reduces social contact to economic transaction, it is exceedingly difficult to conduct cost-benefit analysis (Zafirovski, 2014; Homans & Blau, 2023). Thus, the theory ignores the cultural traits like social factor or societal norms that affect social interactions and have impact on how a recipient reciprocates (Deng et al. 2021). Furthermore, academics like Kirin et al., (2020) assert that the culture is very important in an institution's success. IWB needs to be founded on shared organizational values, assumptions, and beliefs in order to thrive and compete (Setyawasih and Buchdadi 2022). Denson's organizational culture model was presented in light of this theoretical argument in order to close the gap and offer a more thorough explanation of workers' IWB.

2.1.2 Denison's Organizational Culture Model (1990)

The collective set of values and conduct within an organization is referred to as organizational culture (Aboramadan et al. 2020). Denison (2000) asserts that corporate culture is founded on four fundamental characteristics: mission, consistency, adaptability, and involvement. Mission means establishing strategic objectives through statements of organization's purpose and direction. It is observed through indices like strategic direction, goals, objectives, and vision (Pirayeh, Mahdavi, and Nematpour 2011). Consistency means that employee behavior is based on ideals, procedures, and processes that form agreements and synchronize actions for

establishment of a strong culture. It consists of consensus, integration, coordination, and fundamental principles (Kirin et al. 2020). The term "adaptability" refers to an institution's capacity to respond to environmental changes and new client needs (Tulcanaza-Prieto, Aguilar-Rodríguez, and Artieda 2021). Adaptability assesses an organization's capacity to evolve, take chances, learn from errors, and respond to customer needs (Wahyuningsih et al. 2019). Involvement refers cultural characteristic that tries to promote human talent on all levels, empower individuals and structure the business around groups (Abane et al. 2022). Sadry et al. (2022) revealed that participating in work entails developing people's capacity, authority, and sense of responsibility. Empowerment, a focus on the team, and the development of competencies are all ways that employers can ensure their staff members are involved in decision-making (Addai and Prempeh 2020). Therefore, to maintain its worth, a company must create and implement an innovation culture for the necessary future competitive capacities (Shayah 2019). As a result, culture can inspire creativity among staff members because it pushes them to adopt it as a guiding principle (Aboramadan et al. 2020).

Research has consistently shown that an organization's culture determines whether it succeeds or fails (Sadry et al. 2022). However, the four characteristics listed by Denison (1990) ignores employee psychological aspects (Buhumaid 2022), yet vital for innovative practices among workers. Consequently, employees must feel that they have a voice in decision-making, that their opinion are heard, and that organizational goals directly relate to their work in order to effectively contribute (Spreitzer, 1995). Additionally, it is advised that in order to create a culture that encourages innovation activities, managers must provide their staff more autonomy and empowerment (Caliskan & Zhu, 2020; Alsaqqa, 2024). Thus, based on Spreitzer Employee Empowerment Model (1995), we integrate employee empowerment in our employee IWB model.

2.1.3 Spreitzer Employee Empowerment Model (1995)

Kanungo's (1982) notion of empowerment served as the foundation for the motivating concept known as psychological empowerment (PE). Also, Spreitzer, (1995) defined PE as an innate drive that takes the form of four cognitions pertaining to the workplace: Meaning, competence, impact, and self-determination. Psychological empowerment is considered popular for its vital influences in boosting individual's self-efficacy (Nasir, Halimatussakdiah, and Suryani 2019). Meaning refers to a person's assessment of the company's objectives and values in light of his or her own ideals and standards of belief (Wang et al. 2022). When workers understand how important their work is, they focus on coming up with fresh concepts through IWB (Zhang, et al., 2021). The notion of competence is related to the notion of self-efficacy, which measures a person's capacity to carry out their job duties successfully (Javed et al. 2019). Accordingly, people with high competence are more persuaded to produce and apply creative ideas in the work (Helmy, Adawiyah, and Banani 2019).

Cai et al., (2018) contends that autonomy is the degree to which people are free to choose the strategies, devices, and efforts required to complete their activities. Employee task performance is improved with higher influence and increased work autonomy related to psychological empowerment (Almulhim 2020). Impact is the term for the personal influence one has via their work (Tanoto and Sutarhanji 2019). Employees who perceive psychological empowerment view themselves as more influential, more independent, proactive, and capable of producing innovative solutions (Kustanto et al. 2020). According to Tanoto & Sutarhanji (2019), psychological empowerment encourages employees to behave innovatively.

From the above review, this study was buttressed by SET, Denison's OC model and Spritzer EE model to provide an appropriate framework for understanding IWB among academic staff of public universities in Uganda. Precisely, the independent effects of POS, servant leadership and OC on academic staff's IWB was explored. Also, the mediation influence of psychological empowerment was examined which led to the derivation of conceptual framework-Fig.1 to guide this inquiry.

Based on the above, it is evident that this study relied on a multi-theoretical approach to explain IWB though marginal adjustments were made to suit the study context. The multi-theoretical approach is bolstered by the assertions stated by Cairney, (2013), who argues that having many theories results into knowledge advancement. Table 2.1 below illustrates a summary of the three theories used to account for academic staffs' IWB in universities in Uganda.

Table 2.1: Summary of theories used to explain Employees' innovative work behavior.

Basic theories	**Main argument**	**Limitations**	**Source**	**Emerging variables**
Social Exchange Theory	Blau (1964) asserts that reciprocal norms and mutual exchange are the foundation of a relationship between two parties.	The theory ignores cultural traits like social factor or societal norms that affect social interactions and have impact on how a recipient reciprocates.	Deng et al., (2021)	Perceived organizational support and Servant leadership
Denison's Organizational Culture Model	Denison (1990), claims that organizations participate in sociocultural relationships with their environment, which impact their employees' life.	The four traits are intertwined with economic and psychological structures that are not fundamentally cultural yet vital for innovative practices among employees	Buhumaid, (2022),	Organizational culture

Spreitzer Employee Empowerment Model	Spreitzer (1995) argues that workers who feel psychologically empowered view themselves as capable, significant, and important at work, which motivates them to behave independently, pro-actively & with initiatives	The psychological empowerment construct is a dynamic work-specific concept that is influenced by the workplace environment and is not applicable in different contexts or cultures.	Khairani et al., (2021)	Psychological empowerment

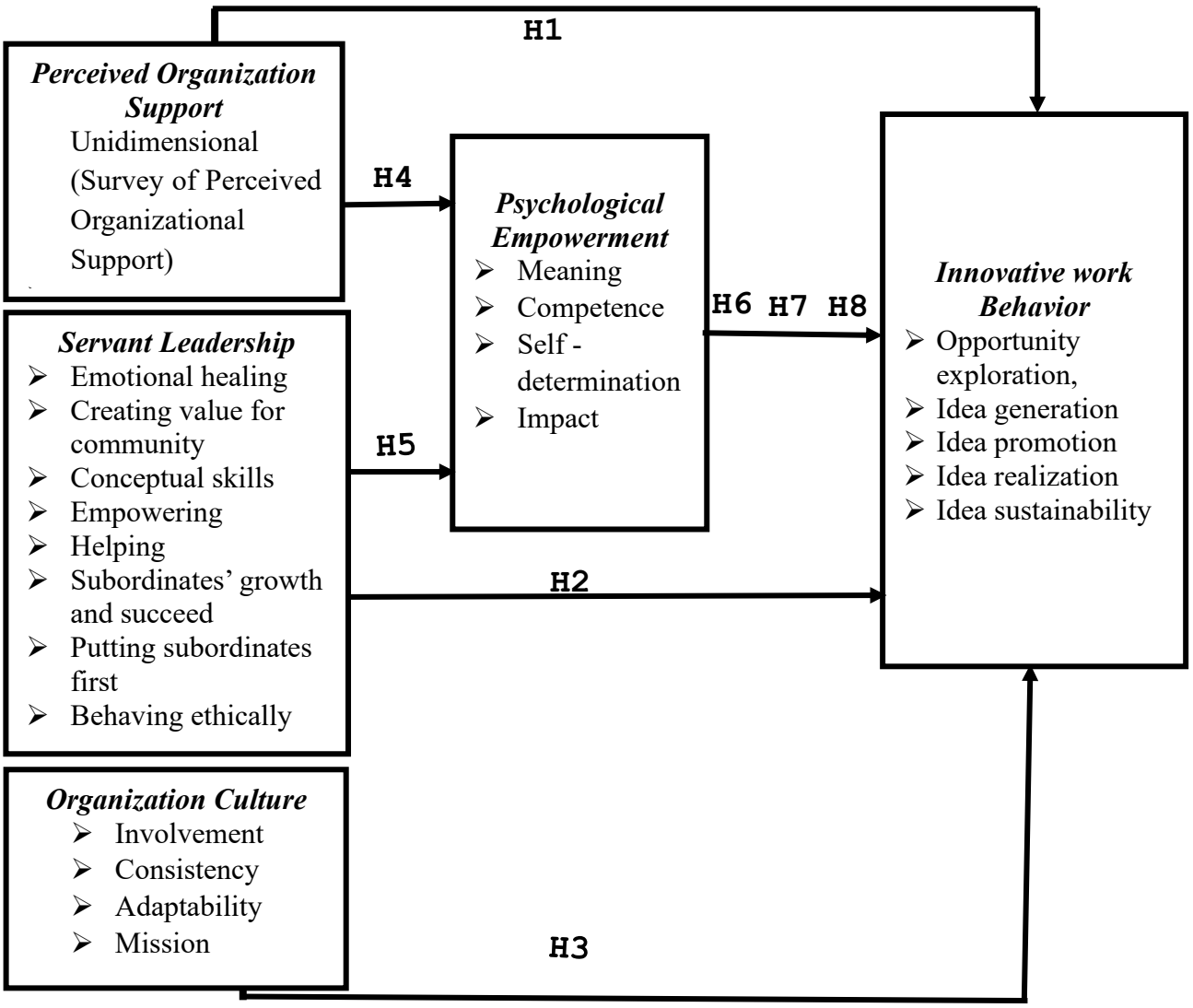


Fig.1.1: Conceptual framework

Source: Review of theories & literature based on Blau (1964), Denison (1990), Spreitzer (1995), Messmann and Mulder, (2012); Lambriex-Schmitz et al., (2020), Ayoub et al., (2023), Rhoades & Eisenberger (2002), Yogeswaran, (2020), Liden et al., (2015), Rasheed & Lodhi (2015), Abid Marzuki et al., (2019), Sadry et al., (2022) and Helmy et al., (2019).

SL (emotional healing, creating value for the community, conceptual skills, empowering, helping subordinates grow and succeed, putting subordinates first, and ethical behavior); organizational culture (mission, consistency, adaptability, and involvement); and the independent variable of POS (fairness, supervisor support, organizational rewards, and job conditions) were all included in the model. The dependent variable was IWB, which stands for opportunity exploration, idea generation, idea promotion, idea realization, and idea sustainability. The mediating variable was PE, which stands for meaning, competence, self-determination, and impact.

2.2 Exposition of the conceptual model (Fig.1.1)

The over-arching argument of this study is that public university employees perceive fairness, support, reward, care (POS) and empowerment, conceptual skills, and ethical behavior from their leaders (servant leadership), feeling of strategic direction, objectives- mission, consistency, adaptability, and involvement (organizational culture) and observe significance, competence, impact, and self-determination (PE), exhibit efficient and effective employee IWB. Accordingly, the assumption made in the model (Fig1.) above is that POS, servant leadership and organizational culture might autonomously influence employee IWB and correspondingly, when the three variables are integrated, they possess greater explanatory power of employee IWB. Also, the role of POS and servant leadership on IWBs is indirect through psychological empowerment.

CHAPTER THREE

LITERATURE REVIEW

3.0 Introduction:

This chapter presents a review of literature available on innovative work behavior, perceived organizational support, servant leadership, organizational culture, and psychological empowerment. In addition, the chapter provides reviews on the relationship between different variables as embedded in the model and innovative work behavior.

3.1 Study Setting

The use of science, technology, and innovation (STI) as catalysts for significant social and economic change has been revived in Uganda. Program 14 (Innovation, Technology Development and Transfer) of the National Development Plan (NDPIII 2020/21 & NDPIV 2024/25) provides proof of this. Through the formation of a cohesive STI eco-system, this program seeks to promote the development, adoption, transfer, and commercialization of technologies and innovations. Over the next five years, the following major goals must be met: i) improve the Global Innovation Index from 25.32 to 35; ii) expand Gross Expenditure on R&D (% of GDP) from 0.4% to 1%; and iii) advance business enterprise sector spending on R&D (% of GDP) from 0.01 to 0.21 percent. In conclusion, this study offers a solid foundation for insightful information on innovation for companies, investors, and governments to take advantage of the opportunities brought forth by innovation-driven growth.

3.2 Conceptualization of Variables

3.2.1 Innovative Work Behavior (IWB)

Al-Omari et al. (2019), adding to the description provided by Farr and Ford (1990), define IWB as the introduction of new creative concepts, methods, procedures, and products. It is the deliberate development and implementation of fresh concepts in the workplace with the goal of raising individual, group, or organizational performance (Kmieciak 2020). IWB comprises of three interconnected behavioral activities, namely idea production, idea promotion, and concept realization (Scott and Bruce 1994). Novel solutions to organizational problems are found during the idea generation process (Opoku, Choi, and Kang 2019). Ideas are then promoted in order to enlist with the assistance of the appropriate decision-making authorities (Faraz et al., 2019). The creation of a prototype or model of the imagined new ideas results in idea realization (Jiwon & Kim, 2022).

Unique IWB, in contrast to standard performance, entails the origination, realization and commercialization of fresh, innovative ideas and solutions (Kustanto et al. 2020) as well as sustainability which entails enhancing and integrating the innovation into the organization's system (Lambriex-Schmitz et al. 2020). IWB, in the opinion of Tanoto & Sutarhanji, (2019), involves the employment of novel strategies for achieving objectives, novel work processes, and resource analysis for the application of novel concepts. Nevertheless, a review of extant literature finds that few scholars have examined the extent to which Lecturers use IWB to enhance instructional strategies (Johari et al. 2021). IWB is allied to difficult and complex tasks connected to numerous intellectual and social activities among the employees (Sari, Yudiarso, and Sinambela 2021). Although research on innovation at the company level is becoming more popular, less is known about how innovation might be encouraged on an individual basis (Bos-Nehles. et al., 2017; Sinaga

et al., 2021). Furthermore, the majority of past studies concentrated on organizational-level factors of innovative work behavior (Salam and Senin 2022). Furthermore, IWB determinants are invisible, fragmented, and inconsistent, despite the fact several researchers have studied IWB at the individual level (Pokhrel 2024), individual employees that exhibit innovative behavior and make original contributions are essential to organizational innovation (Morales and Contreras-Pacheco 2024).

Furthermore, Ayoub et al., (2023) pointed out that there is a lack of research on the IWB of academic staff members and that there isn't a globally recognized method for assessing IWB in educational settings. A four-dimensional measure of IWB that includes idea exploration, generation, championing and implementation was created by De Jong and Den Hartog (2010). Messmann and Mulder (2012) recognized opportunity exploration, idea production, and idea promotion as the four elements of IWB, which Gkontelos et al. (2021) have identified as idea creation, idea promotion, idea realization, and idea sustainability. Similarly, Lambriex-Schmitz et al. (2020) specified five IWB elements: opportunity exploration, idea production, idea promotion, idea realization, and idea sustainability. However, Ayoub et al., (2023)'s five dimensions—opportunity exploration, idea generation, idea promotion, idea realization and idea sustainability—was employed in this study. Due to their comprehensiveness, these five IWB dimensions have been the most successful (Lambriex-Schmitz et al., 2020) particularly for the education context.

The concept of innovative work behavior is multifaceted and includes the intricate and interconnected processes of idea generation, exploration, dissemination, and implementation within the organizational context in an organizational setting (Mustapha & Hilmi, 2025). IWB is when employees create, accept, and use new concepts for goods, technology, and work processes. Remarkably, scholars concur that the three phases of idea development, idea promotion, and idea

realization make up IWB (De Jong & Den Hartog, 2010). During the ideation stage, workers who are facing work-related issues will look for methods to enhance current procedures or goods and attempt to develop fresh, different approaches to difficulties. Employees involved in IWB must use networks and coalitions of allies to market freshly developed concepts, procedures, and goods to possible partners throughout the idea promotion phase (Hock-Doepgen et al., 2025).
Lastly, in order to guarantee that the process or product becomes integrated in the working routine, staff must create a model of the new procedure and try to standardize it throughout the implementation phase (Liehr & Hauff, 2025).

Despite Kanter's (1988) emphasis on the diffusion phase, the stage has not been included in more recent conceptualizations of IWB. In order to prevent implementation dips, the sustainability stage entails refining and maximizing the invention by updating and ongoing regeneration. integrating innovation deeply into the organization's structure through capacity building to obtain sufficient funding. Larger-scale innovation dissemination includes planning for project expansion and wider application of an innovative concept, and lastly, visualizing the innovation's advantages for stakeholders by encouraging community involvement and sharing a longer-term vision and results (Lambriex-Schmitz et al. 2020). IWB has been thought to be discretionary and to occur when employees have positive relationships with their superiors.

3.2.2 Perceived organizational support

According to Eisenberger et al. (1986), perceived organizational support (POS) is the term used to describe how employees feel their contributions are valued and that the company is concerned about their welfare. Perceived organizational support includes a variety of factors, including fairness, supervisor support, organizational rewards, and favourable working

circumstances. Furthermore, according to the authors (Eisenberger, Rhoades Shanock, and Wen 2020), offering prospective future options like training and promotions could raise employee concern and acknowledge their dedication (Rhoades and Eisenberger, 2002). According to Jiwon and Kim (2022), the organization's support includes making employees' tasks engaging, expressing concern for their personal beliefs and objectives, and expressing gratitude and acknowledging their accomplishments. According to the social exchange perspective, which was used in the conceptualization of POS, when one person treats another well, one anticipates a reciprocal favour based on a reciprocity norm, and ultimately, both parties would benefit (Blau, 1964).

3.2.3 Servant Leadership

According to Amin et al. (2022), servant leadership is a style of leadership that prioritizes employee satisfaction and service. A leader who practices servant leadership views themselves as servants who put their subordinates' needs first. By encouraging personal growth, empowerment, and steady teamwork for the long-term well-being of followers, leaders have the primary duty to assist others in achieving shared objectives (Sawan, 2020). Developing followers based on the altruistic and moral attitudes of leaders is its primary goal (Greenleaf, 1977). The dimensions of servant leadership identified by Liden (2015) present a mult-dimensional construct: a) emotional healing, which involves the extent to which the leader cares about the personal issues and well-being of followers; b) creating value for the community, which captures the leader's involvement in helping the community surrounding the organization as well as encouraging followers to be active; c) *conceptual skills*, which reflect the leader's competency in solving work problems and understanding the organization's goals; d) *empowering*, which measures the extent to which the leader gives followers autonomy, responsibility, and decision-making influence (Van & Nuijten,

2011); e) *helping subordinates grow and succeed*, which captures the extent to which the leader assists followers in realizing their full potential and achieving professional success; f) *putting subordinates first*, evaluating the extent to which the leader puts followers' needs ahead of one's own; and g) *behaving ethically*, which entails being truthful, reliable, and an example of integrity. A holistic style to leadership, servant leadership empowers followers to develop into their full potential (Sendjaya, van Dierendonck, and Liden 2019). When followers' growth and well-being are given priority, they become more involved and productive at work.

3.2.4 Organizational Culture

According to Tian et al. (2018), there is no widely agreed-upon definition of culture in the literature because it is a complicated subject. An organization's culture encompasses both official and informal rules and regulations (Vijayakumar et al., 2025). An organization's culture is a set of fundamental beliefs that its members have accepted as true as they have struggled to solve issues with internal integration and external adaption. According to Denison et al. (2006), a strong organizational culture is characterized by vision congruence, the presence of order principles, teamwork, employee creativity and innovation, empowerment, alignment between components, a shared direction and purpose, high coordination and integration, and employee development that complies with business needs.

This study made use of Denison's organizational culture model, which addresses two exterior dimensions: mission and adaptability, and internal dimensions: involvement and consistency (Wahyuningsih et al., 2019). Empowering individuals, forming teams, and enhancing the skills of workers at all organizational levels are ways to gauge involvement. Three indicators of involvement are used to measure it: capability growth, team orientation, and empowerment.

Core values, consensus, integration, and coordination are characteristics of consistency. Adaptability is the ability of a business to change, take chances, learn from mistakes, and adjust to the needs of its customers (Wahyuningsih et al., 2019). Three indicators a) business vision, goals and objectives, and strategic direction and intent measure the mission's capacity to articulate future vision (Denison, 2000).

3.2.5 Psychological empowerment

Conger and Kanungo (1988) defined psychological empowerment (PE) as an internal incentive about employees' self-belief. Psychological empowerment is demonstrated by four ideas that reflect an individual's attitude toward their work role: Meaning, according to Thomas and Velthouse (1990), is the value of a work goal or purpose when assessed in relation to one's own standards or values. b) Competence is the belief in one's own competence to perform activities associated with one's work. C) Self-determination refers to an individual's sense of independence in initiating and regulating their own conduct. d) Impact is the degree to which an individual may influence strategic or operational outcomes (Spreitzer, 1995).

3.3 Relationship between variables

3.3.1 Perceived Organizational Support (POS) and Innovative Work Behavior (IWB)

POS is linked to the working environment circumstances at the workplace (Masyhuri, Pardiman, and Siswanto 2021) and refers to employees' overall beliefs about how the company recognizes their achievements and cares for their welfare (Eisenberger et al. 1986) as cited by Eisenberger et al., (2020). Physical and intangible results of employee encounters through the organization's daily exchange process, perceptions of organizational support are established and

later induces a culture of IWB (Sulaiman, Ragheb, and Wahba 2019). Caglar Dogru, (2018), stated that organizational, managerial, and peer support are the three key sources from which employees perceive support, though employees' perception of organizational support comes from rewards, supervisors and justice as well as support from leaders (Marfuatun and Muafi 2021). However, there is limited empirical evidence to substantiate the link between IWB and POS (Jiwon & Kim, 2022).

In accordance with SET, when employees perceive assistance positively, they respond favorably to those impressions (Blau, 1964). If workers believe that their organization fully values and cares for them, this perception might be reciprocated through IWB (Akhtar et al. 2019). Employee appreciation in an organizational setting for positive treatment such as promotions and access to information, generates a responsibility for employees to pay back (Jiwon & Kim, 2022). As a result, employees shall exhibit commitment to achieving organizational goals through generation of innovative ideas (Mustika et al. 2020) when the perceive fair and just treatment (Ranihusna et al. 2021). However, despite POS's vital impact on employee attitudes, perceptions and behavior, literature offers little information about the underlying mechanisms for the association between POS and IWB (Jiwon & Kim, 2022; Yildiz et al., 2017), most specifically in the context of public universities. As a result, we hypothesize that:

H1*: POS has a positive significant relationship with innovative work behavior.*

3.3.2 Servant Leadership (SL) and Innovative Work Behavior

The phrase "servant leadership style" was primary invented by Greenleaf in 1970 to describe the desire to serve. According to Greenleaf, SL is a form of leadership that goes above the vested interests of its practitioners and puts a strong importance on "helping others" and prioritizes employees' needs, desires, and interests (Liao and Zhu 2021). According to SET (Blau,

1964), the genuine concerns of a servant leader for their followers generate mutual duties to reciprocate. Thus, leadership styles, in particular servant leadership influence IWB (Nurbaety Rojuaniah 2022) by establishing leaders-subordinates close relationship and generates an responsibility for employees to reciprocate by innovating (Faraz et al. 2019). However, practical confirmation about the role of SL on employees' innovativeness is still limited (Abdullah Alajhar and Asif Salam 2022). Also, because most IWB research findings centered on commercial firms, generalizing the results to non-profit IHL is constrained (Zeng and Xu 2020). Moreover, there is little empirical evidence on the precise characteristics academic leaders should exhibit to enhance IWB (Khan et al. 2020).

In addition, servant leadership prioritizes organizational growth by providing service to all key stakeholders within a corporation (Mardhayiska et al. 2021). SL encourage their followers to take calculated risks, which promotes innovative activity (Faraz et al., 2019). According to Abdullah & Salam (2022), servant leaders encourage followers to be satisfied, committed, engaged, innovative, and productive. Despite the expanding academic advances in the notion of servant leadership, the evaluated literature asserts that there is a dearth of coherence and clarity in the conceptualization of the servant leadership research across disciplines such as innovation (Sendjaya et al. 2019). As a result of the aforementioned reviews, hypothesis H2 was developed:

H2*: Servant leadership has a positive and significant effect on innovative work behavior.*

3.3.3 Organizational Culture and Innovative Work Behavior

Organizational culture refers to how employees view the norms and values that the organization has set up to help its members accomplish its objectives (Tjahjono, Muhtar, and Abdullah 2020). OC is the culmination of an organization's numerous values, principles, and beliefs (Hamid and Durmaz 2020). Employee thoughts, feelings, and behaviors are influenced by institutional culture, which also has an effect on how individuals behave inside an organization (Aryani and Widodo 2020). Muhammed, (2020) assert that the culture of an organization shapes the workplace, which in turn impacts people's capacity for innovation. Further, Harhash et al., (2020) argues that the fundamental presumptions and beliefs of an organization have an impact on its behavior and procedures. Gautam, (2020) demonstrated that a willingness to learn from customers, suppliers, and competitors fosters an innovative organizational culture.

Immense research to date has been conducted in western nations, despite the fact that organizational culture is essential for promoting innovation (Aboramadan et al., 2020). A vibrant culture that embraces innovation creates the ideal environment for the growth of creativity, knowledge exchange, and partnership to thrive (Christian, 2024) and encourage innovative behavior among the workforce (Mutonyi et al., 2022; Setyawasih & Buchdadi, 2022; Aboramadan et al., 2020).

The respect for varied knowledge, skills, and abilities fostered by employers nurtures the development of shared values, norms, and objectives that in turn drive innovative work behavior (Wang 2019). Studies show that organizational culture is favorably correlated with IWB, particularly in the stages of idea development, concept promotion, and idea realization (Setyawasih and Buchdadi 2022). However, for many businesses, the most difficult task is developing a culture that values and accepts innovations (Zhu and Engels 2014).

Group collectivism emerges from the environment that innovative culture fosters, which promotes people's ideas and thinking (Khan et al., 2020) and organizational culture is essential for promoting the development of IWB (Sofiyan et al. 2022). Organizational culture, in this case, is one of the major determining factor of IWB and helps institutions achieve a competitive edge (Fibriandhini, Surati, and Hermanto 2022). However, while there has been a lot of research on how organizational culture affects different outcomes, there has been considerably less research on how organizational culture affects innovation (Aboramadan et al. 2020). The third hypothesis was developed in this study based on the aforementioned research findings:

H3*: Organizational culture has a positive and significant impact on innovative work behavior.*

3.3.4 Perceived Organizational Support (POS) and Psychological Empowerment (PE)

The degree of psychological empowerment a person experiences at work is influenced by how competent or capable they feel (Marfuatun and Muafi 2021). Employees who feel organizational support for working conditions are more likely to experience psychological empowerment, which gives people or groups the impression that they have influence over their job (Marfuatun and Muafi 2021). Employees feel psychologically empowered, important at work, competent, influential, and autonomous when given support in form of making work exciting, showing regard for employee values and aspirations, and expressing gratitude and recognition for their accomplishments by their respective organizations (Jiwon & Kim, 2022).

Employee commitment and motivation are sparked when employees view the support they are getting from the organization in form of organizational rewards, supervisor support and appropriate Job conditions (Rhoades & Eisenberger, 2002; Yogeswaran, 2020) as adequate. Earlier research indicates that employees would exhibit work-disruptive conduct if POS is not

implemented effectively, considering this state psychologically destabilizes and dissatisfies them (Usama butt 2022). Therefore, Maan et al. (2020), argues that proactive companies should empower their staff through involvement in making decisions to give them a sense of purpose in their work. However, Maan et al. (2020)'s study was conducted in the manufacturing companies in Pakistan, an emerging economy, and using a single theory approach which might not be appropriate for the current study context (Mahmud 2020). Further, the empirical research has not fully revealed the effects of POS on PE (Caesens, Bouchat, and Stinglhamber 2020). To fill this gap, ***H4*** was developed:

Perceived organizational support has a positive and significant impact on psychological empowerment.

3.3.5 Servant Leadership (SL) and Psychological Empowerment (PE)

Servant leadership is the desire to support and assist others generates a confident attitude that gives team members a sense of power (Zorlu and Avan 2019). Leadership empowerment behaviors including giving people meaningful work, enabling decision making, demonstrating excellent work, and promoting independence (Hoven, Mahembe, and Hamman-Fisher 2021) and promotes PE (Faraz et al. 2019). Employees' views, feelings, and attitudes change as a result of feeling as though they are pursuing worthwhile professional goals and are being treated honestly and fairly (Ghalavi and Nastiezaie 2020). By providing them with necessary tools, skills, and resources to complete tasks sustainably, SL helps employees feel more confident (Zafar et al. 2022) and instills among them a belief of evolution of novel ideas (Mahendri, Susita, and Yohana 2022).

Further, servant leaders encourage their subordinates to think for themselves, to feel autonomous, and to take personal accountability for their own continued growth (Thelen and Yue

2021). Servant leaders encourage freedom, optimize the capacity of their workforce, and help them reach their greatest potential (Zada et al. 2022). Therefore, by offering chances for employees to learn new skills through training, servant leaders foster a sense of competence in their workforce (Faraz et al., 2019). Consequently, employees might feel psychologically empowered to perform when they believe that their bosses care about their professional development and also motivate them to take ownership of their behavior (Hoven et al. 2021). The followers' psychological empowerment is supplemented by servant leaders' increased views of significance, competence, self-determination, and effect.

While literature is replete with studies linking servant leadership with psychological empowerment, there are currently few empirical studies on servant leadership - psychological empowerment, especially in public universities and the field still remains understudied (Langhof and Güldenberg 2020). As a result, the subsequent claim was made:

H5: *Perceived organizational support has a positive and significant impact on psychological empowerment.*

3.3.6 Psychological Empowerment mediates the relationship between POS on IWB

Once employees believe that their institutions supports fundamental rights, including social, economic and others, it affects their psychological empowerment and motivates them to innovate (Tahira 2021). In this regard, empowering them and paying greater attention to their well-being will result into IWB (Yildiz et al. 2017). Employees who feel psychologically empowered at work and have greater control over work-related issues exhibit high-levels of work meaning, critical job skills, and considerable influence when they perceive supportive treatment from their employers (Jiwon & Kim, 2022). Academic staff are psychologically empowered to function as academics in terms of research, teaching, and community service when they believe

that their institutions support them through capacity building, training, adequate compensation among others, in realizing their personal goals which helps to build and develop their ability to act innovatively in execution of their duties and responsibilities (Kwahar 2021).

Similarly, empowered employees, who see themselves as important contributors to the organization, are capable of achieving their objectives, feel in control of their work, and engage in activities that have positive impact on the organization (Maan et al. 2020). Consequently, such employees constantly take part in activities that maintain their closeness with employer (K'osuri & Onyango, 2020) and develop innovative concepts as organization encourage them to contribute without concern for administrative rules and restrictions (Putra, Suharti, and Sasongko 2022). The importance of psychological empowerment (PE) in raising people's self-efficacy has made it popular (Nasir et al. 2019) and it has started to gain traction as a mediator (Emete Toros 2021). The PE of employees underlying the association between POS and IWB is crucial yet has received relatively little attention (Jiwon & Kim, 2022). Since POS and an employee's IWB are related, we propose that PE may serve as a mediating factor. The reasoning behind this theoretical argument resides in the view that when employees feel support from their institutions, they develop a feeling of psychological empowerment to complete their tasks, which ultimately impacts their IWB. This investigation thus, seeks to determine whether psychological factors such as PE provides a mechanism through which POS is related to IWB in Uganda's public universities. In view of the above theoretical and empirical arguments, we propose that:

H6*: Psychological empowerment mediates the relationship between POS and IWB.*

3.3.7 Psychological Empowerment mediates the relationship between SL on IWB

Serving followers' needs at work takes precedence over other leadership philosophies that value the success of the organization as the ultimate goal (Thelen and Yue 2021). Servant leaders exhibit traits that foster a calm work environment, motivates staff to behave independently, thus leading to high-level perceived psychological empowerment (Wang et al., 2022), which then prompts them to exhibit innovative actions, IWB (Faraz et al., 2019). PE is therefore a concept of intrinsic motivation that servant leaders employ to positively affect employee outcomes like IWBs (Spreitzer, 1995). Faraz et al. (2019) claims that SL boost their team members' feelings of significance, competence, self-determination, and effect, which adds to their psychological empowerment and encourages IWBs.

Existing literature on the influence of servant leadership style on IWB provide contradictory results (Mahdzir, 2022; Khan et al., 2020). For instance, some research findings reveal a positive relationship between SL and employees' IWBs (Olaleye & Solanke, 2021; Chongvisal, 2020), whereas Amin et al. (2022) found no evidence of a significant positive relationship between servant leadership and IWBs. The mixed findings highlight the necessity for further examination of the interaction between SL and IWB (Mahdzir, 2022) to discover the underlying mechanisms of SL- IWB relationship and provide a better understanding of the IWB problem (Opoku et al., 2019).

Prior studies have argued that there is a connection between servant leadership and IWB through a variety of mediators such as PE (Khan, et al., 2022) albeit the current level of explanation is still insufficient (Khan et al., 2022). Investigating how SL impacts IWB in the context of PE as the mediating factor is therefore justified (Faraz et al., 2019). Moreover, knowledge on indirect effects remains inadequate which necessitates integration of a process variable, in this context PE

in the IWB Model consistent with the recommendations of Faraz et al., (2019). In the current study, we argue that when managers of public universities provide an appropriate level of servant leadership, they might promote and strengthen employees' PE, which in turn, might induce employees to embrace diverse activities necessary for improved IWB, a relationship that remains unexplored in previous studies.

Servant leadership, also called empowering leadership delegates authority, allows employees to contribute in decision making and are made aware of organization operations (Khan et al., 2022), allows for the development of a sense of competence in their subordinates, for example through provision of training opportunities to employees to acquire new abilities (Aldabbas, Pinnington, and Lahrech 2019). Consequently, when employees perceive care and fair treatment from their bosses regarding their professional development, they feel psychologically empowered (Hoven et al., 2021) and consistent with SET, they reciprocate through enhanced IWB. Also, selflessness and fragility are diminished when people have a high level of moral thinking ability (Zorlu & Avan, 2019). Therefore, under this type of leadership, employees are more likely to honestly express themselves as opposed to keeping their opinions and feelings to themselves (Thelen & Yue, 2021). As a result, the following claim was made:

H7*: Psychological empowerment mediates the influence of SL on IWB.*

3.3.8 Psychological Empowerment and Innovative Work Behavior

Innovation is an essential component in today's very competitive and changing corporate climate (Emete Toros, 2021). The ability of employees to put their ideas and suggestions for change into action is improved by PE, leading to more innovation at work (Wang, 2019). Innovation comes from the creative conduct of an organization's staff (Zhang et al., 2021). In this situation, PE based on personal active orientation towards specific work responsibilities is

necessary to manage uncertainty in innovative enterprises (Citta et al. 2019). Employees are motivated and influenced by PE to take initiative and act autonomously at work (Kustanto et al., 2020). Employees therefore, might exhibit IWB if they believe their work responsibilities are relevant, feel confident in their knowledge and skills, have a sense of autonomy and believe their work has an impact on others (Helmy et al. 2019).

Also, previous research has demonstrated that IWB is improved by PE (Nasir et al, 2019). Improvements in organizational procedures and employee PE through information availability and decision-making delegation (Almulhim 2020) is essential for encouraging workers to take the risks necessary to accomplish goals, and if they feel highly impactful, they will behave more innovative (Ghosh et al. 2019). Staff members who are confident and independent, believe that their work tasks are valuable, have an impact on business operations, or feel empowered, are more inclined to participate in IWB (Duger 2021). When given more discretion, an employee will act imaginatively since they appreciate their jobs (Aldabbas et al. 2019).

Numerous studies have noted that PE is an impulse that results from a person's feeling of mastery over their work (Putra et al., 2022), and that the PE sparks innovative work behavior (Lie et al. 2022). It should be highlighted, however, that while employee PE is important, research on its impact on workplace output is modest and frequently inconclusive (Kanake K. Mercy 2020). As a result of the imbalance in the implementation of PE in organizations, IWB has reduced (Suparyanto dan Rosad 2022). In light of this, the following assertion is made:

H8*: Psychological empowerment has a significant and positive impact on IWB.*

CHAPTER FOUR

RESEARCH METHODOLOGY

4.0 Introduction:

The research design process and methodological selection for the study are described in this chapter. the position of philosophy. The methodological choice was heavily influenced by the research challenges. This chapter also describes the procedures for gathering, evaluating, and reporting data. Additionally, it established a purpose for both the qualitative and quantitative methods. The techniques employed to increase the research' validity and reliability were also covered in detail in this chapter.

4.1 Philosophical stance of the study

This study was founded on the critical realism philosophical position, which makes a distinction between the "real" world, which claims the existence of a transcendental reality that "operates independently of human awareness or knowledge of it" (Babbie, 2002; Don-Solomon, et al., 2018) and the "observable" world, which is created from our perspectives and experiences (Guba & Lincoln 1998; Handema et al., 2023; Fuyane 2021; Zhang 2023). Both objective reality and subjective interpretations are acknowledged by critical realism (Sauders et al., 2009). The critical realism paradigm allows the researcher to examine human behavior from multiple angles in order to fully comprehend reality (Lawani 2020). This study also suggests that a method that considers both perceived realities and the underlying causal mechanisms is necessary to investigate the effects of objectively existing structures, systems, and procedures on academic staff. The following is an explanation of the ontological, epistemological and axiology beliefs.

Understanding the nature and structure of reality is the essence of ontology. Objectivism and interpretivism are two opposing stances assumed by this paradigm. According to objectivism,

reality exists outside of the researcher's control. It is structured as a result (Saunders et al., 2019). Interpretivism, on the other hand, makes the assumption that people's lived experiences shape reality (Creswell 2003). Innovative work behavior can be both structured and unstructured in this sense. Consequently, neither positivist (quantitative) nor subjective (qualitative) approaches can adequately describe it (Sauders, 2009; Maksimović and Evtimov 2023). Universities, for example, have frameworks that direct the use of educational technologies, eLearning, online collaboration, and artificial intelligence (AI) in teaching and learning. Universities, on the other hand, support interpretivism, which holds that social reality exists only in people's thoughts. In this sense, innovative work behavior is unstructured since universities employ similar tactics in diverse ways.

The process of acquiring knowledge about reality is referred to as epistemology (Creswell, 2003). From an epistemological view, critical realists believe that reality is structured, thus, using standardized tools is necessary to learn about it (Ansari et al. 2016). It highlights the significance of objectivity, reproducibility, and the application of statistical methods for hypothesis testing. In order to quantitatively gather information about innovative work behavior, a questionnaire was employed. Furthermore, critical realists embrace an interpretivist view of knowledge acquisition, which maintains that as reality is unstructured and subjective, one must seek out other people's perspectives in order to learn about it (Sauders, 2009).

In order to fully comprehend innovative work behavior from the viewpoint of public universities, data were qualitatively gathered in this context using an interview guide, observation, and group discussions. A mixed-methods strategy was employed to gather data for this study, starting with surveys for quantitative data and moving on to an interview guide for qualitative data (Saunders et al., 2019). While the interview guide allowed respondents share their thoughts about innovative work behavior, the surveys served to highlight the structured reality. By emphasizing a

positivist philosophy, this research emphasizes and guarantees an early commitment to theoretical construct development/hypotheses framed prior to data collection and subsequent analysis (Denzin & Lincoln, 2005; Handema et al., 2023).

In view of axiology, interpretivists contend that the knowledge management is not value-free but rather full of value since humans form social reality through social interaction, meaning that humans created the systems (Setiawan 2014) . Axiological philosophy was examined in light of ethical principles such as protecting respondent anonymity and informed consent confidentiality. Thus, objectivity was maintained throughout the entire procedure and the research remained independent of the data collection.

4.2 Research Design:

A research design serves as the basis for the entire study, which is used to reduce costs and has significant control over the consistency of the data collected (Pawar 2021). The research design used for this study was mixed methods. There are basically three primary designs in mixed methods research: explanatory sequential, exploratory sequential, and convergent (Lall 2021). The design of this study was sequential explanatory. According to Subedi, (2016), this entails gathering quantitative data initially, then qualitative data to elucidate or contextualize the quantitative findings. This design was chosen because of its capacity to offer a thorough response to research questions (Lall 2021).

4.2.1 Quantitative research design:

A correlational research design was employed in this study. According to Mekonnen, (2020), correlational research designs are used to describe and measure how strongly two or more

variables are related. It is better since it creates behavior in the study's natural environments. The relationship between servant leadership, organizational culture, innovative work behavior, and perceived organizational support was investigated in this study.

4.2.2 Qualitative research design

A study design based on phenomenology was employed, emphasizing an individual's real experiences in the world. This attempts to explain and interpret the inference of this encounter in terms of both what was experienced and how (Neubauer, Witkop, and Varpio 2019). Interviews were conducted with executives from public universities who have direct experience with the innovative processes. For thorough understanding of the phenomenon, particularly innovative work behavior, both quantitative and qualitative findings were then integrated (Othman, Steen, and Fleet 2020).

4.3 Research Approaches

There are three techniques to conduct research: mixed methods, qualitative methods, and quantitative methods (Voss, 2016; Khan et al., 2023). Because both quantitative and qualitative data were collected and analysed for this study, a mixed methods approach was used to answer the research objectives. In order to comprehend a research problem, mixed methods research is a technique for gathering, assessing, and "mixing" quantitative and qualitative research and approaches in a single study. Using the two approaches can assist researchers deal with challenging research situations (Taherdoost 2022). Mixed methods not only enables triangulation and provision of fresh insights (Amaratunga et al. 2002), but also ensures development of a comprehensive understanding of a research problem (Dawadi, Shrestha, and Giri 2021).

Alternatively, the technique allows the investigator to respond to inquiries that cannot be addressed solely through qualitative or qualitative methods. For instance, the quantitative technique empowers a researcher to collect information on an extensive sample of respondents, enhancing the likelihood that the results can be used to a larger population (Dawadi et al. 2021). Conversely, the qualitative approach offers a greater grasp of the problem being examined.

4.3.1 Quantitative methods:

Developing testable theories and hypotheses that can be applied in a variety of contexts is the goal of this process (Amaratunga et al., 2002). When it comes to providing statistical proof and enabling extensive data collection and analysis at a reasonable cost and effort, quantitative methods are practical (Taherdoost, 2022). According to Taherdoost (2022), survey, descriptive, experimental, correlational, and causal-comparative research methods are among the different kinds of quantitative research methods. To collect data from academic staff at Uganda's public universities, this study used a survey approach and questionnaires. Standardization of questions, anonymity, and the absence of interviewer bias are some benefits of this method (Elangovan and Sundaravel 2021).

4.3.2 Qualitative Methods:

Maarouf, (2019) describes the qualitative method as "exploratory" or "inductive" in nature, with the goal of examining and comprehending the interpretations that persons or organizations attribute to social occurrences. Among the techniques used in qualitative research are focus groups, case studies, interviews, and observations (Dawadi et al., 2021). Interviews, observation, and focus groups were used in this study to find complementarity and to learn about IWB among academic

staff in Uganda's public universities. Particularly, this study identified and interviewed participants who included senior managers in the universities (Vice Chancellor, Deputy Vice Chancellors, University Bursar and Faculty Deans) selected purposively as these possess specific characteristics that are crucial to the investigation (Rahman 2023). Therefore, this study used a mixed research approach to verify hypotheses relating to the independent variables (perceived organizational support, servant leadership, organizational culture) and dependent variable (innovative work behavior). This is important to derive relationships between causal factors and outcomes (Park, Konge, and Artino 2020).

4.4 Population, Sample size and Sampling strategy

4.4.1 Population of the study

A total of 3,396 academic employees from Uganda's 10 public institutions made up the study's population (Staff Lists from Respective Directorates of HRM, as of August 30, 2022). These included the following: the Mountains of the Moon University (146), Kabale University (354), Muni University (105), Lira University (124), Mbarara University (213), Gulu University (252), Busitema University (208), Makerere University (1,496), Kyambogo University (409), and Soroti University (89). Abdullah et al. (2021)’s assertion that only a few studies have looked at the variables influencing innovative work behavior in public educational institutions provided the justification for choosing a public university as the study location. Also, the academic staff were considered for this study because innovation in IHL is manifested in academics’ innovative behavior (Cheah, Cheng, and Hen 2022). They represent the major creative pillars within the higher education sector (Baharuddin, Masrek, and Shuhidan 2019) and as such play a significant role in driving success and utility of the educational systems (Zainal and Matore 2019). Specifically, research has consistently shown that lecturers' IWB are essential for thriving

university business (Supriyadi et al. 2020) and that academics' behavior demonstrates innovation in IHL by carrying out duties and obligations using the most effective and innovative methods (Cheah et al., 2022; Phuong et al., 2021).

4.4.2 Unit of Analysis

Casteel & Bridier, (2021) contends that unit of analysis is the entity that is being studied and then analyzed to produce a conclusion that clarifies the result and tackles the research issue. The study variables' unit of analysis is the person they describe or measure. The public university academic staff was selected as the individual unit of analysis for this study because it aligns with the goals of the research.

4.4.3: Sample size determination

Population representation is provided by the sample (Nanjundeswaraswamy and Divakar 2021). Sample size is essential for the required degree of accuracy in an estimate for a specific population parameter, and the reliability of a significance test (Bathinda 2017). A sample size can be determined using a variety of techniques, such as the census method, using published tables, and using formulas which include: Cochran Formula (1977), the Taro Yamane Formula (1967), and the Krejcie & Morgan Formula (1970). However, Yamane's (1967) formula was adopted for calculating sample sizes because it is simplified (Nanjundeswaraswamy, et al., 2021; Adam, 2020). In this context, the sample of 357 respondents was obtained by means of the statistical method (Yamani, 1967).

$$n = \frac{N}{1 + N(e)^2}$$

Where n= sample size

N= population size

e= level of precision (0.05) Therefore, n = 3396 ÷ [1 + 3396 (0.05)2] ≈ 357

Consequently, the following formula was used to calculate each university's sample size: (Sample size/population size) × stratum size is the stratified sample. The sample size was 357, while the population size was 3396, as shown in the table below.

Table 4.1 Sample size distribution per university

S/N	University	Staff population	Simple size
1	Makerere University	1496	157
2	Kyambogo University	409	43
3	Mbarara University	213	23
4	Gulu University	252	27
5	Busitema University	208	21
6	Muni University	105	11
7	Lira University	124	13
8	Kabale University	354	37
9	Soroti University	89	10
10	Mountains of the Moon University	146	15.
	Total	**3396**	**357**

4.4.4: Sampling design and procedure:

According to Patel & Patel, (2019), sampling design describes the methods and approaches to be applied for selecting samples from the target population. Acknowledged types of sampling designs are: probability sampling techniques and non-probability sampling approaches (Bhardwaj 2019). Cluster sampling, stratified sampling, and simple random sampling are a few types of

probability sampling methods (Pal Singh 2019). This study employed a proportionate stratified sampling technique because academic rank influences the degree and scope of innovation (Arangote 2021). Further, because the study population was heterogeneous, which ensures representation of the entire population and yields more accurate results than other methods (Bhardwaj, 2019; Jaingam & Na-Nan, 2023). Based on similarities in job ranks, the study population was split into three strata: 1) professors and associate professors 2) Senior lecturers and Lecturers 3) assistant lecturers and teaching assistants), after which a random sample of 357 respondents was chosen using a sampling frame.

On the other hand, we employed a non-probability sampling strategy because of the mixed nature of this investigation. Although there are a number of methods available under this design, such as convenience sampling and quota sampling, this study employed purposive sampling to find participants who included university senior managers (vice chancellors, deputy vice chancellors, and academic heads of directorates), as these have particular traits that are essential to the inquiry (Rahman 2023). This approach yielded pertinent data because the respondents had a strong grasp of the subject (Bhardwaj, 2019).

4.5 Operationalization and Measurement of Variables

The conceptualization of any concept can be assessed by measuring it with instruments that meet the validity, reliability, and objectivity standards of the research (Messmann and Mulder 2020). Thus, POS, SL, and OC were among the measured independent variables, as explained in the theoretical and conceptual framework (Fig.1), as well as IWB and psychological empowerment as dependent and mediating variables respectively. Items from instruments created by previous

researchers based on earlier behavioral and psychological theories (SET, Denison's OC Model, and Spritzer's Empowerment theory) were used to measure the study variables. We did, however, make some adjustments when thought necessary to fit the current study environment. Table 4:2 below provides an overview of how the study variables were operationalized and measured.

Table 4.2: Definition and Measurement of study variables

Variable	Dimension	Operational definition	Source
Innovative Work Behavior	• Opportunity exploration (OE) • Idea generation (IG) • Idea promotion (IP) • Idea realization (IR) • Idea sustainability (IS)	IWB is a set of procedures wherein an employee generates, develops, promotes, realizes, implements, and modifies new ideas in order to enhance his or her performance and function.	Ayoub et al., (2023); Lambriex-Schmitz et al. (2020), (Messmann and Mulder 2012)
Perceived organizational support	• Unidimensional (Survey of Perceived Organizational Support)	POS is a measure of how much employee believe their employers understand their contributions, value their work, and are concerned about their welfare.	Rhoades & Eisenberger (2002), Yogeswaran, (2020)
Servant leadership	• Emotional healing, • Creating value for the community • Conceptual skills • Empowering • Helping subordinates grow and succeed, • Putting subordinates first • Behaving ethically	SL is a type of leadership where the leader puts the interests of the followers ahead of their own and concentrates on ways to foster their growth.	Liden et al., (2015), Rasheed & Lodhi, (2015)
Organizational culture	• Mission • Involvement • Adaptability • Consistence	OC is a group's pattern of fundamental presumptions invented, discovered, or developed in learning to adapt both to its external and internal environments.	Denson (2000), Abid Marzuki et al., (2019), Sadry et al., (2022); Tulcanaza-Prieto et al., (2021)

Psychological empowerment	• Meaning • Competence, • Self-determination • Impact	PE is a term used to describe a person's cognitive state, which is characterized by a strong sense of authority, strong motivation, and a high level of competence to meet expectations at work.	Helmy et al., (2019); Gebert-persson, (2013);

4.5.1 Innovative work behavior

Scott & Bruce, (1994) state that IWB is measured using a one-dimensional construct scale consisting of nine items that are based on the conditions at work. In order to measure IWB, Dahiya & Raghuvanshi, (2022) recently created a nine-item unidimensional scale. According to Messmann and Mulder (2012) and De Jong & Den Hartog, (2010), a number of scholars have developed models for measuring IWB and greatly enhanced the instruments that are currently available. Opportunity discovery, generation, promotion, and idea realization are the four pillars of the most recent IWB approach (Gkontelos, Vaiopoulou, and Stamovlasis 2021). Janssen (2000) introduced the first less complex IWB models. De Jong and Den Hartog (2010) created a scale with multiple dimensions.

According to Messmann and Mulder (2012), the successful integration of novelty into the educational context requires careful planning and the development of an innovation paradigm. Because the multidimensional IWB measures developed by Ayoub et al. (2023) were especially designed for the higher education context (Lambriex-Schmitz et al., 2020), they were used in this study. These measures include opportunities exploration (OE), idea generation (IG), idea promotion (IP), idea realization (IR), and idea sustainability (IS). IWB conceptualizations and operationalization is yet consider sustainability into account, even though innovation fosters organizational continuity (Lamriex-Schmitz et al., 2020).

4.5.2 Perceived Organizational Support

Several scales measuring POS exist in literature including Eisenberger's et al. (1986) 36 item uni-dimensional scale, Ming-Chu and Meng-Hsiu (2015) multi- dimensional scale that taps the five dimensions of: the wellbeing of employees, their individual goals, their contributions, their professional and career development, and their pride in their work and Yuan (2017)'s measure that highlights five facets underlying the concept of POS. These include support for one's career, appreciation for one's accomplishments, concern for one's interests, emotional support, and developmental assistance, respectively. Additionally, Sun (2019) abridged the POS measures as follows: justice, employee empowerment, superior and coworker support, and supportive HR practices. However, a 16-item revised version of the POS test created by Rhoades and Eisenberger (2002) was used in this investigation. It is unidimensional and has demonstrated strong and consistent internal reliability (Sun, 2019; Rhoades & Eisenberger, 2002).

4.5.3 Servant Leadership

In the literature, SL is measured using a number of scales: The six-dimensional scale—voluntary subordination, authenticity, covenantal connections, moral responsibility, transcendental spirituality, and transformational influence—was validated by studies conducted by Sendjaya et al., (2019) and Mardhayiska et al., 2021). According to Van Dierendonck & Nuijten, (2011), SL is a six-dimensional framework that includes stewardship, directing, exhibiting humility, interpersonal acceptance, authenticity, and empowering and growing people. Furthermore, Franco & Antunes, (2020); Barbuto & Wheeler, (2006) and Sawan, (2020) presented a model that combines five dimensions, which are as follows: emotional healing, altruistic vocation, wisdom, persuasive mapping and organizational stewardship, while Liden et al., (2008) proposes a 28-item measure comprising the seven facets of: conceptualizing, emotional healing,

putting followers' first, helping followers grow and succeed, behaving ethically, empowering, and creating value for the community. This study thus adopted the 28-itemed scale because this tool has been commonly utilized across diverse settings while posting robust psychometric properties (Liden et al., 2015).

4.5.4 Organizational Culture

Numerous scholars have highlighted a number of scales for measuring OC. According to Wahyuningsih et al., (2019), Denison's organizational culture model, for example, proposes a four-dimensional OC measure: involvement, constancy, adaptation, and mission. In contrast, Langton and Robbins (2006) have identified seven dimensions: aggressiveness, stability, results in orientation, attention to small details, team orientation, innovation and decision making, and stability. Furthermore, according to Muthoni (2013) and Harhash et al. (2018), OC encompasses the four elements of mission, bureaucracy, entrepreneurialism, and adaptability. Denison's OC Model, which proposes involvement, consistency, flexibility, and mission as metrics for OC, was used in this study. This is because the Denison model's constructs incorporate both the external (involvement and consistency) and internal (adaptability and mission) dimensions of OC evaluation (Tulcanaza-Prieto et al. 2021). Additionally, Denison's model offers a convincing explanation of how OC's internal and external integration boosts business competitiveness (Tulcanaza-Prieto et al., 2021).

4.5.5 Psychological Empowerment

The literature that is currently available indicates that a number of researchers have created scales to measure PE. Spreitzer, (1995) and Wang et al., (2022) developed four dimensional scale of impact, self-efficacy, meaning, and self-determination. Short & Johnson, (1994) and Ahadi &

Suandi, (2014) identified six dimensions in the educational sector: autonomy, status, influence, professional growth opportunities, self-efficacy, and involvement in the decision-making process. Furthermore, Thomas & Velthouse, (1990) and Garg et al., (2022) established four dimensional cognitions: impact, competence, meaning, and self-determination. However, The Spreitzer (1995) scale, which evaluates the four facets of psychological empowerment—meaning, competence, self-determination, and impact—was employed in this study. This is because it is among the most extensively utilized instruments to measure PE and the four dimensions provide adequate conceptualization of the PE construct (Khairani et al. 2021), Therefore, if any of the dimensions are missing, the degree of PE will be inflated.

4.6 Questionnaire Design and Pretest

The questionnaire was created in accordance with Taherdoost, (2022)'s recommendations. Because self-administered surveys reduce costs, simplify survey implementation, and improve respondent confidentiality, they were utilized to gather quantitative data for this purpose (Taherdoost, 2022). To assist in creating survey questions that produced actionable data, the questionnaire included items drawn from literature with pre-existing items of known validity (Cobern & Adams, 2020; Ikart, 2019). There were five sections on the tool: Data on demographics was collected in Section A, POS was covered in Section B, SL-related topics were covered in Section C, organizational culture was covered in Section D, and psychological empowerment was covered in Section E. IWB issues were covered in the last section. The 5-likert scale (1-SD to 5-SA), served as the anchor for every item. As a result, the target sample consisted of ten associate professors, as primary target groups. These experts were therefore used to confirm the

questionnaire's numerous aspects, such as its wording, the sequence and flow of the questions, its presentation, and its content. Ultimately, the questionnaire was updated, and the feedback was included as helpful information.

Table 4.3: Pre-test procedures employed

Procedure	Target	Justification for use
Panel of experts	Experts (10) Professors (8) Executive managers (2)	i) To assess the conceptualization of innovative work behavior ii) To evaluate the applicability of the survey items that gauge the corresponding variables iii) iii) To offer additional recommendations, critiques, and remarks regarding the survey iv) To validate the questionnaire
Pre-test survey	10 public universities in Uganda	i) To modify and refine the survey instrument in order to develop the final instrument for the main survey ii) To statistically test the instrument for reliability and validity

Following the collection of pilot data, we used Exploratory Factor Analysis (EFA) to narrow down the items to those that could accurately assess the research variables. Reliability and validity were evaluated using EFA, which resulted in the discovery of underlying factors and items that were then utilized for Confirmatory Factor Analysis (CFA). The structural model in SEM was developed using the emerging variables and the items from EFA that corresponded with them. EFA is a statistical method that uses correlations between questionnaire questions to identify latent factors in a dataset (Field, 2009).

4.7 Control for Biases

4.7.1 Control of Common Methods Variance (CMV) and Bias

Common methods bias is a significant source of measurement error that may jeopardize the validity and reliability of the results pertaining to the correlations between measures or

constructs (Podsakoff et al., 2003; Cooper et al., 2020)). According to Liang et al., (2021) CMV results in the common method bias (CMB), which inflates or deflates correlations. When researchers gather data on the focal independent (predictor) and dependent (criterion) variables from one measurement source, CMV is created. Spector, (2006) argues that the use of self-reported and cross-sectional surveys as the primary research tool raises the most concerns regarding common methods bias. Consistent with Podsakoff et al. (2003), to deal with CMB problem, we adopted both procedural and statistical approaches. Specifically, at the questionnaire formulation stage, we used procedural remedies to address common methods bias, while the pre-test and main survey stages used statistical remedies to evaluate for the existence of CMB.

4.7.1.1 Procedural remedies

As part of the procedural remedies, this study also considered a number of remedies pertaining to instrument development. For example, the scale items were made clear, and the questionnaire development process was systematic. In order to adapt to the study setting, the questionnaire items were first created using scales developed by earlier researchers. The questionnaire items were then slightly modified and refined based on qualitative data generated through interviews. Also, the constructs were clearly stated, the instrument was clear, and experts/raters were asked to review all items before giving each one a score. To aid in the understanding and clarity of the items, the experts were invited to provide written or spoken commentary. The survey instrument was therefore modified to guarantee high response rates (Yusoff, 2019). This aided in the improvement of the instruments. Items were also reverse-coded (negatively worded) to lessen the possible effects of response pattern biases.

The tool balanced the positively and negatively worded measures of each construct, so that a higher or lower score on the underlying construct corresponds to agreement or disagreement with the item, respectively. Acquiescence and dis-acquiescence biases can be actively managed with this approach (Podsakoff et al., 2012). Cognitive "speed bumps" in the form of reverse-coded items force respondents to employ more deliberate cognitive processing as opposed to automatic cognitive processing (Podsakoff et al., 2003). The scale's items were reworded, rephrased, and rearranged with the help of the pretest results (Kamal et al., 2021). Each item was written in easily comprehensible language and designed to measure a single topic in order to guarantee that respondents understand what it means. Second, we used the questionnaire and the interview guide to gather information from academic staff members and senior executives of public universities which led to the collection of both quantitative and qualitative data. By using a multi-rater and multi-source approach, the study was able to reduce the CMB and CMV (Liang et al., 2021).

Third, we applied psychological separation of measurements in the questionnaire development process. Specifically, the items that measure criterion or outcome variable appeared first on the questionnaire, followed by the predictor variables. This is in line with the suggestions of Podsakoff et al. (2003), who claim that this methodological approach reduces the respondents' capacity and enticement to use their earlier answers while responding to new questions or to address follow up questions. Due to this, the respondents are less likely to alter their answers after finishing the other questionnaire sections. Fourth, participants' confidentiality and anonymity were ensured. To inspire the respondents to answer the questions honestly, the phrase ‘there is no right or wrong answer’ was included on the cover of the questionnaire.

4.7.1.2 Statistical remedies

Finally, post hoc tests like CFA and Harman's single-component test were used in relation to statistical remedies. Twenty-one factors were identified by exploratory factor analysis that combined items from the independent, mediation, and dependent variables. With an eigenvalue of 5.21, the first factor explained 12.6% of the variation. This provides evidence that several factors emerged from these variables. Precisely, considering that no single factor contributed much variation from the test is evidence of limited threat of CMB. To assess the model fit, all independent and dependent variables were loaded onto a one-factor and five-factor CFA model. If these variables exhibit common methods variance, the one-factor CFA model provides a good fit to the data (Chi-square = 2105.49; df=365; p=.000; CFI=.573; GFI=.570; NFI=.441; TLI=.525; RMSEA=.231). The findings of a one-factor and five-factor CFA show that the one-factor model fits the data the worst. Therefore, there was no evidence of a common methods bias threat.

4.7.2 Control for non-response bias

According to Podsakoff et al. (2012), non-response bias happens when a researcher is unable to collect data from the sampling units chosen for the sample. In a survey of this kind, taking non-response bias into account is crucial. Dalecki et al., (1993) contends that it is problematic to evade non-response bias, though its potential effects can be limited by implementing righteous research measures. In particular, a large non-response bias diminishes randomness and compromises sample representativeness (Hair et al., 2010). By assuring respondents of confidentiality throughout data collection process and stressing to them that the information was being collected for scholarly purposes, this study alleviated the probable effects of non-response bias. In addition, the questionnaire's independent variables were distributed in

phases (it didn't seem to be large), and those who had stuck with the questionnaires were kindly reminded via phone calls, emails, and physical massage.

4.7.3 Controls for Endogeneity Bias

Consideration was given to endogeneity bias assessment. When additional external variables in the study have an impact on the independent and dependent variables, endogeneity bias usually results (Antonakis et al., 2014; Stone & Rose, 2011). The researcher concludes that the rise in the dependent variable is due to an increase in the independent variable because of external causes (Field, 2009). These endogeneity biases, according to Antonakis et al. (2014), might be linked to common method variance, omission of relevant independent variables in the study, and measurement errors. We controlled for the endogeneity bias following Antonakis et al. (2014) guidelines by ensuring that the variables were theoretically supported, verifying all measurement models with confirmatory factor analysis (CFA), and handling the endogenous and exogeneous variables' questionnaires independently in accordance with the claims of Podsakoff et al., (2012).

According to earlier studies, if endogeneity bias is not taken into consideration, a hypothesis may be mistakenly rejected when it ought to have been accepted (Bartov et al., 2000). By including the control variables (age, sex, and educational levels) in the model, this overlap and the possible association between error terms were addressed with better and improved model specification. This guaranteed the accuracy and consistency of the projected or anticipated results (Bollen 1989). Finding one or more extra variables, known as instrumental variables, that correlate with the independent variables but not with the unobserved determinants of the independent variable (that are included in the error term) is a common method of resolving the endogeneity

issue (Greene 2011). The best conventional approach for addressing endogeneity bias in linear regression models.

4.8 Data collection methods:

Both quantitative and qualitative information was gathered, though quantitative data made up the major data collection source. Using the questionnaire, academic staff provided quantitative data. A series of questions with predetermined responses were provided to the study participants to rate. Questionnaires were deemed relevant in this study because they enlist information from the target population and capture respondent replies promptly and precisely and generate a significant amount of objective data at a comparatively cheap cost (Zhao et al. 2022). In each university where data was obtained, we identified a point of contact who was trained to facilitate a seamless data collection process and was informed about the objective of the study.

In collection of qualitative data, we used an interview guide. Before the interviews commenced, the interview team made appointments with the selected respondents who had consented to the planned interviews. Ideally, these were senior administrators of public universities as well as regulators of higher education such as the National Council for Higher Education (NCHE) and the Ministry of Science, Technology, and Innovation (MoSTI). The interviewers elucidated the objective of the study to the executives and requested their consent to record the interviews. The interviews lasted anywhere from thirty to an hour. The interview tools (interview guide) were simple, affordable, and time-efficient for both the participants and the researchers (Magolo Annet, 2019). Documentary sources, particularly published reports on staff IWB in public universities, also provided additional or secondary data. Overall, the study adopted a two-stage method of gathering data was used. Phase 1: Pre-testing data collection tools (June–Oct 2023). During this phase, both qualitative and quantitative data were collected to evaluate the validity and

reliability of the developed instrument. Phase 2: Collection of primary data for the main survey (October 2023– March 2024). Meaningful discussions and conclusions for this study were derived from the data gathered at this point.

4.9 Data Entry

To ascertain the usable questionnaires, the investigator started sorting through the ones that were collected from the respondents. After sorting the questionnaires, 308 of the 357 administered instruments for the full-scale study were deemed usable. To prevent mistakes while entering the data into the SPSS version 21 software and then into analysis of moment of structure (AMOS) for analysis, the tools were labeled with serial numbers.

4.10 Management

To guarantee clean data prior to analysis following data entry, data exploration and management was deemed crucial. Following data entry, data management was deemed vital to ensure the data was clean before analysis. Field, (2005) asserts that if data is not cleaned, it tends to skew the results (Field, 2009). Field (2009) outlines several reasons for data cleaning. Finding out if the responses provided in the questionnaires were correctly entered was the first reason sighted. Second, to confirm whether missing values exist and address them in a scientific manner. Moreover, as Field (2013) suggests, locate outlier cases and, if found, create strategies to deal with them to reduce their detrimental effects on the data. In order to deal with missing numbers and get rid of outliers, the data was thus meticulously cleansed. According to Field (2009) and Hair, et al., (2010), the researcher used basic frequency analysis to see whether there were any incorrect inputs, missing data, or outliers that could raise error variance and lower the power of statistical tests. Similarly, applying Field's (2010) procedures, the researcher conducted diagnostic tests to

determine whether the data satisfied parametric assumptions prior to further statistical analysis. These tests included normality of data distribution, homogeneity of variance, linearity of data, and multicollinearity, among others (Hair et al., 2010).

4.10.1 Missing Value Analysis (MVA)

When data values for one or more data variables are absent from the observed dataset, the missing data problem occurs (Alruhaymi and Kim 2021). There are three missing value categories that are mutually exclusive: Missing at random (MAR), Missing completely at random (MCAR), and missing not at random (MNAR). Field (2006) asserts that missing values have a negative impact on multi-variate analysis, and must be located and dealt with. Thus, using missing value analysis (MVA), the data was screened to look for missing values and analyze the distribution patterns of those missing values (Alruhaymi and Kim 2021). The main causes of missing data, are mistakes made during the data entry or collection process or respondent omission of responses (Hair et al., 2014). Missing values are a major problem in statistical analysis if they are not handled correctly. Tabachnick and Fidell, (2001) states that if a few data points (5% or less) are missing in a random pattern from a large data set, the problems are less serious. As a result, Hair, et al., (2014) contends that if the percentage of missing data in a particular questionnaire exceeds 15%, the observation is eliminated from the data set.

Using Little MCAR's test, we performed a missing value analysis (Alruhaymi & Kim, 2021). This test posited insignificant results (p=.322), further supporting MCAR, and showed that missing values were completely at random (MCAR), and at less than 5%. Consequently, after determining that the missing values were MCAR and that they were also less than 5%, we replaced them using linear interpolation method through SPSS. The ability of this method to maintain or

preserve the sample led to its consideration as appropriate (Tabachnick and Fidell 2013). The charts display the findings of the missing value analysis (Fig. 4.1).

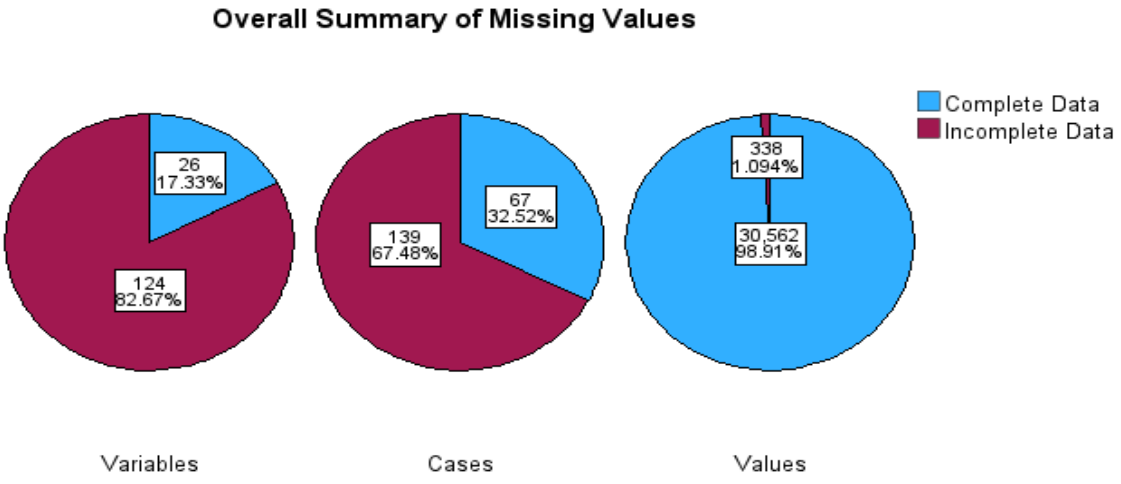


Fig.4.1: Overall summary of missing values

According to Fig. 4.1 above, the study's total variables are 17.33% complete and 82.67% incomplete; 32.52% of the cases entered are complete and 67.48% are incomplete; the values show that the variables and the cases are 98.91% complete and 1.09% incomplete. Missing values between 1% and 5% are considered manageable, while values above 15% are considered dangerous (Field, 2009). Since the study's missing values fell below a tolerable threshold (less than 5%), they were deemed manageable (Hair et al. 2021).

4.10.2 Pattern of missing values

The ability to detect patterns in missing data is made possible by the presence of missing values. In order to show the distribution of the missing values in the data gathered for this survey, a missing value pattern was created using graphs. The degree of randomization test was employed to ascertain if the missing data were dispersed randomly across the cases and variables. The *p*-

value was utilized to ascertain the extent of missing data and whether it was random (MCAR) or non-random (NMCAR), based on Little's MCAR test. Further, expectation-maximization (EM) estimation was validated. In our parametric models, EM estimation used the likelihood estimates to differentiate between data with and without missing variables.

According to Alruhaymi & Kim (2021), missing data may be deemed MCAR if 5% or less of the dataset is absent. The results showed that the data's Chi-Square was 16728.703, its df was 16517, and its significant level was .322 *(p=.322)* for the Little's MCAR test. Given that the percentage was less than 5%, which is acceptable for replacement, and that the Chi-square statistic was insignificant (Sig. =.322), it appears that the data values were missing completely at random (MCAR). The findings showed that the missing values were dispersed or distributed throughout the carefully examined study variables. The Missing Value Patterns were also used to depict the distribution of the missing data (Fig. 4.2).

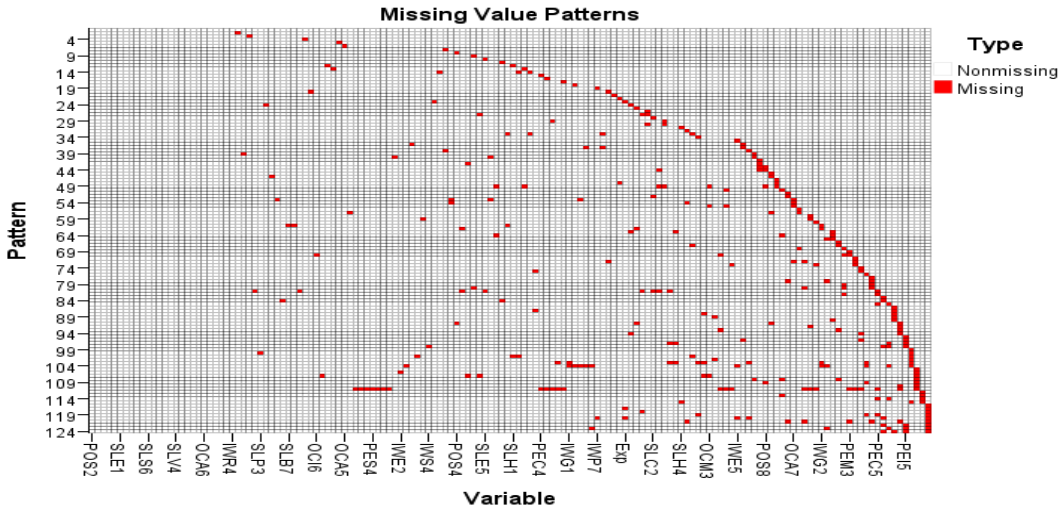


Fig. 4.2: Pattern of missing values

4.10.3 Dealing with missing values

The results of our investigation showed that the level of missing data was low, with less than 5% of the data being missing completely at random (MCAR), a value suitable and acceptable for replacement. Since missing values are perilous and lower the statistical power of the results, the missing data was replaced. To determine which data replacement method to adopt, several approaches were examined. Both pairwise deletion, which keeps the questionnaire but only deletes cases without responses, and listwise deletion, which removes all questionnaires or cases with missing values, were taken into consideration. Additionally, the mean (if normal), median (if skewed), and mode (if categorical) might be used to replace the missing data if less than 5% of the data were missing. However, using linear interpolation, the missing values were substituted as this approach represents an optimum data replacement technique due to its ability to preserve the data structure (Tabachnick & Fidell, 2013; Field, 2009).

4.10.4 Outlier detection and management

According to Field (2006) and Hair et al. (1998), outliers are values that deviate from the measurement scale. Outliers are mostly caused by data entry errors, although they can also happen when respondents provide out-of-range values in their responses. Accordingly, outliers inflate the standard deviation and distort the mean (Field, 2009; Ghorbani, 2019), thereby leading to incorrect conclusions (Hair et al., 2010; Afzal et al., 2021). Consequently, eliminating outliers could make the data more normal and prepared for further statistical analysis. Thus, outliers must be identified and dealt with, either by deletion, transformation, or correction.

Several methods have been proposed to detect outliers, including frequency inspection, use of box plots, and categorized data points based on their observed Mahalanobis distance from the study's expected values (Hair et al., 2010). One of the most widely used techniques is the box plots used for identifying univariate outliers, scatter plots for bivariate outliers, and Mahalanobis distance for multivariant outliers (Deng, Li, and Jiang 2019). This research adopted all the three in dealing with the threat of outliers. Hair et al. (1998) and Afzal et al., (2021) state that outliers should be identified using a variety of methods and handled regardless of whether they are univariate, bivariate, or multivariate. Frequency counts were used to identify uni-variate outliers, and bivariate scatter plots were employed to identify values that were out of range (bivariate outliers). Generally, we also used box plot for determining and analysis of outliers using 1.5*1QR rule. The box plot rule declares observations as outliers if they lie outside the interval (Ghorbani, 2019, Rehman & Belhaouari, 2021). (See **Fig.4.3** below)

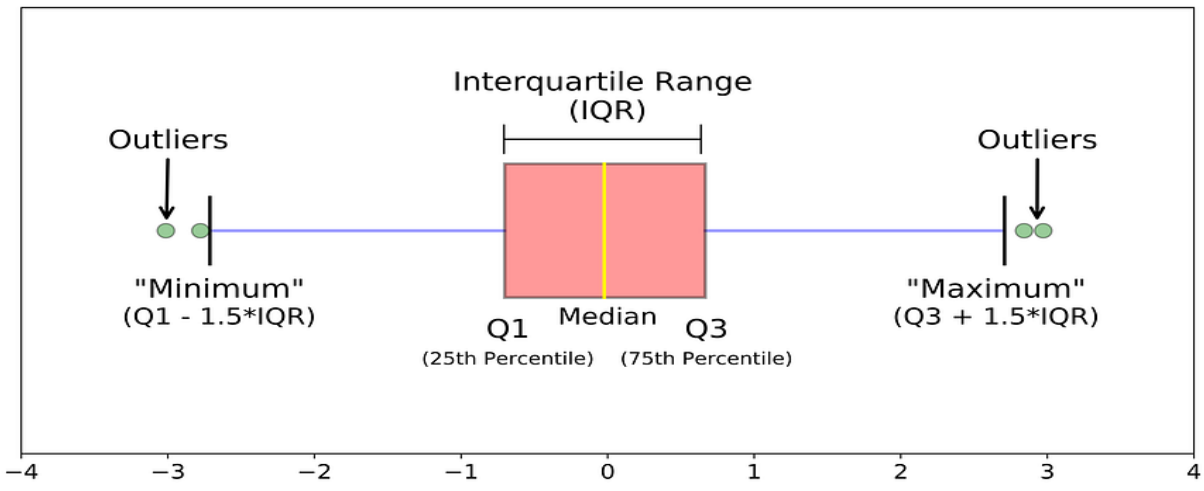


Fig.4.3: Outliers 1.5*1QR rule.

Using box plots, the univariate outliers were located. In SPSS, outlier scores were displayed with numbers (ID numbers) associated with values deemed extreme, i.e., 1.5 below and more than 3 above the normal (Tabachnick and Fidell, 2001). Our data contained some extreme values (outliers) as illustrated by the box plots (Fig.4.4) below. Specifically, outliers were found in the variables (organizational culture and perceived organizational support).

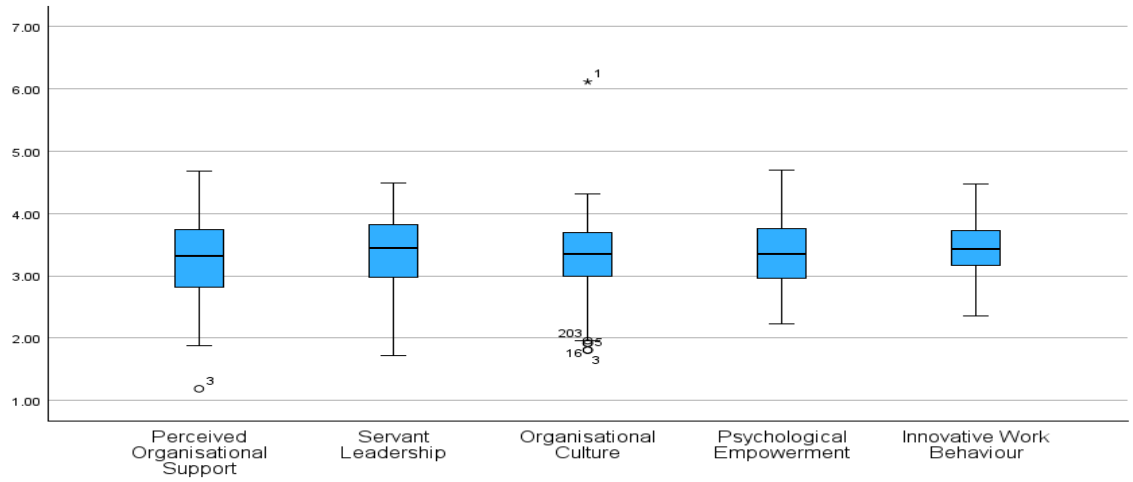


Fig. 4.4: Boxplots showing outliers

To handle outliers, z-scores that deviated from the typical range of +2.5 and -2.5 were replaced. According to Field's (2009) recommendations, values that did not fall within the ±2.5 interquartile range were assigned to the next lower or higher value. The results of a second data check revealed that there were no outliers in any of the study constructs (Fig 4.5. Below).

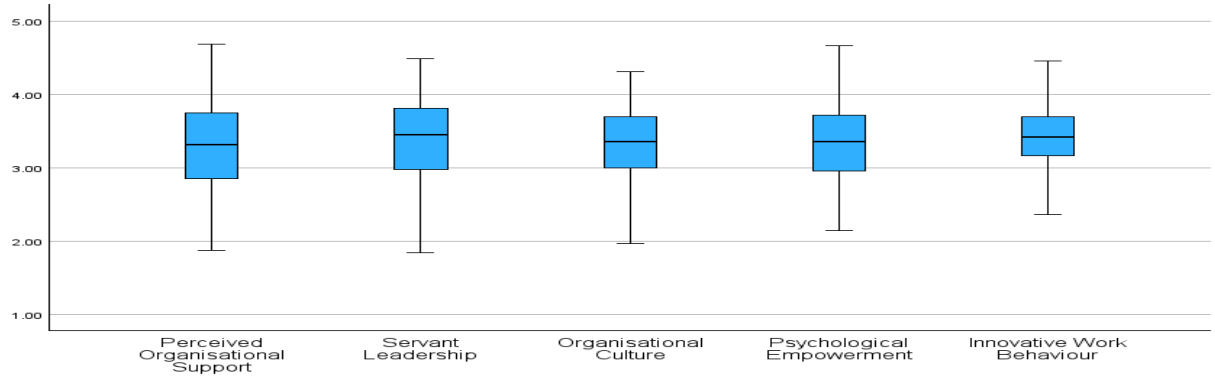


Fig.4.5: Boxplots without outliers

To deal with bivariate outlier, we used regression scatter plots to display distinct out of range values (Rehman and Belhaouari 2021). On examination of the regression scatterplot, we found that data points followed or matched a general shape-a particular curve, and that data points were not far from the general pattern of the other points, alluding to nonexistence of bivariate outliers, (**See Fig4.6, .47, 4.8 and 4.9 below**).

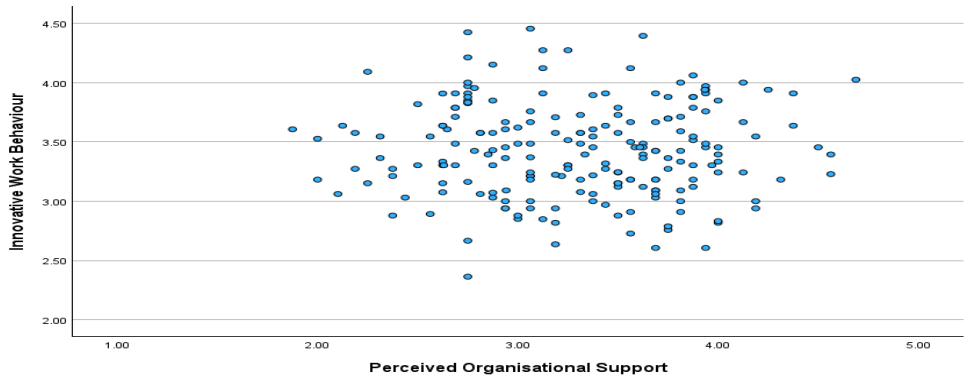


Fig. 4.6: Scatter plot of IWB and Perceived organizational support

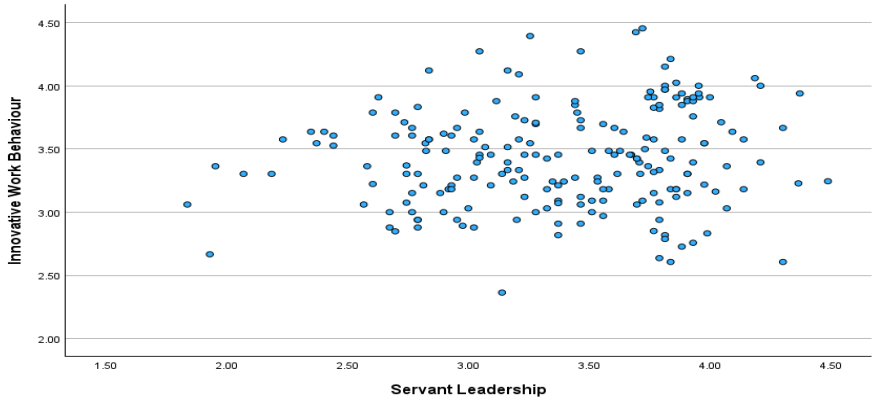


Fig.4.7: Scatter plot of IWB and Servant Leadership

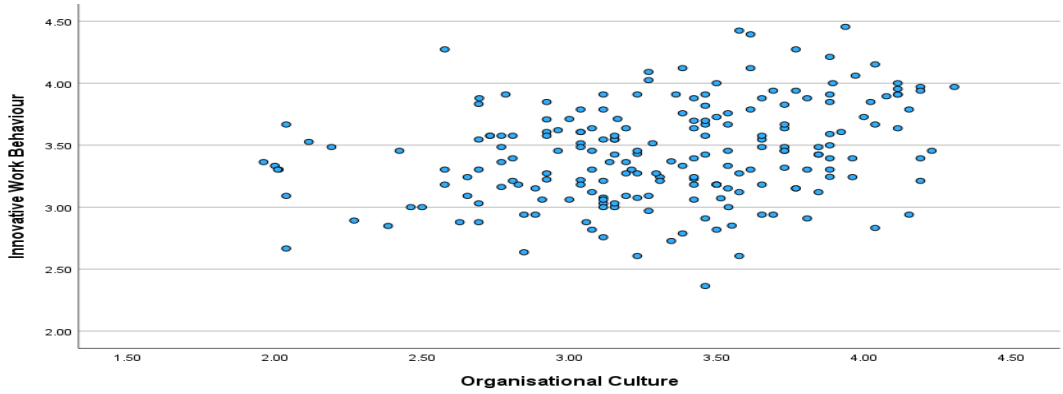


Fig. 4.8: **Scatter plot of IWB and organizational culture**

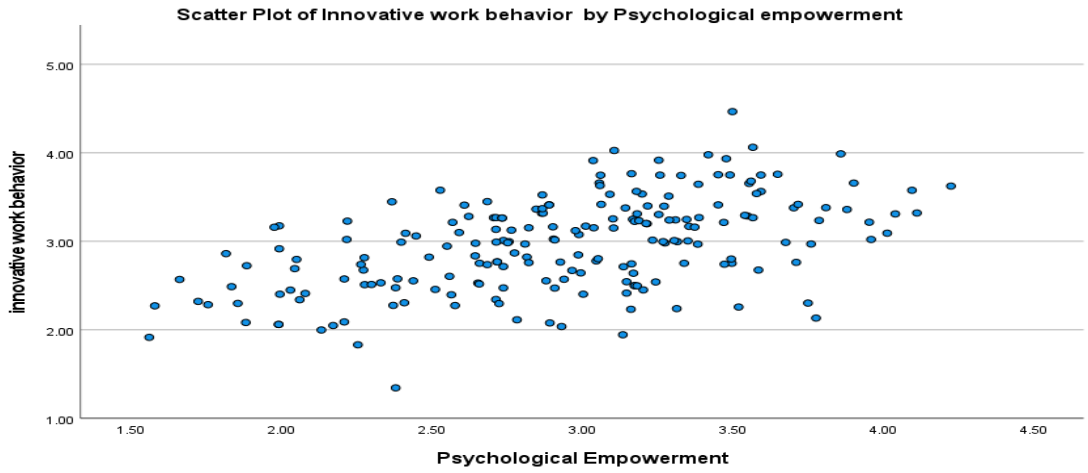


Fig. 4.9: **Scatter plot of IWB and Psychological empowerment**

Data was also assessed for multivariate outliers using Mahalanobis distance test (D^2) (Tabachnick & Fidell, 2013; Deng et al., 2019). A score higher than the critical value was deemed an outlier and was consequently removed from the dataset and any additional analysis. Based on this rule, one value was established and removed from the analysis. The final analysis was thus, based on a sample of 308 academic staff.

4.11 Testing for parametric Assumptions

To examine the data and ascertain the distribution, parametric assumption tests were performed. The assumptions of normality, homogeneity, linearity, and multicollinearity were examined in this case. The analysis results may be inaccurate or misleading when these assumptions are violated. The research conclusion and interpretation of the findings are altered when these assumptions are violated. Model robustness is ensured by data adhering to multivariate statistical assumptions (Hair et al., 2010). Therefore, in order to prevent probable violations that could skew and distort data, it was essential to verify for statistical assumptions before applying multivariate analysis.

4.11.1 Normality Tests

The requirement that data adhere to the normal distribution principle is one of the most commonly cited assumptions of parametric testing (Mishra et al. 2019). This allows the researcher to verify if the data sample was drawn from a population that is normally distributed (Hair et al., 2010; (Hatem et al. 2022). A basic need for all statistical tests is the claim that the data meets the assumption of normality (Tabachnick & Fidell, 2001). To determine data normality, we relied on both graphical and statistical tests. Specifically, the normal distribution was analyzed using four methods, including the histogram, normal P-P plots, and the level of skewness and kurtosis (S-K test), and Kolmogorov-Smirnov (K-S), and Shapiro-Wilk (S-W) (Hair et al.,1998; Field, 2006).

4.11.1.1 Graphical approach to testing for normality

Since statistical tests are subjective and may be overly sensitive, the graphical technique is highly recommended as it allows for good assessment and judgment in many situations (Field, 2009). This involved the use of bell-shaped histograms, normal probability plots, and normal regression scatter plots.

a) Histogram

This was one of the graphical methods used to evaluate the normality assumption. A bell-shaped curve represented the normal distribution for each of the study constructs (Khatun 2021). Fig.4.10 below shows the bell-shaped histogram used in this investigation, which suggests that the data were normally distributed. This implies that our data was appropriate for additional statistical analysis because the assumptions of normality was satisfied.

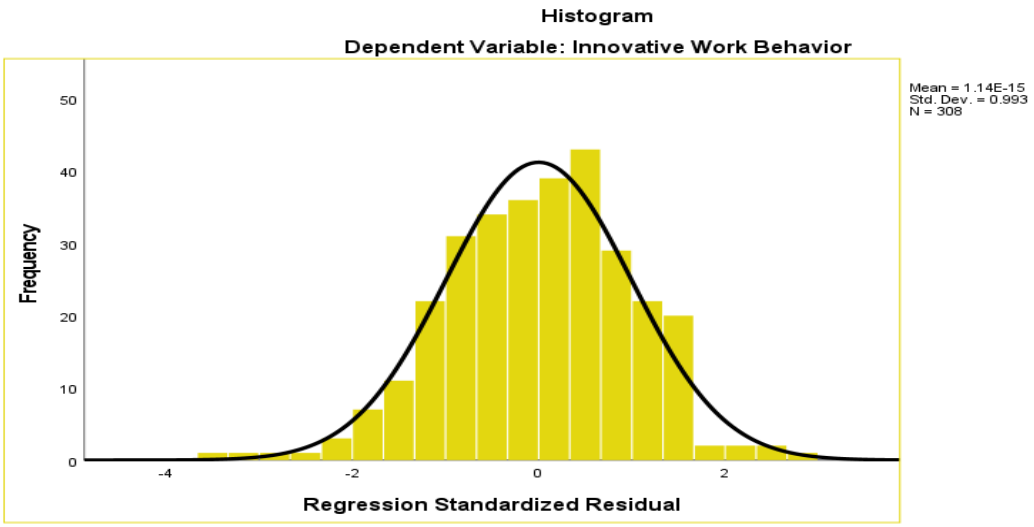


Fig 4.10: Histogram- Dependent variable- Innovative work behavior

b) Normal Probability plots (Normal P-P Plots)

This was the second graphical test for testing the assumption of normal distribution of data. Scholars such as Hair et al. (2010) and Field (2005) emphasize that observed values should be shown as separate data points and should fall exactly along the straight diagonal line, also called line of best fit under a typical p-p chart. When data points are dispersed, we conclude non-normality. It is assumed that the observed values, represented by the dots on the chart, should fall exactly sideways, along the straight line, also called line of best fit to conclude that the data are normally distributed. Consequently, an examination of our data revealed that the majority of the observed values (data points/dots) fell along a straight diagonal line or line of best fit as indicated by the normal p-p plots. This suggested that the study's data was appropriate and tenable for additional statistical tests as the assumption of normality was met (see **Fig 4.11)**

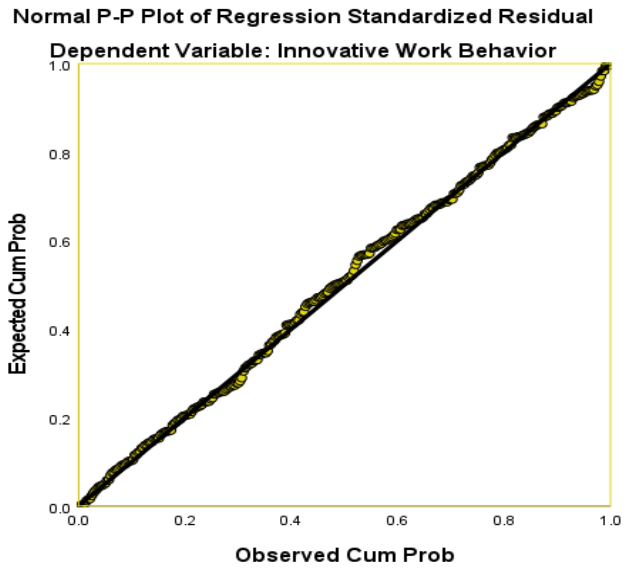


Fig. 4.11: Normal p-p plot of IWB

c) Scatter Plots

We also used regression scatter plot to examine if our data had a normal distribution. This technique was used to uncover patterns in the data and show whether or not there was a relationship between the study variables, what kind of relationship there was, and whether or not some cases were notably different from the others (Field, 2005). This was crucial because it helps to locate cases that substantially depart or deviate from the data's general trend, which could materially distort or skew the data's normality. The regression scatter plot, shown in **Fig. 4.12** below, shows that most of the cases are grouped or clustered together and are within vicinity of other data points, suggesting that there is a relationship between the cases. This suggests that the data from the study is normal and since the assumption of normality was met, the study's data was suitable for further statistical analysis.

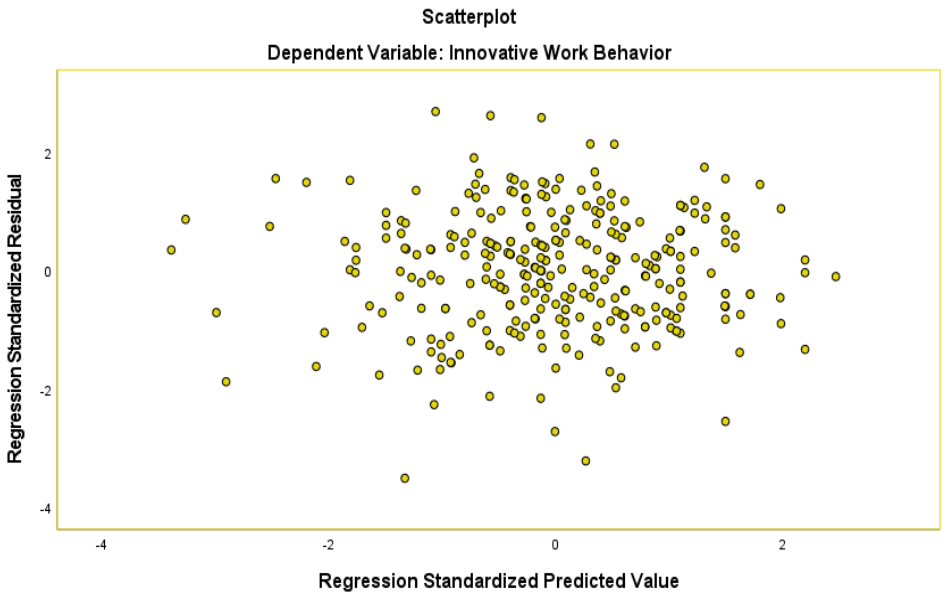


Fig. 4.12: Regression Scatter plot

4.11.1.2 Statistical tests of normality

As previously noted, we also examined for the normality assumption using statistical methods. These tests helped quantify the distribution shapes and locate outliers. Statistical tests generate objective results, but they are too sensitive in big sample sizes and insensitive in small sample sizes. Due to this study's high sample size (308), this approach can thus, be relied upon to generate an objective opinion. Two statistical tests, the Shapiro-Wilk Test and the Kolmogorov-Smirnov (K-S), and Skewness & Kurtosis tests (S-K), were employed to examine for the normality assumption.

a) Skewness and Kurtosis

Hair, et al. (2010) define skewness as the distribution's balance, i.e., whether it is centred and balanced, with the same form on both sides, or imbalanced and slanted to one side (either the right or left). A distribution is considered skewed if it is not balanced. A distribution that has shifted to the left is indicated by a positive skew, whereas one that has shifted to the right is shown by a negative skewness. Two types of deviations from the normal are skewness (lack of symmetry) and kurtosis (pointiness). Data piles to the left are indicated by positive values, whereas data piles to the right are shown by negative values (Hair et al., 2010). Kurtosis shows how "flat" or "peaked" the distribution is in contrast to the normal distribution, whereas skewness defines how balanced the distribution is. Kurtosis also shows the height of the distribution.

The normal distribution of S-K is typically given values of zero (0) in most systems. Consequently, values that are either above or below zero are those that do not fit the normal distribution. For instance, a leptokurtic (peaked) distribution is indicated by positive kurtosis values, whereas a platykurtic (flatter) distribution is shown by negative values. Similarly, distributions with negative skewness values shift to the right, while those with positive values shift

to the left. The likelihood that the data are not normally distributed increases with the amount that the value deviates from zero (Field, 2005). Ideally, the data should be normally distributed, meaning it shouldn't be overly skewed or flat or pointed. According to Field (2005), a normal distribution is perfectly symmetrical and neither too flat nor too sharp, with skew and kurtosis values of zero.

Skewness and kurtosis are more warranted in testing for assumption of normality because they show the normal distribution's flatness and pointiness, whereas the other approaches do not. Our study data revealed that the skew and kurtosis values are close to zero. To normalize the skewness and kurtosis scores, it is advised that they be transformed to a z-score; the conventional rule to determine normality is + 3.29 and – 3.29 (Field, 2009), an approach we followed in this study. To generate the z- score, for skewness, the formula is (skewness- 0 divided by the standard error (SE). The also holds true for kurtosis. The normality test assumption- that is, that the skewness and kurtosis values in a normal distribution are zero- was confirmed to be met and tenable, as indicated in Table 4.3. Also, the z-scores for all values are within the range of (+ 3.29 and – 3.29) indicating normality at significance level ($p < .05$).

Table 4.3: Skewness and Kurtosis z- score statistics for Normality

Construct	Skewness			Kurtosis		
	S- statistic	SE	z-score	K-statistic	SE	z-score
Innovative work behavior	-.438	.139	-3.15	.339	.277	1.22
Perceived organizational support	-.416	.139	2.99	-.441	.277	-1.59
Servant leadership	.032	.139	0.23	-.727	.277	-2.62
Organizational culture	-.328	.139	-2.35	.450	.277	1.62
Psychological empowerment	-.246	.139	1.76	-.678	.277	-2.44

Source: Primary data

b) Kolmogorov-Smirnov and Shapiro-Wilk Test

We used the Shapiro-Wilk and Kolmogorov-Smirnov tests to see if the distribution in our data generally deviated from normal levels. It is commonly believed that the test is non-significant ($p > .05$) since the sample distribution does not significantly differ from the normal distribution. The distribution in question is non-normal, however, if the test is significant ($p < .05$), since it deviates significantly from a normal distribution. As shown in Table 4.4 below, all of the study variables had non-significant values ($P > .05$), indicating that the sample distribution did not deviate significantly from a normal distribution. As a result, it can be concluded that the distribution is fairly normal, meaning that further statistical tests can be carried out because the normality assumption was satisfied.

Table 4.4. Kolmogorov-Smirnov and Shapiro-Wilk Test

	Kolmogorov-Smirnov			**Shapiro-Wilk**		
Variable	Statistic	df	Sig	Statistic	df	Sig
Innovative work behavior	.057	308	.210	.995	308	.231
Perceived organizational support	.059	308	.421	.994	308	.460
Servant leadership	.061	308	.091	.995	308	.095
Organizational culture	.060	308	.312		308	.316
Psychological empowerment	.062	308	.204	.994	308	.248

Source: Primary data

4.11.2 Homogeneity of variance

Using our data, we examined the homogeneity of variance assumption. In this assumption, the data's variances ought to be steady or continuous. Levene's test was used to establish whether there is no difference between the groups and whether their variances are identical (Field, 2009). If the Levene's test is significant at $p \leq .05$, we can assume that the homogeneity of variances assumption has been violated and that the variances are significantly different. However, if Levene's test results indicate that the variances are similar ($p > .05$), it is justified or satisfied. All of the research variables' p-values for Levene's test results are greater than 0.05 (see table 4.5 below), suggesting that the data are homogeneous and appropriate for further statistical analysis.

Table 4.5: Levene's test for Homogeneity of Variance

Variable	Levene Statistic	df1	df2	Sig.
Innovative work behavior	.564	1	308	.320
Perceived organizational support	.736	1	308	.281
Servant leadership	1.121	1	308	.283
Organizational culture	1.254	1	308	.465
Psychological empowerment	.342	1	308	.512

Source: Primary data

4.11.3 Linearity:

The linearity assumption posits that a straight-line relationship between two variables exists (Nimon 2012). However, linearity should be verified using graphical methods as it is not guaranteed (Tabachnick & Fidell, 2001). The relationship between the independent and dependent

variables were thus examined using a P-P regression plot of the standardized residual plot, which led to the finding of a normal distribution. On examination of scatter plot (Fig.4.13), the data points were distributed along a straight line in the graph, also referred to as a line of best fit (Field, 2009, Garson, 2010), alluding to a linear relationship between the study variables as indicated below.

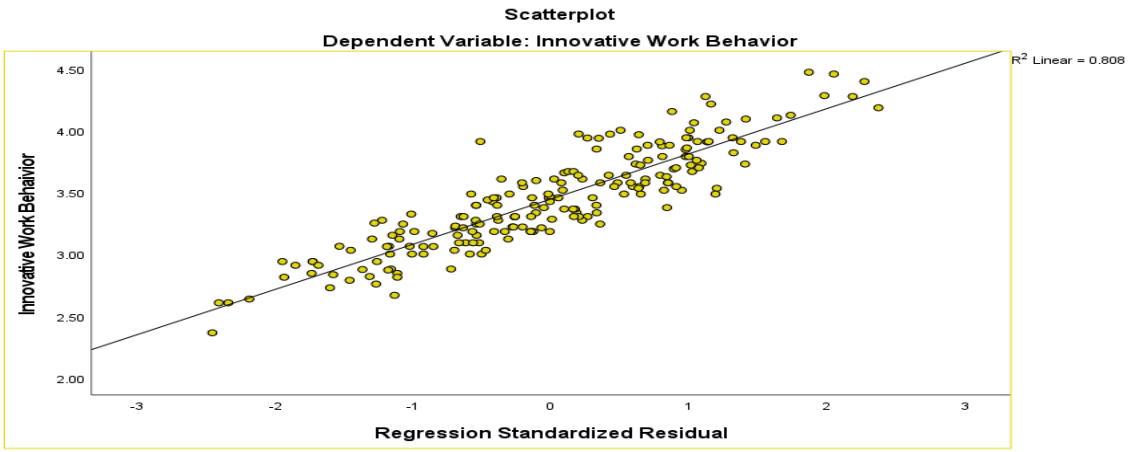


Fig.4.13: Regression standardized scatter plot

4.11.4 Test for Multicollinearity

The multi-collinearity test was used to find the degree of correlation between two or more independent variables. When there is multi-collinearity, it is quite challenging to determine which of the two independent factors has a major impact on the dependent variable (innovative work behavior). Two well-known metrics for determining the risk of multi-collinearity are the Variance Inflation Factors (VIF) and the Tolerance statistics. When tolerance levels are higher than.2 (TL > 0.2) and Variance Inflation Values (VIF) are less than 5 (VIF < 5), multicollinearity is often not a danger (Hair et al., 2010; Shrestha, 2020). It is recommended that one of the offending variables be eliminated as soon as it is identified in order to alleviate the multi-collinearity issues. The VIF and tolerance level or statistics matched both assumptions when regression results from the SPSS were examined to check for multi-collinearity (**see table 4.6**). To further validate these results, we

further examined for multi-collinearity through condition index. Multicollinearity is deemed problematic if the condition index is higher than 30 (Shrestha, 2020; Tabachnick & Fidell, 2007). Examination of all the collinearity statistics for all the predictor variables revealed values in the range of **14.516- 23.523**, well below the threshold of 30 (Tabachnick & Fidell, 2007), providing evidence for less risk of multi-collinearity threat. Thus, the results indicated in Table 4.6 below show VIF, tolerance statistics and conditional index results which reveal tolerable threat of multi-collinearity.

Table 4.6: Test for multicollinearity

Variable	Variance Inflation Factor (VIF)	Tolerance Statistics	Condition Index
Perceived organizational support	1.35	0.46	14.516
Servant Leadership	2.36	0.35	16.254
Organizational Culture	1.84	0.57	21.375
Psychological Empowerment	1.79	0.58	23.523

4.12 Reliability of the main study instrument

Hair et al. (2010) state that reliability, which is also referred to as a measure of internal consistency, shows that a measure will deliver and exhibit greater consistency if it is repeated. Reliability is a measure of how consistently a variable is measured over multiple measurements. Cronbach's Alpha coefficients at exploratory factor analysis (EFA) and composite reliability at confirmatory factor analysis (CFA) were used to evaluate the reliability of the full-scale study data in order to ascertain the internal consistency of the data collection technique (Cronbach, 1951, Hair

et al., 2010; Peterson et al., 2024). The degree of agreement between the outcomes of repeated measurements of the same concept is known as reliability.

A reliable assessment of a known concept remains unchanged when conducted twice with the same individual in comparable situations. On different occasions, it ought to yield the same or consistent result. A research instrument is considered reliable if its Cronbach's Alpha coefficient is 0.7 or greater (Cronbach, 1951). For a construct to be deemed sufficiently reliable, confirmatory factor analysis (CFA) must yield a composite reliability score of CR > 0.6 (Cheung et al. 2023). According to the results obtained from the study data, all of our variables had Cronbach's Alpha coefficients of 0.7 and above and composite reliability values of >0.6 (**see table 4.7**). This proved that the data collection tool used in the study was reliable.

Table 4.7: Summary of reliability coefficients

Study Variables	**Cronbach's alpha @**>0.7	**No. Items**	**Composite reliability**	**No. Items**
Perceived Organizational Support	.842	13	.781	10
Servant Leadership	.862	32	.810	22
Organizational Culture	.872	19	.875.	10
Psychological Empowerment	.866	16	.858	10
Innovative work behavior	.829	29	.864	17

Source: Primary data

All of the study variables; perceived organizational support, servant leadership, organizational culture, psychological empowerment and innovative work behavior, met the cut-off mark of 0.7 at both EFA and CFA, according to the results in the above table. This indicates that the study's instrument was reliable enough to be employed.

4.13 Validity of Quantitative Instrument

After verifying that a scale meets the necessary reliability requirements, we conducted a validity test. Finding out if the instrument truly measures the things it claims to assess – which was the aim of this test (Field, 2009). On the other hand, validity is how well a measure captures what it is supposed to capture (Hair et al., 2010). The measurement of the constructs derived from the study's theories and concepts was taken into account. Both content as well as construct validity were considered. Two requirements must be satisfied by survey items in order to conclude accurate measurements. Each respondent must, first and foremost, comprehend the question as intended by the researcher and, second, interpret it in the same way. "How do we know that we are certainly measuring what we want to measure?" is a pertinent question to ask when a decision has been made, and a measure has been devised (a laborious and meticulous procedure). Usually, it is focused on whether the tool actually measures the aspects it is supposed to measure (Babbie & Mouton, 2002). As previously noted, validity may be divided into two categories: construct validity and content validity.

4.13.1 Content Validity

Content validity evaluates the relationship between variables to be involved in a summed scale and its conceptual definition is known as content validity. Measuring each of the study's constructs is necessary for content validity (DeVellis, 2003; Gregory, 2015). If participants and researchers generally agree that the constituent items of a measure cover every facet of the variable being measured, then the measure is said to have content validity. This type of validity, sometimes referred to as face validity, uses pre-testing with several subpopulations, expert judge evaluations, or other methods to subjectively evaluate how well the individual items and the idea match. The

goal is to make sure that theoretical and practical factors are taken into account in addition to empirical ones when choosing scale items to integrate in the tool (Hair et al. 2010). As a result, we assessed the content validity of the developed instrument by distributing it to ten experts, including policy makers, practitioners, and academic supervisors in the field of innovation management.

Expert comments were graded using a five-point Likert scale, which comprised assessments of innovative work behavior, POS, SL, OC, and PE: 1. Strongly Disagree 2. Disagree, 3. Not Sure, 4. Agree, and 5. Strongly Agree. This implies that the instrument was rated based on an expert assessment. The content validity index was computed by dividing the percentage of items considered valid by the total number of questions included in the study's instrument, in compliance with Amin's (2005) recommendations. The results demonstrate that the Content Validity Index (CVI) for each construct is higher than the 0.7 threshold. The tool was therefore judged to be appropriate and to possess content validity.

4.13.2 Construct Validity

Construct validity is the degree of consistency in assessing the set latent items of a construct (Lu et al., 2011). Based on the underlying theoretical underpinnings, construct validity quantifies the relationship between one variable and another. Both convergent and discriminant validity were analyzed in order to investigate construct validity, in line with Blumberg et al. (2014). Convergent validity shows homogeneity within a single construct, whereas discriminant validity shows variability or heterogeneity across many constructs. In other words, discriminant validity looked at whether there was a lack of strong correlation between the measures of the items from different constructs, while convergent validity examined whether there was a high or strong correlation between the measures of items of constructs used to measure the same variable (Sekara, 2000).

Exploratory factor analysis (EFA) was employed for every construct item in our study variables. By comparing the inter-construct correlation values to the square root of AVE (average variance extracted) during confirmatory factor analysis (CFA), the convergent and discriminant validity of the study's components were evaluated. EFA and the subsequent CFA were designed to assess and validate the proper validity of the measurement model (Hair et al., 2010). (See appendix 1)

Additionally, KMO were taken into consideration in determining the sampling adequacy and to verify whether or not the items were correlated. According to Kaiser (1974), the Bartlett test values should be (sig. <.05), and the values of the sampling adequacy must be greater than .70. for variables. According to the study's findings, every KMO value was higher than the suggested 0.7, and every Bartlett's test value was significant at 0.000 below the suggested cutoff of 0.05 (EFA Results Matrix). This demonstrated that all constructs' items correlated, a prerequisite for component analysis, and that the sample data was sufficient. This was done on every item in our study variables for every study concept, as seen below.

4.13.2.1 Convergent validity

According to Hair et al. (2013), this is the degree to which a measure has a positive correlation with other measures of the same variable. To evaluate convergent validity, Average Variance Expected (AVE) was computed. AVE is calculated by dividing the total squared loadings by the total number of indicators. AVE must be at least 0.50. A construct is said to explain at least 50% of the variance of the indicators that comprise it if its AVE is 0.50 or higher (Hair et al., 2022). All of the latent variables employed in this investigation had AVE values greater than the

recommended value of above 0.5, according to our results in Table 4.8, indicating convergent validity among the study variables (Hair et al., 2017; Hair et al., 2021).

Table 4.8 Average Variance Expected (AVE)

Study Variable	AVE >0.5)
Perceived organizational support	0.68
Servant leadership	0.64
Organizational culture	0.69
Psychological empowerment	0.64
Innovative work behavior	0.61

4.13.2.2 Discriminate validity

According to Hair et al. (2010) and Field (2009), discriminant validity examines whether items measuring several constructs are unique and load independently. The SEM path model aims at ensuring that reflective concepts have the strongest correlations with its own indicators to assess discriminant validity (Hair et al., 2022). Generally, a threshold value of 0.90 is recommended. A threshold of 0.95 and higher was taken into consideration in this research. Table 4.9 below displays the SEM data for each of the constructions.

Table 4.8 Normed fit indices (>0.90)

Study Variable	NFI
Perceived organizational support	0.963
Servant leadership	0.952
Organizational culture	0.969
Psychological empowerment	0.954
Innovative work behavior	0.952

According to Table 4.11, all of the variable measurement items' discriminant validity using SEM (AMOS) was higher than the 0.95 cutoff. According to Hair et al. (2017), this suggests that the constructs are actually different from one another confirming construct validity.

4.14 Data Analytical strategy

Descriptive statistics were calculated, and regressions, analysis of variance, and correlation analyses between the variables were conducted. In particular, we used frequency count (frequencies and percentages), descriptive statistics (means and standard deviations), and significance testing (analysis of variance, correlations, regressions, and structural equation modeling, or SEM). To get results and make inferences, we leaned mainly on SEM as our primary data analysis technique. Additionally, mediation was analyzed using SEM, the bootstrapping process, and the mediation principles of Baron and Kenny (1986). The statistics pertaining to the objectives, theories, and propositions of the study were the main emphasis of the subsequent data analysis method. A description of the many statistical techniques employed in this investigation **(table 4.9).**

Table 4.9: Statistical Modelling

S/N	Objectives	Hypotheses to be Tested	Statistical Tests
1	To investigate the relationship between POS and employee IWB among academic staff in public universities in Uganda.	H1: POS and employee IWB are significantly related in Uganda's public universities.	Zero order correlations, SEM
2	To investigate the relationship between servant leadership and employee IWB among academic staff in public universities in Uganda.	H2: There is a positive and significant relationship between SL and employee IWB in Uganda's public universities.	Zero order correlations, SEM
3	To investigate the relationship between organizational culture and employee IWB in public universities in Uganda.	H3: There is a positive and significant relationship between OC and employee IWB in Uganda's public universities.	Zero order correlations, SEM
4	To investigate the relationship between POS and psychological empowerment in public universities in Uganda	H4: There is a positive and significant relationship between POS and Psychological empowerment in Uganda's public universities.	Zero order correlations, SEM
5	To investigate the relationship between servant leadership and psychological empowerment in public universities in Uganda	H5: There is a positive and significant relationship between servant leadership and psychological empowerment in Uganda's public universities	Zero order correlations, SEM
6	To investigate whether psychological empowerment mediates the relationship between POS and employee IWB in public universities in Uganda.	H6: Psychological empowerment mediates the relationship between POS and IWB in Uganda's public universities.	Zero order correlations, SEM, bootstrapping test
7	To investigate whether psychological empowerment mediates the relationship between servant leadership and employee innovative IWB in public universities in Uganda.	H7: Psychological empowerment mediates the relationship between Servant leadership and IWB in Uganda's public universities.	Zero order correlations, SEM, bootstrapping test
8	To examine the relationship between psychological empowerment and IWB in public universities in Uganda.	H8: Psychological empowerment is positively and significantly related to IWB in Uganda's public universities.	Zero order correlations, SEM

Source: Literature review

4.15 Quantitative Data Analysis Tools

Based on 308 valid observations, the quantitative data analysis included structural equation modeling, zero order correlations, and descriptive statistics using SPSS 19 and AMOS Version - 21. Hair et al. (2010) states that SEM is a second-generation modelling technique that assesses validity, reliability, and correlations between variables simultaneously. It offers both individual parameters estimate tests, and a composite test of the model fit. The same statistical assumptions that apply to multivariate analysis also apply to SEM. Furthermore, a sufficient sample size is crucial for SEM because covariance and correlations are less stable when computed from small samples (Hair et al., 2010). All of the statistical assumptions were supported in this respect, based on the performed diagnostic parametric tests. Additionally, a sample size of three hundred and eight (308) was judged sufficient and suitable for SEM.

As a data analysis technique, the two-stage SEM process proposed by Anderson & Gerbing, (1988) was employed. In step one, a measurement model was estimated using CFA, and in stage two, the structural model utilized to evaluate the study hypotheses was calculated. The first phase in the SEM technique is model formulation, which links the variables that are believed to affect one another (Kline 2005). Statistics were evaluated during the estimation process to ascertain whether the proposed model suited the data and whether any modifications were required to enhance the model fit. There is no clear consensus on which fit indices should be reported. Certain fit indices may be sample size dependent, while others may not (Hu & Bentler, 1999).

4.16 Qualitative Research Approach

We collected qualitative data from key informants throughout the ten universities that were sampled in order to bolster the quantitative findings. Below is an explanation of the qualitative research methodology used in this investigation.

4.16.1 Sample Size and Selection

Purposive sampling was used in the study to collect qualitative data. Participants were selected according to their expertise, experiences, and willingness to take part in the study. In order to ascertain the respondents' (executive managers) willingness to participate in the interview, the researcher personally visited these universities before the interviewing procedure began, and appointments were set. This was done in an effort to establish rapport and reduce the likelihood of wasteful time management on unprepared interview issues. In order to guarantee complete representation of views from all universities, the researcher also made sure that executive managers from all routes including human resource managers, and finance managers, were included in the sample.

4.16.2 Data Collection and Procedure

A semi-structured interview guide (see Appendix 4) was used to gather qualitative data using appreciative inquiry. Information was gathered from several cases at ten Ugandan public univesies. To reach a saturation level of 28 participants, at least two senior managers from each university were taken into consideration. The interviewees were chosen based on their willingness to participate in the interview as well as their expertise and familiarity with the topic (innovative work behavior) of the study. Each interview lasted between 30-60 minutes. When it was convenient for them, the interviews were conducted from their places of employment. To

guarantee the accuracy of the information collected, notes and audio recordings were made (with the interviewees' consent).

4.16.3 Reliability of qualitative data:

According to guidelines by Golafshani (2003), several techniques were employed to ensure reliability of qualitative data: a) triangulation was used by integrating techniques for gathering data such as observation, interviews, and group discussions, b) field notes were accurately and thoroughly documented right away following the observation or interview, c) standardization of interview and observation procedures, d) established a structure for how and when data was recorded through audio recording or transcription to ensure that no important data was lost.

4.16.4 Validity of qualitative data:

The validity of the qualitative data was evaluated using the triangulation method. Creswell & Miller (2000) distinguished four basic types of triangulations: triangulation among investigators, procedures (such as observations, interviews, documents), theories, and data sources (such as participants). The study employed methods such as document analysis, interviews, and observations to determine major and minor themes. Official documents and pertinent parties, such as organizational executive officers, were among the many data sources used. Complementary perspectives on the same construct may be offered by data from multiple sources (Coleman 2022). Consequently, it provided an additional opportunity to demonstrate the accuracy and comprehensiveness of the constructs' information.

4.15.5 Trustworthiness of data

According to Hadjer et al., (2023), trustworthiness is the degree to which "the researcher's presence may have influenced the data in a way that leads to misleading conclusions." In order to avoid this, researchers were generally counseled to take proactive steps to lessen their bias and intrusiveness, maintaining the validity of this study. This was accomplished by a) triangulating data collection methods (which necessitates gathering information from several sources), b) using experts and peer debriefing: ten experts evaluated the research tools for improvement, and we shared our findings with other academic colleagues to share ideas and get feedback on our work, which helped to stay focused. Therefore, we followed the four steps suggested by Miles and Huberman (2014) to ensure the trustworthiness of qualitative data. These include (i) credibility, (ii) transferability, (iii) dependability, and (iv) confirmability as explained below;

4.15.5.1 Credibility

Credibility relates to the research's focus and is the degree of confidence in the data's ability to address the intended focus (Elo et al. 2014). Triangulation (Miles and Huberman, 2014) and extended engagement (Denzin and Lincoln 2005) were used to accomplish this. Respondents were attentive for a considerable amount of time (30–60 minutes) throughout interviews, asking for additional clarification whenever a topic was covered. The respondents had the freedom to voice their opinions whenever it deemed fit. In order to guarantee the validity of the results, triangulation of data collection and member techniques were used.

4.15.5.2 Transferability

Transferability in positivistic studies refers to the potential for results to be extended or applied to different situations and contexts (Drisko 2025) . Transferability is the capacity to apply conclusions from one study to different individuals, situations, and times. This is a critical evaluation of how well a study's conclusions can be applied in a different context. A wider range of experiences were made possible by the diverse participant pool (several executive mangers), and in order to assess whether the results would be applicable in other contexts, we gave thorough explanations of the research setting on innovative work behavior in public universities. This implies that the inquiry's transferability is facilitated when the researcher gives a thorough explanation of the study and the participants were chosen with purpose (Anney 2014).

4.15.5.3 Dependability

This phrase describes the consistency of study findings over time and across many investigations. In order to accomplish this, we made careful adherence to an established audit trail, which included keeping all transcripts, notes, audiotapes, and notes up to date. Additionally, we made sure that a continuous audit was conducted with our supervisors (Creswell, 2003), who consistently provided feedback on the data presentation, analysis, and methodology.

4.15.5.4 Confirmability

The degree to which an investigation's findings could be verified or corroborated by additional researchers is known as confirmability. An audit trial and triangulation (Guba, & Lincoln 1998). were used in this study to show observable evidence from the procedure and outcomes/findings.

Confirmability is the process of demonstrating that data and interpretations of the results are unmistakably drawn from the data and are not products of the inquirer's imagination (Anney 2014).

4.16.7 Qualitative Data Analysis

The Gioia methodology of data analysis was used to examine qualitative data (Gioia and Hamilton 2012)**.** In accordance with this methodology, the study used a three-stage coding process that blends deductive and inductive techniques supported by a prior knowledge of innovative work behavior and its manifestations. Coding (first order coding) of the pertinent ideas from empirical data was the initial step. The "raw" thoughts that were found at this point were broad because they came from the interviews. The first-stage thoughts were refined, clarified, and organized into what we called second-order themes during the second coding step. The emergent second-order themes were further combined in the third stage to create the aggregated dimension of constructs under study.

4.17 Ethical Considerations:

The Principles of Research Ethics (Nazmul, 2021) outline the ideals and beliefs of the research community. Protecting study participants' rights and dignity requires adherence to ethical standards. For a scientific study to be deemed ethical, it must adhere to five basic ethical principles: reducing the risk of harm to participants, obtaining informed consent from identified participants, protecting participants' anonymity and confidentiality, refraining from deceptive practices, and allowing participants to withdraw from the study at any time, (Rana 2020). The University's Research Ethics Committee granted ethical approval to the lead investigator for this study (see appendix 4). This study used the following ethical considerations:

4.17.1 Informed Consent.

The "Informed" and "consent" are the two key components of the phrase, and each one needs careful thought. According to Fleming & Zegwaard, (2018), participants must be thoroughly informed about the questions they will be asked, the purpose of the data, and any potential repercussions. All individuals in the current investigation were requested to participate willingly, and informed consent was obtained. All participants received a consent letter (**Appendix 6**) outlining the primary goal and objectives of the study to sign. Prior to conducting their interviews, the executives' signed consent was obtained (**Appendix 7**).

4.17.2 Risk of Harm, Anonymity and Confidentiality

Researchers should do everything in their power to safeguard data privacy and research participants' anonymity (Hadjer et al., 2023). Confidentiality and anonymity are crucial measures in shielding people from any damage. One of the ethical tenets of qualitative research is the preservation of participant confidentiality and anonymity (Fleming and Zegwaard 2018). All participants in the current study were de-identified at every stage of the research procedure in order to preserve confidentiality and anonymity. Every participant in the interviews was deidentified using pseudonyms, and every effort was made to guarantee that no participant could be identified in the report by an excerpt from an interview or a description of a situation.

4.15.3 Minimizing Time Burdens

During the data gathering process, it was crucial to keep the research participants' burdens to a minimum. To inform them of the schedule, the academic staff was called. For them, this was seen to be the most practical configuration. During office hours at the university, interviews were conducted with executives. Only the questions that participants felt comfortable answering had to

be answered. The executives who volunteered for the focus groups were called to set up a time that worked for them before they left. Participants were not asked to commit to anything other than the time allocated for interview.

CHAPTER FIVE

PRESENTATION AND INTERPRETATION OF FINDINGS

5.0 Introduction

This chapter provides analysis of the data gathered based on the study objectives and hypotheses mentioned in section 1.5 of this thesis's first chapter. To test the formulated hypotheses, this chapter covers the CFA and SEM procedures.

5.1 Sample profile

In this IWB study in Uganda's public universities, the sample's characteristics and nature had to be established before looking at the connections between the study variables. Consequently, Table 5.1 shows the distribution of the questionnaire, while Table 5.2 below details the respondents' demographic profile, which includes gender, age, job experience, educational background, and name of position.

5.2 Response Rate

A total of 357 academic staff members were chosen to participate in the study from among the ten public universities in Uganda: Mountains of the Moon University, Makerere University, Kyambogo University, Mbarara University, Gulu University, Busitema University, Muni University, Lira University, Kabale University, and Soroti University. Of these, only 313 completed and returned the questionnaires, with five being excluded for incomplete responses, as these cases didn't accurately reflect the sample (Hair et al., 2010). Consequently, the study comprised of 308 respondents, signifying an 86.2% response rate. A least sample size of 200 is suggested by Chomeya et al., (2024) for models with seven or fewer components. Based on this assertion and the fact that structural equation modeling employs sizable/large samples (Tabachnick

& Fidell, 2007) led to the conclusion that this sample was sufficient and thus suitable for the research.

Table 5.1: ***Questionnaire Distribution***

Item	Frequency	Percentage
Distributed questionnaire	357	100%
Returned questionnaire	313	87.7%
Rejected questionnaire	5	1.4%
Usable questionnaire	308	86.3%

5.3 Quantitative Sample Characteristics

It was crucial to comprehend the traits of the participants in this investigation. The features of the public universities (unit of analysis) and academic staff as respondents (unit of inquiry) that supplied the useful data, which was subsequently utilized to carry out the analysis to test the study hypotheses, are presented in this section.

Table 5.2: Demographic Characteristics of the Respondents

Description	Frequency	Percentage
Gender		
Male	207	67.3
Female	101	32.7
Total	**308**	**100%**
Staff Title		
Teaching Assistant	29	9.40
Assistant Lecturer	67	22.0
Lecturer	98	32.0
Senior Lecturer	77	25.0
Associate Professor	22	7.10

Professor	15	4.57
Total	**308**	**100%**
Academic Qualification		
Bachelor's Degree	39	13.0
Master's Degree	98	31.0
PhD	171	56.0
Total	**308**	**100%**
Age in Years		
20 – 29	22	7.14
30 – 39	101	32.7
40 – 49	124	40.2
50 – 59	45	14.7
More than 60	16	5.19
Total	**308**	**100%**
Work Experience (Years)		
1-5	38	12.3
6 – 10	106	34.4
11 – 15	91	29.5
16 – 20	44	14.3
More than 20	29	9.5
Total	**308**	**100%**

Table 5.2 shows that the most of respondents were males (67.3%), while the females constituted (32.7%). Given that the responses were distributed unevenly by gender, this suggests that the males in this study were slightly more receptive than the females. Table 5.2 above shows that 56% of respondents had a PhD, while 31% had a master's degree and 13% had a bachelor's degree respectively. Moreover, as can be seen from Table 5.2, the majority of respondents (40.2%), were within the age bracket of 40-49; followed by 32.7% in the category of 30 – 39. Those in the age range of 50-59 made up a percentage of 14.7%. Twenty-two (22) respondents,

constituting 7.14%, were in the age category of 20-29 and sixteen (16) participants constituting 5.19% were in the category of more than 60. This indicates that young and dynamic people (30–39; 40-49) make up the majority of academic staff engaged in innovation within public universities. The majority of respondents—106 in all, or 34.4%—had between six and ten years of job experience. 91 responses (29.5%) with 11–15 years of work experience came next. Additionally, 44 (14.3%) fell into the 16–20-year experience category. 29 respondents (9.5%) reported having more than 20 years of job experience, compared to 38 (12.3%) who had 1–5 years of experience.

5.4 Descriptive Statistics

The observed data was summarized using the means and standard deviations. This was due to the fact that while the means offer a summary of the data, standard deviations demonstrate how well the means represent the data (Field, 2009). Finding out if the statistical means provided a fair match for the observed data was the primary goal of the descriptive statistics (Field, 2005, 2009). A summary of the means, standard deviations, variances, and standard errors for each of the study constructs is presented (**table 5.3 below**).

Table 5.3: Means and Standard Deviations

Construct	Minimum	Maximum	Mean	Std Error	Std Dev
Perceived Organizational Support	1.44	5.00	3.6290	0.061	.73073
Servant Leadership	2.27	5.00	3.7974	0.064	.57111
Organizational Culture	2.27	5.00	3.8852	0.066	.55902
Psychological empowerment	2.93	5.00	4.0907	0.064	.42603
Innovative Work behavior	2.24	5.00	4.0718	0.022	.43896

The mean scores of the constructs under investigation (servant leadership, perceived organizational support, psychological empowerment, organizational culture, and IWB) range from 3.6290 to 4.0907 on a five-point Likert scale, with standard deviations falling between 0.42603 and 0.73073, as shown in table 5.3 above. standard deviations relative to the mean are displayed in these statistics. According to Field (2009), data points that have standard deviations (relative to the value of the mean) are close to the means. As a result, the calculated means represent the observed data. As a result, the calculated means faithfully capture reality. Examining the standard error, which shows how representative a sample is likely to be of the population, is also informative (Field, 2009). The standard error values are relatively small, indicating that the sample used in this study was probably a good representation of the population. Consequently, it may be concluded that the study sample accurately represents the population (Field, 2009).

5.5 Data Entry and Statistical Analysis

Several statistical tests and data screening were part of the data analysis stage. More precisely, data screening and preliminary analysis were conducted using SPSS version 19. The study objectives were addressed using Pearson correlation, which demonstrated the direction link between study variables, while study hypotheses were investigated using Structural Equation Modelling (SEM) and Analysis of Moments of Structures (AMOS) Version 21.

5.6 Results of Bivariate Correlations

We started our data analysis process with zero-order correlation analysis. We were able to ascertain the degree and direction of the correlation between the variables (POS, SL, OC, and PE with IWB) by means of this process. The correlation data are summarized in Table 5.4 below,

which demonstrates that all research variables had a positive and significant link with IWB. This compelling preliminary research lays the groundwork for a more in-depth examination of these correlations (hypotheses testing). Table 5.4 displays a statistical analysis of the variables included in this investigation.

Table 5.4 Correlations Results

	Mean	**SD**	**1**	**2**	**3**	**4**	**5**
Perceived Organizational Support (1)	3.6290	0.730	1				
Servant Leadership (2)	3.7974	0.571	.117*	1			
Organizational Culture (3)	3.8852	0.559	.009	.032	1		
Psychological empowerment (4)	4.0907	0.426	.209**	.518**	.064	1	
Innovative Work Behavior (5)	4.0718	0.438	.444**	.505**	.348**	.383**	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

The mean scores range from 3.6290 to 4.0907, and the standard deviations range from 0.426 to 0.730, suggesting that the participating public universities have elements of psychological empowerment, organizational culture, servant leadership, POS, and IWB. The nearer to zero standard deviation values imply that the respondents most likely have a similar comprehension of the study variables and that our study sample fairly represents the general population.

Our key variables—Perceived Organizational Support, Servant Leadership, Organizational Culture, Psychological Empowerment, and Innovative Work Behavior—have substantial, positive, and strong relationships with one another, as Table 5.4 demonstrates. For instance, POS and IWB have a substantial positive correlation ($r = .444$, $P < 0.01$), indicating that POS strengthening is likely to encourage creative work practices. Additionally, there is a positive association ($r = .505$,

p<0.01) between innovative work behavior and servant leadership, suggesting that advances in innovative work behavior can be a consequence of improvements in servant leadership development.

Furthermore, our results demonstrate positive and significant correlations between IWB and OC (r =.348, P<0.01), PE and IWB (r =.383, P<0.01), POS and servant leadership (r =.117, P<0.05). According to these results, strengthening organizational culture, psychological empowerment may encourage innovative work behavior, just as changes in perceived organization support might stimulate improvements in IWB. Furthermore, our data reveals positive associations between POS and psychological empowerment (r =.209, P<0.01) which means that positive changes in perceived organization support bring about corresponding changes in psychological empowerment. Finally, a positive significant relationship between SL and PE was established (r =.518, P<0.01), implying that progress in servant leadership breeds psychologically empowered academic staff. In light of these noteworthy and significant associations, the data provides a strong basis for testing our hypotheses through the use of SEM, as discussed in the subsequent section.

5.7 An overview of Structural Equation Modelling (SEM)

Hair et al. (2010) states that SEM is a second-generation modelling technique that assesses validity, reliability, and correlations between variables simultaneously. It offers both individual parameters estimate tests, and a composite test of the model fit. The same statistical assumptions that apply to multivariate analysis also apply to SEM. Furthermore, a sufficient sample size is crucial for SEM because covariance and correlations are less stable when computed from small samples (Hair et al., 2010). All of the statistical assumptions were supported in this respect, based

on the performed diagnostic parametric tests. Additionally, a sample size of three hundred and eight (308) was judged sufficient and suitable for SEM.

As a data analysis technique, the two-stage SEM process proposed by Anderson & Gerbing, (1988) was employed. In step one, a measurement model was estimated using CFA, and in stage two, the structural model utilized to evaluate the study hypotheses was calculated. The first phase in the SEM technique is model formulation, which links the variables that are believed to affect one another (Kline 2005). Statistics were evaluated during the estimation process to ascertain whether the proposed model suited the data and whether any modifications were required to enhance the model fit. There is no clear consensus on which fit indices should be reported. Certain fit indices may be sample size dependent, while others may not (Hu & Bentler, 1999).

Fit indices that are unaffected by sample size include the Tucker Lewis Index (TLI), the Standardized Root Mean Residual (SRMR), the Incremental Fit Index (IFI), and the Comparative Fit Index (CFI) (Hu and Bentler, 1995). Sample size (S-Z) sensitive tests include the Chi-square test ($\chi 2$) and the Root Mean Square Error of Approximation (RMSEA). Therefore, while providing the fit statistics or indices, the sample size should be considered. Researchers such as Kenny & McCoach, (2003) highlight TLI, CFI, and RMSEA as popular fit indices and contend that there is no universal criterion for assessing a suitable model. However, scholars such as Hair et al. (2010), and Smith, (2006) advise using a subset of fit indices drawn from the three main categories (incremental, absolute, and parsimonious indices). The goal is to determine the best model fit while reflecting a variety of factors. In light of these revelations, a subset of fit indices from the three main fit categories were used in this investigation.

Under the heading of absolute fit indices, the Goodness-of-fit index (GFI) and RMSEA were examined in this investigation. The GFI index displays the total amount of variance and

covariance that the model can explain. .90 is the standard accept/reject rule. The RMSEA is used to adjust for chi-square's propensity to reject particular models. It relaxes the rigorous requirement that the model holds exactly in the population by taking population approximation mistakes into account. A value below.05 is the desired RMSEA, even if a value between.05 and.08 is often acceptable (Hair et al., 2010). The second set of model fit statistics consists of the incremental fit indices. By using these measures, it is possible to compare the suggested model to a few baselines model fit criteria. The Tucker Lewis Index (TLI), the Comparative Fit Index (CFI), and the Incremental Fit Index (IFI) were selected for this category. The acceptance/rejection rule for a good fit is .90; a value above .95 is advised for a very good fit. The parsimonious fit indices are included in the third group. This category tests the proposed model's parsimony by evaluating how well the model fits the number of estimated coefficients required to achieve the degree of fit. The normed chi-square statistic ($\chi 2$) was taken into consideration in order to confirm the data fit in this category.

Despite the fact that the $\chi 2$ has been criticized for being overly sensitive to sample size (Jöreskog & Sörbom, 1996) and model complexity (Hair et al., 2010), it is still regarded as a fundamental metric for assessing model fit. According to Kenny and McCoach (2003), the larger the $\chi 2$ that is more likely to reject the given model, the more complex the model. Similar findings were reported by Gulliksen & Tukey, (1958). Given these issues, some academics have favored the use of normed $\chi 2$, which is calculated by dividing $\chi 2$ by the number of degrees of freedom. This yields a $\chi 2$ measure for each degree of freedom together with an index of model parsimony (Holmes-Smith et al., 2005).

From less than 2.0 (Bollen, 1989; Hair et al., 2010), less than 3.0 (Carmines & McIver, 1981), to more lenient limitations of less than 5.0 (Wheaton et al., 1977), a number of academics

have established different limits for the normed χ2value. This measure is particularly sensitive to sample size because χ2 is the main factor utilized to compute the normed χ2. Therefore, this score was used as a measure of the overall model fit rather than as a criterion for accepting or rejecting the model in this investigation. Table 5.5 shows the fit indices and the cutoff criteria for evaluating model fit in this study, taking sample sensitivity and model complexity into consideration.

Table 5.5: Summary of fit indices utilized in this study

Fit Statistics	Acceptable Level/Decision criteria	Comments
Absolute fit indices		
GFI	.90 or higher	Values near 1 signify an excellent fit.
RMSEA	.05 -.08	Value less than .50 is considered Acceptable
Incremental fit indices		
NFI	.90 or higher	Values near 1 signify an excellent fit.
TLI	.90 or higher	Values near 1 signify an excellent fit.
CFI	.90 or higher	Values near 1 signify an excellent fit.
Parsimonious fit indices		
CMIN/df	$1.0 \leq \chi 2/df \leq 5$	The upper limit is 3.0 or as high as 5, and the lower limit is 1.0.

5.8 Confirmatory Factor Analysis

To ascertain whether the operationalization of a construct actually measures what theory purports to measure, construct validity was examined using AMOS V.21 and confirmatory factor analysis (Sarantakos, 2005). This first stage established distinct measuring models for organizational culture (OC), psychological empowerment (PE), perceived organizational support (POS), servant leadership (SL), and innovative work behavior (IWB). Convergent and discriminant validity tests, which demonstrate item homogeneity within a single construct and heterogeneity between distinct constructs, respectively, were used to analyze construct validity.

Following the guidelines provided by Hair et al. (2010), three parameters were taken into consideration in order to test convergent validity. First, the final parts must be substantially loaded on one factor, have a factor loading of .50 or above, and be statistically significant. Second, an average variance extracted (AVE) of .50 or higher for the latent construct indicates acceptable item convergence. Thirdly, construct reliability should be at least .70, but reliability between .60 and .70 is acceptable if there are additional strong signs of the model's construct validity. In general, the reliability of individual items was assessed by looking at the outer loadings of each construct's measure (Hair et al., 2014; Hair et al., 2012). In keeping with this, Hair et al. (2011) suggests that indicator loadings must be more than 0.70. Based on the above arguments, a cut-off value of 0.70 for factor loadings was used in this investigation.

In situations when the guidelines' requirements were not fulfilled, adjustments were made. Prior to examining the normalized residual (standardized residuals), and modification indices, the factor loadings were examined. The model's specification error is indicated by residuals more than ± 2.58, while a modification index value greater than 3.84 indicates that the chi-square would be greatly lowered when the associated parameter is estimated (Hair et al., 2010). Nonetheless, the assessment of the measurement model is grounded in both theoretical rationale and statistical principles (Kline, 2010). This suggests that the ultimate objective is to identify a model that fits the data and theory both statistically and substantively (Jöreskog, 1993). 'The researcher should thus, guard against making changes solely based on data-driven grounds in an attempt to generate a model that adequately fits the data,' as stated explicitly by Holmes-Smith et al. (2005, p. 15). The following below are the results of the convergent, and discriminant validity analysis.

5.8.1 CFA- Measurement model for Perceived Organizational Support (POS)

With an NFI of 0.963, the Perceived Organizational Support (POS) Measurement Model exhibits strong convergent validity in Figure 15 and Table 5.6 below. With a p-value of 0.240, degrees of freedom/df (27), and a $\chi 2$ statistic of 31.778, the model fit the data well and was not significant at the 0.05 level. Other fit indices including RMSEA (0.031), TLI (0.977), CFI (0.987), GFI (0.971), and AGFI (0.952) also confirmed this. According to Fornell and Larcker (1981), a measure of discriminant validity should have an average variance explained (AVE) of 0.5 or above (Cheung et al., 2023; Surucu & Maslakci, 2020). This specific study's AVE is 0.68. There is evidence of a link between POS and its corresponding constructs and item components when the observed factor loadings are compared to their standard errors (Hair et al., 2010). Multiple regression analysis was used to evaluate item reliability (R2). For all the eight (8) items retained for POS, each had a regression weight (R^2), a value greater than 0.5, which indicated satisfactory reliability for each item (Kline, 2005). As a result, save for POS1, every item served as a reliable component for POS. The POS composite reliability is .78, which is above (.70) that DeVellis (2003) and Nunnally, (1978) consider to be an acceptable level. (see Appendix-2 for detailed Table 5.6)

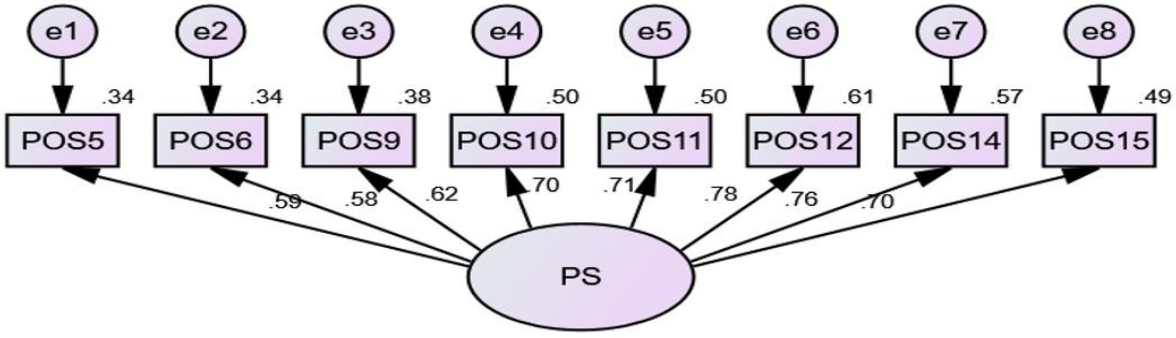


Fig.5.1: Confirmatory Factor Analysis for perceived organization support

Goodness of Fit Indices
$\chi 2 = 31.778$; p -value = 0.240, d/f = 27; RMSEA (0.031); TLI (.977); IFI (.983); CFI (.987); NFI (0.963); GFI (0.971); AGFI (0.952) and AVE = 0.51; Key: PS- Perceived Organizational support.

Table 5.6: CFA for perceived organizational support

Measurement Item	Standardized regression estimates (*R2*)	*Composite Reliability (CR)*	*AVE*	*P-Value*
POS5	.59	.78	.68	***
POS6	.58			***
POS9	.62			***
POS10	.70			***
POS11	.71			***
POS12	.78			***
POS14	.76			***
POS15	.70			***

5.8.2 CFA- Measurement model for Servant Leadership (SL)

Conceptual skills, empowerment, subordinate growth and success, prioritizing subordinates, ethical behavior, emotional healing, and generating value for the community are the seven different variables that were used to measure servant leadership. We conducted CFA for Servant leadership to see how well the model matches the data (Ahadi and Suandi 2014). During the model modification phase, twenty (20) of the thirty-seven (37) components that did not fit the accepted criteria were eliminated iteratively. The number of eliminated items had no discernible impact on the content of the construct as originally conceived or conceptualized because the retained items had the highest factor loadings and the meaning of the factors was therefore preserved. The final model's results demonstrated the model's validity with appropriate and

outstanding model fit statistics for this SL construct measure. The variable's composite reliability is.81, which is within an acceptable range (Nunnally, 1978). Additional convergent validity assumptions were also satisfied.

Strong convergent validity is indicated by the servant leadership (SL) Measurement Model's NFI of 0.952 in Fig.16 below. With a p-value of 0.928, degrees of freedom/df (104), and a $\chi 2$ statistic of 83.755, the model fit the data well and was not significant at the 0.05 level. Other fit indices including RMSEA (0.000), TLI (1.000), CFI (1.000), GFI (0.970), and AGFI (0.955) also supported this. According to Fornell and Larcker (1981), a measure of discriminant validity should have an average variance explained (AVE) of 0.5 or above (Cheung et al., 2023; Surucu & Maslakci, 2020). The AVE for this particular study is 0.64. There is proof that SL and its corresponding constructs and item factors are related when the observed factor loadings are compared to their standard errors (Hair et al., 2010).

Finally, item reliability (R2) was assessed using multiple regression analysis. For all the seventeen (17) items retained for SL, each had a regression weight (R^2), a value higher than 0.5, which demonstrated satisfactory reliability for each item (Kline, 2005). As a result, every item served as a reliable component for SL. Overall, the reported fit indices reveal that, as seen in Fig.5.2 and Table 5.7 below, a good measurement model fit for SL was acceptable and deemed satisfactory. (see Appendix-2 for detailed Table 5.7).

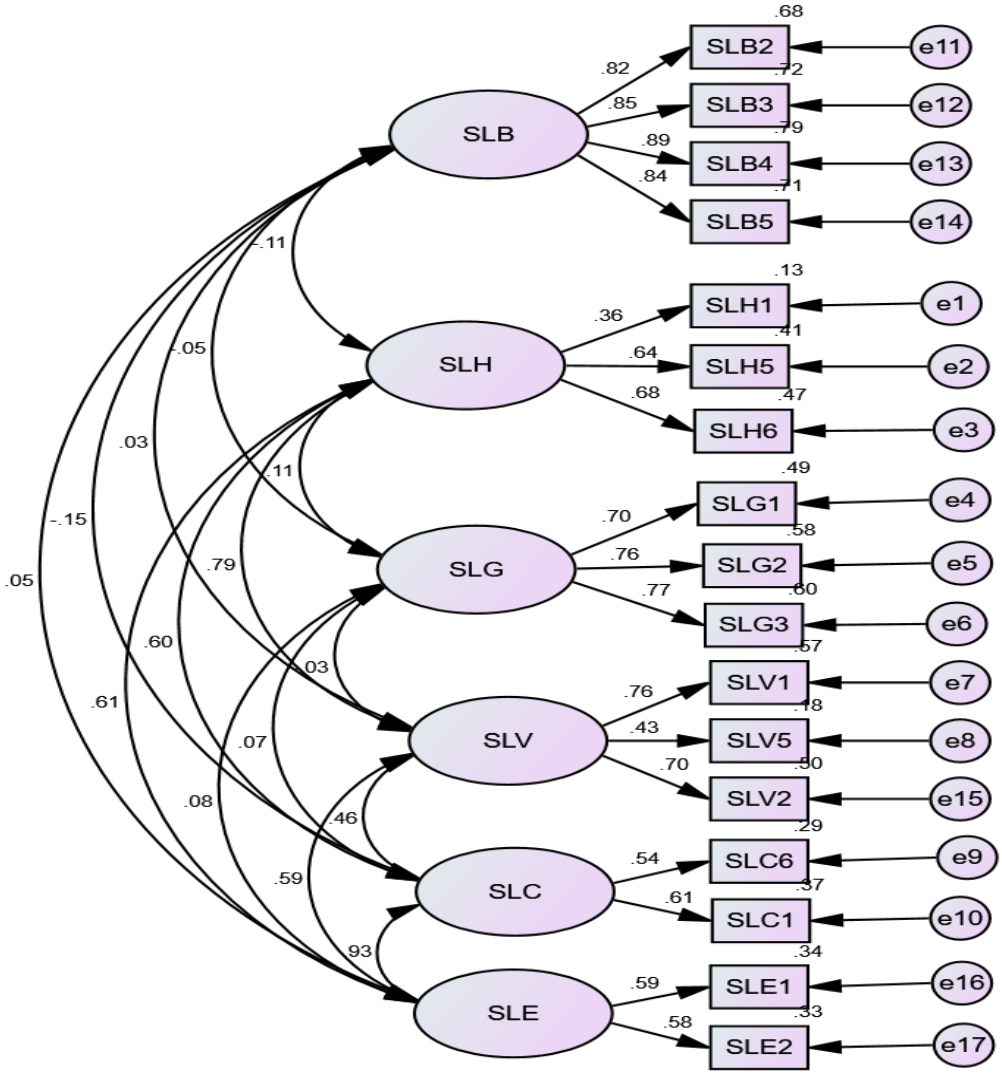


Fig.5.2: Confirmatory Factor Analysis for Servant Leadership

Goodness of Fit Indices

$\chi 2 = 83.755$; p -value = 0.928, d/f = 104; RMSEA (0.000); TLI (1.000); IFI (0.998); CFI (1.000); NFI (0.952); GFI (0.970) and AGFI (0.955); Key: SLG- subordinates' growth and success; SLC- conceptual skills; SLE-empowering; SLB- ethical behavior; SLH- emotional healing; SLV- creating value for the community.

Table 5.7: CFA for servant leadership

Measurement Item	Standardized regression estimates (*R2*)	*Composite Reliability (CR)*	*AVE*	*P-Value*
SLV1	.76	**.81**	**.64**	***
SLV2	.53			***
SLV5	.70			***
SLB2	.82			***
SLB3	.85			***
SLB4	.89			***
SLB5	.84			***
SLH1	.47			***
SLH5	.64			***
SLH6	.68			***
SLE1	.59			***
SLE2	.58			***
SLC1	.61			***
SLC6	.54			***
SLG1	.70			***
SLG2	.76			***
SLG3	.77			***

5.8.3 CFA- Measurement model for Organizational Culture (OC)

Organizational culture was measured using four different factors (adaptability, involvement, mission, and consistence). We conducted CFA for OC to establish how the model matches the data (Ahadi and Suandi 2014). During the model modification phase, seventeen (17) of the thirty-seven (37) components that did not fit the accepted criteria were eliminated iteratively. The amount of eliminated items had no discernible impact on the content of the construct as originally conceived because the items that were kept had the highest factor loadings and the significance of the factors was therefore preserved. The final model's results showed that it was valid, with robust and adequate model fit statistics for this measure of the OC construct. The variable's composite reliability is. 85, which is within an acceptable range of .70 (Nunnally, 1978).

Other assumptions of convergent validity were also met. Strong convergent validity is indicated by the OC Measurement Model's NFI of 0.969, which is displayed in Table 5.8 and Fig. 17 below. With a p-value of 0.901 and degrees of freedom/df (29), the $\chi 2$ statistic of 19.746 was not significant at the 0.05 level, indicating that the model matched the data well. Other fit indices, including RMSEA (0.000), TLI (1.024), CFI (1.000), GFI (0.987), and AGFI (0.976), further supported this. The average variance explained (AVE), a metric for discriminant validity, should be 0.5 and above, (Fornell and Larcker, 1981; Cheung et al., 2023; Surucu & Maslakci, 2020). In this particular study, the AVE is 0.69 (Table 5.8).

There is proof that OC is associated with its corresponding constructs and item factors when the observed factor loadings are compared to their standard errors (Hair et al., 2010). To assess item reliability, multiple regression analysis was employed (R2). The regression weight (R2) for each of the ten (10) items retained for OC were greater than 0.5, indicating that each item had excellent reliability (Kline, 2005). Consequently, every item served as a reliable component for OC. Overall, the reported fit indices reveal that, as seen in Fig.5.3, Table 5.8. below, a good measurement model fit for OC was acceptable and considered satisfactory. (see Appendix-2 for detailed Table 5.8).

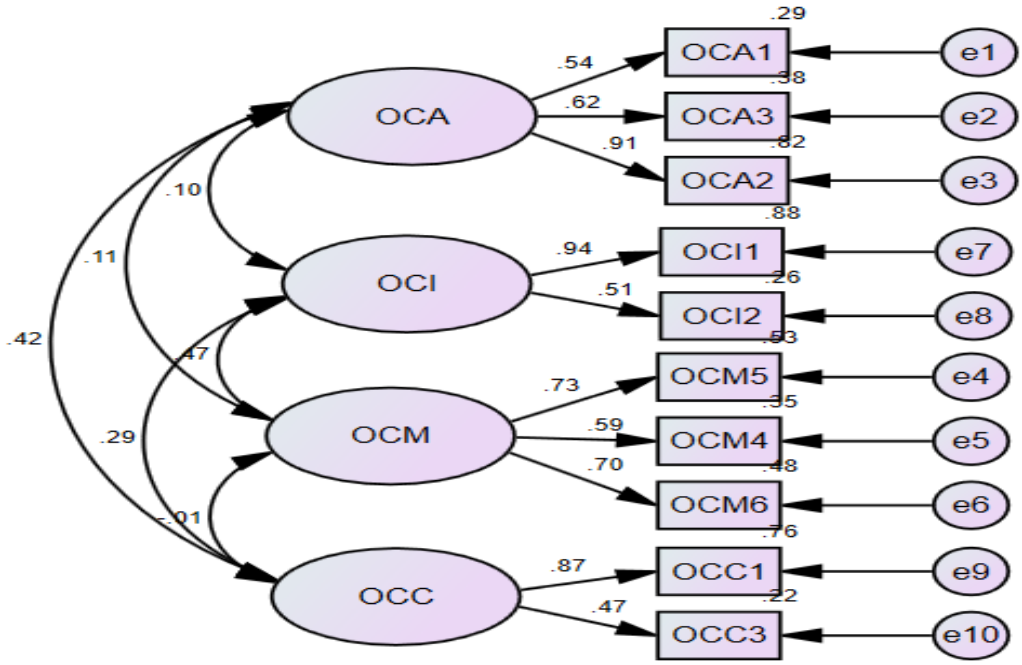


Fig 5.3. Confirmatory Factor Analysis for Organizational Culture

Goodness of Fit Indices

$\chi 2$ = 19.746; p -value = 0.901, d/f = 29; RMSEA (0.000); TLI (1.024); IFI (1.000); CFI (1.000); NFI (0.969); GFI (0.987) and AGFI (0.976) Key: OCC-consistence; OCI- involvement; OCM-mission; OCA- adaptability.

Table 5.8: CFA for organizational culture

Measurement Item	Standardized regression estimates (*R2*)	*Composite Reliability (CR)*	*AVE*	*P-Value*
OCA1	.54	**.85**	**.69**	***
OCA2	.91			***
OCA3	.62			***
OCI1	.94			***
OCI2	.51			***
OCM4	.59			***
OCM5	.73			***
OCM6	.70			***
OCC1	.87			***
OCC3	.47			***

5.8.4 CFA- Measurement model for Psychological Empowerment (PE)

Four different components—meaning, competence, self-determination, and impact—were used to quantify psychological empowerment. We conducted CFA for PE to assess the model's fit to the data (Ahadi & Suandi, 2014). Fourteen (14) of the twenty-four (24) items that did not meet the approved criteria were iteratively weeded out during the model modification process. Since the retained items had the highest factor loadings and the meaning of the factors was thus maintained, the number of deleted items had no considerable effect on the construct's content as originally conceived. The final model's results indicated the model's validity with acceptable and robust model fit statistics for this PE construct measure. The variable's composite reliability is .83, which meets the suggested threshold of .70 (Nunnally, 1978). Additional convergent validity assumptions were also satisfied. The PE Measurement Model in Fig.**16** and Strong convergent validity is indicated by an NFI of 0.954, as seen in Table 5.9 below. With a p-value of 0. 629, degrees of freedom/df (29), and a $\chi 2$ statistic of 2.940 that is insignificant at the 0.05 level, the model seems to have fit the data well.

This was further corroborated by the fit indices of RMSEA (0.000), TLI (1.009), CFI (1.000), GFI (0.984), and AGFI (0.969). According to Fornell and Larcker (1981), the AVE, a metric for discriminant validity, ought to be 0.5 and higher (Cheung et al., 2023; Surucu & Maslakci, 2020; Lim, 2024). For this specific investigation, the AVE is 0.64. Comparing the observed factor loadings with their standard errors provides evidence of a relationship between PE and the constructs and item factors that correspond to it (Hair et al., 2010, 2016). Multiple regression analysis was used to evaluate item reliability (R2). The reliability of each of the ten (10) items that were retained for PE was good, as indicated by their regression weights (R2) being better than 0.5 (Kline, 2005). Consequently, each item functioned as a dependable PE component.

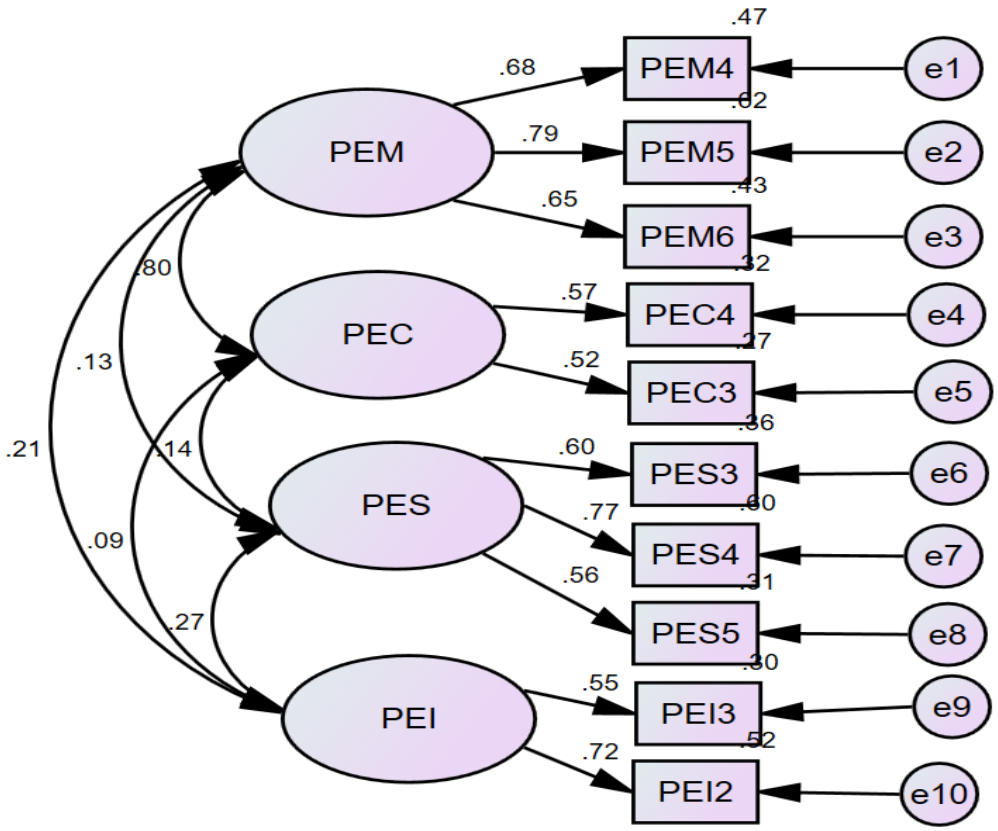


Fig 5.4. Confirmatory Factor Analysis for Psychological Empowerment

Goodness of Fit Indices

$\chi 2$ = 25.940; p -value = 0.629, d/f = 29; RMSEA (0.000); TLI (1.009); IFI (1.001); CFI (1.000); NFI (0.954); GFI (0.984) and AGFI (0.969) Key: PEM- meaning; PES- self-determination; PEC-competence; PEI-impact

Overall, the reported fit indices reveal that, as seen in Fig 5.4. above, a good measurement model fit for PE was acceptable and considered satisfactory. (see Appendix-1 for detailed Table 5.9).

Table 5.9: CFA for psychological empowerment

Measurement Item	Standardized regression estimates (*R2*)	*Composite Reliability (CR)*	*AVE*	*P-Value*
PEM4	.68	.83	.64	***
PEM5	.79			***
PEM6	.65			***
PEC3	.57			***
PEC4	.52			***
PES3	.60			***
PES4	.77			***
PES5	.56			***
PEI2	.55			***
PEI3	.72			***

5.8.5 CFA- Measurement model for Innovative Work Behavior (IWB)

Five different criteria were used to quantify IWB: opportunity exploration, idea generation, idea promotion, idea realization, and idea sustainability. CFA for IWB was conducted to assess the model's fit to the data (Ahadi & Suandi, 2014). The model update method successively eliminated 18 of the 35 components that did not fit the predetermined criteria. Since the factors' meaning was preserved and the retained items had the highest factor loadings, the number of eliminated items had no discernible impact on the construct's content as originally conceived. The final model's results indicated the model's validity with acceptable and strong model fit statistics for this IWB construct measure. The variable's composite reliability is .86 (Table 5.10), which is within an acceptable range (Nunnally, 1978). Other convergent validity assumptions were similarly satisfied.

Fig.5.5 below displays the IWB Measurement Model with an NFI of 0.952, indicating strong convergent validity. With degrees of freedom/df (109) and a p-value of 0. 579, the $\chi 2$ statistic of 105.445 was not significant at the 0.05 level, indicating that the model matched the data well. The following fit indices: RMSEA (0.000), TLI (.992), CFI (1.000), GFI (0.961), and AGFI (0.946) provided additional evidence for that conclusion. Fornell and Larcker (1981) suggest that, the AVE, a measure for discriminant validity should be 0.5 and above (Cheung et al., 2023; Surucu & Maslakci, 2020; Lim, 2024). In this present study, the AVE is 0.61 (Table 5.10).

There is proof that IWB and its corresponding constructs and item factors are related when the observed factor loadings are compared to their standard errors (Hair et al., 2010). To assess item reliability, multiple regression analysis was employed (R2). Regression weights (R2) more than 0.5 were found for all seventeen (17) items retained for IWB, indicating excellent reliability for each item (Kline, 2005). Therefore, every item served as a reliable component for IWB. Generally, the reported fit indices tell that, as seen in Fig.5.5 below, a good measurement model fit for IWB was acceptable and considered satisfactory. (see Appendix-2 for detailed Table 5.10).

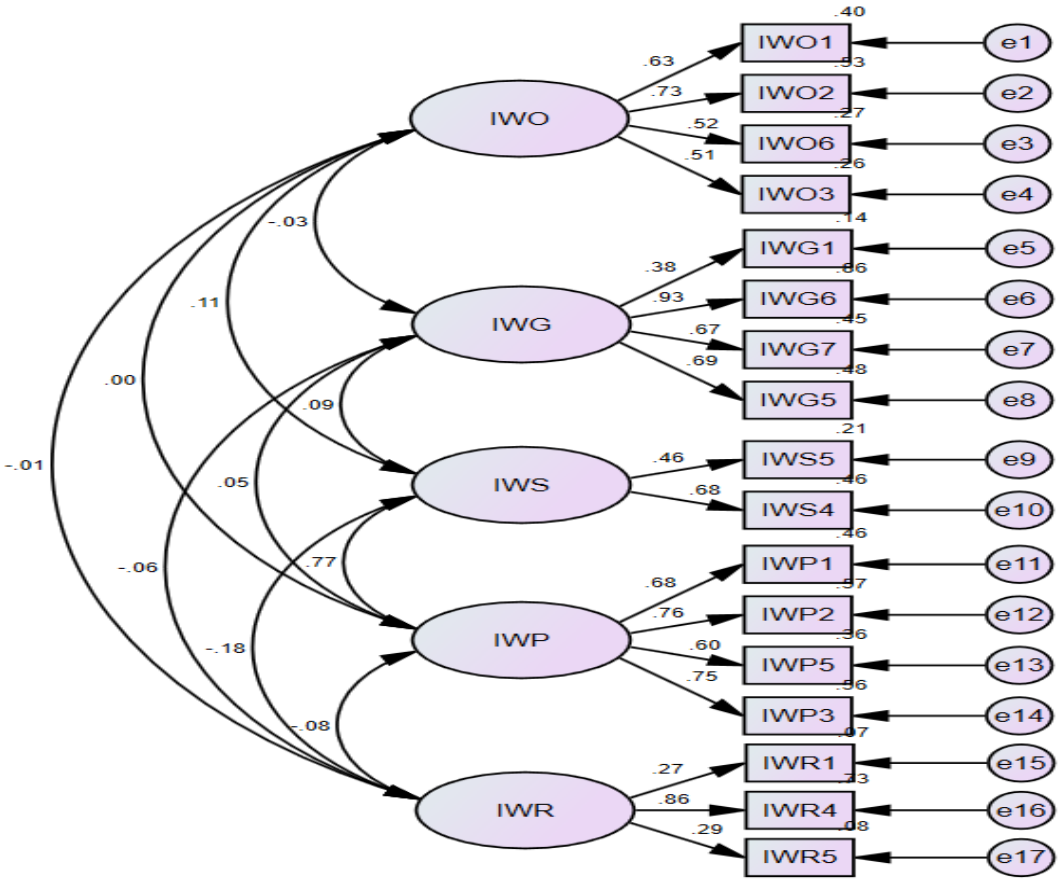


Fig 5.5. Confirmatory Factor Analysis for Innovative Work Behavior

Goodness of Fit Indices

$\chi 2$ = 105.445; p -value = 0.579, d/f = 109; RMSEA (0.000); TLI (.992); IFI (1.000); CFI (1.000); NFI (0.952); GFI (0.961) and AGFI (0.946); Key: IWR-idea realization; IWG- idea generation; IWS- idea sustainability; IWP-idea promotion; IWP-idea promotion.

Table 5.10: CFA for innovative work behavior

Measurement Item	Standardized regression estimates (*R2*)	*Composite Reliability (CR)*	*AVE*	*P-Value*
IWO1	.63	.86	.61	***
IWO2	.73			***
IWO3	.51			***
IWO6	.52			***
IWG1	.52			***
IWG5	.69			***
IWG6	.93			***
IWG7	.67			***
IWS4	.68			***
IWS5	.46			**
IWS7	.46			**
IWP1	.67			***
IWP2	.76			***
IWP3	.60			***
IWP5	.75			***
IWR1	.45			**
IWR4	.86			***
IWR5	.49			**

Source: Primary data

5.9 Estimation of the Structural model and hypotheses testing

After fitting the measurement models for perceived organizational support, servant leadership, organizational culture, psychological empowerment and innovative work behavior, it was imperative to estimate a structural model to aid hypotheses testing process. The findings from testing the hypotheses listed in Table 5.11 below are accordingly covered in this section.

Table 5.11: Study hypotheses

Hypotheses	Statements	Hypothesized Path	Accept/Reject
H_1:	Perceived organizational support has a positive and significant relationship with innovative work behavior.	POS→IWB	*Accept*
H_2:	Servant leadership has a positive and significant effect on innovative work behavior.	SL→IWB	*Accept*
H_3:	Organizational culture has a positive and significant impact on innovative work behavior.	OC→IWB	*Accept*
H_4:	Perceived organizational support has a positive and significant impact on psychological empowerment.	POS→PE	*Accept*
H_5:	Servant leadership has a positive and significant impact on psychological empowerment.	SL→PE	*Accept*
H_6:	Psychological empowerment mediates the relationship between Perceived organizational support and innovative work behavior.	POS→PE→IWB	*Accept*
H_7:	Psychological empowerment mediates the influence of SL on innovative work behavior.	SL→PE→IWB	*Accept*
H_8:	Psychological empowerment has a significant and positive impact on innovative work behavior.	PE→IWB	*Accept*

5.9.1: Testing for Competing Models

To ascertain which model was most appropriate for hypothesis testing, two models—the mediated and alternate (non-mediated/competing) models—were evaluated in compliance with the recommendations of Morgan and Hunt (1994) and Musenze et al., (2021). According to Morgan and Hunt (1994), SEM models were compared using the following criteria: (1) overall model fit as determined by confirmatory factor indices (CFI); (2) the percentage or proportion of the

hypothesized significant paths ($p < 0.05$); (3) the amount of variance explained as determined by squared multiple correlations (SMC), also known as adjusted R2; and (4) model parsimony as determined by the parsimonious normed fit indices (NFI). At 0.05, every path coefficient for the compared models (mediated and non-mediated models) suggested favorable and significant outcomes. The results of the mediated model, i.e., when the basic relationship between perceived organizational support and servant leadership with innovative work behavior was controlled by entering psychological empowerment (Fig.5.6, Table 5.12), show squared multiple correlations (SMC) of .50, NFI - 0.986, TLI- .995, and CFI - .998. Similarly, the alternative or non-mediated model, in which the path from perceived organizational support and servant leadership to psychological empowerment was cut or trimmed (Fig.5.7, Table 5.12**),** exhibits a poor model fit with squared multiple correlations (SMC) - 0.47, NFI -0.672, TLI- 0.468, and CFI- 0.681

As can be observed in Fig.5.7, additional fit indices demonstrate that the non-mediated model did not sufficiently fit the data. The model's RMSEA of 0.238, Goodness of Fit Indexes (GFI) of 0.884, Adjusted Goodness of Fit Indexes (AGFI) of 0.711, and $\chi 2$ statistic of 110.291, d/f (6) were all significant (p - 0.000). Thus, based on the criteria suggested by Morgan and Hunt (1994), the model comparison findings indicate that the mediated model in **Fig.5.6.** is superior, having the highest SMC (R_2 - 0.50), better parsimony (NFI- .986), besides highest number of the significant hypothesized paths or routes. The study hypotheses were thus, tested using the mediated model.

After the measurement models were evaluated, the structural model was estimated using SEM to examine the hypothesized links between the latent components. According to Kline (2011) and Richter et al. (2016), SEM is also recommended for mediation studies because to its adaptability and ability to analyze complicated correlations (analysis of direct and indirect effects)

between the variables. The results of the structural models for the mediated and non-mediated (competing) models (**Table 5.12 below**).

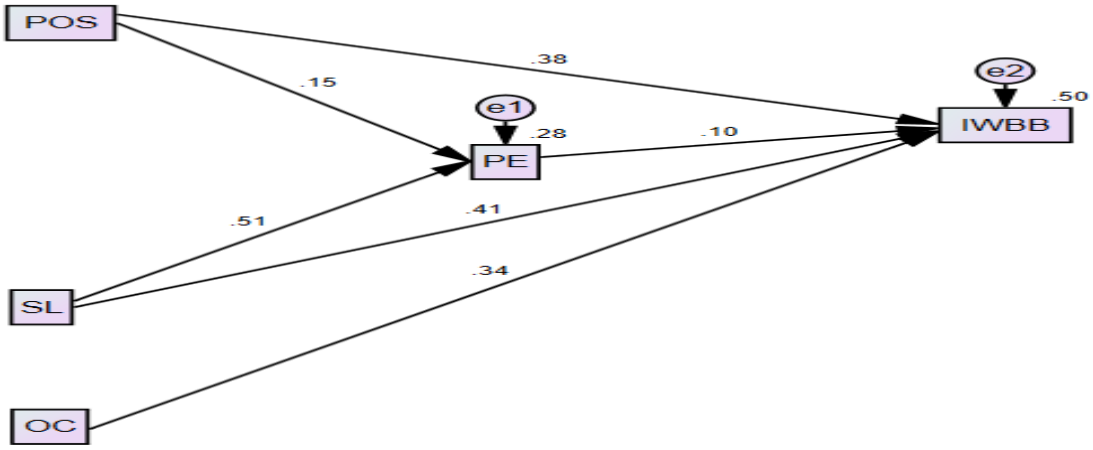


Fig.5.6: Mediated model:

Goodness of Fit Indices
$\chi 2 = 4.702$; p -value = 0.319, d/f = 4; RMSEA (0.024); TLI (.995); IFI (0.998); CFI (0.998); NFI (0.986); GFI (0.994) and AGFI (0.997); Key: POS- Perceived Organizational Support; SL- Servant Leadership; OC- Organizational Culture; PE --; IWBB- Innovative Work Behavior.

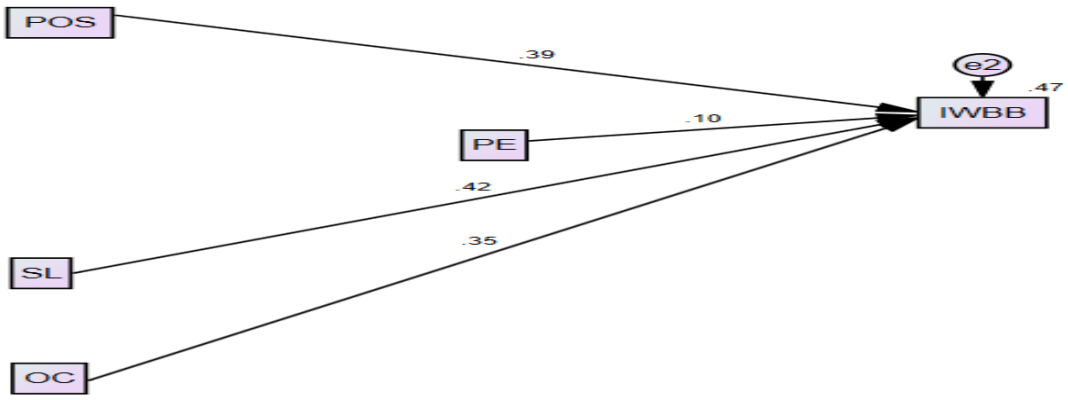


Fig.5.7: Non-mediated model:

Goodness of Fit Indices
$\chi 2 = 110.291$; p -value = 0.000, d/f = 6; RMSEA (0.238); TLI (0.468); IFI (0.685); CFI (0.681); NFI (0.672); GFI (0.884) and AGFI (0.711); Key: POS- Perceived Organizational Support; SL- Servant Leadership; OC- Organizational Culture; PE --; IWBB- Innovative Work Behavior.

Table 5.12 Competing Structural Model Results

Model Essentials Model fit	**Model1- Mediated Model**	**Model2- Non- Mediated Model**
$\chi 2$	4.702	110.291
Df	4	6
p-value	0.319	0.000
RMSEA	0.024	0.238
GFI	0.994	0.884
AGFI	0.997	0.711
CFI	0.998	0.681
TLI	0.995	0.468
NFI	0.986	0.672
SMC-PE	0.28	---
SMC – IWB	0.50	0.47
Percentage of significant routes/paths	100%	100%
Parameter estimates (standardized)		
POS→IWB	.384***	.364***
SL →IWB	.410***	.402***
OC → IWB	.342***	.321***
POS → PE	.152***	---
SL→ PE	.505***	---
PE→IWB	.101***	.105 *(p=.034)*

5.9.2 Testing Direct Relationships

Table 5.13 below demonstrates the significance of each of the six suggested direct pathways between IWB and POS, servant leadership, organizational culture, and psychological empowerment.

Table 5.13: Regression results on the direct paths

Hypotheses	Unstd. Est (B)	S.E	CR	Std. Est(β)	p-value	Supported
H_1: Perceived Org support ⟶ innovative work behavior.	.421	.015	9.255	.384	***	YES
H_2: Servant leadership ⟶ Innovative work behavior.	.475	.016	8.653	.410	***	YES
H_3: Organizational culture ⟶ innovative work behavior.	.378	.013	8.421	.342	***	YES
H_4: Perceived Org support ⟶ psychological empowerment.	.154	.049	3.118	.152	.002	YES
H_5: Servant leadership ⟶ psychological empowerment.	.567	.047	10.347	.505	***	YES
H_8: Psychological ⟶ empowerment innovative work behavior.	.235	.017	2.115	.101	.034	YES

**** p<.0001, **p<.01, *p<.05*

5.9.3 Interpretation of Results in relation with Direct Hypotheses

The SEM estimation in this study provides no insight into causality. Instead, it mostly informs us about correlations. We are able to draw stronger conclusions regarding causality thanks to the qualitative data and the SEM estimation. As a result, the findings were interpreted using quantitative data, which were then augmented by qualitative data, as shown below.

5.9.3.1 Hypothesis 1: Perceived organizational support has a positive and significant relationship with innovative work behavior

Hypothesis **H1** examined the relationship between perceived organizational support and innovative work behavior. According to the results, this hypothesis was supported because there was a positive and significant connection ($\beta = 0.384$, $p < 0.001$). This shows a relationship between enhanced innovative work behavior and university academic staff's view of positive organizational support. These findings are consistent with the following qualitative extracts;

"... during the evolution of university-wide plan, support for innovation in the form of budgetary allocation is provided which has enabled academic staff to come up with several innovations including transition to blended learning environment and Technology Assisted Instruction that integrates education software, social networking tools and emerging technologies into the learning process" (interviewee5)

Another respondent had this to say:

"... this university has a research and innovation policy in place. This policy has provided guidance and direction to researchers and academicians in this university and supports the process of innovation. No wonder, several innovations by the academic staff including the four-grain chamber silo have come up" (interviewee 3)

The above highlights the role POS plays in stimulating innovative behavior among academic staff of public universities. Thus, public university executives must create a culture in which staff feel supported and cared for. This provided further support to H_1.

5.9.3.2 Hypothesis 2: Servant leadership has a positive and significant effect on innovative work behavior

Hypothesis **H2** tested the association between servant leadership practices and innovative work behavior. The findings of this hypothesis test show a positive and significant correlation between innovative work behavior and servant leadership ($\beta=0.410$; $p<0.001$). H2 was therefore supported. This suggests that improvements in innovative work behavior are linked to improvements in servant leadership. These results are further corroborated by the qualitative extracts below;

"... during the COVID-19 period, staff were granted autonomy to come up with novel ideas to deal with the pandemic. Also, the university provided funding to enable staff to innovate solutions to deal with the pandemic. As a result, we were able to come up with COVIDEX which later became a game changer in the management of the COVID-19 health challenges" (interviewee 8).

In addition, another key informant supposed;

> *"... in this university, grants such as MakRIF that support innovation are competitive and awarded in a more honest, fair and transparent manner. This has allowed competent staff to compete for these funds and use the funds for development of fundamental innovations" (interviewee 5)*

Further, another key informant said;

> *"... top leadership of this university has prioritized regular training and workshops in areas like critical thinking, decision making, adaptability, and logical reasoning which has improved the knowledge, comprehension and synthesis skills among staff. We are armed with these skills which have supported us in our innovative efforts (interviewee 6)*

It can thus be noted that the dimensions of moral development, empowerment, and the development of conceptual skills, and creating value for the community, within servant leadership emerge as significant factors for innovation. Thus, servant leadership significantly promotes innovation which highlights its crucial role in building a culture of creativity and innovative behaviors amongst academic staff in public universities.

5.9.3.3 Hypothesis 3: Organizational culture has a positive and significant impact on innovative work behavior.

Hypothesis **H3** investigated the link between organizational culture and innovative work behavior. The findings indicated that innovative work behavior and organizational culture were positively and significantly correlated ($\beta = 0.342$; $p < 0.001$). These findings provided support for H3. This implies that academic staff at public universities exhibit innovative work practices in response to

changes in organizational culture. This finding was consistent with qualitative findings indicated below;

> *"... to promote innovative work behavior among staff in this university, the university leadership regularly organizes staff retreats where core values, including innovation, accountability, teamwork among others, are imparted to staff" (interviewee 11)*

Another informant said;

> *"... the mission of this university aims at providing high-quality training, research, and outreach for sustainable development and industrialization. This mission has focused the efforts of university staff towards seeking the development of innovative work behaviors to actualize it" (interviewee 16)*

In light of the above, this participant observed:

> *"... in this university, for any curriculum that we develop, we include learning technologies that promote online and distance learning to cater for a diverse set of contemporary learners. This has promoted innovative work behaviors such as personalized learning, flexibility, and access to global resources" (interviewee 17)*

In a nutshell, it can therefore be noted that OC metrics such as mission, adaptability, involvement and consistency seem relevant factors for the development of innovative work behavior. Therefore, organizational culture significantly promotes innovation which highlights its important role in building a culture of creativity and innovative behaviors amongst academic staff in public universities.

5.9.3.4 Perceived organizational support has a positive and significant impact on psychological empowerment

Hypothesis **H4** assessed the relationship between perceived organizational support and psychological empowerment. The results reveal a statistically positive and significant relationship ($\beta = 0.152$; $p < 0.001$) between Organizational culture and innovative work behavior. On the basis of these results, **H4** was supported. This suggests that positive perception of perceived organizational support brings about variations in psychological empowerment among academic staff in public universities. the qualitative views also indicate support for the hypothesis as shown below;

> *"... because of the several competence development programs that are embraced in this university including training and capacity building, and professional development programs, academic staff have developed innovative abilities as evidenced by several innovations in this university" (interviewee 27).*

This was further reinforced that;

> *"... in this university, for any curriculum that we develop, we include learning technologies that promote online and distance learning to cater for a diverse set of contemporary learners. This has promoted innovative work behaviors such as personalized learning, flexibility, and access to global resources" (Interviewee 17)*

5.9.3.5 Servant leadership has a positive and significant impact on psychological empowerment.

Hypothesis **H5** examined the relationship between servant leadership practices and psychological empowerment. Based on the data, H5 was supported because there was a significant and positive link ($\beta = 0.505$; $p < 0.001$). According to this, academic staff members' perceptions of positive

servant leadership are linked to a greater sense of psychological empowerment in public universities. In view of this, one participant observed:

> *"... in this university, lecturers have been provided with the independence to enrich the pedagogical methods which has enabled the implementation of the Problem Based Learning on the side of the students" (interviewee 20)*

Therefore, based on the relevance of self-determination to improving innovative work behavior among academic staff, leadership of public universities is required to conduct regular self-determination assessments, provide training on self-determination, encourage participative decision making and recognize, and reward autonomous behavior.

5.9.3.5 Hypothesis 8: Psychological empowerment has a significant and positive impact on innovative work behavior.

Hypothesis **H8** examined the association between psychological empowerment and innovative work behavior. A positive and significant correlation ($\beta = 0.101$; $p < 0.001$) was found between innovative work behavior and psychological empowerment. These findings supported the use of H8. This indicates that modifications in psychological empowerment result in a steady change in innovative work behavior among academic staff at public universities. A key informant added that;

> *"... as a result of the inclusive decision-making process, and the ability to effect change developed through training, we have participated in innovation supporting policies in this university which has promoted innovative work behavior amongst academic staff" (interviewee 25).*

It can thus be concluded that meaning, impact, self-determination and competence as key measures for psychological empowerment emerge as relevant factors that drive innovative work behavior among academic staff in public universities.

5.9.3 Testing Mediation Effect

The term "mediator" can be used to describe a variable that helps explain the link between the predictor and outcome variables. This study described psychological empowerment as a mediator in the relationship between perceived organizational support, servant leadership, and innovative work behavior among academic staff members in public universities. If a cause-and-effect link occurs, this model can explain "why" and "how" (Wu and Zumbo 2008); Baron & Kenny, 1986). The mediation effect test sought to identify the mediating mechanism between the independent variables (POS and SL) and the dependent variable (IWB).

Hair et al. (2010)'s suggested SEM methodologies were used to investigate the suggested mediation effects. The SEM method was chosen due to its capacity to evaluate multiple regression equations simultaneously and offers information on the degree of "fit" for the entire model after compensating for measurement error (Hair et al., 2010). More precisely, the process of testing for mediation involved two steps: first, determining whether a mediation effect exists, and second, determining the strength (significance) of the mediation effect. More precisely, the process of testing for mediation involved two steps: first, determining whether a mediation effect exists, and second, determining the strength (significance) of the mediation effect. The discrepancy between Standardized Direct Effects and Standardized Total Effects is thought to be the result of mediation. i) psychological empowerment as a mediator in the relationship between innovative work behavior and perceived organizational support (.015); ii) Psychological empowerment as a mediator in the relationship between servant leadership and innovative work behavior (.051); mediation is present for the two hypothesized mediation paths in this study because Standardized Direct Effects and Standardized Total Effects varied for the two assumed relationships (Standardized indirect effects). (**see table 5.14 below**).

Table 5.14 Total, Direct and Indirect Effects

Standardized Total Effects

	Perceived Org Support	Servant Leadership	PE	IWB
PE	.152	.505	.000	.000
IWB	.399	.461	.101	.000

Standardized Direct Effects

	POS	Servant Leadership	PE	IWB
PE	.152	.505	.000	.000
IWB	.384	.410	.101	.000

Standardized Indirect Effects

	POS	Servant Leadership	PE	IWB
IWB	.015	.051	.000	.000

5.10 Bootstrap significance Testing for Mediation

To test for the significance of mediation, bootstrapping procedure was chosen over other techniques such as Sobel tests and the casual steps approach. This is primarily because, even though a model may be complex and contain multiple paths, its estimation and extrapolation rely on the indirect effect between the independent and dependent variable correspondingly (Preacher, Rucker, and Hayes 2007). Prior to testing for mediation effects, the Baron and Kenny (1986) conditions for proving existence of mediation were satisfied thus, providing support for testing the mediation hypotheses. Before testing for the indirect hypotheses, it was necessary to determine whether the direct hypotheses had a substantial direct effect, which was answered in the affirmative. To verify the existence of mediation, we looked at the importance of mediation or the indirect impacts of PE on the link between POS, SL, and IWB (Preacher & Hayes, 2004). For the indirect effect, the lower and upper bounds of the confidence intervals identifies whether the hypothesis is accepted or rejected. When the lower and higher bounds are equal to zero, the alternative hypothesis on the indirect impact is not supported. Accordingly, the 95% confidence

level for the indirect impact is 0. The alternate theory about the indirect impact is upheld, if there isn't a zero between the lower and upper boundaries. In Table 5.15 below, based on the contemporary version of AMOS (Arbuckle et al,. 1999), we present bootstrapping results based on assessment of the indirect effects of psychological empowerment in the relationships between perceived organization support, servant leadership and innovative work behavior as seen below.

Table 5.15 Bootstrapping mediation Results- Two tailed significance

Standardized Total Effects

	Perceived Org Support	**Servant Leadership**	**PE**	**IWB**
PE	.152	.505	.000	.000
IWB	.399	.461	.101	.000

Standardized Direct Effects

	POS	**Servant Leadership**	**PE**	**IWB**
PE	.152	.505	.000	.000
IWB	.384	.410	.101	.000

Standardized Indirect Effects

	POS	**Servant Leadership**	**PE**	**IWB**
IWB	.015	.051	.000	.000

Bootstrapping Mediation Results of PE

Parameter	Point Estimate	Lower Bounds	Upper Bounds	Standardized indirect effect of PE	p
IWB ← POS	.015	.001	.047	.037	*.001*
IWB ← SL	.051	.001	.110	.046	*.001*

To confirm whether the mediation is significant, the standardized indirect effects must be smaller than .5 (Hair et al 2010), which this study established or found. As seen in Table 5.19 above, the estimates of the indirect effect from each bootstrap sample for our two mediation hypotheses were .037 for the mediation of PE in POS- IWB relationship and .046 for the mediation

influence of PE in the SL- IWB association, respectively, confirming partial mediation of PE in the POS, SL relationship with IWB.

In particular, at the 0.001 level of significance, the standardized indirect (mediated effect) of POS on IWB is significantly different from zero (P-.037, two tailed), supporting the hypothesis that PE mediates the relationship between IWB and POS. On the other hand, the standardized indirect (mediated effect) of servant leadership on IWB differs significantly from zero at the 0.001 level of significance (P-.046, two-tailed), supporting the hypothesis that PE mediates the relationship between innovative work behavior and servant leadership.

5.10.1 H6: Psychological empowerment mediates the relationship between Perceived organizational support and innovative work behavior.

H6 was supported, and the analysis confirmed a partial mediation (β=.015, $p<.05$). This finding suggests that psychological empowerment acts as a mediator in the association between innovative work behavior and perceived organizational support. As a result, psychological empowerment serves as a mediator in the association between innovative work behavior and perceived organizational support.

5.10.2 H7: Psychological empowerment mediates the influence of SL on innovative work behavior.

H7 was supported, and the analysis confirmed partial mediation (β=.051, $p<.05$). This finding suggests that psychological empowerment acts as a mediator in the interaction between servant leadership and IWB. Therefore, psychological empowerment offers a way for servant leadership to influence innovative work behavior. This novel finding further suggests that servant leaders require psychologically empowered employees to promote innovative work behavior among academic staff of public universities in Uganda.

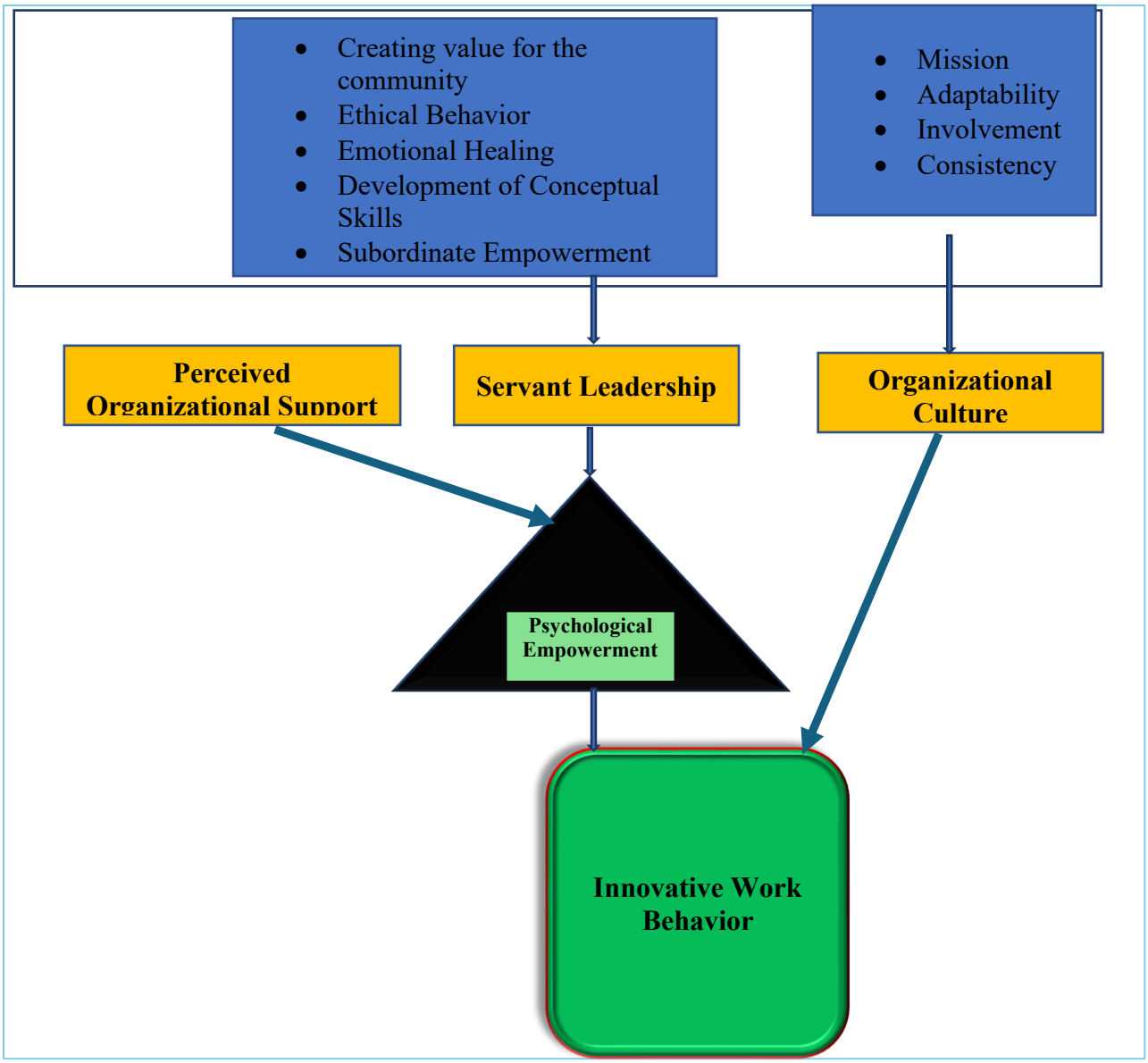


Fig.23: The relationship between Perceived Organizational Support, Servant Leadership, Organizational Culture, Psychological Empowerment and Innovative Work Behavior

SL dimensions–conceptual skills, subordinates' growth and success, empowering subordinates, ethical behavior, putting subordinates first, creating value for the community, and emotional healing; POS, and OC indicated by involvement, adaptability, mission, and consistency, directly influence IWB. The influence of POS, SL, and OC is processed by Psychological Empowerment indicated by meaning, competence, self-determination, and impact resulting into IWB.

Fig.5.8: The Event Causal Network Showing the Association between Perceived Organizational Support, Servant Leadership, Organizational Culture, Psychological Empowerment & Innovative Work Behavior

5.11 Analysis of Qualitative Data

Qualitative data was collected from key informants throughout the ten universities that were sampled in order to bolster the quantitative findings. Below is an explanation of the qualitative research results.

5.11.1 Demographics for the Qualitative Data

One-on-one interviews were conducted with 28 managers from all Ugandan public universities, including faculty deans and executives. At the moment of saturation, this was achieved. Because of their shared decision-making and provision of a secure environment for testing educational technology, these leaders were selected (Laufer et al., 2025). These were full-time employees at several the respective universities. The sample size included; Makerere University (2), Kyambogo University (3), Mbarara University (2), Gulu University (3), Busitema University (4), Muni University (3), Lira University (3), Kabale University (2), Soroti University (3) and Mountains of the Moon University (3). Each participant had experience for at least two years in their individual roles at the time of data collection. At the time of data collection, the majority of the executives (22) had worked in their respective jobs for more than five years (78.6%). Most of the executives (18) were on five-year contract employment (64.3%), and most of the executives (21) were between 45- 50 (75%) years of age.

5.11.2 Interpretation of Qualitative Results

5.11.2.1 Perception of innovative work behavior in Uganda's public Universities

The key informants' opinions on how innovative work practices are seen in Uganda's public universities are presented in this part. The key informants were requested to characterize the research IWB in order to get a clearer perspective. As a result, we were able to convert their narrative explanation into new themes and sub-themes. With the help of the Gioia methodology of qualitative data analysis, these themes and sub-themes were connected to create a hierarchical model (Gioia and Hamilton 2012). The research constructs perceived meaning as well as its main themes and sub-themes are presented in the following sections.IWB comprises five interconnected behavioral activities, namely: opportunity exploration, idea production, idea promotion, and idea realization, and idea sustainability (Scott & Bruce, 1994; Jiwon & Kim, 2022).

On analyzing the transcripts from qualitative interviews, it was established that four major themes emerged and the respective sub themes; i) Entrepreneurial mindset (innovation consciousness cognitive adaptability, individual motivation and innovation capability), ii) Creation of innovative atmosphere (organizational support, welfare and care psychological security and autonomy), digitalization of information/ideas (digital competence, innovative culture, compensation and incentives) and sustainable innovations (societal demands, government regulation, intellectual property rights and technological transfer).

Entrepreneurial mindset: refers to a mental state that guides behavior in order to spot opportunities, take initiative, and innovate (Cui and Bell 2022). This type of mind includes innovation consciousness, cognitive adaptability, individual motivation and innovative capability. One of the key informants exclaimed;

".. innovation is so difficult that it calls for the collaboration of employees with entrepreneurial mindset" (interviewee 24).

Creation of innovative atmosphere: This is the existence of a stimulating and encouraging workplace that fosters individuals' innate curiosity, independence, and sense of accomplishment, all of which increase their inherent drive to innovate (Luo and Zhang 2024). The subthemes that emerged included; organizational support, welfare and care psychological security and autonomy.

"...in this university top managers are always meeting to discuss how to improve the teaching and learning environment to enable employees to take chances, challenge themselves, and the best innovators are rewarded as a way of feedback." (interviewee 12)

Digitalization of information: In order to integrate ICT into teaching and learning, academic professionals must possess digital abilities (Abun et al. 2023). The sub-themes which emerged include; digital competence, innovative culture, compensation and incentives, and Innovation proficiency.

Sustainable innovations: Senior managers are essential to creating a successful and long-lasting innovation culture. Senior managers play a key role in four areas, especially when it comes to creating new products: leadership, flexibility, responsibility, and employee empowerment. These areas combine with process innovations to adapt to the rapidly changing environment with consumer and societal demands in the market (Shayah 2019). The emerging subthemes included; societal demands, government regulation, intellectual property rights and technological transfer. One of the key informants said;

"…. the introduction of digital technology has altered teaching and learning, changed the structures of universities, and encouraged the adoption of numerous long-term innovations...". (interviewee 7)

In order to determine the factors impacting employees' innovative work behavior, the characteristics of the components and the opinions of key informants were finally integrated. (see **Fig 5.9**) below.

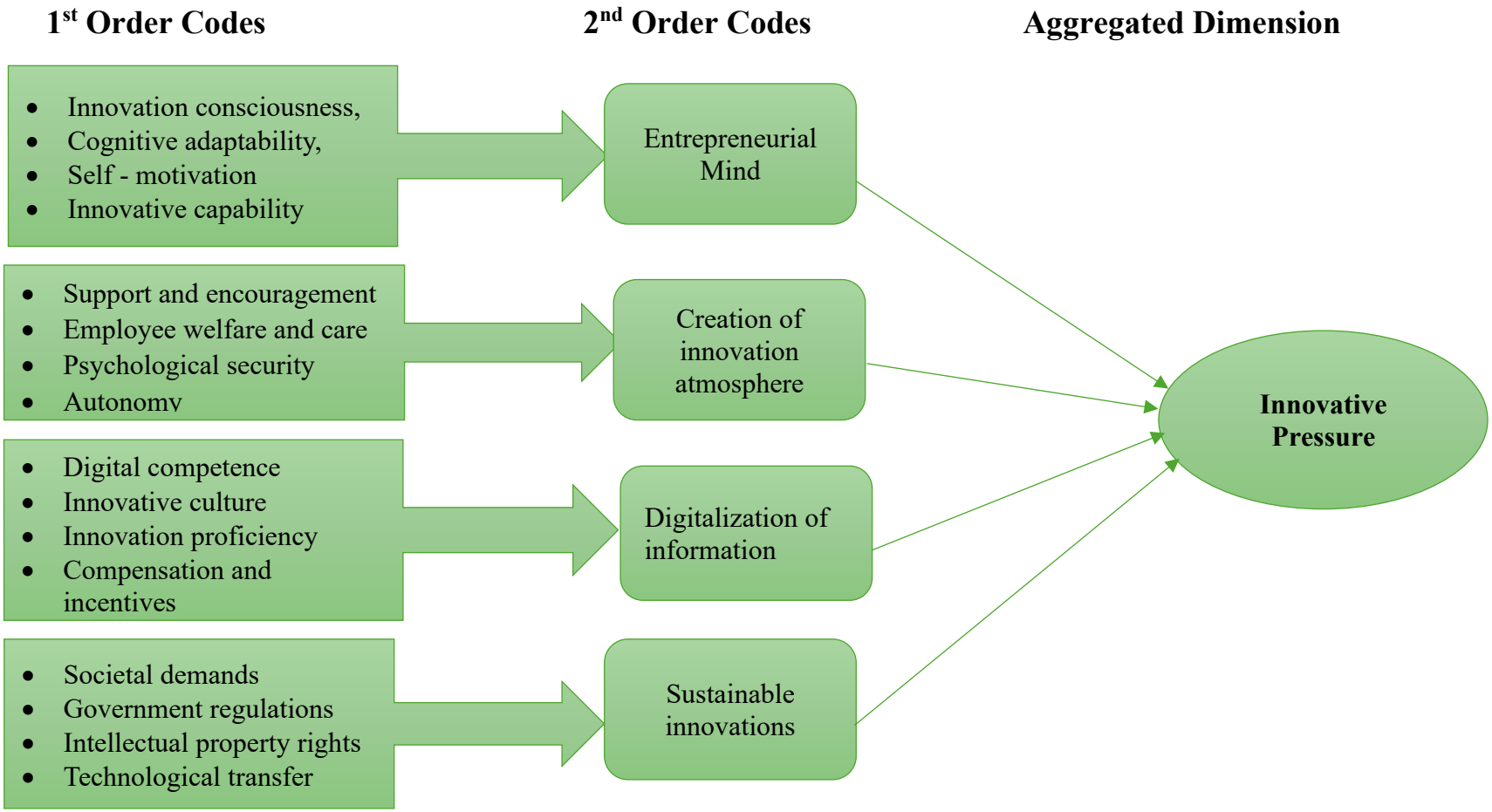


Fig. 5.9: A Reality Radial Diagram of perceptions of Innovative Work Behavior

5.12 Factors that drive innovative work behavior among academic staff

5.12.1 Theoretical model construction

In the setting of public universities, the Gioia technique is used to identify the elements that affect employees' innovative behavior. According to Gong and Liu (2022), the Gioia technique is thought to be the most authoritative and normative qualitative research approach for creating new theories and summarizing novel ideas and phenomena. The study examined each element and its impact on employees' innovative behavior using the interpretive structural modelling (ISM) method. Particularly, this study made use of a hierarchical topological diagram, which makes it possible to quickly comprehend the system factors' causal hierarchy. The recursive structure model diagram of this study was ultimately established based on the key informant interviews, which enhances the research on employee innovation work behavior. Through the perspectives of key informants, first-order concepts, combining second-order themes, and refining aggregate dimensions, we discovered in this study that there are three levels of factors influencing employees' innovative behavior: individual, interpersonal, and organizational. As seen in **Fig.5.10**, we develop a theoretical model of the variables impacting IWB.

5.12.2 Emerging factors that influence innovative work behavior

Three overarching themes emerged from the examination of the opinions of important informants, specifically: personal, interpersonal, and organizational. One executive manager explained that’

> *“.... innovation is carried out by conscientious employees who believe themselves responsible, trustworthy, and goal-oriented are the ones that spark their own innovation.*

They are typically assertive, self-assured, actively seek out opportunities for social engagement, and aspire to success. but will constantly look for rewards." (interviewee 28)

Another key informant also claimed that;

> "*.... good feelings at work can be enhanced by positive relationships among coworkers. A staff member who experiences rejection or isolation from their coworkers may have self-doubt, which may have a detrimental effect on their personality. Employees' creative endeavours will be impacted in some way by informal feedback on ideas that is supportive and encouraging ...". (interviewee 25)*

The degree of organizational innovation will affect enterprise employees' awareness of and capacity for innovation, as well as cause shifts in innovation performance. The two most important elements affecting employees' innovative behavior are leadership style and organizational social responsibility. As a result of their social responsibility, universities foster social collaboration and use the lessons learned from successfully transformed businesses as a foundation for innovation realization. Employees might be made aware of whether or not their innovative behavior is supported through innovation support feedback and innovation expectations (Gong, and Liu 2022). In addition, another three key informants emphasised that;

> *".. employee innovation can be greatly enhanced by friendly leadership and an innovative culture. For example, in the digital age, a university with a strong sharing culture will encourage workers to share digital expertise and create conducive work environment...." (interviewee 20).*

"... This university has enhanced social interaction and gain knowledge from the experiences of businesses that have successfully undergone transformation to serve as a foundation for innovation implementation." (interviewee 11)

"... to stimulate subordinates' desire to innovate, a leaders must make them feel that job duties are important, give them possibilities, and enable them to satisfy their psychological demands for autonomy. This can be done through trust and developmental expectations..." (interviewee 21)

In view of the above perspectives of the key informants about the factors that influence innovative work behavior among academic staff in public universities in Uganda, a reality radial diagram of factors that affect innovative Work behavior was developed as indicated in **Fig 5.10** below. In addition, the matrix (Appendix 5) describes how the interaction of POS, SL, and PE in Driving Innovative Work Behavior among Academic Staff in Public Universities. Further, **Fig.5.11** below illustrates the emerging dimensions of innovative work behavior among academic staff in public universities in Uganda.

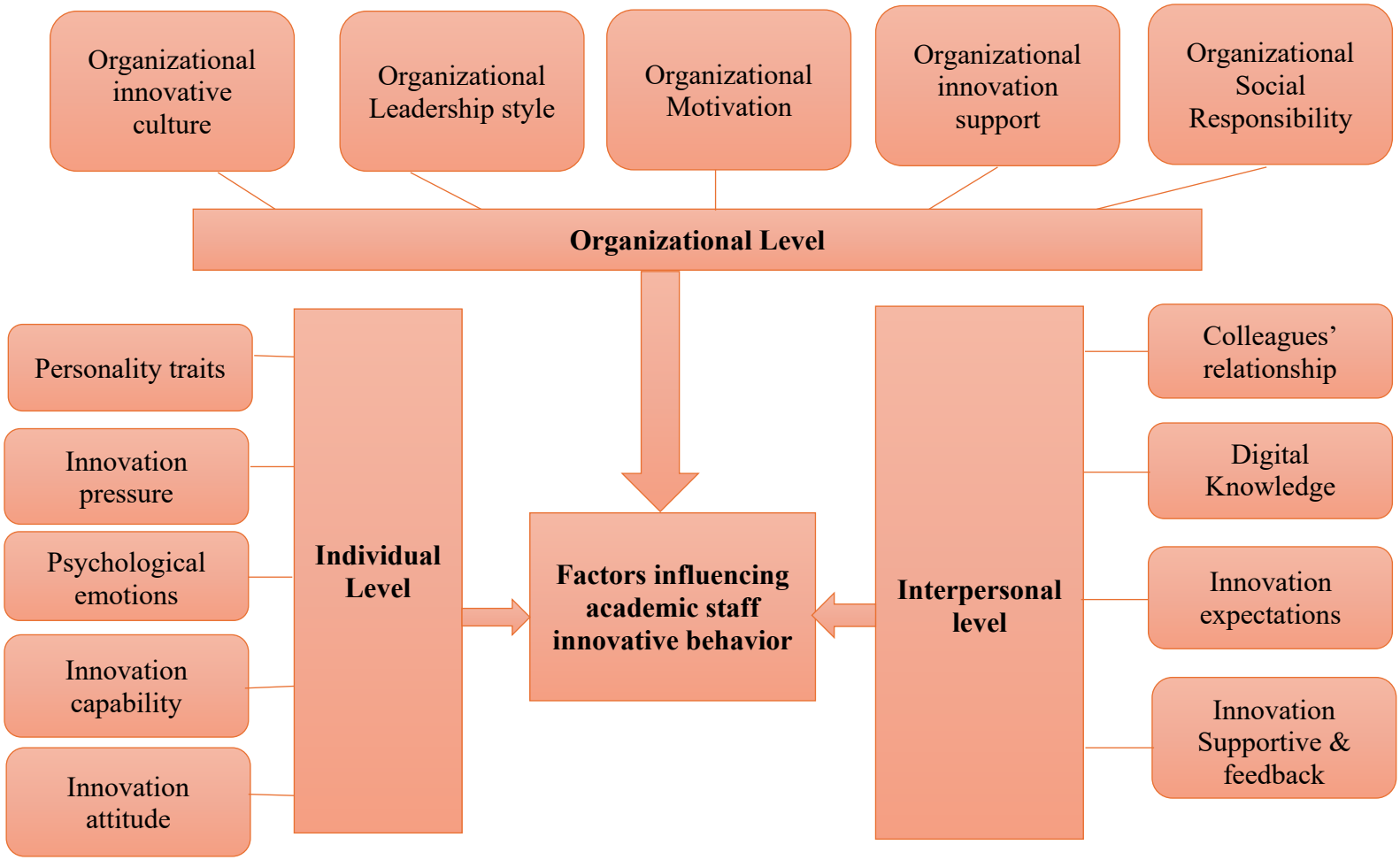
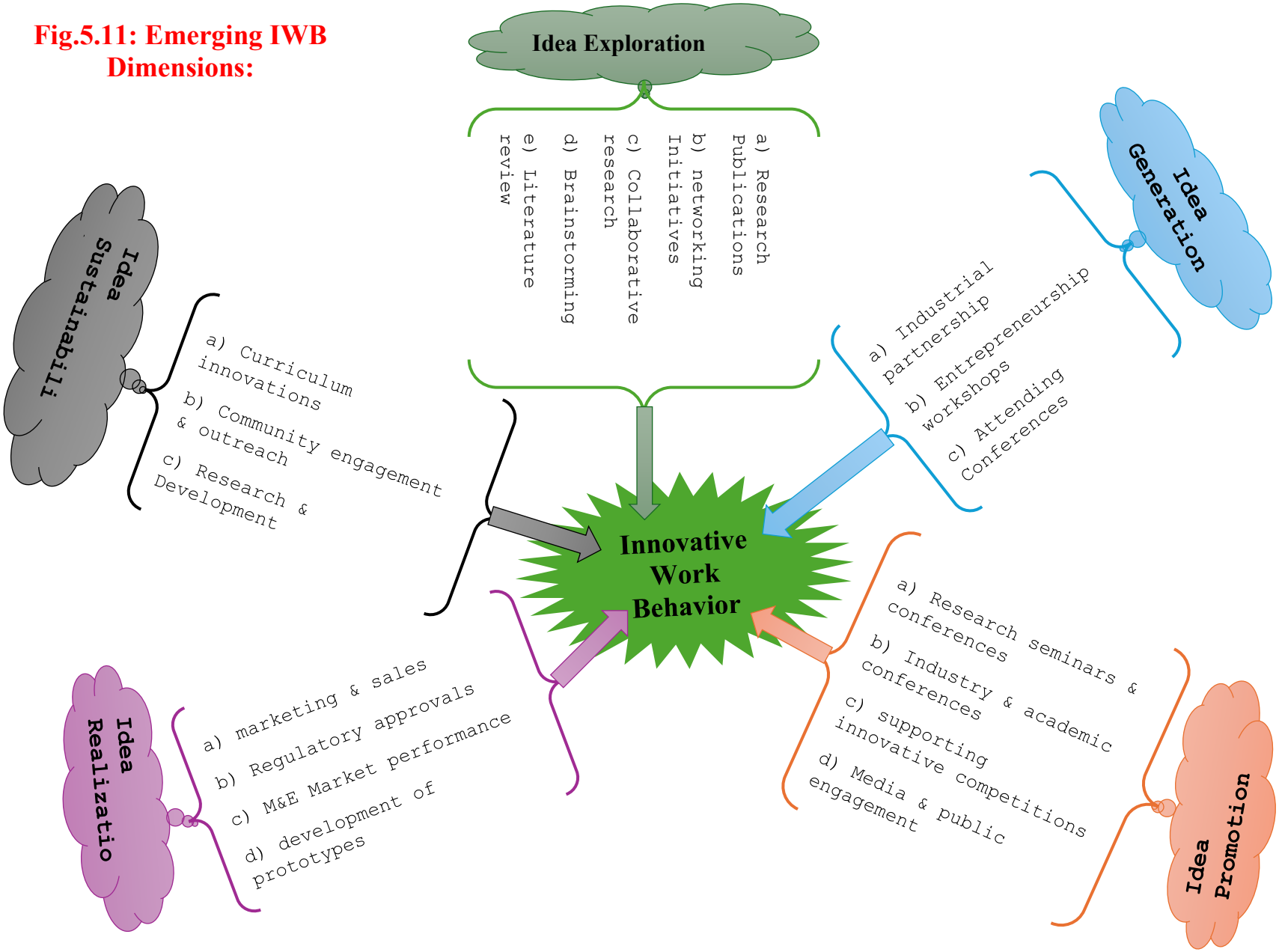


Fig.5.10 A Reality Radial Diagram of factors influencing Innovative Work Behavior

Fig.5.11: Emerging IWB Dimensions:



5.13 Constraints to the innovative work behavior among the academic staff in public universities of Uganda

Through interviews, several constraints to the innovative work behavior among the academic staff of public universities in Uganda were highlighted. These were categorized as internal, external, individual and organizational constraints.

5.13.1 Organizational Constraints

5.13.1.1 Structural Constraints

It was noted that while University Councils are responsible for the provision of a clear framework to guide the decision-making process, allocation of resources, and aiding the institution to operate efficiently and effectively for purposes of achieving its goal, responses from interviews indicated that the majority of these public universities have hierarchical organizational structures which limit flexibility and autonomy, delays and stifles innovation due to bureaucratic decision-making processes. This structure has inversely affected innovation as it inhibits critical thinking amongst staff. When asked how the existing organizational structure affected their capacity to innovate, a senior academic staff replied:

> *"… the problem we have in this university is a centralized decision-making structure where all powers are concentrated in the hands of top managers. This delays decision is related to innovation and has affected our capacity to innovate in this university" (interviewee 14)*

5.13.1.2 Policy Constraints

Through their respective Governing Councils, public universities determine the research and innovation policies, research direction and management structures to drive innovation.

However, interviews seem to suggest that there are inflexible policies that limit innovation and experimentation. Also, there is a problem of over-regulation that stifles innovation and creativity, and support from entrepreneurship units is limited partly due to capacity issues. Asked how the absence of key research policies and structures has affected the development of innovative work behaviors amongst academic staff, a senior academic replied:

> *"… while policies and guidelines in this university to support innovation are in abundance, they are so rigid to the extent that they rarely support innovation initiative amongst lecturers. No wonder the volume of innovations keeps reducing every year…" (interviewee 28)*

5.13.1.3 Resource Constraints

Innovations among academic staff are associated with many costs including research and development that is required to develop new products, services and technology. The responses from key informants indicate that most of the funding for innovation comes from development partners, the government and at times, the industry. However, participant responses indicated insufficient funding that limits investment in innovation, inadequate infrastructure, which is outdated with obsolete equipment and technology, and above all, limited skilled human resources. Moreover, the key informants noted that the funding structure for the majority of innovation does not promote systematic continuity in research and innovation. For example, one participant remarked:

> *"… I wrote a project to work on the problem of unemployment among the youth in Bukedi sub-region and submitted it BURIF for funding. The project's amount was UGX. 200m, but what advanced was UGX. 25m which is so limited to realize the project goals" (interviewee 16)*

The above organizational constraints highlight the need for public universities in Uganda to implement flexible organizational structures, foster a culture of innovation and risk-taking, provide training and development opportunities, encourage industry-academia collaboration, develop strategic plans to promote innovation, improve leadership and management practices, and enhance infrastructure and resources.

5.13.2 Individual Constraints

5.13.2.1 Knowledge and Skill Constraints

Interviews indicated that the quality and skills among the academic staff in public universities are significant limitations to the successful development of innovative work behavior. Most universities lack the right staff with sufficient expertise, training, exposure, research skills and digital literacy to drive innovations. One respondent said:

> *"…majority of staff in this university have limited familiarity with the emerging technologies and are less developed professionally to meet the demands of innovation. This coupled with their inadequate research skills has significantly affected their innovative capabilities…" (interviewee 23)*

5.13.2.2 Limited incentive to innovate

Due to the absence of a clear institutional and national policy framework, there are evident problems with patent ownership and revenue sharing that arise from the innovations. According to the responses, the majority of public universities lack policies that specify who owns what and how much money is shared in proceedings that arise from the innovation of the academic staff. The innovations are further affected by the absence of a clear policy framework regarding patent ownership and revenue sharing. Asked about the presence of a policy framework on innovation, a senior researcher replied:

"… the university administration wanted to own the patent on one of my innovations, but I went through African Intellectual Property Organization to get it. I was informed that I, as the researcher, should own the patent, but the institution serves as the patent's address …" (interviewee 1)

5.13.2.3 Psychological and Attitudinal Constraints

While the literature on innovation reveals that psychological and attitudinal constraints are associated inversely with innovation, the interview outcomes validated this assertion. The participants revealed that risk assertion – fear of failure and uncertainty, fixed mindset – resistance to change and new ideas, lack of motivation – limited incentives and rewards, burnout and stress, arising from the heavy workload and the limited resources, limit the potential of academic staff to develop and engage in innovative work behaviors. Moreover, skepticism about the value of innovation, resistance to change arising with comfort with traditional methods, individualism due to limited collaboration and teamwork, lack of creativity and complacence related to the satisfaction with the status quo, have combined in various ratios to inhibit the development of innovative work behaviors amongst the academic staff in public universities. One of the senior respondents had this to say:

"… In this young university, most of the academic staff consider research for innovations to be a bother and as a consequence, they give it little emphasis unlike in my previous university." (interviewee 3)

Therefore, to address these constraints, universities could benefit from providing relevant training and development opportunities, encouraging collaboration and teamwork, and fostering a culture of innovation and risk-taking. Also, authorities in public universities must address the

demographic and behavioral constraints through targeted initiatives besides promoting digital literacy and emerging technologies.

5.13.3 External Constraints

5.13.3.1 Industry and Market Constraints

Literature on innovation indicates that industry and market factors are influential for promoting innovation in institutions of higher learning. Correspondingly, qualitative results from the interviews and focus group discussions seem to suggest that limited industry-academia collaboration, low market demands for innovative products, high competition from established industries and inadequate entrepreneurship support, have greatly undermined efforts among the academic staff to develop and engage in innovative work behaviors. About this, one respondent had this to share:

> *"… unlike in Europe where the university-industry partnership is emphasized and practiced, in Uganda is yet to the realized. This is one of the reasons why we do not innovate as expected ..." (interviewee 5)*

5.13.4 Global Constraints

Participants highlighted several global constraints that have affected their capability to innovate including limited international collaboration and networking, inadequate access to global markets, intellectual property protection challenges, limited access to cutting-edge technologies and above all, global economic trends and uncertainties. To address these challenges, therefore, universities will have to engage in advocacy and policy influence, develop innovative funding models, promote public awareness, and appreciation for innovation, besides, massive investments in infrastructural development

CHAPTER SIX:

DISCUSSION OF FINDINGS

6.0 Introduction

The results from chapters five and six, which are outlined below. In order to create a logical model for improving IWB, the study's primary goals were to ascertain the relationship between perceived organizational support (POS), servant leadership (SL), organizational culture (OC), and innovative work behavior (IWB) and to look into whether psychological empowerment (PE) mediated these relationships. This chapter generally addresses the link between the results and the theoretical foundations, and the empirical findings in the existing literature.

While this chapter relies on qualitative results to understand the social reality of IWB among academic staff in Uganda's public universities to support the discussions, the major focus of quantitative analyses was on the study objectives and the corresponding hypotheses as the study made an initial commitment to theory and hypotheses development prior to data collection. Therefore, this chapter examines the findings in the context of pertinent literature in order to draw specific conclusions and offer suggestions for improvement in IWB. Since it is the next to last chapter, it serves as the foundation for the final chapter of this thesis, which includes conclusions, implications, suggestions, limitations, and areas that require more investigation.

6.1 Summary of findings

The scope and comprehensive analysis of findings in this chapter are predicated on the eight hypotheses, two (2) of which are mediated and seven of which are directional, as shown in table 7.1 below:

Table 6.1 Summary of the results of the hypothesis testing

	Hypothesis	Results	*Decision*
H1	Perceived organizational support has a positive and significant relationship with innovative work behavior	($\beta = 0.384$, $p < 0.001$)	*Supported*
H2	Servant leadership has a positive and significant effect on innovative work behavior.	($\beta=0.410$; $p<0.001$)	*Supported*
H3	Organizational culture has a positive and significant impact on innovative work behavior.	($\beta = 0.342$; $p < 0.001$)	*Supported*
H4	Perceived organizational support has a positive and significant impact on psychological empowerment	($\beta = 0.152$; $p < 0.001$)	*Supported*
H5	Servant leadership has a positive and significant impact on psychological empowerment.	($\beta = 0.505$; $p < 0.001$)	*Supported*
H6	Psychological empowerment mediates the relationship between Perceived organizational support and innovative work behavior	($\beta=.015$, $p<.05$)	*Supported*
H7	Psychological empowerment mediates the influence of SL on innovative work behavior	($\beta=.051$, $p<.05$)	*Supported*
H8	Psychological empowerment has a significant and positive impact on innovative work behavior	($\beta = 0.101$; $p < 0.001$)	*Supported*

6.2 Discussion of results

6.2.1 Perceived organizational support and Innovative Work Behavior

The purpose of this study was to examine the relationship between perceived organizational support (POS) and innovative work behavior (IWB) of academic staff in Uganda's public universities. POS, operationalized by fair treatment, support from the supervisor, and organizational rewards, and work environment (Rhoades and Eisenberger 2002), is conceptualized as employees' perceptions of how much the organization values their contributions, and is concerned about their welfare (Eisenberger et al. 1986). Its primary goal is to strengthen employees' sense of duty to assist the organization in achieving its goals, strengthen their sense of affiliation with the organization, and help them anticipate that better work would be rewarded (Peng et al. 2023), and such, POS is one of the essentials that persuades employees to work

innovatively (Susilo, 2019; Peng et al., 2023). On the other hand, IWB denotes a conduct involving employees coming up with and putting into practice new and practical ideas at work (Jaingam and Na-Nan 2023).

Employees' perception of organizational support significantly impacts their motivation to engage in activities such as idea generation, idea promotion, as well as idea realization, that promote IWB. POS thus, represents a motivational mechanism through which employees feel obliged to engage in positive behavior and workplace- IWB. The results of the hypothesis testing thus, show that POS has a significant and positive impact on IWB, thereby providing support to H1. This suggests that a perception of favorable organizational support indicated by fair treatment of employees, strong, and quality supervisor support to subordinates, and provision of good organizational rewards, and work environment (Rhoades & Eisenberger, 2002) is associated with enhanced feeling to engage in IWB among academic in public universities. This finding is consistent with the extensive body of empirical evidence that show that POS plays a crucial role in promoting IWB (Peng et al., 2023; Cardina & Negara, 2022; Dirgantara, 2022; Kwahar, 2021). Moreover, Mustika et al., (2020) found that employees exhibit commitment to achieving organizational goals through generation of innovative ideas when they perceive fair and just treatment- POS.

Drawing from the above empirical support, universities can promote a perception of organizational support for improved IWB among their employees by enacting innovation supportive policies, providing good rewards and benefits, helping employees feel supported (supervisor support), fairness, and developing positive work environment characterized by open communication, and involvement in organization's decision making. This is demonstrated by the following interview responses:

"... this university has a research and innovation policy in place. This policy has provided guidance and direction to researchers and academicians in this university and supports the process of innovation. No wonder, several innovations by the academic staff including the four-grain chamber silo have come up." (Interviewee 3)

"... during the evolution of university-wide plan, support for innovation in the form of budgetary allocation is provided which has enabled academic staff to come up with several innovations including transition to blended learning environment and Technology Assisted Instruction that integrates education software, social networking tools and emerging technologies into the learning process'. (Interviewee 5)

"... top leadership of this university has prioritized regular training and workshops in areas like critical thinking, decision making, adaptability, and logical reasoning which has improved the knowledge, comprehension and synthesis skills among staff. We are armed with these skills which have supported us in our innovative efforts.' (Interviewee 6)

The above responses show that the organizational initiatives that are perceived as supportive to employees' wellbeing drive employees to engage in innovative work behaviors. This research thus, validates the argument that POS is closely related to IWB.

Accordingly, academic staff members at public universities will engage in IWB when they believe that the organizations, they work for will reward them in terms of compensation and benefits, career advancement, training and development, and overall personal well-being. These perspectives inherently motivate them to actively seek out IWB in order to succeed in their job tasks (Wiggins, 2021).

Moreover, the study findings provide support for SET (Blau, 1964) that suggests that employees will reciprocate the positive treatment from their employers by engaging in IWB (Krupah, 2022; Khawar et al., 2021). Based on the SET, employees who believe that their organizations are supporting them fairly develop a sense of obligation that helps them to act in ways that help them achieve organizational objectives. One of such positive behaviors is IWB.

Due to felt obligations, POS has consequently encouraged extra-role behavior, such as IWB, among academic staff. In line with SET, these findings indicate that when employees are rewarded appropriately, treated fairly, supported by supervisors, and surrounded by a positive work atmosphere, they feel motivated to reciprocate by exceeding expectations through exhibition of IWB (Anwar, 2022; Musenze & Mayende, 2022).

Despite increased research on the relationship between POS and IWB in a number of domains (Pratiwi et al., 2023; Mustika et al., 2020; Dirgantara Prakoso, 2022), empirical studies on the link between perceived organizational support and IWB has not been extensively explored (Caglar Dogru, 2018; Jiwon & Kim, 2022). In addition, recent research by (Ayoub et al. 2023) emphasized the dearth of studies on IWB in higher education generally. According to scholars, perception of organizational support characteristics such fair treatment, adequate rewards and benefits, supervisor support, and a positive work environment enhances IWB among academic personnel in public universities (Musenze & Mayende, 2023; Anwar, 2022; Jamal et al., 2023; Kong & Wang, 2024). Consequently, this study reinforces the theoretical assertion that in the higher education sector, the degree of IWB exhibited by employees is influenced by the feeling of fairness, supervisor support, adequate compensation and benefits, and supportive work environment.

Consequently, it is reasonable to assert that within the context of higher education, particularly in public universities, POS has a significant impact on IWB among academic staff. This assertion is supported by the emerging factors of organisational support leading to innovative work behavior as presented using the flow diagram in **Fig. 6.1.**

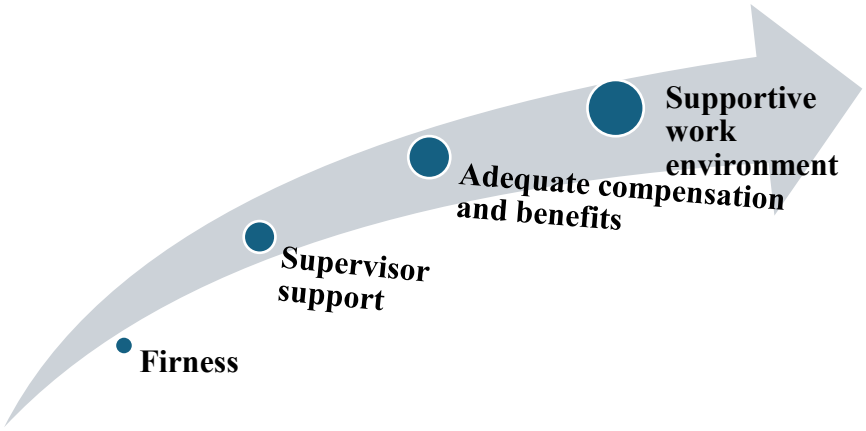


Fig. 6.1 Emerging themes relating to perceived organizational support

6.2.2 Servant Leadership and Innovative Work Behavior

The study postulated that servant leadership is associated with IWB of university academic staff. The findings revealed a positive significant correlation between servant leadership and IWB. Qualitative data further reinforced these conclusions by highlighting the critical role servant leaders play in fostering a culture of innovative work behavior. These results thus, suggest that developing a culture of IWB requires the support of servant leaders. This is true as servant leaders have the ability to foster an environment of trust that encourages workers to take risks and develop creative solutions, and also motivate employees to think creatively. The qualitative finding in vignette 1 below supports the quantitative findings above.

Vignette 1: Servant leadership enhances IWB among academic staff in Uganda's Public Universities:

> Participants informed the study that an environment of trust created by servant leaders is demonstrated by putting others first, acting morally, and empowering members of the team. Informants indicated that top leadership of their respective universities actively listen to their issues, establish sincere relationships, and openly share information, promoting an environment of mutual respect and understanding. They also stated that they feel appreciated and trusted because of their leaders' empathy, accountability, and dedication to their growth and development. They reported that as a means of giving back to their leaders and university, they put in more effort and participate in innovative activities.

These findings are consistent with previous research that supports the servant leadership - IWB link. For example, studies conducted by Abdullah & Asif, 2022; Zeng & Xu, 2020; and Olaleye & Solanke, 2021), suggest that leaders who prioritize their subordinates, empower followers, practice emotional healing, support subordinate growth and success through education and training, and act with ethical principles succeed in inspiring employees to create and implement innovative ideas. These studies thus, provide support to the assertion that engaging in opportunity exploration, idea generation, idea promotion, idea realization and ensuring sustainability of IWBs is driven by how servant leaders encourage such IWB practices.

The study findings further support the SET (Blau, 1964), which emphasizes employees' obligation to reciprocate good treatment from their leaders (SL). Servant leadership (SL) is a style that prioritizes the well-being of employees over personal interests, showing concern for their work and personal lives, emphasizing their career growth, promoting their ability to make decisions autonomously, and assisting them in overcoming work-related challenges (Ekmekcioglu and Öner 2024). Such leadership behaviors, focused on serving others, can be seen as a leader's investment in resources to cultivate positive social exchange relationships with employees.

Thus, when employees believe their leaders treat them fairly, for example, by offering them empowerment and courage to take risks, helping to them grow and succeed, and conceptual skills (Krupah, 2022; Saleem et al., 2024). One of the ways through which academic staff have reciprocated SL is the promotion of IWB. Accordingly, based on SET, these results suggest that by promoting employee growth and development, empowering employees, and exercising care for the employees' interests, servant leaders have provided a platform for the introduction and implementation of innovative ideas.

Despite the fact that the relationship between SL and IWB has been thoroughly examined in several domains, such as banking (Akram et al. 2024), manufacturing (Opoku et al. 2019), and pharmaceutical (Saleem et al., 2024), the evaluated literature asserts that there is a lack of coherence and clarity in the conceptualization of the SL research across disciplines such as innovation (Sendjaya et al., 2019; Akram et al., 2024). Nevertheless, extant literature suggests that promotion of SL traits such as employee empowerment, caring treatment, and autonomy in decision-making boosts IWB among academic staff in public universities (Georges, 2023; Daud et al., 2023; Khattak et al., 2023). This study advances the theoretical assertion that leaders in the higher education sector can build relationships and influence employees' IWB by establishing subordinates' priorities, prioritizing their interests, supporting their growth and development, and maintaining complete honesty. It's thus, logical to argue that in the context of higher education, and specifically in public universities, SL significantly influences IWB among the academic staff. The key informants' views support the above findings through the emerging factors shown in Fig. 6.2 below;

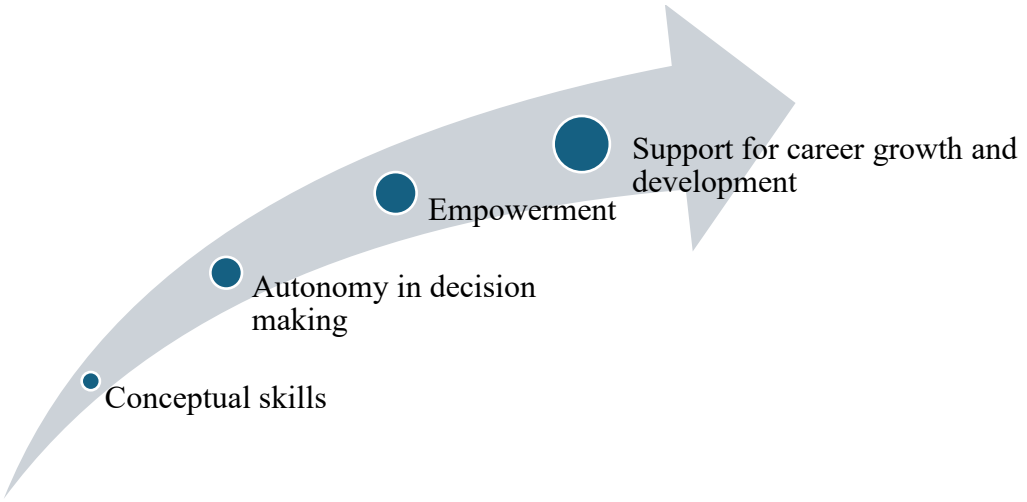


Fig. 6.2 Emerging themes relating to Servant Leadership

6.2.3 Organizational culture and Innovative Work Behavior

The study hypothesized that organizational culture (OC) is linked with IWB of university academic staff. The findings revealed a positive significant relationship between OC and IWB. Qualitative data further supported these findings by emphasizing how important OC is in promoting IWB. Therefore, these findings suggest that organizations behavioral norms and values foster a sense of belonging and shared meaning, which encourages employees to exhibit more creative behavior related to opportunity exploration, idea generation, idea promotion, idea realization, and idea sustainability. This is true because the organization's culture impacts the kind of people the organization recruits, their retention prospects, and their engagement, and performance levels while they work with the organization. The qualitative results in vignette 2 and 3 below supports the quantitative findings above.

Vignette 2: Organizational culture through mission dimension enhances IWB among academic staff in Uganda's Public Universities:

> Participants underlined the necessity of innovation, for the university to fulfill its mandate and proposed that academic staff who effectively participated in innovative activities were enabled by a strong university mission that was communicated to all university personnel. According to the interviews, the university administration encourages staff members to accept new ideas, cultivates a culture of creativity and teamwork, and provides clear direction and purpose. They observed that by highlighting and outlining the university's values and goals, employees felt more empowered and saw their role as a part of a bigger, more significant whole, which improved their IWB.

Vignette 3: Organizational culture- through involvement enhances IWB among academic staff in Uganda's Public Universities

> Key informants also revealed that academic staff that are engaged in successful innovations were those who were actively involved in several university-wide activities. University management involved staff in university activities through decision-making process, empowerment and engagement, which offered them an opportunity to participate in activities that help the universities achieve their goal, solve problems, and offer feedback on decisions that impact their jobs and the university as a whole. Participants also reported feeling more purpose and ownership as a result of participating in the decision-making process, which boosts creativity and encourages a more proactive approach to problem-solving. They now feel appreciated, which increases their likelihood of coming up with fresh ideas and actively promoting innovation.

Moreover, this is one of the most potent elements that defines the innovative behaviors of employees. This study finding is in agreement with Eskiler et al., (2016); Priyadi et al., (2023); Matin et al., (2024); Gautam, (2020); and Aboramadan et al., (2020), who contend that OC promotes the exchange of thoughts and viewpoints among academic staff members in order to enhance their expertise and capacity to provide novel ideas and more inventive work procedures.

Similarly, Muhammed, (2020), found that an organization's culture influences the work environment, which in turn affects individuals' ability to innovate. Moreover, Harhash et al. (2018) argued that an organization's basic assumptions and beliefs influence its practices and behavioral patterns-IWB. These studies support the assertion that a positive OC underpinned by virtues of open communication, supportive leadership, and a shared set of values between the organization and employees lead to increased productivity, enhanced employee well-being, decision making authority, and high levels of engagement, which boost employees' IWB.

Moreover, this study provides support for the theoretical assertions of the Denison organizational culture model (1990), that emphasizes the need to promote organization's effectiveness- IWB through cultural performance-oriented dimensions of mission, involvement, consistency and adaptability. The mission is the external 'steady pole' that articulates the organization's goal, and serves as a crucial instrument for promoting general employee behavior-IWB. Therefore, through articulating the mission statement, public universities have been able to provide a vital mechanism for encouraging overall employee behavior- IWB. The results also highlight how crucial it is to successfully incorporate innovation into the university's strategic management agenda.

Consequently, in order to increase the likelihood of success, IWB should be aligned with the university mission, and supported with the organization's senior management. Similarly, the findings confirm the literature's assertion that flexibility is essential for advancing IWB. Adaptability is the flexibility that an organization develops to react to changes in the environment, and in the needs of its clients. Scholars such as Denison et al., (2012), Montreuil et al., (2021), and Tian et al., (2021), contend that flexibility, risk taking, customer focus, and organizational learning are all encouraged by adaptability, moreover these are important for advancing IWB in

organizations. Therefore, given the substantial impact that adaptability has on IWB, public university leadership should identify, understand, and act upon customer needs, as these are what propel IWB forward. Thus, in order to increase employee IWB, our findings urge organizations and top management to support flexibility.

Also, the findings indicate that through consistency, public universities have been able to enhance IWB among its academic staff. Consistency is a feature of aligning employee views and values with the organization (Buhumaid 2022) and coordinating and integrating core principles (Kokina and Ostrovska 2013). Organizations with an innovative structure must continuously and meticulously explore new facilities and opportunities (Eskiler et al. 2016). Our findings thus suggest the need for public university management to develop and implement decentralized organizational structures, and also waive formal decision-making structures in order to enhance IWB. In light of the study findings that positively associate consistency with IWB, this study highlights the need for public universities to enable IWB among staff through developing standards, managerial principles and compatible viewpoints among workers (Denison, 2001). Finally, through involvement, public universities have been able to enhance IWB among academic staff. Involvement denotes the extent of the participation that employees have in terms of decision-making. Our findings therefore suggest the crucial role of involving employees in decision-making processes as this enables them to realize value of their contributions which stimulates IWB.

Despite the fact that the relationship between OC and IWB has been extensively researched in other domains (Setyawasih & Buchdadi, 2022; Luo et al., 2024; Priyadi et al., 2023), the current research does not fully understand the role of certain organizational culture dimensions in educational innovations (Caliskan & Zhu, 2020; Aboramadan et al., 2020) and some lecturers do not adhere to the organizational culture (Matin et al. 2024). Extant literature suggests that

supportive OC boosts IWB in public universities (Ssempebwa 2020). This study therefore lends support to the theoretical assertion that IWB depend on whether they perceive the OC as favorable. Consistent with this argument, it is logical to argue that understanding and improving IWB requires examining the prevailing OC culture. The results of this research provide empirical support on the important role of OC in promoting an enabling environment for IWB. The above findings are consistent with key informants' views and emerging factors indicated below;

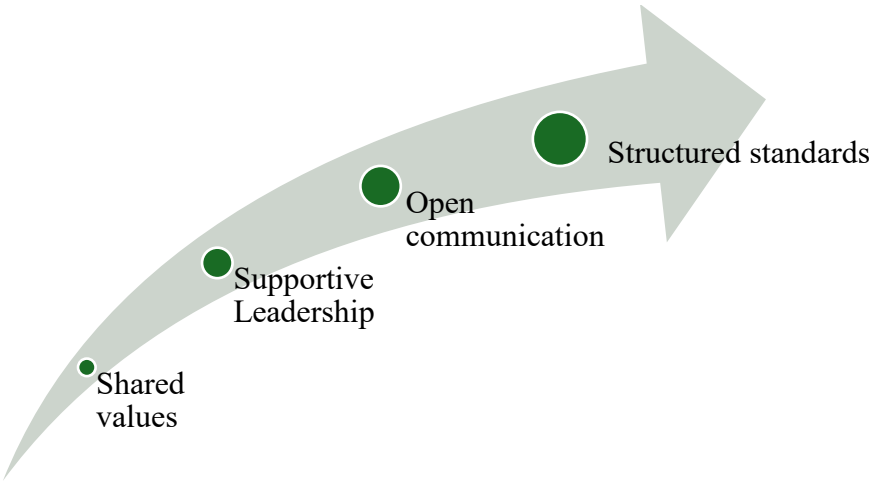


Fig. 6.3 Emerging factors relating to organizational culture

6.2.4 Perceived organizational support and psychological empowerment.

The purpose of this study was to examine how perceived organizational support (POS) and psychological empowerment (PE) among academic staff of Uganda's public universities. In a workplace context, POS reflects the organization's commitment to its employees. This concept encompasses two interrelated aspects: the perceived support from colleagues and the perceived support from supervisors. Colleague support involves practical assistance and task-related information, as well as socio-emotional support and empathy (Rousseau et al., 2009; Maan et al., 2020), while POS is understood as how much employees believe their supervisors care about and

support their well-being (Rhoades and Eisenberger 2002). Conversely, PE is conceptualized in this context as an inspiring and motivating concept that provides methods to be positive in employees' work and behavior (Kwahar, 2021; Wiggins, 2021). Building a good mindset that provides an employee with strength is greatly influenced by the work environment and how employees perceive it. PE is thus, a motivational belief that give ways to positivity in employees' behavior and work. The hypothesis's results demonstrate a positive and significant correlation between POS and PE. This hypothesis was therefore supported.

The above results implies that academic staff in public universities are better equipped to feel empowered and actively execute their tasks including research and publication, teaching and learning, and research and community engagement, if they perceive a feeling of care and support from both the supervisors, peers, and organization at large. The qualitative responses derived from the interactions between the university management and academic staff examined in Vignette 4 corroborate the aforesaid quantitative findings:

Vignette 4: Perceive organizational support improves psychological empowerment of staff in Uganda's Public Universities:

> Key informants noted that their capacity to execute tasks in their respective roles in the university was determined by how well they perceived the support in terms of care for their well-being and the appreciation they received arising from their contribution to their respective universities. They indicated that universities engaged in activities like enhancing employee perks including free insurance cover, housing and compensation, improved working conditions, and equitable treatment for all employees. Participants informed the study that this feeling of support gives them the impression that the university values, cares for, and supports them, which has led to a feeling of meaning, capability, self-determination, and influence at work

The finding is in line with Maan et al. (2020) who established that employees who perceived care for their wellbeing by their respective organizations tend to be more

psychologically empowered- motivated to execute their tasks with positivity. However, this study was conducted in the manufacturing companies in Pakistan, an emerging economy, and using a single theory approach. On the contrary, the present study was done within academic staff of public universities in Uganda, a developing nation, using a multi-theoretical approach. Scholars such as (Yin, 2009; Nag et al., 2006; Shepherd & Suddaby, 2016) have argued that theory development is better realized when the process is based on several theories drawn from different disciplines. Consequently, this research adds significantly to available literature on IWB through the use of a multi-theoretic approach.

Contextually, in Uganda's educational sector, several public universities have embraced POS mechanisms such as use of fair compensation and benefits scheme, staff training and development initiatives, and several positive employee welfare initiatives to enhance employees motivational and inspirational thought (PE) thereby, ensuring positivity in employees' behavior and work. Busitema university, a public university in Uganda is a prime example of this movement.

The university has improved its support services including timely payment of workers' compensation, provided regular funding for staff development and research, and evolved supportive policies and regulations, a practice that has scaled up research and innovation. By enhancing employees' POS, public universities have not only improved service delivery but also increased employees' impact, competence, meaning, and self-determination (PE), reflected in their ability to execute assigned tasks with positivity.

Similarly, universities in Uganda have demonstrated POS by reforming their compensation and benefits scheme to provide for extra incentives such as bonuses, housing, and fuel to facilitate their movements while on duty, enhanced supervisor support, individual coaching, as well as

mentoring schemes, personal development support, and improvement in the general working conditions, for example, provision of tools and equipment to support employees in the execution of their tasks, thereby enhancing employees expression of internal motivation in relation to the four cognitive components of impact, competence, meaning, and self-determination, also known as PE. By instituting POS inducing strategies highlighted above, the public universities have positioned themselves to navigate challenges that inhibit PE, thereby promoting organizational citizenship behavior, increased academic and professional satisfaction, job satisfaction, employee wellbeing, and IWB (Wiggins, 2021). Public universities have thus, driven innovation by promoting IWB among staff, especially through the development of virtual or online learning technologies, fostered entrepreneurship, and explored the link between technology and society, thereby contributing to sustainable development goal- SDG 9 (Industry, Innovation, & Infrastructure).

This finding associating POS with PE can be discussed using Organizational support theory (OST) (Eisenberg et al., 1986) SET (Blau, 1964) and Spritzer's Employee Empowerment Model (Spritzer, 1995). The OST (Eisenberger et al. 1986) suggests that POS is driven by the interaction of supervisor support, organizational support and peer support factors. Eisenberg et al. (1986) argue that the interplay of these elements helps employees develop the perception or broad understanding of how much the organization appreciates their effort and is concerned for their wellbeing. Concurrently, the SET (Blau (1964) suggests that a perception of organizational support by employees enhances employees' impact, competence, meaning, and self-determination (PE), reflected in their ability to execute assigned tasks with positivity. This theory suggests that POS significantly contributes to PE of academic staff in public universities by inducing a motivational

and inspirational thought that give ways to positivity in employees' behavior (Kwahar, 2021; Wiggins, 2021).

However, while Maan et al. (2020), argue that proactive organizations should empower their staff through involvement in decision-making (POS) to give them a sense of purpose in their work, limited empirical research demonstrating the effects of POS on PE exists (Caesens et al. 2020). This study thus, provides empirical support for the increased understanding of the role of POS in enhancing PE of employees within Uganda's public university setting. Accordingly, improvement in PE among academic staff in public universities requires implementation of POS enhancing strategies such as better compensation and benefits schemes, providing supervisor, and peer support, and provision of supportive staff development programs. When employees feel that their organizations appreciate their contributions, they will feel more psychologically empowered. These results show that academicians at public universities who perceived organizational support from their institutions are motivated to execute their tasks and achieve, find their employment meaningful, and exhibit competence in their profession. The views of the key informants concur with the above findings and puts emphasis on the following factors;

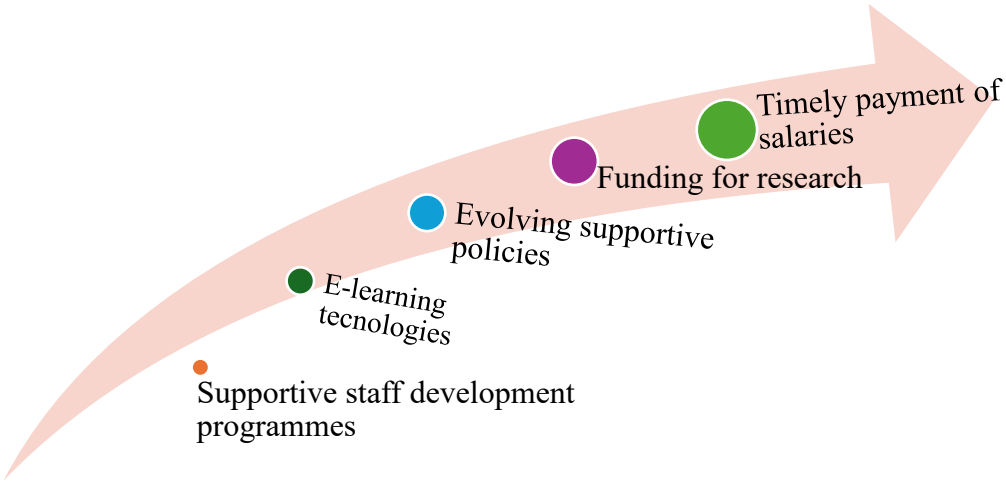


Fig. 6.4 Emerging factors of perceived organizational support leading to Empowerment

6.2.5 Servant Leadership and psychological empowerment

This study looked into the connection between academic staff members' psychological empowerment (PE) and servant leadership in Uganda's public universities. Servant leadership (SL) is a holistic approach to leadership that involves followers in several aspects (e.g., relational, ethical, emotional, and spiritual) in order to empower them to reach their full potential. Its main objective is to cultivate followers based on leaders' moral and selfless tendencies (Greenleaf, 1977; Khan, et al., 2022). The primary operationalizations of SL, notwithstanding certain variations, are humility, empowering staff, focusing on followers' needs, behaving as a steward, fairness, and autonomous decision making (Hoven et al., 2021; Khan et al., 2022). On the other hand, PE is viewed in this context, as an inspiring and motivational impression that offers strategies to foster positive work and behavior in employees (Kwahar, 2021; Wiggins, 2021). How employees view their workplace has a big impact on how they develop a positive outlook that gives them strength.

Therefore, PE is an inspiring and motivating concept that provides avenues to employees for positive behavior and work. The results of the hypothesis testing show that SL has a significant and positive relationship with PE, thereby providing support to H5. This suggests that a perception of favorable SL indicated by employee empowerment, humility, concern for followers' needs among university academic staff is associated with enhanced feeling of psychological empowerment in public universities. This finding is in tandem with Mahendri et al. (2022) and Hoven et al. (2021) who found that servant leaders who supported, empowered followers, and addressed their needs, tended to augment their perceptions of meaning, competence, impact, and self-determination (PE).

The significant association between SL and PE in the context of public universities can be explained by three major factors namely: supportive work environment, autonomy and decision making, and finally employee personal growth and development. Through supportive work environment, servant leaders prioritized their team members' well-being, creating a supportive work environment that encourages PE. Also, from autonomy and decision-making perspective, servant leaders have empowered their followers with decision making authority, which has enhanced their perceptions of meaning, competence, impact, and self-determination to execute work related tasks.

Moreover, through personal growth and development, servant leaders have been able to invest in their team members or followers' growth and development. Therefore, servant leaders develop a sense of competence in their workforce by offering training opportunities for employees to acquire new skills (Faraz et al. 2019). Consequently, when workers feel that their leaders are interested in their professional growth and encourage them to take responsibility for their actions, they may feel psychologically empowered to perform in their respective roles (Hoven et al., 2021).

The results of this study further suggest that the servant leadership philosophy comprises behaviors that provide followers with a sense of psychological empowerment (PE). The crucial behaviors such as humility, caring for followers, staff growth and development, and decision-making autonomy unique to servant leaders generate PE as defined by Conger and Kanungo (1988), Hoven et al. (2021) and Zafar et al., (2022). The study findings imply that servant leaders are fundamentally aware that the effectiveness of their empowering actions depend on the followers' sense of psychological empowerment. The findings further suggest that by training leaders to apply servant leader behaviors or by hiring leaders who exhibit such behaviors, employers can achieve long-term success at the operational levels of their organizations.

The study's findings, which align with the social exchange theory, indicate that employees might acquire PE as a useful psychological resource through their relationships with leaders. As a result, employee attitudes and behavior at work are also significantly impacted (Wang et al. 2022). According to the findings, servant leaders who support and care for their staff members' personal and professional development also provide them a stronger sense of PE- self-determination, and meaning in their work. Therefore, servant leaders enhance employees' PE by improving their views of significance, competence, self-determination, and impact.

The SL behaviors exhibited by public university leaders enable their followers to realize and enhance their professional potential through PE. The leader, the followers, and the organization all gain from this SL. The study findings highlight the fundamental importance of SL in promoting PE. As a result, employees feel psychologically empowered to perform when they believe that their bosses care about their professional development, grant them autonomy for decision making, and also motivate them to take ownership of their behavior (Hoven et al. 2021). Several predictors of PE have been considered in literature (Karimi et al. 2021), however, although leadership stands out as an essential antecedent of workers' PE, little is known about which specific leadership philosophies work best in explaining PE (Schermuly et al., 2022).

This study thus, answers the call of Schermuly et al. (2022) for examining which leadership philosophy better explains PE. In response to this call, the study finds that SL evokes more PE among university academic staff. Therefore, it can be stated that the association between SL and PE exists among academic staff in public universities. Accordingly, when management practices SL principles, we begin to witness improvement in employees' PE in public universities. Hence, the emerging factors listed below from the key informant support the above assertion.

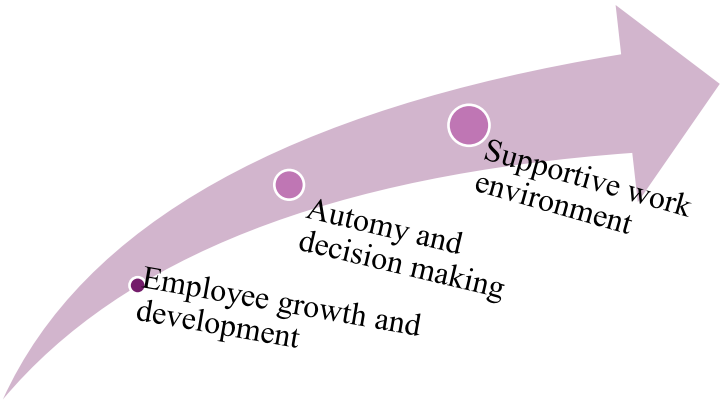


Fig. 6.5 Factors of servant leadership leading to psychological empowerment

6.2.6 Psychological empowerment mediates the relationship between Perceived Organizational Support and Innovation Work Behavior.

The purpose of this study was to ascertain how psychological empowerment (PE) mediated the relationship between academic staff members' IWB and POS at public universities. The results showed that PE acts as a mediator in the interaction between POS and IWB and that POS has a favourable primary influence on employees' IWB. Importantly, the results on the perceived organization support's influence, demonstrated that first, POS and IWB are significantly associated. Second, this association is partially achieved through PE towards IWB, thereby, providing support for H6. The findings indicate that the specific mechanism or channel by which the relationship between POS and IWB occurs is direct, even though psychological empowerment to some extent offsets or reduces the strength of this association, and thus, takes away part of the contribution of perceived organizational support on IWB. As was previously noted, we anticipated that IWB would be enhanced when academic staff perceive adequate organizational support. However, as the performance of public universities is centered on individual academic performance, the final action intended to support decisions on IWB are based on the employees'

inspirational and motivational impression that offers strategies to foster positive work and behavior among employees (PE).

The evidence provided through the qualitative interviews show that managing IWB in public universities is all about "this is my knowledge", should I use it to innovate for organization's success?' Therefore, academic staff may perceive organizational support to innovate but at the end of the day, the kind of actions, and behaviors that they undertake depend on whether they are inspired and motivated to execute such behaviors. This demonstrates that, when the level of psychological empowerment towards IWB is high, it takes away some of the direct contribution in the causal pathway of POS and IWB. In this case, PE acts as a channel and since it takes priority in IWB, one cannot divorce PE from IWB. Undeniably, POS and PE are mutually true drivers of IWB among academic staff in public universities.

Although there is dearth of empirical support in the IWB literature, this finding links well with the SET (Blau, 1964) which argues that, when people perceive care and support for their wellbeing (POS) from their respective organizations, they reciprocate through enhanced IWB (Park et al., 2022). However, when the feeling of PE is strong, POS may have little direct effect on IWB, as part of its influence is transmitted via PE. Previous research on the relationship between perceived organizational support (POS) and innovative work behaviors (IWB) has tended to focus on the direct links. Jiwon and Kim (2022), for example, examined the direct relationships and found a strong correlation between POS and IWB. Moreover, Ranihusna et al., (2021) discovered a strong correlation between POS and IWB. Similarly, Mustika et al. (2020) found that employees exhibit commitment to achieving organizational goals through generation of innovative ideas when they perceive fair and just treatment- POS. Thus, this study contributes to the knowledge or understanding that psychological empowerment is a partial mediator in the association between

POS and IWB among academic staff in public universities. The above arguments were supported by the causal model in Fig. 6.6, which was derived from interviewing key informants.

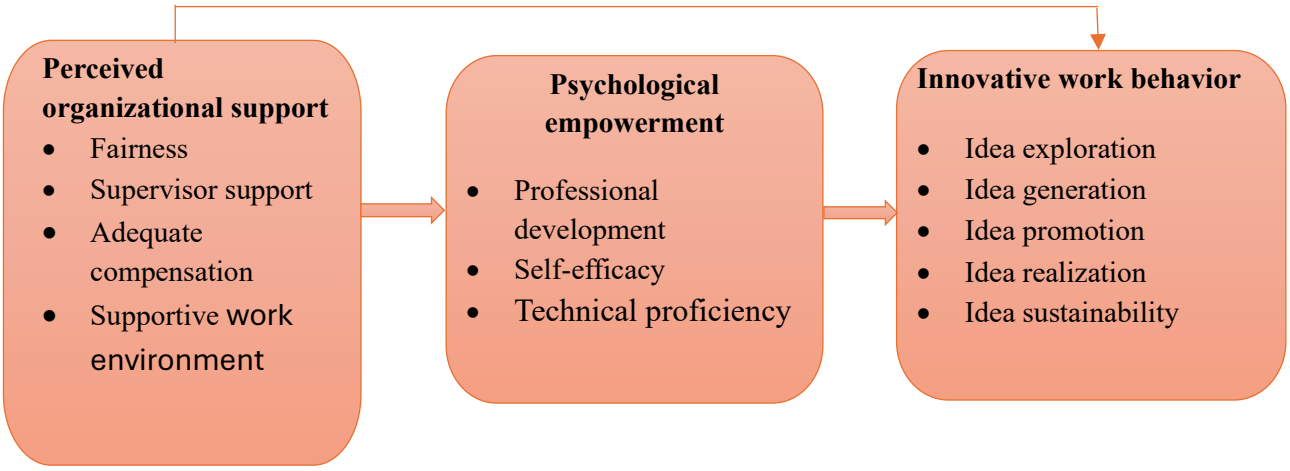


Fig. 6.6 Mediation role of psychological empowerment on the relationship between perceived organizational support and IWB

6.2.7 Psychological empowerment mediates the relationship between servant leadership and Innovation Work Behavior.

The purpose of this study was to determine how PE mediated the association between IWB and servant leadership practices among academic staff members in public universities. The findings demonstrated that servant leadership has a positive primary influence on employees' IWB and that PE mediates the relationship between servant leadership and IWB. Fundamentally, the results of the study on the effects of servant leadership principles demonstrated that, first, there is a strong relationship between IWB and servant leadership. Second, the association between IWB and servant leadership is partially mediated by PE, which supports H7. The findings demonstrate that the specific mechanism by which the relationship between servant leadership and IWB takes place is direct, even though psychological empowerment offsets or reduces this relationship, and thus, takes away part of the contribution of servant leadership on IWB.

As earlier noted, we expect IWB to improve when academic staff feel that their leaders exhibit and practice servant leadership practices such as promotion of training, and staff development programs, staff empowerment, and exercise concern for employees' wellbeing. The ultimate servant leadership decision to support IWB actions, however, will be based on the employees' inspirational and motivating impressions, which provide strategies to foster positive work and behavior in employees (PE). These inspirational and motivating impressions formed, enhance employees' capacity to explore novel ideas, a practice that promotes IWB.

Based on the gathered qualitative data, managing IWB in public universities concerned two fundamental aspects: whether or not employees have sufficient knowledge base to innovate, and if they use such knowledge to innovate for organization's success. As a result, although academic staff may believe that SL practices such as staff growth and development, employee empowerment, and provision of employees with decision making autonomy encourage innovation, their actual actions and behaviors ultimately depend on their level of inspiration, motivation, and capacity to explore novel ideas -PE. This illustrates how a high a feeling of PE toward IWB reduces the direct contribution to the causal route or path between servant leadership and IWB. PE thus, serves as a channel through which SL impacts IWB. Considering the prominent role of PE in IWB, both PE and IWB cannot be separated. Conclusively, servant leadership and PE work together to drive IWB, among academic employees in public universities.

Despite the dearth of empirical evidence in the IWB literature, this finding aligns well with the SET (Blau, 1964), which contends that people reciprocate by exhibiting increased IWB when they believe their respective leaders empower them, guarantees staff with decision making autonomy, and extend staff development and growth opportunities to them (Khan et al., 2022). Despite this, this investigation finds that SL may have minimal direct impact or strength on IWB

as part of its influence is transmitted to IWB via PE. Therefore, this study contends that while SL is important for IWB, its total effect on innovative work behavior is enhanced by a perception of psychological empowerment among organizational staff.

Prior studies investigating the relationship between servant leadership (SL) and IWB typically concentrated on direct associations. For instance, Nurbaety Rojuaniah, (2022) analyzed these direct links and identified a strong correlation between servant leadership and IWB. Additionally, Faraz et al. (2019) found a significant association between SL and IWB as well by establishing that leader-follower cordial relationship arising from implementation of SL principles enhanced workplace innovation behaviors among organizational employees.

In a similar vein, Khan et al. (2022) revealed that by empowering, providing staff development opportunities, and granting decision making autonomy to staff, SL facilitates cognitive processes that enable employees to engage in IWB. Employees are committed to reaching organizational objectives by generating innovative ideas- IWB when they feel their leaders primarily focus on their growth and wellbeing- reflecting high SL. Therefore, this research enhances the understanding on mediation studies by demonstrating that PE acts as a partial mediator in the relationship between SL and IWB among academic staff in public universities. We argue that PE and SL work in tandem to drive IWB. The causal model in Figure 6.7, which was developed through key informant interviews, bolsters the aforementioned claims.

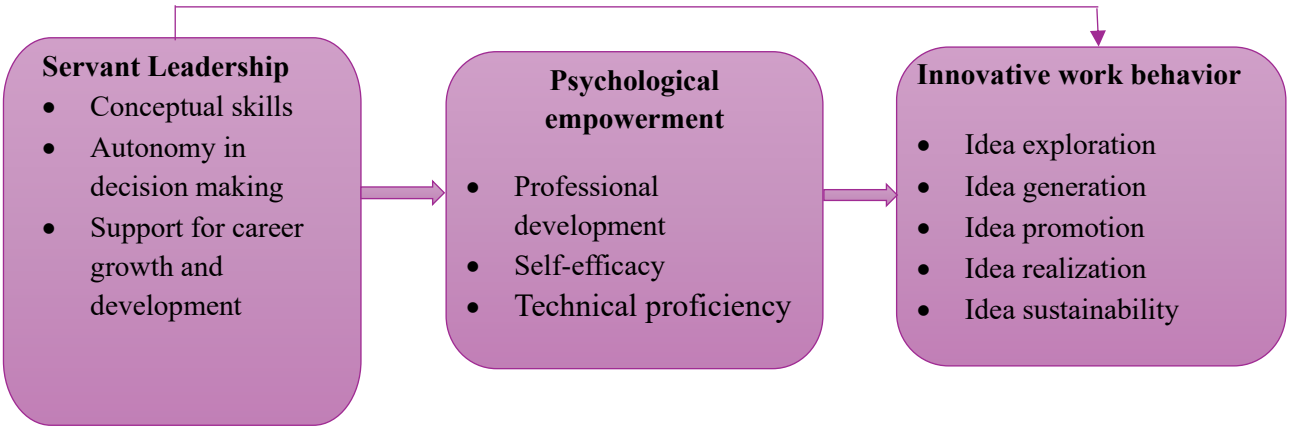


Fig. 6.7 Mediation role of psychological empowerment on the relationship between servant leadership and IWB

6.2.8 Psychological Empowerment and Innovative Work Behavior

The purpose of this study was to investigate how psychological empowerment (PE) and innovative work behavior (IWB) are related. While IWB is the combined efforts or actions of individuals and teams to develop new services, products, activities, processes and ideas that improve overall innovativeness and generate favorable outcomes (Farrukh et al. 2023), PE denotes a person's perception and belief that he possesses the necessary capacity, self-efficacy, and decision-making autonomy to choose his own path, achieve set goals, and find purpose in his work (Aristana et al., 2024; Wang, 2019).

The results displayed in Table 7.1 above demonstrate a strong and significant correlation between PE and IWB, thereby providing support to hypothesis 8. This implies that organizations with psychologically empowered employees are more likely to innovate successfully. Thus, the capacity to develop psychologically empowered employees acts as a motivation or significant driver for educational institutions to engage in IWB. The following quantitative findings are

corroborated by the qualitative responses derived from the interviews of senior managers of public universities as examined in Vignette 5:

Vignette 5: Psychological empowerment enhances IWB of academic staff in Uganda's Public Universities:

> Throughout the investigator's interaction with the public university senior leadership, it was observed that academic staff in public universities exhibited a sense of self-efficacy and capacity to influence their work setting, allowing them to execute their duties effectively even in the face of adversity. The participants reported that as a result, they felt empowered, which boosted their motivation and encouraged them to engage in innovative and creative behaviors.

This finding is consistent with a growing body of empirical evidence that indicate that PE plays a key role in promoting IWB (Citta et al., 2019; Kustanto et al., 2020; Sun, 2023). In line with this, Helmy et al., (2019) and Zia et al., (2023), suggest that employees might exhibit IWB if they believe their work responsibilities are relevant, feel confident in their knowledge and skills, and have a sense of autonomy and belief in their work. Drawing from empirical literature above, Universities can promote PE among their staff by putting in place mechanisms such as allowing staff members to participate in decision-making, offering professional development opportunities, cultivating an environment of open communication, acknowledging accomplishments, assigning meaningful tasks, and guaranteeing access to resources. All of this can be done while maintaining a supportive leadership style that values staff input and fosters a sense of ownership over their work.

PE symbolizes employees' belief and perception that they can change things, in this context innovation, by being self-sufficient, independent in making decisions, and equipped to choose their own path, and achieve the stated goals.

In a complex and turbulent environment, like the one that public universities operate in, PE becomes very crucial, and important. For example, when Uganda's education sector was liberalized in the 1990s, established IHL had to show capability to develop psychologically empowered staff, as a coping strategy by offering opportunities for decision-making, professional development, recognition, open communication, and alignment of their work with the university's mission and values. These strategies have enabled staff to develop and feel a sense of competence, impact, and meaning in their roles. Thus, university staff can have autonomy and urgency in their work while receiving the support and resources they need, a practice that promoted their ability to explore new opportunities, generate, promote, realize and sustain new ideas-IWB.

On the other hand, innovation- which is the creation and use of novel concepts, methods, goods, or techniques- also depends on PE (Lie et al. 2022). IWB, specifically, requires institutions to embrace a culture of development of personal competency, meaning, psychological wellbeing, commitment and self-determination- all of which are key features of PE (Sun, 2023). Research by Manjari et al. (2018) provides empirical support for the positive and significant association between PE and IWB. The study suggests that PE, perceived as individual's motivation, and capability to execute tasks due to positive work environment, might promote a culture of opportunity exploration, idea generation, promotion, realization and sustainability-IWB. This claim is observable in the context of Uganda's institutions of higher learning (IHL), where environmental uncertainty and instability arising from liberalization of the education market, technological changes, and demographic factors are central features of the environment in which public universities operate.

PE demonstrated by these IHL in the face of the examined uncertainty has regularly led to exploration, generation, execution, and sustainability of novel ideas-IWB as an approach for

institutional success and survival. The study findings further support, and expand the Spritzer's (1995) Empowerment Model, which emphasizes the motivational influence that employees have in promoting innovation through four work-related cognitions: Meaning, competence, impact, and self-determination. Through meaning, university employees have found belief and significance in their work, explored various options to find solutions and generated new ideas along the way.

Moreover, through competence, university employees have gained adequate knowledge, skills and abilities relevant for the development and execution of IWB. Yet, in line with the aspects of self-determination and influence, university personnel have been given the autonomy to decide how to accomplish their tasks, approach their work more innovatively, generate novel concepts, and have greater assurance that their contributions will be appreciated, which has promoted IWB (Javed et al. 2019). Thus, the results offer empirical support for the assertion that employees who believe in PE perceive themselves as more proactive, influential, independent, and capable of coming up with innovative solutions, which is consistent with the core tenets of the Spreitzer Empowerment model (Kustanto et al. 2020). Considering the competitive nature of the environment in which public universities operate, innovation has become a vital theme in organizational literature (Ibus et al., 2020; Dan et al., 2020). Thus, interest of several organizations has focused on establishing strategies aimed at motivating employees to innovate.

In line with the above, previous studies have attempted to examine the relationship between PE and IWB (Putra et al. 2022), however, the findings of this research are modest and frequently inconclusive (Kanake K. Mercy 2020). In the context of public universities, this study finds that a perception of self-efficacy, competence, meaning and self-determination tend to drive IWB among staff in public universities. The findings of the present study thus, align with prior research (Sudirman, 2024; Putra et al., 2022; Suparyanto dan Rosad, 2022). These authors established that

successful innovation results from employees' perception of self-efficacy, technical proficiency arising from competence development, autonomous decision making, and self-determination. Accordingly, effort to improve IWB among university academic staff must deal with the question of how staffs' PE can be developed and enhanced. The views of the key informants also empathize that psychological empowerment impacts IWB through the following factors;

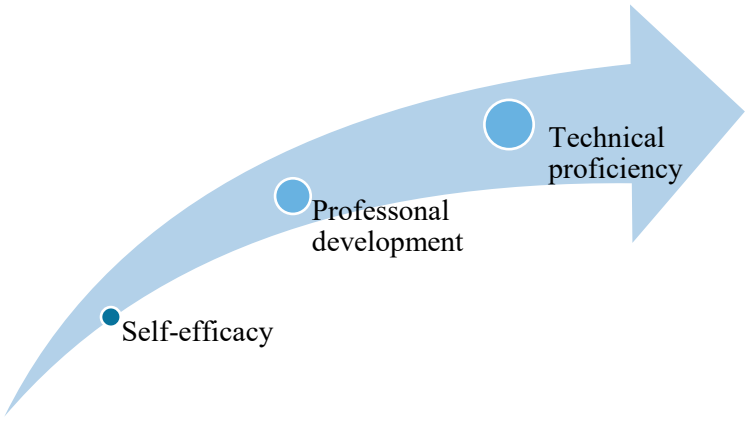


Fig. 6.8 Factors of psychological empowerment that influence innovative work behavior

CHAPTER SEVEN
CONCLUSIONS, IMPLICATIONS, RECOMMENDATIONS, LIMITATIONS AND AREAS FOR FUTURE RESEARCH

7.0 Introduction

This research investigated the effect of perceived organizational support (POS), servant leadership (SL), organizational culture (OC), and innovative work behavior (IWB), and examined whether psychological empowerment (PE) serves as a mediator between the relationships of POS and SL with IWB, with the aim of developing a clear model geared towards enhancing innovative work behavior. The current study collected data from 308 academic staff drawn from a total of ten (10) public universities. In line with the study's focus, and methodological design, additional data were gathered from senior managers of the 10 public universities.

This research was prompted by the unsatisfactory IWB among Uganda's academic staff in public universities, which adversely affects delivery of the universities' mandate especially in the area of teaching and learning, research and innovation, and community engagement. To tackle this challenge, the study focused on eight (8) objectives. Correspondingly, this research proposed and evaluated a total of eight hypotheses. This chapter summarizes the conclusions drawn from the research, offers recommendations, and highlights implications in line with the study's findings as well as relevant literature and theory. Suggestions for areas requiring additional focus within the context of this study are as well suggested.

7.1 Conclusions

It was crucial to determine the elements that impact IWB and the consequences that follow, such as better customer interactions, improved organizational procedures, and improved product systems, in order to determine the likely adjustments required to improve IWB among academic staff in public universities. The following conclusions were reached as a result of the results and debate in the previous chapter.

First, this study defines SL in Uganda's public universities as subordinate's growth and success, conceptual skills, empowering leadership, ethical behavior, emotional healing, and creating value to community; OC in Uganda as comprising: consistence, involvement, mission, and adaptability; PE as: meaning, self-determination, competence, and impact; POS as involving: fairness, supervisor support, and organizational support (organizational rewards & working conditions) while IWB is explained by idea realization, idea generation, idea promotion and idea sustainability. POS, SL, and OC make significant contributions to IWB, whilst the contribution of both POS and SL can also be realized through PE.

Second, on assessment of the level of POS, the study tells that academic staff in public universities value the care and support they receive from their respective institutions, and would reciprocate this care through enhanced IWB. However, the following conclusions are drawn from the findings about the mediation influence of PE in the association between POS and IWB: a) IWB among academic staff in public universities are directly influenced by POS. This suggests that support from the supervisors, fair treatment of employees, and decent benefits and compensation, and working conditions strengthen worker's IWB in public universities; b) part of the influence of POS on IWB is realized through PE. This proves that POS is very important for both PE and IWB.

Third, SL is crucial for both SL and IWB. On examination of the role of SL, the findings reveal that when employees are treated with humility, involved in decision making, and provided with opportunities for growth and development (SL), they are more engaged in IWB. Thus, it can be concluded that SL is a key driver for IWB. Nonetheless, the results on the mediating role of PE in the relationship between SL and IWB lead to the following specific conclusions: a) servant leadership has a direct impact on IWB among academic staff at public universities. This implies that workers' IWB in public universities is reinforced by SL practices such open communication, humility, involvement in decision making, and provision of staff with opportunities for growth and development; b) PE contributes to the influence of SL on IWB. This demonstrates how crucial SL is for both PE and IWB.

Fourth, the two contextual factors (SL, and OC), along with individual level factors (POS and PE) are strong predictors of IWB; when combined, they account for up to 50 percent of the variance in the academic staffs' IWB in public universities in Uganda. The study has, therefore, established that SL, POS, OC and PE significantly drive IWB among academic staff in public universities. Finally, in suggesting the route for improving IWB, this research has supported for a multi-theoretic approach in the explanation of IWB. The current study which used the theories of SET (Blau, 1986), Denison's OC Model (1990) and the Spritzer's Empowerment Model (1995) has demonstrated that using a multi-theoretic method provides an alternative pathway to IWB of academic staff by integrating both the contextual and individual level perspective to identify pertinent factors for POS, SL, OC and PE in a least developed context. The employees' IWB in organizations will suffer if these factors are absent, improper, or ineffective. Fifty percent (50%) of the variation in IWB in academic staff in the Uganda's higher education sector- public

universities may be explained by the collective effects of POS, OC, SL, and PE. The study's theoretical, managerial (practical), and policy implications are discussed next.

7.2 Study Implications

7.2.1 Introduction

Understanding the dynamics of POS, SL, OC, PE, and innovative work behavior becomes crucial for scholars and practitioners in the constantly changing education landscape. These research implications, which show the importance of the findings for theory, methodology, practice, and policy implications of the phenomenon under study, are thus, drawn from the study discussion and conclusions. This is accomplished by unpacking their relationships and examining how they work together to influence IWB. Scholars and researchers can use the theoretical and methodological implications to further our understanding of IWB. The practical implications can also be used by public universities to create strategies that promote IWB, which are crucial to their long-term success and survival. Moreover, governments and universities can use the policy implications to create initiatives and policies that foster a positive workplace culture that supports public Universities' IWB of their academic staff. The following implications are explained, and expanded as below:

7.2.2 Theoretical Implications

First, in tackling the important topic of 'innovative work behavior of academic staff in Uganda's public universities', this study has been carefully grounded in the robust theoretical frameworks of the social exchange theory, Denison's organizational culture model, and the Spritzer's empowerment model. Drawing from this theoretical base, a novel model has been developed that captures the complex interactions among POS, SL, OC, and PE, clarifying their combined effectiveness in promoting long-term IWB in the higher education sector. Using a multi-

theoretical approach, the study drew on the theories of social exchange theory (SET) (Blau, 1964), organizational culture model (Denison, 1990) and Spritzer's Empowerment Model (1995) to offer a more thorough explanation and understanding of IWB among academic staff in Uganda's public universities. It was found that no single theory of the aforementioned theories could adequately explain IWB phenomenon.

Yin (2009) supports the use of a multi-theoretical approach by highlighting the need of applying several theories to examine a research theme (IWB) from different perspectives, enabling a more comprehensive and in-depth understanding of the topic under study-IWB. Further, scholars such as Nag et al. (2006) and Shepherd and Suddaby (2017) have argued that the theorizing process requires integrating several constructs drawn from several theories, and from diverse knowledge fields to explicate a phenomenon under study. As a result, the study has developed a model that offers an explanatory framework for IWB by incorporating constructs such as POS, SL, OC, and PE.

This model can be used to improve IWB in similar situations. In doing so, the study responds to the demand of innovation scholars to investigate this phenomenon from a variety of theoretical angles, as advocated by researchers such as Stake (2013) and Dubin (1970). This study thus, provides a thorough understanding of the interactions between POS, SL, PE, and IWB within the intricate higher education ecosystem by fusing theoretical insights with empirical data and real-world applications. This adds to the larger conversation on organizational dynamics in this industry.

Second, although the significance of IWB is becoming more well recognized, the majority of research has concentrated on traditional approaches, specifically the organizational level perspective on innovation (Jankelová et al., 2021; Hock et al., 2024), ignoring one important

component: the individual perspective on innovation. Individuals are a key source of creativity in the workplace, as this study showed (Lee & Kim, 2016; Tajeddini & Martin, 2020). By exploring the understudied area of the contribution of individual level elements like attitudes and cognitive abilities to IWB, the study adds to the existing body of knowledge on IWB and develops a conceptual model that emphasizes this crucial dimension. In particular, this study argues that IWB at the individual level- defined as employees' intention to introduce and apply new concepts, products, and procedures to their work roles-is framed as critical thinking that makes it possible to identify possible issues and investigate opportunities and solutions to add value, which in turn promotes IWB (AlEssa and Durugbo 2021). Largely, this study answers the call by Hulsheger, & Salgado, (2009) for further studies on individual innovation. Therefore, this study suggests that IWB can be increased by applying individual-level methods such providing access to training programs, promoting lifelong learning to strengthen employees' professional cognitive abilities, and offering incentives for effective work performance.

Third, previous research has generally established that POS has a beneficial impact on employees' IWB (e.g., Wiggins, 2021; Kwahar et al., 2021; Khan, 2022; Rhoades & Eisenberger, 2002). These studies, however, did not emphasize or highlight the basic process that link POS to workers' IWB. To further explore the relationship between POS and employees' IWB, this study uses PE as one of the main underlying processes through which POS is associated with IWB. By examining the mediating role of PE in the POS- IWB relationship, our study advances knowledge of the fundamental process through which POS influence IWB. These results suggest that a perception of organizational support as indicated by fair treatment, conducive working environment, support from supervisors, and good compensation and reward system, might increases workers' level of PE, which in turn increases their IWB.

Our mediation results provide support to existing research that specify PE as an important source of motivation that drives IWB in organizations (Tahira, 2021; Yildiz et al., 2017; Jiwon & Kim, 2022). These studies argue that when employees believe that their organization supports their fundamental rights, including social, economic and others, it affects their PE and motivates them to innovate (Tahira 2021). Moreover, examining PE as a mediating factor, helps provide a better understanding of how and why POS can increase IWB among organizational employees. Fourth, earlier studies have generally demonstrated that SL has an influential role in promoting employees' IWB (e.g., Nurbaety Rojuaniah, 2022; Faraz et al., 2019). This research, however, failed to highlight the basic mechanism that link SL to workers' IWB. Moreover, existing research on the effects of SL on IWB provide mixed results (Mahdzir, 2022; Khan et al., 2020). For instance, studies by Olaleye & Solanke, (2021) and Chongvisal, (2020) reveal a positive correlation between SL and employees' IWB, albeit Amin et al. (2022) found no evidence of a significant association between SL and IWB. The mixed nature of the findings highlights the need for further examination of the interaction between SL and IWB (Mahdzir 2022) in order to explore the underlying mechanisms by which SL impacts IWB and provide a better understanding of the IWB problem (Opoku et al. 2019).

Scholars have argued that in the face of contradictory results, it is important to integrate a process variable with a definitive role as either a mediation or moderation to account for the aforesaid relationship (Namazi, 2016; Pokhariyal, 2019; Kouam, 2024). In line with these arguments, this study examines the relationship between SL and employees' IWB, by integrating PE as one of the fundamental underlying mechanisms through which SL is associated with IWB. By exploring the mediating influence of PE in the relationship between SL and IWB, our study advances knowledge of the fundamental process through which SL influences IWB. The study

findings suggest SL reinforced by actions such as empathy, commitment to employees' growth and development, listening, and involvement in decision making process, might enhance workers' level of PE, which in turn increases their IWB. Our results provide support to existing research that specify PE as a significant source of motivation that drive IWB in organizations (Tahira, 2021; Khan et al., 2022; Jiwon & Kim, 2022). These studies contend that by empowering, providing staff development opportunities, and granting decision making autonomy to staff, SL facilitates cognitive, and motivational processes that enable employees to engage in IWB. Employees are thus, committed to reaching organizational objectives by generating innovative ideas- IWB when they feel that their leaders primarily focus on their growth and wellbeing, and grant them with decision making autonomy- reflecting high SL. Therefore, when employees perceive SL culture underpinned by humility, involvement in decision making, and listening to followers' concerns, their PE is affected and they are motivated to innovate- IWB (Khan et al., 2022). Moreover, examining PE as a mediating concept, helps provide a better understanding of how and why SL can improve IWB among employees in their respective organizations.

Fifth, previous studies have posited inconclusive or mixed results about the relationship between SL and IWB in organizations (Mahdzir, 2022; Khan et al., 2020). For instance, while Olaleye and Solanke (2021); and Chongvisal (2020) found positive significant association between SL and IWB, studies by Amin et al. (2022) suggest contradictory results, as no evidence of positive and significant relationship between SL and IWB was found. This study contributes by providing empirical evidence that SL practices such as emotional healing, empowering leadership, promoting subordinate growth and development, account for substantial unique variance in the IWB among academic staff in organizations thereby providing support for studies by Olaleye and Solanke (2021); and Chongvisal (2020).

Finally, another important contribution is that this study provided additional empirical evidence for the effectiveness of POS, SL and OC in promoting IWB among academic employees in public universities and evaluated our assumptions in Uganda's context. Although several research has been conducted in western countries regarding the effectiveness of POS (Wiggins, 2021; Kwahar et al., 2021; Khan, 2022; Rhoades & Eisenberger, 2002), SL (Olaleye & Solanke 2021; Chongvisal, 2020) and OC (Aboramadan et al., 2020) in promoting IWB, not much of it has been conducted in underdeveloped countries such as Uganda. The degree of collectivism, operational environment, cultural orientation, and the support that universities provide to staff (POS) in the higher education sector in Uganda is less compared to western nations. Consequently, assuming that POS, SL and OC will have the same beneficial impact on IWB in Ugandan society is not tenable, as this affects generalizability, and suitability for use in underdeveloped countries. The results of this research thus, contribute by advancing our understanding of the effectiveness of POS, SL, and OC on IWB in several countries with differing levels of culture and development.

7.2.3. The central thesis

In the setting of Uganda's higher education sector, this study suggests that POS, servant leadership, and organizational culture are essential predictors of innovative work behavior. Moreover, the overarching concept of PE has a significant mediating influence in the relationship between these important factors and IWB, highlighting its critical role in determining the course of IWB among academic staff in higher education institutions-public universities.

> *According to the main argument/central thesis of this study, which takes into consideration the variables from various theories that were combined to explain innovative work behavior among academic staff in public universities, "perceived organizational support, servant leadership, and organizational culture independently predicted innovative work behavior; the mediation influence of psychological empowerment in the perceived*

organizational support and servant leadership relationship with innovative work behavior provide a better explanation for innovative work behavior among academic staff in public universities in Uganda"

Fig 7.1 Thus, below is the novel conceptual and theoretical model resulting from this research that might be used to provide a better explanation of innovative work behavior among academic staff in Uganda's public universities.

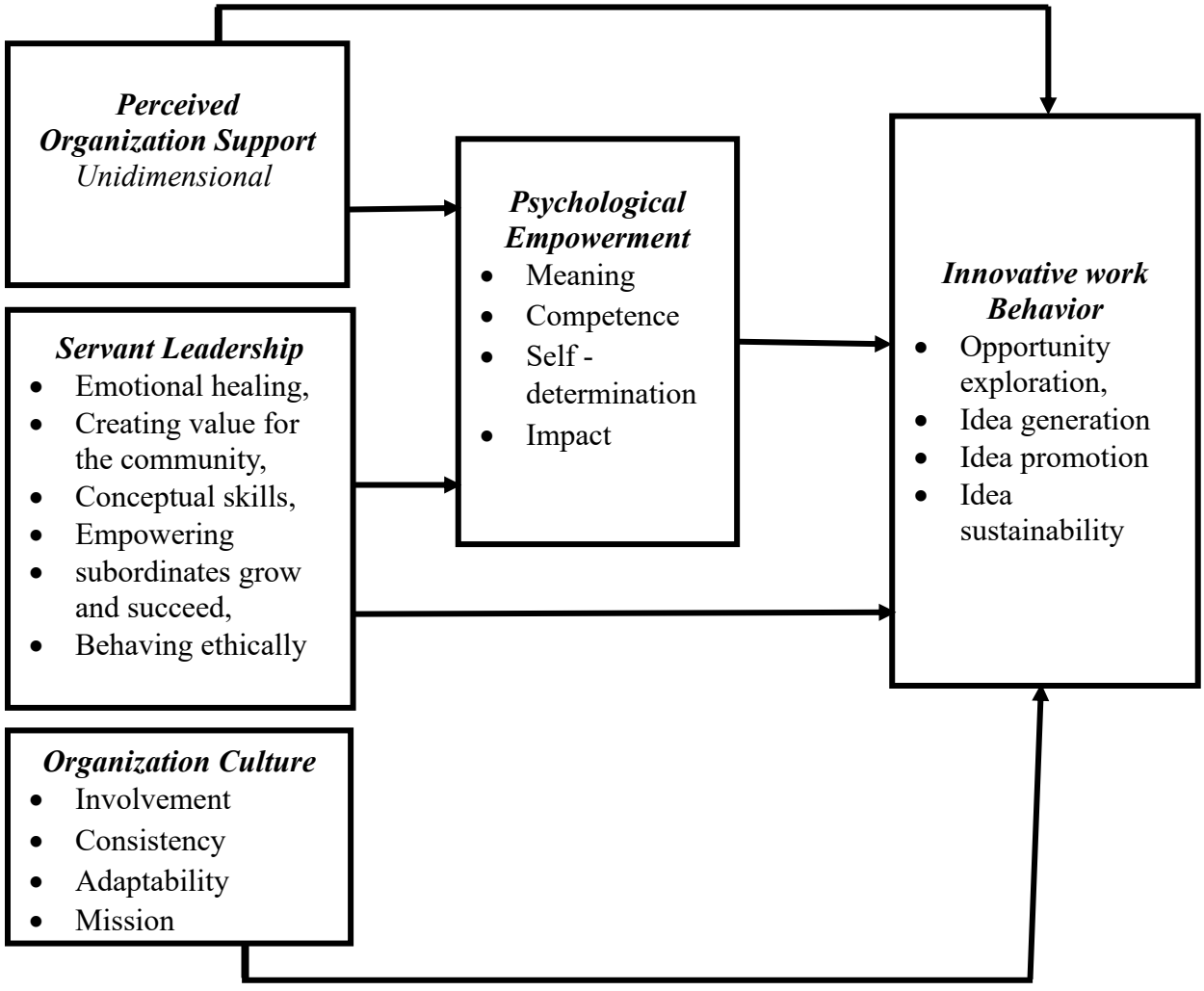


Fig 7.1: Final Modified Model for enhancing Innovative Work Behavior among academic staff in Uganda's Higher Education Sector - Wanyana Mercy IWB Model (2025)

According to the final model for IWB, which is depicted in Figure 8.1, there was a significant direct relationship between perceived organizational support, servant leadership, organizational culture with innovative work behavior. Moreover, psychological empowerment mediated the relationship between POS, and servant leadership with IWB. This means that POS, servant leadership, and organizational culture can have a direct influence on IWB, while perceived organizational support and servant leadership can have an indirect influence on innovative work behavior with psychological empowerment mediating the relationship between them.

8.2.4 Practical Implications

The current study has a number of implications for practice. First, this study supports previous research showing that SL promotes employees' IWB. Servant leadership's service style provides employees with the confidence and support they need to pursue IWB. Employees in the knowledge economy-public universities are more likely to develop and apply new ideas when their workplaces offer an atmosphere that supports their cognitive processes. As a result, organizations need to improve employees' work environment in order to raise their IWB. This can be achieved through a number of ways: a) By giving them the right instruction and knowledge to adhere to SL. b) despite being a successful leadership style, managers struggle to adapt to SL, which prevents organizations from reaping the full benefits of its application.

As additional research demonstrates the benefits of SL for knowledge workers, organizations should concentrate on cultivating these talents through a series of training initiatives. c) organizations need to develop and implement procedures for performance reviews that assess SL behavior. The notion of adopting SL should be associated with promotions in order to promote SL behavior among administrators, considering its crucial role for promoting IWB among

employees. Moreover, to promote SL, IHL must ensure recruitment and retention of servant leaders through appealing compensation benefits as these aid IHL in realizing their goals-IWB (Liden et al., 2014).

Second, POS was found to be associated with IWB. Primarily, the findings elucidate or clarify the relationship between the creation of innovative ideas and their execution, and highlight the significance of POS in fostering IWB ethos. When employees lack resources, their proactive innovation behavior is adversely affected. The development of an IWB culture among employees is contingent upon the provision of enough innovation resources, including cash, equipment, and technology, as well as a comfortable and equitable work environment. To encourage creative thinking and development of proactive IWB among employees, organizations should reinforce pertinent supporting policies and measures, create an ideal innovation service support structure, provide employees with staff training and development opportunities to grow their innovative capacity, provide supervisor support, and offer better compensation and rewards.

Third, according to our research, PE is a significant factor in the relationship between supervisors and subordinates in an organizational setting. In a broader sense, the more supportive an organization is, the more their employees will believe they are motivated to perform tasks effectively, and the higher the level of IWB. Our results also highlight the critical role that the relationship between the organization and its employees plays: in order to maximize their PE and produce greater levels of IWB, institutions need to look out for their employees and provide a conducive work environment. Supporting activities that can raise employees' IWB is also crucial for businesses because this will eventually contribute to individual output-IWB. These organizations can improve employees' IWB by implementing appropriate POS management practices, such as open communication, improved leadership, acknowledging professional

accomplishments, adjusting work schedules to suit individual needs, treating employees fairly, and fostering positive working relationships (Eisenberger et al., 2001). Overall, organizations must offer a strong, supportive framework for workers to become psychologically empowered and flourish at work, which might drive high IWB.

Finally, the study established a significant relationship between PE and IWB. These results suggest the need for university management to focus on initiatives that promote PE empowerment in order to enhance the IWB of university academic staff. Such initiatives could include provision of decision-making autonomy to staff, access to staff development and growth opportunities, provision of flexible working environment, establishing a culture of open communication, and delegation of work and responsibility. Generally, universities' effort to improve employees' IWB must deal with the question of whether or not their staff are psychologically empowered.

8.2.5 Policy Implications

Academicians, decision-makers, and administrators worldwide might find this research particularly interesting. First, as a concept in the fourth industrial revolution, low IWB has an impact on a country's overall social-economic development as well as the expansion, competitiveness, and performance of higher education institutions. In particular, this study has demonstrated that POS, SL, OC, and PE are significant factors that impact IWB among academic staff in public institutions. Given this, policymakers ought to create projects and programs that take into account how academic staff members in public universities view PE, leadership styles, and organizational support. For instance, the government should enact comprehensive training programs through legislation to enhance the professional and pedagogical abilities of academic staff and senior management at public universities.

Second, academic staff at public universities still struggle with poor IWB, as evidenced by their incapacity to identify issues and search for new opportunities, their incapacity to come up with innovative ideas for teaching and learning, their inadequate promotion of innovative concepts, their incapacity to develop prototypes and research models, and their lack of entrepreneurial skills to transfer or offer innovative solutions to community demands (Namono et al., 2021; Wao et al., 2022). As a result, this study supports, and recommends reviewing the current innovation policy. With an emphasis on STEM (Science, Technology, Engineering, and Mathematics) subjects-which are strongly linked to the success of innovations-the goal should be to make the educational system strong for innovation success. In order to enhance knowledge transfer and advance IWB, the policy should also ensure that research and development (R&D) institutions, universities, and research centers receive sufficient funding. It should also encourage collaborations between government, industry and academia. The application of technology, interdisciplinary efforts, chances for collaborative learning, entrepreneurship promotion, and a strong emphasis on practical experience are the five specific focus areas that should be considered in the evaluation.

8.3 Recommendations

Based on the results of the study and the literature review, and study conclusions, the following suggestions/recommendations are relevant to the IWB success of academic staff in public universities in Uganda.

Perceived organizational support

Management of public universities can improve employees' IWB through organizational support initiatives to employees. This research provides empirical evidence suggesting that employees' IWB is supported by workers perception of care for their well-being and support from

their respective organizations. Given the positive and significant correlation found between POS and IWB, university managers ought to give top priority to putting in place organizational support systems that could be focused on offering competitive pay, opportunities for career advancement, work-life balance programs, mental health resources, recognition programs, and strong leadership that cultivates a positive work environment. This will aid employees in returning the favor from the organization through increased engagement in IWB. Rhoades and Eisenberger (2002) argue that a feeling of fairness, and impartiality, support from the supervisor, and provision of sound organizational rewards, and positive work environment is essential for employees' successful innovation-IWB.

Servant Leadership

The study findings offer empirical support that IWB is positively and significantly correlated with SL. This shows that poor IWB, which is frequently linked to SL, results from leader's propensity to act without due regard to followers' growth, and development, lack of empathy, foresight and listening, and above all, failure to demonstrate stewardship character. This study thus, recommends that management of public universities must squarely deal with these consequences by organizing training programs in SL that majorly focus on the seven critical SL pillars namely: integrity, compassion, empowerment, strong communication, authenticity, constant progress, and prioritizing others. Once trained, servant leaders would uphold the principles of SL, foster a satisfying work environment, and inspire team members to deliver their best work- IWB.

Organizational culture

The results of this study provide empirical evidence that OC and IWB are positively and significantly related. This shows that supportive collection of many ideals, standards, values, and beliefs held by members of an organization affect how employees think, feel, act and as well influences how they behave in an organization- IWB (Aryani and Widodo 2020). Muhammed, (2020) contends that an organization's culture, embraced as a guiding principle influences the work environment, which in turn affects individuals' ability to innovate. Given these findings, the study suggests or recommends that public university administration create and sustain an inventive culture-a pattern of consistent behavior marked by positivity, inclusivity, and a sense of belonging. Actions to build this innovative culture could focus on: setting purpose, mission, and values that support innovation, evaluating the existing culture to determine whether it supports innovation, aligning leadership and communication strategy, engaging staff, monitoring, and measuring, as well as planning for future initiatives. This will undoubtably promote IWB among university academic staff.

Psychological empowerment and IWB

This study established that POS and SL are crucial for the development of psychologically empowered employees. This therefore, implies that development of IWB improves when the employees develop innate drive that takes the form of four work-related cognitions: Meaning, competence, impact, and self-determination. Meaning refers to a person's assessment of the organization's objectives and values in light of his or her own ideals and standards of belief (Wang et al. 2022). When workers understand how important their work is, they focus on coming up with novel concepts through IWB (Z. Zhang, Liu, and Yang 2021). Competence is related to the concept of self-efficacy, which measures a person's capacity to carry out their job duties successfully.

Competent individuals are more inclined to come up with and use innovative ideas at work, than incompetent staff (Helmy et al. 2019). Impact denotes the personal influence one has via their work. The greater the influence the higher IWB are likely to evolve (Kustanto et al. 2020). Finally, self-determination connotes the ability of the academic staff to make decisions, set goals, and take autonomous actions, practices that have been associated with increased IWB. This study thus, recommends delegation of work and responsibility, provision of training and learning opportunities, setting realistic expectations, quality mentorship, and granting employee decision making autonomy if we are to witness an improvement in employees' PE towards IWB.

8.4 Limitations and Areas for Future Research

This research has certain limitations, although it makes important empirical contributions to theory, practice and policy. First, since our analysis is centered on individual-level data, any inferences made should not be extrapolated or generalized to team or organizational dynamics. However, this limitation offers a chance for additional investigation from the viewpoints of the team and the organizations. Furthermore, academic staff at public universities participated in this study. The study's industry-specific approach might restrict how broadly the results can be applied. Therefore, in order to address the issue of external validity, it would be advantageous to repeat our study approach in a different corporate situation. Researchers from other fields such as manufacturing sector, healthy, and hospitality industry are thus, invited to test this similar IWB model.

Second, data used in this study came from a single source- academic staff from the Uganda's public universities, and was gathered using a self-administered questionnaire which involves bias. Using data from a single source to test or measure every study construct may have

resulted in common methods bias (CMB), which might have affected the study findings and conclusions. Although our study used both procedural- clarity with the scale items, and ensuring systematic questionnaire development process; and the statistical remedies such as post hoc tests like confirmatory factor analysis (CFA) and Harman's single-factor test to deal with the CMB threat, the problem might not have been entirely ruled out. To further mitigate this issue, future research should consider using data collection methods from multiple sources, consistent with recommendations of Podsakoff et al., (2003) and Liang et al. (2021).

Third, because the current study is based on a cross-sectional research design, it is likely that people's opinions may change over time, making it difficult to draw conclusions about causation or causality. As a result, this approach did not allow for definitive causal attributions for the associations that were established. Consequently, it is important to exercise caution when interpreting the directional influences proposed in the hypothesized models. Since people's views and opinions evolve over time, it is suggested that future research use a longitudinal or time-lagged design to gather data and evaluate the suggested relationship in order to determine causation. This will provide researchers and practitioners with a more complete picture of the times when perceptions, beliefs, and behavior are most strongly correlated.

Lastly, as motivational and affective mechanisms, respectively, the current study investigated the mediation influence of PE in both POS- IWB, and SL- IWB relationships. Future studies should look at and contrast other competing mediation mechanisms, like social-relational processes (like followers' trust in the leader) and cognitive mechanisms (like self-efficacy, and employees' psychological safety), to better understand how POS and SL affect employees' IWB. The above drawbacks notwithstanding, this study may be helpful to Ugandan policymakers who deal with higher education, academics, directors of various higher education institutions,

institutional owners, and even readers in general who are curious about innovation in higher education sector. The model developed in this study may be tested in future research to predict creative work practices-IWB in private universities.

References:

Abane, Juliana Abagsonema, Ronald Adamtey, and Virceta Owusu Ayim. 2022. "Does Organizational Culture Influence Employee Productivity at the Local Level? A Test of Denison's Culture Model in Ghana's Local Government Sector." *Future Business Journal* 8(34):2–13. doi: 10.1186/s43093-022-00145-5.

Abdullah Alajhar, Noha, and Mohammad Asif Salam. 2022. "Servant Leadership and Innovative Work Behavior: The Mediating Role of Organizational Citizenship Behavior." *International Journal of Academic Research in Business and Social Sciences* 12(4):326–48. doi: 10.6007/ijarbss/v12-i4/12888.

Abdullah, N., H. Saleh, and N. F. Ibrahim. 2021. "Relationship Between Well-Being and Innovative Work Behaviour in Public Educational Institutions : A Conceptual Relationship Between Well-Being and Innovative Work Behaviour in Public Educational Institutions : A Conceptual Paper." *Academy of Entrepreneurship Journal* 27(5):1–10.

Abid Marzuki, Muhammad, Billy Tunas, and Mukhtadi A. 2019. "The Mediating Effect of Achievement Motivation on the Relationship Between Organizational Culture and Innovative Behavior in Public Sector." *International Journal of Advanced Research* 7(6):1101–10. doi: 10.21474/ijar01/9929.

Abidi, Oualid, Khalil Nimer, Ahmed Bani-Mustafa, and Sam Toglaw. 2022. "Relationship between Faculty Characteristics and Their Entrepreneurial Orientation in Higher Education Institutions in Kuwait." *Journal of Innovation and Entrepreneurship* 11(12):1–22. doi: 10.1186/s13731-022-00206-7.

Aboramadan, Mohammed, Belal Albashiti, Hatem Alharazin, and Souhaila Zaidoune. 2020. "Organizational Culture, Innovation and Performance: A Study from a Non-Western Context." *Journal of Management Development* 39(4):437–51. doi: 10.1108/JMD-06-2019-0253.

Aboramadan, Mohammed, Zeeshan Hamid, Yasir Mansoor, Kundi Eissa, and El Hamalawi. 2022. "The Effect of Servant Leadership on Employees ' Extra-Role Behaviors in NPOs : The Role of Work Engagement." *Wiley* 21:1–21. doi: 10.1002/nml.21505.

Abun, Damianus, Libertine Gertrude R. Macaspact, Elita B. Valdez, and Fredolin P. Julian. 2023. "The Effect of Innovative Work Environment on the Innovative Work Behavior of Employees." *International Journal of Research in Business and Social Science (2147-4478)* 12(3):140–58. doi: 10.20525/ijrbs.v12i3.2467.

Adam, Anokye M. 2020. "Sample Size Determination in Survey Research." *Journal of Scientific Research and Reports* 26(5):90–97. doi: 10.9734/jsrr/2020/v26i530263.

Addai, Emmanuel, and Agyemang Amofa Prempeh. 2020. "The Effect of Organisational Culture on Teachers' Engagement at Selected Senior High Schools in Kumasi Metropolitan." *Academia Journal of Educational Research* 8(4):138–53. doi: 10.15413/ajer.2020.0102.

Afzal, Saima, Ayesha Afzal, Muhammad Amin, Sehar Saleem, Nouman Ali, and Muhammad Sajid. 2021. "A Novel Approach for Outlier Detection in Multivariate Data." *Mathematical Problems in Engineering* 2021(1899225):1–12. doi: 10.1155/2021/1899225.

Ahadi, Sahar, and Turiman Suandi. 2014. "Structural Empowerment and Organizational Commitment : The Mediating Role of Psychological Empowerment in Malaysian Research Universities Intorduction." *Journal of Asian Developement Studies* 3(1):44–65.

Ahmad, Rehan, Muhammad Rafay Nawaz, Muhammad Ishtiaq Ishaq, Mumtaz Muhammad Khan, and Hafiz Ahmad Ashraf. 2023. "Social Exchange Theory: Systematic Review and Future Directions." *Frontiers in Psychology* 13:1–13. doi: 10.3389/fpsyg.2022.1015921.

Akhtar, Muhammad Waheed, Fauzia Syed, Mudassir Husnain, and Saima Naseer. 2019. "Person-Organization Fit and Innovative Work Behavior: The Mediating Role of Perceived Organizational Support, Affective Commitment and Trust." *Pakistan Journal of Commerce and Social Science* 13(2):334–57.

Akram, Muhmmad, Shahbaz Sharif, Khurshed Iqbal, and Muhammad Adnan. 2024. "Servant Leadership and Innovative Work Behavior : Self-Construal Moderates the Relationship." *Remittances Review* 9(4):1169–98. doi: doi.org/10.33282/rr.vx9i2.66.

Aldabbas, Hazem, Ashly Pinnington, and Abdelmounaim Lahrech. 2019. "The Mediating Role of Psychological Empowerment in the Relationship between Knowledge Sharing and Innovative Work Behaviour." *Management Analysis Journal* 8(3):330–39. doi: 10.1142/S1363919621500146.

AlEssa, Hanan S., and Christopher M. Durugbo. 2021. *Systematic Review of Innovative Work Behavior Concepts and Contributions*. Springer International Publishing.

Almulhim, Abdullah F. 2020. "Linking Knowledge Sharing to Innovative Work Behaviour: The Role of Psychological Empowerment." *Journal of Asian Finance, Economics and Business* 7(9):549–60. doi: 10.13106/JAFEB.2020.VOL7.NO9.549.

Alruhaymi, Abdullah Z., and Charles J. Kim. 2021. "Study on the Missing Data Mechanisms and Imputation Methods." *Open Journal of Statistics* 11(04):477–92. doi: 10.4236/ojs.2021.114030.

Alsaqqa, Hatem H. 2024. "Organizational Culture Relation With Innovation; Comment on 'Employee-Driven Innovation in Health Organizations: Insights From a Scoping Review.'" *International Journal of Health Policy and Management* 13:8583. doi: 10.34172/ijhpm.8583.

Alshathri, Sulaiman. 2020. "Leadership and Organisational Climate for Innovation: Towards a Research Agenda for Saudi Higher Education." *World Conference on Mobile and Contextual Learning* 59–72.

Amaratunga, Dilanthi, David Baldry, Marjan Sarshar, and Rita Newton. 2002. "Quantitative and Qualitative Research in the Built Environment: Application of 'Mixed' Research Approach." *Quantitative and Qualitative Research in the Built Environment* 51(1):17–31. doi: 10.1108/00438020210415488.

Amin, Shofia, Zulfina Adriani, and Fitri Widiastuti. 2022. "How Can Servant Leadership Arouse to Innovative Work Behavior ?" *Jurnal Ekonomi, Keuangan Dan Manajemen* 18(Special Issue):183–93. doi: 10.29264/jinv.v18i0.11253.

Anderson, James C., and David W. Gerbing. 1988. "Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach." *Psychological Bulletin* 103(3):411–23. doi: 10.1037/0033-2909.103.3.411.

Anney, Vicent N. 2014. "Ensuring the Quality of the Findings of Qualitative Research: Looking at Trustworthiness Criteria." *Journal of Emerging Trends in Educational Research and Policy Studies* 5(2):272–81.

Ansari, Sanaullah, Abdul Hameed Panhwar, Ghulam Akbar Mahesar, Abdul Hameed Panhwar, Ghulam Akbar, and Mahesar /. Ariel. 2016. "Mixed Methods Research: Ontological, Epistemological and Methodological Underpinnings." *International Research Journal of Language and Literature* 27:133–41.

Antonakis, John, Samuel Bendahan, Philippe Jacquart, and Rafael Lalive. 2014. "Causality and Endogeneity: Problems and Solutions." *The Oxford Handbook of Leadership and Organizations* 1:93–117.

Anwar, Muhammad, Khan Sajjad Ahmad Jan &. 2022. “Linkages Between Ethical Leadership, Perceived Organizational Support, and Innovative Work Behaviors in HEIs.” *Journal of Social Research Development* 3(1).

Arangote, Emily M. 2021. “Innovativeness of a University : Its Implications to Individual and Organizational Transformation.” *PSYCHOLOGY AND EDUCATION* 58(4):1634–38.

Arbuckle, James L. 1999. “Amos^{TM} 6.0 User’s Guide.” *Amos Development Corporation* 142:1–509.

Ardianti, Tanti, Martinus Tukiran, and Diah Mariana. 2024. “INNOVATIVE WORK BEHAVIOR IN HIGHER EDUCATION :” *Research and Development Journal Of Education* 10(2):975–85. doi: 10.30998/rdje.v10i2.23807.

Aristana, I. Nengah, I. Wayan Sucipta Wibawa, and I. Made Bayu Wisnawa. 2024. “Psychological Empowerment Exploration on Innovative Work Behavior: The Role of Transformational Leadership as Mediator.” *Jurnal Manajemen Bisnis* 15(1):77–98. doi: 10.18196/mb.v15i1.20274.

Arsawan, I. Wayan Edi, Ismi Rajiani, I. Wayan Wirga, and Ni Putu Santi Suryantini. 2020. “Harnessing Knowledge Sharing Practice to Enhance Innovative Work Behavior: The Paradox of Social Exchange Theory.” *Polish Journal of Management Studies* 21(2):60–73. doi: 10.17512/pjms.2020.21.2.05.

Arundel, Anthony, Dominique Bowen-butchart, and Sarah Gatenby-Clark. 2016. “The Role of an Inclusive Innovation Culture and Innovation Support Strategies in University Managerial and Service Innovations : Survey Results for Australia and New Zealand.” *Australian Innovation Research Centre* 1–22.

Aryani, Rita, and Widodo Widodo. 2020. “The Determinant of Organizational Culture and Its Impact on Organization: A Conceptual Framework.” *International Journal of Higher Education* 9(3):64–70. doi: 10.5430/ijhe.v9n3p64.

Ayadi, Asma Daboussi. 2021. “The Effects of Organizational Justice on Innovative Work Behavior : A Multilevel Analysis.” *International Journal of Economics & Strategic Management of Business Process (ESMB)* 19:98–104.

Ayoub, Alaa Eldin Abdel Hamid, Soud Mohammad Almahamid, and Luma F. Al Salah. 2023. “Innovative Work Behavior Scale: Development and Validation of Psychometric Properties in Higher Education in the GCC Countries.” *European Journal of Innovation Management* 26(1):119–33. doi: 10.1108/EJIM-04-2021-0176.

Babbie, E. and Mouton, J. 2002. “The Practice of Social Research.” *Oxford University Press Southern Africa, Cape Town.* 5th Editio:1–540. doi: 10.2307/2062956.

Baharuddin, Mohammad Fazli, Mohamad Noorman Masrek, and Shamila Mohamed Shuhidan. 2019. “Innovative Work Behaviour of School Teachers: A Conceptual Framework.” *International E-Journal of Advances in Education* V(14):213–21. doi: 10.18768/ijaedu.593851.

Barbuto, John E., and Daniel W. Wheeler. 2006. “Scale Development and Construct Clarification of Servant Leadership.” *Group and Organization Management* 31(3):300–326. doi: 10.1177/1059601106287091.

Barclay, Et. a. 1995. “The Partial Least Squares (PLS) Approach to Causal Modeling, Personal Computer Adoption and Use as an Illustration.” *Technology Studies* 2(2):285–309.

Baron, Reuben M., and David A. Kenny. 1986. “The Moderator-Mediator Variable Distinction in Social Psychological Research. Conceptual, Strategic, and Statistical Considerations.” *Journal of Personality and Social Psychology* 51(6):1173–82. doi: 10.1037/0022-

3514.51.6.1173.
Basemera, Mellan, Samuel Mafabi, Francis Kasekende, Eva Mpaata, and Donatus Mugisha Rulangaranga. 2016. “Enhancing Proactive Work Behaviour amongst Lecturers in Public Universities in Uganda.” *International Journal Of Management And Economics Invention* 2(10):1065–72. doi: 10.18535/ijmei/v2i10.04.
Bathinda, Aiims. 2017. “REVIEW ARTICLE SAMPLE SIZE DETERMINATION (FOR DESCRIPTIVE STUDIES).” *INTERNATIONAL JOURNAL OF CURRENT RESEARCH* 9(03):48365–67.
Bhardwaj, Pooja. 2019. “Types of Sampling in Research.” *Journal of the Practice of Cardiovascular Sciences* 5(3):157–63. doi: 10.4103/jpcs.jpcs_62_19.
Bollen, Kenneth A. 1989. “A New Incremental Fit Index for General Structural Equation Models.” *Sociological Methods & Research* 17(3):303–16. doi: 10.1177/0049124189017003004.
Bos-Nehles., Maarten Renkema, and Maike Janssen. 2017. “HRM and Innovative Work Behaviour: A Systematic Literature Review.” *Personnel Review* 46(7):1228–53. doi: 10.1108/PR-09-2016-0257.
Bos-Nehles, Anna C., and Andre A. R. Veenendaal. 2019. “Perceptions of HR Practices and Innovative Work Behavior: The Moderating Effect of an Innovative Climate.” *International Journal of Human Resource Management* 30(18):2661–83. doi: 10.1080/09585192.2017.1380680.
Buhumaid, Maitha. 2022. “Identifying an Organizational Culture Model/Framework to Effectively Approach Quality Management: A Comprehensive Literature Review.” *International Journal For Research In Business, Management And Accounting* 8(4):1–8.
Bwire, Felix, Emily Bagarukayo, and Paul Birevu Muyinda. 2020. “Online Learning Challenges in Academia: The Case of Uganda.” *CSEDU 2020 - Proceedings of the 12th International Conference on Computer Supported Education* 2:484–89. doi: 10.5220/0009794504840489.
Caesens, Gaëtane, Pierre Bouchat, and Florence Stinglhamber. 2020. “Perceived Organizational Support and Psychological Empowerment: A Multi-Sample Study.” *Journal of Occupational and Environmental Medicine* 62(7):1–24. doi: 10.1097/JOM.0000000000001889.
Caglar Dogru. 2018. “The Relationship between Perceived Support and Innovative Behavior : Analyzing the Mediating Role of Work Engagement Ça ğ Lar DO Ğ RU.” *Journal of Business Research-Türk* 10(2):384–402. doi: 10.20491/isarder.2018.435.
Cai, Wenjing, Evgenia I. Lysova, Svetlana N. Khapova, and Bart A. G. Bossink. 2018. “Servant Leadership and Innovative Work Behavior in Chinese High-Tech Firms: A Moderated Mediation Model of Meaningful Work and Job Autonomy.” *Frontiers in Psychology* 9(1767):1–13. doi: 10.3389/fpsyg.2018.01767.
Cairney, Paul. 2013. “Standing on the Shoulders of Giants: How Do We Combine the Insights of Multiple Theories in Public Policy Studies?” *Policy Studies Journal* 41(1):1–21. doi: 10.1111/psj.12000.
Caliskan, Aysun, and Chang Zhu. 2020. “Organizational Culture and Educational Innovations in Turkish Higher Education: Perceptions and Reactions of Students.” *Educational Sciences: Theory and Practice* 20(1):20–39. doi: 10.12738/jestp.2020.1.003.
Cardina, Dica Surya, and Danes Jaya Negara. 2022. “The Effect of Organizational Culture and Perceived Organizational Support on Innovative Work Behavior.” *Lembaran Ilmu Kependidikan* 51(2):63–69.

Carvalho, Larissa Pinon de, Thiago Poleto, Camila Carvalho Ramos, Fernando de Assis Rodrigues, Victor Diogho Heuer de Carvalho, and Thyago Celso Cavalcante Nepomuceno. 2023. “Predictors of Digital Competence of Public University Employees and the Impact on Innovative Work Behavior.” *Administrative Sciences* 13(5). doi: 10.3390/admsci13050131.

Casteel, Alex, and Nancy L. Bridier. 2021. “DESCRIBING POPULATIONS AND SAMPLES IN DOCTORAL STUDENT RESEARCH.” *International Journal of Doctoral Studies* 16:339–62.

Cheah, Lee Fong, Ming Yu Cheng, and Kai Wah Hen. 2022. “The Effect of Quality Management Practices on Academics’ Innovative Performance in Malaysian Higher Education Institutions.” *Studies in Higher Education* 1–14. doi: 10.1080/03075079.2022.2160702.

Cheung, Gordon W., Helena D. Cooper-Thomas, Rebecca S. Lau, and Linda C. Wang. 2023. *Reporting Reliability, Convergent and Discriminant Validity with Structural Equation Modeling: A Review and Best-Practice Recommendations*. Springer US.

Chomeya, R., S. Tayraukham, S. Tongkhambanchong, and N. Saravitee. 2024. “Sample Size Determination Techniques for Multivariate Behavioral.” *Journal of Education and Innovation* 26(2):438–47.

Chongvisal, Rattigorn. 2020. “Factors Affecting Innovative Work Behavior of Managers.” *Polish Journal of Management Studies* 22(2):50–64. doi: 10.17512/PJMS.2020.22.2.04.

Christian Iragi, Dr. Joanes Kyongo. 2024. “ORGANIZATIONAL CULTURE AND INNOVATION: AN EMPIRICAL INVESTIGATION.” *International Journal of Management and Commerce Innovations* 11(2):214–19. doi: 10.5281/zenodo.10439019.

Citta, Andi Batary, Ahmad Ridha, Yosefina Andia Dekrita, and Ritha Yunus. 2019. “Psychological Empowerment, Innovative Work Behavior and Job Satisfaction.” *Advances in Economics, Business and Management Research (AEBMR)* 92(Icame):636–43.

Claudia Beatriz. 2018. “The Individual Innovativeness Theory: A Framework to Investigate Teachers’ Views on Technology.” *ICICTE* 360–70.

Cobern, William, and Betty Adams. 2020. “Establishing Survey Validity: A Practical Guide.” *International Journal of Assessment Tools in Education* 7(3):404–19. doi: 10.21449/ijate.781366.

Coleman, P. 2022. “Validity and Reliability within Qualitative Research For.” *International Journal of Caring Sciences* 14(3):2041–45.

Collins, Christopher S., and Carrie M. Stockton. 2018. “The Central Role of Theory in Qualitative Research.” *International Journal of Qualitative Methods* 17:1–10. doi: 10.1177/1609406918797475.

Cooper, Brian, Nathan Eva, Forough Zarea Fazlelahi, Alexander Newman, Allan Lee, and Martin Obschonka. 2020. “Addressing Common Method Variance and Endogeneity in Vocational Behavior Research: A Review of the Literature and Suggestions for Future Research.” *Journal of Vocational Behavior* 121:1–39. doi: 10.1016/j.jvb.2020.103472.

Creswell, John W. 2003. “Research Design: Qualitative, Quantitative and Mixed Methods Approaches.”

Cui, Jun, and Robin Bell. 2022. “Behavioural Entrepreneurial Mindset: How Entrepreneurial Education Activity Impacts Entrepreneurial Intention and Behaviour.” *International Journal of Management Education* 20(2). doi: 10.1016/j.ijme.2022.100639.

Dahiya, Rinki, and Juhi Raghuvanshi. 2022. “Validation of Innovative Work Behaviour Scale: Indian Apparel Manufacturing Sector.” *Asia Pacific Management Review* 27(2):120–36.

doi: 10.1016/j.apmrv.2021.06.002.
Dalecki, Michael G., John C. Whitehead, and Glenn C. Blomquist. 1993. “Sample Non-Response Bias and Aggregate Benefits in Contingent Valuation: An Examination of Early, Late and Non-Respondents.” *Journal of Environmental Management* 38(2):133–43.
Dan, Yi, Surapee Sorajjakool, and Nathara Mhunpiew. 2020. “Increasing Instructors’ Teaching Innovation: A Significant Role of Leaders in Higher Education Institutions.” *Rangsit Journal of Educational Studies* 7(2):12–23. doi: 10.14456/rjes.2020.2.
Daud, Siti Rohana, Nani Shuhada Sehat, Muhammad Syukri Abdullah, Azira Rahim, Intan Liana Suhaime, Saida Farhanah Sarkam, and Norlela Abas. 2023. “Academicians’ Innovative Work Behaviour: Which Leadership Style Most Effective to Foster It?” *International Journal of Academic Research in Progressive Education and Development* 12(3):1082–94. doi: 10.6007/ijarped/v12-i3/19002.
Dawadi, Saraswati, Sagun Shrestha, and Ram A. Giri. 2021. “Mixed-Methods Research: A Discussion on Its Types, Challenges, and Criticisms.” *Journal of Practical Studies in Education* 2(2):25–36. doi: 10.46809/jpse.v2i2.20.
Deng, Lifang Li, and Yunchuan Jiang. 2019. “Outlier Detection Based on Robust Mahalanobis Distance and Its Application.” *Open Journal of Statistics* 09(01):15–26. doi: 10.4236/ojs.2019.91002.
Deng, Yingli, Cynthia S. Wang, Federico Aime, Long Wang, Niro Sivanathan, and Yun Chung Kim. 2021. “Culture and Patterns of Reciprocity: The Role of Exchange Type, Regulatory Focus, and Emotions.” *Personality and Social Psychology Bulletin* 47(1):20–41. doi: 10.1177/0146167220913694.
Denison, Daniel, Levi Nieminen, and Lindsey Kotrba. 2012. “European Journal of Work and Organizational Psychology Diagnosing Organizational Cultures : A Conceptual and Empirical Review of Culture Effectiveness Surveys.” *European Journal of Work and Organizational Psychology* 23(1):145–61. doi: 10.1080/1359432X.2012.713173.
Denzin, Norman K., and Yvonna S. Lincoln. 2005. “The Discipline and Practice of Qualitative Research.” *Sage Publication, Inc* 9(20):1–32.
DeVellis, Robert F. 2003. “Scale Development: Theory and Applications.” *TThousand Oaks, California, Sage* 2nd Editio:1–97.
Van Dierendonck, Dirk, and Inge Nuijten. 2011. “The Servant Leadership Survey: Development and Validation of a Multidimensional Measure.” *Journal of Business and Psychology* 26(3):249–67. doi: 10.1007/s10869-010-9194-1.
Dirgantara Prakoso, Satrio. 2022. “Influence of Perceived Organizational Support on Innovative Behavior With Organizational Commitment as a Mediating Variable on Employees of PT. Lay Brothers.” *Airlangga Development Journal* 4(6):48–56. doi: 10.20473/adj.v6i1.36991.
Don-Solomon, Amakiri and Eke, Gift Juliet. 2018. “Ontological & Epistemological Philosophies Underlying Theory Building: A Scholarly Dilemma or Axiomatic Illumination- The Business Research Perspective.” *European Journal of Business and Innovation Research* 6(2):1–7.
Drisko, James W. 2025. “Transferability and Generalization in Qualitative Research.” *Research on Social Work Practice* 35(1):102–10. doi: 10.1177/10497315241256560.
Duger, Yavuz Selim. 2021. “The Effect of Empowering Leadership on Employees’ Innovative Behavior: The Role of Affective Commitment and Psychological Empowerment.” *Pamukkale University Journal of Social Sciences Institute* 46:479–96. doi: 10.30794/pausbed.829858.

EILU, EMMANUEL, JOSEPH MUTEMERE, SUMAYA M. KAGOYA, MARGARET NAGWOVUMA, GODFREY ODONGTOO, and JAMES BOOGERE. 2024. “Usability Evaluation of Learning Management Systems in Public Universities in Uganda: Lecturers’ Perspectives.” *The Uganda Higher Education Review* 12(1):108–24. doi: 10.58653/nche.v12i1.8.

Eisenberger, Robert, Robin Huntington, Steven Hutchison, and Debpra Sowa. 1986. “Perceived Organizational Support.” *Journal of Applied Psychology* 71(3):500–507. doi: 10.1037/0021-9010.71.3.500.

Eisenberger, Robert, Linda Rhoades Shanock, and Xueqi Wen. 2020. “Perceived Organizational Support: Why Caring about Employees Counts.” *Annual Review of Organizational Psychology and Organizational Behavior* 7:101–24. doi: 10.1146/annurev-orgpsych-012119-044917.

Ekmekcioglu, Emre Burak, and Kürşad Öner. 2024. “Servant Leadership, Innovative Work Behavior and Innovative Organizational Culture: The Mediating Role of Perceived Organizational Support.” *European Journal of Management and Business Economics* 33(3):272–88. doi: 10.1108/EJMBE-08-2022-0251.

Elangovan, N., and E. Sundaravel. 2021. “Method of Preparing a Document for Survey Instrument Validation by Experts.” *Elangovan and E. Sundaravel / MethodsX* 8(101326):1–10. doi: 10.1016/j.mex.2021.101326.

Elo, Satu, Maria Kääriäinen, Outi Kanste, Tarja Pölkki, Kati Utriainen, and Helvi Kyngäs. n.d. “Qualitative Content Analysis: A Focus on Trustworthiness.” *SAGE Open* 4(1):1–10. doi: 10.1177/2158244014522633.

Emete Toros. 2021. “The Mediating Effect of Psychological Empowerment on Inclusive Leadership and Innovative Work Behaviour: A Research in Hotels.” *Advances in Global Services and Retail Management:* Volume 2:1–10. doi: 10.5038/9781955833035.

Eskiler, Ersin, Summani Ekici B, and Fikret Soyer B-d. 2016. “The Relationship between Organizational Culture and Innovative Work Behavior for Sports Services in Tourism Enterprises.” *Physical Culture and Sport. Studies And Research* LXIX:53–64. doi: 10.1515/pcssr-2016-0007.

Etikariena, Arum, and Pratiwi Widyasari. 2020. “Quality Education to Succeed the SDGs among College Students through the Role of Learner Empowerment and Creative Self-Efficacy to Develop Innovative Work Behavior.” *E3S Web of Conferences* 211:1–10. doi: 10.1051/e3sconf/202021101018.

Etzkowitz, Henry, and Loet Leydesdorff. 1998. “THE ENDLESS TRANSITION : A " TRIPLE HELIX " OF UNIVERSITY-INDUSTRY- GOVERNMENT RELATIONS : Introduction Author (s): Henry Etzkowitz and Loet Leydesdorff Source : Minerva , AUTUMN 1998 , Vol . 36 , No . 3 , THE ENDLESS TRANSITION : A " TRIPLE HELIX " OF.” *Springer* 36(3):203–8.

Faraz, Naveed Ahmad, Muhammad Farhan Mughal, Fawad Ahmed, and Ali Raza. 2019. “Impact of Servant Leadership on Employees ’ Innovative Work Behaviour-Mediating Role of Psychological Empowerment 1 . Intro d Uctio n 2 . How to Recognize a Good.” *Internationa l Journa l of Management Science and Bus Iness Adminis Trat Ion* 5(3):10–21. doi: 10.18775/ijmsba.1849-5664-5419.2014.53.1002.

Farrukh, Muhammad, Fanchen Meng, Ali Raza, and Yihua Wu. 2023. “Innovative Work Behaviour: The What, Where, Who, How and When.” *Personnel Review* 52(1):74–98. doi: 10.1108/PR-11-2020-0854.

Fibriandhini, Ariana, Surati Surati, and Hermanto Hermanto. 2022. "The Effect of Transformational Leadership on Innovative Work Behavior Mediated by the Organizational Culture." *ALEXANDRIA (Journal of Economics, Business, & Entrepreneurship)* 3(2):42–48. doi: 10.29303/alexandria.v3i2.336.

Field, Andy. 2005. *Discovering Statistics Using SPSS (2nd Ed.).* Vol. 2rd Editio.

Fleming, Jenny, and Karsten E. Zegwaard. 2018. "Methodologies, Methods and Ethical Considerations for Conducting Research in Work-Integrated Learning." *International Journal of Work-Integrated Learning* 19(3):205–13.

Franco, Mário, and Augusto Antunes. 2020. "Understanding Servant Leadership Dimensions : Theoretical and Empirical Understanding Servant Leadership Dimensions Theoretical and Empirical Extensions in The." *Nankai Business Review Internationa, Emerald Publishing Limited* (January):1–26. doi: 10.1108/NBRI-08-2019-0038.

Fried, Eiko I. 2020. "Theories and Models: What They Are, What They Are for, and What They Are About." *Psychological Inquiry* 31(4):336–44. doi: 10.1080/1047840X.2020.1854011.

Fuyane, Nkululeko. 2021. "International Journal of Business & Management Studies Research Methodology Choice Dilemma: A Conceptual Note to Emerging Researchers." *International Journal of Business & Management Studies* 02(02):29–43.

Gao, Yu, and Haiyan Liu. 2021. "How Supervisor–Subordinate Guanxi Influence Employee Innovative Behavior: A Moderated Mediation Model." *Psychology Research and Behavior Management* 14:2001–14. doi: 10.2147/PRBM.S342875.

Garg, Vishal, Arun Kumar Attree, and Vibhash Kumar. 2022. "The Mediating Role of Psychological Empowerment on the Transformational Leadership-Innovative Work Behaviour Relationship: A Study of Indian Banking Sector." *Journal of Human Resources Management* ahead-of-p(2022). doi: 10.1177/23220937221084436.

Gautam, Prakash Kumar. 2020. "Work-Culture for Employee Work-Behaviour : Mediating Role of Satisfaction." *PYC Nepal Journal of Management* XIII(1):17–32.

Gebert-persson, Sabine. 2013. "Linking Employee Empowerment and Customer Perceptions of Service Quality."

Georges, Y. Maalouf. 2023. "THE ROLE OF SERVANT LEADERSHIP STYLE IN IMPROVING INNOVATION IN HIGHER EDUCATION INSTITUTIONS Article History : Keywords : Servant Leadership ; Higher Education Institutions ." *Business Review* 8(9):1–17.

Ghalavi, Zahra, and Naser Nastiezaie. 2020. "Relationship of Servant Leadership and Organizational Citizenship Behavior with Mediation of Psychological Empowerment." *Eurasian Journal of Educational Research* 89:241–64. doi: 10.14689/ejer.2020.89.11.

Ghorbani, Hamid. 2019. "Mahalanobis Distance and Its Application for Detecting Multivariate Outliers." *Facta Universitatis, Series: Mathematics and Informatics* 34(3):583–95. doi: 10.22190/fumi1903583g.

Ghosh, Vinit, Manaswita Bharadwaja, Sresha Yadav, and Gaurav Kabra. 2019. "Team-Member Exchange and Innovative Work Behaviour: The Role of Psychological Empowerment and Creative Self-Efficacy." *International Journal of Innovation Science* 11(3):344–61. doi: 10.1108/IJIS-12-2018-0132.

Gioia, Dennis A., Kevin G. Corley, and Aimee L. Hamilton. 2012. "Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology." *Organizational Research Methods* 16(1):15–31. doi: 10.1177/1094428112452151.

Gkontelos, Angelos, Julie Vaiopoulou, and Dimitrios Stamovlasis. 2021. "Teachers' Irrational

Belief Scale: Psychometric Properties of the Greek Version and Measurement Invariance across Genders." *Behavioral Sciences* 11(306):1–13. doi: 10.3390/bs11110160.
Golafshani, Nahid. 2003. "The Qualitative Report Understanding Reliability and Validity in Qualitative Research Understanding Reliability and Validity in Qualitative Research." *The Qualitative Report* 8(4):597–606.
Gong, Xiheng, WU, Jiale, and Yijun Liu. 2022. "Research on the Influence Mechanism of Employees' Innovation Behavior in the Context of Digital Transformation." *Frontiers in Psychology* 13:1–16. doi: 10.3389/fpsyg.2022.1090961.
Greenleaf, Robert K. 1977. "Servant Leader: : A Journey into the Nature of Legitimate Power and Greatness." *New York: Paulist Press*.
Gregory, Robert J. 2015. "Psychological Testing: History, Principles, and Applications." *Global Edition, Pearson* Seveth Edi:1–589.
Guba, E. G., & Lincoln, Y. S. 1998. "Competing Paradigms in Qualitative Research." Pp. 195–220 in *The Landscape of Qualitative Research*.
Gulliksen, Harold, and John W. Tukey. 1958. "Reliability for the Law of Comparative Judgment." *Psychometrika* 23(2):95–110. doi: 10.1007/BF02289008.
Hadjer Mirza, Fouzi Bellalem, and Chahrazed Mirza. 2023. "Ethical Considerations in Qualitative Research: Summary Guidelines for Novice Social Science Researchers." *Social Studies and Research Journal* 11(01):441–49.
Hair, J., Black, W., Babin, B., & Anderson, R. 2014. *Multivariate Data Analysis Seventh Edition*. Vol. 1.
Hair, J., Black, W. C., Babin, B. J. & Anderson, R. E. (2010). 2010. "Multivariate Data Analysis." *Upper Saddle River, NJ: Pearson Prentice Hall.* 7th Editio:1–785.
Hair, Joseph .. F., Thomas .. M. G. Hult, Chrisrian. M. Ringle, Sarstedt;, Nicholas. P. Danks, and Soumya Ray. 2021. *An Introduction to Structural Equation Modeling.Partial Least Squares Structural Equation Modeling with R*. Vol. 3rd Editio.
Hamid, Diary, and Osman Durmaz. 2020. "Organizational Culture Impact on Employee Innovative Behaviors in Kurdistan." *Black Sea Journal of Management and Marketing* 2(1):63–72. doi: 10.47299/bsjmm.v2i1.68.
Handema, Macmillan, John Lungu, Mwansa Chabala, and Chanda Shikaputo. 2023. "Conceptualising the Philosophical Underpinning of the Study: A Practical Perspective." *Open Journal of Philosophy* 13:257–68. doi: 10.4236/ojpp.2023.132017.
Harhash, Doha E., Manal Z. Ahmed, and Hayam A. El-shereif. 2020. "Healthcare Organizational Culture : A Concept Analysis." *Menoufia Nursing Journal* 5(1):65–77.
Hari, Pramono. 2021. "Individual Demographic Characteristics: Differences in Innovative Work Behavior during the Covid-19 Pandemic." *International Journal of Business, Economics and Law* 24(5):93–100.
Hashim, Kamarul Liza. 2020. "Factors Influencing Innovative Work Behaviour (IWB) of Civil Servants in Malaysian Public Service Organisations: A Conceptual Study." *Asian Journal of Research in Business and Management* 2(2):187–96.
Hatem, Georges, Joe Zeidan, Mathijs Goossens, and Carla Moreira. 2022. "Normality Testing Methods and the Importance of Skewness and Kurtosis in Statistical Analysis." *BAU Journal - Science and Technology* 3(2):1–5. doi: 10.54729/ktpe9512.
Helmy, Irfan, Wiwiek Rabiatul Adawiyah, and Ade Banani. 2019. "Linking Psychological Empowerment, Knowledge Sharing, and Employees' Innovative Behavior in Indonesian SMEs." *Journal of Behavioral Science* 14(2):66–79.

Hock-Doepgen, Marianne, Jana Sophia Montasser, Sascha Klein, Thomas Clauss, and Adnan Maalaoui. 2024. “The Role of Innovative Work Behavior and Organizational Support for Business Model Innovation.” *R and D Management* 55(1):1–26. doi: 10.1111/radm.12671.
Hock-Doepgen, Marianne, Jana Sophia Montasser, Sascha Klein, Thomas Clauss, and Adnan Maalaoui. 2025. “The Role of Innovative Work Behavior and Organizational Support for Business Model Innovation.” *R and D Management* 55(1):7–26. doi: 10.1111/radm.12671.
Homans, George, and Peter Blau. 2023. “Social Exchange Theory.” *TheoryHub Book: Social Exchange Theory Concepts* 53(8).
Hoven, Adrian G., Bright Mahembe, and Desiree Hamman-Fisher. 2021. “The Influence of Servant Leadership on Psychological Empowerment and Organisational Citizenship on a Sample of Teachers.” *Journal of Human Resource Management* 19(0):1–12. doi: 10.4102/sajhrm.v19i0.1395.
Hu, Li Tze, and Peter M. Bentler. 1999. “Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria versus New Alternatives.” *Structural Equation Modelling: A Multidisciplinary Journal,* 6(1):1–55. doi: 10.1080/10705519909540118.
Hulsheger, U.R., Anderson, N. & Salgado, J. F. 2009. “Team-Level Predictors of Innovation at Work : A Comprehensive Meta-Analysis Spanning Three Decades of Research.” *Journal of Applied Psychology* 94(5):1128–45. doi: 10.1037/a0015978.
Ibus, Salbeha, Eta Wahab, and Fadillah Ismail. 2020. “How to Promote Innovative Work Behavior among Academics.” *International Journal of Psychosocial Rehabilitation* 24(03):103–17. doi: 10.37200/ijpr/v24i3/pr200761.
Ibus, Salbeha, Eta Wahab, Fadillah Ismail, and Rosmaria Omar. 2020. “Stimulating Innovative Work Behavior among Academics in Private Higher Educational Institutions.” *International Journal of Innovation, Creativity and Change* 11(4):245–61.
Ikart, Emmanuel M. 2019. “Survey Questionnaire Survey Pretesting Method: An Evaluation of Survey Questionnaire via Expert Reviews Technique.” *Asian Journal of Social Science Studies* 4(2):1–17. doi: 10.20849/ajsss.v4i2.565.
Ilham, Dodi, Heri Erlangga, Abdul Rojak, Denok Sunarsi, R. Roro Vemmi Kesuma Dewi, Muhamad Sadam, Nur Imam Duta Waskita, Eddc Ahmad Khoiri, and Nur Komariah. 2022. “Innovative Work Behavior Model for Teachers With a Generation Diversity Approach.” *Turkish Journal of Physiotherapy and Rehabilitation* 32(3):2345–53.
Inam, Aneeq, Jo Ann Ho, Hina Zafar, Unaiza Khan, Adnan Ahmed Sheikh, and Usama Najam. 2021. “Fostering Creativity and Work Engagement Through Perceived Organizational Support : The Interactive Role of Stressors.” *SAGE Open* 1–16. doi: 10.1177/21582440211046937.
Jaingam, Woranaree, and Khahan Na-Nan. 2023. “The Mediating Effect of Resilience on the Relationship between Perceived Organizational Support and Innovative Work Behavior.” *International Journal of Advanced and Applied Sciences* 10(9):45–56. doi: 10.21833/ijaas.2023.09.006.
Jamal, Azra, Safia Begum, Hina Alam, and Tariq Hussain. 2023. “Impact of Perceived Organizational Support on Innovative Work Behavior and Burnout in Teachers : Thriving at Work as the Mediator (2020).” *Journal of Education and Educational Development* 10(2):288–307. doi: 10.22555/joeed.v10i2.815.
Jankelová, Nadežda, Zuzana Joniaková, and Juraj Mišún. 2021. “Innovative Work Behavior—A Key Factor in Business Performance? The Role of Team Cognitive Diversity and Teamwork Climate in This Relationship.” *Journal of Risk and Financial Management*

14(185):1–16. doi: 10.3390/jrfm14040185.
Javed, Basharat, Iqra Abdullah, Muhmmad Adeel Zaffar, Adnan Ul Haque, and Ume Rubab. 2019. “Inclusive Leadership and Innovative Work Behavior: The Role of Psychological Empowerment.” *Journal of Management and Organization* 25(4):554–71. doi: 10.1017/jmo.2018.50.
Jiwon Park, and Woocheol Kim. 2022. “The Impact of Perceived Organizational Support on Innovative Work Behaviour Through Psychological Empowerment : Focusing on the Moderated Mediating Role of Organizational Procedural Justice.” *Journal of Technical Education and Training* 14(1):178–91.
Johari, Aduni Binti, Nor Wahiza Abdul Wahat, and Zeinab Zaremohzzabieh. 2021. “Innovative Work Behavior among Teachers in Malaysia: The Effects of Teamwork, Principal Support, and Humor.” *Asian Journal of University Education* 17(2):72–84. doi: 10.24191/AJUE.V17I2.13387.
De Jong, Jeroen, and Deanne Den Hartog. 2010. “Measuring Innovative Work Behaviour.” *Creativity and Innovation Management* 19(1):23–36. doi: 10.1111/j.1467-8691.2010.00547.x.
K’osuri M. A., 1 Eggesa, R., & Onyango, R. 2020. “Perceived Organizational Support, Psychological Empowerment and Employee Engagement In Public Health Facilities In Kenya. A REVIEW K’osuri M . A., Eggesa, R., & Onyango, R.” *Strategic Journal of Business and Change Management* 7(2):70–85.
Kamal Kishore, Vidushi Jaswal1, and Ipankar Kulkarni2, VinayDDe. 2021. “Practical Guidelines to Develop and Evaluate a Questionnaire.” *Indian Dermatology Online Journal* 12(2):66-75. doi: 10.4103/idoj.IDOJ_674_20.
Kanake K. Mercy. 2020. “The Direct and Indirect Effect of Employee Empowerment and Employee Engagement on Innovative Work Behaviour within Manufacturing Sector in Kenya.” *African Journal of Education, Science and Technology* 6(1):170–84.
Karimi, Leila, Sandra G. Leggat, Timothy Bartram, Leila Afshari, Sarah Sarkeshik, and Tengiz Verulava. 2021. “Emotional Intelligence : Predictor of Employees ’ Wellbeing , Quality of Patient Care , and Psychological Empowerment.” *BMC Psychology* 9(93):1–7. doi: 10.1186/s40359-021-00593-8.
Kenny, David A., and D. Betsy McCoach. 2003. “Effect of the Number of Variables on Measures of Fit in Structural Equation Modeling.” *Structural Equation Modeling* 10(3):333–51. doi: 10.1207/S15328007SEM1003_1.
Kerlinger, F. N. Winston. 1986. “Foundations of Behavioral Research; Educational and Psychological Inquiry.” *New York: Holt, Rinehart, and Winston.* 28–46. doi: 10.1097/00006199-196501420-00011.
Khairani, Ahmad Zamri, Aziah Ismail, and Norliza Abdul Kadir. 2021. “Assessing the Factor Structure of the Spreitzer’S Psychological Empowerment Scale Among Malaysian Teachers.” *Cakrawala Pendidikan* 40(3):564–72. doi: 10.21831/cp.v40i3.41035.
Khan, Mubarik, Muhammad Shujaat, Tahir Islam, Asif Rehman, Syed Saad Ahmed, Essa Khan, and Farhan Sohail. 2022. “How Servant Leadership Triggers Innovative Work Behavior: Exploring the Sequential Mediating Role of Psychological Empowerment and Job Crafting.” *European Journal of Innovation Management* 25(4):1037–55. doi: 10.1108/EJIM-09-2020-0367.
Khan Ali, Jaffer, Alamelu Mangai Raman, Nithya Sambamoorthy, and Kanniga Prashanth. 2023. “Research Methodology (Methods, Approaches And Techniques).” *San International*

Scientific Publications 1–185. doi: 10.59646/rmmethods/040.
Khan, Muhammad Asad, Fadillah Binti Ismail, Altaf Hussain, and Basheer Alghazali. 2020. "The Interplay of Leadership Styles, Innovative Work Behavior, Organizational Culture, and Organizational Citizenship Behavior." *SAGE Open* 10(1):1–16. doi: 10.1177/2158244019898264.
Khattak, Shoukat Iqbal, Muhammad Anwar Khan, Muhammad Iftikhar Ali, Hafiz Ghufran Ali Khan, and Imran Saeed. 2023. "Relationship Between Servant Leadership, Leader-Member-Exchange, Organization Learning and Innovative Work Behavior: Evidence From High-Tech Firms." *SAGE Open* 13(4):1–13. doi: 10.1177/21582440231212267.
Khatun, Nasrin. 2021. "Applications of Normality Test in Statistical Analysis." *Open Journal of Statistics* 11(1):113–22. doi: 10.4236/ojs.2021.111006.
Kirin, Snežana, Gordana Gavrić, and Sandra Kirin. 2020. "Organizational Culture in Serbia in Relation to the Characteristics of Organization: Empirical Reserch." *Industrija* 48(4):23–45. doi: 10.5937/industrija48-29810.
Kline, B. Rex. 2005. "Principles and Practice of Structural Equation Modeling." *Guilford Press, New York* 2nd Editio:1–486.
Kmieciak, Roman. 2020. "Trust, Knowledge Sharing, and Innovative Work Behavior: Empirical Evidence from Poland." *European Journal of Innovation Management* 24(5):1832–59. doi: 10.1108/EJIM-04-2020-0134.
Kokina, Irena, and Inta Ostrovska. 2013. "THE ANALYSIS OF ORGANIZATIONAL CULTURE WITH THE DENISON MODEL (The Case Study of Latvian Municipality)." *European Scientific Journal* 1:362–68.
Kong, Tengqiao, and Hsuan Po Wang. 2024. "Research on the Influence of Perceived Organizational Support and Job Reshaping on the Innovative Behavior of Vocational College Teachers in China." *Pakistan Journal of Life and Social Sciences* 22(2):7732–48. doi: 10.57239/PJLSS-2024-22.2.00583.
Kouam Arthur William, Fodouop. 2024. "Assimilating Mediating and Moderating Variables in Academic Research: Role and Significance." *International Journal of Research Publications* 143(1):273–78. doi: 10.47119/ijrp1001431220246119.
Kruger, Sean, and Adriana Aletta Steyn. 2024. "Developing Breakthrough Innovation Capabilities in University Ecosystems: A Case Study from South Africa." *Technological Forecasting and Social Change* 198(123002):1–12. doi: 10.1016/j.techfore.2023.123002.
Krupah, Edward Kofi. 2022. "The Impact of Servant Leadership on Innovative Work Behavior in Ghana: The Mediation of Employee Voice." *European Journal of Business and Management* 14(2):58–71. doi: 10.7176/ejbm/14-2-08.
Kundu, Subhash C., Sandeep Kumar, and Kusum Lata. 2020. "Effects of Perceived Role Clarity on Innovative Work Behavior: A Multiple Mediation Model." *RAUSP Management Journal* 55(4):457–72. doi: 10.1108/RAUSP-04-2019-0056.
Kusmaryani, Rosita Endang. 2022. "Successful Schools : The Role of Teacher s ' Work Innovative Behavior." *International Journal of Scientific and Research Publications,* 12(11):200–205. doi: 10.29322/IJSRP.12.11.2022.p13126.
Kustanto, Hery, Anis Eliyana, Jelita Harum, Santri Mumpuni, and Desynta Rahmawati Gunawan. 2020. "The Moderation Role of Psychological Empowerment on Innovative Work Behaviour." *Systematic Reviews in Pharmacy* 11(8):254–64.
Kwahar, Nguwasen and Iyortsuun, Akuraun Shadrach. 2021. "PERCEIVED Organizational Support, Psychological Empowerment And Innovative Work Behavior Of Academic Staff

Of Private POLYTECHNICS IN NIGERIA." *Innovative Journal of Management and Business Education* 7(1):84–97.
Kwahar, Nguwasen. 2021. "Perceived Organizational Support, Psychological Empowerment and Innovative Work Behavior of Academic Staff of Private Polytechnics in Nigeria." *Innovative Journal of Management and Business Education* 7(1):84–97.
Lall, Dorothy. 2021. "Mixed - Methods Research : Why , When and How to Use." *Indian Journal of Continuing Nursing Education* 22(2):143–47. doi: 10.4103/ijcn.ijcn_107_21.
Lambriex-Schmitz, Peggy, Marcel R. Van der Klink, Simon Beausaert, Monique Bijker, and Mien Segers. 2020. "Towards Successful Innovations in Education: Development and Validation of a Multi-Dimensional Innovative Work Behaviour Instrument." *Vocations and Learning* 13(2):313–40. doi: 10.1007/s12186-020-09242-4.
Langhof, Jan G., and Stefan Güldenberg. 2020. "Servant Leadership: A Systematic Literature Review—toward a Model of Antecedents and Outcomes." *German Journal of Human Resource Management* 34(1):32–68. doi: 10.1177/2397002219869903.
Lawani, Ama. 2020. "Critical Realism: What You Should Know and How to Apply It." *Qualitative Research Journal* 21(3):320–33. doi: 10.1108/QRJ-08-2020-0101.
Lee, Hun Whee, and Seongsu Kim. 2016. "Effects of Human Resource Management Systems on Employee Proactivity and Group Innovation." *Journal of Management* XX(X):1–28. doi: 10.1177/0149206316680029.
Li, Mingxing, Arif Jameel, Zhiqiang Ma, Hongzheng Sun, Abid Hussain, and Sidra Mubeen. 2022. "Prism of Employee Performance Through the Means of Internal Support: A Study of Perceived Organizational Support." *Psychology Research and Behavior Management* 15(April):965–76. doi: 10.2147/PRBM.S346697.
Liang, Ting Peng, Yi Ling Lin, Wen Lung Shiau, and Sih Fan Chen. 2021. "Investigating Common Method Bias Via an Eeg Study of the Flow Experience in Website Design." *Journal of Electronic Commerce Research* 22(4):305–21.
Liao, Shiwen, and Xin Zhu. 2021. "Research on the Relationship Between Servant Leadership and Employee Innovation Behavior : A Theoretical Model." *Advances in Social Science, Education and Humanities Research,* 516:299–303.
Liden Robert, Sandy J. Wayne, Hao Zhao, and David Henderson. 2008. "Servant Leadership: Development of a Multidimensional Measure and Multi-Level Assessment." *Organizational Behavior and Human Decision Processes* 9(2):161–77. doi: 10.1016/j.leaqua.2008.01.006.
Liden, Robert C., Sandy J. Wayne, Jeremy D. Meuser, Jia Hu, Junfeng Wu, and Chenwei Liao. 2015a. "Servant Leadership: Validation of a Short Form of the SL-28." *Leadership Quarterly* 26(2):254–69. doi: 10.1016/j.leaqua.2014.12.002.
Liden, Robert C., Sandy J. Wayne, Jeremy D. Meuser, Jia Hu, Junfeng Wu, and Chenwei Liao. 2015b. "Servant Leadership: Validation of a Short Form of the SL-28." *Leadership Quarterly* 26(2):254–69. doi: 10.1016/j.leaqua.2014.12.002.
Lie, Darwin, Elidawaty Purba, Sri Harini, Meldasari Said, and Acai Sudirman. 2022. "Managing Innovative Work Behavior : The Role of Member-Leader Exchange , Organizational Climate and Psychological Empowerment." *ICASI – Life Sciences Chapter* 2022:243–54. doi: 10.18502/kls.v0i0.11805.
Lim, Weng Marc. 2024. "A Typology of Validity: Content, Face, Convergent, Discriminant, Nomological and Predictive Validity." *Journal of Trade Science* 12(3):155–79. doi: 10.1108/jts-03-2024-0016.

Luo, Minxin, Yuhang Cai, and Mengge Zhang. 2024. “A Review of Research on the Influence of Organizational Culture on Employee Innovation Behavior.” *SHS Web of Conferences* 181:01034. doi: 10.1051/shsconf/202418101034.

Maan, Annum Tariq, Ghulam Abid, Tahira Hassan Butt, Fouzia Ashfaq, and Saira Ahmed. 2020. “Perceived Organizational Support and Job Satisfaction : A Moderated Mediation Model of Proactive Personality and Psychological Empowerment.” *Future Business Journal* 6(1):1–10. doi: 10.1186/s43093-020-00027-8.

Maarouf, Heba. 2019. “Pragmatism as a Supportive Paradigm for the Mixed Research Approach : Conceptualizing the Ontological , Epistemological , and Axiological Stances of Pragmatism.” *International Business Research* 12(9):1–12. doi: 10.5539/ibr.v12n9p1.

Mahdzir, Mohamad Nasaruddin. 2022. “THE IMPACT OF SERVANT Leadership On Innovative Behaviour.” *BALTIC JOURNAL OF LAW & POLITICS* 15(3):1294–1320. doi: 10.2478/bjlp-2022-002089.

Mahendri, Muhammad Rayi, Dewi Susita, and Corry Yohana. 2022. “The Effect of Servant Leadership on Innovative Work Behavior with Psychological Empowerment and Job Crafting as Intervening Variables.” *The International Journal of Social Sciences World* 4(2):197–214. doi: 10.5281/zenodo.7310898.

Mahmud, Md Tapan. 2020. “Quest for a Single Theory to Explain Managerial Motivations for Sustainability Disclosures: Legitimacy Theory, Stakeholder Theory or Institutional Theory.” *Bulletin of Japanese Association for International Accounting Studies* 7(September):135–59.

Maksimović, Jelena, and Jelena Evtimov. 2023. “Positivism and Post-Positivism as the Basis of Quantitative Research in Pedagogy.” *Research in Pedagogy* 13(1):208–18. doi: 10.5937/istrped2301208m.

Manjari Singh; Sarkar, Anita. 2018. “Role of Psychological Empowerment in the Relationship between Structural Empowerment and Innovative Behavior.” *Management Research Review* 42(4):521–38. doi: 10.1108/MRR-04-2018-0158.

Mardhayiska, I. Putu Ramaditya, Ida Bagus, and Ketut Surya. 2021. “The Role of Servant Leadership in Moderating the Effect of Empowerment and Knowledge Sharing on Innovative Work Behavior in Village-Owned Enterprises (BUMDes) in the Badung Regency Area.” *International Journal of Economics and Management Studies* 8(7):30–39. doi: 10.14445/23939125/IJEMS-V8I7P104 Volume.

Marfuatun, Marfuatun, and Muafi Muafi. 2021. “Perceived Organizational Support and Psychological Empowerment on Service Performance Mediated by Organizational Citizenship Behavior Islamic Perspective (OCBIP).” *International Journal of Research in Business and Social Science (2147- 4478)* 10(1):15–27. doi: 10.20525/ijrbs.v10i1.1020.

Martens, Jason P. 2020. “Theories, Models, and Effects—Oh My! Differentiating Similar Constructs.” *Transformative Dialogues: Teaching and Learning Journal* 13(1):64–78. doi: 10.59236/td2020vol13iss1275.

Masyhuri, Masyhuri, Pardiman Pardiman, and Siswanto Siswanto. 2021. “The Effect of Workplace Spirituality, Perceived Organizational Support, and Innovative Work Behavior: The Mediating Role of Psychological Well-Being.” *Journal of Economics, Business, & Accountancy Ventura* 24(1):63–77. doi: 10.14414/jebav.v24i1.2477.

Matin, Matin, Sugiarto Sugiarto, Masduki Ahmad, Nur Kholifah, and Muhammad Nurtanto. 2024. “Positive Influence on Innovative Work Behavior in Higher Education, Indonesia.” *Educational Administration: Theory and Practice* 30(4):780–90. doi:

10.53555/kuey.v30i4.1558.
Mekonnen, Wubante. 2020. “Review on Correlation Research.” *AcademicresearchJornals* 8(4):99–106. doi: 10.14662/IJELC2020.085.
Messmann and Mulder. 2012. “Innovative Work Behaviour: Investigating the Nature and Facilitation of Vocational Teachers’ Contributions to Innovation Development.” *Vocational Education and Training* 2(1):21–40.
Messmann and Mulder. 2020. “A Short Measure of Innovative Work Behaviour as a Dynamic, Context-Bound Construct.” *International Journal of Manpower* 41(8):1251–67. doi: 10.1108/IJM-01-2019-0029.
Miles B. Matthew, and A. Michael Huberman. 2014. *Qualitaive Data Analysis*. 3R Edition. SAGE Publications, Inc.
Ming-Chu, Yu, and Lee Meng-Hsiu. 2015. “Unlocking the Black Box: Exploring the Link between Perceive Organizational Support and Resistance to Change.” *Asia Pacific Management Review* 20(3):177–83. doi: 10.1016/j.apmrv.2014.10.003.
Mishra, Prabhaker, Chandra M. Pandey, Uttam Singh, Anshul Gupta, Chinmoy Sahu, and Amit Keshri. 2019. “Descriptive Statistics and Normality Tests for Statistical Data.” *Wolters Kluwer - Medknow* 22(1):67–72. doi: 10.4103/aca.ACA_157_18.
Montreuil, V., Lauzier, M. and Gagnon, S. 2021. “A Closer Look at Determinants of Organizational Capability to Innovate (OCI).” *European Journal of Innovation Management* 24(3):820–47. doi: 10.1108/EJIM-05-2019-0127.
Morales, Yesica, and Orlando E. Contreras-Pacheco. 2024. “Determinants of Innovative Behavior from the Perspective of Individual Factors: A Conceptual Framework.” *Intangible Capital* 20(1):60–88. doi: 10.3926/IC.2389.
Mozie, Noorizan Mohamad, and Nomahaza Mahadi. 2024. “Fostering Innovative Work Behavior: Ethical Leadership, Psychological Safety, and Proactive Personality.” *International Journal of Academic Research in Business and Social Sciences* 14(8):2145–58. doi: 10.6007/ijarbss/v14-i8/22286.
Mugizi, Wilson, Joseph Rwothumio, and George W. Kasule. 2023. “Measuring Digital Teaching Competence of Academic Staff in Public Universities in Uganda.” *African Journal of Education, Science and Technology* 7(3):736–46.
Muhammad, L. A. L., Mian Muhammad, and Waseem Iqbal. 2020. “Organizational Culture and Innovation: A Study of Banking Sector in Pakistan.” (1990):243–54.
Muhammad Saqib Khan1*. 2021. “Predicting the Innovative Work Behavior By Assessing Leadership Styles in a Higher Educational Context.” *Humanities & Social Sciences Reviews* 9(4):48–55.
Muhammed, Shahnawaz. 2020. “Evaluating Task Knowledge as a Mediator in the Relationship between Knowledge Sharing and Innovative Work Behaviour.” *International Conference on Knowledge Management and Information Systems* 3:40–50. doi: 10.5220/0010015000400050.
Musenze, Ibrahim Abaasi, and Thomas Sifuna Mayende. 2022. “Ethical Leadership (EL) and Innovative Work Behavior (IWB) in Public Universities: Examining the Moderating Role of Perceived Organizational Support (POS).” *Management Research Review* 46(5):682–701. doi: 10.1108/MRR-12-2021-0858.
Mustika, Silvia Indra, Kusdi Rahardjo, and Arik Prasetya. 2020. “The Effect of Perceived Organizational Support on Knowledge Sharing and Innovative Work Behavior.” *Advances in Economics, Business and Management Research,* 154:61–64. doi:

10.2991/aebmr.k.201116.012.
Mutonyi, Barbara Rebecca, Terje Slåtten, Gudbrand Lien, and Manel González-Piñero. 2022. "The Impact of Organizational Culture and Leadership Climate on Organizational Attractiveness and Innovative Behavior: A Study of Norwegian Hospital Employees." *BMC Health Services Research* 22(1):1–19. doi: 10.1186/s12913-022-08042-x.
Muwani Trust Tipedze, Anyway Ngirazi, Dr Tagarira Mutenga &. Satande. 2020. "Discourses on Conceptual and Theoretical Frameworks in Research: Meaning and Implications for Researchers." *Journal of African Interdisciplinary Studies* 2(12):16–27.
Namazi, Mohammad, and Navid-reza Namazi. 2016. "Conceptual Analysis of Moderator and Mediator Variables in Business Research." *Procedia Economics and Finance* 36:540–54. doi: 10.1016/S2212-5671(16)30064-8.
Namono, Rehema, Ambrose Kemboi, and Joel Chepkwony. 2021. "Enhancing Innovative Work Behaviour in Higher Institutions of Learning: The Role of Hope." *World Journal of Entrepreneurship, Management and Sustainable Development* 17(4):632–43. doi: 10.1108/WJEMSD-07-2020-0073.
Nanjundeswaraswamy, T. S., and Shilpa Divakar. 2021. "Determination of Sample Size and Sampling Methods in Applied Research." *Proceedings on Engineering Sciences* 3(1):25–32. doi: 10.24874/pes03.01.003.
Nasir, Halimatussakdiah, and Irma Suryani. 2019. "Psychological Empowerment, Innovative Work Behavior and Job Satisfaction." *Advances in Economics, Business and Management Research* 92:636–43. doi: 10.2991/icame-18.2019.68.
Nazmul Hasan1, Rashed Ullah Rana2, Sharmin Chowdhury3, Afrin Jahan Dola4, Moustaq Karim Khan Rony. 2021. "Ethical Considerations in Research." *Journal of Nursing Research,Patient Safety and Practise* oi(01):55–73. doi: 10.1007/978-94-6300-112-0_4.
NDPIII Innovation and Technology Report. 2020. "NDPIII INNOVATION , TECHNOLOGY DEVELOPMENT AND TRANSFER PROGRAMME IMPLEMENTATION ACTION PLAN."
NDPIV, Report. 2025. "Fourth National Development Plan (NDPIV)." *Natinal Planning Authority Report (NPAUGANDA)*.
Neubauer, Brian E., Catherine T. Witkop, and Lara Varpio. 2019. "How Phenomenology Can Help Us Learn from the Experiences of Others." *Perspectives on Medical Education* 8(2):90–97. doi: 10.1007/s40037-019-0509-2.
Nimitha Aboobaker and Zakkariya, KA. 2021. "Digital Learning Orientation and Innovative Behavior in the Higher Education Sector: Effects of Organizational Learning Culture and Readiness for Change." *International Journal of Educational Management* 35(5):1030–47. doi: 10.1108/IJEM-09-2019-0345.
Nimon, Kim F. 2012. "Statistical Assumptions of Substantive Analyses across the General Linear Model: A Mini-Review." *Frontiers in Psychology* 3(32):1–5. doi: 10.3389/fpsyg.2012.00322.
Nunnally, Jum C. 1978. "An Overview of Psychological Measurement. In B. B. Wolman (Ed.),." *Clinical Diagnosis of Mental Disorders* 97–146. doi: 10.1007/978-1-4684-2490-4_4.
Nurbaety Rojuaniah. 2022. "Servant Leadership , Organizational Culture and Organizational Citizenship." *Management Analysis Journal* 11(1):83–94.
Olaleye, Banji Rildwan, and Festus Taiwo Solanke. 2021. "Influence of Servant Leadership and Organizational Structure on Employee Innovative Behaviour in Nigerian Tertiary Institutions." *KIU Journal of Humanities Copyright©2021* 6(1):305–8.

Opoku, Mavis Agyemang, Suk Bong Choi, and Seung-wan Kang. 2019. “Servant Leadership and Innovative Behaviour : An Empirical Analysis of Ghana ’ s Manufacturing Sector.” *Sustainability* 11(6273;):1–18. doi: 10.3390/su11226273.

Osano, Hezron Mogaka. 2021. “Universities in Entrepreneurial Ecosystems and MSME Revitalization.” *Journal of the International Council for Small Business* 2(4):355–64. doi: 10.1080/26437015.2021.1942327.

Othman, Shwikar, Mary Steen, and Julie-Anne Fleet. 2020. “A Sequential Explanatory Mixed Methods Study Design: An Example of How to Integrate Data in a Midwifery Research Project.” *Journal of Nursing Education and Practice* 11(2):75–90. doi: 10.5430/jnep.v11n2p75.

Pal Singh, Fulwinder. 2019. “Sampling Design and Techniques in Research.” *International Journal of Management, Technology and Engineering* IX(I):94–103.

Park, Yoon Soo, Lars Konge, and Anthony R. Artino. 2020. “The Positivism Paradigm of Research.” *Academic Medicine,* 95(5):690–94. doi: 10.1097/ACM.0000000000003093.

Patel, Mimansha, and Nitin Patel. 2019. “Exploring Research Methodology: Review Article.” *International Journal of Research and Review* 6(3):48–55.

Pawar, Neelam. 2021. “Type of Research and Type Research Design.” *Social Research Methodology* 46–57.

Peng, Michael Yao Ping, Cheng Xu, Rong Zheng, and Yuan He. 2023. “The Impact of Perceived Organizational Support on Employees’ Knowledge Transfer and Innovative Behavior: Comparisons between Taiwan and Mainland China.” *Humanities and Social Sciences Communications* 10(1). doi: 10.1057/s41599-023-02242-4.

Peterson, Tami, Jessica Dodson, Robert Sherwin, and Frederick Strale. 2024. “An Internal Consistency Reliability Study of the Catalyst Datafinch Applied Behavior Analysis Data Collection Application With Autistic Individuals.” *Cureus* 16(4):1–13. doi: 10.7759/cureus.58379.

Phuong, Nguyen Duy, Pham Huong Quynh, and Hoang Thi Thu Hien. 2021. “Supportive Work Environment and Teacher’s Innovative Work Behaviour: The Mediating Role of Informal Learning in Vietnam.” *Review of Economics and Finance* 19(1):97–106. doi: 10.55365/1923.X2021.19.10.

Pirayeh, Nasrin, Abdol Mohammad Mahdavi, and Ali Mohammad Nematpour. 2011. “Study of Organizational Culture Influence (Based on Denison’s Model) on Effectiveness of Human Resources in Karun Oil & Gas Production Company.” *Australian Journal of Basic and Applied Sciences* 5(9):1886–95.

Podsakoff, Philip M., Scott B. MacKenzie, Jeong Yeon Lee, and Nathan P. Podsakoff. 2003. “Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies.” *Journal of Applied Psychology* 88(5):879–903. doi: 10.1037/0021-9010.88.5.879.

Podsakoff, Philip M., Scott B. MacKenzie, and Nathan P. Podsakoff. 2012. “Sources of Method Bias in Social Science Research and Recommendations on How to Control It.” *Annual Review of Psychology* 63:539–69. doi: 10.1146/annurev-psych-120710-100452.

Pokhariyal, G. P. 2019. “Importance of Moderating and Intervening Variables on the Relationship between Independent and Dependent Variables.” *International Journal of Statistics and Applied Mathematics* 4(5):1–4.

Pokhrel, Sakinah. 2024. “Factors Influencing Innovative Work Behavior among Academicians at Politeknik Tuanku Sultanah Bahiyah, Kulim, Kedah.” *Αγαη* 15(1):37–48.

Pratiwi, Nimas Aryany, Siti Fatimah, and April Kukuh Susilo. 2023. "The Impact of Organizational Support and Employee Attitude to Innovative Work Behavior Mediating Role of Psychologic Empowerment." *Journal of Information and Organizational Sciences* 47(2):443–70. doi: 10.31341/jios.47.2.11.

Preacher, Kristopher J., Derek D. Rucker, and Andrew F. Hayes. 2007. "Addressing Moderated Mediation Hypotheses : Theory , Methods , and Prescriptions." *MULTIVARIATE BEHAVIORAL RESEARCH* 42(1):185–227.

Priyadi, Hajad, Surono Surono, and Chairul Hakim. 2023. "Innovative Work Behavior and the Impact of Organizational Culture." *Jurnal Ekonomi, Akuntansi Dan Manajemen* 2(2):215–28.

Putra, Yanuar Surya, Lieli Suharti, and Gatot Sasongko. 2022. "Developing Innovative Work Behavior: The Influence of Psychological Empowerment and Intergenerational Learning." *Jurnal Ekonomi Dan Bisnis* 25(2):435–52. doi: 10.24914/jeb.v25i2.5327.

Rahman, Md Mizanur. 2023. "Sample Size Determination for Survey Research and Non-Probability Sampling Techniques: A Review and Set of Recommendations." *Journal of Entrepreneurship, Business and Economics* 11(1):42–62.

Rahmawati, Ima, Merry Paulina Saimima, Reza Fajarghifari, Universitas Pendidikan, Universitas Pendidikan Indonesia, Universitas Pendidikan Indonesia, and Universitas Pendidikan Indonesia. 2020. "Teachers Innovative Behavior And Role Performance With The Team : An Empirical." *European Journal of Molecular & Clinical Medicine* 07(06):1616–23.

Rana, Juwel. 2020. "Etnical Issues in Research." *Global Encyclopedia of Public Administration, Public Policy, and Governance* (June 2022). doi: 10.1007/978-3-319-31816-5.

Ranihusna, D., A. S. Nugroho, S. Ridloah, V. W. Putri, and N. A. Wulansari. 2021. "A Model for Enhancing Innovative Work Behavior." *Earth and Environmental Science* 747(2021):1–10. doi: 10.1088/1755-1315/747/1/012039.

Rasheed, Amna, and Rab Nawaz Lodhi. 2015. "Relationship between Servant Leadership and Employee Innovative Work Behavior: Role of Work Engagement as Mediator." *Science International Lahore* 27(5):4681–86.

Rehman, Atiq, and Samir Brahim Belhaouari. 2021. "Unsupervised Outlier Detection in Multidimensional Data." *Journal of Big Data* 8(80):1–27. doi: 10.1186/s40537-021-00469-z.

Rhoades, Linda, and Robert Eisenberger. 2002. "Perceived Organizational Support: A Review of the Literature." *Journal of Applied Psychology* 87(4):698–714. doi: 10.1037/0021-9010.87.4.698.

Sadry, Abdul Mahmood, Shokrullah Zeerak, and Wahida Yaqobi Popalzai. 2022. "The Tendency of Faculty Members to the Organizational Culture Based on Denison Model: A Case Study of Kunduz University." *Technium Education and Humanities* 2(1):1–16. doi: 10.47577/teh.v2i1.6270.

Salam, Sidra, and Aslan Amat Senin. 2022. "A Bibliometric Study on Innovative Behavior Literature (1961–2019)." *SAGE Open* 12(3):1–15. doi: 10.1177/21582440221109589.

Saleem, Sultan, Amna Manzoor, Muhammad Baqir Zar, and Jehanzeb Khan. 2024. "How Does Servant Leadership Enhance Worker Innovative Behavior in Pharmaceutical Industries: Mediating Role of Worker Creativity." *Qlantic Journal of Social Sciences and Humanities* 5(1):220–28. doi: 10.55737/qjssh.597167321.

Sari, Devietha Kurnia, Ananta Yudiarso, and Frikson Christian Sinambela. 2021. "Work Engagement and Innovative Work Behavior: Meta-Analysis Study." *Proceedings of the*

International Conference on Psychological Studies (ICPSYCHE 2020) 530:359–66. doi: 10.2991/assehr.k.210423.053.
Sauders, and Mark NK. 2009. "Understanding Research Philosophies and Approaches." *Research Methods for Business Students* 7(4):122–61.
Sauders, and Mark NK. 2009. "Understanding Research Philosophies And..." *Research Methods for Business Students* 122–61.
Sawan, Fransiskus. 2020. "Servant Leadership : Antecedent Factors , Impact , and Education Theories Used as Researcher ' s Perspective." *International Journal of Higher Education* 9(5):60–75. doi: 10.5430/ijhe.v9n5p60.
Scott, Susanne G., and Reginald A. Bruce. 1994. "DETERMINANTS OF INNOVATIVE BEHAVIOR: A PATH MODEL OF INDIVIDUAL INNOVATION IN THE WORKPLACE." *Academy of ManagemenI Louma* 37(3):580–607.
Sendjaya, Sen, Dirk van Dierendonck, and Robert C. Liden. 2019. "Servant Leadership: A Systematic Review and Call for Future Research." *Leadership Quarterly* 30(2019):111–32. doi: 10.1016/j.leaqua.2018.07.004.
Setiawan, Rahmat. 2014. "Study of Ontology , Epistemology and Axiology On." *The Second International Conference on Entrepreneurship* 144–51.
Setyawasih, Rianti, and Agung Dharmawan Buchdadi. 2022. "Organizational Culture and Innovative Work Behavior in Manufacturing Company : The Role of Employee Engagement as a Mediator." *International Journal of Research and Review* 9(1):360–71.
Shayah, M. Haze. 2019. "Organizational Culture and Innovation: A Literature Review M.Hazem Shayah 1,." *Advances in Social Science, Education and Humanities Research* 344(Icecsd):465–72.
Shepherd, Dean A., and Roy Suddaby. 2016. "Theory Building : A Review and Integration." *Journal of Management* XX(X):1–28. doi: 10.1177/0149206316647102.
Short, Paula M., and Patsy E. Johnson. 1994. "Exploring the Links among Teacher Empowerment, Leader Power, and Conflict." *Education* 114(4):581-593.
Sinaga Ida, Anggun Tiur, Prihatin Lumbanraja, Isfenti Sadalia, and Amlys Syahputra Silalahi. 2021. "The Influence of Affective Commitment on the Employees Innovative Work Behavior." Pp. 596–601 in *Economics and Business in Industrial Revolution*. Scitepress.
Smith, Matthew Longshore. 2006. "Overcoming Theory-Practice Inconsistencies: Critical Realism and Information Systems Research." *Information and Organization* 16(3):191–211. doi: 10.1016/j.infoandorg.2005.10.003.
Sofiyan, Sofiyan, Rasmulia Sembiring, Yuris Danilwan, Rini Anggriani, and Acai Sudirman. 2022. "Innovative Work Behavior and Its Impact on Teacher Performance: The Role of Organizational Culture and Self Efficacy as Predictors." *Journal of Education Research and Evaluation* 6(1):44–52. doi: 10.23887/jere.v6i1.38255.
Spector, Paul E. 2006. "Method Variance in Organizational Research: Truth or Urban Legend?" *Organizational Research Methods* 9(2):221–32. doi: 10.1177/1094428105284955.
Spreitzer, Gretchen M. 1995. "Psychological Empowerment in the Workplace: Dimensions, Measurement, and Validation." *Academy of Management Journal* 38(5):1442–65.
Spreitzer, Gretchen M. 1995. "Psychological Empowerment in the Workplace: Dimensions , Measurement , and Validation Author (s): Gretchen M . Spreitzer Source : The Academy of Management Journal , Vol . 38 , No . 5 (Oct ., 1995), Pp . 1442-1465 Published by : Academy of Management." *Academy of Management Journal* 38(5):1442–65.
Ssempebwa, Jude. 2020. "A Conceptual Paper on Innovativeness of Academic Staff." *Journal of*

Education and Practice 11(18):48–57. doi: 10.7176/jep/11-18-06.
Stone, Susan I., and Roderick A. Rose. 2011. "Social Work Research and Endogeneity Bias." *Journal of the Society for Social Work and Research* 2(2):54–75. doi: 10.5243/jsswr.2011.3.
Subedi, Dhanapati. 2016. "Explanatory Sequential Mixed Method Design as the Third Research Community of Knowledge Claim." *American Journal of Educational Research* 4(7):570–77. doi: 10.12691/education-4-7-10.
Sudirman, Acai. 2024. "Development Innovative Work Behavior for Companies ? Analysis of Self-Efficacy , Organizational Justice , and Psychological Empowerment as Predictors." *International Journal of Social Science and Business* 8(1):124–32. doi: 10.23887/ijssb.v8i1.56489.
Sulaiman, Muhammad, Mohamed A. Ragheb, and Mohamed Wahba. 2019. "Perceived Organization Support Role in Creating an Innovative Work Behavior." *Open Access Library Journal* 6(e5372):1–13. doi: 10.4236/oalib.1105372.
Sun, Lilan. 2023. "Factors Impacting Innovative Work Behavior of Employees at University in Yunnan, China." *AU-GSB e-Journal* 16(1):182–92.
Suparyanto dan Rosad. 2022. "Determinants of Innovative Work Behaviorof MSME Employees during the Covid-19 Pandemic in Pematangsiantar City." *Simatupang, Dkk. / Valid Jurnal Ilmiah* 20(1):54–63. doi: 10.53512/valid.v20i1.245.
Supriyadi, Dikdik, Lely Nur Hidayah Syafitri, Syukri Fathudin Achmad Widodo, Ridhoul Wahidi, Yusvita Nena Arinta, Faqih Nabhan, Abdul Mufid, Agus Purwanto, Mochammad Fahlevi, Denok Sunarsi, and Yoyok Cahyono. 2020. "Innovation and Authentic Leadership of Islamic University Lectures in Faculty Pharmacy Faculty: What Is the Role of Psychological Capital?" *Systematic Reviews in Pharmacy* 11(8):383–93. doi: 10.31838/srp.2020.8.56.
Surucu, Lütfi, and Ahmet Maslakci. 2020. "Validity and Reliability in Quantitative Research." *Business & Management Studies: An International Journal* 8(3):2694–2726. doi: 10.15295/bmij.v8i3.1540.
Susilo, Heru. 2019. "Improving Innovative Work Behavior and Organizational Performance through Workplace Spirituality and Perceived Organizational Support." *Advances in Economics, Business and Management Research* 93(AICoBPA 2018):101–5. doi: 10.2991/aicobpa-18.2019.24. Tabachnick and Fidell. 2001. "Using Multi Variate Statistice, 4TH Edition.Tabachnick, Barbara G., and Linda S. Fidell. 2013. "Using Multivariate Statistics." *Pearson Education, Inc.* 6th Editio:1–963.
Taherdoost, Hamed. 2022. "What Are Different Research Approaches? Comprehensive Review of Qualitative, Quantitative, and Mixed Method Research, Their Applications, Types, and Limitations." *Journal of Management Science & Engineering Research* 5(1):53–63. doi: 10.30564/jmser.v5i1.4538.
Tahira, Akifa. 2021. "The Effect of Perceived Organizational Support on Championing Behavior of IT Professionals : Mediating Role of Psychological Empowerment." *International Journal of Business and Administrative Studie* 7(5):102–12. doi: doi.org/10.20469/ijbas.7.10001-5.
Tajeddini, Kayhan, and Emma Martin. 2020. "International Journal of Hospitality Management The Importance of Human-Related Factors on Service Innovation and Performance." *International Journal of Hospitality Management* 85:1–14. doi: 10.1016/j.ijhm.2019.102431.
Tanoto, Sherly Rosalina, and Suwandi Sutarhanji. 2019. "Does Job Involvement Influence

Psychological Empowerment and Innovative Behaviour?" *Management in Emerging Markets (ICMEM)* 7(9):723–37.
Tanveer, Syed, Hussain Shah, Syed Mohsin, Ali Shah, and Hatem El-gohary. 2022. "Nurturing Innovative Work Behaviour through Workplace Learning among Knowledge Workers of Small and Medium." *Journal of the Knowledge Economy*. doi: 10.1007/s13132-022-01019-5.
Tesfa, Lemi, and Nidhi Walia. 2019. "A Study of the Innovative Work Behavior of Academic Staff: Focus On Ethiopian Higher Education Institution." *Journal of Emerging Technologies and Innovative Research* 6(1):340–50.
Thelen, Patrick David, and Cen April Yue. 2021. "Servant Leadership and Employee Advocacy: The Mediating Role of Psychological Empowerment and Perceived Relationship Investment." *International Journal of Communication* 15:3802–26.
Thomas, Kenneth W., and Betty a Velthouse. 1990. "Of Empowerment : Elements " Interpretive " Model An Motivation Task Intrinsic of." *The Academy of Management Review* 15(4):666–81.
Tian, Mu, Ping Deng, and Bing Wu. 2021. "Innovation : The European Journal of Social Science Culture and Innovation in the International Context : A Literature Overview." *Innovation: The European Journal of Social Science Research* 34(4):1–28. doi: 10.1080/13511610.2020.1783644.
Tjahjono, Budi, Mukhneri Muhtar, and Thamrin Abdullah. 2020. "The Effect of Transformational Leadership, Organizational Culture, and Innovation on Lecturers Performance at Esaunggul University, 2019." *International Conference on Education, Language, and Society* (Icels):82–90. doi: 10.5220/0008994200820090.
Tulcanaza-Prieto, Ana Belén, Iliana E. Aguilar-Rodríguez, and Carlos Artieda. 2021. "Organizational Culture and Corporate Performance in the Ecuadorian Environment." *Administrative Sciences* 11(132):1–17. doi: 10.3390/admsci11040132.
Tura, Belgin, and Sait Akbasli. 2022. "Factors Affecting Innovative Work Behaviors of Teachers from the Perspective of Organizational Intelligence." *Journal of Qualitative Research in Education Factors* 29(8):203–31. doi: 10.14689/enad.29.8.
Usama butt, Amaz. 2022. "The Impact of Perceived Organizational Support on Work Deviant Behavior the Mediating Role of Psychological Empowerment Usama Butt 1 , Amaz Myhar 2 , Bilal Ahmed 3 1 . Superior University Lahore * Correspondence : Amaz Myhar , Superior University Lahore I." *Global Science Journallobal Science Journal* 10(6):693–703.
Varpio, Lara, Elise Paradis, Sebastian Uijtdehaage, and Meredith Young. 2020. "The Distinctions Between Theory, Theoretical Framework, and Conceptual Framework." *Academic Medicine* 95(7):989–94. doi: 10.1097/ACM.0000000000003075.
Vivek, Ramakrishnan, Yogarajah Nanthagopan, and Sarmatha Piriyatharshan. 2023. "Beyond Methods: Theoretical Underpinnings of Triangulation in Qualitative and Multi-Method Studies"." *SEEU Review* 18(2):105–22. doi: 10.2478/seeur-2023-0088.
Voss, Marc T. 2016. "Research Methodology and Approach." *Journal of Research & Method in Education* 5(3):48–51. doi: 10.1057/9781137598042_6.
Wahyu, Rahmawati, Nurmaya Ema, Sutanto Aftoni, Abdul, and Choliq Hidayat. 2024. "Predicting Innovative Work Behavior Through the Empowerment (Study At the National Narcotics Agency." *Indonesian Interdisciplinary Journal of Sharia Economics* 7(1):501–45.
Wahyuningsih, Sri Handari, Achmad Sudiro, Eka Afnan Troena, and Dodi W. Irawanto. 2019.

"Analysis of Organizational Culture with Denison's Model Approach for International Business Competitiveness." *Problems and Perspectives in Management* 17(1):142–51. doi: 10.21511/ppm.17(1).2019.13.

Wang. 2019. "Linking Ambidextrous Organizational Culture to Innovative Behavior : A Moderated Mediation Model of Psychological Empowerment and Transformational Leadership." *Frontiers in Psychology* 10(2192):1–12. doi: 10.3389/fpsyg.2019.02192.

Wang, Li, Yuchen Sun, Jinzhi Li, Yunxia Xu, Meifen Chen, Xiaoyu Zhu, and Dawei Wang. 2022. "Effects of Ambidextrous Leadership on Employees' Work Behavior: The Mediating Role of Psychological Empowerment." *Frontiers in Psychology* 13(862799.):1–15. doi: 10.3389/fpsyg.2022.862799.

Wao, Hesborn, Clement Oduor Otendo, Jackline Syonguvi, Petronilla Muriithi, Damazo T. Kadengye, and Eva M. Brodin. 2022. "Encouraging Social Innovation for Combating Poverty: Master's Students' Gendered Experiences with a Service-Learning Intervention in Kenya and Uganda." *Studies in Graduate and Postdoctoral Education* 13(2):171–87. doi: 10.1108/SGPE-07-2021-0054.

Wiggins, Richard. 2021. "Perceived Organizational Support, Psychological Empowerment And Innovative Work Behavior of Academic Staff of Private Polytechnics in Nigeria." *Innovative Journal of Management and Business Education* 7(1):84–97.

Wu, Amery D., and Æ. Bruno D. Zumbo. 2008. "Understanding and Using Mediators and Moderators." *Springer Science+Business Media* 87:367–92. doi: 10.1007/s11205-007-9143-1.

Yildiz, Bora, Sümeyra Uzun, Serdar Semih, and C. O. Ş. Kun. 2017. "Drivers of Innovative Behaviors : The Moderator Roles of Perceived Organizational Support and Psychological Empowerment." *International Journal of Organizational Leadership* 6:341–60.

Yogeswaran, Thasika. 2020. "Factors of Perceived Organizational Support : A Conceptual Study." *University of Jaffna* 305–10.

You, Yutian, Zhongfeng Hu, Jiawei Li, Youhan Wang, and Mingli Xu. 2022. "The Effect of Organizational Innovation Climate on Employee Innovative Behavior: The Role of Psychological Ownership and Task Interdependence." *Frontiers in Psychology* 13(856407):1–13. doi: 10.3389/fpsyg.2022.856407.

Zada, Muhammad, Shagufta Zada, Mudassar Ali, Zhang Yong Jun, Nicolás Contreras-Barraza, and Dante Castillo. 2022. "How Classy Servant Leader at Workplace? Linking Servant Leadership and Task Performance During the COVID-19 Crisis: A Moderation and Mediation Approach." *Frontiers in Psychology* 13(Article 810227):1–13. doi: 10.3389/fpsyg.2022.810227.

Zafar, Hina, Feng Tian, Jo Ann Ho, and Gaoqi Zhang. 2022. "Environmentally Specific Servant Leadership and Voluntary Pro-Environmental Behavior in the Context of Green Operations: A Serial Mediation Path." *Frontiers in Psychology* 13:1–11. doi: 10.3389/fpsyg.2022.1059523.

Zafirovski, Milan. 2014. "Social Exchange Theory under Scrutiny : A Positive Critique of Its Economic-Behaviorist Formulations." *Electronic Journal of Sociology* 1–40.

Zainal, Mohammed Afandi, and Mohd Effendi Ewan Mohd Matore. 2019. "Factors Influencing Teachers' Innovative Behaviour: A Systematic Review." *Creative Education* 10(12):2869–86. doi: 10.4236/ce.2019.1012213.

Zeng, Jianji, and Guangyi Xu. 2020. "How Servant Leadership Motivates Innovative Behavior: A Moderated Mediation Model." *International Journal of Environmental Research and*

Public Health 17(4753):1–14. doi: 10.3390/ijerph17134753.
Zhang, Abdul Rashid Abdullah, Dalowar Hossan, and Zongxiang Hou. 2021. "The Effect of Transformational Leadership on Innovative Work Behavior with Moderating Role of Internal Locus of Control and Psychological Empowerment." *Management Science Letters* 11:1267–76. doi: 10.5267/j.msl.2020.11.012.
Zhang, Tong. 2023. "Critical Realism: A Critical Evaluation." *Social Epistemology* 37(1):15–29. doi: 10.1080/02691728.2022.2080127.
Zhang, Zaisheng, Meng Liu, and Qing Yang. 2021. "Examining the External Antecedents of Innovative Work Behavior: The Role of Government Support for Talent Policy." *International Journal of Environmental Research and Public Health* 18(3):1–17. doi: 10.3390/ijerph18031213.
Zhao, Guolong, Yuxiang Luan, He Ding, and Zixiang Zhou. 2022. "Job Control and Employee Innovative Behavior: A Moderated Mediation Model." *Frontiers in Psychology* 13(720654):1–8. doi: 10.3389/fpsyg.2022.720654.
Zhu, Chang, and Nadine Engels. 2014. "Organizational Culture and Instructional Innovations in Higher Education: Perceptions and Reactions of Teachers and Students." *Educational Management Administration and Leadership* 42(1):136–58. doi: 10.1177/1741143213499253.
Zia, Muhammad Qamar, Tobias M. Huning, Muhammad Sufyan Ramish, Muhammad Naveed, and Shiraz Ahmed. 2023. "The Impact of Psychological Empowerment on Innovative Work Behavior: A Moderated Mediation Model of Informal Learning and Proactive Behavior." *Review of Managerial Science* 18(12):3695–3716. doi: 10.1007/s11846-023-00717-x.
Zorlu, Özcan, and Ali Avan. 2019. "The Effect of Servant Leadership on Psychological Empowerment and Organizational Identification." *Journal of Business Research-Turk* 11(1):293–309. doi: 10.20491/isarder.2019.600.
Zreen, Aneeqa, Muhammad Farrukh, and Nagina Kanwal. 2021. "Do HR Practices Facilitate Innovative Work Behaviour? Empirical Evidence from Higher Education Institutes." *Human Systems Management* 40(5):701–10. doi: 10.3233/HSM-201001.

APPENDIX 1

4.14.3 Exploratory Factor Analysis (EFA)

EFA was used to assess the construct validity. Before performing CFA with the items that had survived after EFA, we began with EFA to establish a factor structure to be confirmed through CFA. The primary applications of factor analysis are the examination of theoretical framework and the reduction of variables from complex conceptions into more interpretable and significant elements (Barclay 1995). According to Hair et al. (2010), a variety of criteria should be taken into account while deciding how many factors to keep or retain. By placing all objects into their intended factors with factor loadings more than 0.5 and eigenvalues greater than 1.0 for each factor, a set of stopping criteria was established to decide the initial number of factors to keep or retain. To evaluate the dimensionality and factor loadings of our scales and to improve the measures, we employed principal component analysis as the extraction method and Varimax with Kaiser Normalization as the rotation method during EFA. This study relied on the principal component analysis as this is the most effective approach for inferential statistics (Field, 2009). Moreover, since Varimax with Kaiser Normalization is widely recommended and assumes that factors correlate, it was deemed a necessary rotation method in this study.

Condensing a large data set to a more manageable size while preserving the crucial information intended to be measured by the study variables, confirming that the questionnaire items measure the underlying variables, and recognizing the structure of the primary variables were the objectives of EFA (Field, 2009). It is assumed that the items that grouped together measure the same underlying construct, as stated by Kerlinger, (1986). As a result, Field (2009)

excluded from the study any items that had loadings below 0.5 and those that were cross loading on other components with values greater than 0.5.

Additionally, KMO were taken into consideration in determining the sampling adequacy and to verify whether or not the items were correlated. According to Kaiser (1974), the Bartlett test values should be (sig. <.05), and the values of the sampling adequacy must be greater than .70. for variables. According to the study's findings, every KMO value was higher than the suggested 0.7, and every Bartlett's test value was significant at 0.000 below the suggested cutoff of 0.05 (EFA Results Matrix). This demonstrated that all constructs' items correlated, a prerequisite for component analysis, and that the sample data was sufficient. This was done on every item in our study variables for every study concept, as seen below.

4.14.3.1 Exploratory Factor Analysis (EFA) for perceived organizational support

The study data's results demonstrated that 12 items loaded well with a single factor on the perceived organizational support (POS) construct. The data was subjected to principal component analysis (PCA) with Varimax and Kaiser normalization. The sample data was sufficient with KMO (.820) and Bartletts' test (.000) as both showed satisfactory results, indicating that the items of the POS constructs were correlated. Factors with eigen values greater than 1 and items with loadings greater than 0.50 were the only ones included. The single factor also had significant loadings between.787 and.647, according to the results, explaining 51.86% of the variance. The POS variable (**see table 4.8 below**), was sufficiently explained by the items that loaded above 0.5. (see Appendix-1 for detailed).

Table 4.8: EFA for perceived organizational support

S/N	**Item code**	**Item Label**	Loading
1	POS1	My contribution to the wellbeing of this university is valued.	.787
2	POS5	This university considers my best interests when making decisions that have an impact on me.	.743
3	POS16	This university does its best to make my work interesting	.725
4	POS6	Help is available from this university when I have a problem	.710
5	POS8	The university is prepared to go above and beyond to support me to do my work effectively	.707
6	POS12	If given the opportunity, the university would take advantage of me.	.687
7	POS9	My efforts are noticed as much as possible by management	.647
8	POS7	This university cares about my well-being.	.643
9	POS10	This university is willing to help me when I need a special favor	.610
10	PO13	This university shows a lot of concern for me.	.607
11	POS11	This university cares about my general satisfaction at work.	.547
12	POS14	This university cares about my opinion	.543

Kaiser-Meyer-Olkin Measure of Sampling Adequacy. .820*; Bartlett's Test of Sphericity – Approx. Chi-Square-* 230.586*; df-10; Sig .000.*

Source: Primary data

4.14.3.2 EFA for Servant leadership

Results from our data showed that 31 items loaded well on servant leadership construct with a total of seven factors namely conceptual skills, empowerment, subordinates' growth & success, putting subordinates first, ethical behavior, emotional healing, and creating value for the community. The principal component analysis (PCA) using Varimax with Kaiser Normalization was done on the data to test the components of servant leadership which extracted seven factors with Eigen values of greater than 1. These factors of conceptual skills (19.999), empowerment

(6.931), subordinates' growth & success (6.222), putting subordinates first (5.688), ethical behavior (5.186), emotional healing (4.803), and creating value for the community (4.498) were extracted, and accounted for 53.32% of the total variance in servant leadership. Both the KMO (.864) and Bartletts' test (.000) displayed satisfactory results, which indicated that servant leadership constructs' items were correlated, and the sample data was sufficient.

Also, to compute the loadings on each of the servant leadership factors, only items with loadings greater than 0.50 and factors with eigen values greater than 1 were included. Additionally, the results showed that 9 items had significant loadings between .625 and .505 on factor 1 (conceptual skills), which accounted for 19.999% of the variance, other significant loadings ranging from.707 to.527, with 5 items loaded well on factor 2 (empowerment), accounting for 6.931% of the variance. Furthermore, 4 items had significant loadings on factor 3 (subordinates' growth & success) between .753 and .560, which explained 6.222% of the variance, and 3 items had significant loadings on factor 4 (putting subordinates first) between .744 and .703, which explained 5.688% of the variance.

Also, 3 items with significant loadings between .707 and.674 on factor 5 (ethical behavior) and 3 items with significant loadings between .761 and .503 on factor 6 (emotional healing) both loaded well and explained 5.186% and 4.803% of the variance, respectively. Lastly, 3 items loaded well on factor 7 (creating value for the community), with significant loadings between.741 and.685 that explained 4.498% of the variance. The SL variable (**table 4.9 below**), was sufficiently explained by the items that loaded above 0.5. (see Appendix-1 for detailed Table 4.9).

Table 4.9: EFA for Servant Leadership

S/N	Item code	Item Label	1	2	3	4	5	6	7
		Empowerment							
1	SLE1	My supervisor gives me the responsibility of making important decisions about my job.	.664						
2	SLE2	My supervisor encourages me to handle important work decisions on my own.	.625						
3	SLE3	My supervisor gives me the freedom to handle difficult situations in the way that I feel is best.	.611						
4	SLE4	When I have to make an important decision at work, I do not have to consult my supervisor first.	.563						
5	SLE5	My supervisor gives me the confidence I require to succeed	.555						
6	SLE6	My supervisor always solicits and acts on my feedback	.537						
7	SLE7	My supervisor always provides me with additional responsibility	.535						
8	SLE8	My supervisor has confidence in my ability to succeed at this university.	.530						
		Conceptual skills							
9	SLC1	My manager can tell if something work-related is going wrong.		.707					
10	SLC2	My manager has the capacity to effectively solve complicated issues.		.643					
11	SLC3	My supervisor has a thorough understanding of our university and its goals.		.642					
12	SLC4	My supervisor can solve work problems with new or creative ideas		.626					
13	SLC6	I have the ability to evaluate different aspects of university operations.		.527					
		Subordinates' growth & success							
14	SLG1	My supervisor prioritizes my professional growth.			.753				
15	SLG2	My supervisor is interested in making sure that I achieve my career goals.			.676				

16	SLG3	My supervisor provides me with work experience that enables me to develop new skills.		.599					
17	SLG4	My supervisor is interested in learning about my career aspirations at this university.		.560					
		Putting subordinates first							
18	SLF2	My supervisor puts my best interests ahead of his/her own.			.744				
19	SLF3	My supervisor sacrifices his/her own interests to meet my needs.			.741				
20	SLF4	My supervisor does whatever she/he can make my job easier.			.703				
		Ethical behavior							
21	SLB1	My supervisor holds high ethical standards				.707			
22	SLB2	My supervisor is always honest				.689			
23	SLB3	My supervisor would not compromise ethical principles to achieve success.				.674			
24	SLB4	Honesty is more important to my supervisor than financial gain.				.747			
25	SLB5	My supervisor upholds the highest moral standards established by this university.				.657			
		Emotional healing							
26	SLH1	If I have a personal problem, I approach the supervisor who provides much needed assistance.					.761		
27	SLH5	My supervisor shows empathy to me					.739		
28	SLH6	My supervisor positively copes with my strong emotions					.503		
		Creating value for the community							
29	SLV1	My supervisor emphasizes the importance of giving back to community.						.741	
30	SLV3	My supervisor participates in community activities						.692	
31	SLV5	My supervisor encourages me to volunteer in community service.						.685	
		Eigen values	19.999	6.931	6.222	5.688	5.186	4.803	4.498
		% Of Variance	11.644	8.249	7.980	6.640	6.445	6.209	6.159
		Cumulative	11.644	19.893	27.873	34.513	40.958	47.167	53.326

Kaiser-Meyer-Olkin Measure of Sampling Adequacy. .864*; Bartlett's Test of Sphericity – Approx. Chi-Square-* 1433.680*; df-*435*; Sig .000.*

4.13.3.3 EFA for organizational culture

Results from our data revealed that 17 items loaded well on the construct of organizational culture with a total of four components or dimensions. All the extracted components had eigen values greater than 1 and the loadings above 0.5. Involvement (20.272), consistency (12.941), adaptability (9.356), and mission (7.651) factors were extracted and accounted for 50.221% of the total variance in the organizational culture construct. The KMO was sufficient at .741 and the Bartlett's test was significant (*p-.000*) to assume that the data were likely to factor well due to appropriate correlations between the study variables. To ascertain the loadings on each component of organizational culture, only items with absolute values greater than.50 were included. The components of organizational culture were tested using principal component analysis with Varimax and Kaiser Normalization (**table 4.10 below**).

Table 4.10: EFA for organizational culture

S/N	Item code	Item label	1	2	3	4
		Involvement				
1	OCI1	Most workers in this university are highly involved in their work	.738			
2	OCI2	Everyone has access to information when they need it.	.719			
3	OCI3	Work is organized so that everyone sees the relationship between his or her job and the goals of the university	.715			
4	OCI4	Authority is delegated; therefore, people act on their own	.659			
5	OCI5	The capacity of employees is constantly improving.	.648			
6	OCI6	Problems decrease because employees have enough skills to perform their job.	.643			

		Consistency					
7	OCC1	Leaders and managers are aligned with what they preach.			.706		
8	OCC2	The university has a consistent set of values			.654		
9	OCC3	Consensus is easy to reach within the university			.593		
10	OCC4	Key issues are solved by reaching an agreement among members			.551		
11	OCC5	Working in teams with colleagues from different departments is easy			.523		
		Adaptability					
12	OCA1	The university's procedures are very flexible and easy to change				.811	
13	OCA2	The university's response to competitors in the education environment is adequate				.634	
14	OCA3	Changes are generated using client's comments and recommendations				.619	
		Mission					
15	OCM4	There is a shared vision of the university in the long run.					.818
16	OCM5	Leaders look at things in the long-term perspective.					.616
17	OCM6	Short-term and long-term thinking are aligned in the university.					.598
		Eigen values	20.272	12.941	9.356	7.651	
		% Of Variance	18.883	12.308	9.750	9.280	
		Cumulative %	18.883	31.191	40.941	50.221	
		Kaiser-Meyer-Olkin Measure of Sampling Adequacy. .741*; Bartlett's Test of Sphericity- Approx. Chi-Square-* 824.746*; df-*435*; Sig .000.*					

4.13.3.4 EFA for psychological empowerment

From the psychological empowerment construct, 4 factors with Eigen values greater than 1 were extracted through Exploratory Factor Analysis, namely: meaning (20.416), competence (12.479), self-determination (10.008), and impact (9.202) were extracted and explained 52.105% of the total variance in psychological empowerment construct. The analysis (EFA) loaded 16 items with a KMO of .801 and significant Bartlett test results (p- 0.00), indicating that the sample data were adequate and thus, the data were likely to factor well due to significant correlations.

Additionally, loadings on each factor of psychological empowerment were only calculated for components whose absolute values were greater than 0.50. As a result, five items on factor 1

(meaning) had significant loadings ranging from .720 to .582 and explained 20.41% of the variance, three items on factor 2 (competence) loaded well and explained 12.47% of the variance in psychological empowerment with significant loadings ranging from .751 to .698, and three items on factor 3 (impact) had significant loadings ranging from.753 to.525 and explained 10.00% of the variance in the psychological empowerment construct 3 items with significant loadings between .736 and .698, loaded on factor four (Self-determination) explaining 9.20% of the variance in the psychological empowerment construct. The components of psychological empowerment were tested using principal component analysis with Varimax and Kaiser Normalization. The items loading higher than 0.5 adequately explained the psychological empowerment construct (**table 4.11 below**).

Table 4.11: EFA for psychological empowerment

S/N	Item code	Psychological empowerment	1	2	3	4
		Meaning				
1	PEM2	My work activities are personally meaningful to me	.720			
2	PEM3	The decisions I make at work correspond with my standards and beliefs of the university	.662			
3	PEM4	I am accountable for the outcome of my work.	.600			
4	PEM5	The purpose of my work is related to the university values and standards	.593			
5	PEM6	The purpose of my work is related to the standards set by the university.	.582			
		Competence				
6	PEC2	I am confident in my ability to perform my work		.751		
7	PEC3	My work is well-designed to fit my skill level.		.709		
8	PEC4	I periodically receive training to advance my skills.		.698		
9	PEC1	I have mastered skills necessary for my work		.575		
		Self-determination				
10	PES2	I have a great control over my job activities			.753	
11	PES3	I have an opportunity to use personal initiative in my work			.728	
12	PES4	I determine the way to improve in my job performance			.530	
13	PES5	I feel independent at my workplace			.525	

		Impact				
14	PEI2	My opinion counts in the university decision-making				.736
15	PEI3	I have a significant influence on service quality.				.712
16	PEI4	My work contributes to the company's overall goals				.698
		Eigen values	20.416	12.479	10.008	20.416
		% Of Variance	15.419	12.889	12.889	11.183
		Cumulative %	15.419	28.308	40.923	52.105
Kaiser-Meyer-Olkin Measure of Sampling Adequacy .801; Bartlett's Test of Sphericity – Approx. Chi-Square- 441.501; df-105; Sig .000.						

4.13.3.5 EFA for innovative work behavior

In order to identify patterns in data and to reduce data to manageable levels, we executed an Exploratory Factor Analysis (Field, 2006). This test generated acceptable content validity indices that were greater than 0.5 (Field, 2006). The analysis indicated that 19 items loaded adequately well on the innovative work behavior construct and the test extracted a total of five components or dimensions with eigen values greater than 1. The five factors of idea exploration, idea generation, idea promotion, idea realization and idea sustainability accounted for 51.966% of the total variances in innovative work behavior. The KMO of .618 and the significant Bartlett's test results (*p- 0.00*) were satisfactory, indicating that the sample data was adequate and thus, likely to factor well.

To determine the loadings on each of the components, only items with absolute values greater than .50 were included. This construct was tested using principal component analysis with Varimax and Kaiser Normalization. Taken together, the five dimensions explained approximately 50% of the total variance. As shown in Table 4.12 below, the KMO (.618), factor analysis, Eigen values, and percentage of variance for the five innovative work behavior components: idea exploration (14.033), idea generation (11.916), idea promotion (9.660), idea realization (8.270), and idea sustainability (8.270), are adequate and amenable to factorial analysis.

Table 4.12. EFA for Innovative work behavior

S/N	Item code	Item label	1	2	3	4	5
		Opportunity exploration					
1	IWO1	I am able to develop ideas and solutions for creative opportunities in my field	.819				
2	IWO2	I share ideas with my colleagues or supervisors about opportunities for the development of working methods within the university	.725				
3	IWO3	I share ideas with my supervisors about the opportunities to find solutions to the problems we face at work	.683				
4	IWO6	I discuss with my colleagues the possible opportunities to change work patterns to achieve better results	.670				
		Idea generation					
5	IWG1	I propose new ideas for development within the university		.741			
6	IWG5	I suggest improvements to ideas expressed by colleagues or bosses at work		.664			
7	IWG6	When putting ideas into practice, I test evolving solutions for work shortcomings.		.595			
8	IWG7	In order to make my work easier, I look for unique and innovative tools.		.586			
		Idea promotion					
9	IWP1	I am able to convince others of the importance of an improved idea.			.768		
10	IWP2	I propose the new idea to key people authorized to allocate resources to this new idea			.752		
11	IWP3	I promote supervisors' and colleagues' new ideas			.701		
12	IWP5	I illustrate how the new idea can be applied gradually and practically to others			.562		
		Idea realization					
13	IWR4	I determine the necessary requirements for realizing a new idea.				.725	
14	IWR5	I keep colleagues informed about progress in achieving the new idea				.652	
15	IWR1	I test solutions for unexpected problems that arise when new ideas are put into practice				.641	
16	IWR3	I monitor progress during the process of putting new ideas into practice				.545	
		Idea sustainability					
17	IWS4	I discuss with colleagues how to consolidate newly implemented ideas in the university.					.691

18	IWS5	I am aware of the steps that can be taken to make the implementation of the proposed idea a success					.682
19	IWS7	I initiate strategies to anchor the new idea in existing procedures or structures of the University					.670
		Eigen values	14.033	11.916	9.660	8.270	8.086
		% Of Variance	12.103	10.538	10.345	9.788	9.192
		Cumulative %	12.103	22.640	32.985	42.774	51.966

Kaiser-Meyer-Olkin Measure of Sampling Adequacy .618; Bartlett's Test of Sphericity – Approx. Chi-Square - 508.992; df-136; Sig .000

APPENDIX 2

Table 5.6: CFA for Perceived Organizational Support

Item code	Item label	Standardized regression estimates (*R2*)	*AVE*	*P-Value*
POS5	This university considers my best interests when making decisions that impact on me.	.59	**.68**	***
POS6	Help is available from this university when I have a problem	.58		***
POS9	My efforts are ever noticed as much as possible by management	.62		***
POS10	This university is willing to help me when I need a special favor	.70		***
POS11	This university cares about my general satisfaction at work.	.71		***
POS12	If given opportunity, the university would take advantage of me.	.78		***
POS14	This university cares about my opinions.	.76		***
POS15	This university is proud of my achievements at work.	.70		***
	Composite construct reliability .78			

Table 5.7: CFA for Servant Leadership

Item code	Item label	Standardized regression estimates (*R2*)	*AVE*	*P-Value*
SLV1	My supervisor emphasizes the importance of giving back to community.	.76	**.64**	***
SLV2	My supervisor is always interested in helping people in our community.	.53		***
SLV5	My supervisor encourages me to volunteer in community service.	.70		***
SLB2	My supervisor is always honest	.82		***
SLB3	My supervisor would not compromise ethical principles to achieve success.	.85		***
SLB4	Honesty is more important to my supervisor than financial gain.	.89		***
SLB5	My supervisor upholds the highest moral standards established by this university.	.84		***
SLH1	If I have a personal problem, I approach the supervisor who provides much needed assistance.	.47		***

SLH5	My supervisor shows empathy to me	.64		***
SLH6	My supervisor positively copes with my strong emotions	.68		***
SLE1	My supervisor gives me the responsibility to make important decisions about my job.	.59		***
SLE2	My supervisor encourages me to handle important work decisions on my own.	.58		***
SLC1	My manager can tell if something work-related is going wrong.	.61		***
SLC6	I have the ability to evaluate different aspects of university operations.	.54		***
SLG1	My supervisor prioritizes my professional growth.	.70		***
SLG2	My supervisor is interested in making sure that I achieve my career goals.	.76		***
SLG3	My supervisor provides me with work experience that enables me to develop new skills.	.77		***
	Composite construct reliability .81			

Table 5.8: CFA for Organizational Culture

Item code	**Item label**	**Standardized regression estimates (*R2*)**	***AVE***	***P-Value***
OCA1	The university's procedures are very flexible and easy to change	.54	**.69**	***
OCA2	The university's response to competitors in the education environment is adequate	.91		***
OCA3	Changes are generated using client's comments and recommendations	.62		***
OCI1	Most workers in this university are highly involved in their work	.94		***
OCI2	Everyone has access to information when they need it.	.51		***
OCM4	There is a shared vision of the university in the long run.	.59		***
OCM5	Leaders look at things in the long-term perspective.	.73		***
OCM6	Short-term and long-term thinking are aligned in the university.	.70		***
OCC1	Leaders and managers are aligned with what they preach.	.87		***
OCC3	Consensus is easy to reach within the university	.47		***
	Composite construct reliability .85			

Table 5.9: CFA for Psychological Empowerment

Item code	Item label	Standardized regression estimates (*R2*)	*AVE*	*P-Value*
PEM4	I am accountable for the outcome of my work.	.68	**.64**	***
PEM5	The purpose of my work is related to the university values and standards	.79		***
PEM6	The purpose of my work is related to the standards set by the university.	.65		***
PEC3	My work is well-designed to fit my skill level.	.57		***
PEC4	I periodically receive training to advance my skills.	.52		***
PES3	I have an opportunity to use personal initiative in my work	.60		***
PES4	I determine the way to improve in my job performance	.77		***
PES5	I feel independent at my workplace	.56		***
PEI2	My opinion counts in the university decision-making	.55		***
PEI3	I have a significant influence on service quality.	.72		***
	Composite construct reliability .83			

Table 5.10: CFA for Innovative Work Behavior

Item code	Item label	Standardized regression estimates (*R2*)	*AVE*	*P-Value*
IWO1	I am able to develop ideas and solutions for creative opportunities in my field	.63	**.61**	***
IWO2	I share ideas with my colleagues or supervisors about opportunities for the development of working methods within the university	.73		***
IWO3	I share ideas with my supervisors about the opportunities to find solutions to the problems we face at work	.51		***
IWO6	I discuss with my colleagues the possible opportunities to change work patterns to achieve better results	.52		***
IWG1	I propose new ideas for development within the university	.52		***
IWG5	I suggest improvements to ideas expressed by colleagues or bosses at work	.69		***
IWG6	When putting ideas into practice, I test evolving solutions for work shortcomings.	.93		***
IWG7	In order to make my work easier, I look for unique and innovative tools.	.67		***
IWS4	I discuss with colleagues how to consolidate newly implemented ideas in the university.	.68		***

IWS5	I am aware of the steps that can be taken to make the implementation of the proposed idea a success	.46	**
IWS7	I initiate strategies to anchor the new idea in existing procedures or structures of the University	.46	**
IWP1	I am able to convince others of the importance of an improved idea.	.67	***
IWP2	I propose the new idea to key people authorized to allocate resources to this new idea	.76	***
IWP3	I promote supervisors' and colleagues' new ideas	.60	***
IWP5	I illustrate how the new idea can be applied gradually and practically to others	.75	***
IWR1	I test solutions for unexpected problems that arise when new ideas are put into practice	.45	**
IWR4	I determine the necessary requirements for realizing a new idea.	.86	***
IWR5	I keep colleagues informed about progress in achieving the new idea	.49	**
	Composite construct reliability .86		

APPENDIX 3

QUESTIONNAIRE:

INNOVATIVE WORK BEHAVIOR AMONG ACADEMIC STAFF IN PUBLIC UNIVERSITIES IN UGANDA

INTRODUCTION: -

This Questionnaire has six sections: Section A is on background information, Section B taps questions on perceived organizational support, section C is on servant leadership. Section D is on organizational culture; section E is on psychological empowerment and Section F relates to employee innovative work behavior. We appreciate the time and work you have put into this study.

SECTION A: BACKGROUND INFORMATION

This part contains statements concerning general information about the participants. Please read the following statements and checks the category that best describes your situation and tick (√).

Please tick the most applicable to you (√)

	VARIABLE		(√)
1.	**Gender**		
	Male	1	
	Female	2	
2.	**Staff Title**		
	Teaching Assistant	1	
	Assistant Lecturer	2	
	Lecturer	3	
	Senior Lecturer	4	
	Associate Professor	5	
	Professor	6	
3.	**Academic Qualification**		
	Bachelor's Degree	1	
	Master's	2	
	PhD	3	
4.	**Age in Years**		
	20 - 29	1	
	30 - 39	2	
	40 - 49	3	
	50 - 59	4	
	More than 60	5	
5.	**Work Experience (Years)**		
	1-5	1	
	6 - 10	2	
	11 - 15	3	
	16 - 20	4	
	More than 20	5	

SECTION B: PERCEIVED ORGANIZATIONAL SUPPORT

Listed below is a series of statements that represent possible feelings that individuals might have about organizational support. Please indicate the degree of your agreement or disagreement with each statement by ticking (√) the number that best represents your feelings.

1 = SD	2 = D	3 = N	4 = A	5 = SA
Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**

S/N	Statement	SD	D	N	A	SA
1	My contribution to the wellbeing of this university is valued.	1	2	3	4	5
2	This university values the extra work I do.	1	2	3	4	5
3	My values and goals are taken seriously by this university.	1	2	3	4	5
4	The University does not disregard my complaints.	1	2	3	4	5
5	This university considers my best interests when making decisions that have an impact on me.	1	2	3	4	5
6	Help is available from this university when I have a problem	1	2	3	4	5
7	This university cares about my well-being.	1	2	3	4	5
8	The university is prepared to go above and beyond to support me to do my work effectively	1	2	3	4	5
9	My efforts are ever noticed as much as possible by management	1	2	3	4	5
10	This university is willing to help me when I need a special favor	1	2	3	4	5
11	This university cares about my general satisfaction at work.	1	2	3	4	5
12	If given the opportunity, the university would take advantage of me.	1	2	3	4	5
13	This university shows a lot of concern for me.	1	2	3	4	5
14	This university cares about my opinions.	1	2	3	4	5
15	The university is proud of my achievements at work.	1	2	3	4	5
16	This university does its best to make my work interesting.	1	2	3	4	5

SECTION C: SERVANT LEADERSHIP

Listed below is a series of statements that represent possible feelings that individuals might have about **Servant Leadership**. Please indicate the degree of your agreement or disagreement with each statement that best describe servant leadership by ticking (√) the number that best represents your feelings.

1 = SD	2 = D	3 = N	4 = A	5 = SA
Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**

S/N	Statement	SD	D	N	A	SA
	Conceptual skills					
1	My manager can tell if something work-related is going wrong.	1	2	3	4	5
2	My manager has the capacity to effectively solve complicated issues.	1	2	3	4	5
3	My supervisor has a thorough understanding of our university and its goals.	1	2	3	4	5
4	My supervisor can solve work problems with new or creative ideas	1	2	3	4	5

5	My supervisor allows me to come up with answers for complex problems	1	2	3	4	5
6	I have the ability to evaluate different aspects of university operations.	1	2	3	4	5
	Empowering					
1	My supervisor gives me the responsibility to make important decisions about my job.	1	2	3	4	5
2	My supervisor encourages me to handle important work decisions on my own.	1	2	3	4	5
3	My supervisor gives me the freedom to handle difficult situations in the way that I feel is best.	1	2	3	4	5
4	When I have to make an important decision at work, I do not have to consult my supervisor first.	1	2	3	4	5
5	My supervisor gives me the confidence I require to succeed	1	2	3	4	5
6.	My supervisor always solicits and acts on my feedback	1	2	3	4	5
7	My supervisor always provides me with additional responsibility	1	2	3	4	5
8	My supervisor has confidence in my ability to succeed at this university.	1	2	3	4	5
	Subordinate's growth & success					
1	My supervisor prioritizes my professional growth.	1	2	3	4	5
2	My supervisor is interested in making sure that I achieve my career goals.	1	2	3	4	5
3	My supervisor provides me with work experiences that enable me to develop new skills.	1	2	3	4	5
4	My supervisor is interested in learning about my career aspirations at this university.	1	2	3	4	5
5	I'm encouraged to take part in all of this university's skill-training initiatives.	1	2	3	4	5
6	I benefit from special mentoring programs in this university	1	2	3	4	5
7	My supervisor regularly provides and asks for feedback	1	2	3	4	5
	Putting subordinates first					
1	My supervisor cares more about my success than his/her own	1	2	3	4	5
2	My supervisor puts my best interests ahead of his/her own.	1	2	3	4	5
3	My supervisor sacrifices his/her own interests to meet my needs.	1	2	3	4	5
4	My supervisor does whatever she/he can to make my job easier.	1	2	3	4	5
	Ethical Behavior.					
1	My supervisor holds high ethical standards	1	2	3	4	5
2	My supervisor is always honest	1	2	3	4	5
3	My supervisor would not compromise ethical principles to achieve success.	1	2	3	4	5
4	Honesty is more important to my supervisor than financial gain.	1	2	3	4	5
5	My supervisor upholds the highest moral standards established by this university.	1	2	3	4	5

6	At this university, my supervisor treats me with dignity and respect.	1	2	3	4	5
7	My supervisor values the diversity of her staff members.	1	2	3	4	5
	Emotional healing					
1	If I have a personal problem, I approach the supervisor who provides much needed assistance.	1	2	3	4	5
2	My supervisor cares about my personal well-being.	1	2	3	4	5
3	My manager takes time to talk to me on a personal level.	1	2	3	4	5
4	Without having to ask, my manager can tell when I'm not happy.	1	2	3	4	5
5.	My supervisor shows empathy to me	1	2	3	4	5
6	My supervisor positively copes with my strong emotions	1	2	3	4	5
	Creating value for the community					
1	My supervisor emphasizes the importance of giving back to community.	1	2	3	4	5
2	My supervisor is always interested in helping people in our community.	1	2	3	4	5
3	My supervisor participates in community activities	1	2	3	4	5
4	I am encouraged by my manager to participate in the community related activities.	1	2	3	4	5
5	My supervisor encourages me to volunteer in community service.	1	2	3	4	5
6	My supervisor donates to local charities	1	2	3	4	5

SECTION D: ORGANIZATIONAL CULTURE

Listed below are several statements that represent possible feelings that individuals might have about Organizational Culture. Please indicate the extent to which you agree or disagree with each statement that best describe **Organizational Culture** by ticking (√) the number that best represents your feelings.

1 = SD	**2 = D**	**3 = N**	**4 = A**	**5 = SA**
Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**

S/N	**Statement**	**SD**	**D**	**N**	**A**	**SA**
	Involvement					
1	Most workers in this university are highly involved in their work	1	2	3	4	5
2	Everyone has access to information when they need it.	1	2	3	4	5
3	Work is organized so that everyone sees the relationship between his or her job and the goals of the university	1	2	3	4	5
4	Authority is delegated; therefore, people act on their own	1	2	3	4	5
5	The capacity of employees is constantly improving.	1	2	3	4	5
6	Problems decrease because employees have enough skills to perform their job.	1	2	3	4	5
	Consistency					
1	Leaders and managers are aligned with what they preach.	1	2	3	4	5
2	The university has a consistent set of values	1	2	3	4	5
3	Consensus is easy to reach within the university	1	2	3	4	5

4	Key issues are solved by reaching an agreement among members	1	2	3	4	5
5	Working in teams with colleagues from different departments is easy	1	2	3	4	5
6	There is a good alignment of goals and levels within the university	1	2	3	4	5
	Adaptability					
1	The university's procedures are very flexible and easy to change	1	2	3	4	5
2	The university's response to competitors in the education environment is adequate	1	2	3	4	5
3	Changes are generated using client's comments and recommendations	1	2	3	4	5
4	Decisions are made using client's input.	1	2	3	4	5
5	Failure is an opportunity for learning and improvement	1	2	3	4	5
6	Innovation and risk are tools to improve university performance.	1	2	3	4	5
7	The university's response to the reforms in the education environment is adequate	1	2	3	4	5
	Mission					
1	The university has a long-term goal and direction.	1	2	3	4	5
2	The achievement of stated goals is continuously monitored	1	2	3	4	5
3	The university's managers are aware of what must be done to ensure their long-term success.	1	2	3	4	5
4	There is a shared vision of the university in the long run.	1	2	3	4	5
5	Leaders look at things in the long-term perspective.	1	2	3	4	5
6	Short-term and long-term thinking are aligned in the university.	1	2	3	4	5
7	Employees in this university understand what needs to be done for them to succeed in the long run.	1	2	3	4	5

SECTION E: PSYCHOLOGICAL EMPOWERMENT

Listed below are several statements that represent possible feelings that individuals might have about Psychological Empowerment. Please indicate the extent to which you agree or disagree with each statement that best describe **Psychological Empowerment** by ticking (√) the number that best represents your feelings.

1 = SD	**2 = D**	**3 = N**	**4 = A**	**5 = SA**
Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**

S/N	**Statement**	**SD**	**D**	**N**	**A**	**SA**
	Meaning					
1	The university values my work.	1	2	3	4	5
2	My work activities are personally meaningful to me	1	2	3	4	5
3	The decisions I make at work correspond with my standards and beliefs of the university	1	2	3	4	5

4	I am accountable for the outcome of my work.	1	2	3	4	5
5	The purpose of my work is related to the university values and standards	1	2	3	4	5
6	The purpose of my work is related to the standards set by the university.	1	2	3	4	5
	Competence					
1	I have mastered skills necessary for my work	1	2	3	4	5
2	I am confident in my ability to perform my work	1	2	3	4	5
3	My work is well-designed to fit my skill level.	1	2	3	4	5
4	I periodically receive training to advance my skills.	1	2	3	4	5
5	I have confidence in my ability to deliver work that meets high standards.	1	2	3	4	5
6	I possess the knowledge necessary to carry out my duties in this university.	1	2	3	4	5
7	University employees are regularly trained to enable them to perform efficiently	1	2	3	4	5
8	This university recruits experienced staff to achieve its goals	1	2	3	4	5
	Self-Determination					
1	I have freedom to choose how I want to carry out my work.	1	2	3	4	5
2	I have a great control over my job activities	1	2	3	4	5
3	I have an opportunity to use personal initiative in my work	1	2	3	4	5
4	I determine the way to improve in my job performance	1	2	3	4	5
5	I feel independent at my workplace	1	2	3	4	5
6	In this university, I take autonomous decision about my work	1	2	3	4	5
7	I am able to independently regulate my actions pertaining work in this university	1	2	3	4	5
	Impact					
1	I am capable of influencing on service delivery process	1	2	3	4	5
2	My opinion counts in the university decision-making	1	2	3	4	5
3	I have a significant influence on service quality.	1	2	3	4	5
4	My work contributes to the company's overall goals	1	2	3	4	5
5	My decisions have a significant impact on university performance	1	2	3	4	5
6	My work contributes to the university's overall strategy	1	2	3	4	5

SECTION F: INNOVATIVE WORK BEHAVIOR

The statements below indicate the variety of behaviors relating to developing ideas and obtaining support to ensure their implementation. Please ticking (√) the box next to the number in the range provided to indicate how well each of the following statements applies to your innovative behavior.

S/N	Statement	SD	D	N	A	SA
	Opportunity Exploration					
1	I am able to develop ideas and solutions for creative opportunities in my field	1	2	3	4	5

2	I share ideas with my colleagues or supervisors about opportunities for the development of working methods within the university	1	2	3	4	5
3	I share ideas with my supervisors about the opportunities to find solutions to the problems we face at work	1	2	3	4	5
4	I share ideas with my colleagues about the opportunities to find solutions to the problems we face at work	1	2	3	4	5
5	I never question the effectiveness of the current way of working in the university	1	2	3	4	5
6	I discuss with my colleagues the possible opportunities to change work patterns to achieve better results	1	2	3	4	5
7	I discuss with my supervisors the possible opportunities to change work patterns to achieve better results	1	2	3	4	5
	Idea Generation					
1	I propose new ideas for development within the university	1	2	3	4	5
2	I am able to express personal opinions about basic problems in the workplace	1	2	3	4	5
3	I share my own ideas for enhancing my work with university colleagues.	1	2	3	4	5
4	I share with university colleagues about practical changes made at work.	1	2	3	4	5
5	I suggest improvements to ideas expressed by colleagues or bosses at work	1	2	3	4	5
6	When putting ideas into practice, I test evolving solutions for work shortcomings.	1	2	3	4	5
7	In order to make my work easier, I look for unique and innovative tools.	1	2	3	4	5
	Idea Promotion					
1	I am able to convince others of the importance of an improved idea.	1	2	3	4	5
2	I propose the new idea to key people authorized to allocate resources to this new idea	1	2	3	4	5
3	I promote supervisors' and colleagues' new ideas	1	2	3	4	5
4	I introduce to and encourage colleagues to use an idea or a new solution	1	2	3	4	5
5	I illustrate how the new idea can be applied gradually and practically to others	1	2	3	4	5
6	I am able to convince others of the importance of an improved idea.	1	2	3	4	5
7	I get colleagues acquainted with the utilization of the new idea	1	2	3	4	5
	Idea Realization					
1	I test solutions for unexpected problems that arise when new ideas are put into practice	1	2	3	4	5
2	I analyze solutions arising from unwanted effects, when putting new ideas in practice	1	2	3	4	5

3	I monitor progress during the process of putting new ideas into practice	1	2	3	4	5
4	I determine the necessary requirements for realizing a new idea.	1	2	3	4	5
5	I keep colleagues informed about progress in achieving the new idea	1	2	3	4	5
6	I critically think about the procedures that are followed when putting the new idea into practice	1	2	3	4	5
7	I design practical (operational) strategies for similar future situations	1	2	3	4	5
	Idea Sustainability					
1	I compare the results of the proposed ideas with the original predetermined goals	1	2	3	4	5
2	I engage with colleagues to further develop the novel idea	1	2	3	4	5
3	I Initiate collaboration with other groups in the university to apply the new idea in other contexts as well	1	2	3	4	5
4	I discuss with colleagues on how to consolidate newly implemented ideas in the university.	1	2	3	4	5
5	I am aware of the steps that can be taken to make the implementation of the proposed idea a success	1	2	3	4	5
6	I organize activities for professional development for myself and my colleagues, to continue the development of the new idea.	1	2	3	4	5
7	I initiate strategies to anchor the new idea in existing procedures or structures of the University	1	2	3	4	5

APPENDIX 4

INTERVIEW GUIDE:

INNOVATIVE WORK BEHAVIOR AMONG ACADEMIC STAFF IN UNIVERSITIES IN UGANDA

A. Background questions

Please probe for the following,

a) Title

b) Role at university

c) Educational background

d) Years of experience

e) Academic or non-academic staff

B. Innovative work behavior

d) How has the innovative work behavior been perceived by academic staff in public universities of Uganda?

e) What factors, practices and processes drive innovative work behavior among academic staff of public universities of Uganda?

f) What are the constraints to the innovative work behavior among the academic staff in public universities of Uganda?

APPENDIX 5

The matrix below describes how the interaction of POS, SL, and PE in Driving Innovative Work Behaviors among Academic Staff in Public Universities

Table 5.2.2: Matrix showing successful innovation activities

Project/Activity	Perceived Organizational Support	Servant Leadership	Psychological Empowerment	Innovative Work Behavior
Multi-chamber Grain Silo	• ***Recognition and Rewards*** – during a series of university ceremonies like graduation, the innovators were publicly recognized and given awards • ***Trust and Open Communication*** – throughout the development process of the multi-chamber grain silo, innovators were in regular communication with the intended beneficiaries and other stakeholders through research to	***Development of Conceptual Skills*** • Universities have developed high level cognitive abilities in their staff through training and workshops, mentorship programs, and networking, collaborations and linkages which have fostered academic staff's ability to innovate • Innovation and research policies in place in several public universities ***Subordinate Empowerment*** • Several universities have granted autonomy to their staff to innovate, and experimentation errors are not punished	***Competence*** • Academic staff in several public universities are capable and skilled to innovate. This feeling of competence has been developed through mentorship programs, and training opportunities ***Impact*** • Several universities have imparted among their academic staff a sense of control over their work environment which	***Idea Exploration*** • Senior academic staff and top executives have regularly scanned the working environment to earmark opportunities that require innovation, especially in the area of teaching and learning, research and community engagement. This has been achieved through collaborative research projects, publications and global networking initiatives. ***Idea Generation*** • Staff creatively developed the new idea (multi-grain 4 chamber silo). This was aided by literature review and research studies,

	ensure they innovate demand driven products ***Support and Resources*** – GoU jointly with BURIF provided funding for the development of a multi-chamber grain silo at Busitema University	• Existence of Grants Management Units such as TBIC, Makerere University's Innovation and Incubation Centre to co-ordinate research and innovation related activities • University's top executives have delegated decision making authority among its staff and improved communication among its staff. This has provided an enabling innovative environment ***Creating Value to Community*** • Through community engagement initiatives, several universities have allowed community innovations such as COVIDEX, a drug being COVID-19 pandemic	has promoted their ability to innovate • Staff have been empowered to effect change and influence innovation decision-making ***Self-Determination*** • Staff are granted autonomy to make decisions • Through self-efficacy, staff have developed a feeling of capability to participate in several innovations	collaborative initiatives involving colleagues and industry partners and participation in national and international conferences. ***Idea Promotion*** Busitema University through BURIF provided sufficient resources to aid the process of progressing this idea to implementation stage. This was achieved through research seminars, department meetings and workshops and the use of social media.
Development of COVID-19 drug	***Care and Concern*** • The University and the GoU cared and supported the innovators to scale	***Development of Conceptual Skills*** • MUST built capacity through the *Africa Centre of Excellence for Pharm-Biotechnology and*	***Competence*** • Academic staff developed competence through training and mentorship	***Idea Exploration*** • Through environmental scanning, it was established that COVID-19 pandemic necessitated an intervention,

	up the production due to the efficacy of the drug. Also, the GoU gifted the developer of COVIDEX, with 5 acres of land and 10 years of tax holiday to support him in scaling up its production. ***Recognition and Rewards*** • The innovators were recognized and rewarded, and the drug secured approval from the National Drug Authority. ***Support and Resources*** • Through GoU, innovators received funding from Uganda Development Bank	*Traditional Medi*cine which equipped innovators with the necessary knowledge regarding the innovation. ***Subordinate Empowerment*** • During the COVIDEX development, innovators under the project were granted independence to innovate and experiment. • University's top executives have delegated decision making authority among its staff and improved communication among its staff. This has provided an enabling environment ***Creating Value to Community*** • As a result of this innovation, local (Ugandan), and international community benefited from the medicinal herb- the supportive treatment for the COVID-19 and other viral infections.	programmes for innovation. ***Impact*** • Innovators of COVIDEX were able to effect change regarding the management of COVID-19 and also influence decision making like decision on the lockdown. ***Self-Determination*** Through self-efficacy, innovators developed a belief in themselves and were able to develop the drug.	and innovators made use of this opportunity. ***Idea Generation*** • Staff ingeniously developed the new idea (COVIDEX). Participation in national and international conferences, research studies and literature reviews, and cooperative efforts including colleagues and industry partners helped with this. **Idea Promotion** • The innovator of COVIDEX secured 2bn funding for COVID clinical trials from the GoU to progress the idea to the implementation stage. **Idea Realization** • The product (COVIDEX) has been commercialized and marketed through the JENA Pharmacies and a network of distributors and retailers has been developed to further scale up the availability of the product.

	to scale up the innovation.			
Development of Low-Cost Malaria Diagnostic Kit	***Care and Concern*** • Innovators led by Prof. Emmanuel Otuku, received support from Gulu University which enabled them to come up with a low-cost malaria diagnostic kit. ***Recognition and Rewards*** • Prof. Emmanuel Otuku and the team were rewarded for this innovation that often generated fast and reliable results. Specifically, he is a recipient of 'The Best Innovation in the Health Care at the 2020 Uganda Health Care Innovation Awards.'	***Development of Conceptual Skills*** • Through research and training in tropical diseases program, the WHO in conjunction with the National Health Research Fund, provided funding which enabled the project team members to acquire more knowledge, competence and skills necessary for the project ***Subordinate Empowerment*** • During the development of low-cost malaria diagnostic kit, the innovators under the project were granted academic freedom by the university to innovate and experiment. • Top management of Gulu University provided considerable degree of decision-making autonomy to a team of	***Competence*** Through development partner initiatives such as European and Developing Countries Clinical Trials' Partnership, Uganda National Health Research Organization and Gulu University, Faculty of Medicine, competence of team members was enhanced through several mentorship interventions. ***Impact*** As a result of this innovation, the community has received widespread benefits. Some of the documented impacts of this innovation include improved malaria diagnostic accuracy, enhanced health worker capacity, increased access to healthcare, and	***Idea Exploration*** • Based on the environmental scanning results that point out the ever-growing health threats of malaria in the tropics, it has provided an opportunity for this intervention, and innovators have seized this opportunity. ***Idea Generation*** Staff creatively developed the new idea (low-cost malaria diagnostic kit). This was aided by research studies, literature reviews, participation in national and international conferences, and collaborative efforts with coworkers and industry partners. ***Idea Promotion*** The low-cost malaria diagnostic kit innovator was able to advance the secure funding from the GoU, and other development partners for clinical trials.

	Support and Resources Funding for the low-cost malaria diagnostic kit was obtained from the GoU through the National Health Research Fund, WHO,-Research and Training in Tropical Diseases.	innovators on all project related matters. ***Creating Value to the Community*** • Due to its ease to use, minimal training requirements, rapid results, and affordability and accessibility have made this innovation suitable for resource-limited settings.	contribution to malaria control efforts. ***Self-Determination*** Through self-efficacy, innovators developed a belief in themselves and developed the low-cost Rapid Diagnostic Kit for malaria testing.	***Idea Realization*** Private clinics and hospitals, community health centres, public health facilities, pharmacies and drug shops have been used to market the product. Marketing strategies have involved training of the healthcare workers, print and electronic media advertising, partnership with local organizations, and word-of-mouth referrals.
The Solar-Powered Water Purification System	***Care and Concern*** • This innovation was aimed at increasing access to clean water, especially in remote areas as well as disaster relief scenarios. ***Recognition and Rewards*** The innovation team at Makerere University were recognized by the University for this Breakthrough that increased access to	***Development of Conceptual Skills*** • Through training, workshops, mentorship programs, networking, partnerships, and connections, Makerere University has helped its employees on this project build high-level cognitive capacities, which has enhanced their innovation capabilities. • Makerere University has policies in place regarding innovation and research. ***Subordinate Empowerment***	***Competence*** • The competency of team members was improved through several mentorship interventions and development partners like the WHO, UNICEF, and the GoU. ***Impact*** • This innovation has had a wide range of positive effects on the community. Environmental protection through reduced chemical	***Idea Exploration*** • Top university executives and senior academic staff have been observing the workplace regularly to identify areas that need innovation, particularly in the areas of research, teaching and learning, and community involvement. This has been accomplished through international networking efforts, publications, and cooperative research projects. This has led to the idea of developing an affordable water solar-

	clean water especially in rural areas, and in refugee camps.	• Makerere University granted autonomy to its staff to innovate, and experimentation errors are not punished • Existence of Grants Management Units such as MAKRIF which has financially empowered innovators. • Innovators on this program have been delegated with decision-making authority on all matters about this innovation which has created an enabling innovative environment. ***Creating Value to the Community*** Through this innovation several universities have enormously contributed to the community through the provision of safe drinking water which has reduced waterborne diseases, energy efficiency through low operating costs and minimal maintenance.	use and waste generation, access to safe drinking water, and community empowerment as communities can manage their water resources are part of this. ***Self-Determination*** Self-efficacy allowed innovators to believe in themselves and create a low-cost solar-powered water purification system	powered purification system. ***Idea Generation*** • The innovative concept (the solar-powered water purification system) was imaginatively designed by the staff. This was made possible by research investigations and literature reviews, teamwork among coworkers and business partners, and involvement in national and international conferences. ***Idea Promotion*** Makerere University through MakRIF provided adequate funds to aid the process of advancing this idea to the implementation stage. This was achieved through research seminars, department meetings and workshops and the use of social media.

APPENDIX 6

BUSITEMA UNIVERSITY
Pursuing Excellence

P.O Box 236, Tororo, or 226 BusiaUganda
Tel: +256-454448876/454448838
Fax: +256-454436517
www.busitema.ac.ug

FACULTY OF HEALTH SCIENCES' REC

BUSITEMA UNIVERSITY
FACULTY OF HEALTH SCIENCES
APPROVED VALID UNTIL
★ 04 DEC 2024 ★
RESEARCH & ETHICS COMMITTEE
P. O. BOX 1460, MBALE

04/12/2023

To: Mercy Wanyana

+256782485880

Type: Initial Review

Re: BUFHS-2023-102: INNOVATIVE WORK BEHAVIOR AMONG ACADEMIC STAFF IN PUBLIC UNIVERSITIES IN UGANDA

I am pleased to inform you that at the **13th Meeting of 2023** convened meeting on **02/11/2023**, the Busitema University Faculty of Health Sciences REC meeting voted to approve the above referenced application. Approval of the research is for the period of **04/12/2023** to **04/12/2024.**

As Principal Investigator of the research, you are responsible for fulfilling the following requirements of approval:

1. All co-investigators must be kept informed of the status of the research.
2. Changes, amendments, and addenda to the protocol or the consent form must be submitted to the REC for re-review and approval **prior** to the activation of the changes.
3. Reports of unanticipated problems involving risks to participants or any new information which could change the risk benefit: ratio must be submitted to the REC.
4. Only approved consent forms are to be used in the enrollment of participants. All consent forms signed by participants and/or witnesses should be retained on file. The REC may conduct audits of all study records, and consent documentation may be part of such audits.
5. Continuing review application must be submitted to the REC **eight weeks** prior to the expiration date of **04/12/2024** in order to continue the study beyond the approved period. Failure to submit a continuing review application in a timely fashion may result in suspension or termination of the study.
6. The REC application number assigned to the research should be cited in any correspondence with the REC of record.
7. You are required to register the research protocol with the Uganda National Council for Science and Technology (UNCST) for final clearance to undertake the study in Uganda.

The following is the list of all documents approved in this application by Busitema University Faculty of Health Sciences REC:

No.	Document Title	Language	Version Number	Version Date
1	Protocol	English	2	2023-11-23
2	Informed Consent forms	ENGLISH	2	2023-11-23
3	Data collection tools	ENGLISH	1	2023-10-28

Yours Sincerely

BUSITEMA UNIVERSITY
FACULTY OF HEALTH SCIENCES
APPROVED VALID UNTIL
★ 0 4 DEC 2024 ★
RESEARCH & ETHICS COMMITTEE
P. O. BOX 1460, MBALE

Dr.Edith Mbabazi
For: Busitema University Faculty of Health Sciences REC

APPENDIX 7

BUSITEMA UNIVERSITY
Pursuing Excellence

P.O. Box 236, Tororo, Uganda
Gen: +256 - 45 444 8834
Dir: +256 - 45 443 6517
Email: info@adm.busitema.ac.ug
www.busitema.ac.ug

DIRECTORATE OF GRADUATE STUDIES, RESEARCH AND INNOVATION

Date: 15/12/2023

Ref: BU/GS21/PAM/11

TO WHOM IT MAY CONCERN

RE: WANYANA MERCY MUGONOLA

Dear Sir/Madam,

This is to introduce to you the above-named Doctoral student in Business Administration and Management (PhD, PAM), tenable at the Faculty of Management Sciences - Pallisa. Her registration number is: **BU/G21/PAM/11.** and student number is: **2100403668**.

Mrs. Mugonola intends to conduct a field-based study that combines quantitative and qualitative approaches. This study is entitled, '**Innovative Work Behavior among Academic Staff in Public Universities in Uganda**' that should lead to the award of a Doctor of Philosophy in Business Administration and Management of Busitema University.

The purpose of this letter is to request you grant her permission to conduct her study in your institution. Any assistance rendered to her will be highly appreciated.

Yours sincerely,

Associate Professor, RWAHWIRE, Samson (PhD), *FUNAS*
Director DGSRI

APPENDIX 8

BUSITEMA UNIVERSITY
Pursuing Excellence

Study #:
PARTICIPANT CONSENT FORM

FACULTY OF HEALTH SCIENCES RESEARCH AND ETHICS COMMITTEE (BUFHSREC)

PROTOCOL TITLE: Innovative Work Behaviour among academic staff in public universities in Uganda

PRINCIPAL INVESTIGATOR: Wanyana Mercy Mugonola

1. PURPOSE OF THE STUDY:

Generally, the study seeks to explore strategies for enhancing innovative work behavior among academic staff in public universities. The study's major objective is to improve innovative work behaviors (IWB) by developing an IWB model that integrates the constructs of servant leadership, perceived organizational support, organizational culture, and employee empowerment from three different theories: social exchange, Denison's Organizational Culture Model, and Spritzer's empowerment theory. Specifically, eight objectives underpin this study namely: 1) to examine the relationship between servant leadership and IWB among academic staff of public universities, 2) to examine the correlation between perceived organization support and IWB of academic staff of public universities, 3) to assess the association between psychological empowerment and IWB among academic staff of public universities, 4) to examine the degree of association between servant leadership and psychological empowerment, 5) to determine the relationship between perceived organizational support and psychological empowerment among academic staff of public universities, 6) to examine the mediating influence of psychological empowerment in the relationship between servant leadership and IWB, 7) to examine the relationship between psychological empowerment and academic staff IWB and finally, 8) to assess how the relationship between perceived organizational support and IWB among staff of public universities is mediated by psychological empowerment.

2. INVESTIGATORS:

This PhD research in business administration and management is being conducted among academic staff of the 10 public universities spread across all the regions of Uganda, with funding from Busitema University. These universities include: Makerere, kyambogo, Busitema, Muni, Mbarara, soroti, lira, mountain of the moon, Gulu and Kabale University. The principal investigator is Wanyana Mercy Mugonola from Busitema University, and the work is supervised by Professor Mpaata Kaziba Abdul (PhD) and Assoc. Prof. Musenze Abaasi Ibrahim (PhD) who are also senior members of staff at Busitema University.

2. POPULATION:

The study population comprise 3,296 academic staff nested in the ten operational public universities in Uganda. This population is derived from staff lists obtained from the respective HR Directorates as of August 30, 2022. The consideration to study academic staff from Uganda's public universities is informed by persistent reports of poor IWBs among this staff category relative to others such as administrative staff (Wao et al., 2022). From this population, a sample of 357 respondents was drawn using the statistical formula (Yamani, 1967) and these are expected to participate in this study. The study employed proportionate stratified sampling technique due to the heterogeneity of the study population and the technique's ability to yield accurate results in comparison to other techniques

BUSITEMA UNIVERSITY
FACULTY OF HEALTH SCIENCES
APPROVED VALID UNTIL
★ 04 DEC 2024 ★
RESEARCH & ETHICS COMMITTEE
P. O. BOX 1460, MBALE

rdwaj, 2019). The staff academic rank formed the stratification variable, on which basis strata ere formed. I therefore, request you to participate in the study as an eligible respondent.

4. PERIOD:

This is a 3 YR study programme. However, it is structured in such a way that the data collection shall last between 3-6 months. This is the period through which the participants' active involvement in the study is envisaged.

5. PROCEDURES:

A mixed methods approach will be used in this study using both quantitative and qualitative methods. Through quantitative methods, data shall be collected from academic staff using questionnaires, while, based on qualitative approach, this study shall rely on interviews and observation methods to enlist data from senior executives from these ten public universities. The findings shall be triangulated to provide a better understanding of the research problem, in this context, innovative work behaviour of academic staff in Uganda's public universities.

Through the institutions' respective directorates of HR, we shall establish contacts at each university where the data will be collected; these individuals shall be informed about the purpose of the study and a training secession shall be organized for them to facilitate smooth data collection process. Considering the extent and magnitude of the exercise, we shall also employ three research assistants with master's qualification to ease the entire data collection exercise. Participation in this study shall be voluntary, and participants shall be informed of their right to withdraw at any stage and time of the exercise should they desire to do so. As the study is of a mixed nature, two data collection tools have been prepared namely: the questionnaire and the interview guide for the collection of quantitative and qualitative data respectively. The questionnaire comprises of five parts: A- Demographic characteristics, B- Items on perceived org support, C- Items on servant leadership, D- Items on organizational culture, E- Items on psychological empowerment and, finally F- Items on innovative work behavior. All items shall be anchored on a 5-likert scale ranging from 1-Strongly Disagree to 5-Strongly Agree. It is expected that completion of the questionnaire will on average last between 15-25 minutes. Also, the interaction (interviews) between the researcher and the participants are anticipated to last between45 minutes to 1 hour per respondent, and the interviews shall be both hands recorded, and video tapped before being transcribed for subsequent analysis. More importantly, SPSS V.19 shall be used for data exploration while structural equation modelling version 21 will be used for testing of the hypothesized links in order to draw inferences. Finally, we shall rely on Nvivo v.12 as the major analytical strategy for qualitative data.

6. RISKS:

This study anticipates some reasonably foreseeable risks of harm or discomforts for individuals and/or groups that may result from participation in the research. The particular risks associated with participating in this research are those of losing time, being reminded of unpleasant experiences in the past, and facing legal issues that call for mandatory reporting. Also, physical risks or harms (e.g., fatigue, pain or discomfort), information risks (e.g., loss of privacy and/or breach of confidentiality), psychological or emotional risks (e.g., fear, stress, confusion, loss of self-esteem) present a likelihood of occurring. Aware of their potential occurrence, this study makes provisions for data and safety monitoring for the progress of the research and the safety of the participants. For example, potential research participants are provided with enough information to enable them to make an informed decision about whether or not to participate in the study, thereby minimizing risks. Also, this study provides for a data and safety monitoring plan. For example, as soon as possible, during the

...tigation, data will be encrypted and safely kept so that only authorized personnel and the ...vestigator may access it, a practice that is likely to deal with the anticipated information risks. Respondents' explicit consent will always be obtained before releasing their identities.

7. BENEFITS:

This study has benefits or significance to theory, practice, and participants. To theory, existing studies have assumed an organizational perspective to innovation (Wao et al., 2022), yet innovation is as well an individual level activity (Namono et al., 2021) since individuals develop, initiate, and apply new ideas at work (Namono et al., 2021). This study thus contributes by providing an additional individual perspective to innovative work behaviour in public universities thereby broadening our understanding of innovative work behaviour (IWB). Second, existing studies on perceived organizational support (POS), servant leadership (SL) and organizational culture (OC) (Park & Kim, 2022; Sendjaya et al., 2019; Aboramadan et al., 2020) are limited and thus, perpetuated the problem. Extant literature sustains the view that IWB is influenced by SL (Olaleye & Solanke, 2021; Aboramadan et al., 2022) and POS (Mustika et al., 2020; Park & Kim, 2022). However, these studies have not integrated psychological empowerment (PE) as a psychological underlying mechanism through which POS and SL affect IWB, thus, rendering these relationships unexplored. This study intends to bridge this gap by investigating employee IWBs in Uganda's public universities.

To practice, the study findings are likely to have practical significance. First, the empirical findings of this study might inspire university management to encourage innovative culture among staff. The study's findings highlight modalities to encourage staff in public universities to engage in innovative work behaviour. It is expected that human resource management policies and initiatives will be developed, reviewed, and put into action based on the study's findings to improve academic staffs' innovative behaviour in the Ugandan education sector.

To the participants, people who participate in this study may have a better understanding of additional methods and procedures that might enable them and others to experience and increase their overall sense of innovative work behavior.

8. COSTS:

Participants shall not be compensated for participation in this study.

9. PARTICIPANT'S RIGHTS:

Participation in this study is voluntary and your decision to participate in the study is made by free will, devoid of compulsion or coercion. Signing the consent does not amount to waiver of personal rights, including withdrawal from the study in any way.

(b). Withdrawal:

Withdrawal of an initial decision to participate in research is voluntary and your wishes to withdrawal shall be respected and protected.

(c). Privacy:

The questionnaire shall not have any identifying information. For example, participants shall not be required to list their names on the questionnaire and no provision to that effect has been provided for on the tool. Thus, we shall also avoid collecting any data that can directly identify them, such as their name, email, phone number, or address. Instead, we shall use anonymous data that cannot be linked to

cific person without additional information. Secondly, we shall limit the scope and duration of ta collection. In this way, we shall only collect data that is relevant and necessary for this research objectives, and this shall later be deleted or destroyed after analysis. Through this approach, efforts shall be undertaken to avoid asking questions that are too personal, sensitive, or intrusive, such as those related to health, income, or political views, as these are not even directly related to this research topic. Third, we shall ensure respondent privacy by encrypting and securing the collected data. Thus, we shall use encryption techniques and password protection to prevent unauthorized access, modification, or disclosure of the gathered data. Also, reliable and reputable platforms and tools to create and distribute the study questionnaires, and to store and transfer your data shall be used. Online survey software that offers encryption, security, and privacy features, such as SSL, HTTPS, or GDPR compliance shall be used. Finally, in order to ensure privacy, we shall consistently follow and adhere to ethical and legal guidelines, including principles and standards of ethical and responsible research, and comply with the laws and regulations of Uganda, as well as public universities, which represent the context of our study. Thus, the dignity, autonomy, and confidentiality of the respondents shall be respected, and we shall take necessary steps to avoid any harm, deception, or coercion.

(d). Confidentiality:

In order to protect confidentiality, we shall collect anonymous data, which is not in any way connected to information that can identify the individual participant. Thus, we shall collect data from participants without identifiers. Also, we shall adhere to good data collection and storage practices. For example, we shall keep research notes, interview transcriptions and any other identifying participant information if any in a locked file cabinet, in the personal possession of the researcher. In general, access to information about individual participants shall be restricted to the researcher, research supervisors, and any research assistants on a need-to-know basis. All the research assistants and I shall undergo training in data collection and storage practices and, we shall ensure that study participants are not discussed outside the research context. In order to protect against psychological, social and legal harm, care shall be taken to avoid breaches of confidentiality in which this information shall not be divulged to anyone else. Further, on completion of the study, questionnaires shall be destroyed within six months. Since this study is of a mixed nature, collection of secondary data, that is use of data that has already been collected will as well address concerns of confidentiality in this study.

10. CONTACTS:

Contact Wanyana Mercy Mugonola – Principal Investigator on (0782485880) for any other questions or concerns you may have about this study: OR

Contact Dr. Edith Mbabazi, Chairperson, Busitema University Faculty of Health sciences Research Ethics Committee (BUFHSREC) on +256 704 414441 for concerns with participants' rights and other ethical-regulatory issues.

DOCUMENTATION AND AUTHORIZATION OF INFORMED CONSENT

What does my signature or thumbprint on this consent form mean?

a) I have read this consent form and was given enough time to consider the decision to participate in this study.
b) This research study has been satisfactorily explained to me, including possible risks and benefits.
c) All my questions were satisfactorily answered.

understand that participation in this research study is voluntary and that I can withdraw at any time.

e) I am signing this consent form prior to participation in any research activities.

f) I give voluntarily my permission to participation in this research study.

g) I will be provided with a copy of the fully signed consent form for my reference.

Name of **Participant (PRINT)** **Participant's** Signature/Thumbprint Date (DD/MM/YYYY)

Name of **Investigator/Associate (PRINT)** Signature of **Investigator/Associate Date** (DD/MM/YYYY)