T.C.

ANKARA YILDIRIM BEYAZIT UNIVERSITY

GRADUATE SCHOOL OF SOCIAL SCIENCES

STIMULATING EMPLOYEE ENGAGEMENT AND INNOVATION THROUGH AUTHENTIC LEADERSHIP: UNDERSTANDING THE ROLES OF PERCEIVED ORGANIZATIONAL SUPPORT AND SOCIAL INTERACTION

PhD THESIS

Yussif MOHAMMED ALHASSAN

MANAGEMENT AND ORGANIZATION

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APPROVAL PAGE

The thesis study titled as "Stimulating Employee Engagement and Innovation Through Authentic Leadership: Understanding the Roles of Perceived Organizational Support, and Social Interaction" prepared by Yussif Mohammed ALHASSAN was approved by a large majority by the following jury as a Ph.D. thesis in Ankara Yıldırım Beyazıt University Social Sciences Institute, in the program of Management and Organization.

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I certify that the student has fulfilled the requirements for a PhD thesis at Ankara Yıldırım Beyazıt University, Institute of Social Sciences, in the program of Management and Organization.

Director of the Institute of Social Sciences — Prof. Dr. Yaşar YİĞİT

PLAGIARISM

I hereby declare that all information in this thesis has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work; otherwise, I accept all legal responsibility (19/06/2023).

Yussif Mohammed ALHASSAN

DEDICATION

To my parents, who always encouraged me to pursue my dreams and supported me every step of the way. I would not be here today without your unwavering love and belief in me. To my partner and children, Muniratu, Tipagya and Chelpang who have been my rock and my source of strength through the ups and downs of this journey. Your love, patience, and unwavering support have been the wind beneath my wings. To my advisor, who has been a constant source of guidance, encouragement, and inspiration. Your knowledge and wisdom have shaped me into the scholar I am today. To my friends, Abukari Sulemana (Major) and Dr. Ibrahim Nandom who have shared this journey with me and provided invaluable support and camaraderie. Your friendship and encouragement have made this experience so much richer and more fulfilling and finally, to all those who have supported and inspired me along the way, including friends, mentors, and loved ones. Thank you for believing in me and helping me to achieve my dreams.

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ABSTRACT

Stimulating Employee Engagement and Innovation through Authentic Leadership: Understanding the Roles of Perceived Organizational Support, and Social Interaction

In the fast-paced business environment characterized by extreme turbulence, organizations continually work to breed or promote leadership styles that help them succeed in the environment. Because of that the study of authentic leadership and how it promotes survival and success has become necessary. This study aimed to investigate the impact of authentic leadership on innovative work behavior and employee engagement, and the potential mediating roles of perceived organizational support and social interaction in this relationship in SME firms in Ghana. Data was collected from 357 employees (87 female, 270 male) through self-reported surveys and analyzed using structural equation modeling. The respondents were sampled from the Agric, education, manufacturing, telecommunication, health, and fashion SME industries. The results showed that social interaction significantly mediated the relationships between authentic leadership and both innovative work behavior and employee engagement. However, perceived organizational support did not show any significant mediating effects. The study contributes to the literature on authentic leadership, innovative work behavior, employee engagement, and their antecedents in the context of SMEs in Ghana. It highlights the importance of social interaction in fostering innovative work behavior and employee engagement and suggests that authentic leadership can facilitate such interactions. The findings also have practical implications for SME managers, who can leverage the power of authentic leadership to enhance employee engagement and promote innovative work behavior by fostering positive social interactions among employees. This study underscores the need for organizations to pay more attention to the social dynamics within the workplace, and provides valuable insights for future research on leadership, innovation, and engagement in SMEs in Ghana and beyond.

Keywords: Authentic Leadership; Employee Engagement; Innovative Work Behavior; Perceived Organizational Support; Social Interaction; SMEs; Ghana.

ÖZET

Otantik Liderlik Yoluyla Çalışan Bağlılığını ve Yeniliği Teşvik Etmek: Algılanan Örgütsel Desteğin ve Sosyal Etkileşimin Rolü

Yoğun dalgalanmaların karakterize ettiği hızlı tempolu iş ortamında, örgütler sürekli olarak içinde bulundukları çevrede başarılı olmalarına yardımcı olacak liderlik tarzlarını geliştirmek veya bu tür liderlik tarzlarını teşvik etmek için çaba gösterirler. Bu nedenle, otantik liderliğin örgütlerin hayatta kalmasına ve örgütlerin başarısına nasıl destek sağladığını incelemek gerekli görülmektedir. Bu çalışma, otantik liderliğin yenilikçi iş davranışı ve çalışan bağlılığı üzerindeki etkisini ve Gana'daki KOBİ firmalarında algılanan örgütsel destek ve sosyal etkileşimin bu ilişkideki potansiyel aracı rollerini araştırmayı amaçlamıştır. Anketler, 357 çalışandan (87 kadın, 270 erkek) öz-bildirim aracılığıyla toplanmış ve elde edilen veriler yapısal eşitlik modellemesi kullanılarak analiz edilmiştir. Örneklem grubunu tarım, eğitim, imalat, telekomünikasyon, sağlık ve moda sektörü gibi KOBİ çalışanları oluşturmaktadır. Bulgular, otantik liderlik ile hem yenilikçi iş davranışı hem de çalışan bağlılığı arasındaki ilişkide sosyal etkileşimin aracılık rolünün anlamlı olduğunu göstermiştir. Ancak, algılanan örgütsel destek anlamlı bir aracı etki göstermemiştir. Bu çalışma, Gana'daki KOBİ'ler bağlamında otantik liderlik, yenilikçi iş davranışı, çalışan bağlılığı ve bunların öncüllerine ilişkin literatüre katkıda bulunmaktadır. Çalışma, yenilikçi iş davranışını ve çalışan bağlılığını teşvik etmede sosyal etkileşimin önemini vurgulamakta ve otantik liderliğin bu tür etkileşimleri kolaylaştırabileceğini öne sürmektedir. Bulgular ayrıca, çalışanlar arasında olumlu sosyal etkileşimleri teşvik ederek çalışan bağlılığını artırmak ve yenilikçi iş davranışını teşvik etmek için otantik liderliğin gücünden yararlanabilen KOBİ yöneticileri için pratik çıkarımlara sahiptir. Bu çalışma, örgütlerin iş yerindeki sosyal dinamiklere daha fazla dikkat etmesi gerektiğinin altını çizmekte ve Gana ve ötesindeki KOBİ'lerde liderlik, yenilikçilik ve çalışan bağlılığı üzerine gelecekteki araştırmalar için değerli bilgiler sağlamaktadır.

Anahtar Kelimeler: Otantik Liderlik; Çalışan Bağlılığı; Yenilikçi İş Davranışı; Algılanan Örgütsel Destek; Sosyal Etkileşim; KOBİ'ler; Gana.

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LIST OF ABREVIATIONS

AL	Authentic Leadership
ALQ	Authentic Leadership Questionnaire
EE	Employee Engagement
IWB	Innovative Work Behavior
LCR	Local Citation References
POS	Perceived Organizational Support
Recs	Number of publications
SI	Social Interaction
SMEs	Small and Medium Enterprises
TGCS	Total Global Citations Score
TLC	Total Local Citations
TLCS	Total Local Citations Score

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1. INTRODUCTION

1.1. Introduction

In times of difficulties and challenges like those of our time, it takes societies and organizations to excessively learn and adapt quickly through aggressive innovation. Evidence from management and organization literature proves innovation to be necessary for the survival of organizations in their industries (Černe et al., 2013). Organizations yearn for creativity and innovation to achieve a competitive edge over others and to survive in their environments. Technology and globalization have increased the level of turbulence in the environment of organizations such that there are several complexities and uncertainties (Carapiet, 2006). Some scholars proposed that companies must utilize their human capital capabilities to succeed within the business environment. This belief has inspired lots of research in the fields of organization theory and behavior.

In addition, the complexity of the problems faced by organizations in the 21st century and beyond demands highly engaged employees to steer the success agenda of organizations. Employee engagement is an important factor for organizations as they seek to improve the probability of their success. This is due to the fact that researchers realized that engaged employees fully and/or wholly commit themselves to their work (Rich et al., 2010), noting that their job is stimulating and keeps them engaged on a cognitive, emotional, and physical level (Shuck et al., 2017). The psychological concept of employee engagement is, therefore, useful in helping organizations to get the best out of their workforce.

One of the main research activities is based on whether leadership can be used to get the best out of an organizations' human capital. The proposition is that leaders can carry and motivate their followers to undertake creative and innovative activities to advance their organizational success (Blomme, 2012). Based on this, there have been numerous propositions regarding the best type of leadership style that can effectively stimulate the creative and innovative behaviors of people in organizations. Some researchers in organizational behavior suggest that authentic leadership is the best for organizations to propel creativity and innovation among their people (Černe et al, 2013). Authentic leadership has been noted, in previous studies, to impact on personal initiative and innovative behaviors

of individual employees within organizations (Laguna et al., 2019). Authentic leadership theory posits that by being aware of oneself and remaining authentic, the leader can communicate, arouse trust and stimulate self-awareness among his/her followers (Iqbal et al., 2020). This further leads to innovative work behavior among the followers. This position has been supported by several researchers, even though the concept of authentic leadership is quite a new area in organizational psychology literature. For Example, Černe et al. (2013) agree with the assertion that authentic leaders stimulate self-awareness among their followers, thereby making it easy to promote creativity and innovation among the followers. Further, it is argued that authentic leaders gain trust, encourage transparency, and promotes autonomy and independence among their followers by being self-aware and staying true to themselves (Nkwabi, 2019). That is, followers can emulate and learn self-awareness and authenticity from their leaders, which will further encourage them to exhibit creative and innovative behaviors at their workplace.

Authentic leadership is crucial in organizations by extant literature in many ways. However, much is still to be known in authentic leadership research. This is due to the bit of vagueness surrounding the definition of authenticity (Nkwabi, 2019). Also, there have been controversies regarding the possibility of one remaining authentic. It has also been a case of arguments as to who determines how one is authentic- whether oneself or people around the person.

Also, many of the previous studies emphasize authenticity and self-regulation, suggesting that effective leaders align their behaviors solely on their values. However, there is also little evidence in previous literature that explores how authentic leaders facilitate their followers' innovative work behaviors (Nkwabi, 2019). It is also not clear from both authentic leadership, employee engagement, and innovative work behavior literature on how critical social interaction, and perceived organizational support are in their connections. Meanwhile, these variables have been suspected to promote positive outcomes like innovative behaviors and employee engagement (Afsar & Umrani, 2020; Akram et al., 2016; Chau et al., 2018; Shuck et al., 2017).

From the above, the study will explore the authentic leadership theory among Ghanaian SMEs and assess its link with employee engagement and innovative work behavior. The research will also argue that authentic leaders create an environment that supports their efforts in promoting engagement and innovative work behavior among their

followers. This, the researcher will assess the mediating roles of social interaction and perceived organizational support on the connection between authentic leadership and both the employee engagement and employee innovative work behavior.

1.2. Problem and Sub-Problem

Small and Medium Enterprises (SMEs) seek ways to stimulate innovation among their employees. Innovation research has shown that innovative behaviors of employees play a significant role in the performance and survival of organizations (Afsar & Umrani, 2019; Černe et al., 2013). Due to this, organizations have been embarking on numerous programs and activities to organize themselves and provide a climate for their employees to always exhibit innovative behaviors in the performance of their roles. Scholars have also emphasized the importance of social interaction and perceived organizational support in the success of organizations in their markets (Afsar & Umrani, 2020; Akram et al., 2016; Chau et al., 2018). In this sense, organizations must build systems and forms to promote these variables within themselves.

Leadership has been highly regarded to be key in promoting innovation within organizations. This is evident in the findings of Standing et al. (2016) that macro-level factors of organizations such as leadership predicates employee innovative work behavior. Li et al. (2020) found a positive relationship between entrepreneurial leadership and innovative work behavior. Transformational leadership has also been found to impact positively on innovative behaviors of employees at the workplace (Afsar & Umrani, 2019).

There have been some studies linking leadership, employee engagement, and employee innovative work behaviors (Standing et al., 2016). Most of these studies do not include authentic leadership in their analysis. The very few that are on how authentic leaders stimulate innovative behaviors among employees do not consider the roles of social interaction and perceived organizational support. There is an empirical gap in the literature because there is no study that directly examines the link between authentic leadership and employee innovative work behavior considering the roles of social interaction and perceived organizational support. However, understanding the unexplored relationships among these variables appear to be important and worthy because it will expand the literature of authentic leadership theory and further guide practitioners in their actions and behaviors in their quest to promote innovation among their employees. Also, to the best of my knowledge, no study

has been carried out in Ghana among employees of SMEs to understand how authentic leadership behaviors can help them promote their engagement and innovation prospects. This is a clear case of the population gap (Miles, 2017), meanwhile applying this study in Ghana may reveal contextual issues and expand the literature on authentic leadership, employee engagement, and innovative work behavior.

Based on this, this research tried to comprehend the relationship between authentic leadership, engagement, and innovative work behaviors of employees. It further assessed the roles of social interaction and perceived organizational support.

1.3. Aims and Expected Benefits of Research

At the end of the conduct of this study, the findings have the following implications for research and policy:

First, this study extends the boundaries of authentic leadership theory by assessing the effect authentic leadership behaviors have on the ability of employees to be innovative when performing their roles. This will be appropriate because, for an authentic leader to be effective, he/she does not only inspire hope and confidence in their followers but also encourages them to generate new ideas for the success of the entire organization. With this, authentic behaviors such as self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency will be necessary for both authentic leaders and authentic followers (Müceldili et al., 2013; Walumbwa et al., 2008; Yagil & Medler-Liraz, 2014).

Second, emphasizing the importance of the concept of authenticity will guide policymakers in their efforts to produce and create effective leaders in their organizations. Findings of this study will show whether authentic leadership relates with employee innovative work behaviors as touted by many scholars in the literature.

Third, the findings of the mediation analysis and role of social interaction on the relationships among authentic leadership, engagement of employees, and innovative work behavior will be determined and its implications for both theory and practice. For theory, it will help us understand whether high levels of social interactions within organizations can facilitate the leaders' efforts to promote engagement and innovative behaviors among their employees. For practice and policy, the study results will inform and guide management

professionals on the importance of having a favorable social environment conducive to healthy idea generation by employees.

Finally, the results of the mediation analysis of the role of perceived organizational support on authentic leadership, employee engagement and innovative work behavior relationships will be useful for policymakers in organizations. Here, the findings will guide the management of organizations to act appropriately to create an environment where every employee perceives and feels treated with just.

1.4. Research Questions

For the purpose of this study, the research found the following conceptual useful. In order to meet the objectives of this study, the researcher sought to answer the following question:

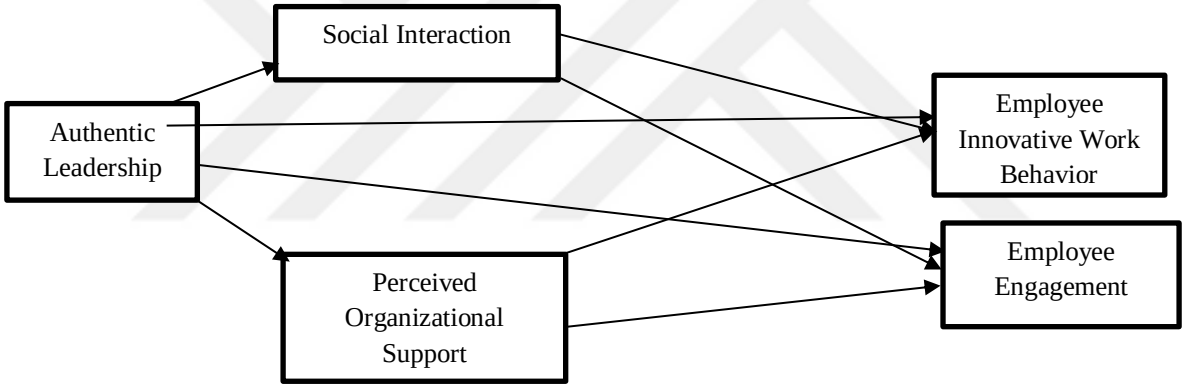

Figure 1. Research Model

Research Question

RQ: What are the relationships between authentic leadership and employee engagement and innovative work behavior, and do social interaction and perceived organizational support play mediating roles in the relationships?

1.5. Organization of The Study

This research is organized in a logical way to make it easier for readers to understand the information it presents. It has been organized into five chapters. Chapter one is an introduction to the research. The chapter provides a background to the problem under

investigation in this study. Chapter two is made up of an evaluation of the literature relevant to the purpose of this research. First, the researcher conducted a bibliometric analysis of the literature of the independent (authentic leadership) and the two dependent (innovative work behavior and employee engagement) variables. Finally, the researcher analyzed the mediation effects of social interaction and perceived organizational support in the associations among the independent and the dependent variables. Chapter three presents the research design adopted to conduct the study. This included how data is gathered and analyzed. Chapter four provides the results of the research. Chapter five presents the discussion and conclusion of the study. That is the results of this study are discussed in light of extant literature in this research area.

2. LITERATURE REVIEW

2.1. Introduction

This chapter consists of an evaluation of the relevant studies on the topic. In the conduct of the review, the researcher adopted a bibliometric literature review strategy to complement our understanding the traditional literature (Zupic & Carter, 2015). The bibliometric literature review uses statistical tools and analysis to analyze published studies and their citations in the area of interest to understand their impacts (Maditati et al., 2018).

In conducting the bibliometric analysis of the studies, the HitCite Software was used. This software has been used widely for bibliometric analysis in the field of business, management, and organization studies (Alon et al., 2018; Christensen & Gazley, 2008; Maditati et al., 2018). Further, content analysis was used to analyze the most relevant articles in the literature to understand themes and patterns in the field. This method was used for all the independent and dependent variables in this research. Further, the traditional literature review method was applied to the mediators in the study.

2.2. Theoretical Framework

The model of the relationships among the variables under study in this research is drawn from the following theory:

2.2.1. Positive Psychology Theory

Positive psychology theory offers a unique perspective to understand the complex relationships among authentic leadership, innovative work behavior, employee engagement, social interaction, and perceived organizational support. According to this theory, positive emotional experiences, engagement, and meaningful relationships are necessary to promote positive organizational outcomes and individual well-being. Positive psychology emphasizes strengths, virtues, and positive attitudes and emotions, which are essential components of authentic leadership, innovative work behavior, and perceived organizational support.

Positive psychology theory is a relatively new field of psychology that emerged in the late 1990s and early 2000s. The theory was developed in response to the traditional focus of psychology on negative experiences, such as mental illness and dysfunction, and the need for a more positive and strengths-based approach to understanding human behavior and well-being. Here is a brief history of positive psychology theory:

1998: Martin Seligman, a prominent psychologist, becomes president of the American Psychological Association and calls for a shift in focus from pathology to positive psychology (Kern et al., 2020).

1999: Seligman and Mihaly Csikszentmihalyi organize a summit on positive psychology, which brings together leading researchers and practitioners in the field (Kern et al., 2020).

2000: The Journal of Positive Psychology is founded, providing a platform for research and scholarship in the field (Kern et al., 2020).

2002: Seligman publishes his book "Authentic Happiness," which outlines his theory of positive psychology and provides practical advice for promoting well-being and happiness2.

2006: Seligman and colleagues publish the first Handbook of Positive Psychology, which provides a comprehensive overview of the field (Titus & Titus, 2016).

2011: Positive psychology continues to grow and expand, with research focusing on a wide range of topics, including positive emotions, character strengths, resilience, and well-being (Patterson & Joseph, 2007).

2.2.1.1. Assumptions of the Theory

Positive psychology is a branch of psychology that emphasizes the study of positive emotions, behaviors, and experiences, such as happiness, well-being, and flourishing. The theory of positive psychology is based on several assumptions that highlight the importance of focusing on the positive aspects of human experience:

Human strengths: Positive psychology assumes that humans have inherent strengths and virtues that can be cultivated and used to promote well-being and happiness (Patterson & Joseph, 2007).

Focus on positive experiences: Positive psychology focuses on positive experiences, emotions, and traits, rather than negative ones (Patterson & Joseph, 2007).

Optimism: Positive psychology assumes that people are generally optimistic and have a positive outlook on life (Kern et al., 2020).

Self-determination: Positive psychology assumes that people have a natural tendency towards growth and self-determination, and that they are motivated by the need for competence, relatedness, and autonomy (Patterson & Joseph, 2007).

Virtues: Positive psychology assumes that virtues, such as courage, wisdom, and compassion, are important for human flourishing (Titus & Titus, 2016).

Systems perspective: Positive psychology can be informed by systems science, which emphasizes the interconnectedness of individuals and groups within larger systems (Kern et al., 2020).

Positive psychology is not just used for therapeutic activities, but also for designing preventive educational processes. It can also be used to optimize human social systems and the individuals within them.

2.2.1.2. How Positive Psychology Theory Explains the Study Variables

Positive psychology theory suggests that authentic leadership, innovative work behavior, employee engagement, social interaction, and perceived organizational support are all interrelated and contribute to individual and organizational well-being. Here is an explanation of how positive psychology theory explains the relationships among these concepts:

Authentic leadership: Positive psychology theory suggests that authentic leadership, which involves being true to oneself while leading others, can promote employee well-being and engagement (Kern et al., 2020). Authentic leaders are thought to promote positive

emotions, such as hope and optimism, among their followers, which can lead to increased job satisfaction and organizational commitment.

Innovative work behavior: Positive psychology theory suggests that innovative work behavior, which involves generating and implementing creative ideas, can lead to increased job satisfaction and well-being (Titus & Titus, 2016). Innovative work behavior is thought to be related to positive emotions, such as joy and interest, which can promote engagement and motivation (Koortzen & Oosthuizen, 2012).

Employee engagement: Positive psychology theory suggests that employee engagement, which involves being fully involved and enthusiastic about one's work, is related to positive emotions, such as enjoyment and pride (Koortzen & Oosthuizen, 2012). Engaged employees are thought to be more productive, committed, and satisfied with their work (Patterson & Joseph, 2007).

Social interaction: Positive psychology theory suggests that social interaction, which involves positive relationships with others, can promote well-being and positive emotions, such as love and connection. Social support from colleagues and supervisors can also promote engagement and job satisfaction.

Perceived organizational support: Positive psychology theory suggests that perceived organizational support, which involves feeling valued and supported by one's organization, can promote well-being and positive emotions, such as gratitude and loyalty. Perceived organizational support is thought to be related to engagement, job satisfaction, and commitment.

Overall, positive psychology theory suggests that these concepts are all interrelated and contribute to individual and organizational well-being. By promoting positive emotions, engagement, and well-being, organizations can create a positive work environment that fosters creativity, productivity, and commitment among employees.

2.2.1.3. Why Used the Positive Psychology Theory?

Positive psychology theory is considered the best lens to explain the complex relationships among authentic leadership, innovative work behavior, employee engagement, social interaction, and perceived organizational support. According to this theory,

individuals have the capacity to thrive and excel, and when provided with a positive work environment, they not only flourish but also pursue work goals with enthusiasm and dedication. Authentic leadership, which emphasizes ethical and transparent behavior, promotes a positive work environment that inspires employees to actively engage in their work and fosters creative and innovative thinking within the organization (Maziero et al., 2020). Research has shown that positive organizational climates led by authentic leaders are associated with higher levels of employee engagement and innovation. For instance, Yıkılmaz & Sürücü (2021) found a significant positive relationship between authentic leadership and employee creativity. Employees who perceived their leaders as authentic were more likely to engage in innovative and exploratory behavior in their work. Moreover, positive social interactions within the workplace foster the development of social support networks, which may serve as an important resource for employees in coping with stress and maintaining well-being (Biggio & Cortese, 2013). Perceived organizational support is also a critical factor in employee well-being and work performance. Positive psychology theory argues that when employees feel valued and supported by their organization, they are more likely to be committed to their work, engaged, and motivated to go the extra mile (Patterson & Joseph, 2007).

In conclusion, positive psychology theory is the best framework to explain the complex interplay among authentic leadership, innovative work behavior, employee engagement, social interaction, and perceived organizational support. By promoting an optimistic and constructive work environment, authentic leadership can unleash the full potential of each employee, leading to higher levels of engagement, innovation, and job performance.

2.3. Authentıc Leadershıp

Authentic leadership has gained popularity in organizational behavior and psychology research (Malik & Khan, 2020). This emergence is a result of a constant search for ways to help organizations cope and succeed in the turbulent, complex, and dynamic business environment of today. Research evidence proved that leadership plays key role in providing organizations with the needed creativity as well as innovation in order to adapt and to survive in the face of the complexity and turbulence (Laguna et al., 2019). Authenticity is the key concept in the theory of authentic leadership. There has been attempts to understand

authenticity in extant literature. Walumbwa et al. (2008) see authenticity as a word that has its roots from Greek and means being true to oneself and one's experiences. This suggests that one has to stay true to his/her emotions, beliefs, values, and previous experiences in order to be authentic. Based on this, Walumbwa and his colleagues (2008) defined authentic leadership as below:

"as a pattern of leader behavior that draws upon and promotes both positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers, fostering positive self-development"

From the criteria above, authentic leadership is composed of four main elements such as: self-awareness; balanced processing; relational transparency; and an internalized moral perspective. Self-awareness of the leader involves being aware and trusting his/her personal emotions, values, cognition, and characteristics. This means the leader must be conscious of his/her weaknesses, strengths, and personal objectives. He/she must also be accept how others see view his/her leadership style (Yagil & Medler-Liraz, 2014). The relational transparency is a measure of the leader being genuine, transparent, open, and truthful in his/her relationship with others (Müceldili et al., 2013). This suggests that authentic leaders portray the qualities of trust worthiness when dealing with followers and others within the organization. Balanced processing requires the authentic leader to be objective and accept his/her positive and negative characteristics. This implies that the leader is able to combine and/or balance these characteristics in decision making processes. An internalized moral perspective involves the ability of the authentic leader to identify and care much about moral standards, even in the face of group and organizational pressures.

2.3.1. Bibliometric Analysis of Authentic Leadership Using ISI Web of Science Data

Many of the reviews of authentic leadership literature utilized other types of literature evaluation methods. For example, Gardner et al. (2011) used content analysis to comprehend who the authentic leader and/or authentic leadership is and how research in the field has evolved overtime. However, their analysis covered up to December 31, 2010, with a total of 91 articles analyzed. Their review is limited based on the timeframe and the number of

published works in the field used. The literature reviews often neglect current works on the field due to lower citations (Maditati et al., 2018). Literature evaluation based on traditional methods often have replication problems (Garza-Reyes, 2015; Margiadi & Wibowo, 2020).

Due to this, Margiadi and Wibowo (2020) conducted a bibliometric review of authentic leadership literature using a total of 122 studies that spanned between 1999 – 2018. The study used Google Scholar and Scopus indexed articles in the analysis. The VosViewer software was used for the analysis. Clearly, this study is limited due to the timeframe it covered. Also, using Google Scholar indexed database limited the study's ability to reach large number of articles in the field of authentic leadership.

Therefore, the researcher found it important to use bibliometric analysis using the database of ISI Web of Science to review authentic leadership literature. This review will answer the following research objectives: 1. Identify the major journals, impactful articles, and trending articles in authentic leadership literature. 2. Discuss the underlying streams of research in authentic leadership. 3. Identify and review the trending areas in authentic leadership research.

2.3.1.1. Analysis Procedures

As mentioned earlier, the researcher used the database of ISI Web of Science and the HitCite software in the analysis. During the literature search process, the researcher used a search term as: "authentic leadership". The initial search process yielded 1623 results. To make sure that each result is relevant to authentic leadership, the researcher conducted the filtration step. Only articles published in English language were considered. Also, only articles were collected. That is, books, reviews, and conference issues were filtered. During the filtration, the researcher read at least the abstract of each result. For articles whose abstracts were not clear, the researcher obtained a full PDF copy and read through them. The filtration resulted in only 568 articles being relevant to authentic leadership out of the 1623. The researcher downloaded the data into two documents. The first document contained 491 items and the second contained 76. This is because the HitCite software takes up to 500 data items only per upload. After that, the documents were processed appropriately for use in the software. The 567 articles were then used for the analysis in the software. To answer the literature review questions, the researcher used the following processes. The various steps followed are shown in Figure 2.

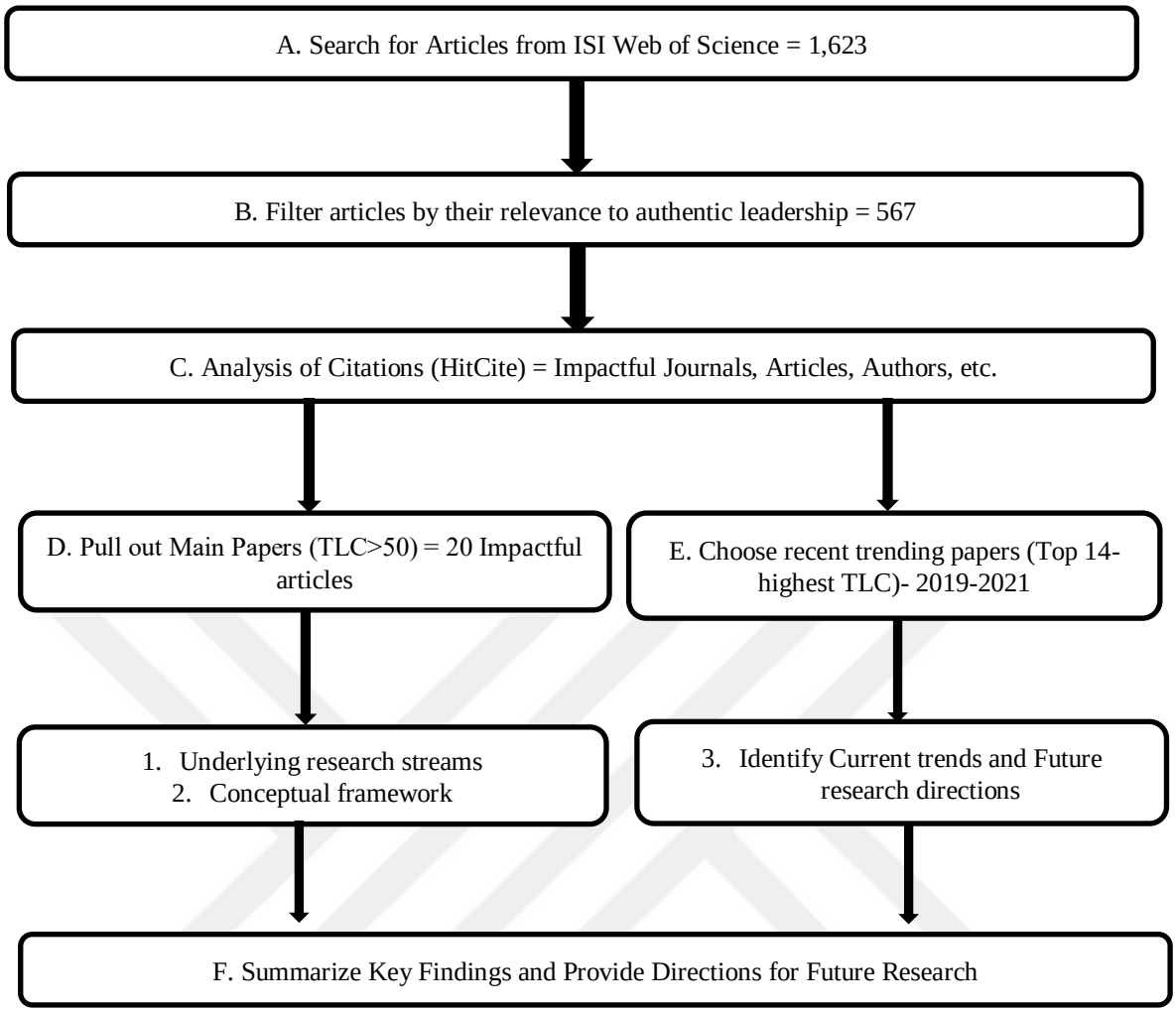

Figure 2. Outline of the steps taken to conduct the Bibliometric analysis

2.3.1.2. Influential Journals Dealing with Articles on Authentic Leadership

In this section, the researcher attempted to achieve the following objective: identify the major journals that are impactful in authentic leadership research. The analysis of the 567 articles published about the topic of authentic leadership revealed the journals in Table 1 as the most influential ones. These journals have been ranked according to the number of articles published and the total local citations index.

The results showed that the "Leadership and Organization Development Journal" is the most impactful journal according to the articles published. A total of 33 authentic leadership articles were published in this journal between the period of 2003 and August 2021. That is followed by the "Leadership Quarterly" journal with a total of 27 articles published in the same period. Coming third is the "Journal of Business Ethics" with a total of 18 articles published.

In terms of the total number of local citations of articles published, the “Leadership Quarterly” journal came first with a whopping total local citation of 1512. “The Journal of Business Ethics” is second with a total local citation of 320. Interestingly, the “Journal of Nursing Management” came third with a total local citation of 250. This shows how useful authentic leadership is to other fields of discipline.

Table 1. Influential Journals in Authentic Leadership Literature

Ranked by Number of Articles Published				**Ranked by Total Local Citations**			
Rank	**Journal**	**Recs**	**TLCS**	**Rank**	**Journal**	**Recs**	**TLCS**
1	Leadership & Organization Development Journal	33	180	1	Leadership Quarterly	27	1512
2	Leadership Quarterly	27	1512	2	Journal of Business Ethics	18	320
3	Journal of Business Ethics	18	320	3	Journal of Nursing Management	15	250
4	Leadership	17	132	4	Leadership & Organization Development Journal	33	180
5	Journal of Nursing Management	15	250	5	Journal of Management	4	140
6	Frontiers in Psychology	11	0	6	Leadership	17	132
7	Journal of Leadership & Organizational Studies	10	57	7	Organizational Dynamics	3	132
8	Advances in Developing Human Resources	9	14	8	Journal of Business Research	2	126
9	Sustainability	9	0	9	Journal of Advanced Nursing	4	75
10	Journal of Leadership Studies	8	12	10	Harvard Business Review	2	70

Figure 3 shows the number of publications and citations overtime

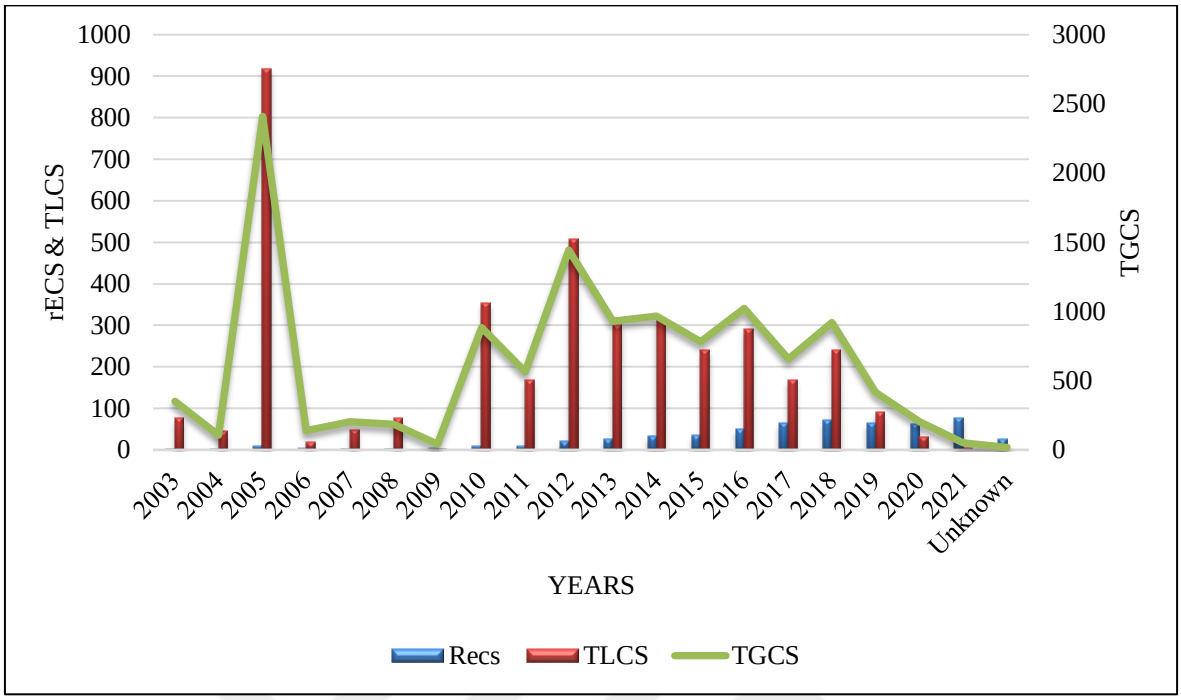

Figure 3. Number of Publications and Citations

(Recs – Number of publications; TLCS – Total Local Citations Score; TGCS – Total Global Citations Score)

Figure 3 shows that there have been more publications on authentic leadership over time. This is evident in the fact that many disciplines are adopting authentic leadership theory to understand leaders and leadership practices of individuals in their field. It can be realized that the sum of the quantity of citations of each article from the collection, represented as the Total Local Citations Score (TLCS), was high at 919 in 2005. Then it was low between 2006 and 2009. Thereafter, it increased and started to fluctuate in the subsequent years. Total Global Citation Score (TGCS), that measures the total quantity of citations of articles from the database collection of Web of Science, also experienced the same trend as the TLCS.

2.3.1.3. Influential Authors in the Field of Authentic Leadership

In this section, the ten most influential authors in the evolution of the field of authentic leadership are ranked according to the number of publications of each, the total local citations scores, and the total global citations scores. Table 2 shows the ranks acquired by each of the ten authors after the analysis.

Table 2. Top Ten Most Influential Authors in Authentic Leadership Research

Most Influential Authors in the Field of Authentic Leadership														
Number of Articles Published					**Total Local Citation Scores**					**Total Global Citation Scores**				
No	**Author**	**Recs**	**TLCS**	**TGCS**	**No**	**Author**	**Recs**	**TLCS**	**TGCS**	**No**	**Author**	**Recs**	**TLCS**	**TGCS**
1	Laschinger H.K.S.	**14**	298	1168	1	Avolio B.J.	7	**538**	1471	1	Avolio B.J.	7	538	**1471**
2	Gardner W.L.	**8**	467	1271	2	Gardner W.L.	8	**467**	1271	2	Gardner W.L.	8	467	**1271**
3	Ribeiro N.	**8**	60	131	3	May D.R.	2	**362**	981	3	Laschinger H.K.S.	14	298	**1168**
4	Shapira-Lishchinsky O.	**8**	0	89	4	Luthans F.	2	**349**	907	4	Wong C.A.	8	319	**991**
5	Wong C.A.	**8**	319	991	5	Wong C.A.	8	**319**	991	5	May D.R.	2	362	**981**
6	Avolio B.J.	**7**	538	1471	6	Laschinger H.K.S.	14	**298**	1168	6	Luthans F.	2	349	**907**
7	Braun S.	**7**	117	223	7	Walumbwa F.	2	**294**	790	7	Walumbwa F.	2	294	**790**
8	Moriano J.A.	**7**	28	131	8	Ilies R.	3	**255**	557	8	Ilies R.	3	255	**557**
9	Stander M.W.	**6**	0	57	9	Morgeson F.P.	1	**237**	502	9	Morgeson F.P.	1	237	**502**
10	Eid J.	**5**	26	149	10	Nahrgang J.D.	1	**237**	502	10	Nahrgang J.D.	1	237	**502**

(Recs: Number of articles published; TLCS: Total Local Citations Score; TGCS: Total Global Citations Score)

From Table 2, it is noted that the top three influential authors vary greatly depending on the indicator used in the ranking process. However, there are some authors whose contributions stand out.

Based on the number of studies published in the area, Laschinger, H. K. S. ranked first with a total of 14 articles. This is almost double the quantity of articles published by Gardner, W. L, who came second with eight articles. Ribeiro, L. placed third with eight articles. Placing third on the ranking is Ribeiro, N., with eight articles published in the area. Avolio, B. J., is ranked in sixth position with seven articles published in the field. However, he has great influence in the area.

Considering the total number of citations acquired by each author from all the articles included in the analysis (TLCS), Avolio, B. J., came first with a total score of 538. Thus, despite publishing seven articles as compared to Laschinger, H. K. S., who published 14 papers, Avolio's contribution in the area is huge. Ranking second is Gardner, W. L., with a TLCS of 467. From this, Gardner's influence in the authentic leadership research domain is

huge as he has ranked second according to all the indicators used in the ranking process. Coming third is May, D. R., with a score of 362 and only two articles published in the area. This is good considering she published only two articles in the area. Surprisingly, Laschinger, H. K. S., who published the highest number of articles in the field of authentic leadership occupied the sixth position with a TLCS of 298.

Avolio, B. J., occupies the first position when the Total Global Citation Score (TGCS) is used as an indicator to evaluate the impact of authors in the development of the authentic leadership field. He got a TGCS of 1471 after the analysis. The TGCS, remember, measures the total number of citations acquired by authors from other authors or articles in database of the Web of Science. Gardner, W. L., again came second in the rankings with a TGCS of 1271. Here, the contributions of Avolio and Gardner to the works of others in the authentic leadership theory are immense. This is evident in the fact that they made it to the top three when considering all the indicators used. Laschinger, H. K. S. also got a TGCS of 1168 and occupied the third position. Laschinger has extended the field to the Nursing domain for the understanding of the processes of developing authentic leadership among nurses and how it impacts their work. Over the years, he published the highest number of articles on authentic leadership according to the data used for the analysis.

2.3.1.4. Citation Mapping and Content Analysis Based on Authentic Leadership Articles

The researcher used the "Graph Maker" tool on the HitCite software to conduct a citation map analysis. The assessment was made to demonstrate the way authentic leadership research has evolved and developed over time. The tool makes it easier for the researcher to identify key research streams (Maditati et al., 2018) in the authentic leadership research literature. It further facilitates the conduct of content analysis based on the key or influential articles identified through the process. This is necessary to help the researcher construct a conceptual map for the theory of authentic leadership.

From the analysis, the researcher selected and considered only articles with the total local citation score (TLCS) of 50 and more. This is because many relevant articles have been gathered during the analysis. Thus, the decision is meant to make the process simple and usable. The filtration process yielded 20 articles. In this case, those 20 articles are the most

cited works within authentic leadership literature. They are therefore considered to be key in the evolution and development of the field.

Co-citation analysis is one of the strategies that are used in the conduct of bibliometric citation analysis (Zupic & Čater, 2015). This investigation shows the number of times two studies are referenced together by many other studies, as suggested by Small (1975). Citation mapping is a co-citation analysis technique that the researcher used to find out the sub-themes in the area of authentic leadership.

Table 3. Top 20 Most Influential Articles in Authentic Leadership Literature

Number	Node	Authors	LCS	GCS
1	26	May et al. (2003)	77	220
2	30	Gardner et al. (2005)	285	761
3	31	Ilies et al. (2005)	237	502
4	32	Shamir and Eilam (2005)	122	372
5	33	Sparrowe (2005)	64	183
6	35	Eagly et al. (2005)	65	249
7	36	Cooper et al. (2005)	84	167
8	44	Yammarino et al. (2008)	60	118
9	51	Ladkin and Taylor (2010)	53	173
10	54	**Walumbwa et al. (2010)**	116	223
11	55	Wong et al. (2010)	73	192
12	56	Giallonardo at al. (2010)	78	182
13	65	Neider and Schreisheim (2011)	91	162
14	71	Rego et al. (2012)	86	242
15	72	Leroy et al. (2012)	78	186
16	73	Peus et al. (2012)	87	141
17	102	Wong and Laschinger (2013)	58	175
18	126	Wang et al. (2014)	64	146
19	173	Leroy et al. (2015)	62	154
20	215	Banks et al. (2016)	60	187

From the above table it can be realized that the researcher identified the 20 most relevant studies in the development of authentic leadership theory. Walumbwa et al. (2010) has been bolded because it was not included in the final analysis as presented in Table 4 below. This is because the article was retracted. The table is organized according to the nodes of each article as presented in Figure 4 below as well as the year of publication of each article.

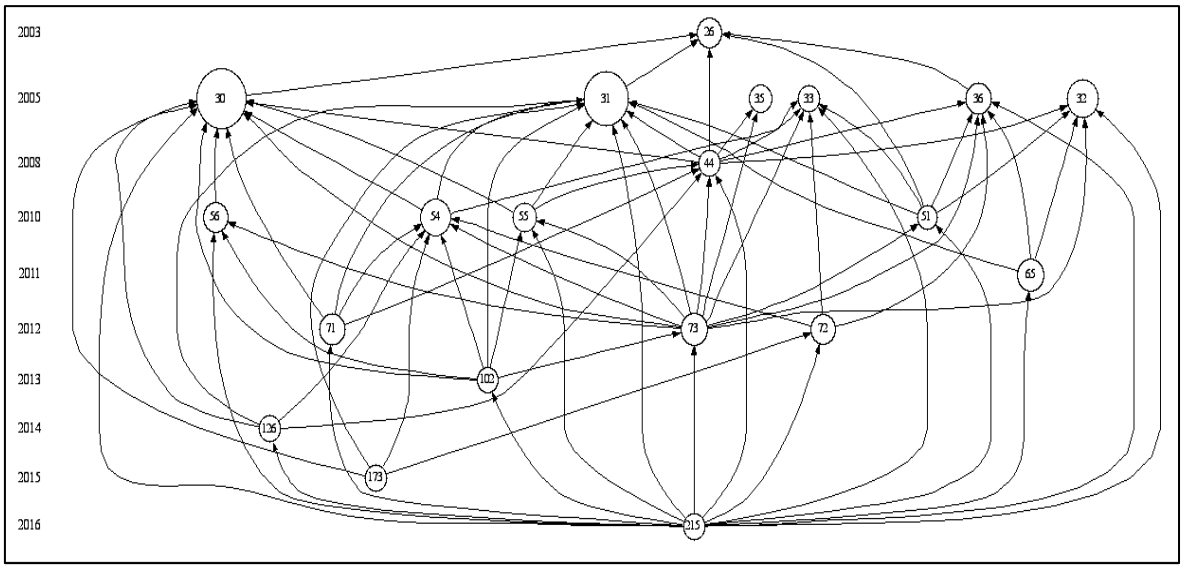

Figure 4. A Map of Citation of the 20 Most Impactful Articles in Authentic Leadership Development Theory

Table 4. Understanding Authentic Leadership Theory Literature

Levels of Analysis			
PERSPECTIVES	**Intrapersonal**	**Interpersonal**	**Developmental**
Positive OB, TL, and Ethics	Peus et al. (2012)	May et al. (2003) Wong et al. (2010) Giallonardo et al. (2010) Rego et al. (2012) Leroy et al. (2012) Wong and Laschinger (2012) Wang et al. (2014) **My Research**	Yammarino et al. (2008) Peus et al. (2012)
	A	**B**	**C**
Authenticity	Sparrowe (2005)	Eagly (2005) Banks et al. (2016)	Ilies et al. (2005) Cooper et al. (2005)
	D	**E**	**F**
Life-Story	Ladkin and Taylor (2010)	Gardner et al. (2005)	Gardner et al. (2005) Neider and Schriesheim (2011) Shamir and Eilam (2005)
	G	**H**	**I**

Theoretical and Philosophical Underpinning

From the above table, two criteria of grasping, clearly, the theory of authentic leadership literature are identified. The categorization is based on the efforts of Kvasić et al. (2020) about the development of authentic leadership literature. They argue that there are two criteria for understanding the theory. In this study, the researcher has compared elements of the two criteria against one another to help identify where in the literature each article fit. This approach was informed by the fact that most of the articles fit into and can be understood from the two criteria.

First, the literature of authentic leadership can be understood or studied based on the levels of analysis and evolution of the concept. Here, authentic leadership is viewed from the perspectives of differentiating among Intrapersonal, Interpersonal, and Developmental (Northouse, 2019). This criterion to understanding the authentic leadership theory and its literature is founded on the levels of analysis and evolution of authentic leadership. In the intrapersonal approach, the leader is the main emphasis. The leader is considered to possess unique leadership qualities based on his or her own beliefs and values (Shamir & Eilam, 2005).

The interpersonal perspective of viewing authentic leadership argues that it is a relational construct that emerges from the link between leaders and their followers. This is evident in the work of Eagly (2005). The concept of reciprocity is critical in this approach to understand authentic leadership. It is believed that authentic leadership arises from the interaction and/or relationship between leaders and followers.

The developmental perspective argues that authentic leadership evolves and can be constructed throughout time. That means that authentic leadership is not considered to be a fixed trait, but an evolving one. Examples of some of the proponents of this approach are Avolio and Gardner (2005), Gardner et al. (2005), and Walumbwa et al. (2008).

The second criterion of understanding the literature of authentic leadership is through: the philosophical and theoretical understandings that shape the meaning of the construct. Here, the concept is categorized based on: Positive organizational behavior, transformational leadership, and ethics; Authenticity; and Life-story. Among the earliest conception of authentic leadership in the literature is founded on the perceptions of positive organizational behavior, ethics, and transformational leadership (Nikolić et al., 2020). Proponents of this perspective argue that authentic leadership entails self-regulation, favorable psychological

characteristics, self-consciousness, personal-development, and a strong moral standing (Ibid). This suggests that an authentic leader has positive psychological traits, is self-aware, self-regulated and morally upright. But there are arguments regarding the validity of this conception of authentic leadership in literature. For example, Cooper et al. (2005) doubted this meaning of authentic leadership as well as its discriminant validity. They noted that this approach makes it difficult to differentiate between or among authentic leadership, psychological capital, and transformational leadership.

With that, most scholars started searching for a more precise and clearer definition and understanding of the concept of authenticity. That became the new approach to looking at authentic leadership, with the main purpose of understanding what constitutes "authenticity" of a leader. Some proponents of this perspective are Avolio & Gardner (2005), Gardner et al. (2005), and Ilies et al. (2005). This approach considers authenticity to be a multidimensional construct that consists of relational orientation, awareness, behavior/action, and unbiased processing components. This understanding led to the increase in the popularity of Authentic Leadership Questionnaire by Walumbwa et al. (2008).

Another conceptualization of authentic leadership in literature is the life-story approach. From this perspective, the life story of the leader is central to developing authentic leadership traits (Nikolić et al., 2020). Shamir and Eilam (2005) put forward this approach contending that authentic leadership depends on the meanings that an authentic leader assigns to his or her life experiences that allows him or her to understand and accept him/herself. In this conception of authentic leadership, the concept of morality is not considered critical to the development of authenticity by the leader (Nikolić et al., 2020).

2.3.1.5. Major Findings of the Most Popular Articles in Authentic Leadership Literature (Zones)

Below are what the researcher called "Zones" from the framework above. Each Zone is a box in the matrix that corresponds to one of the philosophical underpinnings and one of the levels of analysis in authentic leadership literature. Below are the various Zones identified in the framework above as well as their descriptions and the articles that belong to them.

Zone A: This area is the intersection of positive organizational behavior and ethics and intrapersonal. Articles that fall here are based on the philosophy that authentic leadership produces positive and ethical leaders. The analysis conducted was based on the intrapersonal level. For example, Peus et al. (2012) found that there is a link between authentic leadership and followers' attitudes towards their jobs and perceived team effectiveness, which is facilitated by perceived predictability of the leader. Authentic leadership is seen as the result of leaders' self-knowledge and self-consistency.

Zone B: This area occurs at the nexus of the philosophy of positive organizational behavior and ethics and the interpersonal level of analysis. Studies categorized here perceived authentic leadership to be responsible in producing leaders who promote positive organizational behaviors in their followers. Also, they believe authentic leaders promote positive workplace behaviors through their interactions with others. For example, May et al. (2003) noted that authentic leadership is conceptualized as comprising of moral components as well as decision-making processes based on positive organizational psychology and behavior. They created a framework that explains how leaders may act morally and authentically while maintaining that conduct throughout time. Similarly, Wong et al. (2010) utilized the theory of authentic leadership from the moral, positive organizational behaviors, and interpersonal perspectives. In their study, they concluded that authentic leadership has a positive and substantial relationship with and impact on staff nurses' trust in their supervisors and their level of job engagement. These relationships then foster trust, job engagement, perceived quality of care of nurses, and voice behavior. According to Giallonardo et al. (2010), work engagement and authentic leadership are to account for 20% of the variation in nurses' job satisfaction. The relationship between graduate nurses' engagement and the preceptors' authentic leadership is also shown to be mediated by their work engagement. Rego et al. (2012) also found authentic leadership to be helpful in developing innovation of employees through psychological capital. There is a clear correlation between authentic leadership and employee creativity, indicating that other factors may contribute in different ways to employees' increased creativity under the direction of authentic leaders. Moreso, Leroy et al. (2015) noted that authentic leadership relates with the affective commitment of followers to the organization and that the link is fully facilitated by leaders' behavioral integrity. Also, authentic leadership and leaders' behavioral integrity are related to follower work role performance and the link is fully mediated by affective commitment of employees. All these findings hold when they controlled for ethical organizational culture. Also, Wong

& Laschinger (2012) found that authentic leadership promotes employee structural empowerment among nurses. This further increases the performance of the nurses as well as their job satisfaction. Finally, Wang et al. (2014) pointed out that followers who have low levels of psychological capital rather than high levels do so to a higher extent, which is positively connected with leader-member interaction and therefore to followers' performance.

Zone C: In this zone, studies consider the concept of authentic leadership to promote ethical leaders who can facilitate the development of positive organizational behaviors among their followers. They also tried to understand how to develop authentic leaders or how they evolve. One of the articles that adopted this approach is Yammarino et al. (2008). They noted that previous authentic leadership studies have focused on individual-level analysis. They created a transdisciplinary, multi-level framework to analyze effective organizational behavior and authentic leadership.

Zone D: Here, authors tried to understand the concept of authenticity which is a key issue in authentic leadership. In doing that, they analyzed the individuality of the authentic leader at the intrapersonal level. Studies in this zone will be interested in understanding the authenticity of the leader by analyzing his or her values and personal experiences. For instance, Sparrowe (2005) provided the perspective of narrative self to understand the authenticity in leadership. The researcher noted that authenticity is emergent and arises from the narrative processes where others play a critical role in the self.

Zone E: In this zone, studies try to clearly perceive the concept of authenticity of the leader. But in doing so, they consider how it impacts interpersonal interactions between authentic leaders and their followers. Proponents of this approach will allow followers to determine or state whether their leaders are authentic or not in their analysis. For example, Eagly (2005) assessed how to achieve relational authenticity in leadership and whether the leaders' gender matters in the process. The researcher concluded that achieving relational authenticity in leadership is more challenging for women than men and for members of outsider groups. Also, Banks et al.'s (2016) transformational leadership and authentic leadership have many characteristics in common. They contend that the two variables do not significantly increase one another's incremental validity. Authentic leadership has less of an influence on task performance, leader effectiveness, and follower satisfaction with the

leader. Finally, authentic leadership dominates transformational leadership in generating group or organizational outcomes.

Zone F: Here, researchers explore the philosophy of the concept of authenticity, calling for more research to understand it clearly. During their analysis, they explore the appropriate ways to facilitate the development of authentic leaders in the organizations. Examples include Ilies et al. (2005) defined authentic leadership, ontologically, based on philosophical approaches of human well-being such as hedonism and eudaimonia. They proposed a multi-component model that included unbiased processing, self-consciousness, authentic action and behavior, and authentic relational orientation. Moreover, Cooper et al. (2005) concluded that authentic leadership researchers must conduct thorough and systematic studies on authentic leadership and its development if they want to train or develop leaders who possess ethical and positive capabilities like authentic leaders. That is, it will be premature to start designing programs to train and develop authentic leaders if the authentic leadership construct is not properly defined, operationalized, or measured.

Zone G: Studies in this zone explore the life stories of the authentic leaders and investigate how they impact their authenticity. In doing that, they analyzed the authentic leader at the intrapersonal level. No need to understand the authentic leader through others. Ladkin & Taylor (2010) recommended the theory of embodied authentic leadership. It is noted that developing fully and integrated authentic leadership compose of three parts such as: relating, leaderly choices, and self-exposure.

Zone H: This zone is the intersection of the life-story perspective and interpersonal level of analyzing and understanding authentic leadership. They consider the life history and experiences of leaders to shape their authenticity. Gardner et al. (2005) focused on the processes of development that facilitate leader and follower's self-regulation as well as their self-awareness. That is the individual histories as well as the trigger events of leaders and followers are seen to be precursors of authentic leadership and followership. Moreover, authentic leadership and followership are positively impacted by an inclusive, moral, compassionate, and strength-based workplace atmosphere.

Zone I: Here, researchers explored the life story of leaders and how it helps them become authentic. That is, they looked at the history and experiences of the leader and the ways that facilitates the development of the features of authentic leadership by the

individual. Neider & Schriesheim (2011) found some issues with the Authentic Leadership Questionnaire (ALQ). Yet, their results support its concurrent validity, discriminant validity, reliability, and convergent validity. However, authentic and transformational leadership are not supported by the study findings as generally applicable concepts. Also, Shamir & Eilam (2005) offered a conception of authentic leadership based on self-concept. Therefore, it provided the life-story model to developing authentic leaders. The authors postulate that the life-story of authentic leaders provides more information to their followers that helps them to base their judgment of the leaders' authenticity.

2.3.1.5.1. Where Does This Study Fit in the Streams of Research Identified?

From the analysis in Table 4 above, this research fits in the nexus between the approaches of positive organizational behavior, ethics, and transformational leadership and the interpersonal level of analysis (Zone B). To meet the objectives of this study, a leader's authenticity is considered to be a multidimensional variable or construct consisting of measures such as: self-awareness, balanced processing, relational transparency, and internalized moral perspective. Further, this study views authentic leadership as a leadership approach that is based positive psychology and ethics just like transformational leadership, therefore, can promote behaviors among followers. Also, authentic leadership is perceived from the view of interpersonal construct. That is, authentic leadership is a social construct that develops or arises from the interaction of leaders and their followers.

2.3.1.6. Trending Articles in Authentic Leadership Literature

In this section, the researcher ranked articles according to their Local Citation References (LCR) scores. The LCR is a metric used to measure the number of articles referenced by the article in question (Maditati et al., 2018). Here, articles are listed based on the quantity of articles cited within the 567 publications used in the analysis. The most ranked articles according to this filtration and analysis process are highly relevant to the topic of research. The analysis yielded the following as the 14 most ranked articles according to their LCR scores:

Table 5. Top 14 Most Trending Articles in Authentic Leadership Research

Number	Author/Date	LCS	LCS/t	LCR
1	Faheem et al. (2021)	0	0	40
2	Banks et al. (2016)	60	10	36
3	Gill & Caza (2018)	20	5	35
4	Iszatt-White & Kempster (2019)	0	0	35
5	Sidani & Rowe (2018)	15	3.75	31
6	Levesque-Cote et al. (2018)	0	0	26
7	Duarte et al. (2021)	0	0	25
8	Lei et al. (2021)	0	0	25
9	Nair et al. (2021)	0	0	23
10	Qu et al. (2019)	6	2	22
11	Shahid & Muchiri (2019)	1	0.33	22
12	Ramalu & Janadari (2020)	0	0	22
13	Gigol (2020)	0	0	22
14	Ribeiro et al. (2020)	0	0	22

(TLCS: Total Local Citations Score; LCS/t: Average Local Citations Scores received per year; LCR: Local Citation References)

From Table 5 above**,** it can be noted articles that had the same LCR scores were ranked based on their TLCS scores. The analysis done in this section is necessary because it was used to ascertain or identify future research questions and directions in the field of authentic leadership literature. The LCR is used as a metric for this analysis because it helps identify articles that are current and extremely relevant to the topic of analysis (Maditati et al., 2018). In conducting the process, the researcher obtained PDF copies of each of the articles ranked in Table 5 above and read through them to obtain the list of future research direction suggested by each of them. The result of the process is presented in Table 24.

2.4. Employee Innovative Work Behavior

Innovation has been cited in literature and practice as one of the main driving forces in organizational survival (De Jong & Den Hartog, 2010). Scholars believed that innovation is particularly essential for the performance of organizations in their environments (Lempiälä & Vanharanta, 2018; Michelsen, 2009). There is substantial evidence in the management and business literature that proves that innovation is a survival kit in today's business environment. Innovation enhances the effectiveness and efficiency of the internal processes of organizations and offer them competitive edge over their rivals and eventually a long-term survival (Cropley et al., 2011).

The literature has been clear on employee innovative behavior or capability, noting that it counts a lot towards organizational innovation. Today's organizations face numerous challenges including the turbulence, the complexity, and the dynamic nature of their business environment. Employees are often tasked to be innovative in performing their roles. It unfortunate however, that most employees do not get the necessary recognition for being and acting innovatively (Oukes, 2010). That is, innovative behaviors of employees go unnoticed in most organizations as they are not properly appreciated by superiors. Recognizing the efforts and the innovative behaviors of employees stimulates their intrinsic motivation to be more innovative. This is essential to organizations' success according to management and business scholars (Amabile, 1988). Due to this, employee innovative work behavior has grown in popularity because of how important it has become in our recent business environment. Employee innovative work behavior is critical for the achievement of competitive advantage and survival of organizations within their aggressive business environment.

Innovative work behavior of employees (IWB) refers to the actions of employees geared towards generating, developing, and implementing new ways, products, process, and methods of performing their tasks and roles (Torres et al., 2017). Some scholars believe innovative work behavior is the willingness of employees to perform their roles and tasks innovatively (Mete, 2017). De Jong and Den Hartog (2008) considered the concept to be "an individual's behavior that aims to achieve the initiation and intentional introduction (within a work role, group or organization) of new and useful ideas, processes, products or procedures as well as implementation of those ideas". Dörner (2012) believes that innovative work behavior is the will to develop, promote, and put into practice new ideas when performing ones' job role to improve organizational and personal performance. Some researchers like Mete (2017), propose two different perspectives, efficiency-oriented and social-political oriented, to help us understand the concept of innovative work behavior. The efficiency-oriented view suggests that when employees exhibit innovative work behavior, it improves the efficiency and performance of their organizations (J. De Jong & Den Hartog, 2010). The social-political orientation proposed a social and a political condition and/or environment that support the exhibition and development of innovative work behavior among employees (Mete, 2017). That is, management has to promote a supportive environment and leadership to stimulate employee innovative work behaviors.

Some scholars might equate the concept of employee innovative work behavior with employee creativity. However, such an understanding is narrow due to the fact innovative work behavior extends beyond employee creativity. The concept consists of several behavioral patterns and goes beyond employee creativity. Dörner (2012) categorized three behavioral attributes that make up employee innovative work behavior such as: opportunity exploration and idea generation; championing; and application. First, employees undertake an exploration process to generate and identify opportunities and ideas that are superior to present methods or ways, which can lead to improved performance at the workplace. This process and behavior properly captured under opportunity exploration work behavior. Further, when successful, employees advocate for the adoption of the generated idea. This behavior pattern can be classified under championing behavior. Finally, application comes in when the generated idea is successfully adopted and implemented.

In this study, the researcher assumes that: (1) innovative work behaviors of employees lead to superior performance of the organization; (2) management can stimulate innovative work behavior by creating an organizational environment conducive for innovation; (3) leaders can push their followers to exhibit innovative work behaviors. These assumptions underlie the conduct of this research.

2.4.1. Bibliometric Analysis of Innovative Work Behavior Using ISI Web of Science Data

Literature reviews in the field of employee innovative work behaviors (IWB) always take the form of the traditional literature reviews methods. To the best of the researcher, there have not been any literature review in the field of IWB using bibliometric analysis methods. The researcher therefore chose the bibliometric analysis method to ensure replication by other studies in the future. The method also covers a large number of published articles on the topic. The analysis sought to meet the following research objectives: 1. Identify the major journals, influential articles, and trending articles in IWB literature. 2. Assess how research in IWB evolves over time. 3. Comprehend the underlying research streams in IWB, and 4. Uncover the trending areas in IWB research.

2.4.1.1. Analysis Procedures

To achieve the objectives regarding this review, the researcher gathered data (articles) from the ISI Web of Science database. The keyword used for the search is “Employee Innovative Work Behavior”. The database returned the result of 952 articles in the initial search. Then the results were sorted into only articles that are relevant to IWB according to the “Relevance” feature in the Web of Science database. Further, a filtration system was initiated to retrieve only relevant works in the area. Only articles that were published in the English language were included. Also, review works, books, book chapters, conferences issues were all removed from the included list. Thereafter, a final filtration process was conducted. In the process, the researcher read at least the abstract of each of the articles included in this stage. The final list of articles considered for analysis is 508 after the filtration stage. After that the document containing the 508 articles was processed and prepared for analysis in the HitCite software.

To answer the literature review questions, the researcher used the following processes. The various steps followed are shown in Figure 5.

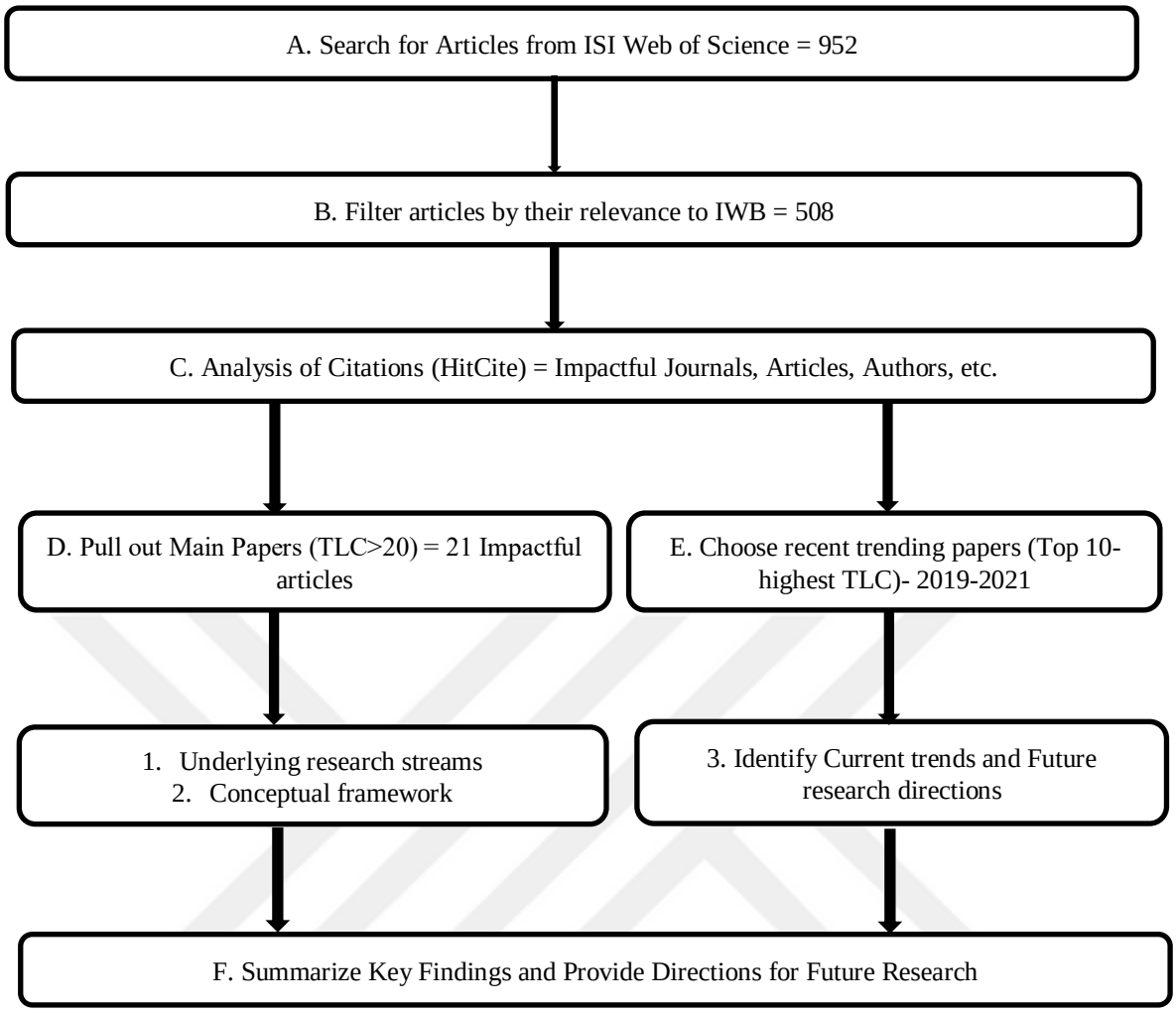

Figure 5. Outline of the steps followed in the bibliometric analysis

2.4.1.2. Influential Journals Dealing with Articles on Innovative Work Behavior

It can be understood from Table 6 that the results of the analysis showed that the "European Journal of Innovation Management" is the most impactful journal house according to the number of IWB research published within the period of analysis. It published a total of 25 articles about IWB. The "International Journal of Innovation Management" came second with 20 articles published. Closely behind was "Sustainability" with a total of 19 research papers published in the area.

The analysis found the "Journal of Occupational and Organizational Psychology" to be the most influential journal in the area, boosting the most impactful and influential articles. Surprisingly it published only five articles that received 348 citations within the collection. Coming second is the "Academy of Management Journal" with 162 local citations for only one article published. This shows that that article is extremely influential

in the area. In third position is “Personnel Review” with 105 citations within the collection of 15 articles.

Table 6. Top Ten Most Influential Journals in Employee Innovative Work Behavior Research

Ranked by Number of Articles Published				**Ranked by Total Local Citations**			
Rank	**Journal**	**Recs**	**TLCS**	**Rank**	**Journal**	**Recs**	**TLCS**
1	European Journal of Innovation Management	25	56	1	Journal of Occupational and Organizational Psychology	5	348
2	International Journal of Innovation Management	20	0	2	Academy of Management Journal	1	162
3	Sustainability	19	0	3	Personnel Review	15	105
4	Personnel Review	15	105	4	Journal of Creative Behavior	10	77
5	Frontiers in Psychology	14	0	5	International Journal of Manpower	6	72
6	Creativity and Innovation Management	13	51	6	European Journal of Work and Organizational Psychology	6	58
7	Social Behavior and Personality	12	3	7	European Journal of Innovation Management	25	56
8	Journal of Creative Behavior	10	77	8	Career Development International	2	55
9	Employee Relations	8	11	9	Journal of Organizational Behavior	3	52
10	International Journal of Human Resource Management	8	27	10	Creativity and Innovation Management	13	51

(Recs: Number of articles published; TLCS: Total Local Citations Score)

Figure 6 shows the number of publications and citations overtime.

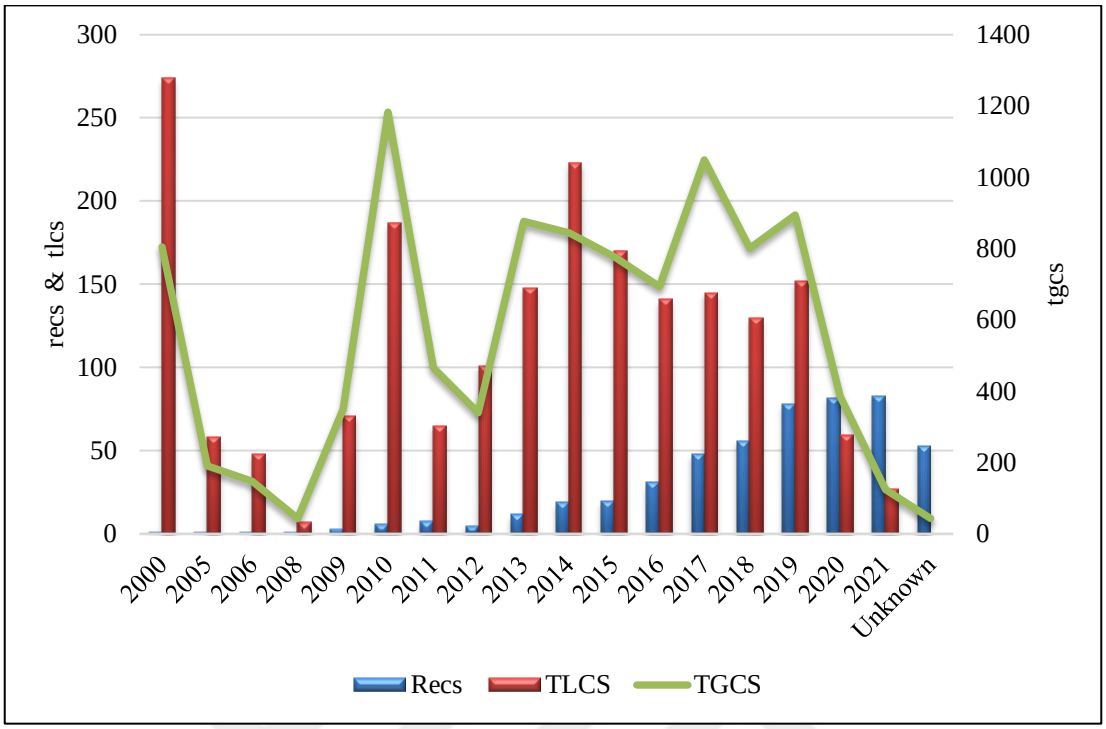

Figure 6. Number of Publications and Citations

(Recs – Number of Published Articles; TLCS- Total Local Citations Score; TGCS – Total Global Citations Score)

From Figure 6 above, the total quantity of citations received by articles about innovative work behavior in the year 2000 from the collection (508 articles) was high at 256. Then consistently reduces for three years, increases for a year, then reduces, and increases consistently for three years. That is, it keeps fluctuating overtime. The TGCS follows the same trend and fluctuates often.

With regards to the number of publications per year, it continues to increase, consistently, overtime. This is evident in the case that innovation among workers has gained popularity over the years.

2.4.1.3. Influential Authors in the Field of Innovative Work Behavior

As part of the analysis of the literature, the researcher assessed the influence of authors on the development of the theory of employee innovative work behavior. Authors were ranked according to the number of articles they published in the area, their TLCS, and their

TGCS. Table 7 shows the ten most influential authors in the field of employee innovative work behavior

Table 7. Top Ten Most Influential Authors in Employee Innovative Work Behavior Research

Most Influential Authors in the Field of Employee Innovative Work Behavior													
No. of Articles Published					Total Local Citation Scores					Total Global Citation Scores			
No	**Author**	**Recs**	**TLCS**	**TGCS**	**No**	**Author**	**Recs**	**TLCS**	**TGCS**	**No**	**Author**	**Recs**	**TLCS**	**TGCS**
1	Afsar B.	18	105	416	1	Janssen O.	3	357	1082	1	Janssen O.	3	357	1082
2	Battistelli A.	12	61	156	2	Woodman R.W.	1	162	585	2	Woodman R.W.	1	162	585
3	Odoardi C.	11	58	149	3	Yuan F.R.	1	162	585	3	Yuan F.R.	1	162	585
4	Mulder R.H.	9	43	115	4	Afsar B.	18	105	416	4	Carmeli A.	5	83	449
5	Messmann G.	8	38	99	5	Carmeli A.	5	83	449	5	Afsar B.	18	105	416
6	Montani F.	8	62	171	6	Agarwal U.A.	3	76	317	6	de Jong J.	1	0	372
7	Bani-melhem S.	7	0	69	7	Montani F.	8	62	171	7	den Hartog D.	1	0	372
8	Ding H.	6	1	20	8	Battistelli A.	12	61	156	8	Agarwal U.A.	3	76	317
9	Al-hawari M.A.	5	0	14	9	Odoardi C.	11	58	149	9	Ng T.W.H.	3	23	208
10	Bin Saeed B.	5	45	145	10	Bhargava S.	1	50	170	10	Feldman D.C.	2	22	204

(Recs: Number of articles published; TLCS: Total Local Citations Score; TGCS: Total Global Citations Score)

From Table 7 above, the analysis revealed that Afsar, B. is the most influential author based on the highest number of articles published in IWB. He has published 18 articles in the area. Battistelli, A. ranked second with 12 articles. Ranking third is Odoardi, C. with 11 publications in the field.

With regards to the quantity of citations gotten by authors from all the articles included in the analysis, Janssen, O. with a TLCS score of 357. This score is more than the scores of the authors who are ranked second and third put together. He only published three articles in the area. The second and third authors in rank, according to the analysis, each received TLCS scores of 162. These authors are Woodman, R. W. and Yuan, F. R. But Afsar, B. ranked fourth with a score of 105.

According to the quantity of citations received by authors from articles in the Web of Science database, Janssen, O. occupied the first position with a TGCS of 1082. This result suggests that Janssen's influence in the field is great. That is, the three articles he published

prove instrumental in inspiring further studies in the area. This is evident in his TLCS and TGCS scores. Interestingly, Woodman, R. W. and Yuan, F. R. ranked second and third respectively again. They scored 585 TGCS each.

2.4.1.4. Citation Mapping and Content Analysis Based on Innovative Work Behavior

Under this section, an assessment was made to understand how the field of employee innovative work behavior has developed over time. In doing so, the researcher applied the "Graph Maker" tool on the HitCite software to conduct a citation map analysis. The tool facilitated the identification of key research streams by the researcher in the IWB research area (Maditati et al., 2018). Further, the analysis conducted identified key and influential articles in the research area. These publications facilitated the conduct of content analysis. This was necessary to help the researcher construct a conceptual framework for the theory of IWB.

In the analysis, only articles with a total local citation score (TLCS) of 20 or more were chosen by the researcher. Even though many relevant articles have been gathered for the analysis, the TLCS scores of articles in the literature were quite low and produced few publications for the analysis. Due to that, the 20 and more TLCS cut-off was set for the ranking. Thus, the decision was meant to make the process comprehensive and usable. The filtration process produced 21 articles. Those 21 articles were the most cited and influential works within the IWB literature. They are therefore considered to be key in the evolution and development of the field.

The citation map in Figure 7 shows the citation connections among the 21 most critical articles in the emplo9 yee innovative work behavior literature.

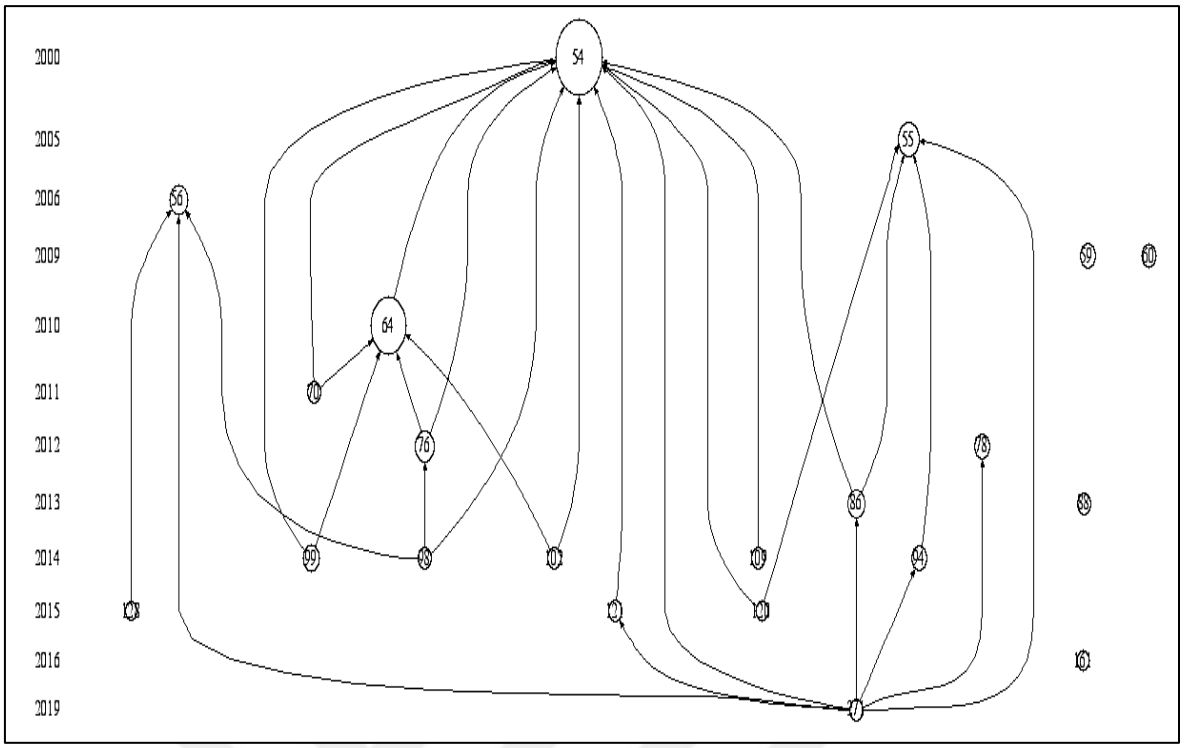

Figure 7. A Citation Map of the Influential Articles in Innovative Work Behavior Literature

It can be seen from Figure 7 that these articles span between 2000 to 2019. They are considered to be critical to the development of innovative work behavior literature. From the figure, if an article cites two other articles, it suggests that those three articles are related. It is realized from the graph that Carmeli and Spreitzer (2009), Knol and Linge (2009), Kim and Lee (2013), and Dhar (2016) with their respective nodes 59, 60, 88, and 161 neither cited nor are cited by other articles in the pool of articles. The rest of the articles cited others or are cited by other authors in the list. Also, the bigger size of the node the higher the influence of the article or study in the literature. From the graph, the three most influential articles are Janseen (2000), Yuan and Woodman (2010), and Janseen (2005) respectively.

Table 8. Influential Articles in Employee Innovative Work Behavior Literature

Articles	**Research Themes**				**Variables**	**Nodes**
	Understanding IWB	**Developing IWB**	**Individual Factors**	**Organizational Factors**		
Janseen (2000)			Yes	Yes	-Effort-reward fairness -Job demands	54
Janseen (2005)			Yes	Yes	-Supervisor supportiveness -Employee perceived influence	55

Table 8. (continued) Influential Articles in Employee Innovative Work Behavior Literature

Carmeli et al. (2006)		Yes			-Self-leadership -Job tenure -Income	56
Carmeli & Spreitzer (2009)		Yes			-Trust -Connectivity -Thriving	59
Knol & Linge (2009)			Yes	Yes	-Structural empowerment -Psychological empowerment	60
Yuan & Woodman (2010)	Yes				-Social-political perspective -Efficiency-oriented perspective	64
Hsu et al. (2011)			Yes	Yes	-Creative self-efficacy -Optimism	70
Agarwal et al. (2011)			Yes	Yes	-LMX -Turnover intention -Work engagement	76
Aryee et al. (2012)				Yes	-Work engagement -LMX -Transformational leadership	78
Yidong et al. (2013)			Yes	Yes	-Ethical leadership -Intrinsic motivation	86
Kim & Lee (2013)			Yes		-Knowledge sharing behavior -Goal orientation	88
Afsar et al. (2014)			Yes	Yes	-Transformational leadership -Psychological empowerment -Self-control	94
Agarwal (2014)				Yes	-Organizational Justice -Organizational trust -Work engagement	98
Prieto & Perez-Santana (2014)				Yes	-Human resource practices -Supportive work environment	99
Madrid et al. (2014)			Yes		-Moods -Context -Personality	102
Radaelli et al. (2014)				Yes	-Knowledge sharing	109
Ren & Zhang (2015)				Yes	-Job stressors -Organizational innovation climate	120
Wang et al. (2015)	Yes				-Social network -LMX	121
Thurlings et al. (2015)	Yes				-Individual factors affecting IWB -Organizational factors affecting IWB	128
Dhar (2016)				Yes	-Ethical leadership -LMX -Job autonomy	161
Javed et al. (2017)				Yes	-Inclusive leadership -Psychological safety	271

In Table 8 above, the researcher tried to understand the development of the employee engagement literature. In the process, the articles were analyzed based on three research streams such as: *Understanding the concept of IWB*; *Developing IWB; Individual factors that promote IWB*; and *Organizational factors that promote IWB*. These streams of research were generated upon reading all the articles in the pool.

The first stream of research identified in the literature is made up of authors who tried to understand the concept of IWB. These scholars are obsessed with understanding the concept of IWB clearly. These scholars believe that the concept of employee IWB, as a construct, must have a clear and a specific definition that is agreed upon by everyone in the area. They also concern themselves about how to operationalize the concept. Some of the proponents of this perspective are Yuan and Woodman (2010), Wang et al. (2015), and Thurlings et al. (2015). For example, Yuan and Woodman (2010) tried to understand the concept of IWB by examining how social-political and efficiency-oriented factors stimulate the individual employee to embark on innovation. They measured social-political perspective using the risk of expected image as well as the gains in expected image while measuring efficiency-oriented perspective through expected positive performance outcomes. They uncovered substantial impacts of all these three expected outcomes and variables on whether individual employees engage in IWB. Another attempt to understand the concept of IWB was Wang et al. (2015). They explored the effects of social relationships on IWB by integrating the theories of social networks and leader-member exchange (LMX). They noted that there are positive relationships between out-group weak ties and IWB. They also discovered that the second stage of this indirect link was negatively influenced by significant within-group relationships. Within this research stream is the study of Thurlings et al. (2015). They tried to understand and explain the teachers' IWB. With a systematic review of literature, they developed a preliminary model of IWB. Their model made use of and argues for the use of organizational, demographic, and individual factors in explaining IWB among employees.

The second theme of research identified in the literature is about the development of IWB literature. Among the 21 most influential articles in literature, the studies that investigated the development of the field are Carmeli et al. (2006), and Carmeli and Spreitzer (2009). Carmeli et al. (2006) investigated how employees develop their IWB by building their self-leadership skills. Their analysis found that self-leadership skills positively related

to employees IWB, whether rated by employees themselves or by their supervisors. Further, Carmeli and Spreitzer (2009) researched the factors that influence employees' IWB, including trust, thriving, and connectivity. After their analysis, they realized that connectivity mediates the relationship between trust and thriving while the connection between connectivity and IWB is mediated by thriving.

The third group of authors concern themselves about investigating the individual factors that promote IWB in organizations. This group of studies believe there are individual factors that influence, negatively or positively, the innovative work behaviors of employees in organizations. Some of the studies that investigated some of the individual factors that lead to employees' innovative work behavior are Kim and Lee (2013), and Madrid et al. (2014). For example, Kim and Lee (2013) investigated the relationships among goal-oriented, knowledge-sharing behaviors, and employee service IWB. They found positive relationships between knowledge collecting and IWB. This relationship was stronger than the positive relationships between knowledge donating and IWB. Further on this stream of research, Madrid et al. (2014) studied the interactional model of weekly activated moods, personality, and IWB.

The fourth and last stream of research identified in the literature concerns the organizational factors that promote employees' innovative work behavior in organizations. These studies argue that there are certain factors in organizations that either facilitate or impede the development of innovation and creativity in employees. Proponents of this research stream are Aryee et al. (2012), Agarwal (2014), Prieto and Perez-Santana (2014), Radaelli et al. (2014), Ren and Zhang (2015), Dhar (2016), and Javed et al. (2017). For example, Aryee et al. (2012) researched the link between transformational leadership and follower performance outcomes. From their analysis they realized that transformational leadership relates to follower's work engagement, which in turn relates to their IWB. In this study, they investigated the organizational factors that facilitate or impede IWB among employees. Further, Agarwal (2014) studied how contextual or organizational variables drive IWB through work engagement. They finally noted that organizational justice and trust related positively with work engagement which further significantly influences employees' IWB. Consistently, Prieto and Perez-Santana (2014) found from their empirical study that human resource practices that enhance the ability and opportunity of employees related positively with IWB but was facilitated or stimulated by support of management and fellow

workers. Another study within this research theme is Radaelli et al. (2014). They found a direct, indirect, and distal effect of knowledge sharing on IWB. In this article, they investigated how employees' knowledge sharing effects on their IWBs. Ren and Zhang (2015) added to this body of research by investigating how organizational innovation atmosphere and job stressors affect IWB. Their findings showed that the type of job stressors is key in driving employees' idea generation. To be specific, they realized that stressors that are viewed as challenges were positively related to idea formation while those that are considered to be hindrances related negatively to idea generation. Also, they noted that hindrance stressors influenced and facilitated the link that organizational innovation climate has with IWB. Finally, they found that the beneficial positive impact of organizational innovation climate gets weaker in relation to idea implementation but fully disappeared for idea formation when confronted with high hindrance stressors. Dear (2016) found that ethical leadership promoted employees' service IWB when mediated through leader-member exchange (LMX). They also realized that the level of IWB commensurate to the perception of employees' job autonomy. When assessing the influences inclusive leadership have on IWB in the textile industry in Pakistan, Javed et al. (2017) found that inclusive leadership positively related with IWB. Their findings showed that psychological safety mediates this relationship. Aside from that, it is realized that there are other studies that investigated both the individual and organizational factors that promote or impede IWB among employees of organizations.

2.4.1.4.1. Where Does This Study Fit in the Streams of Research Identified?

In the light of the research themes identified from the analysis, this research contributes to the research stream that argues that both individual and organizational factors can facilitate or impede the development of IWB in employees. With that, this study investigates how authentic leadership, social interaction, and perceived organizational support impact innovative work behavior in employees if positive affect-negative affect is controlled for.

2.4.1.5. Trending Articles in Employee Innovative Work Behavior Literature

In this section, the researcher ranked articles according to their Local Citation References (LCR) scores. The LCR is a metric used to measure the number of articles referenced by the article in question (Maditati et al, 2018). Here, articles are ranked

according to the number of articles they cited within the 508 publications used in this analysis. The most ranked articles according to this filtration and analysis process are highly relevant to the topic of research. The analysis yielded the following as the 14 most ranked articles according to their LCR scores:

Table 9. Top 10 Most Trending Articles in Employee Innovative Work Behavior Research

Number	Author/Date	LCS	LCS/t	LCR
1	Jan et al. (2021)	0	0	18
2	Battistelli et al. (2021)	0	0	17
3	Aldabbas et al. (2021)	0	0	17
4	Al-Ghazali and Afsar (2021)	0	0	16
5	Mustafa et al. (2021)	0	0	15
6	Ganji et al. (2021)	0	0	14
7	Li et al. (2019)	0	0	13
8	Stankeviciute et al. (2020)	0	0	13
9	Zuberi and Khattak (2021)	0	0	12
10	Amankwaa et al. (2021)	0	0	12

(TLCS: Total Local Citations Score; LCS/t: Average Local Citations Scores received per year; LCR: Local Citation References)

From Table 9**,** it can be noted articles that had the same LCR scores were ranked based on their TLCS scores. The analysis done in this section is necessary because it was used to ascertain or identify future research questions and directions in the field of IWB literature. The LCR is used as a metric for this analysis because it helps identify articles that are current and extremely relevant to the topic of analysis (Maditati et al, 2018). In conducting the process, the researcher obtained PDF copies of each of the articles ranked in Table 9 and read through them to obtain the list of future research direction suggested by each of them. The result of the process is presented in Table 25.

2.5. Employee Engagement

Employee engagement refers to the level of commitment and enthusiasm that an employee exhibits towards their organization and their work (Saks, 2006). The components of employee engagement can be broken down into three main categories: emotional, cognitive, and behavioral (Shuck et al., 2017). Emotionally engaged employees have positive feelings towards their work and feel a sense of pride in their organization.

Cognitively engaged employees are intellectually stimulated by their work, constantly learning and seeking to improve their skills. Behaviorally engaged employees take proactive steps to improve their organization, such as sharing new ideas or going above and beyond their job duties. Effective measurement of employee engagement requires a combination of surveys, interviews, and observation, as behaviors and attitudes may not always be reflected in survey responses alone. Additionally, it is important to note that disengaged or barely engaged employees can have a negative impact on an organization, including increased turnover rates and decreased productivity (Jiang & Men, 2017). By understanding and measuring employee engagement, organizations can work to build a more committed and successful workforce.

2.5.1. Bibliometric Analysis of Employee Engagement Using ISI Web of Science Data

The researcher found it important to use bibliometric analysis using the database of ISI Web of Science to review employee engagement literature. This review tried to achieve the following objectives: 1. Identify the major journals, impactful articles, and trending articles in the literature of employee engagement. 2. Assess how research in employee engagement evolves over time. 3. Uncover the underlying research streams in employee engagement literature, and 4. Identify the trending areas in employee engagement research.

2.5.1.1. Analysis Procedures

The researcher used ISI Web of Science database and the HitCite software in the analysis. During the literature search process, the researcher made a search using a search term “Employee Engagement” NOT Work Engagement. The first search produced 502 results. To make sure that each result is relevant to employee engagement, the researcher initiated the filtration stage. Only articles published in English language were considered. Also, only articles were collected and other forms of documents in the database such as books, reviews, and conference issues were filtered out. During the filtration, the researcher read at least the abstract of each result. For articles whose abstracts were not clear about their relevance to employee engagement, the researcher obtained a full PDF copy and read through them. The filtration resulted in only 383 articles being relevant to employee engagement out of the 502. The researcher downloaded the data into two documents. The

HitCite software takes up to 500 data items only per upload. After that, the document containing the list of our collection was processed and prepared appropriately for use in the software. The 383 articles were then used for the analysis in the software.

To answer the literature review questions, the researcher used the following processes. The various steps followed are shown in Figure 8.

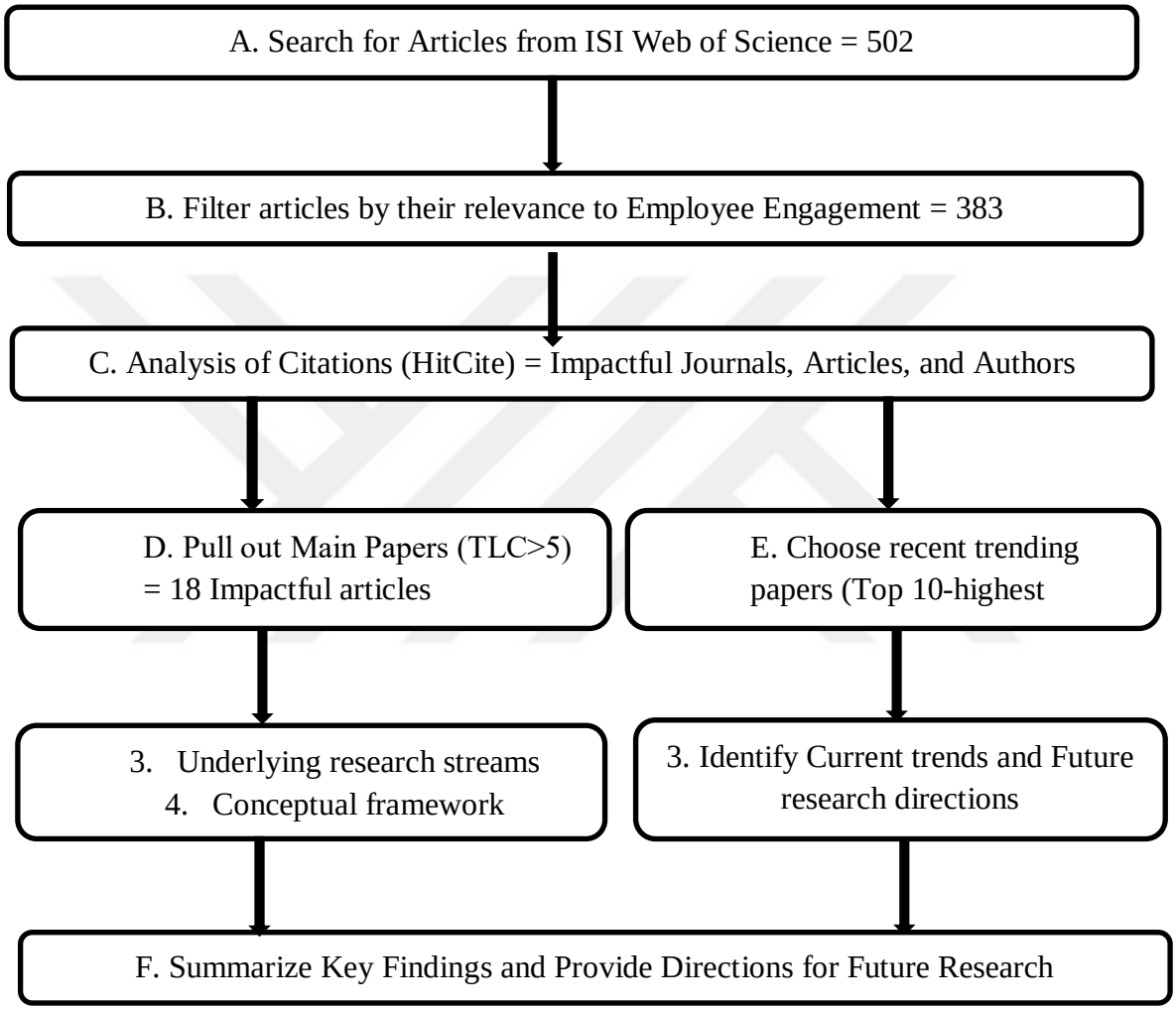

Figure 8. Outline of the steps taken to conduct the bibliometric analysis

2.5.1.2. Influential Journals Dealing with Articles on Employee Engagement

The analysis revealed that the "Public Relations Review" is the most influential and impactful according to the quantity of published articles on the topic per year. It has published 12 articles relating to employee engagement. This is surprising considering the supposed popularity of employee engagement. Another possible reason could be that employee engagement has been reduced to work engagement. In the second place is "South

African Journal of Human Resource Management" with 8 articles published in the area. The "Journal of Business Ethics" came third with only seven articles published over the period of analysis.

The "Journal of Applied Psychology" is the most influential journal in terms of the number of citations received from articles from the 383 collections. It has a citation score of 92, however with only one article published in the area. That is, the journal became the most impactful journal in terms of TLCS despite not being part of the top ten journals according to the number of articles published. In the second position is the "Public Relation Review". It has a score of 35 citations overtime. Coming in third position is the "Industrial Organizational Psychology- Perspectives, Science and Practice" with a citation score of 29 over the period.

Table 10. Influential Journals in Employee Engagement Literature

Ranked by Number of Articles Published				**Ranked by Total Local Citations**			
Rank	**Journal**	**Recs**	**TLCS**	**Rank**	**Journal**	**Recs**	**TLCS**
1	Public Relations Review	12	35	1	Journal of Applied Psychology	1	92
2	SA Journal of Human Resource Management	8	0	2	Public Relations Review	12	35
3	Journal of Business Ethics	7	6	3	Industrial and Organizational Psychology-Perspectives on Science and Practice	6	29
4	Cogent Business & Management	6	0	4	Human Resource Development Quarterly	3	26
5	Industrial and Organizational Psychology-Perspectives on Science and Practice	6	29	5	International Journal of Human Resource Management	6	22
6	International Journal of Human Resource Management	6	22	6	Human Resource Management Journal	4	13
7	Corporate Social Responsibility and Environmental Management	5	0	7	California Management Review	2	8
8	Global Business Review	5	5	8	Journal of Business Research	1	8
9	International Journal of Human Capital and Information Technology Professionals	5	2	9	Journal of Leadership & Organizational Studies	1	8

10	Pacific Business Review International	5	0	10	Journal of Business Ethics	7	6

Figure 9 displays the total annual number of articles published as well as citations in the employee engagement field.

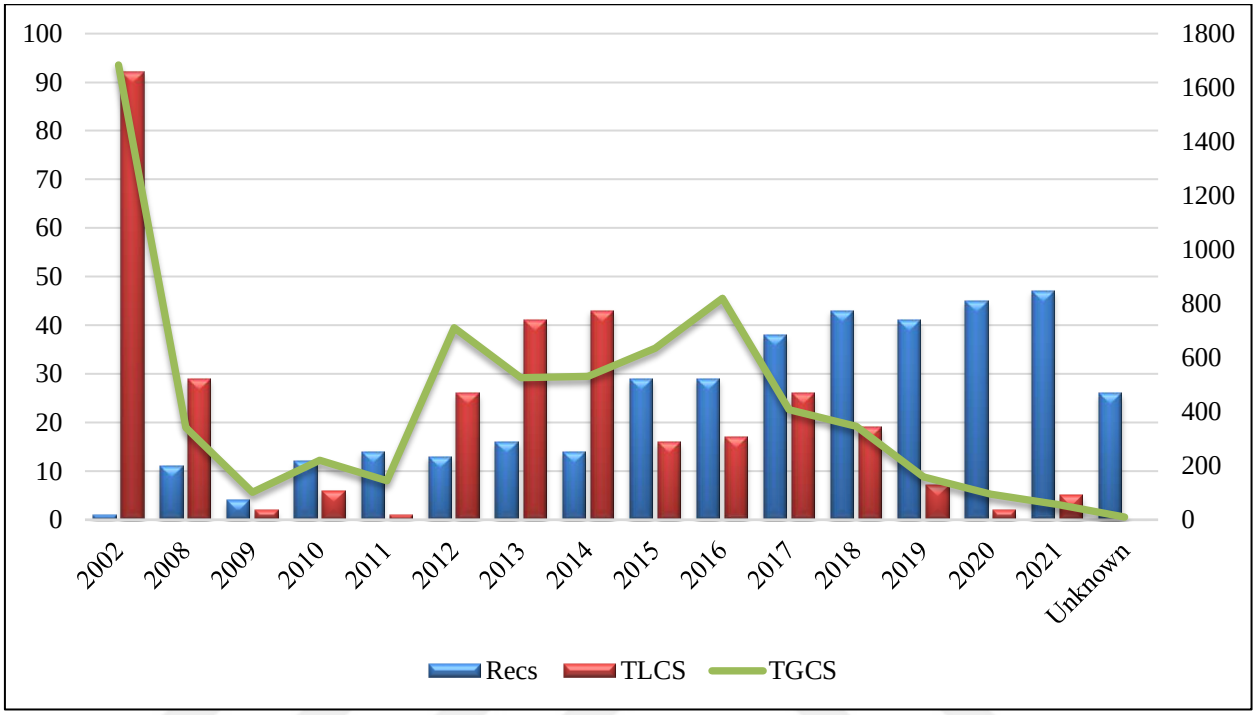

Figure 9. Number of Publications and Citations

(Recs – Number of Published Articles; TLCS- Total Local Citations Score; TGCS – Total Global Citations Score)

Figure 9 shows that there are more publications in the subject each year than there was the year before. That is consistent with the fact that cases of employee engagement become popular overtime. With regards to the number of citations received by articles from other articles out of the 383, it was high at 92 citations. Further, it reduces between 2008 to 2011. Thereafter, it increased for two years and started reducing. The total citations of articles received per year from other articles in the Web of Science database collection also took the same trend as the TLCS. It is high at 1684 citations in 2002, then decreases for the next four years. Then it starts to rise for some years and then consistently keeps reducing.

2.5.1.3. Influential Authors in the Field of Employee Engagement

In this section, the researcher examined how authors contributed to the evolution of the construct of employee engagement. In doing that, the analysis used the number of articles

published by authors in the area, the Total Local Citation Scores (TLCS) of authors, and the Total Global Citation Scores (TGCS) as the indicators for the ranking process. Table 11 shows the results of the analysis.

Table 11. Top Ten Most Influential Authors in Employee Engagement Research

Most Influential Authors in the Field of Employee Engagement														
No. of Articles Published					**Total Local Citation Scores**					**Total Global Citation Scores**				
No	**Author**	**Recs**	**TLCS**	**TGCS**	**No**	**Author**	**Recs**	**TLCS**	**TGCS**	**No**	**Author**	**Recs**	**TLCS**	**TGCS**
1	Shuck B.	6	15	181	1	Harter J.K.	1	92	1684	1	Harter J.K.	1	92	1684
2	Brunetto Y.	5	10	205	2	Hayes T.L.	1	92	1684	2	Hayes T.L.	1	92	1684
3	Farr-Wharton R.	4	10	188	3	Schmidt F.L.	1	92	1684	3	Schmidt F.L.	1	92	1684
4	Jiang H.	4	4	25	4	Saks A.M.	2	31	274	4	Kumar V.	3	6	367
5	Hameduddin T.	3	5	19	5	Gruman J.A.	1	21	211	5	Pansari A.	2	6	366
6	Kumar V.	3	6	367	6	Shuck B.	6	15	181	6	Saks A.M.	2	31	274
7	Lemon L.L.	3	1	9	7	Reio T.G.	2	13	165	7	Gruman J.A.	1	21	211
8	Men L.R.	3	6	71	8	Dhanesh G.S.	2	11	69	8	Brunetto Y.	5	10	205
9	Shacklock K.	3	10	188	9	Alfes K.	1	10	89	9	Bilgihan A.	1	0	202
10	Singh R.	3	1	4	10	Brunetto Y.	5	10	205	10	Kandampully J.	1	0	202

(Recs: Number of articles published; TLCS: Total Local Citations Score; TGCS: Total Global Citations Score).

From Table 11, the analysis revealed that Shuck, B. tops the lists of the ten most influential authors in employee engagement in terms of the number of articles published by authors. He published six articles in the area. In the second position is Brunetto, Y. with five articles published. Farr-Wharton, R. completed the top three influential authors in the field of employee engagement, with four articles published.

Further, the researcher assessed the influence of authors based on the number of citations received by each author from the lists of articles included in the analysis. Here, the top three authors have received the same TLCS scores. These authors are Harter, J. K., Hayes, T. L., and Schmidt, F. L. These co-authored an article that is highly influential in understanding the relationship between employee engagement, employee satisfaction, and

business outcomes. They scored a TLCS of 92. Shuck, B. came sixth with a TLCS of 15 even though he published the highest number of articles in the area.

Similarly, Harter, J. K., Hayes, T. L., and Schmidt, F. L. occupy the top three influential authors' positions according to the number of citations received from all articles in the ISI Web of Science database. They scored a TGCS of 1684. The rest of the top ten authors scored a TGCS between 202 and 367.

2.5.1.4. Citation Mapping and Content Analysis Based on Employee Engagement

In this section, an analysis was conducted to understand how the field of employee engagement has developed over time. In doing so, the researcher applied the "Graph Maker" tool on the HitCite software to conduct a citation map analysis. The tool facilitated the identification of key research streams by the researcher in the employee engagement research area (Maditati et al., 2018). Further, the analysis conducted identified key and influential articles in the research area. These publications facilitated the conduct of content analysis. This was necessary to help the researcher construct a theoretical framework of the theory of employee engagement. In the analysis, only articles with a total local citation score (TLCS) of 20 or more were chosen by the researcher. Even though many relevant articles have been gathered for the analysis, the TLCS scores of articles in the literature were low and produced few publications for the analysis. Due to that, the 5 and more TLCS cut-off was set for the ranking. Thus, the decision was meant to make the process comprehensive and usable. The filtration process produced 18 articles. Those 18 articles were the most cited and influential works within the employee engagement literature. They are therefore considered to be key in the evolution and development of the field.

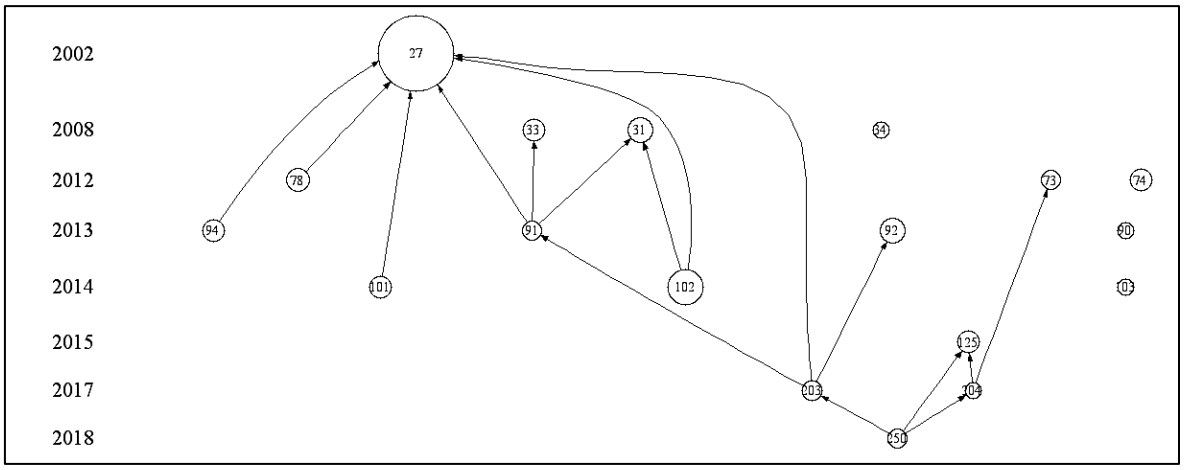

Figure 10. A Citation Map of the Influential Journals in Employee Engagement Literature

The citation map above shows the citation relationships between the 18 most influential articles in the field of employee engagement. These articles span between 2002 to 2018. They are considered to be critical to the evolution and development of the employee engagement literature. From the figure, if an article cites two other articles, it suggests that those three articles are related. It is realized from the graph that Masson et al. (2008), Mirvis (2012), Biswas et al. (2013), and Schuck et al. (2014) with their respective nodes 34, 74, 90, and 103 neither cited nor are cited by other articles in the pool of articles. The rest of the articles cited others or are cited by other authors in the list.

In Table 12, the researcher tried to understand the development of the employee engagement literature. In the process, the articles were analyzed based on three research streams such as: *Understanding the concept of employee engagement*; *Individual factors that promote employee engagement*; and *Organizational factors that promote employee engagement*. These streams of research were generated upon reading all the articles in the pool.

Table 12. Influential Journals in Employee Engagement (EE) Literature

ARTICLES	**RESEARCH THEMES**			**VARIABLES**	**NODES**
	Understanding EE	**Individual Factors that Promote EE**	**Organizational Factors that Promote EE**		
Harter et al. (2002)	Yes			-Employee satisfaction -Business outcomes	27
Saks (2008)	Yes			-A hunt for specific definition of the concept	31
Dalal et al. (2008)	Yes			-Cognitive affective construct	33

				-Putative dispositional antecedents -Behavioral consequences of behavior	
Masson et al. (2008)	Yes			-Operationalization of employee engagement	34
Men (2012)			Yes	-CEO credibility -Perceived organizational reputation	73
Mirvis (2012)			Yes	-Corporate social responsibility	74
Brunetto et al. (2012)		Yes	Yes	-Emotional intelligence -Job satisfaction -Well-being	78
Biswas et al. (2013)			Yes	-Organizational justice -Social exchange	90

Table 12. (continued) Influential Journals in Employee Engagement (EE) Literature

Reissner & Pagan (2013)			Yes	-Management communication activities -Employee experiences	91
Rees et al. (2013)		Yes	Yes	-Employee voice	92
Mengul et al. (2013)			Yes	-Autonomy -Supervisor feedback -Supervisor support	94
Schuck & Reio Jr (2014)		Yes	Yes	-Well-being -Psychological workplace climate	101
Saks & Gruman (2014)	Yes			-No consensus on the meaning of employee engagement	102
Schuck et al. (2014)		Yes	Yes	-HRD practices -Turnover intentions	103
Karanges et al. (2015)			Yes	-Internal communications	125
Ruck et al. (2017)			Yes	-Employee voice	203
Dhanesh (2017)	Yes			-Affective conceptions -Cognitive conceptions -Behavioral conceptions	204
Duthler & Dhanesh (2018)			Yes	-Corporate social responsibility -Internal corporate social responsibility communication	250

As seen in Table 12, the first stream of research identified in the literature is made up of authors who work to understand and clarify the meaning of employee engagement. These scholars are obsessed in understanding the concept of employee engagement clearly without doubts. These scholars believe that the concept of employee engagement, as a construct, must have a clear and a specific definition that is agreed upon by everyone in the area. They also concern themselves about how to operationalize the concept. Some of the proponents of this perspective are Saks (2008), Dalal et al. (2008), Masson et al. (2008), Saks and Gruman (2014), and Dhanesh (2017). For example, Saks (2008) called for a more precise definition of employee engagement. He noted that defining employee engagement as a multidimensional construct consisting of aggregate of older and more developed constructs blurs the meaning of the concept. He concluded by noting that employee engagement deserves a unique and a distinct meaning with role specific. With that measuring and operationalizing the concept becomes easier and clearer. Consistently, Dalal et al. (2008) also recommend modification of the definition of employee engagement by Macey & Schneider (2008). They noted that the definition provided only constitutes engagement suggesting that (1) engagement constitutes both trait-like and state-like elements and (2)

engagement is a cognitive-affective construct. They concluded by arguing that making modification to the definition of employee engagement by Macey & Schneider (2008) is critical since it allows for a more useful conceptualization of employee engagement, as a construct. Further, Masson et al. (2008) noted that the definition of employee engagement by Macey & Schneider (2008), through their article, was timely, arguing that it will allow for studies on its antecedents and consequences and also allow them to be comparable and complementary. However, they called for better developed measures of employee engagement and a more complete understanding of its implications. Moreso, Saks and Gruman (2014) acknowledged that there were still a number of issues with relation to the theory, measurement, and overall meaning of employee engagement. They provided a philosophy of employee engagement founded on the Job Demands-Resources (JD-R) Model and the Theory of Engagement (Kahn, 1990). Nonetheless, they noted in their conclusion that there remains a disagreement over the definition of employee engagement because the most widely used indicator of employee engagement continues to be plagued by validity concerns. The concept of employee engagement is still facing several problems irrespective of where it is applied. Dhanesh (2017) also conceded that there are still problems regarding the clarity of the concept of engagement when engagement was applied to the field of public relations. In a nutshell, all the studies identified above tried to understand and clarify the meaning of employee engagement as a construct.

The second group of authors concern themselves about investigating the individual factors that promote employee engagement in organizations. These groups of studies believe there are individual factors that the engagement of employees in organizations. Some of the studies that investigated some of the individual factors that lead to employee engagement are Brunetto et al. (2012), Rees et al. (2013), Schuck and Reio Jr. (2014), and Schuck et al. (2014). Brunetto et al. (2012) is one of the studies that explored how individual factors or variables related to employee engagement. They analyzed the relationships among emotional intelligence, job satisfaction, well-being, organizational commitment, and turnover intentions and how they relate with employee engagement. The researchers realized that those individual variables have significant relationships with employee engagement, whether negatively or positively. This result is similar to what Rees et al. (2013) found about the role of individual factors in employee engagement. They realized that employee voice has both direct and indirect impacts on employee engagement. Both employee confidence in top management and relationships between employees and line managers were shown to

encourage those linkages. Further, Schick and Reio Jr. (2014) looked at whether employee involvement affected the links between psychological workplace climate and personal successes, depersonalization, emotional weariness, and psychological well-being.

The third and last stream of research identified in the literature concerns the organizational factors that promote employee engagement in organizations. These studies argue that there are certain factors in organizations that either facilitate or impede the development of engagement and commitment to organizations by employees. Proponents of this research path are Men (2012), Mirvis (2012), Biswas et al. (2013), Reissner and Pagan (2013), Mengul et al. (2013), Karanges et al. (2015), Ruck et al. (2017), and Duthler and Dhanesh (2018). Aside from that, it is realized that there are other studies that investigated both the individual and organizational factors that promote employee engagement in organizations.

2.5.1.4.1. Where Does This Study Fit in the Streams of Research Identified?

This study has a place in the list of research streams identified from the analysis. This research fits in with the research theme that argues that both individual and contextual or organizational issues impact the development of employee engagement, whether positively or negatively. Based on that, this study investigates how authentic leadership, social interaction, and perceived organizational support influence the engagement of employees.

2.5.1.5. Trending Articles in Employee Engagement Literature

In this section, the researcher ranked articles according to their Local Citation References (LCR) scores. The LCR is a metric used to measure the number of articles referenced by the article in question (Maditati et al, 2018). Here, articles are ranked according to the number of articles they cited within the 383 publications used in our analysis. The most ranked articles according to this filtration and analysis process are highly relevant to the topic of research. The analysis yielded in Table 13 as the 10 most ranked articles according to their LCR scores.

Table 13. Top 10 Most Trending Articles in Employee Engagement Research

Number	Author / Date	LCS	LCS/t	LCR
1	Lemon & Macklin (2021)	0	0	8
2	Alagarsamy et al. (2021)	0	0	7
3	Lemon (2019a)	0	0	7
4	Lemon (2019b)	1	0.33	7
5	Schohat & Vigoda-Gadot (2010)	0	0	6
6	O'Connor & Crowley-Henry (2019)	0	0	6
7	Kumar & Padhi (2021)	0	0	5
8	Ruck et al. (2017)	7	1.4	5
9	Men et al. (2020)	0	0	5
10	Shuck et al. (2021)	0	0	5

(TLCS: Total Local Citations Score; LCS/t: Average Local Citations Scores received per year; LCR: Local Citation References)

From Table 13 above**,** it can be noted articles that had the same LCR scores were ranked based on their TLCS scores. The analysis done in this section is necessary because it was used to ascertain or identify future research questions and directions in the field of employee engagement literature. The LCR is used as a metric for this analysis because it helps identify articles that are current and extremely relevant to employee engagement literature (Maditati et al, 2018). In conducting the process, the researcher obtained PDF copies of each of the articles ranked in Table 13 above and read through them to obtain the list of future research direction suggested by each of them. The result of the process is presented in Table 26.

2.6. Relations Among Research Variables and Hypotheses

In this subsection, the study explores the relationships that exist among the various variables under consideration in this study. Further, the various hypotheses are developed under this section.

2.6.1. Authentic Leadership and Innovative Work Behavior (IWB)

Several studies recognized that innovation is significant and has a great influence on organizational success and survival (Chen & Huang, 2007). It has been suggested that there is a substantial correlation between effective leadership and employees' creative work

practices. Carapiet (2006) noted that the responsibility of the leader is to push the organization and its people towards the edge of chaos and compels it to innovate in order to adapt and survive. However, most studies on innovation of employees do not address much of the macro-level factors such as leadership that predicates innovative work behaviors (Standing et al., 2016). In recent years, however, many efforts have been made to establish the roles of leadership in promoting innovative behaviors among employees.

Researchers have maintained that top management support and involvement is vital for promoting innovation and IWB. This is because innovative work behavior has become an important element in the innovation processes of both organizations with innovation departments and those without one (Laguna et al., 2019). Also, innovative work behavior is a means of gaining competitive advantage according to the human capital theory (Galovská, 2015). With this, most of the different types of leadership styles have been tested on how they contribute to the stimulation of employee innovation work behavior with the macro environment of organizations. Empirical findings revealed the existence of a substantial positive influence of entrepreneurial leadership on employees' innovative work behavior (Li et al., 2020). This is one of the pieces of evidence that suggests that leadership is critical in promoting innovativeness of employees. Consistent with this view, Afsar and Umrani (2019) found innovative work behavior among workers was positively impacted by transformational leadership.

There has been some amount of work on the link between authentic leadership and employee innovative work behavior. One of the main responsibilities of the authentic leader is to stimulate innovative behaviors among their followers. Laguna et al. (2019) found that authentic leaders are able to instill higher personal initiatives among employees which further make them exhibit their innovative work behaviors through a multilevel analysis of the relationship between team leaders' authenticity and their followers' personal initiative. As a result, they came to the conclusion that leadership development, enhanced subordinate-leader relationships, and increased employee initiative and engagement at work may all encourage innovative behavior among employees. This study was unable to establish a link between staff innovation and authentic leadership, nevertheless. According to Černe, Jaklič and Škerlavaj's (2013) examination of a hierarchical linear model, perceived team leaders' authenticity has a direct impact on both the individual and collective creativity of their team members. The limitation of this study is that the authors did not include other contextual

variables. Although the findings from this research did not fully support all of the theorized direct and cross-level impacts of authentic leadership on individual creativity and team innovativeness, they do not in any way imply that this relationship is unaffected by other contextual factors at the team or even organizational level.

From the above, the research on how authentic leadership is associated with employee innovative work behavior suggests that leaders who are authentic are effective in promotion innovation. These are the arguments of the authentic leadership theory. However, it is not clear how authentic leaders will deal with the diversity of organization people. Thus, how will authentic leaders deal with or take advantage of the diverse cultures of their followers to promote innovation among them? Can the authentic leader be effective by staying true to his/her values while facilitating innovation through the acceptance of the authenticity of their followers? This research therefore hypothesizes the following:

H1: Authentic leadership positively related with employee innovative work behavior.

2.6.2. Authentic Leadership and Employee Engagement

The survival and success of every organization depends upon how it manages its resources effectively. Developing, managing, and engaging the human resources is critical in attainment of organizational goals (Mufeed, 2018). Antony (2018) noted that leadership plays an important part in maintaining and engaging the competent employees of organizations. Improved employee engagement has been connected to a variety of leadership philosophies. For example, a study of 422 employees in information technology companies by Wang et al. (2016) noted a positive link between transformational leadership and work engagement. Another study that confirmed this position is Milhem et al. (2019). The researcher analyzed data from 338 Palestinian employees and found transformational leadership to have a significant impact on employee engagement. Also, servant leadership has been found to be connected positively with employee engagement as shown in Coetzer et al. (2017) and Riyadi et al. (2020). Bao et al. (2018) also a similar result when they analyzed 216 employees of the public sector of India. Furthermore, ethical leadership has been linked to employee engagement. This position is posited by Lin & Liu (2017) after they studied banking sector employees in Taiwan. They found ethical leadership and corporate social responsibility to promote employee engagement by reducing turnover intentions among them. Studying workers of public accounting companies in Jakarta, Rantika &

Yustina (2017) found ethical leadership to increase employee engagement through employee's psychological empowerment. Other studies that are consistent with these results are Demirtas et al. (2015), Lu & Guy (2014), Ahmad and Gao (2018), and Otieno et al. (2019).

Authentic leadership has also been linked to employee engagement, according to the body of literature (Winton et al., 2022). By examining 80 leaders from the Gambia, Njie (2020) concluded that authentic leadership is strongly and positively connected with employee engagement. Similarly, Oh et al. (2018) postulated that authentic leadership has a direct effect on employee engagement and that practicing core values partially mediates their relationship. Also, a study on members of the military units of Spain by Álvarez et al. (2019) showed that leaders with authenticity promote employee engagement through social identification with the military units of the participants. Başaran & Kıral (2020) also realized that school administration's authenticity in leadership promoted employee engagement from the 300 teachers surveyed in their study. Finally, authentic leadership was also noted to correlate with employee engagement directly and indirectly with the facilitation of psychological empowerment irrespective of the levels of role clarity in organizations (Towsen et al., 2020). Due to the above, this study hypothesizes that:

H2: Authentic leadership is positively related to employee engagement.

2.6.3. The Mediating Role of Social Interaction

There has been numerous evidence in management and social science literature that social interaction is a key component of the vehicle that drives organizational and societal success (Ragins & Dutton, 2007). It is not easy to define social interaction. But, to meet the purpose of this research, the researcher will try to describe it according to what the literature has seen it to be. Social interaction can be seen as the interaction between and/or among members of an organization in terms of trust, communication, and coordination (Chen & Huang, 2007). The degree to which members of organizations trust, coordinate, and communicate with one another in the performance of their job roles can be considered as social interaction.

To understand the concept of social interaction further, it is appropriate to assess its components. Chen and Huang (2007) suggest that organizational people relate with one

another in terms of trust, communication, and coordination. In terms of trust, members of organizations interact among themselves due to the trust that exists among them. This suggests that without trust, the extent to which people relate with one another will be minimal or even no interaction at all. In the light of trust, individuals are more likely to exchange and share information and ideas with trustworthy colleagues. In terms of communication, it is noted that the wider the communication channel the more likely workers interactions with other members are facilitated (Lechlar, 2001). This suggests that critical information and ideas are easily exchanged among organizational members. The reverse is true if the communication channel among members is not wide. In this sense, the part of organizational knowledge and information stored in the memories of workers are not fully exchanged among members of the organization (Huang & Li, 2009). In regards to coordination, the more workers feel the organization is well structured and organized the more they will interact and share information and knowledge (Chen & Huang, 2007). Strong coordinative behaviors reduce boundaries among different departments and allow organizational members to freely share and form common interests for the benefit of the organization.

Contributing to the understanding of social interaction, Chua (2002) argues that there are three dimensions to the concept. There are: structural, relational, and cognitive dimensions. The structural dimension emphasizes the physical and/or impersonal structure created to link people and units within the organization. It involves the structural and physical configurations made to socially connect members of the organization. Chow and Chan (2008) believe that the connection among members of the organization gives them the chance to share necessary information and knowledge. Relational dimension refers to the links developed by individuals and persons through historical interactions with others. These bonds, which are personal in nature, are the outcome of shared responsibility, cooperative rules, and a feeling of collective identity (Chow and Chan, 2008; Chua, 2002). That is the interactions resulting from previous relationships among organization members amount to relational dimension of social interaction. The last dimension of social interaction (cognitive) relates to other resources of the organization that bring all members and units together as a unified entity. Thus, those things that make organization members share similar representations, interpretations, and a system of meaning are classified as part of the cognitive dimension. The shared norms, values, artifacts, and strategies are all encompassed in the cognitive dimension of social interaction.

Literature in management, organization, and social science have considered social interaction to be a key driver of employee innovative behaviors within organizations (Pooja et al., 2016). Lechlar (2001) believes that the level of social interaction within members of entrepreneurial organizations plays a key role in their successes. Consistent with this, Pooja, Clercq and Belausteguigoitia (2016) concluded in their study that social interaction reduces the inherent pitfalls of job stressors and hence leads to higher organizational citizenship behaviors.

2.6.3.1. Authentic Leadership and Social Interaction

The relationship between leadership and social interaction has been seen to be direct and positive within the organization (Lechlar, 2001). Authentic leadership is credited with the capability of breeding strong and unique organizational communication among members. This is in line with the ideas put out by Men and Stacks (2014) who believe that authentic leadership is a prerequisite and is crucial to the development of an organization's communication system. Jiang and Men (2017) noted that authentic leadership promotes and increases the amount of trust among individuals that in turn improves interaction and communication within the organization. With this, it is clear to note that the relational transparency aspect of authentic leadership urges leaders to be transparent in their relations with others. Living by example, authentic leaders inculcates relational transparency among their followers (Nkwabi, 2019). Social interaction is facilitated when there is a high rate of relational transparency.

The balanced processing component of authentic leadership is critical in stimulating smooth communication among leaders and fellow followers within the organization (Yagil & Medler-Liraz, 2014). Complexity scholars believe that the authentic leader or any other effective leadership form has the capability to set an organization environment conducive for higher social interaction (Carapiet, 2006). This is the critical difference between effective leadership and ineffective ones according to them (Blomme, 2012). This suggests that the ability of authentic leaders and their followers to listen and accept divergent views during their interactions with others will strengthen social interactions in organizations. Akhtar et al. (2021) found in their study that authentic leadership is positively related to team leader performance in public and private universities in Pakistan. Furthermore, the study showed that social capital moderates the relationship between authentic leadership and team leader

performance, with the positive impact of authentic leadership being stronger among employees with high social capital. This suggests that social interaction and connections within the workplace play an important role in facilitating the impact of authentic leadership on team leader performance. The study provides evidence of the importance of considering social capital and interaction in understanding the impact of authentic leadership in organizations.

Per the association between authentic leadership and social interaction, much research has not been carried out about how authentic leaders promote employee innovative work behavior by creating and stimulating an extensive social interaction among followers. To put it differently, this research tried to further assess the mediating role of social interaction on the authentic leaders' efforts to enhance innovative behaviors in their workers. Leadership is critical in the successful operation of organizations. Research suggests that organizations' leadership are responsible for creating an internal environment that facilitates the formation of quality relationships and interactions among employees of organizations (Pooja et al., 2016).

H3a: Authentic leadership positively related with social interaction.

2.6.3.2. Social Interaction and Employee Innovative Work Behavior

Innovation is an important component of an organizational survival process. That is, organizations must innovate if they want to survive in today's turbulent and dynamic business environment (Carapiet, 2006). It is argued in management and organizational literature that the individual contributes a lot to the innovative efforts of the organization (Wang et al., 2015).

The interactions between and/or among organizational individuals are valued and are always encouraged. The ability of an organization to undertake innovation can be facilitated or marred by the nature of interactions or relationships among its individuals. Organizations with positive employee interactions are easily able to generate and implement innovative ideas for better performance (Froehlich & Messmann, 2017). This point is supported by the Social Exchange Theory (SET) (Blau, 1964) that suggests that the interactions between employees create, facilitates, and fosters innovative behavior among employees.

The level and nature of interactions in the organization impacts the success or otherwise its innovative efforts. Positive relationships among organizational individuals promote the generation of innovative ideas in organizations. Trust is a key component of the concept of social interaction (Chen & Huang, 2007) that facilitates the ability of employees to explore and share innovative ideas with everyone in the organization. Without trust among employees, there will not be strong and healthy relationships among them. Due to that, they will struggle when trying to brainstorm new ways of doing things. Also, employees who do not trust their leaders are most likely to be poor in generating innovative ideas. Diehl & Seeck (2008) reviewed the research on factors that affect employee innovativeness at work, based on 15 peer-reviewed journals and other materials published between 2000-2005. The review discusses individual, job, team, and organizational factors that have been identified as influencing innovativeness in organizations. The review found that positive social interaction, through information sharing and coordination, is an antecedent of employee innovativeness. Further, it is argued that employee social interactions promote belongingness (Xing & Li, 2022), that in turn lead to exploratory innovation among employees (Özsungur, 2020). Drawing from that, Özsungur (2020) investigated the relationship between workplace belongingness and exploratory and exploitative innovation in the IT industry. The research involved 91 executives from IT businesses registered to Adana Chamber of Commerce in Turkey in December 2019. The data was analyzed using structural equation modeling based on social exchange and organizational change management theories. The study found that workplace belongingness has a positive and significant impact on both exploitative and exploratory innovation in the IT industry. Social interaction promotes and encourages coordination and collaboration (Chen & Huang, 2007), that further promote information sharing and finally employee innovation (Zoghi et al., 2010). This viewed is supported by a study that examines the relationship between work organization, such as decentralization, information sharing, and incentive pay schemes, and innovation in Canadian establishments. Although previous research has shown a positive correlation between these factors and innovation, this study suggests that the relationship may not be causal. The study found that the correlation between workplace organization and innovation was stronger for information-sharing but weaker for decentralized decision-making or incentive pay programs (Zoghi et al., 2010).

H3b: Social interaction positively related with employee innovative work behavior.

2.6.3.3. Social Interaction and Employee Engagement

The relationship between internal stakeholders' social interaction and employee engagement cannot be overstated. It is reported that in an internal organizational environment where employees and other stakeholders interact highly, employee engagement is high. Chen and Hartog (2007) believe that social interaction results in strong communication, trust, and strong relationships.

Based on this, existing research purported that strong internal communication within organizations is key to the effective and efficient use of the resources of organizations including employees. Key information regarding job performance and the entire operations of organizations is easily transmitted if there are effective internal communications. The more people communicate among themselves the more they are engaged in their organizations. Quality internal communication helps create a lively environment for employees to perform as expected. Welch (2011) discovered that employee engagement is significantly influenced by internal business communication. Therefore, it is recommended for corporate leaders to carefully handle the communication needs of their employees. The findings of Welch (2011) are consistent with the view of Kahn (1992), who purported that communication is one of the underlying factors that impacts employee performance and well-being through employee engagement.

Trust is an important element of every effective organization. Increased amounts of interpersonal trust within a company are correlated with engaged workers (Hassan & Ahmed, 2011). Dirks and Ferrin (2002) noted that previous research found that increased levels of trust directly and/or indirectly impacts positive attitudes and behaviors at the workplace including employee engagement. Ugwu et al. (2014) also noted that organizational trust positively influenced on employee engagement through employee psychological empowerment. Trust has been noted to have a connection with effective teamwork (Jones & George, 1998), increased performance levels (Dirks, 2000), innovation, profits, and the survival of organizations (Shockley-Zalabak et al., 1999). Further, scholars credit trust for allowing employees of an organization to work with their hearts out and even perform beyond the requirements of their job roles with no further benefits (Ugwu et al., 2014). This relates closely to the phenomenon of ‘employees going the extra-mile’ that Schaufeli and Bakker (2010) consider to be a critical element of employee engagement. Further, a study by Mastroianni & Storberg-walker (2014) showed that workplace

interactions have the potential to affect employee well-being, health behaviors, and engagement. Positive interactions characterized by trust, collaboration, and respect can enhance feelings of well-being, while negative interactions lacking these traits and including injustice and lack of empathy can have a negative impact. These interactions could manifest as physical symptoms and can affect various aspects of life, such as sleep, eating habits, socializing, exercise, relationships, careers, and energy. To promote employee engagement, workplaces should be safe both physically and psychologically to encourage well-being and healthy behavior. Moreso, Ariani (2015) investigated how supervisor relations, co-worker relations, psychological conditions, and employee engagement are interrelated. It found that psychological conditions have a mediating effect on the relationship between good relations with co-workers and supervisors and employee engagement. This indicates that positive workplace relationships can have an indirect influence on employee engagement by affecting the psychological conditions of employees. In conclusion, the study confirms the idea that having positive relationships at work and social interaction can enhance employee engagement.

H4a: Social interaction positively related with employee engagement.

2.6.4. The Mediating Role of Perceived Organizational Support (POS)

Research in management and organization shows that humans are an important element of the organization. The Human Capital Theory suggests that the people are a main source of competitive edge and success for the organization (Sun, 2019). Human capital is of great concern to scholars of organization and management. Organizations that outcompete their rivals in the business environment are those who differentiate themselves through their unique human capital. Scholars and business professionals have emphasized the need for organizations to gain the trust of their employees so that they can get the best out of them. There is no universal definition for perceived organizational support in the literature. The construct of perceived organizational support was shaped in part by the Organizational Support Theory. According to the theory, employees form opinions about how much their employer values, approves, and supports their contributions (Rhoades & Eisenberger, 2002). With this, employees determine the readiness of their organizations to reward their increased work efforts by reflecting on the beliefs formed about the organization based previous actions of managers of the organizations.

2.6.4.1. Authentic Leadership and Perceived Organizational Support (POS)

The Authentic Leadership Theory suggests that a leader must be open and authentic to his or her core values and beliefs (Nikolić et al., 2020). It is argued that leaders who are authentic gain the trust and support of their followers easily because they are easily understood by their followers. In fact, being authentic helps leaders to develop the authenticity of their followers (Gardner et al., 2005). Because of this, authentic leaders effectively affect the actions of their followers.

The idea of perceived organizational support is intimately tied to authentic leadership. This is evident in the findings of Scheepers and Vermeulen (2020). The researcher found that authentic leadership promotes perceived organizational support among employees of international information technology organizations. Consistently, Baykal (2020) noted a similar result in an empirical study on 255 employees about whether authentic leadership positively impacted their perceptions of whether their organizations value their contributions to its performance, success, and survival. Perceived organizational support and authentic leadership have a good working connection. Leaders' support is an antecedent of POS (Hakeem & Nisa, 2016). Employees and followers perceived their leaders as being supportive if the leaders are authentic. That is, exhibiting relational transparency and balanced processing, the authentic leader supports his/her followers to be authentic as well thereby leading to higher POS among organization individuals (Jian, Wang & Tong, 2017; Yagil & Medler-Liraz, 2014). Here, the leaders are representatives of the organization, hence their support for their followers through their authenticity breeds higher POS among members of the organization.

Authentic leadership promotes cooperation and collaboration among members of the organization. As a result, authentic leaders are able to foster a work atmosphere that encourages employee support of one another (Hakeem & Nisa, 2016). Coworker support is an important component of POS. In this study, the researcher will investigate further the extent of the relationships. Authentic leadership promote an organizational environment that is conducive for employees to be authentic (Gardner et al., 2005). With that, employees form perceptions that they are valued by the organization as they are. As a result, there will be a strong perception of organizational support inside the company. That would be advantageous for the organization's success. Considering the foregoing, this study aims to look into the following:

H5a: Authentic leadership positively related with perceived organizational support.

2.6.4.2. Perceived Organizational Support (POS) and Employee Innovative Work Behavior

Organizations yearn for success in their environments. A keyway to achieve that is through continuous innovation. That gives them the ability to keep up with their competitors and the changing environment. To achieve innovation, organizations must have committed employees who can generate, process, and implement innovative ideas (Prieto & Perez-Santana, 2014). Individual or employee innovation is critical to organizational innovation. In literature, organizations are recommended to promote and facilitate the perception of their employees regarding how they value their contributions to the organization (Eisenberger et al., 2016). Doing that helps them keep their employees committed, engaged, and ready to undertake innovation in their jobs.

Positive or higher perceived organizational support promotes employee's innovative work behaviors. This is evident in the findings of Afsar and Badir (2017) who found a direct, positive, and significant effect of POS on the innovative work behaviors of employees. This conclusion is based on an empirical survey of 434 workers and 54 supervisors from five of China's top hotels. Abid et al. (2015) indicate that there is a connection between perceived organizational support and innovative work behavior, which is mediated by the concept of "thriving at work" - a positive psychological state where individuals experience a sense of vitality and learning. The study provides evidence supporting this relationship, indicating that employees who feel that their organization supports them are more likely to thrive at work, which in turn leads to increased innovative work behavior. The study's findings are significant for both theory and practice and help us better understand the relationship between perceived organizational support and innovative work behavior. Similarly, Doğru (2018) indicates that there is a positive relationship between perceived organizational support and innovative work behavior among individual employees. The study used a multilevel lens to measure perceived support, which includes support from the organization, supervisor, and peers. The results suggest that perceived organizational support has the most significant impact on innovative behavior, and employees who perceive high levels of support from their organization are more likely to engage in innovative behavior. Further, perceived organizational support has been found to have a positive impact on employees'

innovative work behavior in the food and beverage sector in Egypt (Sulaiman et al., 2019). This was confirmed by testing two hypotheses that evaluated the positive impact of perceived organizational support and perceived supervision support on innovative work behavior, both of which were fully supported. The study used a semi-structured interview with managers and a questionnaire with employees from SMEs in the sector, and data was analyzed using regression analysis and structural equation modeling. Consistently, a study conducted by Agarwal (2014) on 510 managers from two service organizations in Western India, perceived organizational support (POS) positively relates to innovative work behavior (IWB). This relationship is moderated by leader-member exchange (LMX), and work engagement mediates the relationship between LMX, POS, and IWB. The study highlights the importance of understanding employee motivation, especially in the context of multinational companies operating in India, and makes significant contributions to knowledge about work engagement, LMX, POS, and IWB. Choi et al. (2021) studied how self-efficacy and perceived organizational support affect the relationship between leader-member exchange and innovative behavior. The study used survey data from employees in South Korea and found that leader-member exchange enhances innovative behavior by increasing self-efficacy. The study also suggested that perceived organizational support positively moderates the relationship between leader-member exchange and self-efficacy, which in turn affects innovative behavior. In simpler terms, the study shows that if employees have strong relationships with their leaders and feel supported by their organization, they are more likely to believe in their own abilities to innovate and engage in innovative behavior. Based on the above, it is hypothesized that:

H5b: Perceived organizational support positively related with employee innovative work behavior.

2.6.4.3. Perceived Organizational Support (POS) and Employee Engagement

The business environment today is turbulent and uncertain for both organizations and their employees (Carapiet, 2006). The environment forces organizations to undergo changes that are sometimes detrimental to their employees. For example, takeovers, mergers, and technology usage are common and here to stay. These pose problems for employees regarding their job security and overall well-being. This causes issues of trust between employers and employees (Eisenberger et al., 2016).

The theory of perceived organizational support recommends that organizations take deliberate steps to manage the perception of their employees about how they perceive their contributions to their performance and survival (Eisenberger et al., 1986). Organizations that manage the POS of their employees will see their employees getting committed and engaged to them. Dai and Qin (2016) found a significant, direct, and positive impact of perceived organizational support on employee engagement. Their opinion is based on the empirical study they conducted on 350 employees in 28 provinces of China. Consistently, Nguyen and Tran (2021) revealed a strong and positive influence of perceived organizational support on employee engagement. This is based on their investigation about how POS affected employee engagement among 216 corporate workers in Vietnam during the COVID-19 outbreak. In another study, Amri and Putra (2020) investigated the effects of both perceived organizational support and psychological empowerment on employee engagement among 230 administrative employees of a public hospital in Indonesia. They realized that perceived organizational support relates directly and significantly with employee engagement. Similar to the above, Saeed & Hussain Ch. (2021) suggests that there is a relationship between perceived organizational support (POS) and work engagement (WE) among secondary school teachers in public schools of Punjab, with higher levels of POS leading to higher levels of WE. The study found that POS has a significant positive effect on WE and that it explains 30.9% of the variance in work engagement. Therefore, the study suggests that organizations can improve employee engagement by increasing their perceived organizational support. Bonaiuto et al. (2022) a positive relationship between perceived organizational support and employee engagement. Specifically, when supervisors and coworkers provide more support to employees, it leads to increased work engagement. However, this effect is only observed among employees who have low or medium identification with the organization, not among those who are highly identified. Organizational trust plays a key role in mediating this relationship, as it helps to enhance work engagement and reduce psychosocial risks.

H6a: Perceived organizational support positively related with employee engagement.

According to literature given above, the research model of the study is as follows:

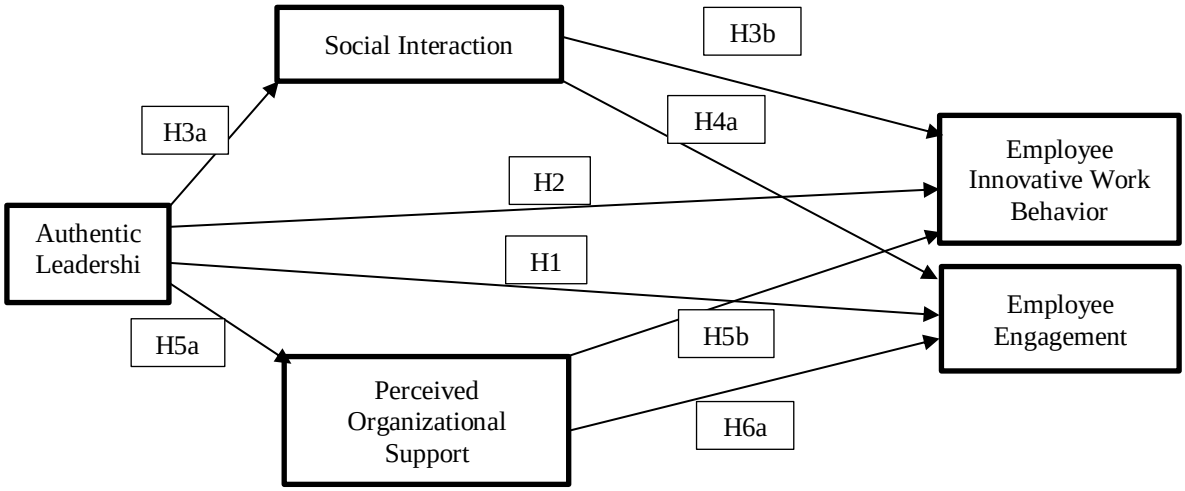

Figure 11. Conceptual Model of the Study

Hypotheses:

H1: Authentic leadership positively related with employee innovative work behavior.

H2: Authentic leadership positively related with employee engagement.

H3: The relationship between authentic leadership and employee innovative work behavior is mediated by social interaction.

H3a: Authentic leadership positively related with social interaction.

H3b: Social interaction positively related with employee innovative work behavior.

H4: The relationship between authentic leadership and employee engagement is mediated by social interaction.

H4a: Social interaction positively related with employee engagement.

H5: The relationship between authentic leadership and employee innovative work behavior is mediated by perceived organizational support.

H5a: Authentic leadership positively related with perceived organizational support.

H5b: Perceived organizational support positively related with employee innovative work behavior.

H6: The relationship between authentic leadership and employee engagement is mediated by perceived organizational support.

H6a: Perceived organizational support positively related to employee engagement.

3. METHODOLOGY

3.1. Introductıon

This chapter discusses the method used in carrying out the study. It details the sampling method, measurements, data gathering technique, and data analysis in particular.

3.2. The Method of Research

This study sought to determine if social interaction and perceived organizational support were mediating factors in the links between innovative work behavior, authentic leadership, and employee engagement. Using a quantitative non - experimental approach, these correlations were tested. In order to achieve such, instruments that had been adapted and validated from pertinent literature were used to assess the test variables. Suitable statistical techniques were used to examine the data acquired, as will be covered in more detail in the following sections. This study's level of analysis is at the personal level. This is as a result of the fact that all of the theoretical constructs examined in the study were centered on how employees perceived the existence or character of the constructs under consideration in their specific firms.

The research design adopted is the survey approach. With social interaction and perceived organizational support serving as the mediating variables, and employee innovative work behaviors and engagement serving as the dependent variables, this is an easy way to measure and explore the relationships among the research variables. The independent variable is authentic leadership. Survey design is advantageous in many ways. First, the design is simple and economical (Creswell, 2009). Due to that, there is an opportunity to collect and analyze data expeditiously. Moreover, it lessens the risks to internal validity posed by problems with history, attrition, and maturation. This is because the data may be easily gathered without having to be longitudinally collected or tested before and after (Mitchell & Jolley, 2001). By utilizing verified measurement tools with proven reliability coefficients from the research literature, measurement problems were also reduced to a minimum. Moreso, self-reporting measures were not used to gather data on the levels of authentic leadership in leaders to avoid potential self-assessment bias (Kerlinger & Lee,

2000). Issues of selection biases were addressed through the research design. It employed purposive sampling.

3.3. Operationalization

Creswell (2009) noted that stating how research variables are operationalized enhances the accuracy and efficacy of the research process. For the purpose of this study, authentic leadership is operationalized as a construct that is made up of unique behaviors of leaders "as a pattern of leader behavior that draws upon and promotes both positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers, fostering positive self- development." (Walumbwa et al., 2008). Employee innovative work behavior is operationalized as a behavioral construct that measures "an individual's behavior that aims to achieve the initiation and intentional introduction (within a work role, group or organization) of new and useful ideas, processes, products or procedures as well as implementation of those ideas" (De Jong & Den Hartog, 2008). Employee engagement is operationalized as a psychological construct that measure "the cognitive, affective, and emotional engagements of employees different from other engagement-like constructs such as work engagement, job engagement, organizational engagement, or intellectual/social engagement" (Schuck et al., 2017). Social interaction is operationalized as "the interaction between and/or among members of an organization in terms of trust, communication, and coordination" (Chen & Haung, 2007). Perceived organizational support (POS) is operationalized as "an employee's perception that the organization values his or her work contributions and cares about the employee's well-being, has been shown to have important benefits for employees and employers." (Eisenberger et al., 2016).

3.4. Sample

For the purposes of data collection, the sample composed of adults who are working in various SMEs in the Northern Regions of Ghana. The researcher used purposive sampling to select the study participants. All the respondents work for SMEs. The official national definition of SMEs in Ghana is: they are organizations with a size of at most 100 employees (Gibson & Vaart, 2008). The purposive sample constituted only employees of SMEs without

their leaders. The researcher sampled the respondents from SMEs because SMEs are often considered to be more creative and innovative than larger organizations (Ardic et al., 2011). This is relevant to the purpose of the study. The total population of the respondents were approximately 3000. The sample for the study is 357. This was determined using the Taro Yemane formula: n=N/1+N (e) ^2. Where: n= Sample size, N= Total Population, and e= Estimated errors (Uakarn et al., 2021). Therefore, N=3000, e=0.05. The total sample required was 353. However, many people responded to the questionnaire as against the researcher's expectations. The respondents rated their immediate supervisors in terms of authentic leadership and rated their own perceptions about the other variables. Since all the respondents understand English language, the researcher did not translate the questionnaire into other languages.

3.4.1. Overview of SMEs in Ghana

Small and medium-sized enterprises, or SMEs, play a crucial role in Ghana's economy. According to recent statistics, SMEs make up approximately 92% of all businesses operating in the country, providing employment opportunities for over 4 million people (Zhao et al., 2022). These businesses operate across a variety of sectors, including agriculture, manufacturing, construction, retail, and services. Despite their importance, SMEs in Ghana face a number of challenges. One of the biggest obstacles is access to finance, as many small businesses struggle to secure loans or other forms of funding (Ackah & Vuvor, 2011). This can limit their growth potential and hinder their ability to create jobs. Additionally, SMEs often struggle with issues related to infrastructure, such as unreliable electricity and poor transportation networks. Despite these challenges, the Ghanaian government has implemented a variety of policies and initiatives aimed at supporting SMEs. For example, the National Board for Small Scale Industries provides training, financial support, and other resources to help small businesses grow and thrive (Nuamah-gyambrah et al., 2016). Additionally, the government has implemented policies to improve infrastructure and reduce the cost of doing business in Ghana. Overall, SMEs play a critical role in Ghana's economy, and supporting their growth and development is key to ensuring sustainable economic growth and job creation in the country.

3.5. Data Collection

A survey was conducted to understand the relationship between the reformulated authentic leadership, employee engagement, and innovative work behavior looking at the roles of social interaction, and perceived organizational support in their relationship. Employees of several Ghanaian SMEs will be invited to take part in the study. During the data collection process, leaders were differentiated from followers (respondents). This helped the researcher to avoid self-assessment bias. The data were collected using Google Forms as well as hard copies of the survey questionnaires. The data collection lasted for five months between 1st June 2021- 30th November 2021.

3.6. Measures

To gather the necessary data, the following scales will be employed:

Authentic Leadership Scale: This is made up of 14 items and will be adopted from Neider and Schriesheim (2011). Respondents will be asked to rank their leaders' authentic behaviors on a scale of (1) "Strongly Disagree" to (5) "Strongly Agree". Example of the items is: "My leader encourages others to voice opposing points of view."

Innovative Work Behavior Scale: To measure innovative work behavior variable, the researcher will adopt Janssen's (2000) IWB scale. This is a 9-item measure with which respondents will be asked to rank the degree to which they agree with the statements in the scale. A sample item is: "I create new ideas for difficult issues." Responses will be based on a five-point Likert scale from (1) "Totally Disagree" to (5) "Totally Agree".

Employee Engagement Scale: The scale developed by Schuk, Adelson, and Reio Jr. (2017), which analyses employee engagement via three viewpoints, namely behavioral engagement, emotional engagement, and cognitive engagement, was utilized to measure employee engagement in this research. This measure comprises 12 statements on a five-point Likert scale that goes from (1) "Strongly Disagree" to (5) "Strongly Agree". A sample item is: I am really focused when I am working."

Perceived Organizational Support (POS) Scale: POS will be measured using Eisenberger et al's (1986) Perceived Organizational Support scale. In this measure, respondents are requested to state the extent to which they agree with the statements

regarding the dimensions of POS. All items use a 7-point scale with anchors of (1) “Strongly Disagree” and (7) “Strongly Agree”. A sample item is: “The organization strongly considers my goals and values.”

Social Interaction Scale: For the purpose of this study, the researcher will use the social interaction measure provided in Sivadas and Dwyer’s (2000) work. In this measure, participants are made to indicate the degree to which you agree to the following statements regarding social interactions in your organization. Response choices will be from (1) “Strongly Disagree” to (5) “Strongly Agree”. A sample item is: “Employees have confidence on other organizational members on their abilities and skills to do the work.”

3.7. Normality Check

A Mahalanobis distance and a box plot were used to assess for univariate and multivariate outliers, and none was found. The researcher did not remove any data from the initial data gathered. Finally, there was no missing data. The result of the analysis is shown in Figure 12.

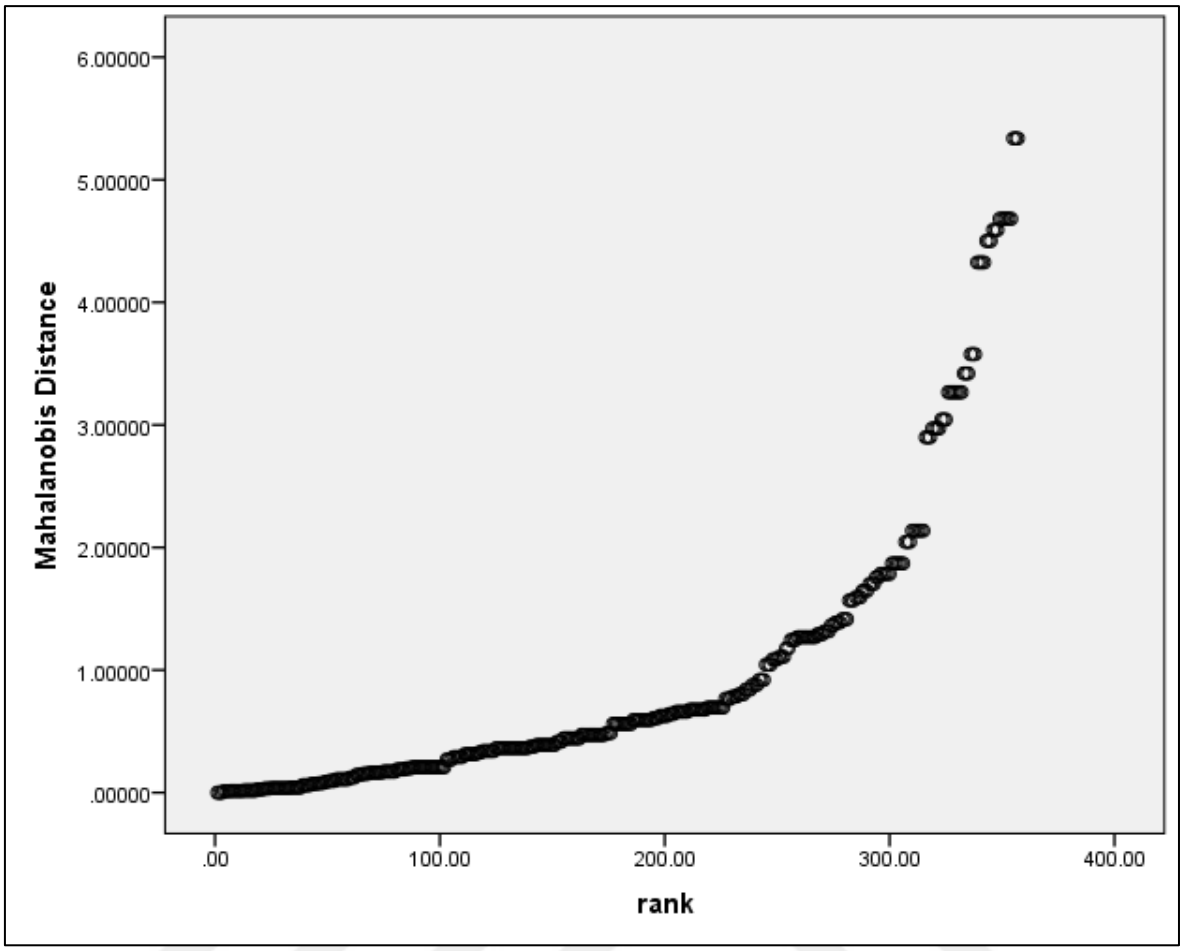

Figure 12. Mahalanobis Distance Box Plot

3.8. Descriptive Analysis

The descriptive analysis shows that the values of the various variables are accurate and fall within the range suggested by various academics. The minimum value column is shown to be 1 and the maximum value column is decided to be 5.

Using a 5-point Likert scale, which ranges from 1 to 5, the researcher gathered responses of the participants. The mean value is more than 3, which is also within the range. To check for normality of the data gathered, Skewness and Kurtosis analyses were conducted. They were found to be in acceptable ranges of 2 and +2 for all constructs as indicated by Gaskin & Happell (2014) and values shown in Table 14.

Table 14. Descriptive Statistics and Correlation Coefficients Among Research Variables

Variables	Mean	SD	(1)	(2)	(3)	(4)	(5)
(1) Authentic Leadership	3.547	.994	—				
(2) IWB	3.813	.765	.590**	—			
(3) Employee Engagement	4.107	.830	.647**	.615**	—		
(4) Social Interaction	3.594	.976	.610**	.537**	.687**	—	
(5) POS	4.183	1.540	.735**	.492**	.576**	.621**	—
Skewness	—	—	-.796	-1.488	-1.540	-.751	-.535
Kurtosis	—	—	-.538	2.628	2.495	-.203	-.815

*Note: ** Correlation is significant at the 0.01 level (2-tailed), N=357; IWB: Innovative Work Behavior; POS: Perceived Organizational Support*

From Table 14, authentic leadership is positively and significantly related to innovative work behavior (r = .590, $p < .01$), employee engagement (r = .647, $p < .01$), social interaction (r = .610, $p < .01$), and perceived organizational support (r = .735, $p < .01$). Also, innovative work behavior has positive and significant correlations with employee engagement (r = .615, $p < .01$), social interaction (r = .537, $p < .01$), and perceived organizational support (r = .492, $p < .01$). Further, employee engagement correlated positively and significantly with social interaction (r = .687, $p < .01$) and perceived organizational support (r = .576, $p < .01$). Finally, social interaction is positively and significantly related to perceived organizational support (r = .621, $p < .01$). All these correlations were less than 0.80 suggesting there is no multicollinearity problem. Also, to determine the normality of the data, typical ranges for skewness and kurtosis values were applied. As suggested by various scholars (Byrne, 2010; Hair et al. 2010; Garson, 2012), a range of -2 to +2 was considered normal for skewness, and a range of -7 to +7 was considered normal for kurtosis. Hoyle (1995) noted that for sample sizes larger than 300, either an absolute skewness value greater than 2 or an absolute kurtosis value greater than 7 can be used as reference values to identify substantial non-normality.

3.9. Confirmatory Analysis of Measures

After removing items 5 and 7 of POS scale from the model, the analysis showed the reliability of the measures revealing the highest and lowest values of .955 and .904 respectively. There was no other modification of the model after the analysis. This is because

of the satisfactory and acceptable good-fit of the indexes used in measuring the fitness of the data to the scale.

Table 15. Factor loadings, Cronbach's α, CR and AVE scores

Variables	Factor loadings	Cronbach's α	CR	AVE
Authentic Leadership	0.582-0.905	0.955	0.955	0.778
Innovative Work Behavior (IWB)	0.688-0.819	0.918	0.919	0.747
Employee Engagement	0.665-0.894	0.951	0.952	0.790
Social Interaction	0.755-0.853	0.936	0.934	0.818
Perceived Organizational Support (POS)*	0.708-0.933	0.904	0.945	0.843

***** *Note: Items 5 and 7 of POS were removed because they were not significant, CR= Composite Reliability, AVE= Average Variance Extracted.*

3.10. Structural Model Results

Table 16 shows details of the fit indices as measured by the data:

Table 16. Model Fit Indices

Parameters	Score
Number of distinct parameters	111
Chi Square	92.021*
Degree of freedom	59
Relative Chi square ($\chi 2$/df)1	1.560
Goodness of Fit Index (GFI)	.935
Adjusted Goodness of Fit Index (AGFI)	.900
Comparative Fit Index (CFI)1	.983
Increment Fit Index (IFI)1	.983
Root mean square error of approximation (RMSEA)1	.053
Tucker-Lewis fit Index (TLI)1	.978

*$p < .01$

From Table 16, it can be seen that the model for the CFA has got a Root Mean Square Error of Approximation (RMSEA) score of .053 and Root Mean Square Residual (RMR) of .045. Thus, the RMSEA value is less than .06 and RMR is less than .08 suggesting that the model fit for the scale is a good one. The recommended criteria are RMSEA ≤ .06 and RMR

≤ .08 according to the literature (Weston et al., 2008). The Tucker-Lewis Fit Index (TLI) for the model and the scale has a score of .978. This is above the threshold of .95 suggested by (Schreiber et al., 2006). Going by this measure, the model fit for the scale will be good. In addition, the Comparative Fit Index (CFI) has a score of .983 showing that the model fit for the scale is satisfactory as its value exceeds the threshold of .95. Also, the Increment Fit Index (IFI) is .983, which is higher than the .95 criterion for the index. This is an indication that the model fit for the scale is good. In general, all the Goodness-of-Fit indices except GFI indicate a satisfactory and an acceptable fit of the data to the scale.

3.11. Model Validity and Reliability Measures

To assess the validity and reliability of the scales and the model, Composite Reliability (CR), Average Variance Extracted (AVE), and Maximum Shared Variance (MSV) were tested. Table 17 shows the results for these variables.

Table 17. Results of Reliability and Validity Test

	CR	AVE	MSV	Max R(H)	AL	EE	IWB	POS	SI
AL	0.955	0.605	0.560	0.961	**0.778**				
EE	0.952	0.625	0.528	0.959	0.648***	**0.790**			
IWB	0.919	0.558	0.455	0.922	0.620***	0.675***	**0.747**		
POS	0.945	0.711	0.560	0.959	0.748***	0.571***	0.484***	**0.843**	
SI	0.934	0.669	0.528	0.936	0.649***	0.727***	0.575***	0.621***	**0.818**

**** $p < 0.001$; AL - Authentic Leadership; EE- Employee Engagement; IWB- Innovative Work Behavior; POS- Perceived Organizational Support; and SI- Social Interaction*

3.11.1. Convergent Validity

Convergent validity measures the extent to which items designed to measure the same variable/construct correlates with one another. Another factor analysis was conducted after the concept validity test using factor analysis (between scales) to test for convergent validity. This factor analysis was conducted utilizing the within scale technique.

Convergent validity, according to Campbell & Fiske (1959), describes the fact that all items measuring a construct really load on only one construct. When all the items used to measure a construct fall into one component as predicted by theory, convergent validity is

proven. From Table 17, the values of AVE range from 0.747 to 0.843. This shows that there is convergent validity in the different factors of the scale.

3.11.2. Internal Reliability

The results indicate that the measures are robust in terms of their internal consistency reliability as indexed by their composite reliability. As shown in Table 17, the composite reliability scores of scales in the model ranges from 0.919 to 0.955. The values of the CR of all the scales are higher than the recommended threshold value of 0.70 (Nunnally, 1978).

3.11.3. Discriminant Validity

The results of the tests conducted on the scales' discriminant validity scores are displayed in Table 17. In every instance, the square roots of the AVEs represented by the bolded matrix diagonal elements are higher than the off-diagonal components in the corresponding row and column. This finding implies that the model has no issues with discriminant validity (Hu & Bentler, 1999).

3.12. Data Analysis

The first portion of the data will be examined utilizing CFA and mediation analysis in the examination of the data gathered. Regression techniques will be used in the mediation analysis, and statistical software like AMOS and SPSS will be used. This will assist the researcher in reaching the study's goals.

4. FINDINGS

4.1. Introduction

The researcher used both the SPSS version 24 and SPSS AMOS version 22 in the analysis. The analysis was based on a population of 357 of employees from SMEs in Ghana. During the analysis, the researcher selected the maximum likelihood estimation method because the data to be used was normally distributed. Thus, the researcher evaluated the data for assumptions of normality and linearity in SPSS 24 software.

4.2. Participant's Profiles

The following are the characteristics of the employees who participated in the research.

4.2.1. Gender

As shown in table below 270 participants were male, and it constitutes 75.6 of the sample group. On the other hand, females represented 24.4% of the sample group with the number of 87.

Table 18. Distribution of Gender

Gender	Frequency	Percent
Male	270	75.6
Female	87	24.4
Total	357	100

4.2.2. Education Level

Table 19 breaks down the levels of education of participants of the study. Of the 357 respondents, 74 (20.7%) had education below bachelors such as high school and diploma certificates. 199, representing 55.7% of the respondents had bachelor's degrees. Further, 81 participants had master's degrees, making up 22.7% of the surveyed sample while the remaining three (0.8%) had doctorate degrees.

Table 19. Distribution of Education Level

Education Level	Frequency	Percent
Below Bachelors	74	20.7
Bachelor's Degree	199	55.7
Masters	81	22.7
Doctorate	3	.8
Total	357	100

4.2.3. Industry

In Table 20, it is noted that the respondents came from six SMEs industries from the Northern region of Ghana. The highest number of participants were from the education industry with a population of 103 representing 28.9%. 63 (17.6%) respondents were sampled from the manufacturing industry. 52, 51, and 50 respondents were from health, telecommunication, and fashion industries respectively. They represented 14.6%, 14.3%, and 14.0% respectively. The fewest number of participants came from the agriculture industry with 38 people representing 10.6% of the sample group.

Table 20. Distribution of Industry

Industry	Frequency	Percent
Telecommunication	51	14.3
Education	103	28.9
Manufacturing	63	17.6
Health	52	14.6
Fashion	50	14.0
Agriculture	38	10.6
Total	357	100

4.2.4. Age and Years in the Organization

Table 21 below shows the age of participants as well as the number of years they have stayed in their respective organizations. The least age of respondents in the sample is 19 years while the average among them is slightly above 30 years. Also, the respondent with the maximum age is 58 years. The minimum number of years spent in their organizations is

one year and the maximum is 32 years. The average years spent by respondents is a little below 5 years.

Table 21. Age and Years in the Organization

	N	Minimum	Maximum	Mean	Std. Deviation
Age	357	19.0	58.0	31.345	6.1335
Years in Organization	357	1.0	32.0	4.882	4.0865
Valid N	357				

4.3. Test of Hypotheses with Multiple Mediation

First, the hypothesized structural model for the study was analyzed and evaluated. It showed a satisfactory fit with the data gathered: CFI=.969; RMSEA=.051; TLI=.901; IFI=.969; GFI=.967; $\chi 2/df=3.1600$. This suggests that the model has a good fit. That is, all standardized paths correlations are significant except for the indirect effects of authentic leadership on innovative work behavior and employee engagement through perceived organizational support.

Table 22. Results of the Path Analyses

Relationships			**Estimate**	**S.E.**	**C.R.**	**P**	**Label**
TASI	<---	TAAL	.61	.041	14.511	***	par_1
TAPOS	<---	TAAL	.57	.067	13.216	***	par_4
TAIWB	<---	TAAL	.41	.049	6.393	***	par_2
TAEE	<---	TAAL	.34	.045	6.178	***	par_3
TAIWB	<---	TAPOS	.02	.032	.372	.710	par_5
TAEE	<---	TAPOS	.05	.030	.870	.384	par_6
TAIWB	<---	TASI	.28	.043	5.029	***	par_7
TAEE	<---	TASI	.45	.040	9.618	***	par_8

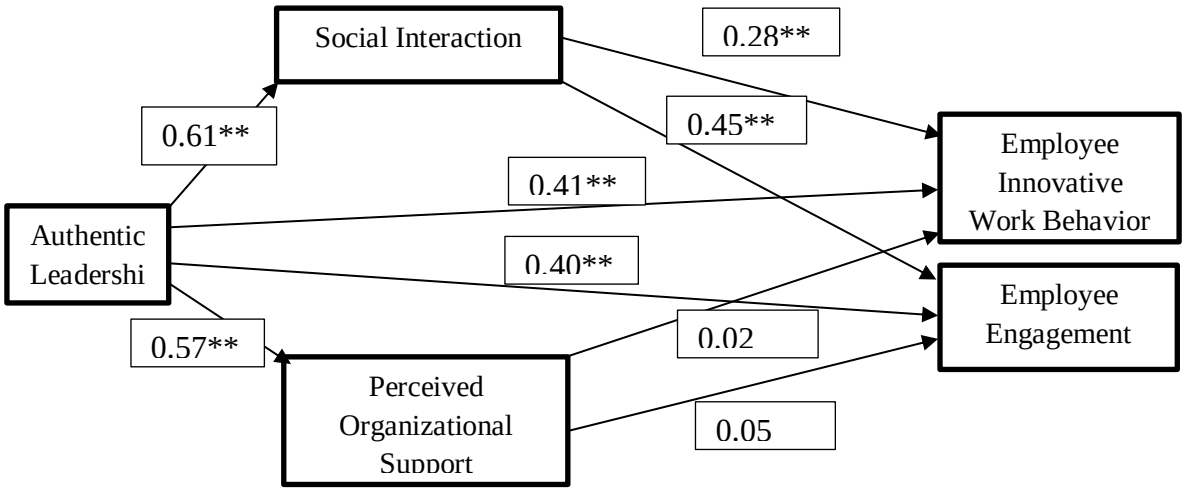

Figure 13. Results of the Path Analyses

***$p < 0.001$; ns: nonsignificant

4.3.1. Direct Effects

From Figure 13 above, the researcher analyzed the direct effects of authentic leadership on innovative work behaviors and employee engagement. The direct effect of authentic leadership on innovative work behaviors was positive and significant (β= 0.41, p<0.001) supporting H1. Also, the relationship between authentic leadership and employee engagement was both positive and significant (β= 0.40, p<0.001) thereby supporting H2. Further, the effect of authentic leadership on social interaction was found to be positive and significant (β =.610, p<0.001), hence supporting H3a and H4a. Moreover, the study showed that the relationship between authentic leadership and perceived organizational support was significant and positive (β =.567, p<0.001), supporting H5a and H6a. The analysis also found the relationship between social interaction and innovative work behavior to be significant and positive (β =.275, p<0.001). This means H3b is supported. Social Interaction and employee engagement were also found to be significantly and positively related (β =.453, p<0.001). This provides support for H4b. However, perceived organizational support and innovative work behavior were found not to be significantly related (β =.024, p=.710). This means H5b is not supported. Also, the relationship between perceived organizational support and employee engagement was positive but not significant (β =.048, p=.348). Due to that, H6b is rejected.

4.3.2. Indirect Effects

Using the bootstrapping procedure (n=5000 samples) in AMOS, the researcher conducted a mediation test. The results showed that the indirect effects of authentic leadership on innovative work behavior through social interaction was significant (B=.1708, *p*<.001). This means H3 is supported. Also, the researcher found a significant indirect effect of authentic leadership on employee engagement via social interaction (B=.2745, *p*<.001), thereby supporting H4. However, the study revealed an insignificant indirect effect of authentic leadership on innovative work behavior through perceived organizational support (B=.0114, *p*=0.696), meaning H5 is not supported. Similarly, the indirect effect of authentic leadership on employee engagement through perceived organizational support was found to be insignificant (B=.0285, *p*=0.366). This shows that H6 is not supported by the data. A summary of the above information is shown in the table below:

Table 23. Mediation Analysis with a Bootstrap Sample of 5000 in AMOS

Relationships	Direct Effects	Indirect Effects	Confidence Interval		*p*	Conclusion
			Lower Bound	Upper Bound		
AL -> SI -> IWB	0.4	0.1708	0.136	0.311	0.001	Partial mediation
AL -> SI -> EE	0.34	0.2745	0.288	0.477	0.001	Partial mediation
AL -> POS -> IWB	0.4	0.0114	-0.044	0.068	0.696	No mediation
AL -> POS -> EE	0.34	0.0285	-0.034	0.083	0.366	No mediation

According to the findings above, social interaction partially and significantly mediates the link between authentic leadership and innovative work behavior. Moreover, social interactions partially mediate the relationship between authentic leadership and employee engagement. Perceived organizational support is not, however, seen to be a mediating factor in the relationship between authentic leadership and innovative work behavior. Moreover, perceived organizational support does not serve as a mediating factor in the link between authentic leadership and employee engagement.

To sum up, Table 24 shows whether research hypotheses are supported or not.

Table 24. Summary of Research Hypotheses

Hypotheses	**Supported/ Not supported**
H1: Authentic leadership positively related with employee innovative work behavior.	Supported
H2: Authentic leadership positively related with employee engagement.	Supported
H3a: Authentic leadership positively related with social interaction	Supported
H3b: Social interaction positively related with employee innovative work behavior.	Supported
H4a: Social interaction positively related with employee engagement.	Supported
H5a: Authentic leadership positively related with perceived organizational support.	Supported
H5b: Perceived organizational support is not positively related with employee innovative work behavior.	Not Supported
H6b: Perceived organizational support is not positively related with employee engagement.	Not Supported
H3: The relationship between authentic leadership and employee innovative work behavior is mediated by social interaction	Supported
H4: The relationship between authentic leadership and employee engagement is mediated by social interaction	Supported
H5: The relationship between authentic leadership and employee innovative work behavior is not mediated by perceived organizational support.	Not Supported
H6: The relationship between authentic leadership and employee engagement is not mediated by perceived organizational support.	Not Supported

5. DISCUSSION AND CONCLUSION

5.1. Introduction

This chapter discusses the findings of the analyses conducted in the findings section. The discussion is done according to the purpose and objectives of the study. Below are details of the discussion in relation to other studies in the literature of the variables under investigation in this research.

5.2. Relationship between Authentic Leadership and Innovative Work Behavior (IWB)

Authentic leadership is directly and significantly related to employee innovative work behavior. This is consistent with the results of the analysis conducted in this research. This findings are simply to that of Grošelj et al. (2020) who realized from the analysis of employees of multinational technological company that authentic leadership promotes innovative behaviors among employees of an organization. This means that organizations with authentic leaders are likely to experience higher innovative behaviors among employees at their jobs. Also, a study of employees of high-tech manufacturing industries in China revealed a similar results noting that authentic leadership positively and significantly impacts IWB and the link is mediated by proactive personality and employee engagement (Bai et al., 2022). Similarly, using a multilevel analysis approach, authentic leadership, creativity, and innovation are all strongly and positively correlated with one another among individuals and teams, according to research by Černe et al. (2013). Unlike most research works, this study is unique by looking at the impacts of authentic leadership on innovation on a multilevel perspective. With another multilevel perspective and analysis, Laguna et al. (2019) confirmed the results of this research arguing that employees of business owners who considered authentic leaders have higher initiatives and engaged more at their jobs. Their opinion is based on their analysis of employees of 711 in 85 small firms from the Netherlands, Poland, and Spain.

5.3. The Relationship between Authentic Leadership and Employee Engagement

Some studies have been conducted on the relationship between authentic leadership and employee engagement. This is because of how important they are in the organization. This research revealed a positive and a strong relationship between authentic leadership and employee engagement. This result means that organizations with authentic leaders are most likely to have more engaged employees. For instance, Winton et al. (2022) found that authentic leadership has a positive influence on the engagement of employees after investigating 90 working professionals. Similarly, Malik & Khan (2020) noted a positive and a significant impact of authentic leadership on employee engagement when they explored employees of public sector organizations. Confirming the findings of this study is research by Scheepers & Vermeulen (2020) who found that authentic leadership is significantly related to employee engagement and that link is partially mediated by employees perceived organizational support. Jiang & Yi Luo (2016) also supported the results after surveying 391 employees across different industrial sectors of the USA.

Further, Towsen et al. (2020) found authentic leadership and psychological empowerment to facilitate employee engagement in organizations. Their findings are based on their study of coal mining organizations in South Africa. Just like this study, they employed a cross sectional research design in the conduct of their study. Another study results that is consistent with the findings this research is that of Oh et al. (2018) who found authentic leadership to be positively and significantly associated with employee engagement. Their findings were based on data from 281 employees in South Korea. Consistently, Başaran & Kıral (2020) carried out a relational survey among 300 teachers and found that authentic leadership is positively, moderately, and significantly related with employee engagement. In this sense, the teachers noted that the authentic leadership of school administration promoted their engagement at the workplace. Niswaty et al. (2021) conducted survey research among the employees of public service offices and noted that authentic leadership predicted work engagement among employees directly. This confirms the findings of this study that authentic leadership and employee engagement are significantly and strongly related. An analysis of the relationship between authentic leadership and employee engagement in the Gambia by Njie (2020) reveals a similar result. Thus, she found a strong significant and positive correlations between the concepts of authentic leadership and employee engagement. All these findings are consistent with the

belief of Avolio et al. (2004) that authentic leadership breeds hope, trust in leadership, and positive emotions among employees. This in turn leads to more engagement at the workplace by employees.

5.4. The Mediating Role of Social Interaction in the Relationship between Authentic Leadership and Innovative Work Behavior (IWB)

The existence of great social interaction among employees of organizations is critical for their success and survival. This research sought to find out the mediating effects of social interaction and connections in the association between authentic leadership and innovative work behavior among employees.

First, the findings of this study revealed that authentic leadership facilitates the levels of social interaction among employees by creating a conducive environment necessary for that. This result is in line with the beliefs of the theories of authentic leadership and social interaction that argue that authentic leadership enhances smooth communication (Yagil & Medler-Liraz, 2014) which is a critical element of social interaction. Also, Nkwabi (2019) found relational transparency of authentic leaders to facilitate high levels of social interaction among employees of organizations by breeding trust among them. Consistently, Wang et al. (2020) acknowledged the importance of leadership in promoting open communication among employees of organizations. Further, Iqbal and his colleagues (2020) found a positive relationship between authentic leadership and social interaction in the form of improved communal employee relationships. Moreso, Iqbal et al. (2018) found authentic leadership to increase and enhance social interactions within employees. Finally, Srivastava and Mohaley (2022) realized that authentic leadership is a significant and a positive predictor of all forms of trust such as dispositional, trust in supervisor, and trust in coworkers, which are major components of social interaction.

For further analysis, this study hypothesizes that social interaction promotes innovative work behavior among employees of organizations. The findings revealed that social interaction is a significant predictor of employees' innovative work behavior. These findings are consistent with the belief of Social Exchange Theory and Social Interaction Theory that improved interaction and communal relationships among employees produces an organizational environment where individuals generate, share, and implement innovative ideas especially in the conduct of their job roles. Empirically, Carmeli and Spreitzer (2009)

found that trust and connectivity, that are critical components of social interaction, were significant predictors of innovative work behavior among employees. Similarly, Anwar ul Haq et al. (2018) realized that social interaction, in the form of trust, predicted innovative work behavior among employees. Hughes et al. (2018) also supported the opinion that trust in organizations, both horizontal and vertical, stimulates employees innovative work behavior noting that innovative behavior is positively connected to employee performance and that trust impacts the level of effect between them. However, Kmieciak (2020) in a study of employees of large capital groups in Poland found only vertical trust to be related to idea generation but not related to idea realization. The researcher further noted that horizontal trust is not connected to both idea generation and idea realization, which are critical elements of innovative work behavior. This is inconsistent with the results of this study.

Social interaction is an important workplace ingredient that affects the overall success of organizations. In this study, the researcher sought to assess the mediating role of social interaction in the link between authentic leadership and IWB. The results of this research found that social interaction mediates the relationship between authentic leadership and IWB. These findings are supported by Men and Stacks (2014) research on the link between authentic leadership, a symmetrical and open communication system, and the quality of employee-organization interactions in organizations. This result emphasizes the role of open and consistent communication among various parts of organizations. Consistently, the findings of Jiang and Men (2017) corroborate the results of this study. As a result, they came to the realization that authentic leadership supports open communication inside businesses and the enrichment of work-life balance (Walumbwa et al., 2008). They therefore advocate for open communication as it is crucial in lowering employee frustration levels.

5.5. The Mediating Role of Social Interaction between Authentic Leadership and Employee Engagement

Social interaction is considered a critical predictor of employee engagement within the organization. This study assessed the mediating role of social interaction in the relationship between authentic leadership and employee engagement. The results of the study show that social interaction plays a role, as a mediator, in link between authentic leadership and employee engagement. This suggests that organizations with authentic leaders are most likely to have strong and positive social interaction among their employees, which in turn

causes them to be engaged at their work. Kahn (1992), supported this conclusion noting that quality communication, which is a key ingredient in social interaction, is one of the key underlying factors influencing employee engagement. Also, Hassan and Ahmed (2011) confirmed the results of this study arguing that interpersonal trust, that is a component of social interaction, mediates the relationship between authentic leadership and employee engagement. Consistently, Ugwu et al. (2014) found that organizational trust is a predictor of employee engagement. There has not been any study assessing the mediating role of social interaction on the links between authentic leadership and employee engagement directly. However, there have been some attempts to link components of it to authentic leadership and employee engagement.

5.6. The Mediating Role of Perceived Organizational Support (POS) in the Relationship between Authentic Leadership and Innovative Work Behavior (IWB)

Perceived organizational support is a critical element of every organization's success and survival. This study evaluated the mediating influence of perceived organizational support in the association between authentic leadership and employee innovative work behavior.

The findings of this research found that authentic leadership enhances the development of perceived organizational support in employees of organizations. This is in line with the views of organizational support theorists who consider leadership to be an important antecedent of perceived organizational support in organizations (Eisenberger et al., 2016). Their opinions are empirically supported by much research that found authentic leadership to be a positive and a significant predictor of perceived organizational support among employees (Aria et al., 2019; Baykal 2020; Kleynhans et al., 2022; Ladao et al., 2022).

Perceived organizational support is also viewed as helping employees develop and exhibit innovative behaviors. This research however realized that perceived organizational support had weak and insignificant link with employee innovative work behavior. This view contradicts the widely espoused belief that strong organizational support, both supervisor and colleagues, makes employees thrive in innovation processes within organizations. For example, Abid et al. (2015) found that perceived organizational support yields innovative work behavior among employees by helping them thrive at their work. Similarly, utilizing

the Social Exchange Theory, and the Job Demands-Resources Model, Doğru (2018) found perceived organizational support to have positive impacts on innovative work behavior. Another research that confirmed this position is Afsar & Badir (2017a). They posited that perceived organizational support influences employee innovative work behavior positively. Further, research on the role of perceived organizational support in the development of innovative work behavior revealed a positive and significant impact of perceived organizational support on innovative work behavior (Sulaiman et al., 2019). Fan et al. (2022) drawing on the principle of self-determination, found a favorable and substantial correlation between perceived organizational support and creative work practices.

Perceived organizational support is a key organizational outcome. This study sets out to investigate the mediating role of POS in the link between authentic leadership and IWB. The results showed that POS is not a significant mediator of the connection between authentic leadership and IWB despite all the three variables being directly related. These results are contrary to the results of previous studies in the area. For example, Afsar and Badir (2017) found a significant, direct, and positive relationship between perceived organizational support and employee innovative work behavior after studying 434 employees and 54 supervisors from the hotel industry of China. There is not much research investigating the connection between perceived organizational support and innovative work behavior.

5.7. The Mediating Role of Perceived Organizational Support (POS) in the Relationship between Authentic Leadership and Employee Engagement

Perceived organizational support is one of the major organizational phenomena that is considered essential organizational in the success of every organization. This study tested the mediating effect of perceived organizational support in the relationship between authentic leadership and employee engagement.

This research found that authentic leadership is positively connected to perceived organizational support. This is consistent with the theory of organizational support that leaders are critical when it comes to the perception of employees about the support they get from their organizations. Empirically, Aria et al. (2019) found that authentic leadership promotes perceived organizational support among teachers at high schools in Iran. This in turn leads to the intention to stay among the employees of those schools. Confirming this

opinion Kleynhans et al. (2022) found authentic leadership to enhance employee flourishing through perceived organizational support. This means authentic leadership promotes perceived organizational support which further leads to employee flourishing in organizations. Baykal (2020), in her study, also found that authentic leadership promotes organizational commitment of employees through perceived organizational support. That is, authentic leadership leads to organizational commitment directly and indirectly through perceived organizational support. Similarly, authentic leadership was found to reduce turnover intention of employees by promoting high perceived organizational support among them (Ladao et al., 2022). This is based on the research conducted among employees of business process outsourcing companies in Philippines.

Interestingly, the findings of this study showed that perceived organizational support is not a significant predictor of employee engagement in organizations. This is contrary to the view of scholars of Organizational Support Theory who believed that perceived organizational support enhances employee engagement (Eisenberger et al., 2016). Bonaiuto et al. (2022) conducted an empirical study and realized that perceived organizational support significantly influences employee engagement in organizations. Similarly, a survey among employees of Slovak hospitals revealed that there is a positive connection between perceived organizational support and the engagement of employees at the workplace (Jankelová et al., 2021). Finally, Saeed and Hussain (2021) found perceived organizational support to have a favorable effect on the engagement of employees in public schools of Punjab. In their study they noted that perceived organizational support accounted for 30.9% of the variance in the work engagement among teachers in the schools.

Extant literature found POS as a positive predictor of employee engagement and commitment. To test this, this research explored the mediating effects of POS in the connection between authentic leadership and employee engagement. The results revealed that POS is not a significant mediator in the relationship between authentic leadership and employee engagement. This is contrary to the expectations of the hypothesis of the study. This result means that the indirect impact of authentic leadership on employee engagement is not significant. For example, Vermeulen and Scheepers (2020) found that POS is a partially significant mediator in the relationship between authentic leadership and employee engagement. The differences between these could be from the context and the profile of respondents in each of the studies. Also, Dai and Qin (2016) realized a significant and a

direct impact of perceived organizational support on employee engagement. Similarly, Nguyen and Tran (2021) argued that perceived organizational support is positively and significantly related to employee engagement. All these findings are contrary to the findings of this research. Thus, further research will be needed in this area.

5.8. Implications for Theory and Policy

This study and its results have some implications for theory and research. The study draws from Authentic Leadership Theory (Walumbwa et al., 2008), Innovative Work Behavior Theory (Wang et al., 2015), Job-Demands Resources Model (Menguc et al., 2013), and Social Exchange Theory (Blau, 1964) to help explore a model that exhibits the interrelationships among authentic leadership, social interaction, perceived organizational support, innovative work behavior, and employee engagement. The findings of this research contradict the arguments in the literature that POS is a significant mediator of the relationship between authentic leadership and IWB and employee engagement (Vermeulen & Scheepers, 2020). Also, previous studies have studied the mediating roles of many positive organizational outcomes in the connection among authentic leadership and IWB and employee engagement. But, to the best of my knowledge, no study has explored the mediating effects of social interaction within organizations in the relationships among authentic leadership, IWB, and employee engagement directly. This study therefore expanded the literature of authentic leadership, IWB, and employee engagement towards that grey area.

The results of this study have some critical implications for policy and practice. As confirmed from the results section, authentic leadership promotes innovative work behavior among employees within organizations. With that, organizations must work to facilitate the development of authenticity among their leaders. Doing that can help them develop their employees' authenticity, which in turn will promote innovative work behavior. Also, management of organizations must work hard to promote strong social interaction and capital in their organizations. This will go a long way to promote employee engagement. That is, this study can guide organizations on the strategies, policies, and programs to adopt so as to create an organizational environment that fosters positive and strong interactions among employees. Even though the study did not find perceived organizational support as a significant mediator in the relationship between authentic leadership and IWB and employee

engagement, the results show that it is still related to all these variables. That is, perceived organizational support has been found to be an important ingredient in every organization by other research in the field. This study adds to the extant literature of perceived organizational support and will guide organizations and managers on how to treat and manage their employees. The findings of this research still encourage management of organizations to still invest in promoting perceived organizational support and letting their employees know they value their efforts and contributions towards the success and survival of the organization.

5.9. Limitations and Future Research Directions

Although this study has some major contributions to the literature, policy, and practice it is important to acknowledge its limitations. Even though self-reported measures were not used for authentic leadership, the rest of the measures used for estimating the other variables were self-reported. By relying on those measures for the analysis, the research was exposed to common method bias in a form of social desirability bias. This may have led participants to answer the research questions in a form considered to be "fair" and desirable to their society. However, respondents were always briefed about the purpose of the study and that it is only for academic purposes and nothing else. Also, I assured them of their anonymity. All these procedures were meant to reduce the risk of social desirability bias. Therefore, it can be suggested for further studies on the topic of the study with research designs that create a separation between the independent and dependent variables when measuring them (Podsakoff et al., 2003).

Also, the study used a cross-sectional survey design to gather data relevant to the objectives of the study. This limits the ability of the study to make causal inferences. Future studies are needed using longitudinal research methods or experimental methods to investigate the causal effects of the variables analyzed on one another (Randall et al., 1999).

Furthermore, all respondents were sampled from employees of Ghanaian SMEs, working in different sectors. Even though they were all employees of SMEs, their sectors vary. This variation in sectors could limit the ability of the study to measure the strength of the relationships among authentic leadership, IWB, perceived organizational support, social interaction, and employee engagement. For example, Kahn (1990) believes that the level of congruence between a person's self-image and his/her work roles may impact his/her

engagement positively. Moving forward, future research should consider the homogeneity of the respondents in order to improve the generalizations of the research findings.

Aside from the above, the following tables show the future research directions in the areas of authentic leadership, innovative work behavior, and employee engagement respectively. References have been given to show the sources of the recommendations provided in each table. Also, the researcher studied the most trending articles and provided recommendations, as captured in the tables below, to help inspire future research.

Table 25. Future Research Directions from the Trending Articles in Authentic Leadership*

Article	Classification/Perspective	Future Research Agendas
Faheem et al. (2021)	Moral, Ethics, Positive Organizational Behavior	1. Study the impacts that the ethical voice of leaders has on unethical organizational outcomes. 2. Evaluate the effect of ethical voice of leaders on performance at the group level. 3. Assess the mediation effects of self-concordance, team authenticity, leader behavioral integrity perception, moral courage, and follower-learning goal orientation as outcomes of authentic leadership. 4. Investigate the effects of authentic leadership on organizational outcomes that are not direct. 5. Explore the interactions of the ethical voice of the leader and employee voice.
Banks et al. (2016)	Leaders' Authenticity, Interpersonal Level	1. Explore the components of authentic leadership in relation to ethical constructs in order to differentiate it from transformational leadership
Gill & Caza (2018)	Positive Organizational Behavior, Multilevel Analysis	1. Assess social identification and other social influences through which authentic leadership influence followers and coworkers. 2. Investigate individual and group influences of authentic leadership on follower responses.
Iszatt-White & Kempster (2018)	Authenticity in Leadership, Authentic Leadership as a Normative Framework	1. Analyze and evaluate authentic leadership construct through multiple perspectives and lenses. 2. Investigate whether there exist a 'true' or 'inner' process to make leaders authentic and how it can be enacted or embodied. 3. Include qualitative research variables in the analysis of authentic leadership to understand the natüre of an authentic leader and whether being considered authentic is a useful defining quality in leadership. 4. Employ multiple research methods to understand the idea of authenticity in leadership.
Sidani & Rowe (2018)	Authenticity of Leaders, Ethics	1. Assess moral elements or aspects of authentic leadership further. 2. Use historiometric methodologies and approaches to understand the phenomenon of authentic leadership instead of the use of the ALQ questionnaire. 3. Evaluate the perspectives of authentic leadership in cross-cultural contexts. 4. Authentic leadership should be studied as an outcome variable. 5. Explore the profiles of the followers of authentic leaders.

Table 25. (continued) Future Research Directions from the Trending Articles in Authentic Leadership*

Article	Classification/Perspective	Future Research Agendas
Levesque-Côté et al. (2017)	Understanding Authentic Leadership	1. Study the validity of the authentic leadership construct-IQ with the use of measures such as absenteeism and multiple-sourced data. 2. Multiple data collection points should be used when exploring how valid the authentic leadership-IQ instrument is. 3. Provide empirical support for the items on the authentic leadership-IQ's cross-linguistic validity.
Duarte et al. (2021)	Positive Organizational Behavior Perspective	1. Employ longitudinal research to understand how authentic leadership affects individual creativity, performance, and affective commitment. 2. Utilize data from both followers and leaders in their analysis. 3. Investigate the level at which organizations can use authentic leadership to attract and retain the current generation in their jobs.
Lei et al. (2021)	Positive Organizational Behavior Perspective	1. Expand data on organizational creativity to cover other sectors of the industry and countries when assessing the influences authentic leadership has on it. 2. Use identification-based mechanisms when exploring the link between employee creativity and authentic leadership. 3. Employ longitudinal research to examine the authentic leadership-creativity relationships.
Nair et al. (2021)	Positive Psychology	1. Use data from multiple sources when studying the links among authentic leadership, followers' well-being, engagement, and psychological capital. 2. Employ research methods with reasonable time lags to comprehend the connection of authentic leadership and followers' outcomes. 3. Experimental research design should be used to confirm authentic leadership and followers' responses.
Ramalu & Janadari (2020)	Positive Organizational Behavior Perspective, Interpersonal Level	1. Examine the impacts of authentic leadership on organizational citizenship behavior via psychological capital using longitudinal research methods.
Qu et al. (2019)	Authenticity in Leadership, Interpersonal Level	1. Look into potential mediators and provide additional information about the way authentic leadership and values may work together to improve the performance of follower. 2. Investigate cultural values in authentic leadership frameworks to learn more about how various cultural values may influence followers' actions in various cultural contexts.
Shahid & Muchiri (2019)	Positive Psychology and Organizational Behavior Perspective	1. Consider how the negative effects of authentic leadership could affect organizational virtuousness, thriving, and work performance. 2. Investigate the link between authentic leadership and work performance as regards personal traits, such as positive and negative affect, trustworthiness, personal virtues and strengths, and collective virtues.

Table 25. (continued) Future Research Directions from the Trending Articles in Authentic Leadership*

Article	Classification/Perspective	Future Research Agendas
Gigol (2020)	Positive Psychology and Organizational Behavior Perspective, Ethics	1. Investigate whether there are any differences between companies that have embraced the corporate social responsibility strategy and those that have not in terms of the connection of authentic leadership to unethical pro-organizational conduct.
Ribeiro et al. (2020)	Positive Psychology and Organizational Behavior Perspective, Interpersonal Level	1. Expand sample to cover more diversified groups for generalization. 2. Use multiple data sources to prevent common source bias. 3. Employ longitudinal research designs in understanding the influences of authentic leadership on customer orientation, turnover intention, and affective commitment.

* Each of the referenced article number in this table corresponds to a specific article in Table 6.

Table 26. Future Research Agendas from the Trending Articles in Innovative Work Behavior*

Classification	Future Research Agendas
Choose Context	1. Expand to cover respondents of different backgrounds (1), (3), (5), (6), (7), (8), (9), (10). 2. Replicate in other countries and locations (1), (3), (6), (7), (8), (9). 3. Industry such as service, manufacturing, small medium enterprises (1), (3), (5), (6), (7), (8). 4. Level of analysis like individual, team, organizational, and multilevel approaches (4), (5).
Use Appropriate Research Design and Instruments	1. Use longitudinal design (1), (3), (7), (10). 2. Utilize experimental research design (10). 3. Make use of co-worker and supervisor ratings to gather data (1), (2), (3), (5), (8).
Components of Employee Innovation Process	1. Include idea exploration and idea promotion in the analysis of the employees' innovation process (2). 2. Add effective control variables into the model (image expectations, organizational climate, and innovative work behavior to improve the validity of its results (2).
Determinants of IWB	1. Assess how implicit and explicit knowledge sharing affects employees IWB and PE (3). 2. Assess whether or how personality traits impact the effects of task conflicts on IWB (4). 3. Test the model in other countries to understand whether culture affects the relationship between task conflicts and IWB (4). 4. Explore the role of psychological ownership as a determinant of IWB in employees (5). 5. Study more situational determinants of IWB in SMEs (both internal and external) (5). 6. Assess the effects of diversity management on conflicts and task responsibility and many other factors and how they all impact IWB (6). 7. Study, empirically, the relationship between diversity management and IWB among employees (9). 8. Assess the effects of skill variety and other job design characteristics on the relationship among leadership, personality, and IWB (10).
Referenced Articles: 1) Jan et al. (2021); 2) Battistelli et al. (2021); 3) Aldabbas et al. (2021); 4) Al-Ghazali and Afsar (2021); 5) Mustafa et al. (2021); 6) Ganji et al. (2021); 7) Li et al. (2019); 8) Stankeviciute et al. (2020); 9) Zuberi and Khattak (2021); and 10) Amankwaa et al. (2021).	

* Each of the referenced article number in this table corresponds to a specific article in Table 9.

Table 27. Future Research Agendas from the Trending Articles in Employee Engagement*

Classification	**Future Research Agendas**
Choose Context	. Expand to cover respondents of different backgrounds (3), (8), (10). . Replicate in other countries and locations (10). . Industry such as service, manufacturing, small medium enterprises (3), (10). . Level of analysis like individual, team, organizational, and multilevel approaches (6).
Use Appropriate Research Design and Instruments	. Use longitudinal design (7), (9), (10). . Utilize experimental research design (9). . Make use of qualitative research design (1), (6), (8), (9). . Use phenomenological methods to study employee engagement (1).
Determinants of Employee Engagement	. Assess the relationships among talent management, organizational justice, and employee engagement empirically. (6). . Investigate the implications and effects of talent management and organizational justice on employee engagement. (2). . Utilize multi-level analysis approach to study employee engagement, organizational justice, and exclusive talent management (6). . Include gender as a control variable to study the links among employee engagement, organizational justice, and exclusive talent management (6).
Effects of Employee Engagement	. Explore the dark side of employee engagement and understand what happens when employees are engaged for a long period of time (3).
Perspectives and Approaches to Employee Engagement	. Understand employee engagement as an adaptive system (1). . Use autoethnographic and ethnographic research designs to cater for context and nuance when analyzing employee engagement as an adaptive system (1). . Assess the roles of middle managers in creating adaptive systems that value co-creation and unpredictability (1). . Utilize multiple case studies to investigate how organizations working as adaptive systems cater for complexity and chaos (1).
Referenced Articles: 1) Lemon and Macklin (2021); 2) Alagarsamy et al (2021); 3) Lemon (2019a); 4) Lemon (2019b); 5) Schohat and Vigoda-Gadot (2010); 6) O'Connor and Crowley-Henry (2019); 7) Kumar and Padhi (2021); 8) Ruck et al (2017); 9) Men et al. (2020); and 10) Shuck et al. (2021)	

* Each of the referenced article number in this table corresponds to a specific article in Table 14.

5.10. Conclusion

This research sets out to assess the impact of authentic leadership on employees' innovative work behavior and employee engagement while considering the mediating effects of social interaction and perceived organizational support on their relationship. The findings provide helpful insights into the understanding of theories of authentic leadership, innovative work behavior, employee engagement, social interaction, and perceived organizational support. The study noted that authentic leadership is a critical ingredient in organizations and promotes perceived employee innovative work behavior in organizations. Also, it was found to stimulate employee engagement within the organization. In the analysis, social interaction is seen to partially mediate the effects of authentic leadership on innovative work behavior. Similarly, the effects of authentic leadership on employee engagement were noted to be mediated partially by social interaction. Perceived organizational support, even though considered critical organizational variable, was not found to mediate the link between authentic leadership and innovative work behavior partially or fully. Further, the effects of authentic leadership on employee engagement were not mediated by perceived organizational support. That is an important contribution to literature. This research is the first attempt to model authentic leadership, innovative work behavior, employee engagement, social interaction, and perceived organizational support together. The study further highlighted the importance of social interaction of employees in promoting innovation, engagement, and eventually success of organizations. Decision makers can also benefit from the results of this study by using them to improve their practice and policy. It is however important to acknowledge the limitations to this study as identified in the preceding section. Based on that, I recommend further research efforts to overcome those challenges.

6. REFERENCES

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7. APPENDICES

7.1. Appendix 1: Survey Questionnaire/Instrument

Dear Sir/Madam

I am a PhD Candidate at Ankara Yildirim Beyazit University in the program of Management and Organization. This study is part of the requirements for the award of the PhD degree in the university. This survey is intended to collect data on the topic: **"Stimulating Employee Engagement and Innovation through Authentic Leadership: Understanding the Roles of Perceived Organizational Support and Social Interaction in the Relationships"** The purpose of this research is to assess how authentic leadership behaviors can stimulate workplace innovative behaviors among employees. The information generated from this questionnaire is purely for academic purposes. I wish to assure you that the information you will provide us would be kept confidentially and only accessible to the researchers. Thank you in advance for your kind cooperation.

Yussif Mohammed Alhassan

Demographic Features

Gender [ ] Female [ ] Male

Education [ ] Below Bachelors [ ] Bachelor's Degree [ ] Masters [ ] Doctorate

Age (in years) ……..

How long have you been working in this organization? …….. years

Industry : …….

Authentic Leadership Scale

Please, indicate the degree to which you agree to the following statements regarding the authentic behaviors of your leader. Response choices are: **(1) Strongly disagree; (2) Disagree; (3) neither agree nor disagree; (4) Agree; and (5) strongly agree.**

My leader….					
1. Encourages others to voice opposing points of view.	**1**	**2**	**3**	**4**	**5**
2. Solicits comments to improve his/her way of interacting with others.	**1**	**2**	**3**	**4**	**5**
3. Clearly states what he/she means.	**1**	**2**	**3**	**4**	**5**
4. Acts in accordance with his/her stated beliefs.	**1**	**2**	**3**	**4**	**5**
5. Asks for ideas that challenge his/her core beliefs.	**1**	**2**	**3**	**4**	**5**
6. Describes precisely how others views his/her abilities.	**1**	**2**	**3**	**4**	**5**
7. Openly express his/her thoughts.	**1**	**2**	**3**	**4**	**5**
8. Bases his/her decisions on its fundamental value.	**1**	**2**	**3**	**4**	**5**
9. İndicates that he/she understands how certain actions can influence other people.	**1**	**2**	**3**	**4**	**5**
10. Expresses his/her ideas and thoughts clearly to others.	**1**	**2**	**3**	**4**	**5**
11. Encourages me to make decisions that are consistent with my fundamental values.	**1**	**2**	**3**	**4**	**5**
12. Carefully listens to alternative perspectives before reaching a conclusion.	**1**	**2**	**3**	**4**	**5**
13. Makes decisions based on a rigorous ethical code.	**1**	**2**	**3**	**4**	**5**
14. Objectively analyzes relevant data before making a decision.	**1**	**2**	**3**	**4**	**5**

SA = Self-Awareness (2, 6, 9); BP = Balanced Processing (1, 5, 12, 14); RT =Relational Transparency (3, 7, 10); MP = Moral/Ethical Perspective (4, 8, 11, 13).

Innovative Work Behavior

Please, indicate the degree to which you agree to the following statements about your innovative work behaviors. Response choices are: **(1) Strongly disagree; (2) Disagree; (3) neither agree nor disagree; (4) Agree; and (5) strongly agree.**

1. I create new ideas for difficult issues.	**1**	**2**	**3**	**4**	**5**
2. I search out new technologies, processes, working methods, techniques, and/or product ideas.	**1**	**2**	**3**	**4**	**5**
3. I generate original solutions for problems.	**1**	**2**	**3**	**4**	**5**
4. I mobilize support for innovative ideas.	**1**	**2**	**3**	**4**	**5**
5. I make organizational members enthusiastic for innovative ideas.	**1**	**2**	**3**	**4**	**5**
6. I try to acquire approval for innovative ideas.	**1**	**2**	**3**	**4**	**5**
7. I transform innovative ideas into useful applications.	**1**	**2**	**3**	**4**	**5**
8. I introduce ideas into the work environment in a systematic way.	**1**	**2**	**3**	**4**	**5**
9. I evaluate the utility (benefits) of innovative ideas.	**1**	**2**	**3**	**4**	**5**

Perceived Organizational Support

(Shortened 9 item version)

Listed below and on the next several pages are statements that represent possible opinions that you may have about working at _____. Please indicate the degree of your agreement or disagreement with each statement by filling in the circle on your answer sheet that best represents your point of view about ____. Please choose from the following answers:

1: Strongly disagree; 2: Moderately Disagree; 3: Slightly disagree; 4: Neither agree or nor disagree; 5: Slightly agree; 6: Moderately Agree; and 7: Strongly agree.

1.	The organization strongly considers my goals and values.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
2.	Help is available from the organization when I have a problem.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
3.	The organization really cares about my well-being.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
4.	The organization is willing to extend itself in order to help me perform my job to the best of my ability.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
5.	Even if I did the best job possible, the organization would fail to notice. (R)	**1**	**2**	**3**	**4**	**5**	**6**	**7**
6.	The organization cares about my general satisfaction at work.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
7.	The organization shows very little concern for me. (R)	**1**	**2**	**3**	**4**	**5**	**6**	**7**
8.	The organization cares about my opinions.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
9.	The organization takes pride in my accomplishments at work.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Social Interaction

Please, indicate the degree to which you agree to the following statements regarding social interactions in your organization. Response choices are: **(1) Strongly disagree; (2) Disagree; (3) Neither agree nor disagree; (4) Agree; and (5) Strongly agree.**

1. Employees have confidence on other organizational members on their abilities and skills to do the work.	**1**	**2**	**3**	**4**	**5**
2. Employees have confidence on other organizational members on making decisions.	**1**	**2**	**3**	**4**	**5**
3. Employees have confidence on other organizational members to act in company's best interests.	**1**	**2**	**3**	**4**	**5**
4. Employees communicate and discuss with other members frequently.	**1**	**2**	**3**	**4**	**5**
5. Employees have willingness to communicate and discuss with other members in depth.	**1**	**2**	**3**	**4**	**5**
6. The task assignments of the employees are well planned.	**1**	**2**	**3**	**4**	**5**
7. The work procedures and activities are well scheduled.	**1**	**2**	**3**	**4**	**5**

1-3 items: Trust 4-5 items: Communication 6-7 items: Coordination

Employee Engagement

All items are measured on a 5-point Likert scale from 1-strongly disagree to 5-strongly agree. The items are defined as below: **(1) Strongly disagree; (2) Disagree; (3) Neither agree nor disagree; (4) Agree; and (5) Strongly agree.**

1. I am really focused when I am working.	**1**	**2**	**3**	**4**	**5**
2. I concentrate on my job when I am at work.	**1**	**2**	**3**	**4**	**5**
3. I give my job responsibility a lot of attention.	**1**	**2**	**3**	**4**	**5**
4. At work, I am focused on my job.	**1**	**2**	**3**	**4**	**5**
5. Working at my current organization has a great deal of personal meaning to me.	**1**	**2**	**3**	**4**	**5**
6. I feel a strong sense of belonging to my job.	**1**	**2**	**3**	**4**	**5**
7. I believe in the mission and purpose of my company.	**1**	**2**	**3**	**4**	**5**
8. I care about the future of my company.	**1**	**2**	**3**	**4**	**5**
9. I really push myself to work beyond what is expected of me.	**1**	**2**	**3**	**4**	**5**
10. I am willing to put in extra effort without being asked.	**1**	**2**	**3**	**4**	**5**
11. I often go above what is expected of me to help my team be successful.	**1**	**2**	**3**	**4**	**5**
12. I work harder that expected to help my company be successful.	**1**	**2**	**3**	**4**	**5**

Items 1-4: Cognitive Engagement Items 5-8: Emotional Engagement Items 9-12: Behavior Engagement

Thank You for Your Time

7.2. Appendix 2. Table 15. Factor loadings, Cronbach's α, CR and AVE scores

Variables	Factor loadings	Cronbach's α	CR	AVE
AL1	.743			
AL2	.782			
AL3	.712			
AL4	.582			
AL5	.744			
AL6	.762			
AL7	.744			
AL8	.797			
AL9	.850			
AL10	.905			
AL11	.832			
AL12	.834			
AL13	.754			
AL14	.802	0.955	0.955	0.778
IWB1	.782			
IWB2	.691			
IWB3	.688			
IWB4	.783			
IWB5	.716			
IWB6	.768			
IWB7	.701			
IWB8	.763			
IWB9	.819	0.918	0.919	0.747
EG1	.850			
EG2	.882			
EG3	.869			
EG4	.894			
EG5	.737			
EG6	.665			
EG7	.729			
EG8	.814			
EG9	.705			
EG10	.757			
EG11	.762			
EG12	.781	0.951	0.952	0.790
SI1	.840			
SI2	.853			
SI3	.845			
SI4	.811			
SI5	.822			
SI6	.795			
SI7	.755	0.936	0.934	0.818
POS1	.758			
POS2	.876			
POS3	.898			
POS4	.933			
POS6	.918			
POS8	.785			
POS9	.708	0.904	0.945	0.843