High Performance Work System and Organizational Performance: A Moderated-Mediation Organizational Level Study of Public Enterprises In Ethiopia

By: Wondimagegne Assefa Reda

Supervisor: Berhanu Temesgen Eshetu (PhD)

Dissertation Submitted to the College of Business and Economics

Department of Public Administration and Development Management

In Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy in Public Management and Policy

February 2026

Addis Ababa, Ethiopia

ORIGINAL LITERARY WORK DECLARATION

This dissertation is my original work and has not been submitted for the award of a degree in any university.

Signature.....

Date.....February 06/2026

Wondimagegne Assefa Reda

SIGNED BY THE MEMBERS OF THE EXAMINATION BOARD

Berhanu Temesgen Eshetu (PhD)

Name of Supervisor

Signature

Prof Worku Mekonnen

Name of Internal Examiner

Signature

Bacha Kebede Debela (PhD)

Name of External Examiner

Signature

Shumey Bernie (PhD)

Name of Chairperson

Signature

DEDICATION

This dissertation is dedicated to my dear mother Zewditu Mengistie Damtie for her ever loving care, support, and encouragement throughout my life.

ABSTRACT

This research examines the relationship between High Performance Work System (HPWS) and organizational performance in public enterprises in Ethiopia. The study uses cross-sectional quantitative survey research strategy. The organization is the unit of analysis of the study while the units of observation are top, middle, and lower level managers. The study employs stratified random sampling, and covers nine public enterprises by collecting data from managers using self-administered structured questionnaire. After assembling the data records of the study participants, data screening is conducted to make sure there are no errors, outliers, excessive missing data, and respondent misconduct. Then, the dataset is further examined to see if it fulfills the assumptions that underlie multivariate analysis. Next, measurement model analysis is performed to ensure the validity and reliability of the measurement scales. Afterwards, Structural Equation Modeling (SEM) technique is used to perform the data analysis of the study. The findings of the research corroborate the hypotheses that investing in HPWS has a significant positive association with the HR outcome, operational outcome, and financial performance of the public enterprises. In addition, operational outcome has a positive and significant complementary partial mediation role in the HPWS-financial performance relationship of the enterprises. However, internal fit and external fit do not have significant moderating effects in the direct and indirect relationship between and among the study constructs. As the findings of the research indicate a significant direct and mediating relationship between the HPWS and organizational performance of the public enterprises, the organizations would do well if they continue to emphasis on how they manage the human side of the enterprises. Given the absence of evidence for the

direct and indirect moderating effects of internal fit and external fit, it is important for the enterprises to focus more on strengthening the main effects of the HPWS practices than attempting to ensure the existence of internal fit among the HPWS practices or external fit between the HPWS practices and the business strategies of the enterprises. The study recommends future researchers to use a longitudinal research design to collect data on HPWS and organizational performance to conclusively understand the nature of relationship and causality between the constructs.

Key words

HPWS, HR outcome, operational outcome, financial performance, internal fit, external fit, public enterprise, Ethiopia

ACKNOWLEDGEMENTS

I thank the Almighty God for providing me with the strength, patience, and endurance to complete this study. I would like to express my deepest gratitude and appreciation to my supervisor Dr. Berhanu Temesgen Eshetu for his patience, motivation, very constructive comments, and unswerving willingness to provide continuous intellectual guidance throughout the learning process of this dissertation. Your unwavering encouragement and advice have not only helped me to enhance the quality of my dissertation, but also supported me to become a better researcher. I am also very grateful for the invaluable advice and very useful comments of Dr. Abeba Beyene, Dr. Yohannes Workaferahu, Dr. Emmanuel G/Yohannes, and Professor Terefe Degefa.

I would also like to thank Addis Ababa University for giving me the opportunity to pursue my doctoral studies in the Public Management and Policy PhD program. I am grateful to the university for providing me with the necessary academic, financial, and technical support. I also owe a great debt to the Department of Public Administration and Development Management, to the office of the registrar, to the finance department of the College of Business and Economics, to Dr. Challa Amdissa, and to Dr. Defferew Kebede. The library and computer facilities of the university were also very helpful.

My deepest gratitude also goes to the University of Ghana, and to the Intra-Africa Academic Mobility Program of the European Commission for the award of the HEED-Africa Academic Mobility Scholarship. The scholarship gave me the opportunity to focus on my research, and experience the culture of another African country. With this regard, I would like to express my deepest gratitude to Professor Albert Ahenkan and Mr. Amsalu Kesete for their precious support throughout the scholarship period.

I extend my heartfelt appreciation to the management and employees of Berhanena Selam Printing Enterprise, Chemical Industry Corporation, Commercial Bank of Ethiopia, Development Bank of Ethiopia, Ethiopian Agricultural Businesses Corporation, Ethio-Telecom, Ethiopian Electric Power, Ethiopian Insurance Corporation, and National

Alcohol and Liquor Factory for giving me the permission to conduct the research and for their willingness to participate in my study by dedicating their precious time and effort during the data collection process. I am also grateful for the support that I received from the Public Enterprise Holdings and Administration, Ethiopian Investment Holdings, National Archive and Library Agency, and Abrehot Library.

I would also like to thank my sponsor and employing organization, Mekdela Amba University, for providing me with the opportunity to study my PhD at the prestigious Addis Ababa University. I am also grateful to my fellow students in the PhD program for their support.

Above all, I would like to always express my deepest gratitude and appreciation to my dear mother Zewditu Mengistie Damtie for her ever loving care, support, and encouragement throughout my life.

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

LIST OF FIGURES

LIST OF FIGURES (Continued)

LIST OF TABLES

LIST OF TABLES (Continued)

LIST OF SYMBOLS AND ABBREVIATIONS

f^2	Effect Size
χ^2	Chi-Square
β	Coefficient
Df	Degrees of freedom
AMOS	Analysis of Moment Structure
AVE	Average Variance Extracted
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
EFA	Exploratory Factor Analysis
HCWS	High Commitment Work System
HIWS	High Involvement Work System
HPWS	High Performance Work System
HR	Human Resource
HRs	Human Resources
HRM	Human Resource Management
HTMT	Heterotrait-Monotrait
IFI	Incremental Fit Index
IOMM	Index of Moderated Mediation
KSAOs	Knowledge, Skills, Abilities, and Other characteristics
RBV	Resource-Based View
RMSEA	Root Mean Square Error of Approximation
ROA	Return on Asset
SEM	Structural Equation Modeling
SHRM	Strategic Human Resource Management
SPSS	Statistical Package for the Social Sciences
SRMR	Standardized Root Mean Square Residual
TLI	Tucker Lewis Index
UK	United Kingdom
USA	United States of America

LIST OF APPENDICES

CHAPTER ONE
INTRODUCTION

This study examines the relationship between High Performance Work System (HPWS) and organizational performance in public enterprises in a developing country context using the Resource-Based View (RBV). It relates HPWS to the Human Resource (HR) outcome, operational outcome, and financial performance of public enterprises in Ethiopia by focusing on the mediating effects of HR outcome and operational outcome, and the direct and indirect moderating effects of internal fit and external fit.

1.1 Background of the Study

Strategic Human Resource Management (SHRM) became an issue in the literature in 1984 after the publication of two seminal books by Tichy and Beer (Garmendia, Elorza, & Uribetxebarria, 2021). The SHRM practices that improve workforce capability and productivity are known as HPWS. Since the 1990s, HPWS has become prominent in the United States of America (USA) with the aim of transforming mass production jobs that were low in discretion and responsibility (Boxall, 2012). In addition, it has a widespread popular appeal in the Anglophone world such as the United Kingdom (UK), Australia, and New Zealand (Boxall, 2012). HPWS is also gaining acceptance in the context of developing countries although there are relatively very limited research work in the area (Cooke, Xiao, & Chen, 2021; Keramatiyazdi, Alizadesani, & Hosseini, 2023; Khatri, 1999).

HPWS is a group of separate but interconnected set of HRM policies and practices (Dessler, 2013; Takeuchi et al., 2009). They are bundles of practices which are designed to mutually reinforce each other synergistically to enhance organizational performance outcomes (Becker & Gerhart, 1996; Hermans & Ulrich, 2021, MacDuffie, 1995). The HPWS practices that increase organizational performance include practices such as providing employees with job security, selective hiring, self-managed teams and decentralization of decision making, high compensation contingent on organizational

performance, extensive employee training and development, decreasing status differences, and sharing financial and performance information to employees (Appelbaum, Bailey, Berg, & Kalleberg, 2000; Datta, Guthrie, & Wright, 2005; Pfeffer, 1998). Both theoretical and empirical studies demonstrate that HPWS has the potential to produce a significant positive impact on organizational performance (see Becker & Huselid, 1998; Boon, Den Hartog, & Lepak, 2019; Huselid, 1995; Jackson & Schuler, 1995; Jiang & Messersmith, 2018; Lado & Wilson, 1994; MacDuffie, 1995; Wright & Boswell, 2002).

There are various theories that demonstrate the significance of effective employee management to organizational performance. The RBV, behavioral perspective, human capital theory, ability-motivation-opportunity (AMO) framework, and social exchange theory are commonly applied theories that are used by scholars to examine the relationship between HPWS and organizational performance (Jiang & Messersmith, 2018). There are also three competing perspectives in the HPWS literature that conceptualize the association between HPWS and organizational performance. Delery and Doty (1996) distinguish them as the universalistic perspective, contingency perspective, and configurational perspective.

Although HPWS is associated with better organizational performance, the focus given to HPWS in public enterprises has been very low (Bach & Kessler, 2007). To apply HPWS in the public sector demands a shift in public administration. In response to the drawbacks of the old public administration that failed to adjust to the needs of a competitive market economy, New Public Management (NPM) emerged in the 1980's. With the desire to shift private sector management to the public sector, NPM mainly focuses on achieving efficiency and effectiveness by borrowing management principles from the private sector (Brown, 2004). Together with the NPM came new ways of managing employees in public enterprises. According to this model, HR is considered as strategic partners of the enterprises to achieve superior organizational performance (Brown, 2004).

Public enterprises focus on serving the needs of the public, stimulating economic growth, or protecting national interests (Smith, 2024). They play a significant role in the economy of both developed and developing countries by contributing considerably to their Gross Domestic Product (GDP), and by being an essential source of employment opportunity (Smith, 2024). Public enterprises have come to exist in Ethiopia since the beginning of the twentieth century (Dagnachew & Addissie, 2009) in an effort to modernize the state, through nationalization, and state investment in a joint venture (Tewodros, 2014). They have also been playing important economic, social, and political role in Ethiopia. Over the past few decades, public enterprises in Ethiopia have been contributing significantly for GDP growth and infrastructure investment (IMF, 2020a).

The role of public enterprises in Ethiopia is manifested in the huge amount of capital they command, their important positive contributions to the nation's development, and the magnitude of the economy's dependence on such enterprises. They have made considerable contributions to domestic capability building by providing essential services in telecommunication, air and sea transport, finance, mining and energy, publication, hotel, construction, manufacturing, and agriculture. Public enterprises are also important sources of revenue for the government and play a significant role in the creation of employment opportunity. All these point to the fact that the state of public enterprises is a significant variable for the performance of the Ethiopian economy. Given the importance of the enterprises to the country's economy, it is important for the government to understand what tools public enterprises can leverage to improve their performance and increase their chances of survival. Among other factors, proper management of human resources appears to be one way that the enterprises can use to improve their performance.

In Ethiopia, since 1991 onwards, the government has taken part in the economy while stimulating the private sector to actively participate in the economy (Dagnachew & Addissie, 2009). Subsequent to the implementation of the Structural Adjustment Program, the government has taken two broad measures concerning public enterprises, i.e. undertaking privatization, and varied reform measures. Although it is difficult to

exactly know the number of privatized state owned enterprises, it is estimated that 254 public enterprises have been privatized (Tadesse & Dawit, 2017). Regarding the reform programs, many measures were taken such as determining the policy framework, the relationship between the government and the public enterprises, conducting reorganization, developing strategic plan, implementing business process re-engineering, developing balanced scorecard, and so on (Mesfin, 2009). These measures have enabled public enterprises in Ethiopia to start recognizing the strategic role of human resources.

Despite policy documents emphasize the significance of human resources in Ethiopian public enterprises, empirical studies showing what HPWS accomplishes and how HPWS contributes to the performance of the public enterprises has been limited. Therefore, this study examines the relationship among HPWS, HR outcome, operational outcome, internal fit, external fit, and financial performance in public enterprises in Ethiopia.

1.2 Statement of the Problem

The relationship between HPWS and organizational performance has been studied from different perspectives and approaches. However, it has not yet been well understood how and to what extent HPWS influences organizational performance (Guest, 2011; Jiang & Messersmith, 2018; Wright & Ulrich, 2017). There is a growing agreement by theoretical HPWS research that the way an organization manages its HR can produce a significant positive impact on organizational performance (see Becker & Huselid, 1998; Boon, Den Hartog, & Lepak, 2019; Jackson & Schuler, 1995; Jiang & Messersmith, 2018; Lado & Wilson, 1994; Wright & Boswell, 2002). Most of the empirical studies also show that there is a link between HPWS and organization performance (Armstrong, 2010; Hermans & Ulrich, 2021). The studies found out a positive relationship between HPWS and objective (see Guthrie, 2001; Huselid, 1995; MacDuffie, 1995) and subjective (see Bae & Lawler, 2000; Delaney & Huselid, 1996) indicators of organizational performance. These studies demonstrate that HPWS results in enhanced HR outcome, operational outcome, and financial performance (see Arthur, 1994; Delaney & Huselid, 1996; Huselid, 1995; Ichniowski, Shaw, & Prennushi, 1995; MacDuffie, 1995; Youndt, Snell, Dean, & Lepak,

1996). Organizations that use HPWS practices have increased return on asset (ROA) by 5% and reduced employment turnover by 20% (Mathis & Jackson, 2011). Market value, return on equity, and other performance measures are also better in organizations that adopt HPWS (Mathis & Jackson, 2011).

Although much has been known about the relationship between HPWS and organizational performance, there are still gaps in knowledge as the past literatures have not adequately addressed the problem of how and to what extent HPWS contributes to organizational performance (Jiang & Messersmith, 2018; Kaushik & Mukherjee, 2022; Wright & Ulrich, 2017). First, previous studies on the relationship between HPWS and organizational performance mainly focused on a single or very few HPWS practices (Becker & Gerhart, 1996; Boon et al., 2019; Gerhart & Milkovich, 1990; Keramatiyazdi et al, 2023; MacDuffie, 1995; Osterman, 1994). However, scholars recommend the use of complementary bundles of HPWS. As a single HPWS practice may capture the impact of the whole HPWS, focusing on the effect of one or few HPWS practices on organizational performance results in an erroneous conclusion (Khatri, 2000; MacDuffie, 1995; Wright & Boswell, 2002). Rather than single HPWS practices, the use of complementary bundles of HPWS contributes to organizational performance by generating competitive advantage through people (Björkman & Xiucheng, 2002; Boon et al., 2019; Wright & Boswell, 2002). As a result, scholars urge the need for more empirical studies by shifting the attention of future HPWS research works from a focus on single or very few HPWS practices to a study of how HPWS as a bundle may contribute to the performance of an organization (Boon et al., 2019; Fey et al., 2000; Keramatiyazdi et al., 2023).

Second, very few studies show the mechanism through which HPWS impacts organizational performance (Becker & Gerhart, 1996; Boselie, Dietz, & Boon, 2005; Guest 2011; Huselid, 1995; Jiang et al., 2012; Kloutsiniotis & Mihail, 2018). The greater part of the previous studies failed to demonstrate the process through which HPWS practices affect organizational performance, which is usually referred by some HRM scholars as the ‘black box’ problem (Björkman & Xiucheng, 2002; Guest, 2011; Jiang et al., 2012; Kloutsiniotis & Mihail, 2018; Messersmith et al., 2011; Wright et al., 1999;

Wright, Gardner, & Moynihan, 2003). HR outcome and operational outcome are proposed by various scholars to mediate the relationship between HPWS practices and financial performance (Armstrong, 2009; Becker, Huselid, Pickus, & Spratt, 1997; Björkman & Xiucheng, 2002; Dyer & Reeves, 1995; Guest 2011; Huselid, 1995; Jiang et al., 2012; Jiang & Messersmith, 2018; MacDuffie, 1995). Even though there are prior studies that demonstrate the process of what HPWS accomplishes and how (see Guthrie, 2001; Huselid, 1995; Messersmith et al., 2011), they are insufficient and focus only on showing the mediating roles of single HR outcomes in the private sector in a developed country context. Hence, due to the absence of enough work that uncover the 'black-box' of how HPWS influences organizational performance, the scholars highlight the need for additional future studies that expose the full picture of the intermediate linkages between HPWS and organizational performance in various contexts (Becker & Gerhart, 1996; Björkman & Xiucheng, 2002; Boselie, Dietz, & Boon, 2005; Fey et al., 2000; Guest, 2011; Huselid, 1995; Jiang et al., 2012; Jiang & Messersmith, 2018; Kloutsiniotis & Mihail, 2018; Messersmith et al., 2011; Way, 2002).

Third, majority of the empirical research works on HPWS are conducted in the context of western countries; predominantly on North American companies (Björkman & Xiucheng, 2002; Cooke et al, 2021; Fey et al., 2000; Keramatiyazdi et al, 2023; Khatri, 1999). As most of the studies were conducted in the USA, to what extent HPWS impacts organizational performance in other countries is a mystery (Cooke et al, 2021; Keramatiyazdi et al, 2023; Khatri, 2000). There is relatively very limited research work in the context of developing countries (Cooke et al, 2021; Keramatiyazdi et al, 2023; Khatri, 1999). The scanty empirical research works in the context of developing countries are also besieged by various limitations. For example, a systematic review of 50 years of HPWS research in Bangladesh demonstrates that only two studies used moderating variables, only one study was conducted in the public sector, studies that focused on individual level outcomes were widespread, and the banking sector was the single most researched industry (Islam, Absar, & Mahmood, 2022). The limited empirical studies conducted in the context of other developing countries such as Ethiopia (see Amare, Abebe, & Abdurezak, 2022a & 2022b; Amare, Abebe, & Abdurezak, 2023; Sheref,

Demis, & Zerihun, 2024), Ghana (see Abugre & Nasere, 2019) and Indonesia (see Jaya et al, 2024) focused on the mediating role of one HR outcome only. In addition, the individual was the unit of analysis, and the employee was the unit of observation. Moreover, the studies emphasized on a single or few organizations, and concentrated on a single or few professions. They also mainly used employee performance as a dependent variable. Besides, few used moderating variables, but none of them tested the moderating effects of internal fit and external fit in the relationship between HPWS and organizational performance. Furthermore, the studies used one indirect path between HPWS and organizational performance.

Fourth, almost without exception, many of the prior studies on the association between HPWS and organizational performance are conducted in private sector organizations in the USA and the UK (Arthur, 1994; Cooke et al., 2021; Gould-Williams, 2003; Huselid, 1995; Knies, Boselie, Gould-Williams, & Vandenabeele, 2018; MacDuffie, 1995; Youndt et al., 1996). Although the field of SHRM has made a tremendous progress over the past decades and developed considerably as a field of study (Kaufman, 2007; Bach & Kessler, 2007), the attention given to HPWS in public enterprises has been very low (Bach & Kessler, 2007). In addition, the coverage given to the issue of HPWS in the public sector on relevant books and scholarly articles has only been superficial (Brown, 2004). However, public enterprises are vital for the functioning of the modern society and are highly expected to provide quality goods and services in a timely manner (Burke, Allisey, & Noblet, 2013). Therefore, the HPWS practices of public enterprises need special consideration due to the following reasons: (1) literatures in HPWS have failed to provide enough attention to public enterprises; (2) the high significance of goods and services delivered by public enterprises to the society, and the importance of public employees in providing these goods and services; (3) the enormous amount of government investment in public enterprises, and the desire of the government to make the most out of it; and (4) the multitude of employee-related problems faced by the organizations (Burke et al, 2013). Given this, the HPWS of public enterprises in the context of developing economies needs to be examined as it has an influence on their performance (Burke et al, 2013).

As can be seen from the above discussion, it is clear that past researches on the link between HPWS and organizational performance have consistently shown a positive relationship. However, prior research works focus on a single or very few HPWS practices, very few studies show the mechanism through which HPWS influences organizational performance, majority of the empirical research works on HPWS are conducted in the context of western countries, and many of the earlier studies are conducted in private sector organizations. Therefore, by testing the association between HPWS and organizational performance in Ethiopian public enterprises, this study has added to the existing few studies that are conducted in the context of developing countries by employing the complete list of HPWS practices. In addition, the research uses the organization as a unit of analysis, and the managers of the public enterprises as a unit of observation. Moreover, the study utilizes multiple indirect paths using HR outcome and operational outcome as mediating variables, internal fit and external fit as moderating variables, and financial performance as distal measure of organizational performance.

1.3 Research Questions

The general research question of this study is: How does HPWS influence the organizational performance of public enterprises in Ethiopia, controlling for organization age, size, sector, degree of unionization, capital intensity, and level of technology?

To answer the fundamental question, the study addresses the following specific questions:

1. What is the relationship between HPWS, HR outcome, operational outcome, and financial performance?

2. How does HR outcome and operational outcome mediate the relationship between HPWS and financial performance?

3. How does internal fit moderate the relationship between HPWS, HR outcome, operational outcome, and financial performance?

4. How does external fit moderate the relationship between HPWS, HR outcome, operational outcome, and financial performance?

1.4 Research Objectives

The main purpose of this cross-sectional quantitative study is to relate HPWS to the organizational performance of public enterprises in Ethiopia using the RBV.

The specific objectives of this study are stated as follows:

1. Examine the relationship between HPWS, HR outcome, operational outcome, and financial performance using the universalistic perspective.

2. Investigate the mediating effects of HR outcome and operational outcome in the relationship between HPWS and financial performance using the behavioral perspective.

3. Determine the moderating effect of internal fit in the relationship between HPWS, HR outcome, operational outcome, and financial performance using the configurational perspective.

4. Find out the moderating effect of external fit in the relationship between HPWS, HR outcome, operational outcome, and financial performance using the contingency perspective.

1.5 Scope of the Study

The temporal, geographical, conceptual, and methodological delimitations of the study are discussed in this section. Temporally and methodologically, the study used cross-sectional quantitative survey research strategy. Geographically, the scope of the study was delimited to public enterprises that were owned and operated by the federal government of Ethiopia; the participants of the study were top, middle, and lower level managers who were working at the headquarters of the public enterprises in Addis Ababa during the data collection period.

The main constructs of the study were also conceptually delimited. First, the study conceptualized HPWS by using practices that enhance employee capability and productivity such as providing employees with job security, selective hiring, self-managed teams and decentralization of decision making, high compensation contingent on organizational performance, extensive employee training and development, decreasing status differences, and sharing financial and performance information to employees (Appelbaum et al., 2000; Datta et al., 2005; Huselid, 1995; Pfeffer, 1998). Second, HR outcome was conceptualized in this study by focusing on employee satisfaction, commitment, and empowerment (Armstrong, 2014; Green et al, 2006; Messersmith et al, 2011; Spreitzer, 1995). Third, the study conceptualized operational outcome by including quality of products, ability to develop new products, and customer satisfaction (Armstrong 2014; Delaney & Huselid, 1996; Dyer & Reeves, 1995; Harel & Tzafrir, 1999; Jiang et al, 2012). Fourth, financial performance was conceptualized as consisting profitability, sales growth, market share, and marketing activities (Armstrong 2014; Delaney & Huselid, 1996; Harel & Tzafrir, 1999; Jiang et al, 2012). Fifth, internal fit was conceptualized measuring the availability of HPWS strategy that is officially approved and supported by the top management, the intentional integration of HPWS policies among each other, and the availability of consistent HPWS policies across the organization's various divisions (Becker & Huselid, 1998; Hoque, 1999; Huselid, 1995). Finally, external fit was conceptualized by measuring the public enterprises effort to align HPWS and business strategies, the involvement of the HR department in the strategic

planning process of the organizations, and how HR managers are perceived by those outside of the department (Becker & Huselid, 1998; Björkman & Xiucheng, 2002; Hoque, 1999; Huselid, 1995).

1.6 Significance of the Study

The findings of this research have important theoretical and practical implications to the existing literature. Theoretically, the study verifies the rationale of the best-practice approach by corroborating the hypotheses that HPWS has a significant association with the HR outcome, operational outcome, and financial performance of the public enterprises. The results of the study also generated data that refute the best-fit approach in public enterprises in a developing country context. Moreover, the findings uncover the 'black-box' of how HPWS influence organizational performance by providing evidence supporting the existence of indirect relationship between HPWS and financial performance via the operational outcome mediating construct. Besides, the study demonstrates that HPWS as a 'bundle' contributes to the performance of an organization. Furthermore, as previous works focused on the private sector in developed countries, this study contributes to the theoretical literature by revealing the influence of HPWS on organizational performance in public enterprises in the context of a developing country.

Practically, the results of the direct and indirect relationship hypotheses tests demonstrate that the use of HPWS significantly contributes to organizational performance beyond and above other well-known drivers of organizational performance. As the study extensively controlled for organizational and individual level control variables based up on the literature, the study highlights to the managers of the public enterprises the significance of HPWS to organizational performance irrespective of the environment. As long as the enterprises effectively implement HPWS, they can expect to see added benefits to their organization regardless of the organization age, organization size, capital intensity, organization sector, degree of unionization, and level of technology. Furthermore, the findings of the study that test the moderating effects of internal fit and external fit provide evidence that the mere adoption of HPWS practices is more essential than any attempts to

ensure such practices have internal fit among each other and external fit with the business strategies of the public enterprises.

1.7 Operational Definition of Key Terms

Human Resource Management is defined as an integrated and coherent approach that is responsible for acquiring, developing, appraising, rewarding, and protecting HRs to achieve organizational and individual goals (adapted from Armstrong, 2014; Dessler, 2013; Ivancevich, 2010).

Strategic Human Resource Management is defined as the planned deployment of a mutually reinforcing HR practices that are vertically aligned with the business strategy of an organization with the intention of enhancing organizational performance (adapted from Becker & Huselid, 2006; Jackson, Shuler, & Jiang, 2014; Schuler, 1992; Wright & McMahan, 1992).

High Performance Work System refers to 'a group of separate but interconnected HR management practices, including comprehensive recruitment and selection procedures, incentive compensation and performance management systems, and extensive employee involvement and training, which are designed to enhance employee and firm performance outcomes through improving workforce competence, attitudes, and motivation (Takeuchi, Chen, & Lepak, 2009, p. 1).

HR Outcome refers to those outcomes most directly related to HRM in an organization (Jiang et al., 2012, p.1265).

Operational Outcome refers to those outcomes related to the goals of an organizational operation, including product quality, product innovation, and customer satisfaction (Armstrong, 2014; Jiang et al. 2012).

Financial Performance is the fulfillment of the economic goals of organizations, including sales growth, profitability, market share, and marketing activities (Armstrong, 2014; Delaney & Huselid, 1996; Harel & Tzafrir, 1999; Jiang et al., 2012).

Organizational Performance refers to all three categories – HR outcome, operational outcome, and financial performance - at the organizational level (Jiang et al., 2012).

Internal Fit refers to the existence of horizontal complementarities among HPWS practices (Baird & Meshoulam, 1988; Hoque, 1999; Lahteenmaki, Storey, & Vanhala, 1998; Wright & Snell, 1991).

External Fit refers to the existence of vertical alignment between HPWS and business strategy (Baird & Meshoulam, 1988; Fey et al., 2000; MacDuffie, 1995).

Public Enterprise also known as government-owned corporation or state-owned enterprise is defined as 'companies with government ownership, control, or partial ownership in sectors such as energy, telecommunications, healthcare, and transportation' (Smith, 2024, p.1).

1.8 Organization of the Study

This study consists six chapters. Chapter two reviews the theoretical and empirical literatures, and presents the hypotheses of the study. Chapter three addresses the research methodology part; it discusses the research philosophy, methodological choice, research strategy, and the data collection and analysis techniques and procedures. Issues related to instrument validation and measurement model analyses are examined in chapter four. Chapter five examines the analysis and results of the primary and secondary data that were collected on the HPWS, HR outcome, operational outcome, internal fit, external fit, and financial performance of the public enterprises in Ethiopia. The discussion, conclusion, limitations of the study, and directions for future research are presented in chapter six.

1.9 Summary of the Chapter

This chapter has provided an introduction to the study. It has presented the general background and context of the study, and identified the knowledge gaps that it intends to address. The chapter has also outlined the research questions and objectives of the study. Moreover, the scope and significance of the study have been discussed. Furthermore, the chapter has provided the glossary of key terms and the organization of the study. The next chapter examines the theoretical and empirical literatures, and presents the hypotheses of the study.

CHAPTER TWO
LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 Introduction

As indicated in chapter one, the main objective of the study is to relate HPWS with the HR outcome, operational outcome, and financial performance of public enterprises in Ethiopia. Accordingly, this chapter reviews the theoretical and empirical literatures that are appropriate for the study. The chapter begins by reviewing the concept of HRM, SHRM, and HPWS. After that, the chapter presents the core HPWS practices. In addition, theoretical foundations that are relevant for the study and an overview of the theoretical background of the study constructs are presented. Moreover, based on theoretical and empirical literatures, the chapter develops the conceptual framework and the hypotheses of the study.

2.2 Definition of Concepts

2.2.1 Human Resource Management

HRM has a long history with writings on the practice dating back to the 1st century (Rowley & Jackson, 2011). It has earlier guises with the most prominent one being personnel management. Due to increased pressure on organizations posed by globalization and technological development, HRM emerged as a concept in the 1980s by rebranding personnel management to highlight the role of people in achieving organizational objectives (O'riordan, 2017; Rowley & Jackson, 2011). This shift in paradigm has created a mindset that explores and interprets HRM as a series of activities that are performed to achieve the business objectives of an organization; consequently, pave the way for the emergence of SHRM (Rowley & Jackson, 2011).

HRM is an essential activity in any type of organization in which people are employed. It deals with people at work and is mainly concerned with all facets of how people are

recruited, developed, and managed in organizations (Armstrong, 2014). It is the proper management of an organization's manpower at work by finding ways that make them motivated, satisfied, and productive (Ivancevich, 2010). It is an unavoidable result of forming an organization; hence, the existence of it demands no elaborate rationalization (Boxall, Purcell, & Wright, 2007). Its center of attention is on the lifeblood of organizations – people; without them, there is absolutely no need for any organizational functions, plans, systems, or procedures (Ivancevich, 2010).

Ivancevich (2010, p. 4) defines HRM as 'the function performed in organizations that facilitates the most effective use of people to achieve organizational and individual goals'. This definition shows the contribution of HRM to the realization of individual and organizational objectives. However, the definition of HRM by Ivancevich (2010) fails to identify the specific HR practices that enable an organization to effectively use its people. HRM is also described as 'a strategic, integrated and coherent approach to the employment, development and well-being of the people working in organizations' (Armstrong, 2010, p. 8). Although the definition given by Armstrong (2010) stresses the need for HR alignment and complementarities, it is less explicit in terms of linking it to organizational performance.

According to Dessler (2013, p. 4), HRM is 'the process of acquiring, training, appraising, and compensating employees, and of attending to their labor relations, health and safety, and fairness concerns'. This definition outlines the HR practices that are usually performed in an organization. Nevertheless, the definition by Dessler (2013) does not demonstrate the importance of performing the HR practices to achieve organizational and individual goals. The definitions given by various authors clearly show that HRM is part of an organization that has the responsibility to effectively utilize people to accomplish the needs and objectives of both the workforce and the organization. Hence, HRM is defined for the purpose of this study as an integrated and coherent approach that is responsible for acquiring, developing, appraising, rewarding, and protecting HRs to achieve organizational and individual goals (adapted from Armstrong, 2014; Dessler, 2013; Ivancevich, 2010).

2.2.2 Strategic Human Resource Management

SHRM is conceptualized by various authors, with each scholar highlighting different features of the concept. According to Wright and McMahan (1992: 298), SHRM is "the pattern of planned human resource deployments and activities intended to enable an organization to achieve its goals". This definition emphasizes on linking HRM practices vertically with the strategic management process of an organization, and horizontally creating congruence among the HRM practices. Nevertheless, this definition does not clearly show how HR practices influence organizational performance.

The argument forwarded by Schuler (1992) towards SHRM can be summarized as systematically linking HRM to the strategic needs of an organization. Although this viewpoint highlights the significance of linking HR practices to the internal and external environment of an organization, it does not openly show the benefit of creating internal fit among the HR process and the process how linking the HR practices with strategy impact organizational performance. Developing on the conceptualizations of Wright and McMahan (1992) and Schuler (1992), Becker and Huselid (2006) argued that SHRM differs from the traditional HRM as it focuses on organizational than individual performance, and as it stresses on the significance of mutually reinforcing HR practices rather than individual practices. The conceptualization of Becker and Huselid shows how internal fit and external fit in SHRM contribute to organizational performance.

The definition by Jackson et al. (2014) focuses on conceptualizing SHRM as systems and their interrelationships with both the internal and external aspects of the organization, which ultimately determines the long-term survival of the organization. This conceptualization of SHRM highlights the benefit of creating interrelationships between HR practices and, the internal and external environment for the long-term success of an organization. Taking all these conceptualizations of SHRM shows a progress from creating alignment and complementarities (Wright & McMahan, 1992), to the benefits of embedding it to the strategic needs of an organization (Shuler, 1992), to a focus on stressing the significance of a bundle of HR practices to organizational performance

(Becker & Huselid, 2006), and finally to the role of creating interrelationship between HR practices and the context of an organization on long-term survival (Jackson et al, 2014).

Taking the above conceptualizations into account, SHRM is defined for the purpose of the current study as the planned deployment of a mutually reinforcing HPWS practices that are vertically aligned with the business strategy of an organization with the intention of enhancing organizational performance (adapted from Becker & Huselid, 2006; Jackson et al, 2014; Schuler, 1992; Wright & McMahan, 1992).

2.2.3 High Performance Work System

HPWS is an interrelated set of HRM policies and practices that enable an organization to achieve better performance (Dessler, 2013). Other terms such as High Involvement Work System (HIWS) and High Commitment Work System (HCWS) are also used interchangeably to label the effective management of an organization's people. The terms are usually used interchangeably as they demonstrate ways on how to use the HR of an organization for enhanced organizational success (Pfeffer, 1998). The concept originated in the US and is an everyday terminology in academic disciplines ranging from HRM to operations management (Boxall, 2012).

2.3 Core HPWS Practices

HPWSs that enhance organizational performance include practices such as providing employees with job security, selective hiring, self-managed teams and decentralization of decision making, high compensation contingent on organizational performance, extensive employee training and development, decreasing status differences, and sharing financial and performance information to employees (Appelbaum et al., 2000; Datta et al., 2005; Huselid, 1995; Pfeffer, 1998). Therefore, the HPWSs that are expected to influence organizational performance are described in the following section.

2.3.1 Employment security

Organizations that have a policy of employment security signal their commitment to their people (Fey et al., 2000). Innovation, knowledge sharing, and productivity are not likely be sustained if employees do not have employment security. When there is employment assurance, there is less probability for organizations to lay off workers during economic downturns. This helps organizations to save costs that they use to select, train, and develop their human asset. In addition, they do not hand over their essential assets for their competitors to employ (Pfeffer, 1998).

As it is not easy to dismiss employees, provision of job security helps an organization to hire fewer people more selectively. The use of rigorous selection procedure ensures productivity as less people are doing the work and as the employees are happy because of their job security and having a career. Furthermore, provision of job security creates trust between management and workers leading to more cooperation, and less demand for urgent pay increase (Pfeffer, 1998).

Provision of job security aligns the purpose of the organization and the employee. Employees will become concerned about the future success of the organization (Fey et al., 2000). Delery and Doty (1996) also investigated a significant positive association between job security and organizational performance in the US banking sector. This is because provision of employment security helps workers to have a longer-term view towards their job and organization performance (Pfeffer, 1998).

In addition, job security is basic for the implementation of other practices in HPWS. Organizations do not invest on rigorous selection, training and development, and share important financial and operational information with employees who are not likely to be with them for long enough (Pfeffer, 1998). Employment security, however, does not mean retaining non-performing employees. It means employees with good performance will not be a victim of issues over which they have no direct control such as economic downturn, financial difficulty, or poor senior management decisions (Pfeffer, 1998).

To sum up, providing employment security signals an organization's commitment to employees. It helps to save costs, hire fewer but more competent employees, instill trust between employees and the management of an organization. In addition, it helps organizations to have committed employees who are concerned about the success of the organization. Moreover, empirical studies have also confirmed that providing job security enhances organizational performance.

2.3.2 Selective hiring of new personnel

Selection is a procedure followed by an organization to choose the prospective employee who has demonstrated a superior performance in meeting the selection criteria (Ivancevich, 2010). A hiring practice that has the capacity to attract large number of application pool, coupled with a rigorous selection practice, will have a considerable effect on the quality and composition of an organization's workforce (Huselid, 1995). Persuading potential employees to apply and selecting the right person from the application pool is the main objective of this component (Posthuma et al., 2013). Rigorous recruitment and selection practice has a positive effect on productivity and profitability (Michie & Sheehan, 2005).

The essence of successful selection system is identifying the essential characteristics that determine high job performance and using it rigorously to select applicants with the necessary knowledge, skills, abilities, and other characteristics (KSAOs). The selection system should also be able to differentiate KSAOs that are required during the hiring stage, those that are trainable, and those that are acquired overtime through constant interaction with the job. Therefore, various selection criteria may be required to evaluate the different KSAOs (Ivancevich, 2010).

Organizations which want to use their HR as a competitive advantage will go the extra mile needed to hire the right workforce. To ensure the recruitment of the right employee, several conditions should be fulfilled. First, the organization should have large number of applicants to choose from. Second, the organization needs to know the critical skills,

knowledge, and attributes that are required from its applicants. Third, the skills and attributes sought by the organization must be consistent with the requirements of the job. Fourth, the organization need to focus on screening employees based on their attributes and cultural fit rather than on trainable skills. Fifth, organizations which are dedicated to have the right people put their potential employees through a number of rigorous tests and interviews so as to select the right employee, develop commitment, cause high level of motivation, and demonstrate that hiring of employees is taken seriously by involving senior people in the hiring process. Finally, the organization learns and improves its future hiring practice by assessing the performance of the recruitment process **(**Pfeffer, 1998).

In general, to implement the selective hiring practice, organization's need many applicants per job opening, hire based on the culture fit and attitude of applicants, use hiring requirement that are relevant to the job, implement numerous screening stages, include senior management in the selection process, and assess the effectiveness of the recruitment and selection practice at the end. The foregoing discussion shows that extensive selection procedure helps to build a high-performing organization. Previous studies also investigated a positive association between rigorous selection practices and organizational performance.

2.3.3 Self-managed teams and decentralization of decision making

Organizational structure and relationships among various jobs are the main issues that are included in this component; teams and job enrichment are also some of the practices therein (Posthuma et al., 2013). Various empirical works have also included teamwork and decentralization as an essential feature of HPWS (see Arthur, 1994; Huselid, 1995; Ichniowski et al., 1995; MacDuffie, 1995; Pfeffer, 1995). They are crucial practices as they determine the level of employee job satisfaction and the discretion that they have on their job (Berg, 1999). The practices also reduce organizational layers; as a result, improve workforce commitment (Fey et al., 2000). In addition, according to Wagner (1994), workforce involvement and participation has a significant positive influence on

job performance and employee satisfaction. Decentralized organizational structures that enhance employee involvement have the potential to impact organizational performance by providing workers the latitude to decide how to perform their job-activities (Huselid, 1995).

A self-managed team is one of the most important aspects of HPWS. It plays a decisive role in organizational effectiveness by reducing defect rate and enhancing productivity. They also create a more effective control system by replacing hierarchical control system with peer control thereby helps to remove unnecessary hierarchical layers and puts decision making authority in the hands of employees who are closer to the job. In addition, team-based organization inculcates a sense of responsibility and accountability by substituting the operation and management of the organization from the hands of few people in senior management position to all employees working in the company. Moreover, working in a team helps to come up with creative ideas and solutions by capitalizing on the diverse experience and background of participants (Pfeffer, 1998).

Generally, having self-managed teams and using decentralized decision making system increases organizational effectiveness by giving full responsibility and accountability to employees who are closer to the job. Various empirical studies have also found out that the use of teams and decentralized decision making improves the job satisfaction and job performance of employees and ultimately has a positive impact on organizational performance.

2.3.4 Comparatively high compensation contingent on organizational performance

The reward employees receive directly or indirectly from their organization is categorized under this practice; compensation and bonuses are some of the main plans included within this category (Posthuma et al., 2013). Compensation is concerned with any form of reward employees obtain in exchange for discharging their organizational duties and responsibilities. It is a major HPWS practice that serves as a magnet to pull competent employees and encourage them to fully utilize their potential for more

effective individual and organizational performance (Ivancevich, 2010). It is divided in to financial and nonfinancial. Financial could be either direct or indirect. The pay workers get in the form of salaries, wages, commissions, and bonuses are considered as direct financial compensation. Indirect financial compensation consists of benefits and services such as insurances, vacation, elder care and childcare service, and other related financial rewards not incorporated in direct financial compensation; they are provided to the workforce irrespective of job performance or seniority (Ivancevich, 2010; Dessler, 2013). On the other hand, nonfinancial compensation includes rewards such as recognition, praise, and self-esteem; it has the potential to positively impact the satisfaction, productivity, and motivation level of employees (Ivancevich, 2010).

The creation of an equitable reward system for both the employer and the workforce is the main objective of the compensation function of HPWS. In order to be effective a compensation policy should be adequate, equitable, balanced, cost-effective, secure, incentive-providing, and acceptable to the employee (Ivancevich, 2010). It is an essential component of HPWS as it channels workforce energy and behavior towards a desired objective (Sheppeck & Militello, 2000). Employees usually have a tendency to compare their compensation with others who are working in the same or another organization. Therefore, payment of high compensation will have a positive impact on the motivation level of an organization's workforce (Fey et al., 2000). High compensation also helps to retain employees (Pfeffer, 1998). Paying employees lesser than others in similar position and organization results in job dissatisfaction and ultimately to higher rate of quits. In addition, there is association between pay level and the quality of employees an organization is capable of attracting. The level of pay signals the true value given by an organization to its employees. Successful organizations have the capacity to pay high salary; however, high salary in not only the consequence of financial success, it has also the potential to enhance an organization's profitability (Pfeffer, 1998).

In addition to the amount of pay, performance-based contingent compensation is one of the most important components of HPWS (Pfeffer, 1998). Various authors have incorporated performance-based compensation practice as one component of HPWS (see

Arthur, 1994; Delery & Doty, 1996; Huselid, 1995; Ichniowski et al., 1995; MacDuffie, 1995; Pfeffer, 1995). Performance-based compensation system together with performance appraisal, and internal promotion based on merit have a significant positive influence on the motivation level of employees (Huselid, 1995).

Research works on the association between performance-based pay and organizational performance have reported a significant positive association. It has even been considered as being the strongest predictor of organizational performance (Delery & Doty, 1996). Performance-based compensation also has a positive impact on employee motivation; when pay is contingent on employee's performance, they are likely to perform in a manner that will help them get the reward (Fey et al., 2000).

Contingent compensation system has various forms; it includes incentives, stock ownership, profit sharing, and gain sharing. Contingent compensation has different benefits. First, it helps to create fairness and equality in the distribution of wealth. When an organization is capable of raising greater returns by using its human asset, it seems fair and logical to distribute some portion of the profit to its employees. This ultimately creates fairness in the organization and motivates its workforce for better subsequent job performances. Second, it helps to create employment security by aligning the interest of employees with the organization with some form of group-based incentive systems. Finally, it replaces bureaucratic control with peer pressure that stimulates participants to identify with the organization and work hard towards the realization of their common goal (Pfeffer, 1998).

In summary, compensation is divided as financial and nonfinancial. Providing compensation that is contingent on the performance of the workforce helps to align the objectives of the organization with the employees. In addition, the pay level of workers has an influence on organizational performance. Numerous empirical research works have also reported that high compensation that is contingent on performance helps to improve employee motivation and reduce turnover by enhancing the retention of talented

workforce. High paying organizations are also capable of generating a large amount of application pool and are more likely to get people with better skills.

2.3.5 Extensive training

Training and development deal with providing the workforce with the necessary knowledge, skills, abilities, and the information to understand the organization and its objectives. They are also designed to enhance employee's performance so as to enable them make positive contributions for superior organizational effectiveness. Training assists the workforce do their present job more effectively (Ivancevich, 2010). It is providing new or existing workforce with the necessary competencies that are needed to discharge their work successfully (Dessler, 2013). In contrast, development mainly focuses on the personal development aspect of employees so as to prepare them for the future (Ivancevich, 2010).

Many empirical studies have included employee training as an important component of HPWS (see Arthur, 1994; Delery & Doty, 1996; Huselid, 1995; Ichniowski et al., 1995; Koch & McGrath, 1996; MacDuffie, 1995; Pfeffer, 1995). Teaching the workforce of an organization on skills and knowledge that is important for both their current and future responsibilities are decisive for the success of an organization. On-the-job and off-the-job trainings, job rotation, and multi-skill training are included under this component (Posthuma et al., 2013). The practice is essential as it is directly connected to improving the overall capacity of the organization (Truss, 2001). It helps organizations to use their full capacity and achieve their objectives (Ulrich, 1997).

Extensive employee training can be a source of competitive advantage (Pfeffer, 1998). The availability of need-based on-the-job and off-the-job training and development experiences provide essential opportunities to enhance the skill and knowledge of an organization's workforce (Huselid, 1995). An organization's investment on training determines the type and variety of skills available in the organization. In addition,

organizations that have substantial training programs experience less employee turnover than their counterparts (Fey et al., 2000).

To conclude, when organizations put a great effort to provide employees with the right training and development opportunities, they are paving the way to get a workplace filled with qualified employees with the right knowledge, skills, and motivation. This creates a conducive work environment where employees are given the opportunity to use their skills fully and contribute towards the goals of the organization effectively. In addition, empirical studies have also demonstrated a positive association between training and development and organizational performance.

2.3.6 Reduction of status differences

In order to create an encouraging work environment where all employees freely share their ideas, skills, and efforts without reservation, HPWS reduces status differences among employees of various organizational levels. This is accomplished by working on dress, office layouts, usage of language, and narrowing the wage inequality across various organizational layers (Pfeffer, 1998). Therefore, together with the remaining HPWS practices, reducing status distinctions between the management and employees is expected to enhance organizational performance.

2.3.7 Extensive sharing of financial and performance information

Sharing of organizational information helps to build trust, clarify goals and expectations, and link job-activities with organization strategy. Providing employees with formal information on financial, operational, and strategic issues is included in this practice (Posthuma et al., 2013). It is also one of the important components of HPWS. Sharing of operational, financial, and strategy related information has a message to the workforce that the management of the organization trusts them. In addition, employees contribute for better organization performance when they have all the necessary information

coupled with the skill on how to interpret and use it (Pfeffer, 1998). Information sharing also impacts organization performance positively (Gittell, Seidner, & Wimbush, 2010).

One reason for holding financial and operational information by organizations is because it is considered as a source of power. In addition, managers are anxious that the information may leak out to their competitors (Pfeffer, 1998). However, employees should not be expected to contribute positively for the performance of their organization if they do not have a clue about what is going on in the organization (Pfeffer, 1998). Therefore, sharing financial and operational information to employees and training them on how to understand the information helps them to positively affect performance. In addition, empirical studies show that there is a positive relationship between information sharing and organizational performance.

To conclude, HPWSs are coherent practices that work synergistically to enhance organizational performance. As indicated, it includes practices such as employment security, selective hiring of new personnel, self-managed teams and decentralization of decision making, high compensation contingent on organizational performance, extensive employee training and development, decreasing status distinctions between employees and the management of an organization, and sharing financial and performance information to the workforce. This study, therefore, expects that the bundles of HPWS practices mutually reinforce each other synergistically to improve the organizational performance of the public enterprises in Ethiopia.

2.4 Theoretical Foundations

HRM scholars have been using numerous theories for examining the relationship between HPWS and organizational performance. Jiang and Messersmith (2018) have identified more than 20 theories that were used by scholars in prior researches. In addition to this, Delery and Doty (1996) have identified three dominant perspectives to demonstrate the relationship between HPWS and organizational performance.

The RBV is the primary theoretical foundation that lays the groundwork for the conceptual framework of this study. Within the umbrella of the RBV, the behavioral perspective, the universalistic perspective, the contingency perspective, and the configurational perspective are employed to determine how HPWS influences the organizational performance of public enterprises in Ethiopia. The subsequent part looks at the theoretical foundations that are relevant for this study in more depth.

2.4.1 Resource-Based View

There has been an effort to establish the significance of an organization's internal resources that is known as the RBV. The view has managed to get a considerable amount of attention because of its ability to initiate an exchange of ideas among scholars from diverse viewpoints (Mahoney & Pandian, 1992), and to provide explanation on how an organization secures a competitive advantage using internal resources (Armstrong & Shimizu, 2007). It is one of the most powerful theories in the management literature (Delery & Roumpi, 2017; Kraaijenbrink, Spender, & Groen, 2010; Peteraf, 1993) as it provides the base for both business and corporate strategies (Peteraf, 1993).

The RBV demonstrates how organizations in an industry can use internal resources as a source of competitive advantage (Peteraf, 1993). It focuses on the association among an organization's internal resources, strategy, and performance (Hart, 1995; Wright et al., 1994). It holds on to the notion that internal resources that are valuable and inimitable are crucial aspects of competitive advantage (Hart, 1995). The central theme of the view is that organizations with internal resources that are valuable, rare, inimitable and non-substitutable (VRIN) perform better than their competitors (Barney, 1991; Wernerfelt, 1984). If an organization has internal resources with these characteristics, other organizations will not be able to copy its strategy because of the imperfect imitability and imperfect substitutability nature of the resources (Peteraf, 1993). Moreover, how the internal resources contribute to organizational performance becomes causally ambiguous and socially complex (Hart, 1995). This creates confusion concerning the reason for efficiency variation among organizations, and stops competitors from understanding what

and how to imitate (Peteraf, 1993). As a result, organizations that formulate their strategies based on causally ambiguous, path dependent, and socially complex internal resources perform better than their rivals (Barney, 1991).

The RBV, however, has been criticized extensively. First, the view does not have managerial implications. Second, the RBV necessitates an infinite regress. Third, the view has limited generalizability. Fourth, it is difficult to attain sustained competitive advantage. Fifth, it is inappropriate to consider RBV as a theory. Sixth, valuable, rare, inimitable, and non-substitutable resources are neither sufficient nor necessary to achieve sustained competitive advantage. Seventh, worth of a resource is not exactly known to provide for a true theory. Eighth, the definition given to the term 'resource' is overly inclusive (Kraaijenbrink et al., 2010). The RBV can survive the first five criticisms; nevertheless, it is difficult to easily dismiss the last three critiques. As a result, it is better to reconsider the three critiques and make fundamental adjustment accordingly (Kraaijenbrink et al., 2010).

Despite the criticisms, the RBV has even been acknowledged by its critics for its significant contribution to various strategic research programs (Wright et al., 2001). It has the potential to bridge the micro-macro divide by producing a truly informative knowledge (Delery & Roumpi, 2017). Particularly, RBV has a substantial contribution to HPWS research due to its focus on resources that are internal to the organization as a competitive advantage. As a result, it is extensively used in HPWS both for theory development and as a justification for empirical research works (Delery & Roumpi, 2017; Wright et al., 2001). The view proposes that HPWS is capable of creating competitive advantage through people. Consequently, organizations that have HR with VRIN skills, knowledge, and abilities have sustained competitive advantage over their rivals (Barney, 1991; Golding, 2004). However, the HPWS of an organization must not be easy to imitate so as to be a source of sustained competitive advantage (Barney, 1991). Inimitability of HPWS can be secured if the system has the attributes of path dependency and causal ambiguity (Collis & Montgomery, 1995). Path dependency occurs when organization HPWS policies are build-up through time; hence, competitors are unable to

simply acquire them in the market (Lengnick-Hall & Lengnick-Hall, 1988). On the other hand, causal ambiguity refers to organizational HPWS policies that can theoretically be understood without difficulty, but in practice have various complex interrelationships that are difficult to decipher by competitors (Lengnick-Hall & Lengnick-Hall, 1988).

Based on the foregoing discussion, the RBV is used as a theoretical foundation for this study. The view mainly impacts HPWS by serving as a link between the field of strategy and HPWS (Delery & Roumpi, 2017; Wright et al., 2001). As a result, numerous empirical and theoretical research works on HPWS use the RBV to examine the relationship between HPWS and organizational performance (Collins & Clark, 2003; Jiang & Messersmith, 2018). Therefore, the RBV enables this study to theorize the relationship between HPWS and organizational performance through the mediating effects of HR outcome and operational outcome, and the moderating effects of internal fit and external fit.

2.4.2 Behavioral perspective

The behavioral perspective highlights how HPWS support organizations attain their goals (Jiang & Messersmith, 2018). It argues that HPWS practices contribute to organizational performance through creating and rewarding positive employee behaviors and attitudes that support organizational strategy (Jackson & Schuler, 1995). Although there are strong evidences that support the positive association between HPWS and different organizational performance, a lot remains hidden regarding the process through which HPWS influences the performance of the organizations (Jiang et al, 2012). Therefore, HRM scholars use the behavioral perspective to understand the black-box that lies in the HPWS-organizational performance relationship (Jiang et al., 2012; Jiang & Messersmith, 2018). In addition, the behavioral perspective has also extended the criteria used to assess the effectiveness of HPWS practices by including other measures of organizational performance such as operational outcome and financial performance while examining the association between HPWS and organizational performance (Kessler, 2013). Therefore, this research uses the behavioral perspective to demonstrate the mechanism through

which HPWS influences organizational performance. The perspective serves to theorize how HR outcome and operational outcome mediate the relationship between HPWS and financial performance.

2.4.3 Universalistic perspective

The universalistic perspective assumes that HPWS practices have the potential to enhance organizational performance regardless of context (Marchington & Grugulis, 2000). The practices are universally valid and effective (Khatri, 2000). Hence, the perspective argues that there is a universal linear association between HPWS and organizational performance regardless of organizational context such as strategy, industry, or nation (Delery & Doty, 1996; Khatri, 2000; Knies et al., 2018). The perspective has two steps. First, the 'best practices' are identified; then, the practices are related to organizational performance (Delery & Doty, 1996).

As the universalistic view argues a direct link between HPWS practices and organizational performance (Youndt et al., 1996), predictions made based on it are simple causal statement that state a certain independent variable has an impact on a dependent variable (Dewar & Werbel, 1979). The test of prediction is also simple (Dewar & Werbel, 1979), and is operationally defined as main effect (Youndt et al., 1996). Many empirical studies have found out that a specific set of HPWS practices directly impact organizational performance (Youndt et al., 1996). Authors that have adopted the universalistic view such as Huselid (1995), Osterman (1994), Pfeffer (1994), and Terpstra and Rozell (1993) believe that 'best practice' approach to HPWS results in superior organizational performance. There are, however, obvious disparities across studies concerning what comprises the 'best practices' (Youndt et al., 1996). In addition, there are numerous hesitations concerning the universal applicability of the so called 'best practices' (Marchington & Grugulis, 2000).

The universalistic perspective enables the study to theorize the relationship between HPWS and organizational performance, which is represented by HR outcome, operational outcome, and financial performance.

2.4.4 Contingency perspective

The contingency perspective of HPWS examines the relationship between HPWS and strategic management by exploring the existence of vertical integration between HPWS and business strategy (Golding, 2004; Knies et al., 2018). It assumes that the effect of HPWS on organizational performance is contingent upon the strategic posture of the organization (Youndt et al., 1996). The justification being that if there is proper link between business strategy and HPWS, a superior organizational performance will result (Golding, 2004). It argues that organizations that have HPWS that is meshed with their business strategy perform better than those that do not have as they are capable of creating an environment where workers behavior is consistent with the strategy of the organization. This perspective also states that HPWS contributes to organizational performance if it is consistent with other parts of the organization. The view hypothesizes that the association between the explanatory and outcome variable varies according to the different levels of the contingency variable (Delery & Doty, 1996).

The contingency perspective necessitates HRM researchers to demonstrate how HPWS interacts with strategy to impact organizational performance (Delery & Doty, 1996). It focuses on interactions than a mere simple linear associations (Delery & Doty, 1996). Predictions based on contingency perspective state that the relationship between two variables predicts a third variable (Dewar & Werbel, 1979). The test of prediction is also more difficult (Dewar & Werbel, 1979), and is operationally defined as interaction (moderation) effect (Youndt et al., 1996).

The contingency perspective helps this study to theorize if the external fit between HPWS and business strategy are vital dimensions for explaining the nexus between HPWS and organizational performance.

2.4.5 Configurational perspective

Configurational perspective assumes non-linear and higher-order interactions that have the potential to cause superior organization performance. It proposes that organizational performance depends not only on the degree of alignment between HPWS practices and business strategy, but also on the degree of internal fit among the practices; hence, it advises organizations to have HPWS practices that fit both vertically and horizontally (Delery & Doty, 1996; Delery & Roumpi, 2017; Golding, 2004).

As HPWS complementarities and alignments provide theoretical justification for a positive relationship between HPWS and organizational performance (Huselid & Becker, 1997), configurational perspective serves this study to theorize if a 'bundle' of horizontally aligned HPWS practices result in superior organizational performance in terms of HR outcome, operational outcome, and financial performance.

To sum up, this study uses the RBV to examine the nexus between HPWS and organizational performance, which is represented by HR outcome, operational outcome, and financial performance, in public enterprises in Ethiopia. In addition, the behavioral perspective is used in this study to demonstrate the mechanism through which HPWS influences financial performance in public enterprises. Moreover, universalistic perspective helps to theorize if there is a positive relationship between the main effect of HPWS and organizational performance. Furthermore, contingency perspective enables the study to hypothesize if the alignment between HPWS and business strategy is very important dimension for explaining the relationship between and among HPWS, HR outcome, operational outcome, and financial performance. Finally, configurational perspective serves the study to theorize if complementarities among the HPWS practices produce better organizational performance. Table 1 provides summary of the theoretical foundations. It presents assumptions of the perspectives, and their relevance to the present study.

Table 1: Summary of the Theoretical Foundations

Perspective	Assumptions of the Perspective	Relevance of the Perspective to the Study	References
RBV	Internal resources that are VRIN are crucial aspects of competitive advantage	HPWS creates competitive advantage through HRs that have VRIN skills, knowledge, and abilities, thus contributes to organizational performance	Barney, 1991; Collins & Clark, 2003; Collis & Montgomery, 1995; Hart, 1995; Lengnick-Hall & Lengnick-Hall, 1988; Peteraf, 1993; Wernerfelt, 1984; Wright et al., 1994
Behavioral Perspective	HPWS contribute to organizational performance through creating and rewarding positive employee behaviors and attitudes that support organizational strategy	Demonstrate the mechanism through which HPWS influences financial performance	Jackson & Schuler, 1995; Jiang et al., 2012
Universalistic Perspective	Refers to the existence of universal linear association between HPWS and organizational performance irrespective of context	HPWS practices positively influence organizational performance in all settings regardless of organizational context such as strategy, industry, or nation	Delery & Doty (1996); Huselid (1995); Osterman (1994); Pfeffer (1994); Terpstra & Rozell (1993)
Contingency perspective	Alignment between HPWS and business strategy leads to superior organizational performance	Aligning HPWS with business strategy improves organizational performance by creating an environment where workers behavior is consistent with the strategy of the organization	Björkman and Xiucheng (2002); Chang & Huang (2005); Delery & Doty (1996); Hoque (1999); Khatri (1999); Huang (2001)
Configurational Perspective	Horizontal complementarities among HPWS practices improves organizational performance	Organizational performance depends on the degree of internal fit among the HPWS practices rather than single practices	Delery & Doty (1996); Gould-Williams (2003); Ichniowski et al (1995); Lam & White (1998); MacDuffie (1995)

2.5 Empirical Studies on the Relationship between HPWS and Organizational Performance

The effect of HPWS on organizational performance has attracted a quantum body of empirical studies (Becker & Huselid, 1998). A considerable amount of the empirical studies examined the association between and among HPWS, HR outcome, operational outcome, and financial performance. The findings of the empirical studies demonstrate a significant positive relationship between HPWS and organizational performance (Armstrong, 2010; Hermans & Ulrich, 2021).

The empirical works reviewed for this study also show the significant impact of HPWS on organizational performance regardless of the time period of the study and the research design adopted. The findings include consistent evidence from both classic and latest studies, from cross-sectional and longitudinal analyses, and from meta-analyses studies that cover substantial amount of empirical researches from varied contextual background. The classic work of Huselid (1995) showed that HPWS is positively related to productivity and financial performance, but negatively associated with turnover. Similarly, Ichniowski et al (1997) demonstrated that HPWS has a significant positive effect on both productivity and product quality. In addition, Guthrie (2001) showed positive association between HPWS, retention, and productivity. Moreover, Delery and Doty (1996) examined the relationship between HPWS and organizational performance using universalistic, contingency, and configurational perspectives, and found a strong support for universalistic perspective and some support for the contingency and configurational perspectives. By illustrating the contribution of HPWS to organizational performance at organizational and plant level, theses earlier empirical studies laid the foundation for subsequent works.

Advancing the evidence provided by previous studies, various meta-analyses works showed the influence of HPWS on organizational performance across different contexts. For example, Combs, Liu, Hall, & Ketchen (2006) demonstrated the significant effect of HPWS on organizational performance by combining results from 92 studies. In addition, Jiang et al (2012) indicated the significant direct positive impact of HPWS on financial performance,

and indirect effect of the practices on financial performance through the HR outcome and operational outcome mediators. Moreover, Saridakis, Lai, and Cooper (2017) found a significant impact of mutually reinforcing HPWS practices on organizational performance than single practices by conducting a meta-analysis on eight longitudinal studies. Furthermore, Rauch and Hatak (2016) revealed that HPWS has a significant positive effect on the organizational performance of SMEs.

Recent empirical studies also show a significant association between HPWS and organizational performance. Park, OK, and Ryu (2023) showed a significant positive association between HPWS and organizational performance in Korea. In addition, Li and Rasiah (2025) discovered a significant association between HPWS and innovative behavior in China's smartphone companies, and highlighted the significance of optimizing HPWS to reinforce psychological empowerment, and innovation. Moreover, recent empirical studies conducted in the context of other developing countries such as Ethiopia (see Amare et al., 2022a & 2022b; Amare et al., 2023; Sheref et al., 2024), Ghana (see Abugre & Nasere, 2019) and Indonesia (see Jaya et al, 2024) showed a significant positive association between HPWS and employee performance.

As can be seen from the above discussion, the empirical studies demonstrated a significant positive association between HPWS and organizational performance. The studies revealed that HPWS results in improved HR outcome, operational outcome, and financial performance. The findings are consistent across time and methodology. Table 2 provides a summary of the major empirical studies on HPWS and organizational performance. The table is organized by focusing on the author, context, sample size, independent variables, dependent variables, mediating variables, moderating variables, methodology, main findings, and major gaps of the studies.

Table 2: Examples of Prior Empirical HPWS Studies

Study	Context	Independent Variable	Dependent variable			Mediator (s)	Moderator (s)	Unit of Analysis and Methodological Choice	Main finding(s)	Major gap(s)
			HR outcome	Operational outcome	Financial performance					
Huselid, 1995	Organizations from various industries; USA	HPWS	Turnover	Productivity	Tobin's *q*; GRATE	Turnover; Productivity	Internal fit; external fit	968 organizations; organizational-level; cross-sectional quantitative survey	HPWS has a significant impact on turnover, productivity, and financial performance	Cross-sectional data
Delery & Doty, 1996	Organizations in the banking industry; USA	HPWS	_	_	ROA; ROE	_	Internal fit; external fit	1,050 organizations; organizational-level; cross sectional quantitative survey	A significant positive association between HPWS and organizational performance	Restricted to one industry (Banking)
Ichniowski, Shaw, & Prennushi, 1997	Organizations in the steel manufacturing industry; USA	HPWS	_	Productivity; Quality	_	_	_	36 organizations; plant-level; longitudinal quantitative study	Complementary HR practices have significant positive effects on productivity and product quality	Limited to one industry (manufacturing)
Guthrie, 2001	Business organizations; New Zealand	HPWS	Retention	Productivity	_	_	Retention	701 organizations; organizational-level; cross-sectional quantitative survey	Positive association between HPWS, retention, and productivity	Cross-sectional data

Combs et al, 2006	Meta-analysis	HPWS	Retention	Productivity	Accounting returns; growth; market returns	KSAs; motivation	Organizational strategy; context; research design	92 studies that examine19,319 organizations; the study is the unit of analysis; cross-sectional studies	HPWS affects organizational performance	Focused on limited contextual variable (service versus manufacturing); cross-sectional data; no control variables
Jiang et al, 2012	Meta-analysis	HPWS	Human capital; employee motivation; voluntary turnover	Operational outcomes	Financial outcomes	Human capital; employee motivation; voluntary turnover; operational outcome	_	115 studies; the study is the unit of analysis; cross sectional studies	HPWS has a direct effect on financial performance, and an indirect impact through HR outcome and operational outcome	Cross-sectional data; no moderators; no control variables
Saridakis et al, 2017	Meta-analysis	HPWS	_	Labor productivity	Accounting returns	_	_	8 longitudinal studies; The study is the unit of analysis; longitudinal quantitative data	Mutually reinforcing HPWS practices have a significant influence on organizational performance than single practices	No mediators; no moderators; no control variables
Rauch	Meta-	HPWS	_	Innovation;	Accounting-	_	Firm size;	56 studies;	HPWS has a	Cross-

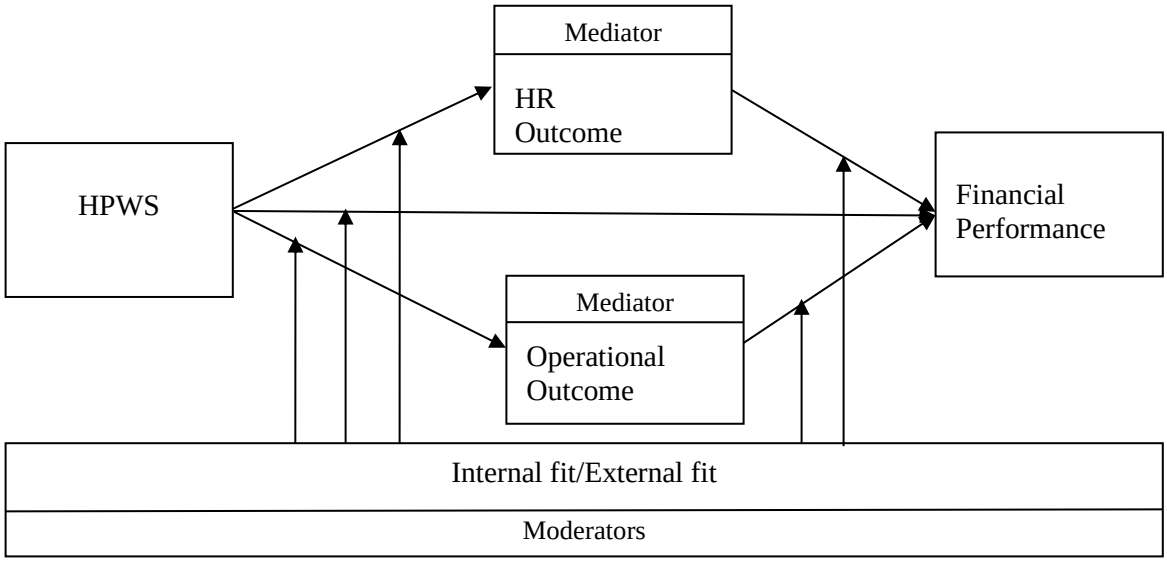
& Hatak, 2016	analysis			entrepreneurial orientation; differentiation; quality of products	based measures; growth; perceived performance		firm age; technology; labor market regulations	The study is the unit of analysis; cross sectional studies; correlations;	significant positive effect on the organizational performance of SMEs	sectional studies; no mediators
Park et al, 2023	Organizations from various industries; Korea	HPWS	Employees' perceived competencies	employees' perceived performance pressure	operating profit per employee	Employees' perceived competencies; employees' perceived performance pressure	_	499 organizations; Longitudinal analysis	HPWS improves organizational performance	Relied on single informant; no moderators
Li & Rasiah, 2025	Smartphone companies; China	HPWS	Empowerment	Innovative behavior	_	Empowerment	Power-distance orientation	481 organizations; Cross-sectional quantitative data	Importance of optimizing HPWS to strengthen psychological empowerment, and innovation	Focused on one industry; cross-sectional data

2.6 Hypotheses Development

The research model that is proposed for the study is depicted in Figure 1. The model demonstrates the association between and among HPWS, HR outcome, operational outcome, and financial performance. The study theorizes that HPWS directly impacts the HR outcome and operational outcome of an organization. When HR outcome and operational outcome show improvement, the organization will have enhanced financial performance (Armstrong, 2014; Dyer & Reeves, 1995; Jiang et al., 2012).

Figure 2 also illustrates the conceptual framework together with the hypotheses of the current study. It demonstrates the presumed relationship between and among the research constructs based on the existing literature. Consequently, hypotheses have been developed showing the relationship between and among HPWS, HR outcome, operational outcome, financial performance, internal fit, and external fit. The hypotheses of the study are summarized in Table 3. The following sub-sections provide the theoretical framework of the research constructs, and present the hypotheses of the study after discussing the empirical and theoretical arguments that are used as a foundation to formulate the proposed hypotheses.

Figure 1: Research Model



2.6.1 HPWS and HR outcome

The HPWS construct represents practices that mutually reinforce each other to enhance organizational performance. It includes practices such as extensive recruitment and selection, incentive based compensation that is contingent upon performance, need based training and development, and employee involvement (Becker and Huselid, 1998). This study utilized the entire HPWS as a bundle. Considering the HPWS as a bundle is applicable for any unit of analysis (Becker and Huselid, 1998). Prior research works also used a single HPWS construct by merging several HPWS practices into one (Ichniowski et al., 1997; MacDuffie, 1995; Youndt et al., 1996; Huselid, 1995). Using a single HPWS construct is a more appropriate approach to measure the HPWS of an organization as it considers the mutually reinforcing HPWS practices as a means to create a strategic asset. In addition, as the bundle is made up of various HPWS practices, it implies there are various ways to improve the value of the HPWS construct (Becker and Huselid, 1998).

The HR outcome construct refers to the improvement in outcomes that are related to HRM resulting from the HPWS practices of the public enterprises. The HR outcome construct in this study was contextualized as composed of job satisfaction (Green, Wu, Whitten, & Medlin, 2006; Messersmith, Patel, & Lepak, 2011), commitment (Armstrong, 2014; Green et al, 2006; Messersmith et al, 2011), and empowerment (Messersmith et al, 2011; Spreitzer, 1995). HPWS practices such as extensive recruitment and selection, incentive and pay for performance reward system, rigorous appraisal of employee performance, sharing information to employees, and providing general and organization-specific trainings (Huselid, 1995; Datta et al., 2005; Takeuchi, Chen, & Lepak, 2009) contribute to employee job satisfaction, commitment, and empowerment (Liao, Toya, Lepak, & Hong, 2009).

HRM researchers have consistently discovered a positive relationship between HPWS and HR outcome (Liao at al, 2009). They argue that when the entire HPWS is in alignment, workforce performance increases because of enhanced job satisfaction, commitment, and empowerment. HPWS positively impacts job satisfaction because of the rigorous hiring procedures and extensive training practices. Selective hiring together with training results in

better fit between employees and their job. This enhances employee's satisfaction as they have the necessary competence to discharge their duties and responsibilities effectively. Furthermore, the tighter relation between employee's job performance and their compensation results in a fair and equitable work environment thereby a more satisfied workforce (Messersmith et al., 2011).

HPWS also affects employee commitment, and empowerment (Messersmith et al, 2011). According to Meyer and Allen (1991), commitment is defined as an employee's trustworthiness and identification with its organization. Various empirical studies examined the impact of HPWS on employee commitment level. The studies demonstrated that HPWS is positively associated with commitment (Macky & Boxall, 2007; Wright et al., 2003). This association illustrates that the use of HPWS assists in the selection of employees whose values are aligned with the values of the organization, and ensuring that the workforce are given the opportunity to add value to the success of the organization (Messersmith et al., 2011). The empowerment level of employees is also affected by an organization's HPWS. Spreitzer (2007) defines empowerment as employee's sense of influence on organizational matters. Sharing strategic, financial, and operational information together with the use of participative management practice are positively associated with greater feelings of empowerment (Spreitzer, 1996). In addition, performance-based compensation practice is likely to generate a feeling of empowerment among an organization's workforce (Messersmith et al., 2011).

Various empirical studies also demonstrated that the use of HPWS results in enhanced job satisfaction, commitment, and empowerment. For example, Messersmith et al. (2011) showed that HPWS has a significant positive relationship with employee job satisfaction, commitment, and empowerment. Takeuchi et al. (2009) demonstrated that HPWS has a positive relationship with workforce satisfaction and commitment. Pfeffer (1994) and Guthrie (2001) discovered a significant association between HPWS and workforce empowerment. Whitener (2001) showed a significant positive relationship between HPWS and commitment. Fey et al. (2000) also demonstrated the mediating role of HR outcome in the relationship between the HPWS and financial performance multinational organizations.

The results of the studies conducted so far are consistent with the logic that HPWS creates better HR outcome. Hence, based on the above findings, the study hypothesizes that:

Hypothesis 1: HPWS is positively related to the HR outcome of public enterprises in Ethiopia.

Hypothesis 2: HR outcome is positively related to the financial performance of public enterprises in Ethiopia.

Hypothesis 3: HR outcome mediates the relationship between the HPWS and financial performance of public enterprises in Ethiopia.

2.6.2 HPWS and operational outcome

The operational outcome construct signifies those outcomes that are related to the goals of an organizational operation, including product quality, product innovation, and customer satisfaction resulting from the HPWS practices of the public enterprises (Armstrong, 2014; Dyer & Reeves, 1995; Jiang et al., 2012). As HR is the most essential assets of any type of organization, no amount of technology and innovative work practices can improve operational outcome unless the necessary HPWS practices are in place (Ahmed & Schroeder, 2003; Guest, 2011). This study measured operational outcome by including quality of products (Armstrong 2014; Delaney & Huselid, 1996; Dyer & Reeves, 1995; Jiang et al, 2012), ability to develop new products (Delaney & Huselid, 1996; Jiang et al, 2012), and customer satisfaction (Armstrong 2014; Delaney & Huselid, 1996; Dyer & Reeves, 1995).

Based on the empirical and theoretical literatures reviewed, HPWS positively influences operational outcome. Although studies showing the influence of HPWS on operational outcome are very limited, the existing body of research on HPWS and operational outcome of an organization demonstrates a positive association (Ahmed & Schroeder, 2003; Guest, 2011). McDuffie (1995) found out that an internally consistent ‘bundle’ of HPWS practices

have a significant positive effect on auto assembly plant productivity and quality. Similarly, Ichinowski et al. (1997) investigated that internally consistent HPWS practices have a significant positive impact on the productivity of organizations. Meanwhile, Youndt et al. (1996) discovered that HPWS was significantly associated with the operational outcome of manufacturing organizations.

Hunter and Hitt (2001) and Bartel (2004) demonstrated a positive relationship between the HPWS and organizational performance in the banking industry. In another study, Ahmed and Schroeder (2003) investigated a positive relationship between HPWS and organizational performance in the electronic, machinery, and automobile industries of four industrialized countries. Wright et al. (2003) and Laursen and Foss (2003) also demonstrated a significant positive association between HPWS and operational outcome.

Given the above discussion, this study predicts the following hypotheses:

Hypothesis 4: HPWS is positively related to the operational outcome of public enterprises in Ethiopia.

Hypothesis 5: Operational outcome is positively related to the financial performance of public enterprises in Ethiopia.

Hypothesis 6: Operational outcome mediates the relationship between the HPWS and financial performance of public enterprises in Ethiopia.

2.6.3 HPWS and financial performance

Financial performance indicates the fulfillment of the economic goals of organizations. The construct refers to improvements in profit, sales, market share, and marketing activities resulting from the HPWS, HR outcome, and operational outcome of the public enterprises (Armstrong, 2014; Dyer & Reeves, 1995; Jiang et al., 2012). Financial performance was measured in this study by including profitability (Armstrong, 2014; Delaney & Huselid,

1996; Harel & Tzafrir, 1999), sales growth (Armstrong, 2014; Delaney & Huselid, 1996; Harel & Tzafrir, 1999; Jiang et al, 2012), market share (Armstrong, 2014; Delaney & Huselid, 1996; Harel & Tzafrir, 1999), and marketing activities (Delaney & Huselid, 1996; Harel & Tzafrir, 1999).

The use of HPWS results in considerable financial returns (Huselid, 1995). Delery and Doty (1996) and Becker and Huselid (1998) investigated that HPWS has a statistically positive impact on financial performance. Similarly, Wright, McMahan, McCormick, and Sherman (1998) and Wright et al. (1999) discovered a positive association between HPWS and financial performance. Li (2003) also demonstrated a positive association between HPWS and financial performance. Likewise, Huselid (1995) and Richard and Johnson (2001) showed a significant association between HPWS, turnover, productivity, and financial performance. Similarly, Guthrie (2001) found that HPWS practices were significantly associated with turnover and profitability of organizations. Zheng (2001) also found a positive relationship between HPWS and financial performance in SMEs.

The findings of the studies have demonstrated that HPWS practices have a significant positive impact on financial performance. Accordingly, HPWS is theorized to have a positive relationship with the financial performance of the study organizations based on the prior theoretical and empirical studies. Thus, this study hypothesizes that:

> *Hypothesis 7: HPWS is positively related to the financial performance of public enterprises in Ethiopia.*

2.6.4 HPWS and internal fit

Internal fit refers to the existence of coherence among HPWS practices (Baird & Meshoulam, 1988; Hoque, 1999; Lahteenmaki et al, 1998). The construct represents the increase in organizational performance due to the existence of fit among the HPWS practices of the public enterprises. It was measured in this study by inquiring the existence of internal fit among the HPWS practices of the enterprises (Baird & Meshoulam, 1988;

Becker & Huselid, 1998; Hoque, 1999; Huselid, 1995; Lahteenmaki et al, 1998; Wright & Snell, 1991).

The importance of internal fit for enhanced organizational performance is ingrained in the RBV theory of the organization (Barney, 1991; Dyer, 1984; Schuler & Jackson, 1987; Wernerfelt, 1984). HPWS contributes to organizational performance when there is complementarity among the various practices within the HPWS (Han, Kang, Oh, Kehoe, & Lepak, 2019; Posthuma et al., 2013). Synergistic interrelationship among HPWS practices improves organizational performance as it is hard to be imitated by competitors than single practices (Barney, 1991). For example, Lam and White (1998) examined the impact of HPWS on organizational performance. By taking data from fourteen industries operating in the USA, they found out those manufacturing organizations that have strong HPWS practices have better performance than organizations with weaker practices. The manufacturing organizations performed better because of the synergy that the organizations have among their HPWS practices.

As organizations that have better internal fit among individual HPWS practices perform better than their competitors (Wright & Snell, 1991), the presence of internal fit is posited to positively influence organizational performance in the current study. Hence,

Hypothesis 8: Internal fit positively moderates the relationship between the HPWS and HR outcome of public enterprises in Ethiopia.

Hypothesis 9: Internal fit positively moderates the relationship between the HPWS and operational outcome of public enterprises in Ethiopia.

Hypothesis 10: Internal fit positively moderates the relationship between the HPWS and financial performance of public enterprises in Ethiopia.

Hypothesis 11: Internal fit positively moderates the indirect relationship between the HPWS and financial performance of the public enterprises via HR outcome.

Hypothesis 12: Internal fit positively moderates the indirect relationship between the HPWS and financial performance of the public enterprises via operational outcome.

2.6.5 HPWS and external fit

External fit refers to the existence of alignment between HPWS and business strategy (Baird & Meshoulam, 1988). The construct refers to change in organizational performance due to the existence of fit between the HPWS and business strategy of the public enterprises. This study measured external fit by the extent of alignment between the HPWS practices and the business strategy of the study organizations (Baird & Meshoulam, 1988; Becker & Huselid, 1998; Fey et al., 2000; Hoque, 1999; Huselid, 1995; MacDuffie, 1995). External fit contributes to organizational performance when there is appropriate alignment between an organizations' HPWS and its business strategy (Baird & Meshoulam, 1988). It argues that HR system becomes effective when the HPWS of an organization is embedded properly with its business strategy (MacDuffie, 1995).

A number of empirical works also demonstrate that the external fit between HPWS and business strategy leads to better organizational performance (Fey et al., 2000). For example, Huselid and Becker (1997) discovered a significant positive relationship between HPWS and organizational performance in organizations that aligned HPWS with business strategy. Similarly, Hoque (1999) demonstrated a positive relationship between HPWS and organizational performance in organizations that have external fit between HPWS and strategy. Likewise, Khatri (2000) discovered the alignment between HPWS and business strategy has a significant influence on organizational performance. Chang and Huang (2005) showed that the interaction between strategy and HPWS has a significant positive effect on organizational performance. Björkman and Xiucheng (2002) also found that the degree of fit between HPWS practices and organization strategy was associated positively with the performance of multinational corporations.

Based upon the findings of the aforementioned empirical and theoretical studies, better organizational performance is possible when there is alignment between HPWS and strategy

(Miles & Snow, 1984; Schuler & Jackson, 1987). As the existence of external fit is expected to positively influence organizational performance, this study hypothesizes that:

Hypothesis 13: External fit positively moderates the relationship between the HPWS and HR outcome of public enterprises in Ethiopia.

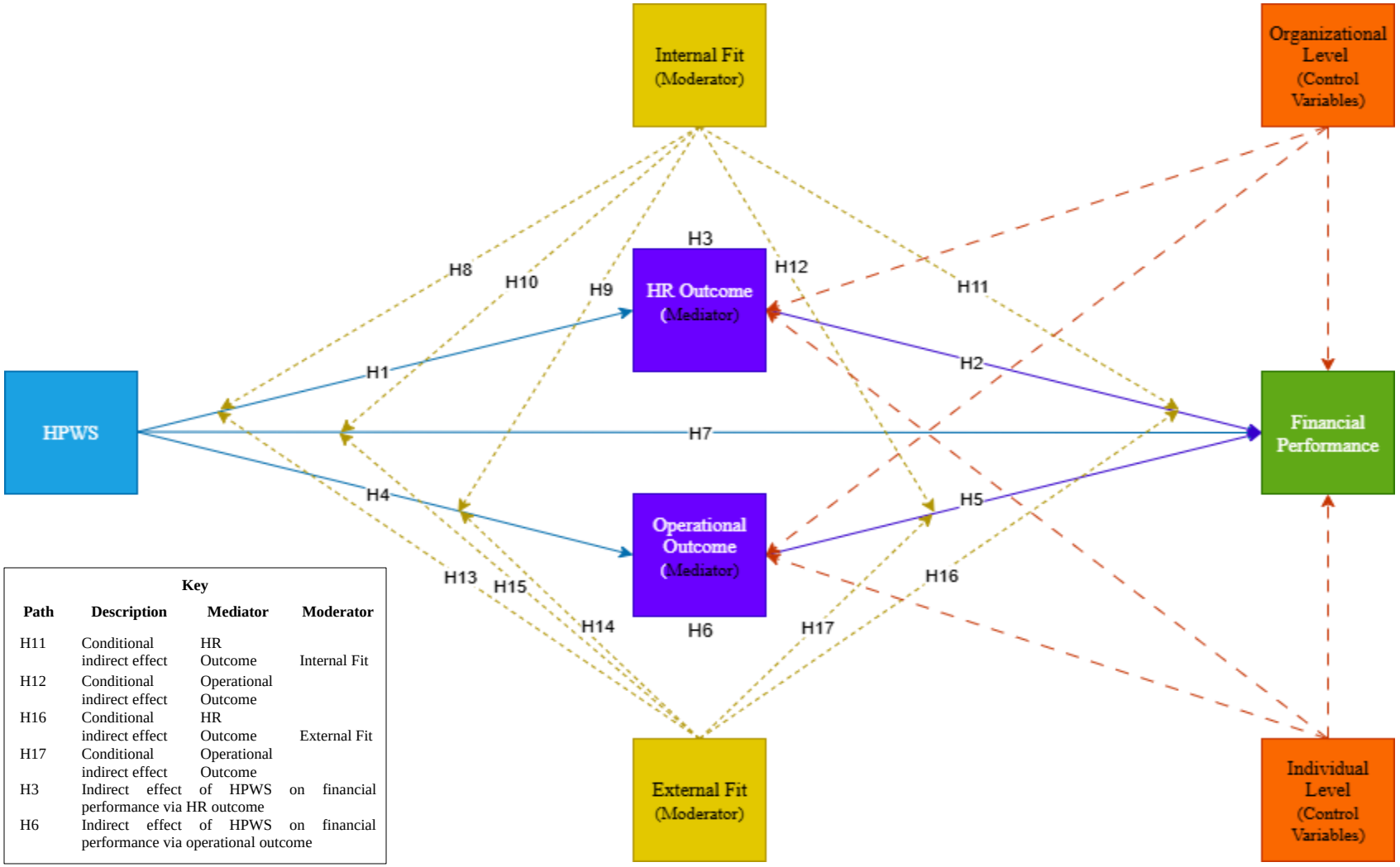
Hypothesis 14: External fit positively moderates the relationship between the HPWS and operational outcome of public enterprises in Ethiopia.

Hypothesis 15: External fit positively moderates the relationship between the HPWS and financial performance of public enterprises in Ethiopia.

Hypothesis 16: External fit positively moderates the indirect relationship between the HPWS and financial performance of the public enterprises via HR outcome.

Hypothesis 17: External fit positively moderates the indirect relationship between the HPWS and financial performance of the public enterprises via operational outcome.

Figure 2: Conceptual Framework and Hypotheses of the Study



Key

Path	Description	Mediator	Moderator
H11	Conditional indirect effect	HR Outcome	Internal Fit
H12	Conditional indirect effect	Operational Outcome	
H16	Conditional indirect effect	HR Outcome	External Fit
H17	Conditional indirect effect	Operational Outcome	
H3	Indirect effect of HPWS on financial performance via HR outcome		
H6	Indirect effect of HPWS on financial performance via operational outcome		

2.7 Summary of the Chapter

This chapter has reviewed the relevant theoretical and empirical literatures that are related to the study. It has discussed the concept of HRM, SHRM, and HPWS. In addition, the chapter has discussed the key components that constitute HPWS. It has also examined the major perspectives that are important for the research: RBV, behavioral perspective, universalistic perspective, contingency perspective, and configurational perspective. Moreover, the chapter has provided an overview of the major empirical studies on the relationship between HPWS and organizational performance. Besides, it has demonstrated how the conceptual framework and the hypotheses that are related to the research are developed. Table 3 presents the summary of the hypotheses of the study that has been discussed in this chapter. The following chapter discusses the research methodology that was used to examine the hypotheses of the study presented in this chapter.

Table 3: Summary of the Hypotheses of the Study

Hypothesis	Description
1	HPWS is positively related to HR outcome in public enterprises in Ethiopia
2	HR outcome is positively related to financial performance in public enterprises in Ethiopia
3	HR outcome mediates the relationship between HPWS and financial performance in public enterprises in Ethiopia
4	HPWS is positively related to operational outcome in public enterprises in Ethiopia
5	Operational outcome is positively related to financial performance in public enterprises in Ethiopia
6	Operational outcome mediates the relationship between HPWS and financial performance in public enterprises in Ethiopia
7	HPWS is positively related to financial performance in public enterprises in Ethiopia
8	Internal fit positively moderates the relationship between HPWS and HR outcome in public enterprises in Ethiopia
9	Internal fit positively moderates the relationship between HPWS and

	operational outcome in public enterprises in Ethiopia
10	Internal fit positively moderates the relationship between HPWS and financial performance in public enterprises in Ethiopia
11	Internal fit positively moderates the indirect relationship between the HPWS and financial performance of the public enterprises via HR outcome
12	Internal fit positively moderates the indirect relationship between the HPWS and financial performance of the public enterprises via operational outcome
13	External fit positively moderates the relationship between HPWS and HR outcome in public enterprises in Ethiopia
14	External fit positively moderates the relationship between HPWS and operational outcome in public enterprises in Ethiopia
15	External fit positively moderates the relationship between HPWS and financial performance in public enterprises in Ethiopia
16	External fit positively moderates the indirect relationship between the HPWS and financial performance of the public enterprises via HR outcome
17	External fit positively moderates the indirect relationship between the HPWS and financial performance of the public enterprises via operational outcome

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

Chapter two has examined the theoretical and empirical literatures that are relevant for the current study. It has also provided the conceptual framework and hypotheses of the study. This chapter presents the research methodology that was employed to undertake the study. It discusses the research philosophy, the methodological choice, the research strategy, and the procedures and techniques that were used to carry out the current study.

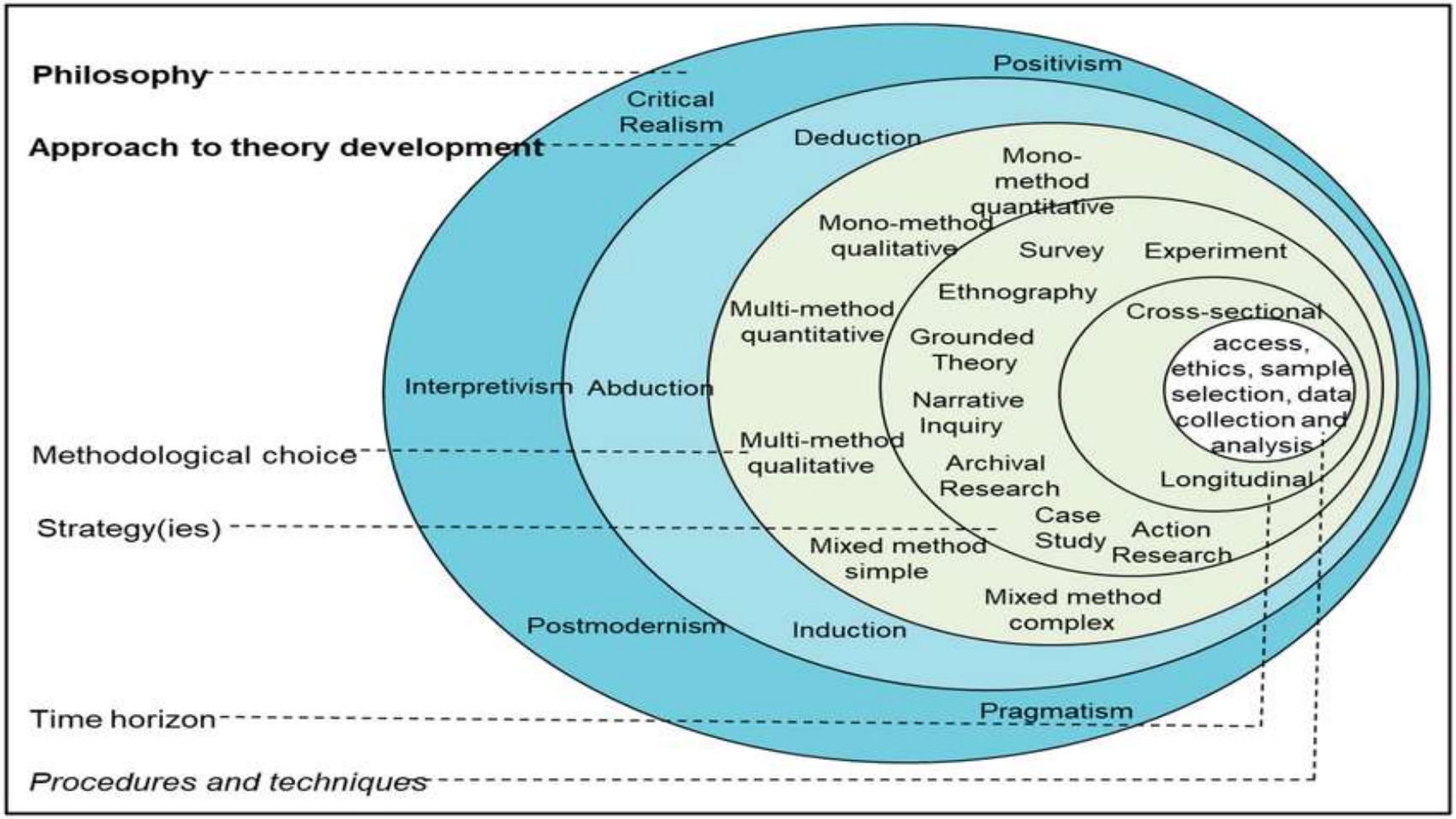
3.2 Research Philosophy

The research philosophy of this study was positivism. This research philosophy is utilized because of the following reasons. First, the research aims to determine the effect of HPWS on organizational performance. Second, HPWS and organizational performance are realities that exist separately from the managers of the public enterprises. Third, the research collects data mainly in numbers and utilizes quantitative methods of data analysis. Fourthly, the research aims to test theories/perspectives developed in the phenomenon of interest. Fifth, the results of the research can be replicated by following similar methodological procedures. Sixth, the researcher upheld an objective axiological position and was independent of the data (Saunders et al, 2023).

3.3 Methodological Choice

This research followed a quantitative research method. The research method was used due to the subsequent reasons. First, quantitative method involves data collection and analysis techniques and procedures that are suitable for studies that use numerical data. Second, the research method helps to test theories by examining the association between variables. Third, quantitative method is generally associated with the deductive approach where theory is tested by collecting data, making it appropriate for this study as the HPWS theories preceded the research data (Creswell, 2014; Saunders et al., 2023).

Figure 3: The research 'onion' portraying the study



Source: Saunders, Lewis and Thornhill (2023).

3.4 Research Strategy

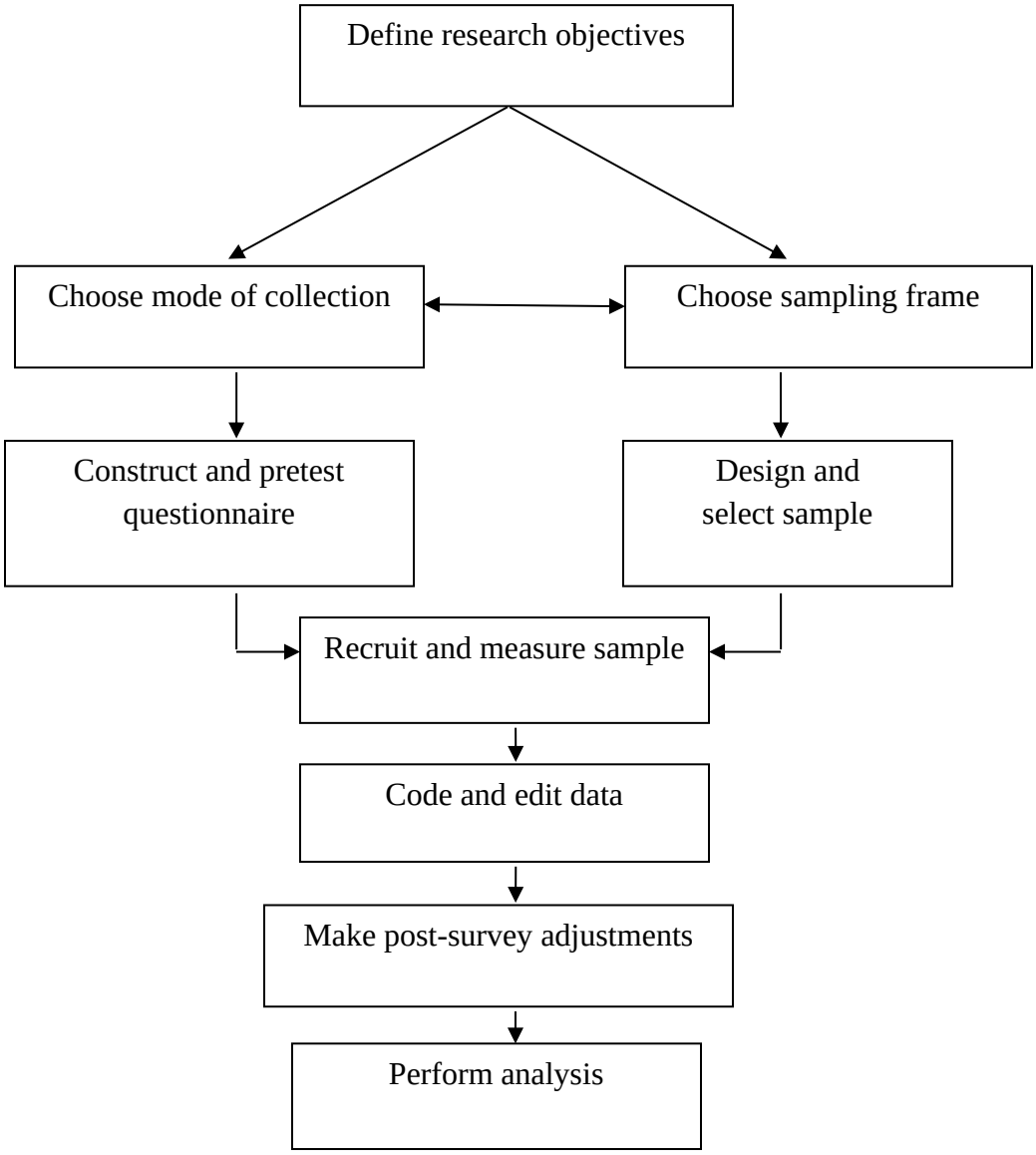
This study applied survey research strategy as it examined the relationship between HPWS and organizational performance. The respondents of the study were the top, middle, and lower level managers of the public enterprises. The respondents had very busy schedule; hence, the study employed cross-sectional quantitative survey research strategy as the data collection was conducted at one point in time (Saunders et al, 2023; Creswell, 2014). Survey research strategy was used because of the succeeding justifications. First, the research strategy is generally linked with positivism research philosophy and deductive approach that was used to conduct the current study. Second, survey strategy usually uses structured questionnaires to collect standardized data from large population in a timely and economical manner. Third, it helps the collection of quantitative data which can subsequently be analyzed by following statistical procedures. Fourth, the research strategy enhances the generalizability of the study. The findings of a study that uses data collected by using survey strategy with appropriate sampling can be used to generalize to the population where the sample is drawn (Creswell, 2014; Saunders et al., 2023).

Table 4: The Survey Process

Survey Process	Placement in the Dissertation
Examining theoretical and empirical literatures to determine the research objectives	Chapter one
Conducting literature review and Developing research model of the study	Chapter two
Developing research instrument	Chapter three
Determining population and sampling frame	
Determining data collection techniques	
Data collection	
Data screening and preparation and Instrument validation	Chapter four
Analysis and results	Chapter five
Discussion and conclusion	Chapter six

A survey research strategy consists of important components to move from the design to the execution stage (Groves et al, 2009). This study adapted the sequence recommended by Groves et al (2009) on how to conduct a survey (see Table 4 and Figure 4).

Figure 4: Steps of Survey Research Strategy



Source: Groves et al. (2009). *Survey methodology*.

3.5 Population and Sample Design

3.5.1 Unit of analysis and target population

The organization was the unit of analysis for this study. The population for the study consisted of all of the managers that worked in the 35 public enterprises that were owned and operated by the federal government. The target population for this research was the 1691 top, middle, and lower level managers of the selected nine public enterprises in Ethiopia who were working in the headquarters of the organizations in Addis Ababa. Although there were 35 public enterprises in Ethiopia that were owned and operated by the federal government as of August 2024 (see Appendix A), ten enterprises were selected because of having a fully audited financial statements for five consecutive years for the fiscal years 2019 to 2023. Out of the ten public enterprises, one organization was reluctant to take part in the study uttering that it would reveal their trade secrets to competitors, resulting in nine enterprises.

Table 5: The Study Organizations

Name of the public enterprise	**Industry***	**Number of managers in the headquarters****			
		Top	**Middle**	**Lower**	**Total**
Commercial Bank of Ethiopia	Finance	74	188	232	494
Ethio-Telecom	Telecom and Media	50	166	273	489
Development Bank of Ethiopia	Finance	41	105	150	296
Ethiopian Electric Power	Energy and Mining	15	75	92	182
Ethiopian Insurance Corporation	Finance	9	21	35	65
Ethiopian Agricultural Businesses Corporation	Agriculture	8	20	32	60
Berhanena Selam Printing Enterprise	Telecom and media	6	16	32	54
National Alcohol and Liquor Factory	Manufacturing	4	10	14	28
Chemical Industry Corporation	Manufacturing	4	6	13	23
Total		**211**	**607**	**873**	**1,691**

Note: * the industry category of the public enterprises is based upon the industrial classification of Ethiopian Investment Holdings (EIH). ** collected from the headquarters of the public enterprises.

The sample frame for this research contains all the top, middle, and lower level managers of the nine selected public enterprises in Ethiopia who were working in the headquarters of the organizations in Addis Ababa, as shown in Table 5.

3.5.2 Sampling technique

The study used probability sampling design with stratified random sampling strategy. Accordingly, the managers of the study organizations were divided into subgroups based upon the organization that they belong. As each public enterprise may have varying opinion on the issue that is being studied, soliciting data from every subpopulation is important to get appropriate representation in the sample (Aczel & Sounderpandian, 2009; Anderson, Sweeney, & Williams, 2011; Creswell, 2014; Saunders et al., 2023). Using stratified random sampling for this study also helps to get more representative sample because of the representation of each stratum in the sample (Aczel & Sounderpandian, 2009; Anderson et al, 2011; Creswell, 2014; Saunders et al., 2023).

Therefore, to get a better understanding of the association between the HPWS and organizational performance of the public enterprises, the managers of the enterprises were stratified into nine based up on their respective organizations. After dividing the managers into nine separate groups, the total sample was allocated proportionally to the nine strata based upon the weight of each stratum (see Table 6). Then, simple random sampling was used to select the study participants from each stratum. The use of simple random sampling to select the study participants from each of the nine public enterprises helped to avoid sample bias by providing each element of the subpopulation an equal chance of being included in the study; thereby, enhanced the reliability and generalizability of the study (Aczel & Sounderpandian, 2009; Anderson et al., 2011; Saunders et al., 2023).

Table 6: Allocation of the Total Sample Size to the Study Organizations

Name of the public enterprise	Number of managers in the headquarters				Weight*	Allocated sample**			
	Top	Middle	Lower	Total		Top	Middle	Lower	Total
Commercial Bank of Ethiopia	74	188	232	494	0.29	21	53	65	139
Ethio-Telecom	50	166	273	489	0.29	14	47	78	139
Development Bank of Ethiopia	41	105	150	296	0.17	11	29	42	82
Ethiopian Electric Power	15	75	92	182	0.11	5	22	26	53
Ethiopian Insurance Corporation	9	21	35	65	0.04	3	6	10	19
Ethiopian Agricultural Businesses Corporation	8	20	32	60	0.04	3	6	10	19
Berhanena Selam Printing Enterprise	6	16	32	54	0.03	2	4	8	14
National Alcohol and Liquor Factory	4	10	14	28	0.02	1	4	5	10
Chemical Industry Corporation	4	6	13	23	0.01	1	1	3	5
Total	**211**	**607**	**873**	**1,691**	**1.00**	**61**	**172**	**247**	**480**

Note: * the weight is calculated by dividing the number of managers in the headquarters of the respective public enterprise to the total number of managers in the headquarters of the nine public enterprises. The values are rounded to the nearest higher or lower number. ** the sample is allocated by multiplying the weight of the respective public enterprise by the total sample size of 480, and distributed to each managerial level based upon their proportion. The values are rounded to the nearest higher or lower number.

3.5.3 Sample size determination

Determination of sample size is generally governed by the level of certainty that we want to have in our data, the margin of error that we are willing to tolerate, the type of analysis we undertake, and the population size from which we select our sample (De Vaus, 2002; Saunders et al., 2023). According to Saunders et al. (2023), researchers normally work with a 95 per cent confidence level and a margin of error that is within plus or minus 3 to 5 per cent. Therefore, the sample size for this study was determined by using a 95 per cent level of certainty and a 5 percent margin of error. In order to select the precise minimum sample size, a researcher also needs the proportion of responses that is expected to have a particular characteristic (De Vaus, 2002; Saunders et al., 2023).

To estimate the proportion of responses that had a particular attribute, this study used the most conservative and worst scenario approach by assuming that 50 percent of the population would have the specified attribute; expecting 50 percent of the population to give particular answer results in the highest possible sample size (De Vaus, 2002; Saunders et al. 2023). By taking this proportion, the public enterprises in Ethiopia were assumed to have 50 per cent of their manpower to be managers. Consequently, with a 95 per cent confidence level, 5 per cent level of accuracy, and assuming maximum of 50 per cent of the enterprise's people being in the management category, this study used the maximum possible sample size of 400 (De Vaus, 2002). However, as there would still be a non-response rate of 20 per cent even after using good techniques (De Vaus, 2002), and in expectation of a low survey response rate, the study drew an initial sample size that is larger than the expected amount by 20 percent; resulting in a total sample size of 480. While collecting the data, the sample size was disbursed to each stratum proportionally (see Table 6). Table 7 provides summary of sample size used by previous studies on the link between HPWS and organizational performance.

Table 7: Sample size used by previous studies

Researcher(s)	Title of the study	Organization studied	Sample size
Gould-Williams (2003)	The importance of HR practices and workplace trust in achieving superior performance: A study of public-sector organizations	UK public organizations	293 managers, and workers
Harel & Tzafrir (1999)	The effect of human resource management practices on the perceptions of organizational and market performance of the firm	Public and Private organizations in Israel	215 managers
Meyer & Smith (2000)	HRM Practices and Organizational Commitment: Test of a Mediation Model	30 different organizations in Canada	281 employees
Knies, Borst, Leisink, & Farndale (2022)	The distinctiveness of public sector HRM: A four wave trend analysis	5271 public and private organizations in 8 European countries	5271 managers
Messersmith et al. (2011)	Unlocking the Black Box: Exploring the Link Between High-Performance Work Systems and Performance	22 local government authorities in Wales	91 managers, and 1,755 employees
Amare, Abebe, & Abdurezak (2022)	The mediating role of employee ambidexterity in the relationship between high-performance work system and employee work performance: An empirical evidence from ethio-telecom	Ethio-Telecom	387 sales representative
Abraraw (2021)	Organizational factors influencing strategic human resource management: An empirical investigation from Ethiopia	156 private and public business organizations	156 HR managers
Gile, Klundert, & Buljac-Samardzic (2022)	Strategic human resource management and performance in public hospitals in Ethiopia	15 public hospitals	19 top managers, and 38 professionals and line managers
Solomon & Meheretab (2022)	Assessment of strategic human resource ma nagement practices and challenges in select ed Ethiopian commercial banks	Selected commercial banks	345 employees

The sample size also fulfilled the requirement of SEM, the data analysis technique that was used in the study. As covariance-based SEM depends on statistical tests that are sensitive to sample size, one of the main assumptions of this technique is the use of larger sample size by studies that apply the data analysis method (Collier, 2020). Accordingly, various authors have offered their suggestion regarding the appropriate sample size for studies that use SEM. As can be seen in Table 8, Hair, Black, Babin, & Anderson (2018) suggests the minimum sample size for using SEM based upon the complexity of the model and the characteristics of the measurement model. In addition, Nunnally and Bernstein (1994) recommended the use of 10 observations for each indicator. Other authors also argue that that appropriate sample size in SEM should be determined with a ratio of five cases for each estimated parameter (Bentler & Chou, 1987). There are also authors who argue that the use of a minimum sample size of 200 would be sufficient to get stable parameter estimates (Collier, 2020).

Table 8: Minimum Sample Size Requirements for Using SEM

Characteristics of the model	Minimum sample size
Five or less unobservable constructs, with each construct having more than three measurement items	100
Seven or less unobservable constructs, with each construct having more than three measurement items	150
Seven or less unobservable constructs, with some constructs having less than three measurement items (just identified model)	300
More than seven unobservable constructs, with some constructs having less than three measurement items (just identified model)	500

Table 9 presents a summary of sample size that is deemed appropriate for the current study according to the above authors.

Table 9: Recommended Sample Size for the Current Study by Various Authors

Author(s)	Sample size determination	Recommended sample size for the study	Remark
Hair et al. (2018)	Based upon the number of unobservable constructs	150	The study had six constructs with each construct having more than three measurement items
Nunnally and Bernstein (1994)	10 observations per indicator	260	The study had 26 indicators
Bentler and Chou (1987)	5 observations per parameter	215	The study had 43 estimated parameters

Therefore, as can be seen from Table 9, based on the six latent constructs of this study with each construct having more than three measurement items, twenty-six indicators, and forty-three estimated parameters, the 480 sample size of the current study was more than sufficient as it was above the minimum sample size requirements of the authors that was deemed suitable for similar studies that use SEM as a data analysis technique. In addition, the sample size was larger than the recommended sample size of 350 individuals for survey study (Clark & Creswell, 2015). Moreover, it was the largest as compared with previous empirical studies on similar research area that used only single-respondent (HR manager) per organization, which had problems such as low reliability (Boon et al., 2019). Using larger sample size would help the study to reduce sampling error (Clark & Creswell, 2015).

3.6 Data Sources and Instrument Development

3.6.1 Data type and sources

The study employed both primary and secondary sources of data. The primary data on HPWS, HR outcome, operational outcome, internal fit, external fit, and financial performance were collected from the top, middle, and lower level operating managers of the public enterprises. Operating managers were used as a source of primary data than a single HR manager because of the following reasons. First, soliciting data from only one HR manager who has direct responsibility for the implementation of HPWS policies may result in biased response. Therefore, collection of data from other operating managers helps to identify the actual HPWS practices in use, not the ones that are found in policy documents (Guest 2011; Wright, Gardner, Moynihan, & Allen, 2005). Second, HR managers may not have the time and knowledge to precisely measure the HPWS practices that are used in multiple job groups in multiple locations (Guest 2011; Wright et al., 2005). As a result, line managers who are closer to the jobs are more appropriate to describe the actual HPWS practices that are used to manage employees (Ivancevich, 2010).

Third, operating managers are the ones who are actually responsible for managing the HR of an organization; as a result, it is appropriate to use them as a source of data. They are HR managers as they deal with employees constantly and perform almost all HPWS practices on employees who are under their direct supervision (Dessler, 2013; Guest 2011; Ivancevich, 2010). Consequently, operating managers dedicate substantial amount of their time to manage people. They closely follow up the acquisition, development, reward, maintenance, and protection aspect of their employees. Empirical studies also show that a considerable amount of operating manager's day is spent on conversations, meetings, solving problems, making decisions, avoiding future difficulties, and handling other issues that are linked with and have a direct effect on people (Ivancevich, 2010). As a result, the use of only HR managers as a source of data decreased from 41 per cent to

26 per cent by studies that had been conducted from 1991 to 2017 on the nexus between HPWS and organizational performance (Boon et al., 2019).

Finally, the audited financial statements and annual reports of the public enterprises were analyzed to gather secondary data on the average financial performance of the public enterprises for the fiscal years 2019 to 2023, the general background information of the study public enterprises, and the organizational level control variables of the research.

3.6.2 Development of the research instrument

Data collection instrument

The study used structured questionnaire to measure the constructs of interest. Although surveys employ different techniques to gather data about their participants, questionnaire is the most common of all. Survey strategy mainly uses questionnaires to collect quantitative data by asking respondents uniform questions in a predetermined sequence (Groves et al., 2009; Kothari, 2004; Saunders et al., 2023). Questionnaire was used in this study as it is consistent with the positivism research philosophy and survey research method. Moreover, it provides dependable and reliable results by collecting data from a large sample efficiently. Furthermore, it provides respondents with enough time to think about their answer. Besides, difficult to reach participants can easily be accessed by the use of questionnaire (Kothari, 2004).

Constructing the data collection instrument

The study used perceptual measures of HPWS, HR outcome, operational outcome, financial performance, internal fit, and external fit. When the organizations under study are from various industries, comparison of organization performance is affected by external economic factors. In such instances, perceptual measures are more appropriate than objective indicators (Bamberger, Bacharach, & Dyer, 1989) as the perceptual performance measures provide data that are comparable among organizations from

different industries (Lahteenmaki et al, 1998). Moreover, when objective measures of performance are not available or are difficult to access, perceptual measures are appropriate and reliable indicators (Dess & Robinson, 1984). This is because perceptual measures of performance have been found out to generate findings that are consistent with the objective measures (Geringer & Hebert, 1991; Powell, 1992; Robinson & Pearce, 1988). In addition, they are widely utilized in strategy related research works (Venkatraman & Ramanujam, 1986). Furthermore, similar past seminal empirical studies also used perceptual measures of organization performance (see Delaney and Huselid, 1996; Youndt et al., 1996).

Drawing from preceding theoretical and empirical works on HPWS, the researcher decided in advance the type of information needed together with the appropriate data collection technique to answer the research questions and meet the purpose of the research. To measure the constructs of the study, therefore, the researcher modified the following perceptual items from prior works to ensure the content validity of the data collection instrument.

HPWS: The HPWS construct was measured in this study using structured items which solicits the intensity of HPWS existing in the public enterprises rather than pointing out the mere presence or absence of a specific HPWS practice. The latent unobservable HPWS construct was measured using 18 standardized questions that concentrated on the extent to which the HPWS practices were used throughout the organizations. The 18 items in the HPWS scale were adapted from the earlier works of Datta, Guthrie, and Wright (2005). A five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), was used to measure the eighteen items.

HR outcome: Although HR outcome was later converted into a single first-order construct throughout this study, it was originally contextualized as a second-order construct composed of three dimensions: job satisfaction, commitment, and empowerment (see chapter four for more detail). Accordingly, data were initially collected on the job satisfaction, commitment, and empowerment level of the employees

of the public enterprises against which the effect of HPWS was evaluated. In addition, the mediating effect of HR outcome in the relationship between the HPWS and financial performance of the selected public enterprises was examined. A five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), was used to measure the dimensions. The first three items that were adapted from Messersmith et al. (2011) were administered to measure job satisfaction. The next 19 items that were modified from Meyer and Allen (1997) focus on measuring commitment, and the last 12 items that were proposed by Spreitzer (1995) measure empowerment.

Operational outcome: The researcher gathered data on the operational outcome of the public enterprises to examine the influence of HPWS on the construct and the mediating role of operational outcome in the HPWS-financial performance relationship of the enterprises. Seven items used by Delaney and Huselid (1996) to measure organizational performance in terms of quality, innovation, and customer satisfaction were modified to measure the extent to which the managers perceived the operational outcome of the public enterprises. The questions use five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), and cover several aspects of an organization such as product quality, product innovation, and customer satisfaction.

Table 10 exemplifies the conceptual and empirical treatments of the constructs of the study. Conceptually, the HR outcome construct was modeled as second-order consisting of three first-order dimensions: job satisfaction, commitment, and empowerment. Nevertheless, the construct was empirically treated as first-order throughout the remaining parts of this study because of statistical considerations (high inter-correlations among the three dimensions of the construct, and inacceptable model fit of the second-order construct as compared to the first order construct). The remaining constructs are preserved as unidimensional throughout the study due to statistical reasons (see chapter four for more detail).

Table 10: Definition of the study constructs

No.	Domain	Construct	Definition	Conceptual Treatment	Empirical Treatment	Scales	Source
1.	_	HPWS	Perception of top, middle, and lower level managers on the application of interconnected HPWS practices designed to improve employees' skills and efforts	Unidimensional	Unidimensional	18 items	Datta et al. (2005); Takeuchi et al. (2007)
2.	HR Outcome	Job Satisfaction	Perception of top, middle, and lower level managers on employee's overall evaluation of their jobs as favorable or unfavorable	Dimension of HR Outcome	Merged to represent HR outcome as a single first-order construct because of statistical reasons	3 items	Messersmith et al. (2011)
		Commitment	Perception of top, middle, and lower level managers on employee's trustworthiness and identification with their organization	Dimension of HR Outcome		19 items	Meyer and Allen (1997)
		Empowerment	Perception of top, middle, and lower level managers on employee's sense of influence on organizational matters	Dimension of HR Outcome		12 items	Spreitzer (1995)
3.	_	Operational Outcome	Perception of top, middle, and lower level managers on outcomes that are related to the goals of an organizational operation, including product quality, product innovation, and customer satisfaction	Unidimensional	Unidimensional	7 items	Delaney and Huselid (1996)
4.	_	Financial Performance	Perception of top, middle, and lower level managers on the extent of fulfillment of the economic goals of their organizations, including sales growth, profitability, market share, and marketing activities	Unidimensional	Unidimensional	4 items	Delaney and Huselid (1996)
5.	_	Internal Fit	Perception of top, middle, and lower level managers on the existence of horizontal complementarities among HPWS practices	Unidimensional	Unidimensional	3 items	Hoque (1999), and Huselid (1995)
6.	_	External Fit	Perception of top, middle, and lower level managers on the existence of vertical alignment between their organizations' HPWS and business strategy	Unidimensional	Unidimensional	3 items	Björkman and Xiucheng (2002)

Financial performance: Four items used by Delaney and Huselid (1996) to measure the market performance of profit-making organizations in terms of sales growth, profitability, market share, and marketing activities were modified and administered to measure the financial performance of the public enterprises. The four questions were used to measure the construct as they focus on economic performance (Harel & Tzafrir, 1999). A five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), was used to measure the four items.

Internal fit: The internal fit construct was measured by using three items that were adapted from Hoque (1999) and Huselid (1995). The three items inquired the study participants about the availability of HPWS strategy that is officially approved and supported by the top management, the intentional integration of HPWS policies among each other, and the availability of consistent HPWS policies across the organization's various divisions. The participant's response to the positive questions varied on a range from 1 to 5.

External fit: This construct was measured by using three items that were adapted from Björkman and Xiucheng (2002). The three questions asked respondents about the public enterprises effort to align HPWS and business strategies, the involvement of the HR department in the strategic planning process of the organization, and how HR managers are perceived by those outside of the department. The responses to the positive questions were rated on a scale of 1 to 5, where one shows extreme disagreement while five represents total agreement.

Control variables: Numerous factors affect the relationship between HPWS and organizational performance. Therefore, it is vital to identify and control the internal and external organizational characteristics so as to understand the association between HPWS practices and organizational performance clearly. Controlling for variables that are not relevant for the study is one of the fundamental natures of a good research design (Boselie & Wiele, 2002). There are control variables at the organizational and individual level. Organizational level control variables (e.g. organization size, organization age,

degree of unionization, industry, technology and capital intensity), and individual level control variables such as employee gender, age, salary, position, level of education, and work experience have an impact on the HPWS, HR outcome, operational outcome, and financial performance of an organization. As a result, it is good practice to take them into consideration in HPWS related research designs (Boselie & Wiele, 2002).

As HPWS activities and organizational performance outcomes may vary across industries (Youndt & Snell, 2004; Lam & White, 1998), this study used dummy variable to indicate the industry the public enterprise under study belongs. In addition to controlling industry effect, the study accounted for organization effects before examining how HPWS practices impact organizational performance. The organization effects include age and size. An organization's age and size might have an impact on organizational performance (Lam & White, 1998). In order to reduce the effect of age and size, the logarithm of the number of years of operation since the organization was first established and the logarithm of the number of employees were used as a proxy for organization age and size respectively (Lam & white, 1998; Harel & Tzafrir, 1999).

Organization age is used as a control variable because the experience of an organization may have an impact on the HR outcome, operational outcome, internal fit, external fit, and financial performance of an organization. Organizations with more years of operation have gone through a learning experience; hence, have better industry knowledge. Therefore, a significant association between HPWS and organizational performance is expected from organizations with many years of operation. Consequently, organization age was used as a control variable (Björkman & Xiucheng, 2002). Similarly, organization size was used as a control variable because a significant relationship is expected between HPWS and organizational performance in organizations with large number of employees than those with small number of employees (Björkman & Xiucheng, 2002). Since HRM holds a greater degree of importance in larger organizations, an interest in HPWS is expected from such establishments (Hoque, 1999).

According to Freeman and Medoff (1984), unions also have an impact on organizational performance. As a union is an organization that stands for preserving the concerns of the workforce, most individual HPWS policies such as compensation, working conditions, grievance handling processes, workforce rights, and work hours are directly impacted by the existence of a union (Ivancevich, 2010). As a result, degree of unionization is the other control variable that was used in the study; it was measured as the percent of non-managerial workers who were covered by a collective agreement (Way, 2001). In addition, capital intensity, the logarithm of the total book value of the public enterprise's fixed capital, was used as a control variable. Moreover, the current level of technology of the public enterprises was controlled by measuring it with a single item that was adapted from Wright et al. (1999). The item asked respondents to provide a perceptual evaluation of the technology that was being utilized by the public enterprises as compared with their competitors in the industry. Finally, the study controlled for individual level control variables. The individual level control variables include employee gender, age, salary, level of management, level of education, and length of service that may interfere with the manager's evaluation of the HPWS, HR outcome, operational outcome, internal fit, external fit, and financial performance of the public enterprises.

Pilot testing the data collection instrument

To ensure the validity and reliability of the data collection instrument that was used in this study, the researcher conducted a pilot study in the first week of August 2024. After determining the suitability of the items by thoroughly reviewing relevant literatures so as to ensure whether the measurement questions were consistent with theoretical expectations, pilot testing was conducted with the target population to ensure the validity and reliability of the measurement questions. First, the researcher assigned number to each of the nine study organizations, and selected four (Ethiopian Insurance Corporation, Ethiopian Agricultural Businesses Corporation, National Alcohol and Liquor Factory, and Chemical Industry Corporation) using Google random number generator. After that, fifty samples were gathered from the four organizations. According to Saunders et al. (2023), the minimum number for a pilot test that should be used for student

questionnaires is 10. The pilot testing participants were then requested to provide their comments on the instrument in order to check whether they understood the questions and instructions as intended, and provided response without difficulty. The participants mentioned that the instructions and the items in the questionnaire were expressed clearly and that they provided their response without difficulty. In addition, the study constructs had reliability values that ranged from 0.808 to 0.908.

Table 11: Response Rate of the Data Collection Instrument

Name of the public enterprise	**Distributed**	**Collected**	**Usable**	**Response rate**
Commercial Bank of Ethiopia	139	119	114	85.6
Ethio-Telecom	139	117	109	84.2
Development Bank of Ethiopia	82	44	44	53.7
Ethiopian Electric Power	53	45	45	85
Ethiopian Insurance Corporation	19	13	13	68.4
Ethiopian Agricultural Businesses Corporation	19	12	12	63.2
Berhanena Selam Printing Enterprise	14	10	10	71.4
National Alcohol and Liquor Factory	10	6	6	60
Chemical Industry Corporation	5	5	5	100
Total	**480**	**371**	**358**	**77.3**

3.6.3 Response rate

Even after using good techniques, according to De Vaus (2002), surveys usually have a 20 per cent non-response rate. Therefore, the researcher distributed 480 questionnaires that are 20 per cent more than the sample size of 400. Out of the 480 questionnaires, a total of 371 were returned, resulting in a response rate of 77.3 per cent. However, after

excluding questionnaires that have large missing data and distrustful response patterns, the researcher arrived at a total of 358 completed questionnaires that were usable for further analysis (see Table 11). According to Baruch and Holtom (2008), for individual or organizational level academic studies response rates of about 50 per cent and 35 to 40 per cent respectively are considered to be appropriate. Hence, the 77.3 per cent response rate of this study is appropriate as it is above the minimum rate that is deemed reasonable.

3.6.4 Access and data collection procedure

Before commencing the data collection process, the researcher received support letter from Addis Ababa University. After that, the researcher contacted the two supervising authorities, Public Enterprise Holdings Administration (PEHA)[1] and EIH, which were responsible to oversee the operation of the thirty-five public enterprises that were owned and operated by the federal government to gather general background information about the organizations. Next, all of the 35 public enterprises were approached physically based upon the contact information gained from the supervising authorities to collect audited financial statements for the fiscal years 2019 to 2023 and inquire their willingness to participate in the study. However, only ten public enterprises were able to provide audited financial statements for the entire five consecutive years. Out of the ten, nine were willing to take part in the study.

To get formal access, the researcher visited the nine public enterprises and clarified the objective of the study to the HR departments in the selected organizations. After securing permission, the HR departments of the enterprises were approached with a semi-structured questionnaire to solicit data about the top, middle, and lower level managers who work in the headquarters of the study organizations in Addis Ababa. After getting the list of managers, the researcher assigned number to each element of the sample frame. Then, the participants of the study were selected on the research site using Google random number generator. Afterwards, the researcher directly delivered the

[1] The organization has been dissolved.

questionnaires to the selected managers, and received an appointment to collect the surveys that usually fall within a week after the distribution of the instrument. The researcher then collected the questionnaires according to the appointment date given by the participants. Out of the 480 questionnaires that were distributed in August and September of 2024, the researcher was able to collect a total of 371 from the nine public enterprises, resulting in a response rate of 77.3 per cent. More details about the response rate have been given in section 4.7 subsection 4.7.6 of this chapter.

3.6.5 Data analysis method

SEM is the most appropriate method to perform the data analysis of this study. According to Collier (2020) and Hair et al. (2019), SEM is the appropriate analysis technique to examine associations among various constructs simultaneously as it lets researchers to analyze the effect of exogenous constructs on multiple endogenous constructs simultaneously. In addition, as compared to other technics such as regression, the data analysis technique takes measurement error into account, and tests the full model at once instead of individual relationships between variables (Collier, 2020). Moreover, by using symbols and drawings to denote relationships between constructs, SEM enhances the understandability of complicated simultaneous mathematical equations (Collier, 2020).

3.6.6 Ethical considerations

Issues related to research ethics have gained a growing amount of attention recently. The ethical issues are applicable to all research methods and stages of the research (Creswell, 2014). Therefore, this study adhered to issues related to the ethical conduct of research as they relate to the various phases of the study. Ethical considerations were given before conducting the study, while beginning the research, throughout the data collection and analysis stage, and when storing, reporting, and sharing the data (Creswell, 2014). As the research required data from managers who were working in the selected public enterprises, the participants of the study were provided with full information concerning the purpose of the study in order to help them make an informed decision before

responding to the items in the research. The researcher informed the participants of the study, both orally and in a written cover letter that accompanied the questionnaire, that their decision to participate in the study was completely voluntary. They were also told not to write their name anywhere on the questionnaire, and assured that the data they provided would be taken care of in the strictest confidence and only be used for academic purposes without disclosing their identity. Accordingly, the identity of the research participants was treated with confidentiality as the dataset did not include any recognizable private data of the respondents. In addition, all information gathered was used only for the purpose of the study.

3.7 Summary of the Chapter

This chapter has discussed the research methodology that was used to undertake the study. It has provided the justification for adopting the research philosophy, the methodological choice, the research strategy, and the procedures and techniques that were used to carry out the study. Positivism was the research philosophy of the study. It also used cross-sectional quantitative survey research strategy with a deductive approach. In addition, the chapter has presented the ethical procedures, and data analysis method followed while conducting the study. The next chapter provides the instrument validation and measurement model analysis part.

CHAPTER FOUR
INSTRUMENT VALIDATION AND MEASUREMENT MODEL ANALYSIS

4.1 Introduction

Chapter three has presented the research methodology that was followed to conduct the study. It has provided the justification for adopting the research philosophy, the methodological choice, the research strategy, and the procedures and techniques that were used to conduct the study. This chapter presents the data screening and preparation activities that were conducted before the data analysis. It also shows the procedures that were followed to purify the items used to measure each construct of the study. In addition, it provides the results of the single-factor measurement model, and full measurement model analyses that were performed to ensure the validity and reliability of the measurement items. Moreover, the measures taken to ensure measurement invariance are also discussed in the chapter.

4.2 Data Screening and Preparation

This section focuses on data screening, and testing the data for assumptions underlying multivariate analysis such as normality, absence of multicollinearity, and linearity. It also discusses the result of the non-response bias, and common method bias.

4.2.1 Missing value analysis

Data screening was conducted before the SEM analysis to make sure there are no errors, outliers, excessive missing data, and respondent misconduct. First, an ID column was set up after data were keyed into SPSS software to easily find a specific case. After that, the data were examined to see if it had any respondent misconduct or abandonment. To check if there was respondent abandonment, missing values analysis was conducted on SPSS software. After sorting cases and variables on missing patterns, 12 cases with more than 10 per cent of missing data were deleted. According to Hair, Black, Babin, &

Anderson (2019), individual case missing data that are under 10 percent can be ignored and be substituted for the missing data. In addition to cases, missing values for variables were also analyzed (see Table 12).

Table 12: Missing Data by Variables

Percentage of missing values (a)	**No. of Variables (b)**	**Percentage c = (b/71)**
<1	20	28.2
1-2	39	54.9
2.1-3	5	7
3.1-4	5	7
4.1-5	2	2.8

Out of the 71 variables, 20 (28.2%) had less than one per cent missing values, 39 (54.9%) had between one and two per cent missing values, 5 (7%) had between 2.1 and 3 per cent missing values, 5 (7%) had missing values that lie between 3.1 and 4 per cent, and the missing value for the remaining 2 (2.8%) was 4.2 and 4.5. According to Hair et al. (2019) and Collier (2020), a researcher can work with data that have up to 20-30 per cent variable missing data by remedying it with an imputation technique.

The next step, therefore, is to address the missing data. As the data has sufficiently low missing data, any of the imputation strategies can be used to remedy the issue. According to Hair et al. (2019), cases that have up to ten percent missing data are acceptable and be remedied by using any imputation techniques. Thus, the missing values were replaced by using mean substitution strategy. According to this method, missing values for a variable are replaced by calculating the mean value of all valid responses for the variable (Hair et al, 2019). The imputation strategy is selected because it is one of the most commonly utilized methods. In addition, the method assumes the mean as the single best replacement value. Moreover, it provides all cases with comprehensive information. Furthermore, the data has low levels of missing data and strong associations among the variables (Hair et al., 2019).

The data were also screened to resolve issues related to respondent misconduct. The standard deviation of each case was examined by using Microsoft Excel 2010 to see if the participant marked uniform answers for all questions. Accordingly, one case was deleted as it had a standard deviation of 0. According to Collier (2020), a respondent with a standard deviation of below 0.25 should be excluded from further analysis as there is no variance among the responses. The issue of respondent misconduct was also handled proactively by offering each respondent enough time to read and answer the questions in a valid manner (Collier, 2020).

4.2.2 Examination for outliers

Mahalanobis D^2 was used to detect outliers. The results identified four cases for being extreme outliers with $p<0.001$. After checking the cause of outlying was not due to an error in data entry, the researcher decided to retain the outliers in order to enhance the generalizability of the study to the entire population (Hair et al., 2019). If outliers are excluded, the study runs the risk of enhancing the multivariate analysis at the cost of limiting its generalizability (Hair et al., 2019).

4.2.3 Testing the assumptions underlying multivariate analysis

Normality test

The data was assessed for normality. As shown in Appendix B, the variables' skewness and kurtosis lie within the normal range of -2 to +2 and -10 to +10 respectively (Collier, 2020). Therefore, the data is considered normal as the skewness and kurtosis values are within the acceptable range.

Multicollinearity

Tolerance and variance inflation factor (VIF) tests were conducted to check the existence of multicollinearity. Table 13 shows the absence of multicollinearity problem since the

VIF and tolerance values for the independent constructs were below 10 and above 0.1 respectively.

Table 13: Multicollinearity Test Results

Construct	Tolerance	VIF
HPWS	.406	2.463
HRO	.472	2.118
Operational Outcome	.620	1.613
External Fit	.386	2.588
Internal Fit	.422	2.370

Linearity

Linearity is one of the assumptions of structural equation modeling; hence, it is prudent to inspect all associations to detect any deviation from linearity (Hair et al., 2019). Therefore, SPSS was used to determine whether there was departure from the linearity assumption. The results in Table 14 indicates that there is a significant linearity between the independent and dependent constructs at $p<0.001$.

Table 14: Linearity Test Results

Construct	Linearity with the dependent construct	
	F	p-value
HPWS	121.486	.000
HR Outcome	158.118	.000
Operational Outcome	270.880	.000
External Fit	55.184	.000
Internal Fit	44.006	.000

4.2.4 Non-response bias

To assess whether non-response bias is a problem, an independent t-test was conducted between 296 participants who responded early and 62 participants who responded late to the measurement items (Armstrong & Overton, 1977). As illustrated in Table 15, the result of the test demonstrates the absence of non-response bias as there were no significant variations between the groups in the ratings of the study constructs.

Table 15: Independent sample t-test between early and late responses

Construct	Response Time	Mean	SD	Std. Error Mean	p-value
HPWS	Early	3.5491	.61536	.03577	.183
	Late	3.6617	.55189	.07009	
HR outcome	Early	3.4391	.42145	.02450	.774
	Late	3.4558	.38961	.04948	
Operational outcome	Early	3.5365	.75466	.04386	.143
	Late	3.6655	.59682	.07580	
Financial performance	Early	3.8702	.84479	.04910	.777
	Late	3.9032	.78191	.09930	
Internal fit	Early	3.6419	.79856	.04642	.447
	Late	3.7258	.73805	.09373	
External fit	Early	3.6290	.68372	.03974	.672
	Late	3.5889	.65096	.08267	

Note: N = 358, SD = Standard Deviation

4.3 Measure Purification

Measure purification was conducted to purify the items used to measure each construct of the study and enhance their reliability. Accordingly, this study performed Cronbach's alpha, change in Cronbach's alpha if a measurement item is deleted, and corrected item-total correlation for the HPWS, HR outcome, operational outcome, financial performance, internal fit, and external fit constructs. Although the items used to measure the study constructs have good reliability, two items were deleted due to corrected item–total correlations score of less than 0.30 (see Table 16).

Table 16: Items deleted due to Measure Purification

Construct	Cronbach's Alpha Before Item Deletion	Item	Item-scale	Cronbach's Alpha if Item Deleted	Remark
HR Outcome	.885	HRO8	.267	.884	The corrected item-total correlation is below 0.30
		HRO20	.275	.885	

4.4 Measurement Model Analysis

To test the single-factor and full measurement model, confirmatory factor analysis (CFA) was computed by using AMOS. Factor loadings were calculated for each item as part of the CFA. Unstandardized coefficients are seldom used to present the results of a CFA. As a result, this study used standardized estimates to report the factor loadings as they are most often reported and would help to relate the weights of indicators across a CFA (Collier, 2020). Accordingly, items that had standardized factor loadings below 0.60 were excluded from further analysis due to low factor loadings. An acceptable indicator has a standardized factor loading above 0.70. However, as the factor loading strength of other indicators and the average variance extracted (AVE) value of the construct should be taken into consideration, having a factor loading that is below 0.70 does not mean the indicator should be dropped (Collier, 2020). Nevertheless, an indicator with a factor loading value below 0.60 should be dropped from the analysis as the indicator is barely contributing to the understanding of the latent construct (Collier, 2020).

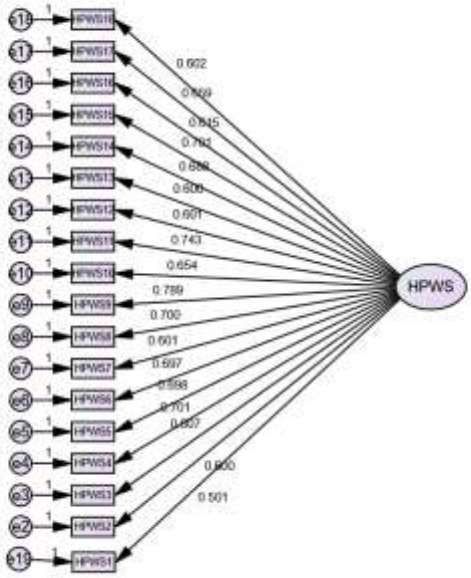
Hair et al. (2019) suggests the use of one absolute index (RMSEA, SRMR), one incremental index (CFI, IFI, TLI), and χ^2 while assessing measurement and structural model fit. However, this study computed the model fit statistics using all of the absolute index, incremental index, and χ^2. Therefore, to evaluate the model's overall goodness of fit the study employed model fit statistics such as χ^2 (Chi-Square), comparative fit index (CFI), incremental fit index (IFI), tucker lewis index (TLI), standardized root mean square residual (SRMR), and root mean square error of approximation (RMSEA). Hence, this part provides the results of the single-factor and full measurement model analyses that were performed to ensure the validity and reliability of the measurement scales. It presents the construct validity tests separately for each of the study constructs. After validating the single-factor CFA models, the construct validity of the full CFA measurement model is reported.

4.4.1 Measurement model of HPWS

To validate the single-factor measurement model of HPWS, CFA was performed. Based on theoretical foundation, the construct was hypothesized to include 18 items that jointly represent the unidimensionality of the construct. Figure 5 illustrates the CFA result of the proposed single-factor measurement model. Examination of the fit statistics (χ^2/df = 3.482; CFI = 0.931; TLI = 0.899; IFI = 0.932; RMSEA = 0.091; SRMR = 0.0528) showed that the model is unacceptable as the TLI and RMSEA values are outside of the acceptable threshold. In addition, HPWS1 has a standardized factor loading that is below 0.6.

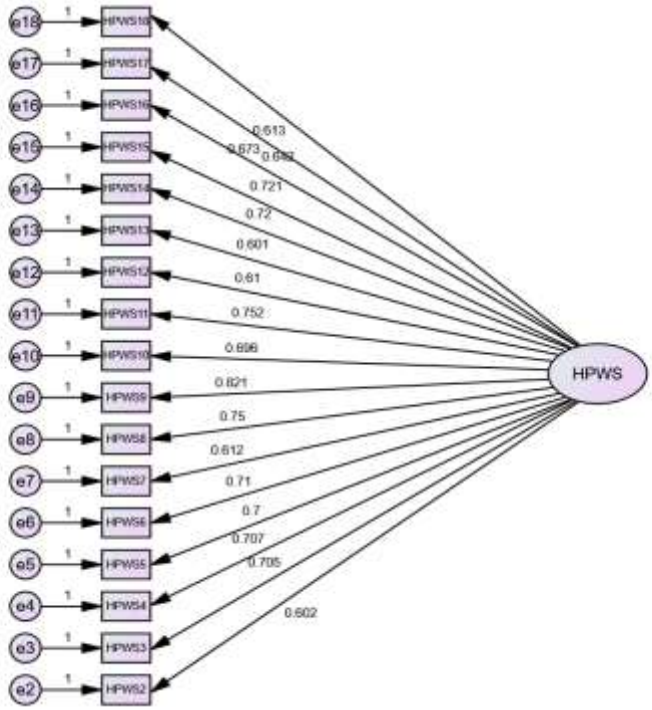
After deleting HPWS1 (see Figure 6), factor loadings of the items were all significant and above the threshold value of 0.6, ranging from 0.601 to 0.821. The model fit statistics of the construct also demonstrated an adequate fit to the data: χ^2/df = 3.264; CFI = 0.942; TLI = 0.917; IFI = 0.943; RMSEA = 0.080; SRMR = 0.0468.

Figure 5: Proposed single-factor model of HPWS



Note: HPWS = High Performance Work System

Figure 6: Final single-factor model of HPWS



Note: HPWS = High Performance Work System

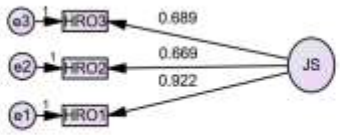
4.4.2 Measurement model of HR outcome

In this study, the HR outcome construct was initially conceptualized as consisting the job satisfaction, commitment, and empowerment dimensions. To decide if the three dimensions could be represented by a single factor (HR outcome), CFA was performed on each of the three factors separately and on all the three factors together.

4.4.2.1 Single-factor measurement model of job satisfaction

As can be seen from Figure 7, the proposed model of job satisfaction has three items. The standardized factor loadings of the three items were all significant, ranging from 0.669 to 0.922. The hypothesized one-factor model also demonstrated an acceptable model fit: CFI = 1.000; TLI = 1.000; IFI = 1.000; RMSEA = 0.000; SRMR = 0. 000.

Figure 7: Single-factor model of job satisfaction

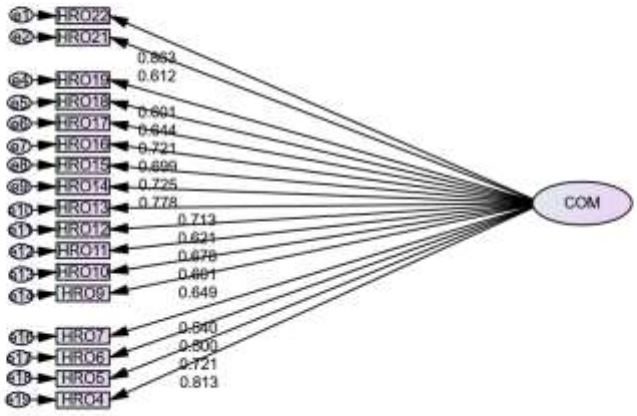


Note: JS = Job Satisfaction

4.4.2.2 Single-factor measurement model of commitment

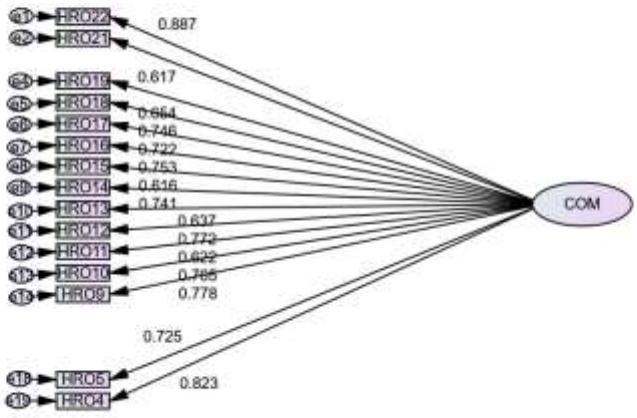
As can be seen from Figure 8, the proposed CFA model for commitment consists of 17 items after two items were deleted due to measure purification. However, the fit indices of the model demonstrated inadmissible model fit (χ^2/df = 5.132; CFI = 0.901; TLI = 0.883; IFI = 0.902; RMSEA = 0.093; SRMR = 0.0781). After dropping two items that had factor loadings below 0.6, the remaining items had factor loadings that were above the threshold value of 0.6, ranging from 0.617 to 0.887 (see Figure 9). The model fit statistics of the construct demonstrated an adequate fit to the data: χ^2/df = 3.103; CFI = 0.921; TLI = 0.901; IFI = 0.922; RMSEA = 0.077; SRMR = 0.0562.

Figure 8: Proposed single-factor model of commitment



Note: COM = Commitment

Figure 9: Final single-factor model of commitment



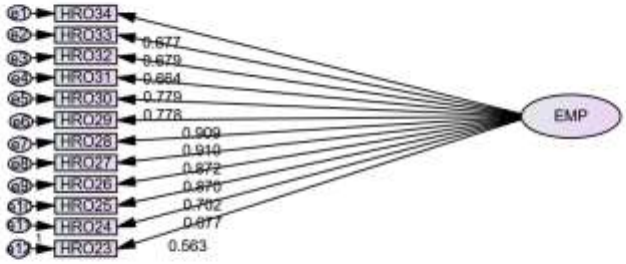
Note: COM = Commitment

4.4.2.3 Single-factor measurement model of empowerment

The proposed CFA model for empowerment is composed of 12 items (see Figure 10). However, the fit statistics of the model revealed inadmissible model fit (χ^2/df = 3.331; CFI = 0.919; TLI = 0.899; IFI = 0.920; RMSEA = 0.077; SRMR = 0.0574). Moreover, one item had a standardized factor loading below 0.6.

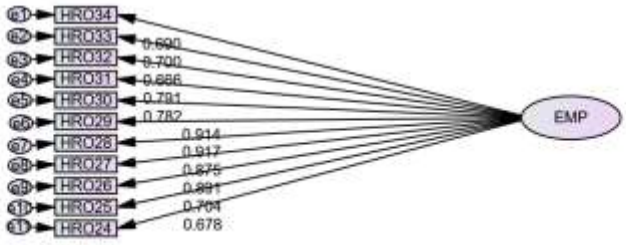
After dropping one item that had factor loadings below 0.6, the other items had factor loadings that were above the minimum recommended value of 0.6, ranging from 0.666 to 0.917 (see Figure 11). The model fit statistics of the construct also showed an adequate fit to the data: χ^2/df = 2.991; CFI = 0.923; TLI = 0.903; IFI = 0.924; RMSEA = 0.071; SRMR = 0.0543.

Figure 10: Proposed single-factor model of empowerment



Note: EMP = Empowerment

Figure 11: Final single-factor model of empowerment

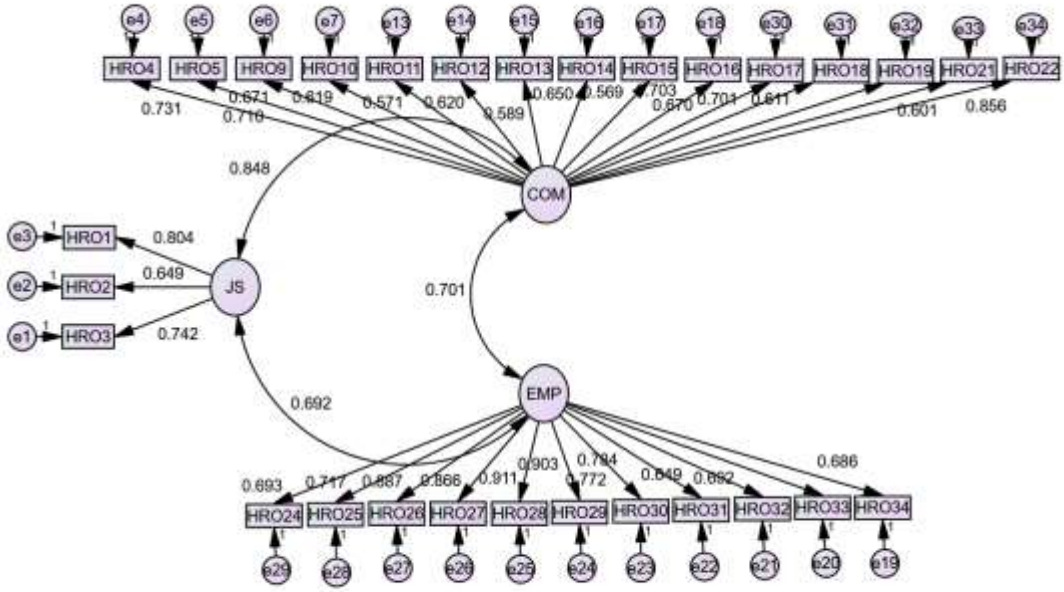


Note: EMP = Empowerment

4.4.2.4 Full measurement model of HR outcome

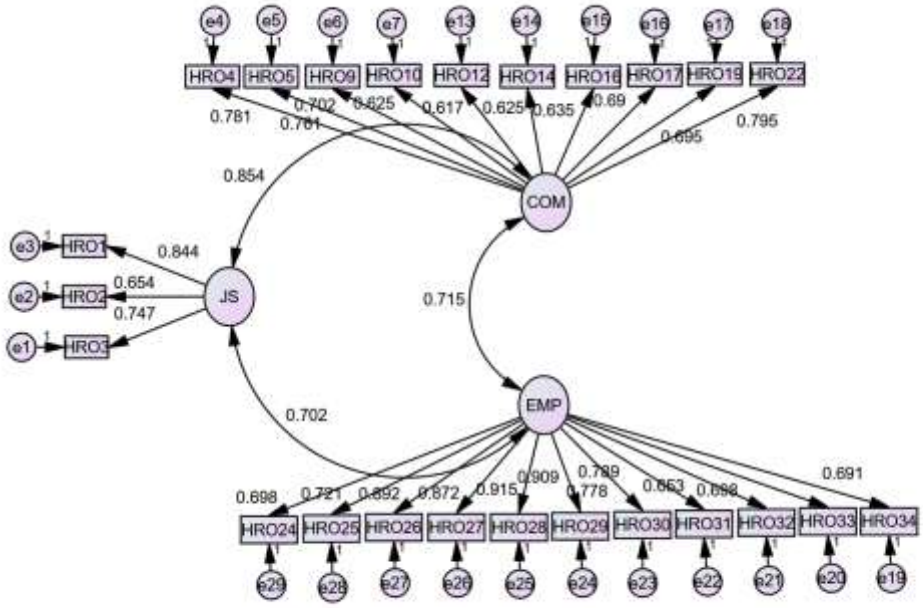
In the previous sections, the single-factor CFA models of the three dimensions that constitute the HR outcome construct were tested individually. This section examines the three factors that form the HR outcome together. However, the fit statistics of the model in Figure 12 illustrated inadmissible model fit on some of the fit indices (χ^2/df = 3.452, CFI = 0.901, IFI = 0.902, TLI = 0.885, SRMR = 0.0579, and RMSEA = 0.089). As can be observed from Figure 13, after dropping five items that had standardized factor loadings below 0.6, the full measurement model of HR outcome produced values that lie within the acceptable level. The full measurement model yielded good fit with the observed data: χ^2/df = 2.986, CFI = 0.921, IFI = 0.922, TLI = 0.905, SRMR = 0.0483, and RMSEA = 0.074.

Figure 12: Proposed full first-order measurement model of HR outcome



Note: JS = Job Satisfaction; COM = Commitment; EMP = Empowerment

Figure 13: Final full first-order measurement model of HR outcome

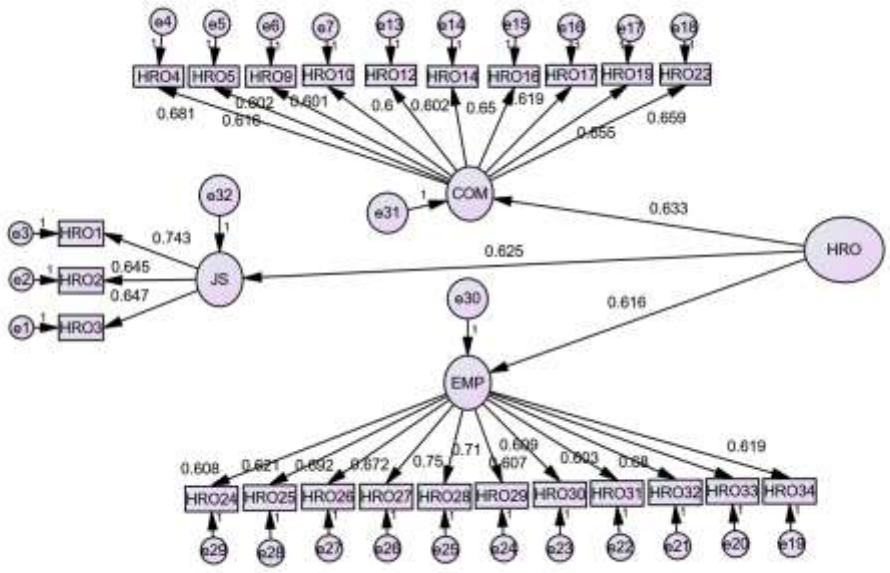


Note: JS = Job Satisfaction; COM = Commitment; EMP = Empowerment

4.4.2.5 HR outcome as a second order construct

This section examines the construct validity of the HR construct at second-order level. As can be seen from Figure 14, after excluding items that had standardized factor loadings below 0.6, the second-order factor model of HR outcome produced values that lie outside of the acceptable level, except the χ^2/df and SRMR values: χ^2/df = 3.846, CFI = 0.884, IFI = 0.886, TLI = 0.850, SRMR = 0.088, and RMSEA = 0.095.

Figure 14: Second-order measurement model of HR outcome

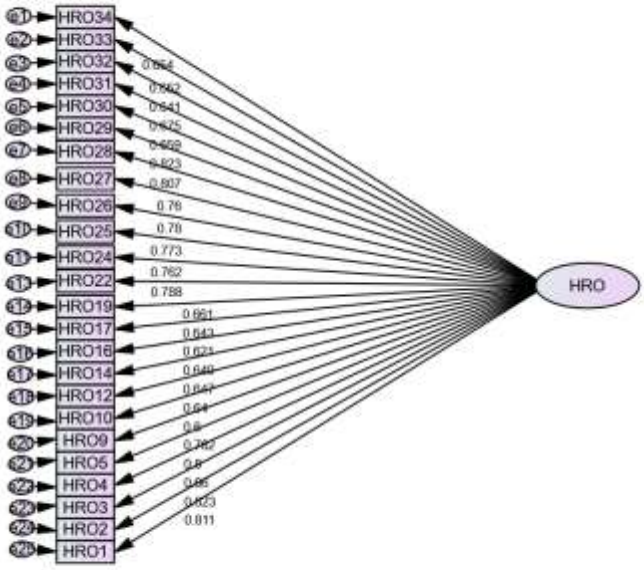


Note: HRO = Human Resource Outcome; JS = Job Satisfaction; COM = Commitment; EMP = Empowerment

4.4.2.6 HR outcome as a first order construct

As can be seen from Figure 13, the correlations among job satisfaction, commitment, and empowerment were very high, extending from 0.702 to 0.854. These strong correlations among the dimensions suggest that the three factors may define a single general factor. If correlations between and among subscales are above 0.3, there is no reason for separating the items into various dimensions (Clark & Watson, 1995). Hence, the dimensions need to be combined into a single score to measure a common underlying construct (Clark & Watson, 1995). To assess this possibility, CFA was conducted to validate the single-factor measurement model of HR outcome. Figure 15 portrays the CFA result of the single-factor measurement model. After excluding items that had a standardized factor loading below 0.6, the loadings of the remaining items were all significant and above the recommended value of 0.6, ranging from 0.600 to 0.823. The model fit statistics of the HRO construct demonstrated an adequate fit to the data: χ^2/df = 2.943; CFI = 0.924; TLI = 0.904; IFI = 0.925; RMSEA = 0.074; SRMR = 0.0657.

Figure 15: First-order measurement model of HR outcome



Note: HRO = Human Resource Outcome

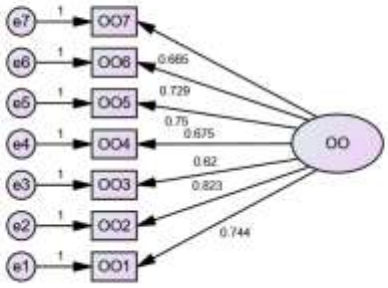
4.4.2.7 Comparison of the first order and second order HR outcome constructs

Comparison of the two models (HR outcome as a first order construct vs. HR outcome as a second order construct) portrays that the model fit statistics of the one-factor model (χ^2/df = 2.943; CFI = 0.924; TLI = 0.904; IFI = 0.925; RMSEA = 0.074; SRMR = 0.0657) is better than the three-factor model (χ^2/df = 3.846, CFI = 0.884, IFI = 0.886, TLI = 0.850, SRMR = 0.088, and RMSEA = 0.095). Besides the acceptable model fit indices of the single-factor model, the three dimensions (job satisfaction, commitment, and empowerment) have very high inter-factor correlations. Therefore, HR outcome was considered as a unidimensional construct in this study.

4.4.3 Measurement model of operational outcome

The operational outcome construct was theorized to be composed of seven indicators. Figure 16 shows the CFA result of the proposed one-factor measurement model for operational outcome. The standardized factor loadings were all significant and above the minimum threshold value of 0.6, ranging from 0.620 to 0.823. The hypothesized one-factor model also has an acceptable model fit: $\chi^2/df = 1.6$; CFI = 0.998; TLI = 0.990; IFI = 0.998; RMSEA = 0.041; SRMR = 0.0136.

Figure 16: Single-factor model of operational outcome

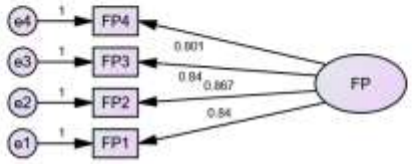


Note: OO = Operational Outcome

4.4.4 Measurement model of financial performance

Financial performance was hypothesized to have 4 items. Figure 17 demonstrates the CFA result of the proposed single-factor measurement model.

Figure 17: Single-factor model of financial performance



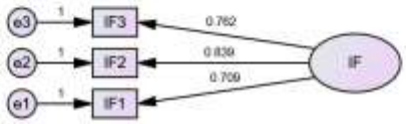
Note: FP = Financial Performance

The standardized factor loadings were all significant and above the recommended threshold value of 0.6, ranging from 0.801 to 0.867. The hypothesized one-factor model also showed an acceptable model fit: $\chi^2/df = 0.619$; CFI = 1.000; TLI = 1.000; IFI = 1.000; RMSEA = 0.000; SRMR = 0. 0047.

4.4.5 Measurement model of internal fit

The internal fit construct was theorized to have three indicators. Figure 18 demonstrates the CFA result of the proposed single-factor measurement model for internal fit. The standardized factor loadings were all significant, ranging from 0.709 to 0.839. The hypothesized one-factor model also demonstrated an acceptable model fit: CFI = 1.000; TLI = 1.000; IFI = 1.000; RMSEA = 0.000; SRMR = 0. 000.

Figure 18: Single-factor model of internal fit

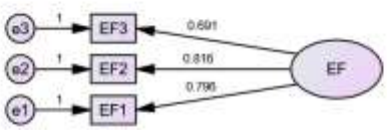


Note: IF = Internal Fit

4.4.6 Measurement model of external fit

The external fit construct was hypothesized as composed of three items. Figure 19 exhibits the CFA result of the proposed one-factor model for external fit. The factor loadings were all significant and above the recommended minimum value of 0.6, ranging from 0.691 to 0.796. The hypothesized single-factor model also illustrated an acceptable model fit: CFI = 1.000; TLI = 1.000; IFI = 1.000; RMSEA = 0.000; SRMR = 0. 000.

Figure 19: Single-factor model of external fit



Note: EF = External Fit

4.4.7 The full measurement model analysis

4.4.7.1 The full CFA measurement model

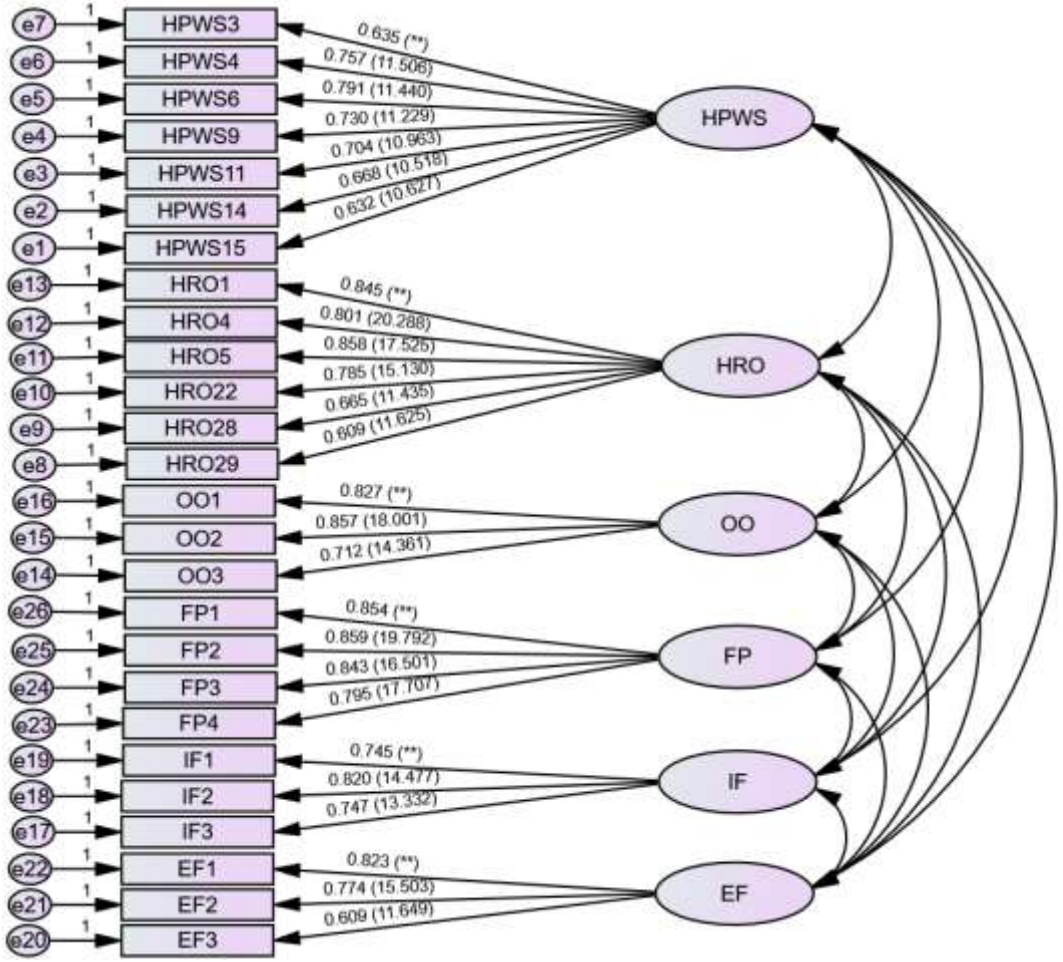
The validity of the full measurement model is presented in this part. The study consists of six factors (HPWS, HR outcome, operational outcome, financial performance, external fit, and internal fit). The six constructs were examined simultaneously in the full CFA measurement model analysis. Figure 20 and Table 17 demonstrate the results of the full CFA measurement model of the study.

Table 17: Confirmatory Factor Analysis

Construct	Item	Standardized Factor Loading	t-value
HPWS	HPWS3	0.635	**
	HPWS4	0.757	11.506
	HPWS6	0.791	11.440
	HPWS9	0.730	11.229
	HPWS11	0.704	10.963
	HPWS14	0.668	10.518
	HPWS15	0.632	10.627
HRO	HRO1	0.845	**
	HRO4	0.801	20.288
	HRO5	0.858	17.525
	HRO22	0.785	15.130
	HRO28	0.665	11.435
	HRO29	0.609	11.625
Operational Outcome	OO1	0.827	**
	OO2	0.857	18.001
	OO3	0.712	14.361
Financial Performance	FP1	0.854	**
	FP2	0.859	19.792
	FP3	0.843	16.501
	FP4	0.795	17.707
External Fit	EF1	0.823	**
	EF2	0.774	15.503
	EF3	0.609	11.649
Internal Fit	IF1	0.745	**
	IF2	0.820	14.477
	IF3	0.747	13.332

Note: ** = Items constrained for identification purposes.

Figure 20: CFA with Factor Loadings and T-values



$\chi^2/df = 2.681$

CFI = .923

IFI = .924

TLI = .907

SRMR = .0475

RMSEA = .069

Note: ** = Items constrained for identification purposes.
Standardized coefficients reported. Values in parentheses are t-values. HPWS = High Performance Work System; HRO = Human Resource Outcome; OO = Operational Outcome; FP = Financial Performance; IF = Internal Fit; EF = External Fit.

After omitting indicators that had standardized factor loadings below 0.6, the full measurement model produced values that lie within the acceptable level of threshold. It yielded good fit with the observed data: $\chi^2/df = 2.681$, CFI = 0.923, IFI = 0.924, TLI = 0.907, SRMR = 0.0475, and RMSEA = 0.069. The model fit indices, the obtained values, and the recommended values together with their sources are illustrated on Table 18.

Table 18: Model Fit Statistics for the Full Measurement Model Analysis

Fit Indices	Recommended Value	Source(s)	Obtained Value
χ^2/df	Under 3	Klein (2016)	2.681
	Up to 5	Schumacker & Lomax (2004)	
CFI	≥ 0.9	Bentler and Bonett (1980)	0.923
IFI	≥ 0.9	Collier (2020)	0.924
TLI	≥ 0.9	Bentler and Bonett (1980)	0.907
SRMR	≤ 0.09	MacCallum, Browne, and Sugawara (1996)	0.0475
RMSEA	≤ 0.08	MacCallum et al. (1996)	0.069

4.4.7.2 Common method bias

Common method bias occurs when a single individual responds to both the independent and dependent variables of a study at the same time (Collier, 2020). As this may lead to biased parameter estimates (Collier, 2020), the researcher used Harman's single factor test to control for common method bias using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). First, EFA was performed on all final validated items using principal axis factoring method. According to this test, common method bias becomes an issue when we have a single factor that explains the majority of the variance

in the data (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Table 19 shows the results of the unrotated factor solution; it revealed that the first factor accounted for only 37.734 per cent of the total variance. As the total variance explained is below the maximum threshold value of 50 per cent, common method bias is not an issue of concern in this study.

Table 19: Assessment of Common Method Bias Using EFA

Factor	**Total**	**Initial Eigenvalues**		**Extraction Sums of Squared Loadings**		
		% of Variance	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	10.426	40.099	40.099	9.811	37.734	37.734
2	2.456	9.446	49.545			
3	2.199	8.456	58.001			
4	1.449	5.573	63.574			
5	1.036	3.983	67.557			
6	.833	3.206	70.762			
7	.809	3.110	73.873			
8	.723	2.779	76.652			
9	.626	2.406	79.058			
10	.566	2.175	81.233			
11	.519	1.996	83.229			
12	.449	1.725	84.954			
13	.423	1.626	86.580			
14	.410	1.578	88.158			
15	.383	1.472	89.630			
16	.372	1.432	91.062			
17	.342	1.315	92.377			
18	.316	1.217	93.593			
19	.267	1.026	94.619			
20	.250	.963	95.582			
21	.229	.881	96.463			
22	.215	.827	97.289			
23	.199	.765	98.054			
24	.179	.689	98.744			
25	.170	.654	99.398			

Extraction Method: Principal Axis Factoring.

Second, CFA was conducted to test the unidimensionality of the data. According to this test, common method bias becomes an issue when we have an acceptable model fit with one factor model (Collier, 2020; Podsakoff, 2003). Therefore, as can be seen from Figure 21, the test was conducted with a CFA where all indicators were deliberately loaded on

one common latent factor. The obtained model indices values (Table 20 and Figure 21) demonstrated an unacceptable fit for the single-factor structure (χ^2 = 7.247, CFI = 0.699, IFI = 0.702, TLI = 0.655, SRMR = 0.101, and RMSEA = 0.132) were all outside of the acceptable threshold; hence, common method bias was not a concern in this study.

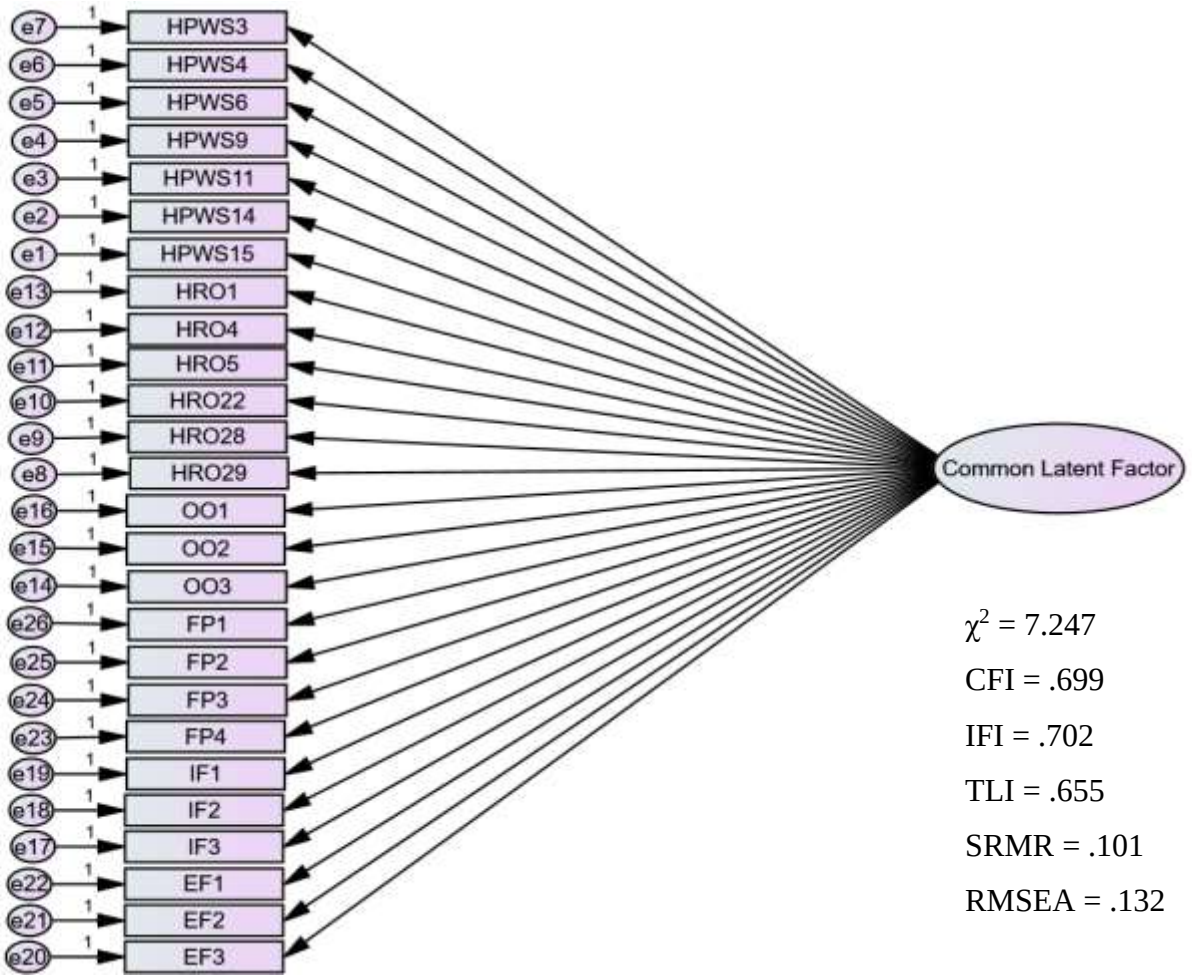
Table 20: Model Statistics with Herman Single Factor Method using CFA

Fit Indices	Recommended Value	Source(s)	Obtained Value	Obtained Value with Harman's Single Factor Test*
χ^2	1-3	Kline (2016)	2.681	7.247
	Up to 5	Schumacker & Lomax (2004)		
CFI	> 0.9	Bentler and Bonett (1980)	0.923	0.699
IFI	> 0.9	Collier (2020)	0.924	0.702
TLI	> 0.9	Bentler and Bonett (1980)	0.907	0.655
SRMR	< 0.08	MacCallum, Browne, and Sugawara (1996)	0.0475	0.101
RMSEA	< 0.08	MacCallum et al. (1996)	0.069	0.132

Note = * common method bias is not an issue of concern when the obtained model fit indices using Harman's single factor test are outside of the acceptable values.

In addition, according to Kock (2015), common method bias is an issue when all constructs of a model have a VIF value that is greater than 3.3. The result of the multicollinearity test on Table 13 shows the VIF values of the study constructs are all under 3.3; therefore, provides another reason not to consider common method bias as an issue of concern in the analysis.

Figure 21: Assessment of Common Method Bias Using CFA*



Note = * common method bias is not an issue of concern when the obtained model fit indices using Harman's single factor test via CFA are outside of the acceptable values.

4.4.7.3 Construct Reliability

Reliability denotes the extent of internal consistency of measurement items based on how highly interrelated they are among each other to measure a similar construct (Hair et al., 2019). The reliability of the constructs of this study was assessed by using Cronbach's alpha and composite reliability (Collier, 2020; Hair et al., 2019).

Cronbach's alpha

Cronbach's alpha was utilized to test the internal consistency of the measurement scales by assessing the average inter-item correlation (Cronbach, 1951; Hair et al., 2019). The result of the test on Table 21 shows 0.87 for HPWS, 0.90 for HR outcome, 0.84 for operational outcome, 0.90 for financial performance, 0.78 for external fit, and 0.81 for internal fit. As the coefficients are greater than 0.7, the questions in each construct are measuring a similar concept (Cronbach, 1951; Hair et al., 2019).

Table 21: Cronbach's Alpha Value of the Constructs

Construct	Cronbach's alpha
HPWS	0.87
HR Outcome	0.90
Operational Outcome	0.84
Financial Performance	0.90
External Fit	0.78
Internal Fit	0.81

Composite reliability

Composite reliability examines the reliability of a construct using the factor loadings of the measurement items (Collier, 2020). It was computed by using Microsoft Excel 2010. The values of the composite reliability ranged from 0.78 to 0.90; 0.87 for HPWS, 0.89 for HR outcome, 0.84 for operational outcome, 0.90 for financial performance, 0.78 for

external fit, and 0.82 for internal fit. As all the values are above the 0.7 benchmark, construct reliability was established for each construct (Hair et al, 2018). The results of the composite reliability assessment are summarized on Table 22.

Table 22: Composite Reliability Value of the Constructs

Construct	Value
HPWS	0.87
HR Outcome	0.89
Operational Outcome	0.84
Financial Performance	0.90
External Fit	0.78
Internal Fit	0.82

4.4.7.4 Construct Validity

Construct validity deals with the precision of measurement by ensuring the accuracy of the measurement items in representing the theoretical latent constructs (Hair et al., 2019). It was assessed in this study using convergent validity and discriminant validity (Collier, 2020; Hair et al., 2019).

Convergent Validity

Convergent validity is indicated by the extent of correlations among indicators that supposedly measure the same construct (Hair et al., 2019; Kline 2016). Average Variance Extracted (AVE) was used to estimate the convergent validity of the items (Collier, 2020, Hair et al., 2019; Kline, 2016). It is the average of the squared standardized factor loadings that shows the extent of variation in an item due to the latent construct (Hair et al., 2019, Kline, 2016). The result of the test reveals (see Table 23) 0.50 for HPWS, 0.59 for HR outcome, 0.64 for operational outcome, 0.70 for financial performance, 0.55 for external fit, and 0.60 for internal fit. The AVE value was above the minimum threshold

value of 0.50 (Hair et al., 2019); therefore, the scales used to measure the constructs of the study had the necessary convergent validity.

Table 23: AVE Value of the Constructs

Construct	AVE
HPWS	0.50
HR Outcome	0.59
Operational Outcome	0.64
Financial Performance	0.70
External Fit	0.55
Internal Fit	0.60

Discriminant Validity

Discriminant validity is the degree to which a construct is different from another constructs (Hair et al., 2019). It can be assessed by using Fornell and Larcker Criterion or Heterotrait-Monotrait (HTMT) ratio (Collier 2020; Henseler, Ringle & Sarstedt, 2015). Although the Fornell and Larcker Criterion test was popular in the past, latest research has found that it is less sensitive to identify discriminant validity concerns between constructs (Collier 2020; Henseler, Ringle & Sarstedt, 2015).

Table 24: HTMT Ratio of the Constructs

	HPWS	HRO	OO	FP	EF
HPWS					
HRO	0.59				
OO	0.60	0.38			
FP	0.59	0.46	0.77		
EF	0.70	0.49	0.67	0.48	
IF	0.64	0.43	0.55	0.39	0.86

Therefore, the discriminant validity values of the study constructs were determined by using HTMT ratio as it is a superior approach to address discriminant validity between constructs (Collier, 2020). According to HTMT, discriminant validity is established when

all ratios of the constructs are below the required limit of 0.90 (Gold, Malhotra, & Segars, 2001; Henseler et al., 2015). Therefore, the constructs of the study had discriminant validity as all ratios were less than 0.90. The result of the discriminant validity analysis is depicted in Table 24.

4.4.7.5 Measurement model invariance

In the previous section, the CFA was performed by including all organizations within a single group. The same measure was used to collect data from all organizations although the research sample was collected from financial and non-financial institutions. As the meaning of the indicators may change based upon the industry category of the organizations, a measurement model invariance test was needed to determine whether the factor loadings of indicators differ across the industry group of the study participants. Therefore, measurement invariance test was performed between finance and non-finance sectors by using the two most common invariance tests: configural invariance and metric invariance (Collier, 2020). The invariance tests are used in the current study due to their sufficiency to guarantee factorial equivalence across groups in SEM analysis (Collier, 2020).

First, the configural invariance test was performed to examine the equivalence of the general structure of the measurement model across the industry categories (Collier, 2020; Hair et al. 2019). It assessed if the same number of factors characterize the data for both groups of sectors (Collier, 2020; Hair et al. 2019). As the result of the unconstrained model shows a good model fit, it can be concluded with confidence that the data is a good fit for each industry group from a configural perspective.

Next, metric invariance was conducted to assess if the indicators were measuring the same construct across the industry categories (Collier, 2020; Hair et al. 2019). The measurement weights comparison in Table 25 illustrates the number of constrained factor loadings, chi-square difference from the unconstrained model, and the associated p-value. The result of the metric invariance test demonstrates that measurement invariance exists

between the finance and non-finance industry groups because of the non-significant metric invariance test (p = 0.071). Hence, the meanings of the study constructs were perceived similarly between the industry groups.

Table 25: Result of the Metric Invariance Test

Model	DF	CMIN	P-value	NFI Delta-1	IFI Delta-2	RFI rho-1	TLI rho2
Measurement weights	20	29.952	.071	.004	.005	-.003	-.003

Independent t-test and one-way analysis of variance (ANOVA) were also conducted to find out whether there are statistically significant differences in scores on the HPWS, HR outcome, operational outcome, internal fit, external fit, and financial performance of the public enterprises among the management level of the respondents, and industry category of the enterprises.

Table 26: Result of Independent t-test and one-way ANOVA Analysis

Construct	Level of Management		Industry*	
	F	p-value	F	p-value
HPWS	1.621	.199	0.613	.434
HR Outcome	2.028	.133	1.543	.130
Operational Outcome	.001	.999	.108	.743
Financial Performance	.515	.598	1.960	.162
Internal Fit	1.733	.178	.047	.829
External Fit	.827	.438	.271	.603

***Note:* *** service vs. manufacturing

The results in Table 26 show that there is no significant difference among the responses given by the three levels of management on HPWS (F = 1.621, p = 0.199), HR outcome

(F = 2.028, p = 0.133), operational outcome (F = 0.001, p = 0.999), internal fit (F = 1.733, p = 0.178), external fit (F = 0.827, p = 0.438), and financial performance (F = 0.515, p = 0.598). In addition, an independent sample t-test was employed to check if there is a significant difference in scores between service and manufacturing industries. The result in Table 26 reveals that there is no statistically significant difference in scores between the industry categories, with HPWS (F = 0.613, p = 0.434), HR outcome (F = 1.543, p = 0.130), operational outcome (F = 0.108, p = 0.743), financial performance (F = 1.960, p = 0.162), internal fit (F = 0.047, p = 0.829), and external fit (F = 0.271, p = 0.603).

4.5 Summary of the Chapter

This chapter has demonstrated the data screening and preparation procedures performed in this study. It has also discussed procedures that were followed to purify the items used to measure each construct of the study. It has provided the results of the single-factor and full measurement model analyses that were performed to ensure the validity and reliability of the measurement scales. In addition, the measures taken to ensure measurement invariance are also discussed in this chapter. The results of the invariance tests demonstrated the absence of measurement variance across the industry and management level categories. The next chapter discusses the results and findings of the study.

CHAPTER FIVE
RESEARCH FINDINGS

5.1 Introduction

The preceding chapter has focused on instrument validation and measurement model analysis. It has presented the techniques and procedures that were employed to screen and prepare the data, and to purify the measures of the study constructs. It has also provided the results of the one-factor and full-factor measurement model analysis. This chapter presents the findings of the primary and secondary data that were gathered on the HPWS and organizational performance of the public enterprises in Ethiopia. As the study aims to relate how HPWS influences organizational performance, the chapter examines the hypotheses of the study on the relationship between and among the HPWS, HR outcome, operational outcome, internal fit, external fit, and financial performance of the public enterprises. AMOS version 26 and SPSS version 27 were utilized to analyze the full structural model of the study.

5.2 Descriptive Analysis

5.2.1 Profile of respondents

The socio-economic profile of the respondents is summarized in Table 27. The Table illustrates the gender, age, educational qualification, level of management, monthly salary, and length of service of the study participants. As can be observed from Table 27, out of the 358 participants, 22.6 per cent were female and 77.4 were male. Concerning the age category of the respondents, the majority (62.6%) were between 31 and 40; 31.3 per cent were above 41; and the remaining 6.1 per cent were below 31 years of age. Regarding the educational qualification of the participants, 72.3 per cent had a master's degree; 22.6 per cent had a bachelor's degree; and the rest were PhD degree holders. More than 97 per cent of the respondents were middle (45.8%) and lower (51.4%) level managers; the remaining 2.8 per cent were top level managers. With regard to income of the respondents, more than 63 per cent earn a monthly salary of above 40,000 Ethiopian

birr; 30.2 per cent receive between 20,000 and 40,000 birr; the rest earn below 20,000 birr per month. 68.5 per cent of the participants had more than 10 years of service; 27.1 per cent served their organization between 5 to 10 years; the remaining 4.5 per cent had a length of service below 5 years.

Table 27: Socio-economic Profile of the Respondents

Variable	Category	Frequency	Percentage
Gender	Male	277	77.4
	Female	81	22.6
Age	20-30	22	6.1
	31-40	224	62.6
	41-50	83	23.2
	51-60	29	8.1
Educational qualification	BA/BSc	81	22.6
	MA/MSc	259	72.3
	PhD	18	5
Level of management	Top	10	2.8
	Middle	164	45.8
	Lower	184	51.4
Monthly salary	Below 20,000	22	6.1
	20,000-40,000	108	30.2
	40,001-60,000	187	52.2
	60,001-80,000	37	10.3
	Above 80,001	4	1.1
Length of service	Below 5 years	16	4.5
	5-10 years	97	27.1
	11-15 years	103	28.8
	16-20 years	72	20.1
	Above 20 years	70	19.6

Note: N = 358

A cross-tabulation among the socio-economic background variables of the respondents is also depicted in Table 28. It can be seen from the Table that the cross-tabulation of the relationship between gender and age illustrates that the Chi-square test of independence between the variables is statistically significant ($\chi^2 = 10.168$, Df = 3, p = 0.017). That is, study participants in the male category are older as compared to the female category; although the strength of association is weak (Cramer's V = 0.169). In addition, the Chi-square test of independence shows that there is significant association between gender and level of management ($\chi^2 = 7.408$, Df = 2, p = 0.025). Although the strength of

association is weak, more male respondents are in top and middle level management positions as compared with female participants (Cramer's V = 0.144). Moreover, male respondents receive a higher monthly salary than female participants ($\chi^2 = 13.383$, Df = 4, p = 0.010) even if the strength of association between the variables is small (Cramer's V = 0.193).

Table 28: Cross-tabulation and Chi-square Summary the Respondents

Pair	Variables	χ^2 Value	Df	p-value	Cramer's V
1	Gender × Age	10.168	3	.017	.169
2	Gender × Education	1.749	2	.417	.070
3	Gender × Management Level	7.408	2	.025	.144
4	Gender × Monthly Salary	13.383	4	.010	.193
5	Gender × Length of Service	8.046	4	.090	.150
6	Age × Education	6.943	6	.326	.098
7	Age × Management Level	23.067	6	<.001	.179
8	Age × Monthly Salary	76.847	12	<.001	.267
9	Age × Length of Service	207.143	12	<.001	.439
10	Education × Management Level	4.407	4	.354	.078
11	Education × Monthly Salary	24.351	8	.002	.184
12	Education × Length of Service	26.669	8	<.001	.193
13	Management Level × Monthly Salary	59.985	8	<.001	.289
14	Management Level × Length of Service	32.799	8	<.001	.214
15	Monthly Salary × Length of Service	175.776	16	<.001	.350

Note: N = 358, χ^2 = Chi-square, Df = Degrees of freedom, Cramer's V = Strength of Association

The Chi-square test of independence in Table 28 also indicates that the relationship between age and management level is statistically significant ($\chi^2 = 23.067$, Df = 6, $p<0.001$); that is, older respondents are relatively in higher management level than

younger participants of the study. However, the strength of association between age and management level is weak (Cramer's V = 0.179). In addition, older participants earn better monthly salary (χ^2 = 76.847, Df = 12, p<0.001) and have many years of service in the public enterprises than younger respondents (χ^2 = 207.143, Df = 12, p<0.001); the strength of associations between age and monthly salary (Cramer's V = 0.267), and age and length of service (Cramer's V = 0.439) are moderate.

The Chi-square test of independence for education and monthly salary, and education and length of service show statistically significant but weak relationships (χ^2 = 24.351, Df = 8, p = 0.002, Cramer's V = 0.184) and (χ^2 = 26.669, Df = 8, p<0.001, Cramer's V = 0.193) respectively. The results demonstrate that respondents with advanced level of education comparatively get higher monthly salary and have many years of experience than those with lower educational qualification. In addition, the study participants in the upper managerial level category relatively receive higher salary (χ^2 = 59.985, Df = 8, p<0.001, Cramer's V = 0.289) and have better length of service (χ^2 = 32.799, Df = 8, p<0.001, Cramer's V = 0.214) than respondents in the lower level of management with moderate strength of associations between the variables. Moreover, participants of the study who comparatively get higher monthly salary have many years of service than those who earn lower salary with a moderate strength of relationship between the variables (χ^2 = 175.776, Df = 16, p<0.001, Cramer's V = 0.350).

5.2.2 Descriptive statistics of the measurement items

The final validated questionnaire items together with their respective means and standard deviations (SD) are depicted in Appendix C. As can be seen from the Table, the managers have positive perception towards the HPWS practices of the public enterprises as the mean score of all items was more than the midpoint of the scale. With a mean score of more than three, the findings of the study also show that the participants have positive perception towards the public enterprises effort to create HPWS internal fit and external fit. It reveals the managers belief in the existence of internal fit among the HPWS practices and external fit between the practices and the business strategy of the

public enterprises. The participants of the study also have a positive perception towards the HR outcome of the enterprises. In addition, the above average mean score of operational outcome shows the participants positive perception towards the operational outcome of the enterprises. Moreover, the items that measure the financial performance of the public enterprises were also perceived positively with mean scores that are above three.

Table 29 displays the correlation matrix for the study variables. It presents the correlations, means, and standard deviations of the study constructs, and control variables. The result of the descriptive analysis indicated that HPWS (M = 3.57; SD = 0.61), HR outcome (M = 3.44; SD = 0.42), operational outcome (M = 3.56; SD = 0.73), financial performance (M = 3.88; SD = 0.83), internal fit (M = 3.66; SD = 0.79), and external fit (M = 3.62; SD = 0.68). This displays the positive perception of the respondents to the HPWS, HR outcome, operational outcome, financial performance, internal fit, and external fit practices of the public enterprises in Ethiopia.

Table 29: Means, Standard Deviations, and Correlations[a]

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
HPWS	3.57	.61	1	.69**	.53**	.50**	.61**	.63**	.12*	.23**	.45**	-.21**	-.03	.15**	-.00
HR Outcome	3.44	0.42	.69**	1	.55**	.52**	.49**	.54**	.00	.23**	.42**	-.20**	-.01	.08	-.02
Operational Outcome	3.56	0.73	.53**	.55**	1	.64**	.45**	.50**	-.05	.26**	.46**	-.08	.00	.08	-.03
Financial Performance	3.88	0.83	.50**	.52**	.64**	1	.33**	.36**	-.09	.29**	.52**	-.10	-.07	.01	.01
Internal Fit	3.66	.79	.61**	.49**	.45**	.33**	1	.74**	.13*	.05	.42**	-.15**	.04	.05	-.00
External Fit	3.62	.68	.63**	.54**	.50**	.36**	.74**	1	.11*	.05	.40**	-.17**	.06	.10*	.02
Organization Size	21.9[1]	19.1[1]	.12*	.00	-.05	-.09	.13*	.11*	1	-.06	.32**	-.24**	.15**	.34**	.35**
Organization Age	94.29[2]	33.72[2]	.23**	.23**	.26**	.29**	.05	.054	-.06	1	.26**	-.20**	-.12*	.26**	.12*
Level of Technology	3.82	1.00	.45**	.42**	.46**	.52**	.42**	.40**	.32**	.26**	1	-.16**	.02	.16**	.12*
Capital Intensity	73.8[3]	161.7[3]	-.21**	-.20**	-.08	-.10	-.15**	-.17**	-.24**	-.20**	-.16**	1	-.05	-.10	-.01
Age	39.67	6.61	-.03	-.01	.00	-.07	.04	.06	.15**	-.12*	.02	-.05	1	.45**	.65**
Monthly Salary	43.7[1]	13.9[1]	.15**	.08	.08	.01	.05	.10*	.34**	.26**	.16**	-.10	.45**	1	.60**
Length of Service	14.4[2]	6.8[2]	-.00	-.02	-.03	.01	-.00	.02	.35**	.12*	.12*	-.01	.65**	.60**	1

Note: [a]N = 358. **Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).
[1]In thousands of birrs. [2]In years. [3]In billions of birrs.

5.3 Full Structural Model Analysis: Hypothesis Testing

Chapter four has presented the single-factor CFA models, and full measurement model of the study constructs. The result of the full structural model analysis of the study is presented in this section. It tests the direct, mediating, and moderating hypotheses of the study on the association between and among the HPWS, HR outcome, operational outcome, internal fit, external fit, and financial performance of the public enterprises in Ethiopia. The full structural model of the study simultaneously examined the direct relationship between the study constructs, and the mediating effects of HR outcome and operational outcome in the relationship between HPWS and financial performance. In addition, it tested the direct and indirect moderating effects of internal fit and external fit in the relationship between and among the HPWS, HR outcome, operational outcome, and financial performance of the public enterprises. This simultaneous analysis of all the mediators and moderators in one model helps to get a better understanding of the mechanism by which HPWS affects financial performance in the study organizations. The combination of mediation and moderation in a more general framework helps to capture the full picture of relationships and provides a valuable perspective on interpreting mediation and moderation (Hair et al., 2019).

To test the hypotheses of the study, a full structural model analysis was performed using mixed model method with a bootstrap sample of 5,000 with replacement (see Figures 22 and 23). In a full structural model, mediation and moderation can be assessed using three different methods. These are the mixed model method, the full indicator interaction method, and the matched-pairs method (Collier, 2020). Although each way to mediation and moderation testing has strengths and weaknesses, mixed model method to mediation and moderation testing is used in this study because, as compared to the other ways, the method offers the advantage of including both the latent unobservable construct of the exogenous and endogenous constructs in a model together with a composite moderator construct and interaction term that is created by multiplying the exogenous construct with the moderating construct (Collier, 2020).

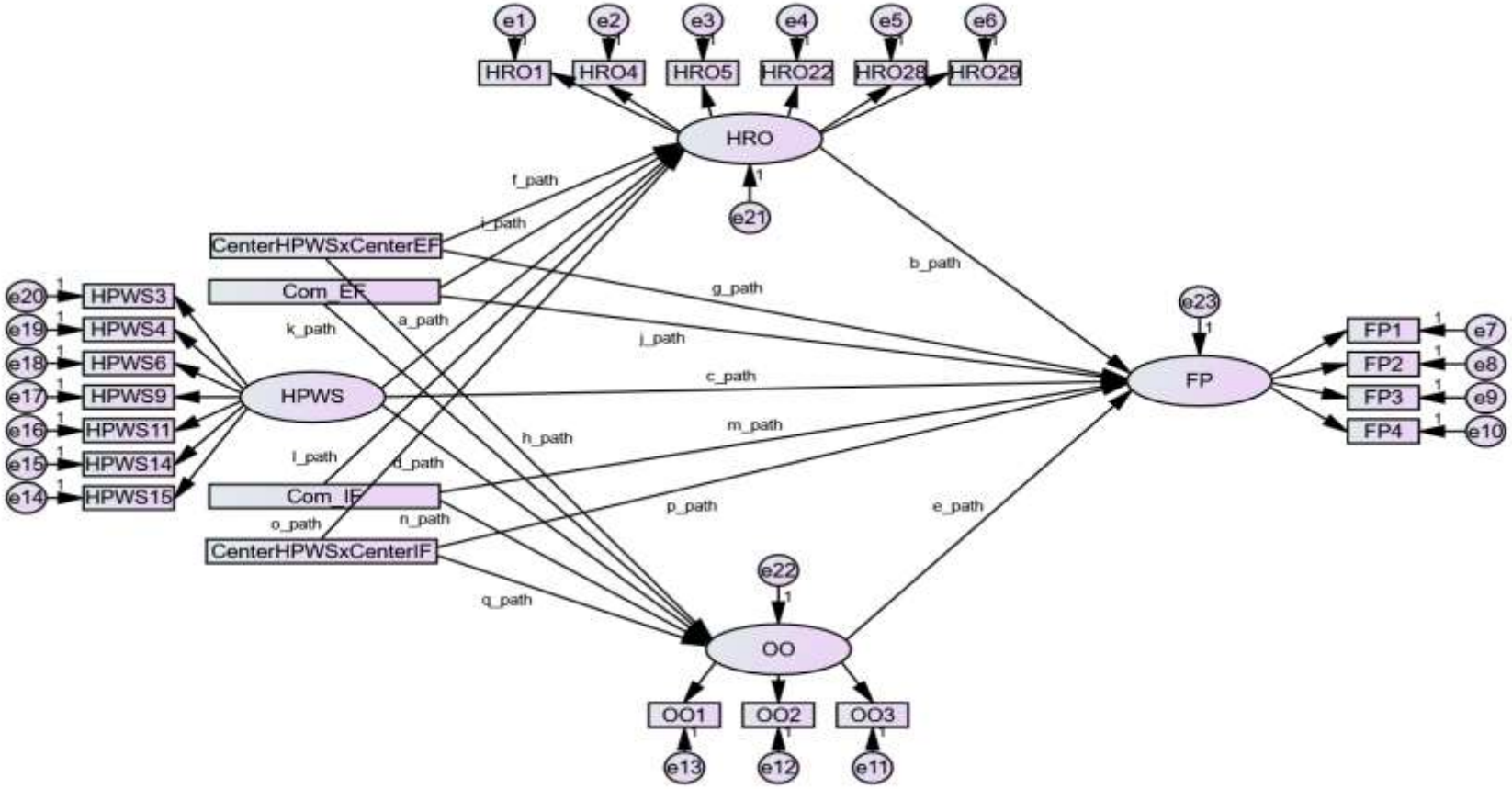
As demonstrated in Figure 23, the hypothesized structural model has a reasonable fit with the observed data. Hair et al (2019) recommend that while assessing structural model fit, one absolute index (RMSEA, SRMR), one incremental index (CFI, IFI, TLI), and χ^2 be used at a minimum. Therefore, this study computed the model fit statistics such as χ^2, CFI, IFI, TLI, SRMR, and RMSEA to evaluate the model's overall goodness of fit. The observed fit indices either meet or exceed the recommended threshold. The model fit indices, the obtained values, and the recommended values together with their sources are depicted in Table 30.

Table 30: Model Fit Statistics for the Structural Model Analysis

Fit Indices	Recommended Value	Source(s)	Obtained Value
χ^2	1-3	Klein (2016)	2.726
	Up to 5	Schumacker and Lomax (2004)	
CFI	> 0.9	Bentler and Bonett (1980)	.907
IFI	> 0.9	Collier (2020)	.910
TLI	> 0.9	Bentler and Bonett (1980)	.90
SRMR	< 0.08	MacCallum et al. (1996)	.0472
RMSEA	< 0.08	MacCallum et al. (1996)	.070

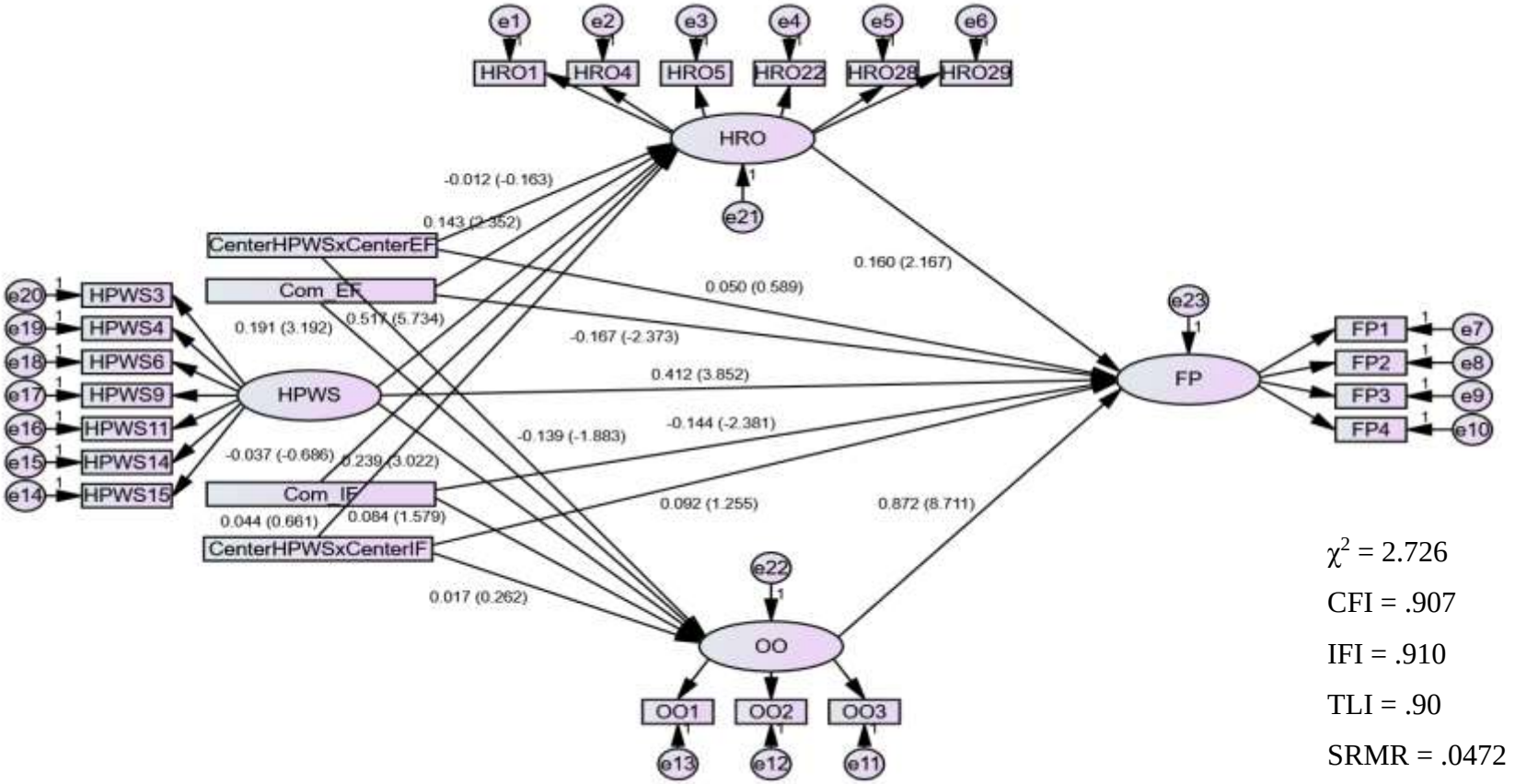
The estimated six factor model (HPWS, HR outcome, operational outcome, financial performance, external fit, and internal fit) yielded good fit with the observed data: χ^2 = 2.726, CFI = 0.907, IFI = 0.910, TLI = 0.90, SRMR = 0.0472, and RMSEA = 0.070.

Figure 22: The Full Structural Model



Note: HPWS = High Performance Work System; HRO = Human Resource Outcome; OO = Operational Outcome; FP = Financial Performance; IF = Internal Fit; EF = External Fit; Com = Composite.

Figure 23: The Full Structural Model with Factor Loadings and T-values



Note: Unstandardized coefficients reported. Values in parentheses are t-values. HPWS = High Performance Work System; HRO = Human Resource Outcome; OO = Operational Outcome; FP = Financial Performance; IF = Internal Fit; EF = External Fit; Com = Composite.

The hypotheses testing of the study also reports the effect size (f^2) analysis result performed using AMOS 26 to evaluate the contribution of each exogenous construct to the endogenous constructs. Following the recommendation provided by Cohen (1988), the effect size was calculated as (R^2 included – R^2 excluded) / (1 – R^2 included). The analysis helps to assess the strength of each structural path besides its level of statistical significance. According to Cohen (1988), effect sizes of 0.02, 0.15, and 0.35 represent small, medium, and large effects respectively.

To calculate the effect sizes, the squared multiple correlations (R^2) for all endogenous constructs were taken from the output of AMOS 26. For all paths, two R^2 values were extracted. R^2_included was obtained from the full structural model with the path included, and R^2_excluded values were taken from the structural model where the path's regression weight was constrained to zero.

The following procedures were followed in AMOS 26 to compute the effect sizes:

1. Run the full structural model to get R^2_included values from the squared multiple correlations of each endogenous construct.

2. To extract R^2_excluded values, the specific path's regression weight was constrained to zero.

3. Run the structural model again to obtain R^2_excluded values from the squared multiple correlations of each endogenous construct after the path's regression weight was constrained to zero.

4. Repeat step one to three for all hypothesized direct, mediating, and moderating relationships.

5. Calculate the effect size for each at a time using the following formula: (R^2_included – R^2_excluded) / (1 – R^2_included).

The results of hypothesized direct, mediating, and moderating relationships between and among the HPWS, HR outcome, operational outcome, internal fit, external fit, and financial performance of the public enterprises are discussed in the subsequent subsections.

5.3.1 Direct relationships

The results of the hypothesized direct relationships test are depicted in Table 31. The table also comprises of the coefficients, t-values, and p-values of the hypotheses.

Table 31: Results of the Hypotheses Testing for Direct Relationships

Hypotheses and paths	Coefficient	t-values	p-value	f^2	Decision
HPWS → HR Outcome	0.517	5.734	***	0.200	H1 Supported
HR Outcome → Financial Performance	0.160	2.167	.030	0.015	H2 Supported
HPWS → Operational Outcome	0.239	3.022	.003	0.049	H4 Supported
Operational Outcome → Financial Performance	0.872	8.711	***	0.681	H5 Supported
HPWS → Financial Performance	0.412	3.852	***	0.018	H7 Supported

Note: ***p<0.001

HPWS and HR outcome

Hypotheses 1 hypothesized that there would be a positive association between HPWS and HR outcome. Hence, a test was conducted to see if there was a relationship between the constructs. The result of the test shows a significant positive path from HPWS to HR outcome ($\beta = 0.517$, t-value = 5.734, $p<0.001$). Therefore, Hypothesis 1 was supported.

The results in Table 31 also demonstrate that the effect of HPWS on HR outcome (f^2 = 0.200) was medium.

HR outcome and financial performance

Hypothesis 2 hypothesized that there would be a positive association between HR outcome and financial performance. The result shows a significant positive path from HR outcome to financial performance (β = 0.160, t-value = 2.167, p = 0.030). Therefore, Hypothesis 2 was supported. Although HR outcome had a significant positive influence on financial performance, its effect size (f^2 = 0.015) was small.

HPWS and operational outcome

Hypothesis 4 hypothesized that there would be a positive association between HPWS and operational outcome. The result revealed a significant positive path from HPWS to operational outcome (β = 0.239, t-value = 3.022, p = 0.003). Hence, Hypothesis 4 was supported. Although HPWS has a significant positive relationship with operational outcome, its effect size on operational outcome (f^2 = 0.049) was small.

Operational outcome and financial performance

Hypothesis 5 hypothesized that there would be a positive association between operational outcome and financial performance. The result confirms the hypothesis with a positive and significant path from operational outcome to financial performance (β = 0.872, t-value = 8.711, p<0.001). Therefore, Hypothesis 5 was supported. The direct effect of operational outcome (f^2 = 0.681) on financial performance was also large, indicating that operational outcome meaningfully contributes to improving financial performance.

HPWS and financial performance

Hypothesis 7 hypothesized that there would be a positive association between HPWS and financial performance. The result demonstrated a significant positive path from HPWS to financial performance ($\beta = 0.412$, t-value = 3.852, $p<0.001$). Hence, Hypothesis 7 was supported. Although HPWS has a significant positive influence on financial performance, its effect size ($f^2 = 0.018$) was small.

5.3.2 Mediating relationships

To test the mediating effects of HR outcome and operational outcome in the relationship between the HPWS and financial performance of the public enterprises in Ethiopia, a bootstrapping approach was used. Bootstrapping approach to mediation and moderation analysis provides the best combined estimated coefficients by selecting a large number of subsamples (Hair et al., 2019). By yielding better levels of statistical power, the approach provides a more accurate assessment of mediating effects as compared with the Baron and Kenny approach and the Sobel test (Hair et al., 2019).

The results of the two hypothesized mediating relationship tests between HPWS and financial performance through the HR outcome and operational outcome mediators are summarized in Table 32. The Table includes the indirect effect coefficients, confidence intervals, p-values, effect size, decisions on the hypotheses that tested mediating relationships, and conclusions of the hypotheses testing. The study used unstandardized coefficients to interpret and present the mediation testing analysis results. The unstandardized indirect effects were reported for mediation analysis because unstandardized coefficients are normally reported by most studies that perform mediation analysis; therefore, it is appropriate to use the unstandardized indirect effects as it is customary to see them in many research works that conduct mediation analysis (Collier, 2020).

Table 32: Test for Mediation Using a Bootstrap Analysis with a 95% Confidence Interval

Hypotheses and paths	Indirect Effect	Confidence Interval Low/High	p-value	f^2	Decision	Conclusion
HPWS → HR Outcome → Financial Performance	.083	-.003/.195	.056	0.026	H3 not supported	No Mediation
HPWS → Operational Outcome → Financial Performance	.209	.057/.410	.005	0.729	H6 supported	Partial Mediation

Note: Unstandardized coefficients reported. Bootstrap Sample = 5,000 with replacement.

Mediation Path 1: HPWS → HR outcome → financial performance

Hypothesis 3 hypothesized that HR outcome would mediate the association between HPWS and financial performance. However, the result shows that HR outcome plays no mediating role in the HPWS-financial performance relationship ($\beta = 0.083$, $p = 0.056$). Therefore, Hypothesis 3 was not supported. The mediating effect size of HR outcome ($f^2 = 0.026$) was also small.

Mediation Path 2: HPWS → operational outcome → financial performance

Hypothesis 6 hypothesized that operational outcome would have a mediating effect in the relationship between HPWS and financial performance. The finding confirms a positive and significant complementary partial mediation path ($\beta = 0.209$, $p = 0.005$). Hence, Hypothesis 6 was supported. The indirect effect of HPWS on financial performance through operational outcome ($f^2 = 0.729$) was also considerable, highlighting the key role of operational outcome in transforming HPWS into financial gains.

5.3.3 Moderating relationships

The moderating relationships hypotheses examined the moderating effects of internal fit and external fit in the direct relationship between the HPWS and HR outcome, operational outcome, and financial performance of the public enterprises in Ethiopia. In addition, the hypotheses tested the presence of moderated indirect relationship between HPWS and financial performance via HR outcome and operational outcome.

The study used unstandardized coefficients to present and interpret the moderation testing analysis results. Unstandardized coefficients were used as the interaction term coefficients in a moderation assessment would not be interpretable because of the difficulty to properly standardize the coefficients (Collier, 2020).

5.3.3.1 Moderated direct relationships: Internal fit as a moderator

The moderating effect of internal fit in the direct relationship between the HPWS and HR outcome, operational outcome, and financial performance of the public enterprises in Ethiopia are presented as follows. The moderated direct relationships are summarized in Table 33.

HPWS, internal fit, and HR outcome

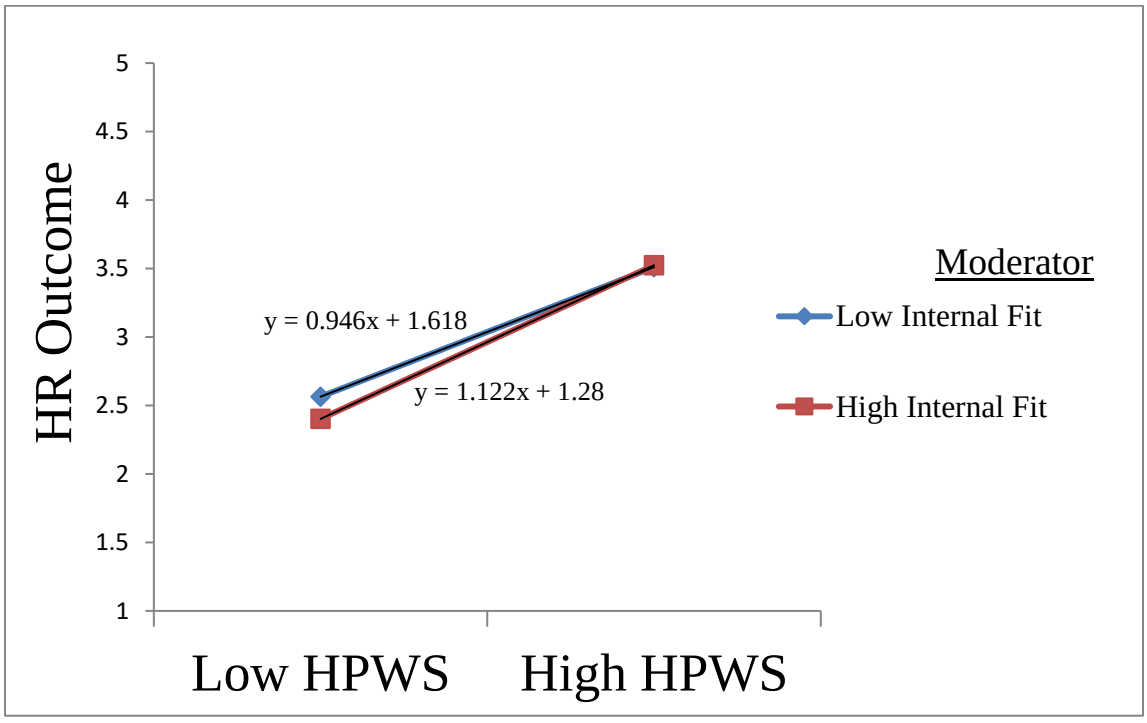
Hypothesis 8 hypothesized that there would be a positive association between the interaction effect of HPWS and internal fit, and HR outcome. The result demonstrated that internal fit did not moderate the direct relationship between HPWS and HR outcome (β = 0.044, t-value = .661, p = 0.509). Therefore, the study failed to reject the null hypothesis. The direct moderating effect size of internal fit on HR outcome (f^2 = 0.014) was also small.

Table 33: Test for Moderated Direct Relationships Using Internal Fit as a Moderator

Moderated Direct Relationships*	Coefficient	t-values	p-value	f^2	Decision
Internal Fit → HR Outcome	-.037	-.686	.493		
Internal Fit → Operational Outcome	.084	1.579	.114		
Internal Fit → Financial Performance	-.144	-2.381	.017		
HPWS **X** Internal Fit → HR Outcome	.044	.661	.509	0.014	H8 not supported
HPWS **X** Internal Fit → Operational Outcome	.017	.262	.793	0	H9 not supported
HPWS **X** Internal Fit → Financial Performance	.092	1.255	.209	0.007	H10 not supported

Note: * = The direct effect is moderated by the construct of Internal Fit.
Unstandardized coefficients reported. Bootstrap Sample = 5,000 with replacement.

Figure 24: HPWS and HR Outcome Interaction



The result of simple slope analysis conducted to better understand the nature of the direct moderating effect of internal fit on HR outcome at different levels of the exogenous construct is depicted in Figure 24. As can be seen from the figure, the slope of the line is much steeper for High Internal Fit; this demonstrates that at high level of internal fit, the effect of HPWS on HR outcome is much stronger in comparison to Low Internal Fit. As the level of internal fit increased, the strength of the relationship between HPWS and HR outcome increased. Therefore, internal fit strengthens the positive relationship between HPWS and HR outcome.

HPWS, internal fit, and operational outcome

Hypothesis 9 hypothesized that there would be a positive relationship between the interaction effect of HPWS and internal fit, and operational outcome. The result established that internal fit did not moderate the path from HPWS to operational outcome (β = 0.017, t-value = 0.262, p = 0.793). Thus, the study failed to reject the null hypothesis. The direct moderating effect size of internal fit on operational outcome (f^2 = 0.000) was also none.

Figure 25: HPWS and operational outcome interaction

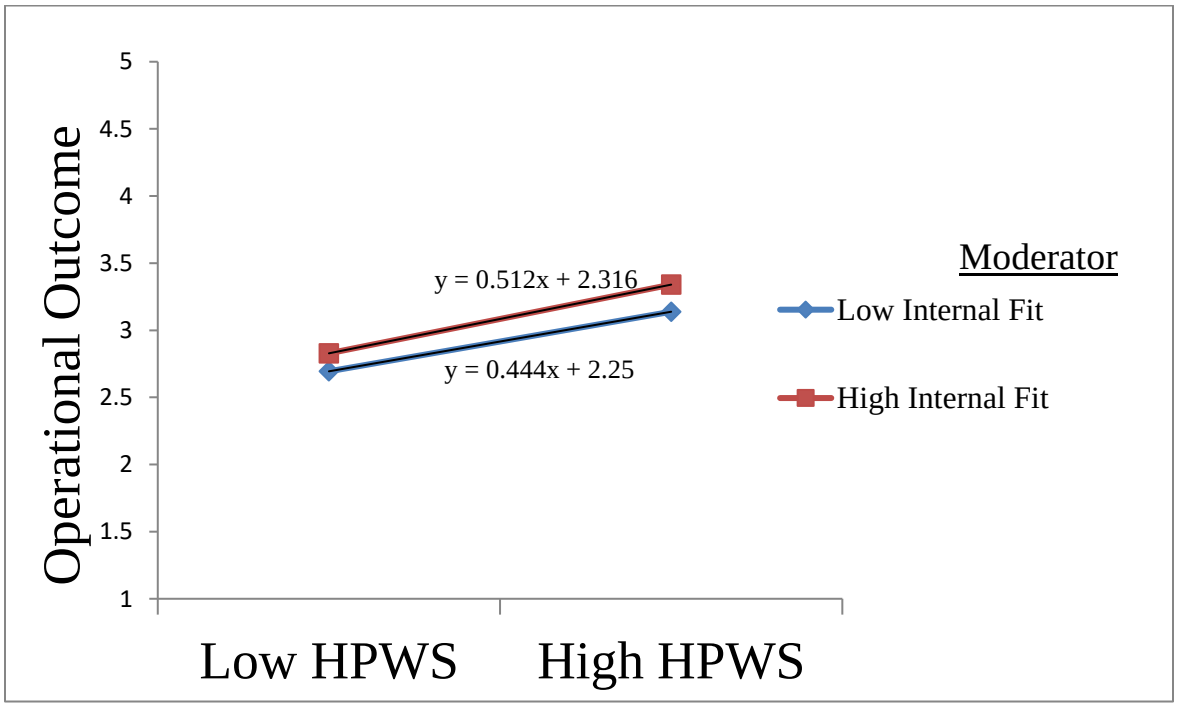


Figure 25 illustrates the result of slope analysis to get a better understanding of the moderating effect of internal fit in the relationship between HPWS and operational outcome. As it can be observed from the figure, the slope is steeper for High Internal Fit; this shows that at high level of internal fit, the influence of HPWS on operational outcome is much stronger as compared to Low Internal Fit. The strength of association between HPWS and operational outcome increases as the level of internal fit increases; hence, internal fit enhances the positive link between HPWS and operational outcome.

HPWS, internal fit, and financial performance

Hypothesis 10 hypothesized that there would be a positive relationship between the interaction effect of HPWS and internal fit, and financial performance in public enterprises in Ethiopia. The result illustrated that internal fit did not moderate the path from HPWS to financial performance in the public enterprises ($\beta = 0.092$, t-value = 1.255, $p = 0.209$). Hence, the study failed to reject the null hypothesis. The direct moderating effect size of internal fit on financial performance ($f^2 = 0.007$) was small.

Figure 26: HPWS and financial performance interaction

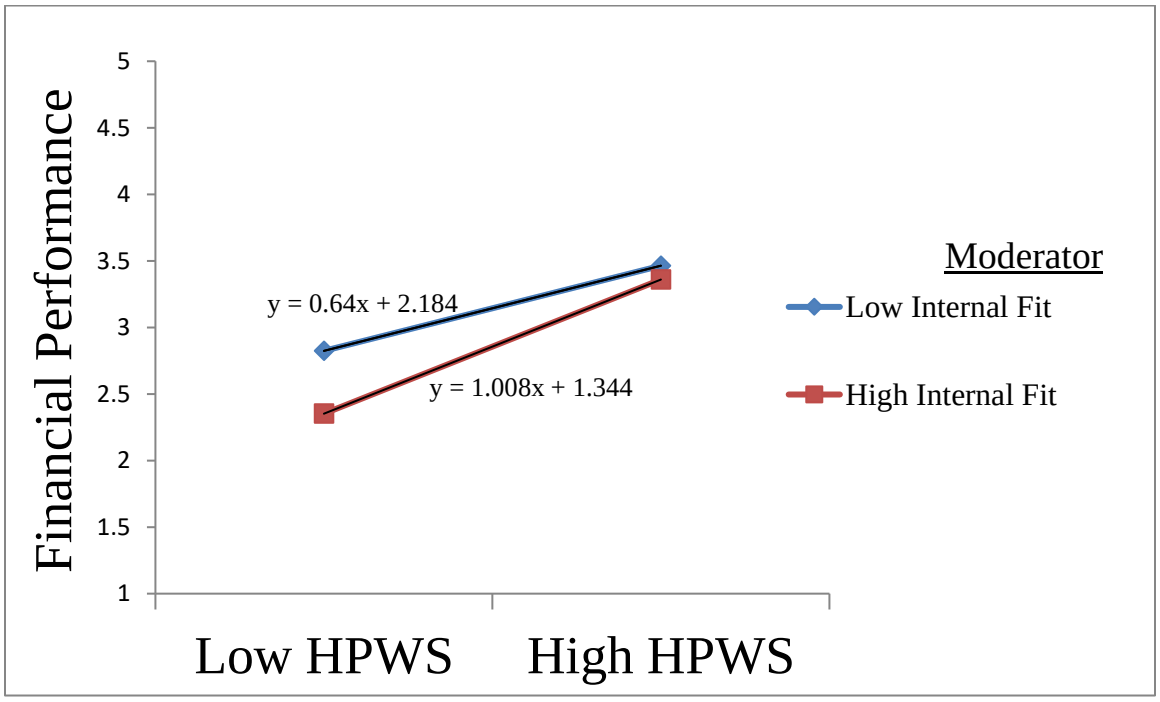


Figure 26 portrays the result of the slope analysis that was conducted to obtain a better picture of the nature of the moderating construct in the relationship between HPWS and financial performance. The figure shows that the line for High Internal Fit is much steeper than the line for Low Internal Fit; thus, at high level of internal fit, the contribution of HPWS on financial performance is superior in contrast to low internal fit. As the level of internal fit improved, the association between HPWS and financial performance strengthened. For that reason, internal fit reinforces the positive relationship between HPWS and financial performance.

5.3.3.2 Moderated indirect relationships: Internal fit as a moderator

The moderating effects of internal fit in the indirect relationship between HPWS and financial performance via HR outcome and operational outcome of the public enterprises in Ethiopia are examined in the following sub-sections. The moderated indirect relationships are summarized in Table 34.

Internal fit and the indirect path from HPWS to financial performance via HR outcome mediator

Hypothesis 11 hypothesized that the indirect path from HPWS to financial performance through HR outcome would be moderated positively and significantly by the internal fit moderating construct. However, the finding showed that the path from HPWS to financial performance by means of HR outcome was not significant in the presence of the moderating construct ($\beta = 0.083$, $p = 0.056$). In addition, the result of the index of moderated mediation (IOMM) analysis verified that internal fit did not have a significant moderating effect on the indirect relationship between HPWS and financial performance via the HR outcome mediating construct ($\beta = 0.007$, $p = 0.307$). Thus, the study failed to reject the null hypothesis. The indirect moderating effect size of internal fit on financial performance through HR outcome ($f^2 = 0.011$) also showed a negligible moderation effect.

Table 34: Test for Moderated Mediation Using Internal Fit as a Moderator

Moderated Indirect Relationships*	Direct Effect	Indirect Effect	Confidence Interval Low/High	p-value	f^2	Decision
Path 1: HPWS → HR Outcome → Financial Performance		.083	-.003/.195	.056		
Path 2: HPWS → Operational Outcome → Financial Performance		.209	.057/.410	.005		
Probing Moderated Indirect Relationships for path 1						
Low Levels of Internal Fit		.077	-.004/.191	.061		
High Levels of Internal Fit		.088	.003/.212	.043		
Probing Moderated Indirect Relationships for path 2						
Low Levels of Internal Fit		.197	.032/.381	.018		
High Levels of Internal Fit		.220	.022/.487	.029		
Index of Moderated Mediation for path 1		.007	-.013/.051	.307	0.011	H11 not supported
Index of Moderated Mediation for path 2		.015	-.119/.131	.758	0.674	H12 not supported

Note: * = The indirect effect is moderated by the construct of internal fit using 95% confidence interval. Unstandardized coefficients reported. Bootstrap Sample = 5,000 with replacement.

Next, a spotlight analysis or a pick-a-point approach to moderation testing was performed to get a superior insight of how moderation is working in the study model (Collier, 2020). Accordingly, the moderated indirect relationship between HPWS and financial performance was further probed in order to better understand how the association from HPWS to financial performance by way of HR outcome changes in different levels of the moderating construct (see Figure 27). Therefore, new low level moderator and high level moderator constructs were created by using one standard deviation below and one standard deviation above the mean of the original moderator construct respectively.

Subsequently, the two newly created moderating constructs were called “Low Levels of Internal Fit” and “High Levels of Internal Fit”.

Figure 27: Indirect effect of HPWS on financial performance via HR outcome

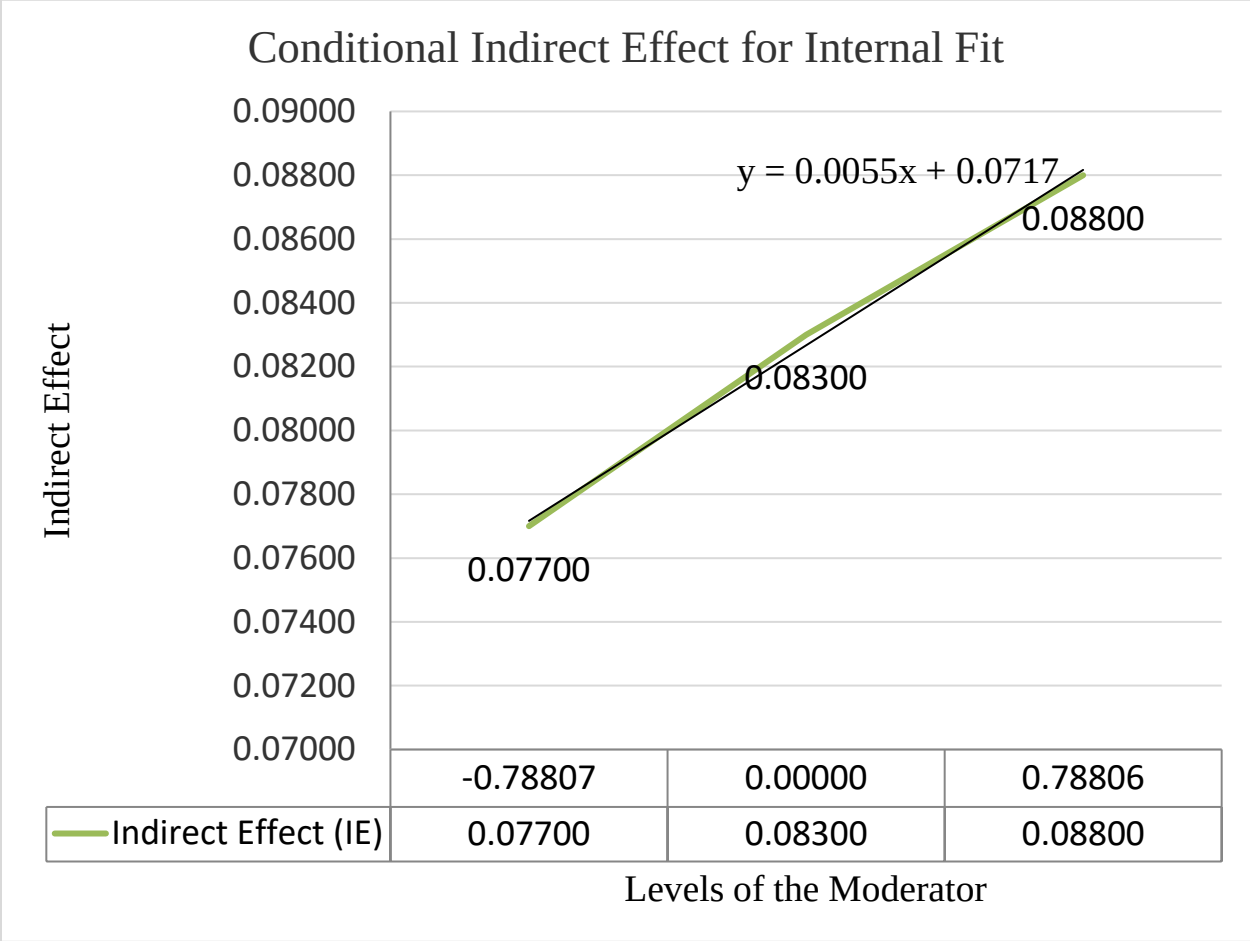


Figure 27 portrays the result of the spotlight analysis to moderation testing to get more insight of how the moderating construct moderates the indirect path from HPWS to financial performance via HR outcome at different levels of the moderator. The result of the slope analysis depicts that the line becomes much steeper with high levels of internal fit than low levels of internal fit. This demonstrates that at high levels of internal fit, the indirect effect of HPWS on financial performance via HR outcome is much stronger in comparison to low levels of internal fit.

It can be seen in Table 35 that as the level of internal fit increased by one SD the indirect effect of HPWS on financial performance has shown a positive and significant improvement from 0.083 to 0.088 (change in indirect effect = 0.005, p = 0.043). On the other hand, although the change is insignificant, a one SD decrease in internal fit has reduced the indirect effect of HPWS on financial performance from 0.083 to 0.077 (change in indirect effect = -0.006, p = 0.061). Therefore, as the strength of indirect relationship between HPWS and financial performance via HR outcome parallels the increase in the moderator level, it can be concluded with confidence that high levels of internal fit strengthen the indirect positive relationship between the HPWS and financial performance of the public enterprises in Ethiopia via the HR outcome mediating construct.

Table 35: Indirect Effect of the Moderator at High Levels and Low Levels via HR outcome

Level of the moderator	Indirect effect from HPWS to Financial Performance*	p-value
High Moderator Level	.088	.043
Mean Centered Level	.083	.056
Low Moderator Level	.077	.061

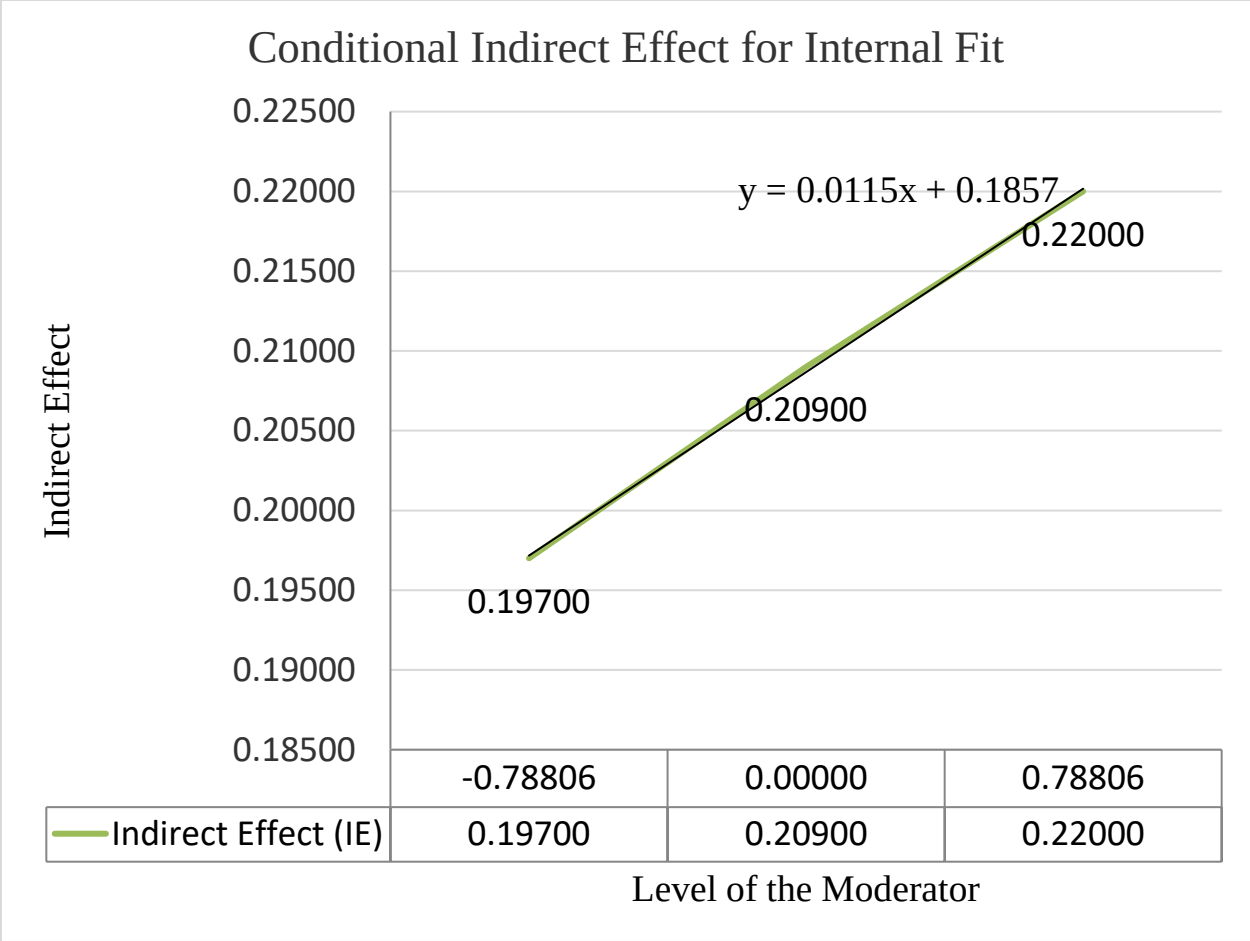
***Note**:* * = The indirect effect is moderated by the construct of Internal Fit.
Unstandardized coefficients reported. Bootstrap Sample = 5,000 with replacement.

Internal fit and the indirect path from HPWS to financial performance via operational outcome mediator

Hypothesis 12 hypothesized that the indirect path from HPWS to financial performance through operational outcome would be moderated positively and significantly by the internal fit moderating construct. The finding demonstrated that the path from HPWS to financial performance by means of operational outcome was significant in the presence of the moderating construct (β = 0.209, p = 0.005). However, the result of the IOMM analysis illustrates that internal fit did not have a significant moderating effect on the indirect relationship between HPWS and financial performance via the operational

outcome mediating construct (β = 0.015, p = 0.758). Hence, the study failed to reject the null hypothesis although the indirect moderating effect size of internal fit on financial performance through operational outcome (f^2 = 0.674) indicated a large effect size.

Figure 28: Indirect effect of HPWS on financial performance via operational outcome



To get a superior insight of how moderation is working in the study model, a spotlight analysis to moderation testing was conducted. Consequently, the moderated indirect relationship between HPWS and financial performance was further explored to get a better picture of how the relationship between HPWS and financial performance by way of operational outcome changes at various levels of the moderating construct. For that reason, new low level moderator and high level moderator constructs were formed using one standard deviation below and one standard deviation above the mean of the original

moderator construct respectively. Afterwards, the two newly created moderating constructs were labeled as “Low Levels of Internal Fit” and “High Levels of Internal Fit”.

The result of the spotlight analysis to moderation testing to better understand how internal fit moderates the indirect path from HPWS to financial performance via operational outcome at various levels of the moderator is illustrated on Figure 28. The result of the slope analysis shows that the line becomes much steeper with high levels of internal fit than low levels of internal fit. This shows that at high levels of internal fit, the indirect effect of HPWS on financial performance via operational outcome is much robust as compared to low levels of internal fit.

Table 36 also demonstrates the positive and significant association between the exogenous and endogenous constructs. As can be seen from the table, a one SD increase and decrease in the level of the moderating construct from the mean centered level improves the indirect effect of HPWS on financial performance via operational outcome from 0.209 to 0.220 (change in indirect effect = 0.011, p = 0.029) and reduces the indirect effect from 0.209 to 0.197 (change in indirect effect = -0.012, p = 0.018) respectively. Thus, as the strength of indirect relationship between HPWS and financial performance through operational outcome moves significantly in the same direction as the moderator, it can be said that high levels of internal fit strengthen the indirect positive relationship between the HPWS and financial performance of the public enterprises via the operational outcome mediating construct.

Table 36: Indirect Effect of the Moderator at High Levels and Low Levels via Operational outcome

Level of the moderator	**Indirect effect from HPWS to Financial Performance***	**p-value**
High Moderator Level	.220	.029
Mean Centered Level	.209	.005
Low Moderator Level	.197	.018

***Note**: * = The indirect effect is moderated by the construct of Internal Fit.*
Unstandardized coefficients reported. Bootstrap Sample = 5,000 with replacement.

5.3.3.3 Moderated direct relationships: External fit as a moderator

The moderating effect of external fit in the direct relationship between the HPWS and HR outcome, operational outcome, and financial performance of the public enterprises in Ethiopia are discussed as follows. The moderated direct relationships are summarized in Table 37.

Table 37: Test for Moderated Direct Relationships Using External fit as a Moderator

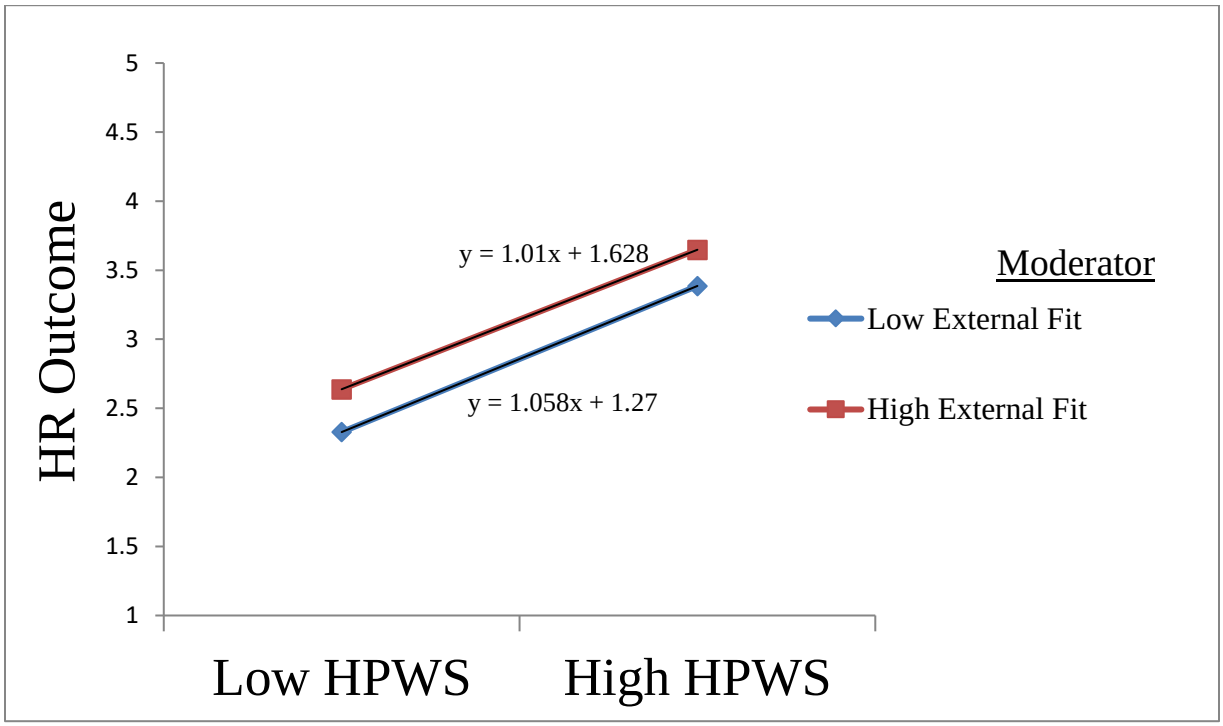
Moderated Direct Relationships*	**Coefficient**	**t-values**	**p-value**	**f^2**	**Decision**
External Fit → HR Outcome	.143	2.352	.019		
External Fit → Operational Outcome	.191	3.196	.001		
External Fit → Financial Performance	-.167	-2.373	.018		
HPWS **X** External Fit → HR Outcome	-.012	-.163	.871	0.009	H13 not supported
HPWS **X** External Fit → Operational Outcome	-.139	-1.883	.060	0.015	H14 not supported
HPWS **X** External Fit → Financial Performance	.050	.589	.556	0.004	H15 not supported

***Note**:* * = The direct effect is moderated by the construct of external fit.
Unstandardized coefficients reported. Bootstrap Sample = 5,000 with replacement.

HPWS, external fit, and HR outcome

Hypothesis 13 hypothesized that there would be a positive association between the interaction effect of HPWS and external fit, and HR outcome. The finding revealed that external fit did not moderate the direct relationship between HPWS and HR outcome (β = -0.012, t-value = -0.163, p = 0.871). As a result, the study failed to reject the null hypothesis. The direct moderating effect size of external fit on HR outcome (f^2 = 0.009) was also small.

Figure 29: HPWS and HR outcome interaction



To better understand the moderating role of external fit in the relationship between HPWS and HR outcome, a simple slope analysis was performed. It can be seen from Figure 29 that the slope of the line for Low External Fit is much steeper than the slope of the line for High External fit. This indicates that at high level of external fit the impact of HPWS on HR outcome is weaker than low external fit. With an enhanced level of external fit, the strength of association between HPWS and HR outcome decreased. Therefore, external fit dampens the positive relationship between HPWS and HR outcome.

HPWS, external fit, and operational outcome

Hypothesis 14 hypothesized that there would be a positive relationship between the interaction effect of HPWS and external fit, and operational outcome. The result established that external fit did not moderate the path from HPWS to operational outcome (β = -0.139, t-value = -1.883, p = 0.060). Thus, the study failed to reject the null

hypothesis. The direct moderating effect size of external fit on operational outcome (f^2 = 0.015) also small.

Figure 30: HPWS and operational outcome interaction

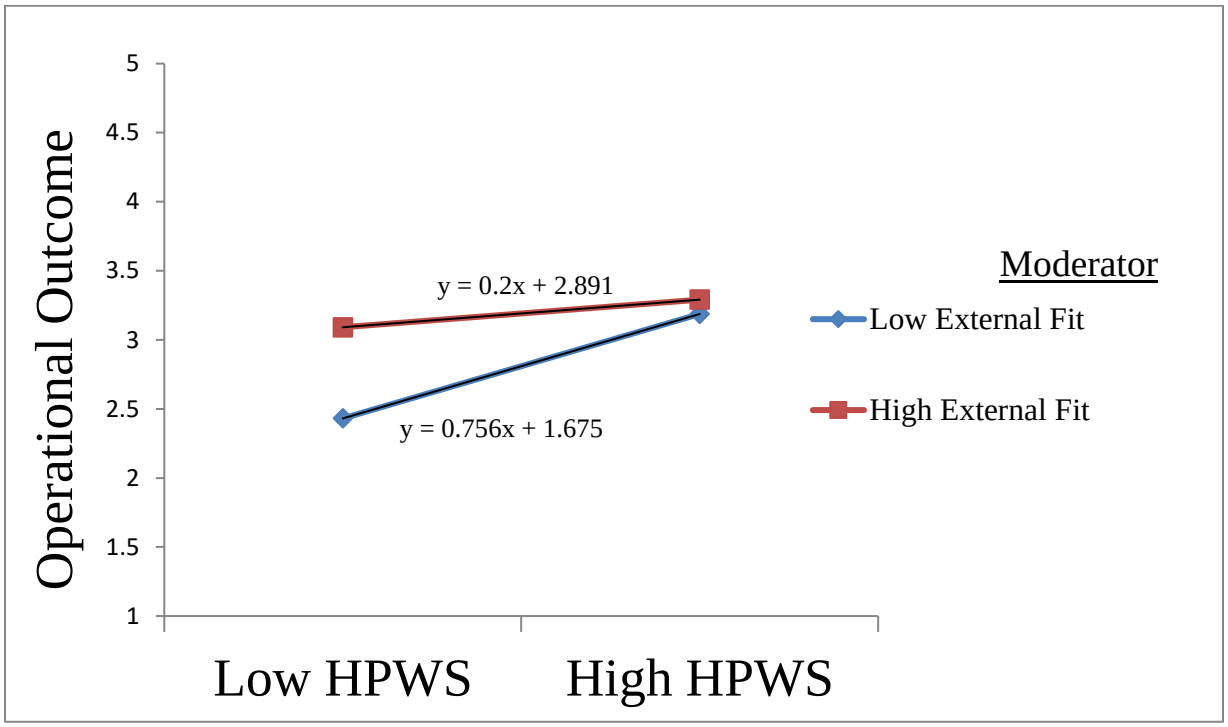


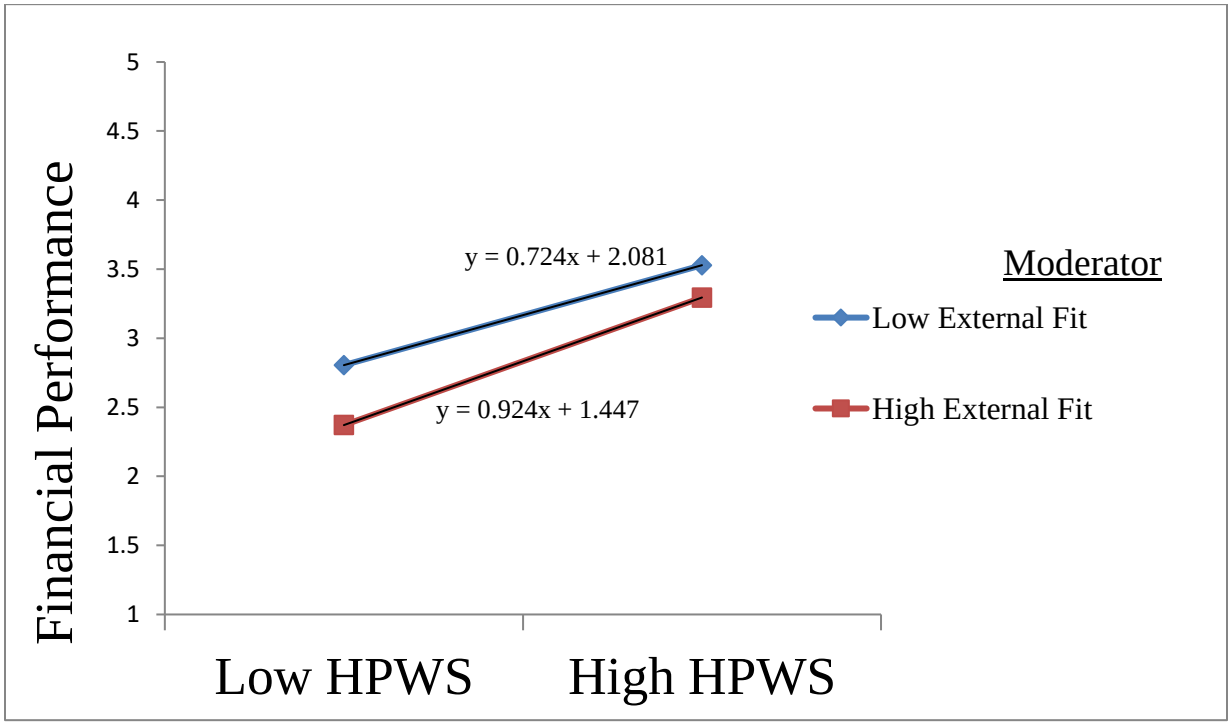
Figure 30 displays the result of the slope analysis performed to better understand the nature of the moderating effect of external fit between HPWS and operational outcome. As can be seen from the figure, the line is much steeper for Low External Fit than High External Fit; this reveals that at high level of external fit, the consequence of HPWS on operational outcome is weaker as compared with low external fit. As the level of external fit increased, the strength of association between HPWS and operational outcome decreased. As a result, external fit dampens the positive relationship between HPWS and operational outcome.

HPWS, external fit, and financial performance

Hypothesis 15 hypothesized that there would be a positive relationship between the interaction effect of HPWS and external fit, and financial performance in public

enterprises in Ethiopia. The result depicts that external fit did not moderate the path from HPWS to financial performance in the public enterprises (β = 0.050, t-value = 0.589, p = 0.556). Therefore, the study failed to reject the null hypothesis. The direct moderating effect size of external fit on financial performance (f^2 = 0.004) was also small.

Figure 31: HPWS and financial performance interaction



Slope analysis was conducted to get a better picture of the moderating effect of external fit in the relationship between HPWS and financial performance. It can be observed from Figure 31 that High External Fit has much steeper line than Low External Fit. This exhibits that the contribution of HPWS on financial performance is much superior with high external fit in comparison with low external fit. With an improved level of external fit, the strength of association between HPWS and financial performance increases. Therefore, external fit strengthens the positive relationship between HPWS and financial performance.

5.3.3.4 Moderated indirect relationships: External fit as a moderator

The moderating effect of external fit in the indirect relationship between HPWS and financial performance via HR outcome and operational outcome mediating constructs of the public enterprises in Ethiopia are examined in the subsequent sub-sections. The moderated indirect relationships are summarized in Table 38.

Table 38: Test for Moderated Mediation Using 95% Confidence Interval

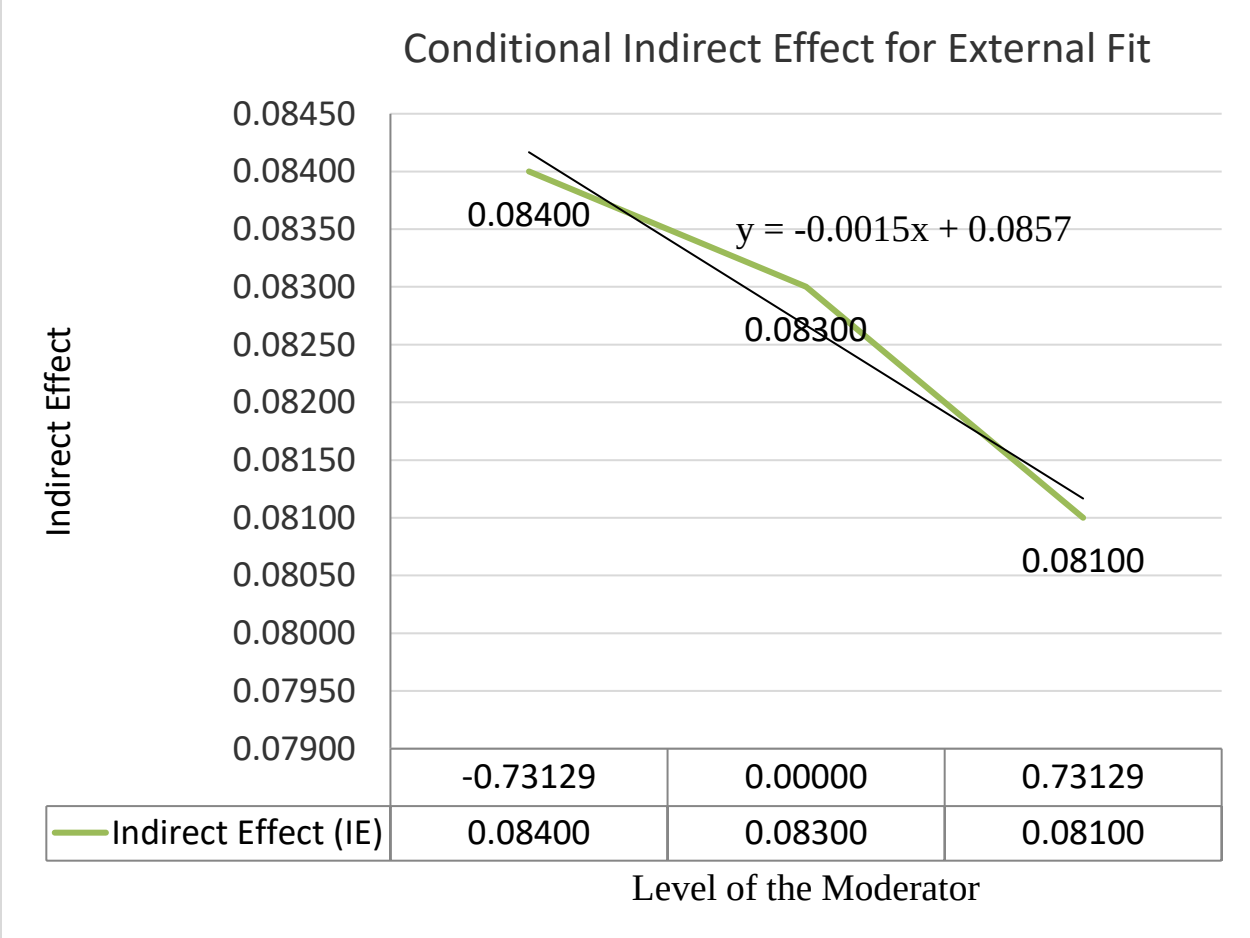
Moderated Indirect Relationships*	**Direct Effect**	**Indirect Effect**	**Confidence Interval Low/High**	**p-value**	**f^2**	**Decision**
Path 1: HPWS → HR Outcome → Financial Performance		.083	-.003/.195	.056		
Path 2: HPWS → Operational Outcome → Financial Performance		.209	.057/.410	.005		
Probing Moderated Indirect Relationships for path 1						
Low Levels of External Fit		.084	.006/.208	.037		
High Levels of External Fit		.081	-.007/.201	.065		
Probing Moderated Indirect Relationships for path 2						
Low Levels of External Fit		.297	.103/.553	.003		
High Levels of External Fit		.120	-.070/.314	.213		
Index of Moderated Mediation for path 1		-.002	-.041/.034	.661	0.011	H16 not supported
Index of Moderated Mediation for path 2		-.121	-.265/.030	.105	0.678	H17 not supported

Note: * = The indirect effect is moderated by the construct of external fit.
Unstandardized coefficients reported. Bootstrap Sample = 5,000 with replacement.

External fit and the indirect path from HPWS to financial performance via HR outcome

Hypothesis 16 hypothesized that the indirect path from HPWS to financial performance through HR outcome would be moderated positively and significantly by the moderating construct. The result showed that the path from HPWS to financial performance by means of HR outcome was not significant in the presence of the moderating construct (β = 0.083, p = 0.056). The result of the IOMM analysis also corroborated that external fit did not have a significant moderating effect on the indirect relationship between HPWS and financial performance via the HR outcome mediating construct (β = -0.002, p = 0.661). For that reason, the study failed to reject the null hypothesis. The indirect moderating effect size of external fit on financial performance through HR outcome (f^2 = 0.011) was also small.

Figure 32: Indirect effect of HPWS on financial performance via HR outcome



To have an enhanced understanding of how moderation is functioning in the study model, a spotlight analysis to moderation testing was performed. Accordingly, the moderated indirect relationship between HPWS and financial performance was examined to get a better picture of how the association between HPWS and financial performance via HR outcome changes in various levels of the moderating construct. In view of that, new low level moderator and high level moderator constructs were formed using one standard deviation below and one standard deviation above the mean of the original moderator construct respectively. After that, the two newly created moderating constructs were named “Low Levels of External Fit” and “High Levels of External Fit”.

Figure 32 shows the result of the spotlight analysis to moderation testing to get better insight of how the external fit moderates the indirect path from HPWS to financial performance via HR outcome at various levels of the moderator. The result of the slope analysis illustrates the inverse relationship between external fit and the indirect effect of HPWS. This reveals that at high levels of external fit, the indirect effect of HPWS on financial performance via HR outcome is negative and much weaker in contrast with low levels of external fit.

It can also be observed from Table 39 that a one SD increase in the level of external fit decreases the indirect effect of HPWS on financial performance via HR outcome insignificantly from 0.083 to 0.081 (change in indirect effect = -0.002, p = 0.065). On the contrary, a one SD decrease in the level of the moderating construct from the mean centered level positively and significantly increases the indirect effect of HPWS on financial performance through HR outcome from 0.083 to 0.084 081 (change in indirect effect = -0.001, p = 0.037). Hence, as the indirect association between HPWS and financial performance via the HR outcome construct is almost perfectly negative (see Figure 38), a high level of external fit has a weakening property and severely diminishes the indirect association between the HPWS and financial performance of the public enterprises in Ethiopia through the HR outcome mediating construct.

Table 39: Indirect Effect of the Moderator at High Levels and Low Levels via HR outcome

Level of the moderator	Indirect effect from HPWS to Financial Performance*	p-value
High Moderator Level	.081	.065
Mean Centered Level	.083	.056
Low Moderator Level	.084	.037

Note: * = The indirect effect is moderated by the construct of External Fit.
Unstandardized coefficients reported. Bootstrap Sample = 5,000 with replacement.

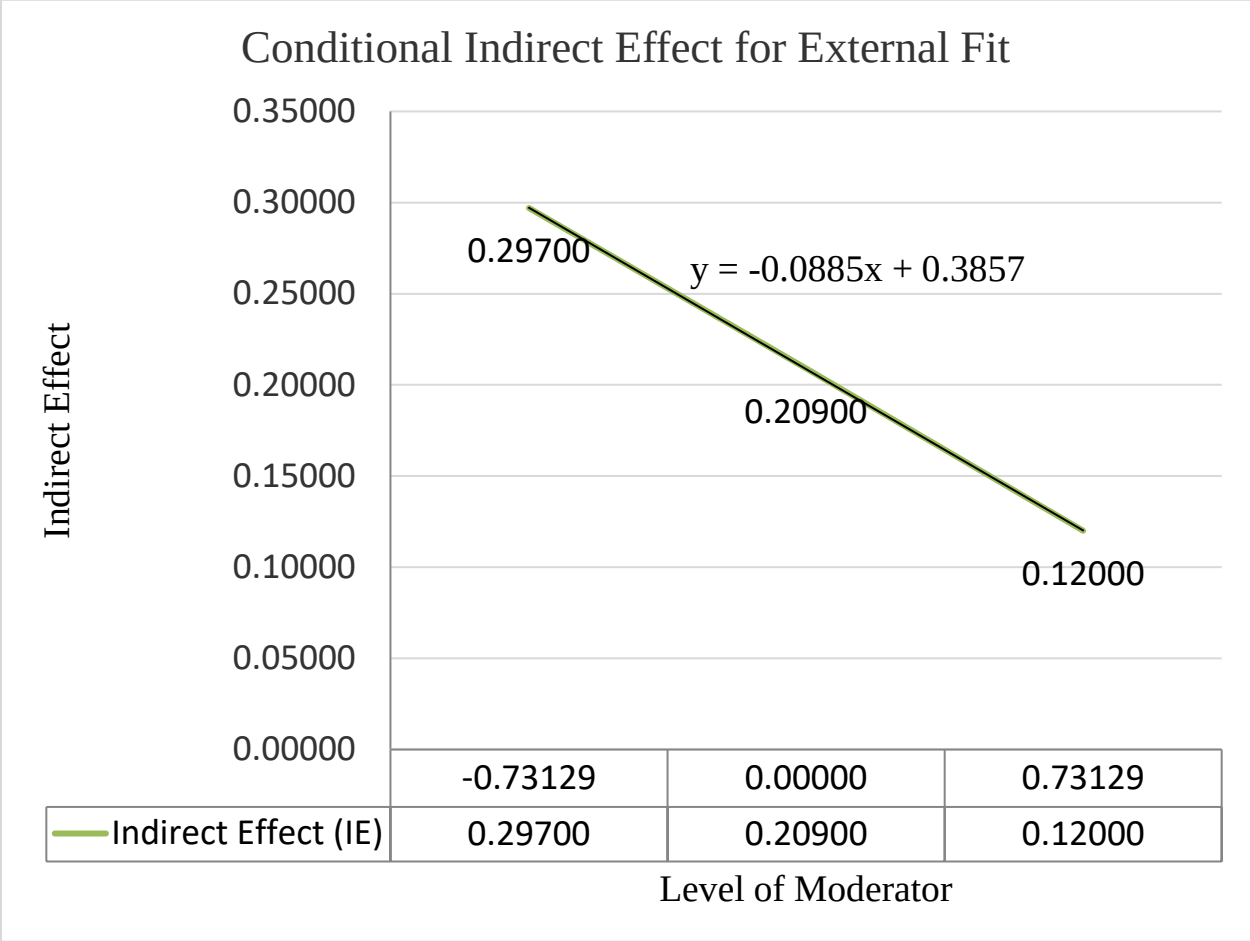
External fit and the indirect path from HPWS to financial performance via operational outcome

Hypothesis 17 hypothesized that the indirect path from HPWS to financial performance by way of operational outcome would be moderated positively and significantly by the external fit moderating construct. The finding indicated that the path from HPWS to financial performance by means of operational outcome was significant in the presence of the moderating construct ($\beta = 0.209$, $p = 0.005$). Nevertheless, the result of the IOMM analysis showed that external fit did not have a significant moderating effect on the indirect relationship between HPWS and financial performance via operational outcome ($\beta = -0.121$, $p = 0.105$). So, the study failed to reject the null hypothesis. Although their relationship is not significant, the indirect moderating effect size of external fit on financial performance through operational outcome ($f^2 = 0.678$) was large.

To obtain an improved understanding of the way moderation is functioning in the study model, a spotlight analysis to moderation testing was carried out. Thus, the moderated indirect relationship between HPWS and financial performance was probed to get a better picture of how the connection between HPWS and financial performance via operational outcome changes in different levels of the moderating construct (see Figure 33). Consequently, new low level moderator and high level moderator constructs were generated using one standard deviation below and one standard deviation above the mean

of the original moderator construct respectively. Then, the two newly created moderating constructs were named “Low Levels of External Fit” and “High Levels of External Fit”.

Figure 33: Indirect effect of HPWS on financial performance via operational outcome



To get a better understanding of how external fit moderates the indirect path from HPWS to financial performance via operational outcome, a spotlight analysis to moderation testing was conducted at different levels of the moderator. As can be seen from Figure 33, the finding of the slope analysis reveals that there is a perfect inverse negative association between external fit and the indirect influence of HPWS on financial performance by way of operational outcome. This demonstrates that at high levels of external fit, the indirect impact of HPWS on financial performance is weaker as compared with low levels of external fit.

Table 40: Indirect Effect of the Moderator at High Levels and Low Levels via Operational outcome

Level of the moderator	Indirect effect from HPWS to Financial Performance*	p-value
High Moderator Level	.120	.213
Mean Centered Level	.209	.005
Low Moderator Level	.297	.003

Note: * = The indirect effect is moderated by the construct of External Fit.
Unstandardized coefficients reported. Bootstrap Sample = 5,000 with replacement.

As depicted in Table 40, enhancing the level of the moderator from the mean centered level by one SD diminishes the indirect effect of HPWS on financial performance via operational outcome from 0.209 to 0.120 (change in indirect effect = -0.089, p = 0.213). Conversely, reducing the level of external fit from the mean centered level by one SD significantly improves the indirect effect of HPWS on financial performance by way of operational outcome from 0.209 to 0.297 (change in indirect effect = 0.088, p = 0.003). Consequently, as the strength of indirect relationship between HPWS and financial performance via operational outcome becomes inferior with an increase in the level of the moderator, it can be concluded that a high level of external fit sharply reduces the indirect effect of HPWS on the financial performance of public enterprises in Ethiopia by means of the operational outcome mediating construct.

5.4 Control Variables

Figures 22 and 23 have illustrated the full structural model, and the full structural model with factor loadings and T-values respectively. The final model that was used in the present study is demonstrated in Figure 34. The figure shows the full structural model of the study that was controlled for both organizational and individual level control variables together with their covariance. At the organization level, the study controlled for organization age, organization size, capital intensity, level of technology, industry, and degree of unionization. Even though the study did not intend to explain disparities at the individual level, a number of relevant individual level control variables such as

employee age, salary, gender, managerial level, educational qualification, and length of service were included. As can be seen in Table 41, it was only less than one third of the control variables that had a significant association with the dependent constructs of the study.

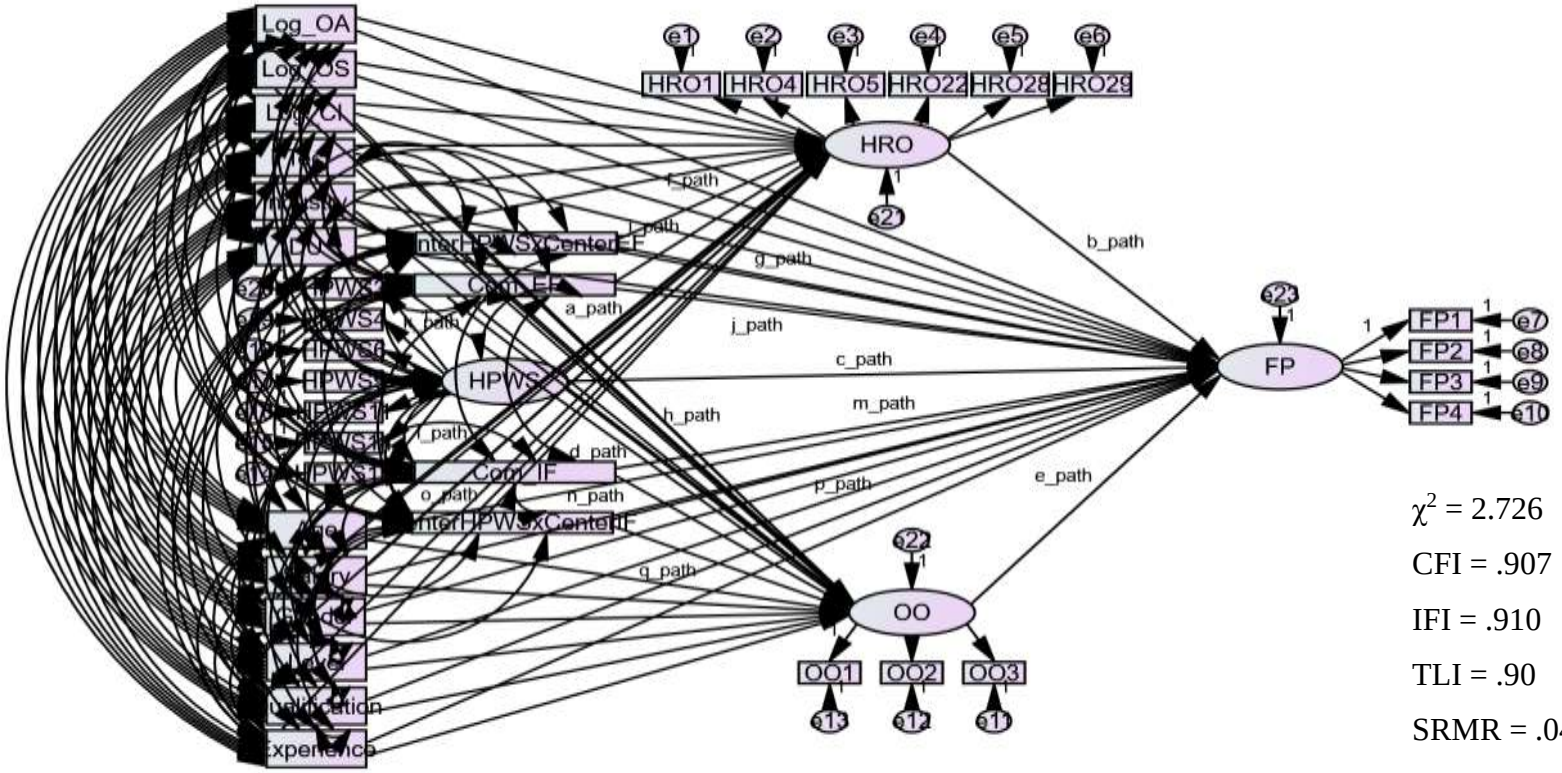
Table 41: Association between the Control Variables and Dependent Constructs of the Study

Control variables and paths	Coefficient	T-values	p-value
Organizational level control variables			
Organization age → HR Outcome	.132	2.437	.015
Organization age → Operational Outcome	.120	2.271	.023
Organization age → Financial Performance	-.010	-.155	.877
Organization size→ HR Outcome	-.079	-1.082	.279
Organization size→ Operational Outcome	-.032	-.444	.657
Organization size→ Financial Performance	-.207	-2.528	.011
Capital intensity → HR Outcome	-.017	-.563	.573
Capital intensity → Operational Outcome	-.011	-.366	.715
Capital intensity→ Financial Performance	.041	1.203	.229
Technology → HR Outcome	.055	1.493	.135
Technology → Operational Outcome	.203	5.570	***
Technology→ Financial Performance	.143	3.185	.001
Industry → HR Outcome	.039	.360	.719
Industry → Operational Outcome	.304	2.819	.005
Industry→ Financial Performance	-.138	-1.104	.270
Degree of unionization → HR Outcome	.084	1.295	.195
Degree of unionization → Operational Outcome	.080	1.255	.209
Degree of unionization→ Financial Performance	.042	.582	.561
Individual level control variables			
Age → HR Outcome	-.006	-.962	.336

Age → Operational Outcome	.006	.984	.325
Age→ Financial Performance	-.013	-1.815	.070
Salary → HR Outcome	.000	-1.803	.071
Salary → Operational Outcome	.000	1.056	.291
Salary→ Financial Performance	.000	-2.771	.006
Gender → HR Outcome	-.196	-2.786	.005
Gender → Operational Outcome	.212	3.065	.002
Gender → Financial Performance	-.098	-1.210	.226
Managerial level → HR Outcome	-.097	-1.703	.089
Managerial level → Operational Outcome	.105	1.889	.059
Managerial level → Financial Performance	-.041	-.638	.523
Qualification → HR Outcome	-.021	-.362	.717
Qualification → Operational Outcome	.024	.413	.680
Qualification → Financial Performance	-.094	-1.421	.155
Length of service → HR Outcome	.004	.535	.593
Length of service → Operational Outcome	-.010	-1.561	.119
Length of service → Financial Performance	.024	3.183	.001

Note: ***p<0.001

Figure 34: The Full Structural Model with the Control Variables



Note: Unstandardized coefficients reported. Values in parentheses are t-values. ***Note:*** HPWS = High Performance Work System; HRO = Human Resource Outcome; OO = Operational Outcome; FP = Financial Performance; IF = Internal Fit; EF = External Fit; Com = Composite.

5.5 Summary of the Chapter

The chapter has presented the results of the descriptive analysis. It has also discussed the full structural model analysis that was used to test the hypothesized associations between and among the study constructs. The results of the structural model analysis demonstrated that HPWS had a positive and significant association with the HR outcome, operational outcome, and financial performance of the public enterprises in Ethiopia. Concerning mediation effects, operational outcome partially mediates the relationship between HPWS and financial performance; however, HR outcome did not have a significant mediation effect in the HPWS-financial performance relationship. Finally, the findings of the moderation analysis revealed that both internal and external fit did not have a significant moderating effect in the direct and indirect relationships between and among the study constructs. The results of the hypotheses testing are summarized in Table 42. In the next chapter, the discussion, conclusion, and limitations of the study and directions for future research are presented.

Table 42: Summary of the Research Hypotheses

Hypothesis	Description	Decision
1	HPWS is positively related to HR outcome in public enterprises in Ethiopia	Supported
2	HR outcome is positively related to financial performance in public enterprises in Ethiopia	Supported
3	HR outcome mediates the relationship between HPWS and financial performance in public enterprises in Ethiopia	Not supported
4	HPWS is positively related to operational outcome in public enterprises in Ethiopia	Supported
5	Operational outcome is positively related to financial performance in public enterprises in Ethiopia	Supported
6	Operational outcome mediates the relationship between HPWS and financial performance in public enterprises in Ethiopia	Supported
7	HPWS is positively related to financial performance in public enterprises in Ethiopia	Supported
8	Internal fit positively moderates the relationship between HPWS and HR outcome in public enterprises in Ethiopia	Not supported
9	Internal fit positively moderates the relationship between HPWS and operational outcome in public enterprises in Ethiopia	Not supported
10	Internal fit positively moderates the relationship between HPWS and financial performance in public enterprises in Ethiopia	Not supported
11	Internal fit positively moderates the indirect relationship between the HPWS and financial performance of the public enterprises via HR outcome	Not supported

12	Internal fit positively moderates the indirect relationship between the HPWS and financial performance of the public enterprises via operational outcome	Not supported
13	External fit positively moderates the relationship between HPWS and HR outcome in public enterprises in Ethiopia	Not supported
14	External fit positively moderates the relationship between HPWS and operational outcome in public enterprises in Ethiopia	Not supported
15	External fit positively moderates the relationship between HPWS and financial performance in public enterprises in Ethiopia	Not supported
16	External fit positively moderates the indirect relationship between the HPWS and financial performance of the public enterprises via HR outcome	Not supported
17	External fit positively moderates the indirect relationship between the HPWS and financial performance of the public enterprises via operational outcome	Not supported

CHAPTER SIX
DISCUSSION AND CONCLUSION

6.1 Introduction

Chapter five has presented the research findings. It has examined the hypotheses of the study on the relationship between the HPWS and organizational performance of the public enterprises. This chapter discusses the major findings of the current study on the direct, mediating, and moderating relationships between and among the HPWS, HR outcome, operational outcome, internal fit, external fit, and financial performance of the study organizations. In addition, it examines the theoretical and practical implications of the findings to academicians and practitioners. The limitations of the current study and directions for future research are also presented in the chapter.

6.2 Discussion

The main purpose of this study is to examine the relationship between the HPWS and organizational performance of public enterprises in Ethiopia. The research is essential because studies that have examined the contribution of HPWS to the performance of public enterprises in a developing country context are very limited. In addition, prior works also recommended to future studies to include appropriate mediating, moderating, and control variables to get a better picture of the association between HPWS and organizational performance (Wright et al., 2005).

Accordingly, this section discusses the major findings of the hypothesized direct, mediating, and moderating relationships of the study. The section is organized and addressed into three major subsections according to the categorization of the research hypotheses in chapter five of the study: direct relationships, mediating relationships, and moderating relationships.

The result of the descriptive analysis showed that HPWS (M = 3.57; SD = 0.61), HR outcome (M = 3.44; SD = 0.42), operational outcome (M = 3.56; SD = 0.73), financial

performance (M = 3.88; SD = 0.83), internal fit (M = 3.66; SD = 0.79), and external fit (M = 3.62; SD = 0.68). This suggests that the constructs of the study were perceived positively by the study participants. In the following subsections, the hypotheses are examined separately including the hypothesized relationship between the constructs, relevant theoretical perspectives, brief definition about the constructs, the hypothesis testing results of the constructs, examination of the findings against the literature, the implications of the findings, and recommendations.

6.2.1 Direct relationships (H1, H2, H4, H5, and H7)

Hypotheses one, two, four, five, and seven investigated the direct association between HPWS, HR outcome, operational outcome, and financial performance of public enterprises in Ethiopia. It also addressed the link HR outcome and operational outcome had with the financial performance of the enterprises. Previous research works claimed that the use of HPWS would lead to enhanced organizational performance. In support of these assertions, the current study also provides substantial evidence by collecting data from public enterprises that are operating across wide-ranging industries and organizational sizes in Ethiopia. The findings of the study corroborated the hypotheses that investing in HPWS has a significant association with enhanced HR outcome, operational outcome, and financial performance of the enterprises.

6.2.1.1 Hypothesis 1: HPWS is positively related to HR outcome

This hypothesis proposed that HPWS is positively related to the HR outcome of public enterprises in Ethiopia. It examined the relationship between the constructs using the universalistic perspective. Grounded in the universalistic perspective, the hypothesis argues that there is a universal linear association between HPWS and HR outcome regardless of organizational context such as strategy, industry, or nation (Delery & Doty, 1996; Khatri, 2000; Knies et al., 2018). Therefore, this study expected a significant positive relationship between HPWS and HR outcome.

HPWS was conceptualized as a first-order construct in this study. It is an interrelated set of HRM policies and practices that enable an organization to achieve better performance (Dessler, 2013). HR outcome refers to outcomes that are most directly related to HRM in an organization (Jiang et al, 2012). The construct was originally conceptualized as a second-order construct composed of job satisfaction, commitment, and empowerment. However, the construct became unidimensional and analyzed as a first-order construct following the comparison of the first-order and second-order HR outcome models (see chapter four for more detail).

The full structural model analysis demonstrated a significant positive path from HPWS to HR outcome ($\beta = 0.517$, t-value = 5.734, $p<0.001$). Therefore, Hypothesis 1 was supported. In addition, the effect size of HPWS on HR outcome ($f^2 = 0.200$) was medium, displaying the meaningful contribution of HPWS to HR outcome.

The findings in chapter five reveal that HPWS has a positive and significant association with the HR outcome of the public enterprises. The result shows that the use of HPWS in the public enterprises would be reflected in better HR outcome. HPWS practices such as extensive recruitment and selection, incentive and pay for performance reward system, rigorous appraisal of employee performance, sharing information to employees, and providing general and organization-specific trainings (Datta et al., 2005; Huselid, 1995; Pfeffer, 1998; Takeuchi et al., 2009) contribute to organizational performance by first influencing HR outcome (Liao et al., 2009). The finding reinforces the assumption of the universalistic perspective that HPWS practices have the potential to enhance organizational performance regardless of context (Marchington & Grugulis, 2000). It is also consistent with prior works that highlight the significance of HPWS in improving employee attitudes and behaviors such as Applebaum et al. (2000), Combs et al. (2006), Green et al. (2006), Guthrie (2001), Huselid (1995), Jiang et al. (2012), Macky and Boxall (2007), Messersmith et al. (2011), Park et al. (2023), Pfeffer (1994), Li & Rasiah (2025), Spreitzer (1996), Takeuchi et al. (2009), Takeuchi et al. (2007), Thomas and Velthouse (1990), Way (2002), Wright et al. (2003), and Wright and Bonett (2002).

The result of the hypothesis testing on the relationship between HPWS and HR outcome implies that public enterprises in Ethiopia can leverage HPWS to successfully improve their HR outcome. As the HPWS practices have enhanced the job satisfaction, commitment, and empowerment of the employees, the public enterprises in Ethiopia are recommended to prioritize the institutionalization of the practices. The enterprises can continue to benefit from HPWS if they continuously evaluate the successful implementation of the practices through regular feedback and benchmarking to ensure the positive effect of HPWS on their HR outcome.

6.2.1.2 Hypothesis 2: HR outcome is positively related to financial performance

This hypothesis proposed that HR outcome is positively related to the financial performance of public enterprises in Ethiopia. It examined the association between HR outcome and financial performance using the universalistic perspective. Grounded in the universalistic perspective, the hypothesis asserts the existence of positive association between HR outcome and financial performance regardless of organizational context (Delery & Doty, 1996; Khatri, 2000; Knies et al., 2018). Hence, this study expected a significant positive relationship between HR outcome and financial performance in the public enterprises.

Financial performance was conceptualized as a first-order construct, and indicates the fulfillment of the economic goals of organizations, including sales growth, profitability, market share, and marketing activities (Armstrong, 2014; Dyer & Reeves, 1995; Jiang et al., 2012).

The structural model analysis showed a significant positive path from HR outcome to financial performance ($\beta = 0.160$, t-value = 2.167, $p = 0.030$). Therefore, Hypothesis 2 was supported. Although HR outcome had a significant positive influence on financial performance, its effect size ($f^2 = 0.015$) was insignificant.

The results in chapter five disclose that HR outcome has a positive and significant association with the financial performance of the public enterprises. The finding demonstrates that an organization that has satisfied, committed, and empowered employees can logically expect improved financial performance. The finding supports the universalistic perspective view that best-practice approach has the potential to produce better organizational performance regardless of context (Marchington & Grugulis, 2000). The result is consistent with prior assertions that having workforce with the right attitude and behavior will inevitably enhance financial performance (see Combs et al., 2006; Jiang et al., 2012; Messersmith et al., 2011; Park et al., 2023; Thomas & Velthouse, 1990).

The result of the hypothesis testing on the relationship between HR outcome and financial performance implies that public enterprises in Ethiopia that have better HR outcome can expect to see superior financial performance. To reinforce the relationship between HR outcome and financial performance, the enterprises can align employee behavior and attitudes to financial goals using various financial and non-financial incentives.

6.2.1.3 Hypothesis 4: HPWS is positively related to operational outcome

This hypothesis proposed that HPWS is positively related to the operational outcome of public enterprises in Ethiopia. It examined the relationship between HPWS and operational outcome using the universalistic perspective. Grounded in the universalistic perspective, the hypothesis claims a positive relationship between HPWS and operational outcome regardless of organizational context (Delery & Doty, 1996; Khatri, 2000; Knies et al., 2018). Accordingly, this study expected a significant positive relationship between the HPWS and operational outcome of public enterprises in Ethiopia.

Operational outcome was conceptualized in this study as a first-order construct, and refers to those outcomes that are related to the goals of an organizational operation,

including product quality, product innovation, and customer satisfaction (Jiang et al, 2012).

The structural model analysis result revealed a significant positive path from HPWS to operational outcome ($\beta = 0.239$, t-value = 3.022, $p = 0.003$). Hence, Hypothesis 4 was supported. Although HPWS has a significant positive relationship with operational outcome, its effect size on operational outcome ($f^2 = 0.049$) was small.

The results in chapter five demonstrate a positive and significant association between the HPWS and operational outcome of the public enterprises. This indicates that investment in HPWS is associated with greater innovation, quality, and customer satisfaction in the enterprises. According to Ahmed and Schroeder (2003), investing in HPWS leads to superior operational outcome such as better quality, innovation, and customer satisfaction. The finding underlines the universalistic perspective assumption that best-practice approach leads to improved organizational performance regardless of context (Marchington & Grugulis, 2000). The result confirms the findings of previous researches that found a positive association between HPWS and operational outcome such as Ahmed and Schroeder (2003), Bartel (2004), Combs et al. (2006), Gould-Williams (2003), Guthrie (2001); Harel and Tzafrir (1999), Hunter and Hitt (2001), Huselid (1995); Ichinowski et al. (1997), Jiang et al. (2012), Laursen and Foss (2003), Li & Rasiah (2025), McDuffie (1995), Park et al. (2023), Rauch & Hatak (2016), Saridakis et al. (2017), Wright et al. (2003), and Youndt et al. (1996).

The finding of the hypothesis testing on the association between HPWS and operational outcome implies that public enterprises in Ethiopia can use HPWS to build superior operational outcome. To improve the contribution of HPWS to operational outcome, the managers of the public enterprises are suggested to continuously ensure the close collaboration between HR and other work units. They can use incentives and conduct regular audits to strengthen the effect of HPWS on product quality, innovation, and customer satisfaction.

6.2.1.4 Hypothesis 5: Operational outcome is positively related to financial performance

This hypothesis proposed that operational outcome is positively related to the financial performance of public enterprises in Ethiopia. It examined the relationship between operational outcome and financial performance using the universalistic perspective. Grounded in the universalistic perspective, the hypothesis proposes the existence of positive link between operational outcome and financial performance regardless of organizational context (Delery & Doty, 1996; Khatri, 2000; Knies et al., 2018). Thus, this study expected a significant positive association between the operational outcome and financial performance of the public enterprises.

The structural model analysis result exhibited a positive and significant path from operational outcome to financial performance ($\beta = 0.872$, t-value = 8.711, $p<0.001$). Therefore, Hypothesis 5 was supported. The direct effect of operational outcome ($f^2 = 0.681$) on financial performance was also large, indicating that operational outcome meaningfully contributes to improving financial performance.

The results in chapter five expose that operational outcome has a positive and significant association with the financial performance of the public enterprises. This indicates that an organization that has innovative and quality products with satisfied customers is likely to enjoy superior financial performance. Operational measures of performance such as quality, innovation, and customer satisfaction predict the financial performance of an organization (Armstrong, 2009; Dyer & Reeves, 1995; Wright et al., 2003). The result of the study on the relationship between operational outcome and financial performance reinforces the assumptions of the universalistic perspective. It is consistent with previous studies such as Combs et al. (2006), Huselid (1995), Jiang et al. (2012), Park et al. (2023), Rauch & Hatak (2016), Saridakis et al. (2017),

The finding of the hypothesis testing on the relationship between operational outcome and financial performance implies that public enterprises in Ethiopia that have better

operational outcome can expect to see enhanced financial performance. The public enterprises may continue to benefit from their operational outcome if they make an explicit effort to link the product quality, innovation, and customer satisfaction aspect of their operational departments with financial targets.

6.2.1.5 Hypothesis 7: HPWS is positively related to financial performance

This hypothesis proposed that HPWS is positively related to the financial performance of public enterprises in Ethiopia. It examined the relationship between the constructs using the universalistic perspective. Grounded in the universalistic perspective, the hypothesis argues that there is a universal linear association between HPWS and financial performance regardless of organizational context such as strategy, industry, or nation (Delery & Doty, 1996; Khatri, 2000; Knies et al., 2018). Therefore, this study expected a significant positive relationship between HPWS and financial performance.

The full structural model analysis demonstrated a significant positive path from HPWS to financial performance ($\beta = 0.412$, t-value = 3.852, $p<0.001$). Hence, Hypothesis 7 was supported. Although HPWS has a significant positive influence on financial performance, its effect size ($f^2 = 0.018$) was small.

The results in chapter five exhibit that HPWS has a positive and significant association with the financial performance of the public enterprises. The significant positive relationship between HPWS and financial performance demonstrates that the broader use of HPWS in the public enterprises is perceived to create better sales, profit, market share, and marketing activities. The finding supports the assumption of the universalistic perspective that HPWS practices have the potential to enhance organizational performance regardless of context. Various authors have also examined the effect of HPWS on the financial performance of an organization and found a significant positive association (see Becker and Huselid, 1998, Combs et al., 2006; Delery & Doty, 1996; Gerhart & Milkovich, 1990; Huselid, 1995; Jiang et al., 2012; Li, 2003; Park et al., 2023;

Rauch & Hatak, 2016; Russell et al., 1985, Saridakis et al., 2017; Schmidt et al., 1979; Terpstra and Rozell, 1993, Wright et al., 1998; Wright et al., 1999).

The finding of the hypothesis testing on the relationship between HPWS and financial performance implies that public enterprises in Ethiopia can leverage HPWS to enhance their financial performance. The public enterprises are recommended to make HPWS their strategic priority, and use reward systems to reinforce the link between HPWS and financial performance.

To summarize, the findings of the hypotheses testing that addressed the direct relationship between HPWS, HR outcome, operational outcome, and financial performance verify the rationale of the RBV perspective and the universalistic theory. The RBV perspective proposes that internal resources of an organization that are valuable and inimitable are crucial aspects of competitive advantage (Hart, 1995). The fundamental theme of the theory is that to achieve a sustained competitive advantage, an organization must have resources that are rare, inimitable, valuable, and non-substitutable (Barney, 1991; Wernerfelt, 1984). According to the RBV, HPWS is capable of creating competitive advantage through people; organizations that have HR with rare, valuable, non-substitutable, and inimitable skills, knowledge, and abilities have sustained competitive advantage over their rivals (Barney, 1991; Golding, 2004). Therefore, the results of this research substantiate the assertions of the RBV that HPWS enhances the HR outcome, operational outcome, and financial performance of organizations by creating committed, empowered, and satisfied employees. In addition, the findings of the research support the universalistic theory by demonstrating that the contributions of HPWS are not confined to western countries or to the private sector. The positive and significant effects of HPWS to organizational performance are universal regardless of organizational strategy, context, country, or sector (Delery & Doty, 1996; Knies et al., 2018; Marchington & Grugulis, 2000).

6.2.2 Mediating relationships (H3 and H6)

The effect of HPWS on financial performance can partly be explained due to its influence on HR outcome and operational outcome (Armstrong, 2009; Dyer & Reeves, 1995; Guest, 2011; Huselid, 1995). HPWS directly impacts the HR outcome and operational outcome of an organization. When HR outcome and operational outcome show improvement, the organization will have an improved financial performance (Armstrong, 2009; Dyer & Reeves, 1995; Guest, 2011; Huselid, 1995). However, very few studies show the mechanism through which HPWS impacts organizational performance (Becker & Gerhart, 1996; Boselie, Dietz, & Boon, 2005; Guest 2011; Huselid, 1995; Jiang et al., 2012; Kloutsiniotis & Mihail, 2018). The greater part of the research works failed to demonstrate the process through which HPWS practices affect organizational performance, which is usually referred by some HRM scholars as the 'black box' problem (Kloutsiniotis & Mihail, 2018; Messersmith et al., 2011; Wright et al., 2003; Wright et al., 1999). Hence, hypotheses 3 and 6 examined the mediating role of HR outcome and operational outcome in the relationship between the HPWS practices and financial performance of the Ethiopian public enterprises.

6.2.2.1 Hypothesis 3: HR outcome mediates the relationship between HPWS and financial performance

This hypothesis proposed that HR outcome mediates the relationship between the HPWS and financial performance of public enterprises in Ethiopia. It addressed the mediating effect of HR outcome in the HPWS-financial performance nexus using the behavioral perspective. Grounded in the behavioral perspective, the hypothesis suggests that HPWS indirectly contributes to financial performance through the HR outcome of organizations (Jackson & Schuler, 1995). Accordingly, this study expected a significant positive mediating effect of HR outcome in the relationship between HPWS and financial performance.

The structural model analysis revealed that HR outcome plays no mediating role in the HPWS-financial performance relationship ($\beta = 0.083$, $p = 0.056$). Therefore, Hypothesis 3 was not supported. The mediating effect size of HR outcome ($f^2 = 0.026$) was also small.

The result in chapter five demonstrates that HR outcome does not have a significant positive mediating effect in the relationship between HPWS and financial performance at $P<0.05$ level. The insignificant mediating effect of HR outcome in the HPWS-financial performance relationship may suggest that only employee attitudinal and behavioral change may not translate into financial performance without improvements in other related areas. However, prior studies such as Combs et al. (2006), Fey et al. (2000), Huselid (1995), Jiang et al., (2012), Messersmith et al. (2011), Park et al., (2023) found a significant mediating effect of HR outcome in the relationship between HPWS and organizational performance. This does not, however, mean that having a satisfied, committed, and empowered manpower will not lead to improved financial performance in the public enterprises, it only shows that the effect of HPWS on the financial performance of the public enterprises in Ethiopia has a direct effect and an indirect effect through operational outcome (see Hypothesis 6). As can be seen from the direct relationship hypotheses discussion sub-section of this chapter, having employees with positive attitude and behavior is reflected in enhanced financial performance in the public enterprises.

The result of the hypothesis testing on the mediating effect HR outcome in the relationship between HPWS and financial performance implies that the effect of HPWS on the financial performance of the public enterprises in Ethiopia has a better direct effect than indirect effect through HR outcome. The public enterprises are advised to establish mechanisms that align HR outcome with financial performance. To strengthen the indirect relationship between HPWS and financial performance through HR outcome, managers of the public enterprises may devise strategies to translate the positive employee behaviors and attitudes into financial gains.

6.2.2.2 Hypothesis 6: Operational outcome mediates the relationship between HPWS and financial performance

This hypothesis proposed that operational outcome mediates the relationship between the HPWS and financial performance of public enterprises in Ethiopia. It addressed the mediating effect of operational outcome in the HPWS-financial performance link using the behavioral perspective. Grounded in the behavioral perspective, the hypothesis argues that HPWS indirectly influences financial performance through the operational outcome of organizations (Jackson & Schuler, 1995). Therefore, this study expected a significant positive mediating effect of operational outcome in the nexus between HPWS and financial performance.

The structural model analysis showed a positive and significant complementary partial mediation path ($\beta = 0.209$, $p = 0.005$). Hence, Hypothesis 6 was supported. The indirect effect of HPWS on financial performance through operational outcome ($f^2 = 0.729$) was also substantial, emphasizing the key role of operational outcome in altering HPWS into financial gains.

The finding in chapter five corroborates the hypothesis that operational outcome has a significant complementary partial mediation effect in the link between the HPWS and financial performance of the public enterprises in Ethiopia. This shows that higher level of HPWS leads to enhanced innovation, quality, and customer satisfaction, which in turn, positively influences the financial performance of the enterprises. The result of the study reinforces the behavioral perspective by indicating the process through which HPWS influences financial performance. The result is consistent with prior studies such as Combs et al. (2006), Huselid (1995), Jiang et al. (2012), Park et al. (2023), Rauch & Hatak (2016), Rogg et al. (2001), and Saridakis et al. (2017).

The finding of the hypothesis testing on the mediating effect operational outcome in the link between HPWS and financial performance implies that the managers of public enterprises in Ethiopia can maximize financial performance if they integrate the HPWS

practices of the enterprises with operational outcome. Managers of the public enterprises can increase the contribution of operational outcome by continuously refining their internal operations in order to enhance product quality, innovation, and customer satisfaction.

To sum up, this study used the behavioral perspective to examine the mediating role of HR outcome, and operational outcome in the relationship between the HPWS and financial performance of the public enterprise in Ethiopia. The findings of the hypotheses testing that tested the mediating effects of HR outcome and operational outcome in the relationship between HPWS and financial performance have demonstrated that operational outcome plays a significant positive role in the HPWS-financial performance relationship. The mediating effect of operational outcome in the relationship between the HPWS and financial performance of public enterprises in Ethiopia supports the behavioral perspective as the theory includes organizational effectiveness measures such as HR outcome, operational outcome, and financial outcome while examining the relationship between HPWS and organizational performance. However, the study was not able to find a significant mediating effect of HR outcome in the association between HPWS and financial performance.

6.2.3 Moderating relationships (H8 to H17)

The eighth to seventeenth hypotheses examined the moderating effects of internal fit among the HPWS practices and external fit between HPWS and business strategy on the HR outcome, operational outcome, and financial performance of the public enterprises in Ethiopia. It also assessed the moderated indirect relationships between HPWS and financial performance via HR outcome and operational outcome mediating constructs. HPWS is expected to contribute for better organizational performance when there is complementarity among the HPWS practices, and alignment between the HPWS practices and the competitive strategy of an organization (Han, Kang, Oh, Kehoe, & Lepak, 2019; Posthuma et al., 2013). It is assumed that organizations that are effective in forming better external fit between competitive strategy and HPWS (Baird &

Meshoulam, 1988), and better internal fit among the HPWS practices are capable of achieving superior performance than their competitors (Wright & Snell, 1991).

6.2.3.1 Hypotheses 8 to 12

The eighth to twelfth hypotheses addressed the direct and indirect moderating effect of internal fit in the relationship between and among HPWS, HR outcome, operational outcome, and financial performance in public enterprises in Ethiopia. Grounded in the configurational perspective, the hypotheses suppose that complementarities among HPWS practices are a prerequisite for improved organizational performance. This assumption is also embedded in the RBV theory of the organization and SHRM literatures (Barney, 1991; Dyer, 1984; Schuler & Jackson, 1987; Wernerfelt, 1984).

Internal fit denotes the complementarity among HPWS practices (Barney, 1991; Dyer, 1984; Schuler & Jackson, 1987; Wernerfelt, 1984). It was conceptualized as a first-order construct. The structural model analysis result revealed that internal fit moderated neither the direct nor indirect paths between the HPWS, HR outcome, operational outcome, and financial performance of the public enterprises (β range = 0.007–0.092, $p > 0.05$). As a result, hypotheses eight to twelve were not supported. Regarding moderating effects, the direct moderating effect size of internal fit on operational outcome ($f^2 = 0.000$), HR outcome ($f^2 = 0.014$), and financial performance ($f^2 = 0.007$) was also none to very small. In terms of the indirect moderating effects, internal fit on financial performance through HR outcome ($f^2 = 0.011$) showed a negligible moderation effect, whereas through operational outcome ($f^2 = 0.674$) indicated a large effect size.

The findings in chapter five revealed that internal fit among the HPWS practices does not moderate the direct relationship between the HPWS and HR outcome ($\beta = 0.044$, t-value = .661, $p = 0.509$), operational outcome ($\beta = 0.017$, t-value = 0.262, $p = 0.793$), and financial performance ($\beta = 0.092$, t-value = 1.255, $p = 0.209$) of the public enterprises. In addition, the construct does not moderate the indirect relationship between the HPWS and financial performance of the public enterprises via HR outcome ($\beta = 0.007$, $p =$

0.307) and operational outcome (β = 0.015, p = 0.758) mediators. The result is consistent with previous works such as Huselid (1995) and Venkatraman (1989) that were not able to find a significant direct and indirect moderating effect of internal fit in the relationship between HPWS, HR outcome, operational outcome, and financial performance. However, the finding contradicts some configurational-based arguments (see Delery & Doty, 1996; Delery & Roumpi, 2017; Golding, 2004; Lam & White, 1998).

The result of the hypothesis testing on the direct and indirect moderating effect of internal fit between HPWS and organizational performance implies that the public enterprises in Ethiopia generate no benefit by creating complementarity among their HPWS practices. Therefore, it is better for the enterprises to focus only on implementing HPWS than trying to create internal fit among the HPWS practices.

6.2.3.2 Hypotheses 13 to 17

The thirteenth to seventeenth hypotheses examined the direct and indirect moderating effect of external fit in the relationship between and among HPWS, HR outcome, operational outcome, and financial performance in public enterprises in Ethiopia. Grounded in the contingency theory, the hypotheses claim that the alignment between the HPWS and business strategy of an organization leads to better organizational performance (Fey et al., 2000). HRM scholars also assert that organizations with HPWS that is aligned with their organizational strategy performance better than those with inconsistent HPWS-business strategy alignment (Miles & Snow, 1984; Schuler & Jackson, 1987).

External fit signifies alignment between the HPWS and business strategy of an organization (Fey et al., 2000; Miles & Snow, 1984; Schuler & Jackson, 1987). It was conceptualized in this study as a first-order construct.

The structural model analysis result discovered that external fit moderated neither the direct nor indirect paths between the HPWS, HR outcome, operational outcome, and

financial performance of the public enterprises (β range = -0.139 to 0.050, p > 0.05). Consequently, hypotheses thirteen to seventeen were not supported. The direct moderating effect size of external fit on HR outcome (f^2 = 0.009), operational outcome (f^2 = 0.015), and financial performance (f^2 = 0.004) was also small. However, the indirect moderating effect size of external fit on financial performance through HR outcome (f^2 = 0.011) and through operational outcome (f^2 = 0.678) was small and large respectively.

The results in chapter five of this study demonstrated that external fit between the HPWS and the business strategy of the public enterprises does not moderate the direct relationship between HPWS and HR outcome (β = -0.012, t-value = -0.163, p = 0.871), operational outcome (β = -0.139, t-value = -1.883, p = 0.060), and financial performance (β = 0.050, t-value = 0.589, p = 0.556) of the enterprises. Furthermore, the moderating construct does not moderate the indirect relationship between the HPWS and financial performance of the public enterprises via HR outcome (β = -0.002, p = 0.661) and operational outcome (β = -0.121, p = 0.105) mediators. The finding is consistent with some of the earlier studies. In spite of the logicality of the argument, there is inadequate backing for the significant contribution of external fit on organizational performance (Becker & Huselid, 1998). The empirical studies that support the argument are very limited and have not been able to find sufficient evidence that demonstrates the effect of HPWS is dependent on the business strategy of the organization (Dyer & Reeves, 1995; Hoque, 1999; Lengnick-Hall & Lengnick-Hall, 1988).

However, the finding contradicts some contingency-based arguments (see Delery & Doty, 1996; Schuler & Jackson, 1987). Although some of the previous researches were not able to identify sufficient evidence supporting the moderating effect of external fit in the nexus between HPWS and organizational performance, there are some studies such as Björkman and Xiucheng (2002), Chang and Huang (2005), Hoque (1999), Huang (2001), Huselid and Becker (1997), Khatri (2000), and Khatri (1999) that have found the external fit between HPWS and the business strategy of an organization leading to improved performance.

The result of the hypothesis testing on the direct and indirect moderating effect of external fit between HPWS and organizational performance implies that the enterprises have not been able to enhance their performance by creating alignment between HPWS and business strategy. Accordingly, the public enterprises in Ethiopia can benefit more if they concentrate on universally effective HPWS practices than trying to create alignment between HPWS and business strategy.

In general, the results of the study demonstrated that internal fit and external fit had no significant direct or indirect moderating effects on any of the relationships between HPWS, HR outcome, operational outcome, and financial performance of the public enterprises in Ethiopia. Hence, the study fails to provide support for contingency theory and configurational theory. These discoveries are actually consistent with some of the previous attempts that tried to establish moderated direct and indirect relationships between HPWS and organizational performance using internal fit and external fit as moderators (Huselid, 1995). Given the considerable main effects of HPWS on the HR outcome, operational outcome, and financial performance of the public enterprises, it is unsurprising to conclude that the mere implementation of HPWS practices is more important than any attempts to guarantee such practices have complementarity among each other or alignment with the business strategies of the enterprises. Nevertheless, as both external fit and internal fit have convincing theoretical justifications, further research works are needed before refuting the moderating roles of the constructs in the relationship between HPWS and organizational performance.

6.3 Conclusion and Implications

6.3.1 Conclusion

This study contributes to our understanding of the significance of HPWS in public enterprises. The results of the study demonstrate that HPWS has a positive and significant direct relationship with the HR outcome, operational outcome, and financial performance of public enterprises in Ethiopia. In addition, the research opens the black box by

demonstrating the mediating effects of HR outcome and operational outcome in the relationship between HPWS and financial performance. The result of the indirect relationship test shows that operational outcome partially mediates the association between HPWS and financial performance in the public enterprises; that is, the use of HPWS enhances the innovation, quality, and customer satisfaction level of the enterprises, which, in turn, helps them to get better financial performance. However, HR outcome did not have a significant mediation effect in the HPWS-financial performance relationship. Moreover, as the findings of the moderation analysis revealed that both internal and external fit did not have a significant moderating effect in the direct and indirect relationships between and among the study constructs, the managers of the public enterprises in Ethiopia should focus more on strengthening the main effect of the HPWS than trying to ensure the existence of complementarity among the HPWS practices or alignment between the HPWS practices with the business strategies of the public enterprises. By controlling for both individual and organizational level variables, the result of the study also demonstrated that the use of HPWS significantly contributes to organizational performance beyond and above other well-known drivers of organizational performance. The research also expands our understanding of HPWS by exemplifying the relationship between HPWS and organizational performance in public enterprises in a developing country context.

6.3.2 Theoretical implications

The findings of this research have important theoretical implications to the existing literature. First, the study provides support for the RBV perspective. The significance of capabilities that are internal to the organization such as HRs for sustained competitive advantage has always been an issue of debate among scholars (Hart, 1995). However, RBV theorists hold on to the notion that the HPWS practices of an organization can be a source of sustained competitive advantage (Barney, 1991; Collins & Clark, 2003; Delery & Roumpi, 2017; Golding, 2004; Jiang & Messersmith, 2018; Wright et al., 2001). The results of this study also provide ample evidence for the RBV by showing the direct

effect of HPWS on the HR outcome, operational outcome, and financial performance of public enterprises in a developing country context.

Second, the findings of the research provide support for the universalistic perspective or best-practice approach. According to the universalistic perspective, a bundle of 'best practice' HPWS practices have the potential to enhance organizational performance. It argues that the association between HPWS and organizational performance is universal regardless of organizational strategy, context, country, or sector (Delery & Doty, 1996; Knies et al., 2018; Marchington & Grugulis, 2000). The findings of the research demonstrated a significant positive relationship between the main effect of HPWS and organizational performance, which were represented by HR outcome, operational outcome, and financial performance, in public enterprises in a developing country context. Hence, they provide evidences that demonstrate the contribution of HPWS to superior organizational performance regardless of the strategy used or the context of the organization (Huselid, 1995; Osterman, 1994; Pfeffer' 1994; Terpstra & Rozell, 1993).

Third, the results of the study generated data that refute the best-fit approach (contingency theory and configurational theory). In contrast to the universalistic theory, the contingency and configurational theories assume that organizational performance is contingent up on the existence of vertical integration between an organization's HPWS and its business strategy, and complementarities among the HPWS practices (Golding, 2004; Knies et al., 2018). The theories argue that organizations that have HPWS alignment and complementarities perform better than those that do not have (Delery & Doty, 1996). However, the results of the study showed that internal fit and external fit had no significant direct or indirect moderating effects on any of the relationships between HPWS, HR outcome, operational outcome, and financial performance of the public enterprises in Ethiopia. Thus, they provide evidence that the mere adoption of HPWS practices is more essential than any attempts to ensure such practices have complementarity among each other or alignment with the business strategies of the enterprises.

Fourth, the results of the study generated data that support the behavioral perspective. Limited studies show the mechanism through which HPWS impacts organizational performance. The mechanism through which HPWS contributes to organizational performance was suggested by HRM scholars to be the main focus of future researches (Becker & Gerhart, 1996; Boselie et al., 2005; Guest 2011; Huselid, 1995; Jiang et al., 2012; Kloutsiniotis & Mihail, 2018). This study, therefore, utilizes multiple indirect paths using HR outcome and operational outcome as mediating variables between HPWS and financial performance. HR outcome and operational outcome are proposed by various scholars to mediate the relationship between HPWS practices and financial performance (Armstrong, 2009; Becker, Huselid, Pickus, & Spratt, 1997; Björkman & Xiucheng, 2002; Dyer & Reeves, 1995; Guest 2011; Huselid, 1995; Jiang et al., 2012; Jiang & Messersmith, 2018; MacDuffie, 1995). Consequently, the findings of this study provide evidence supporting the existence of indirect relationship between HPWS and financial performance via operational outcome. Although the result of the study demonstrated that operational outcome has a positive and significant partial mediating effect in the relationship between HPWS and financial performance in the public enterprises, it was not able to find evidence supporting the mediating role of HR outcome in the nexus between HPWS and financial performance.

Finally, the study find support to consider the bundles of HPWS practices as a system than individually. Preceding works on the association between HPWS and organizational performance mainly focused on a single HPWS practice (Boon et al., 2019; Gerhart & Milkovich, 1990; Huselid, 1995; Keramatiyazdi et al., 2023). Majority of the empirical studies examined the effect of individual or very few HPWS practices on organizational performance (Becker & Gerhart, 1996). Focusing on a single HPWS practice presents both theoretical and methodological problems (Huselid, 1995). As an individual HPWS practice may capture the effect of the whole HPWS, focusing on the influence of a single HPWS practice on organizational performance results in an erroneous conclusion as the sum of the individual HPWS practices radically exaggerate their contribution to organizational performance (Huselid, 1995; MacDuffie, 1995; Wright & Boswell, 2002). Hence, as the result of the study indicates, considering HPWS as a system resulted in

enhanced HR outcome, operational outcome, and financial performance in the public enterprises by showing its real contribution. Hence, rather than single HPWS practices, a mutually reinforcing HPWS practices contribute to organizational performance by generating competitive advantage (Björkman & Xiucheng, 2002; Boon et al., 2019; Wright & Boswell, 2002).

6.3.3 Practical implications

In addition to the academic contributions discussed above, the findings of the study have important practical implications for policymakers, public officials, and managers of the public enterprises. There is ample evidence in the study supporting a significant positive association between the use of HPWS and HR outcome, operational outcome, and financial performance. As government officials and managers are continually looking for new methods to enhance and strengthen the performance of public enterprises, the findings of this research indicate that the way the HRs of the enterprises are managed can play a significant positive role in the organizational performance of the public enterprises.

As the result of the study shows a significant direct positive relationship between HPWS and organizational performance, the managers of the public enterprises would do well if they emphasis on how they manage the human side of the enterprises. The greater use of HPWS enhanced not only the HR outcome, but also the operational outcome of the public enterprises. In addition to improving the HR outcome and operational outcome of the public enterprises, HPWS was linked positively and significantly to the financial performance of the public enterprises in Ethiopia. Moreover, it had a significant positive indirect association with the more distal measure of organizational outcome via operational outcome; that is, the use HPWS helped the enterprises to have innovative and quality products with satisfied customers, which, in turn, led them to get better financial performance.

While the findings of the study did not support the moderating effects of internal fit and external fit, the results can have practical implications to the managers of the public enterprises. Although more research is needed, given the substantial main effects of HPWS on the immediate and distal organizational performance outcomes of the public enterprises, it is important for the managers of the public enterprises to focus more on strengthening the main effect of the HPWS and on other essential activities than attempting to ensure the existence of complementarity among the HPWS practices or alignment between the HPWS practices with the competitive strategies of the enterprises.

Finally, the result of the study demonstrated that the use of HPWS significantly contributes to organizational performance beyond and above other well-known drivers of organizational performance. As the study extensively controlled for organizational and individual level control variables based up on the literature, the study highlights to the managers of the public enterprises the significance of HPWS to organizational performance irrespective of the environment. As long as the managers of the public enterprises effectively implement HPWS, they can expect to see added benefits to their organization regardless of the organization age, organization size, capital intensity, organization sector, degree of unionization, and level of technology.

6.4 Limitations of the Study and Directions for Future Research

It is essential to admit the confines of this research and discuss in what ways they could be resolved in future studies. First, the research used cross-sectional data, which limits its ability to make inferences about causality. Although the study used simultaneous equations with the help of SEM, did not have response bias, extensively controlled for both organizational and individual level control variables and found a significant positive association between HPWS, HR outcome, operational outcome, and financial performance, the issue of temporal precedence should be addressed before claiming causality. Therefore, future research might use a longitudinal research design to collect data on both HPWS practices and organizational performance constructs to conclusively understand the nature of relationship and causality between the constructs.

The second limitation of the study was the issue of generalizability. As the data were collected from public enterprises that were owned and operated by the federal government of Ethiopia, the results of the study are only generalizable to enterprises in the public sector but not to the private sector. As the distinctions between the public and private sectors might have significant implications on organizational performance, future research might attempt to collect data from both the public and private sectors and conduct comparative study to see if such sectorial differences are still relevant for the performance of today's contemporary organizations.

Third, the study used perceptual measures of performance. When the organizations under study are from various industries, comparison of organizational performance is affected by external economic factors; in such instances perceptual measures are more appropriate than objective indicators (Bamberger et al., 1989) as the perceptual performance measures provide data that are comparable among organizations from different industries (Lahteenmaki et al, 1998). In addition, as the study organizations were public enterprises, the developmental objectives of some of the enterprises might have an impact on their financial objectives; making objective measures of financial performance inappropriate. Moreover, when objective measures of performance are not available, perceptual measures are appropriate and reliable indicators (Dess & Robinson, 1984). This is because perceptual measures of performance have been found out to correlate well with the objective measures (Geringer & Hebert, 1991; Powell, 1992; Robinson & Pearce, 1988). Although the context of the study organizations and the results of prior studies demonstrated the appropriateness of perceptual organizational performance measures, the study could have been strengthened by adding objective measures of performance. Whereas the appropriateness, availability, and accessibility of objective data are limited, future studies might consider the use of objective performance measures in their research.

Finally, although this study has found a positive and significant association between HPWS and HR outcome, operational outcome, and financial performance, HPWS is not the only SHRM system. Therefore, future studies might consider extending the findings

of this research to get a better understanding of the contributions of various SHRM systems on organizational performance by examining the effect of additional systems of SHRM such as HCWS and HIWS.

REFERENCES

Abraraw Chane (2021). Organizational factors influencing strategic human resource management: An empirical investigation from Ethiopia. *Journal of Strategic Human Resource Management 10*(1), 39-49.

Abugre, J. B., & Nasere, D. (2019). Do high-performance work systems mediate the relationship between HR practices and employee performance in multinational corporations (MNCs) in developing economies? *African Journal of Economic and Management Studies.* DOI: https://doi.org/10.1108/AJEMS-01-2019-0028.

Aczel, A. D., & Sounderpandian, J. (2009). *Complete business statistics* (7th edi). United States of America: McGraw-Hill Companies.

Ahmad, S., & Schroeder, R.G. (2003). The impact of human resource management practices on operational performance: recognizing country and industry differences. *Journal of Operations Management, 21*(1), 19-43.

Amare Werku, Abebe Ejigu, & Abdurezak Mohammed (2022a). The mediating role of employee ambidexterity in the relationship between high-performance work system and employee work performance: An empirical evide nce from ethio-telecom. *Cogent Business & Management, 9*(1). DOI: https://doi.org/10.1080/23311975.2022.213522.

Amare Werku, Abebe Ejigu, & Abdurezak Mohammed (2022b). Fostering employee ambidexterity: The role of high-performance work system and ambidextrous leadership. *Journal of Theoretical and Applied Management, 15*(3). DOI: https://doi.org/10.20473/jmtt.v15i3.38687.

Amare Werku, Abebe Ejigu, & Abdurezak Mohammed (2023). High-performance work system and employee work performance: a moderated mediation model of ambidextrous leadership and employee ambidexterity. *Int. Journal of Business Science and Applied Management*, *18*(1). DOI: https://doi.org/10.20473/jmtt.v15i3.38687.

Anderson, D. R., Sweeney, D. J., & Williams, T. A. (2011). Statistics for business and economics. 11th edi. Mason, OH: South-Western Cengage Learning.

Appelbaum, E., Bailey, T., Berg, P., & Kalleberg, A. L. (2000). *Manufacturing advantage. Why high-performance work systems pay-off*. Ithaca, NY: ILR Press.

Armstrong, M. (2014). *Armstrong's Handbook of Human Resource Management Practice* (13th edi). UK: Ashford Color press Ltd.

Armstrong, M. (2010). *Armstrong's Essential Human Resource Management Practice: A Guide to People Management.* Great Britain and the United States: Kogan Page Limited.

Armstrong, M. (2009). *Armstrong's Handbook of Human Resource Management Practice.* 11th edition. UK and USA: Kogan Page Limited.

Armstrong, C. E., & Shimizu, K. (2007). A Review of Approaches to Empirical Research on the Resource-Based View of the Firm. *Journal of Management*, *33*(6), 959-986.

Armstrong, J. S., & Overton, T. S. (1977). Estimating Nonresponse Bias in Mail Surveys. *Journal of Marketing Research*, *14*(3), 396–402.
DOI: https://doi.org/10.2307/3150783

Arthur, J. (1994). Effects of Human Resource Systems on Manufacturing Performance and Turnover. *Academy of Management Journal, 37,* 670–687. URL: https://www.jstor.org/stable/256705

Bach, S., & Kessler, I. (2007). Human resource management and the new public management. In P. Boxall, J. Purcell and P. Wright (Eds.) *The Oxford Handbook of Human Resource Management,* 469-488. Oxford: Oxford University Press.

Bae, J., & Lawler, J. J. (2000). Organizational and HRM strategies in Korea: Impact on firm performance in an emerging economy. *Academy of Management Journal, 43,* 502-518. URL: https://www.jstor.org/stable/1556407.

Baird, L., & Meshoulam, I. (1988). Managing two fits of strategic human resource management. *Academy of Management Review, 13*(1), 116-128.

Bamberger, P., Bacharach, S., & Dyer, L. (1989). Human resources management and organizational effectiveness: high technology entrepreneurial startup firms in Israel. *Human Resource Management, 28*(3), 349-366.

Barney, J. (1995). Looking inside for competitive advantage. *Academy of Management Executive, 9*(4), 49–61.

Barney, J.B. (1991). Firm resources and sustainable competitive advantage. *Journal of Management, 17,* 99-120.

Bartel, A.P. (2004). Human resource management and organizational performance: evidence from retail banking. *Industrial and labor relations review, 57*(2), 181-203.

Baruch, Y., & Holtom, B.C. (2008). Survey response rate levels and trends in organizational research. *Human Relations, 61*(8), 1139–1160. DOI: https://doi.org/10.1177/0018726708094863.

Becker, B., & Gerhart, B. (1996). The impact of human resource management on organizational performance: progress and prospects. *Academy of Management Journal, 39*(4), 779-801.

Becker, B., & Huselid, M.A. (2006). Strategic human resources management: where do we go from here? *Journal of Management, 32*(6), 898-925.

Becker, B., & Huselid, M.A. (1998). High performance work systems and firm performance: a synthesis of research and managerial implications. *Research in Personnel and Human Resources Management, 16,* 53-101.

Becker, B., Huselid, M.A., Pickus, P.S., & Spratt, M.F. (1997). HR as a Source of Shareholder Value: Research and Recommendations. *Human Resource Management, 36,* 39–47.

Bentler, P.M., & Bonett, D.G. (1980). Significance Tests and Goodness of Fit in the Analysis of Covariance Structures. Psychological Bulletin, 88(3), 588–606.

Bentler, P.M., & Chou, C. (1987). Practical Issues in Structural Equation Modeling. *Sociological Methods & Research, 16*(1), 78–117. DOI: https://doi.org/10.1177/0049124187016001004.

Berg, P. (1999). The effects of high performance work practices on job satisfaction in the United States steel industry. *Industrial Relations, 54,* 111-135.

Björkman, I., & Xiucheng, F. (2002). Human resource management and the performance of Western firms in China. *International Journal of Human Resource Management, 13*(6), 853-864. DOI: https://doi.org/10.1080/09585190210134246.

Boon, C., Den Hartog, D. N., & Lepak, D. P. (2019). A systematic review of human resource management systems and their measurement. *Journal of Management, 45*(6), 2498-2537. DOI: https://doi.org/10.1177/0149206318818718.

Boselie, J.P, Dietz, G., & Boon, C. (2005). Commonalities and contradictions in research on human resource management and performance. *Human resource management journal. 15*(3), 67-94.
DOI: https://dx.doi.org/10.1111/j.1748-8583.2005.tb00154.x

Boselie, P., & Wiele, T. (2002). High performance work systems: "research on research" and the stability of factors over time. ERIM Report Series reference number: ERS-2002-44-ORG.
URL: http://www.eur.nl/WebDOC/doc/erim/erimrs20020419150437.pdf

Boxall, P. (2012). High-performance work systems: what, why, how and for whom? *Asia Pacific Journal of Human Resources, 50,* 169–186.

Boxall, P., Purcell, J., & Wright, P. (2007). Human resource management: Scope, analysis and significance. In P. Boxall, J. Purcell and P. Wright (Eds.) *The Oxford Handbook of Human Resource Management,* 1-16. Oxford: Oxford University Press.

Brown, K. (2004). Human resource management in the public sector. *Public Managemen t Review, 6*(3), 303-309.

Burke, R. J., Allisey, A. F., & Noblet, A. J. (2013). The importance of human resource management in the public sector, future challenges and the relevance of the current collection. *Human Resource Management in the Public Sector,* 1-13.

Chang, W. A., & Huang, T. C. (2005). Relationship between strategic human resource management and firm performance. *International Journal of Manpower, 26*(5), 434- 449. DOI: https://doi.org/10.1108/01437720510615125.

Clark, V. L., & Creswell, J. W. (2015). *Understanding research: A consumer's guide* (2nd edi). United States of America: Pearson Education.

Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment, 7*(3), 309-319.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd edi). United States of America: Lawrence Erlbaum Associates.

Collier, J.E. (2020). *Applied Structural Equation Modeling Using AMOS: Basic to Advanced Techniques.* New York, NY: Routledge.

Collins, C. J., & Clark, K. D. (2003). Strategic human resource practices, top management Team social networks, and firm performance: the role of human resource practices in creating organizational competitive advantage. *Academy of Management Journal, 46*(6), 740–751.

Collis, D.J., & Montgomery, C.A. (1995). Competing on Resources: Strategy for the 1990's. *Harvard Business Review, 73*(4), 118-128.

Combs, J., Liu, Y., Hall, A., & Ketchen, D. (2006). How much do high-performance work practices matter? A meta-analysis of their effects on organizational performance. *Personnel Psychology*, *59*(3), 501–528. DOI: 10.1111/j.1744-6570.2006.00045.x

Cooke, F. L., Xiao, M., & Chen, Y. (2021). Still in search of strategic human resource management? A review and suggestions for future research with China as an example. *Human Resource Management, 60*, 89-118.
DOI: https://doi.org/10.1002/hrm.22029.

Creswell, J. W. (2014). *Research methods: qualitative, quantitative, and mixed methods approaches* (4th edi). United States of America: SAGE Publications.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*, 297-334.

Dagnachew Asrat, & Addissie Shiferaw. (2009). Law of public enterprises cooperatives: Teaching material. The Justice and Legal System Research Institute.

Datta, D. K., Guthrie, J. P., & Wright, P. M. (2005). Human resource management and labor productivity: Does industry matter? *Academy of Management Journal*, *48*(1), 135-145.

Delaney, J. T., & Huselid, M. A. (1996). The impact of human resource management practices on perceptions of organizational performance. *Academy of Management Journal, 39,* 949–969.

Delery, J.E., & Doty, D.H. (1996). Modes of theorizing in strategic human resource management: tests of universalistic, contingency, and configurational performance predictions. *Academy of Management Journal*, *39*(4), 802-835. URL: https://www.jstor.org/stable/256713.

Delery, J. E., & Roumpi, D. (2017). Strategic human resource management, human capital and competitive advantage: is the field going in circles? *Human Resource Management Journal, 27*(1), 1-21. DOI: https://doi.org/10.1111/1748-8583.12137.

Dess, G.G., & Robinson, R.B. Jr. (1984). Measuring organizational performance in the absence of objective measures: the case of privately held firms and conglomerate business units. *Strategic Management Journal, 5*, 265-73.
URL: https://www.jstor.org/stable/2486280.

Dessler, G. (2013). *Human Resource Management* (13th edi). USA: Pearson Education.

De Vaus, D. A. (2002). *Surveys in social research* (5th edi). Australia: Allen & Unwin.

Dewar, R., & Werbel, J. (1979). Universalistic and contingency predictions of employee satisfaction and conflict. *Administrative Science Quarterly. 24*(3), 426-448.

Dyer, L. (1984). Studying human resource strategy: an approach and an agenda. *Industrial Relations, 23*, 156-69.

Dyer, L., & Reeves, T. (1995). Human resource strategies and firm performance: what do we know and where do we need to go? (CAHRS Working Paper #94-29). Ithaca, NY: Cornell University, School of Industrial and Labor Relations, Center for Advanced Human Resource Studies.

Eshete Taddesse. (1995). The state and performance of public enterprises in Ethiopia. *Ethiopian Journal of Economics, 4*(1), 1-38.

Fey, C.F, Björkman, I., & Pavlovskaya, A. (2000). The effect of human resource management practices on firm performance in Russia. *International Journal of Human Resource Management, 11*(1), 1-18. DOI: https://doi.org/10.1080/095851900339963.

Freeman, B.R., & Medoff, L.J. (1984). What do unions do? New York: Basic Books.

Garmendia, A., Elorza, U., & Uribetxebarria, U. (2021). *Strategic Human Resource Management: 37 Years in Academia, How Many in Practice? A Focus on Large Companies*. In book: Beyond Human Resources - Research Paths Towards a New Understanding of Workforce Management within Organizations. IntechOpen. DOI:10.5772/intechopen.96677.

Gerhart, B., & Milkovich, G.T. (1990). Organizational differences in managerial compensation and firm performance. *Academy of Management Journal 33*(4), 663–691. URL: https://www.jstor.org/stable/256286.

Geringer, M.J., & Hebert, L. (1991). Measuring performance of international joint ventures. *Journal of International Business Studies, 28,* 249–263.

Gile, P. P, van de Klundert, J., & Buljac-Samardzic, M. (2022). Strategic human resource management and performance in public hospitals in Ethiopia. *Front. Public Health, 10*, 1-12. DOI: https://doi.org/10.3389/fpubh.2022.915317.

Gittell, J. H., Seidner, R., & Wimbush, J. (2010). A relational model of how high-performance work systems work. *Organization Science, 21,* 490-506.

Gold, A.H., Malhotra, A., & Segars, A.H. (2001). Knowledge management: An organizational capabilities perspective. Journal of Management Information Systems, 18(1), 185-214.

Golding, N. (2004). Strategic human resource management. In I. Beardwell, L. Holden and T. Claydon (Eds.) *Human Resource Management: A contemporary approach*, (4th edi), 32-74. Essex: Pearson Education.

Gould-Williams, J. S. (2003). The importance of HR practices and workplace trust in achieving superior performance: A study of public-sector organizations. *The International Journal of Human Resource Management*, *14*(1), 28-54. DOI: https://doi.org/10.1080/09585190210158501.

Green, K. W., Wu, C., Whitten, D., & Medlin, B. (2006). The impact of strategic human resource management on firm performance and HR professionals' work attitude and work performance. *International Journal of Human Resource Management, 17,* 559-579.

Groves, R. M., Fowler, F. J., Couper, M. P., Lepkowski, J. M., Singer, E., & Tourangean, R. (2009). *Survey methodology*. Hoboken, New Jersey: John Wiley & Sons.

Guest, D. E. (2011). Human resource management and performance: still searching for some answers. *Human Resource Management Journal*, *21*(1), 3-13. DOI: https://doi.org/10.1111/j.1748-8583.2010.00164.x.

Guthrie, J. P. (2001). High-involvement work practices, turnover, and productivity: evidence from New Zealand. *Academy of Management Journal*, *44*(1), 180-192. URL: http://www.jstor.com/stable/3069345.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2018). *Multivariate data analysis* (7th edi). Andover, Hampshire: Cen gage Learning EMEA.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th edi). Andover, Hampshire: Cen gage Learning EMEA.

Han, J. H., Kang, S., Oh, I., Kehoe, R. R., & Lepak, D. P. (2019). The goldilocks effect of strategic human resource management? Optimizing the benefits of a high performance work system through the dual alignment of vertical and horizontal fit. *Academy of Management Journal*, *62*(5), 1388-1412.

Harel, G. H., & Tzafrir, S. S. (1999). The effect of human resource Management practices on the Perceptions of organizational and Market performance of the firm. *Human Resource Management, 38*(3), 185-200.

Hart, S. L. (1995). A Natural-Resource-Based View of the Firm. *The Academy of Management Review, 20*(4), 986-1014.

Henseler, J., Ringle, C.M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*(1), 115–135.

Hermans, M., & Ulrich, M. D. (2021). How symbolic human resource function actions affect the implementation of high-performance work practices: The mediating effect of influence on strategic decision-making. *Human Resource Management Journal, 31*, 1063-1081. DOI: https://doi.org/10.1111/1748-8583.12361.

Hoque, K. (1999). Human resource management and performance in the UK hotel industry. *British Journal of Industrial Relations. 37*(3), 419-443.

Huang, T. C. (2001). The effects of linkage between business and human resource management strategies. *Personnel Review, 30*(2), 132-151.

Hunter, L. W., & Hitt, L. M. (2001). *What makes a high-performance workplace? Evidence from retail bank branches.* Financial Institutions Center. The Wharton School, University of Pennsylvania.

Huselid, M.A. (1995). The Impact of Human Resource Management Practices on Turnover, Productivity, and Corporate Financial Performance. *Academy of Management Journal*, *38*(3), 635–672.

Huselid, M.A., & Becker, B. (1997). The Impact of High Performance Work Systems, Implementation Effectiveness, and Alignment with Strategy on Shareholder Wealth. Paper presented at the 1997 Academy of Management Meeting, Boston, MA.

Ichniowski, C., Shaw, K., & Prennushi, G. (1997). The effects of human resource management practices on productivity. (NBER Working Paper #5333). Cambridge, MA: National Bureau of Economic Research.

IMF. (2020a). The Federal Democratic Republic of Ethiopia: 2019 Article IV Consultation and Requests for Three-Year Arrangement under the Extended Credit Facility and an Arrangement under the Extended Fund Facility-Press Release and Staff Report. The International Monetary Fund.

IMF. (2020b). State-Owned Enterprises: The Other Government. Fiscal Monitor, The International Monetary Fund.

Islam, M. N., Absar, M. M. N., & Mahmood, M. (2022). A systematic review of 50 years of human resource management research in Bangladesh: retrospective reflections and forward trajectories. *South Asian Journal of Human Resource Management, 9(2),*196-224. DOI: https://doi.org/10.1177/23220937221124745.

Ivancevich, J. (2010). *Human Resource Management* (11th edi). New York, NY: McGraw Hill.

Jackson, S.E., & Schuler, R.S. (1995). Understanding human resource management in the context of organizations and their environments. *Annual Review of Psychology, 46,* 237-264.

Jackson, S.E., Schuler, R.S., & Jiang, K. (2014). An aspirational framework for strategic human resource management. *The Academy of Management Annals*, *8*(1), 1-56.

Jaya, W. I., Matriadi, F., Faliza, N., Marbawi, Mariyudi, Ikramuddin, & Arifin, A. H. (2024). The influence of high-performance work systems and servant leadership on organizational performance through the mediation role of employee work engagement at bank Indonesia representative aceh. *Jurnal ekonomi manajemen dan bisnis*, *25*(1).

Jiang, K., & Messersmith, J. (2018). On the shoulders of giants: A meta-review of strategic human resource management. *The International Journal of Human Resource Management, 29*(1), 6-33.
DOI: https://doi.org/10.1080/09585192.2017.1384930.

Jiang, K., Lepak, D. P., Hu, J., & Baer, J. C. (2012). How does human resource management influence organizational outcomes? A meta-analytic investigation of mediating mechanisms. *Academy of Management Journal*, *55*(6), 1264-1294. DOI: https://dx.doi.org/ 10.5465/amj.2011.0088.

Kaufman, B. E. (2007). The development of HRM in historical and international perspective. In P. Boxall, J. Purcell and P. Wright (Eds.) *The Oxford Handbook of Human Resource Management,* 19-47. Oxford: Oxford University Press.

Kaushik, D., & Mukherjee, U. (2022). High-performance work system: a systematic review of literature. *International Journal of Organizational Analysis, 30*(6), 1624-1643.

Keramatiyazdi, Z., Alizadesani, M., & Hosseini, A. (2023). Investigating the effect of high-performance work systems (hpws) on organizational performance. *Iranian Journal of Management Studies* (*IJMS), 16*(3), 711-724. DOI: http//doi.org/10.22059/ijms.2022.330612.674754.

Kessler, E. (2013). Encyclopedia of Management Theory. Thousand Oaks, CA: Sage.

Khatri, N. (2000). Managing human resource for competitive advantage: a study of companies in Singapore. *International Journal of Human Resource Management, 11*(2), 336-365. DOI: https://doi.org/10.1080/095851900339909.

Khatri, N. (1999). Emerging issues in strategic HRM in Singapore. *International Journal of Manpower, 20*(8), 516-529. URL: http://www.emerald-library.com.

Kline, R.B. (2016). *Principles and Practice of Structural Equation Modeling* (3rd edi). New York, NY: Guilford Press.

Kloutsiniotis, P. V., & Mihail, D. M. (2018). The link between perceived high-performance work practices, employee attitudes and service quality: The mediating and moderating role of trust. *Employee Relations, 40*(5), 801–821. DOI: http://doi.org/10.1108/ER-08-2017-0201.

Knies, E., Borst, R. T., Leisink, P., & Farndale, E. (2022). The distinctiveness of public sector HRM: A four-wave trend analysis. *Human Resource Management Journal, 32,* 799-825.

Knies, E., Boselie, P., Gould-Williams, J., & Vandenabeele, W. (2018). Strategic human resource management and public sector performance : context matters. *The International Journal of Human Resource Management*. 1–13. DOI: https://doi.org/10.1080/09585192.2017.1407088.

Koch, M. J., & McGrath, R. G. (1996). Improving labor productivity: Human resource management policies do matter. *Strategic Management Journal, 17*, 335-354.

Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration, 11*(4), 1–10. DOI: https://doi.org/10.4018/ijec.2015100101.

Kothari, C. R. (2004). *Research methodology: methods and techniques* (2nd edi). New Delhi: New age international publishers.

Kraaijenbrink, J., Spender, J. C., & Groen, A. J. (2010). The Resource-Based View: A review and assessment of its critiques. *Journal of Management, 36*(1), 349-372.

Lado, A. A. and Wilson, M. C. (1994). Human resources systems and sustained competitive advantage: A competency-based perspective. *Academy of Management Review, 19*(4), 699–727. URL: https://www.jstor.org/stable/258742

Lahteenmaki, S., Storey, J., & Vanhala, S. (1998). HRM and company performance: the use of measurement and the influence of economic cycles. *Human resource Management Journal, 8*(2). 51-65.

Lam, L. W., & White, L. P. (1998). Human Resource Orientation and Corporate performance. *Human Resource Development Quarterly, 9*(4). 351-364.

Laursen, K., & Foss, N. J. (2003). New human resource management practices, complementarities and the impact on innovation performance. *Cambridge Journal of Economics 27*, 243-263.

Lengnick-Hall, C.A., & Lengnick-Hall, M.L. (1988). Strategic human resource management: A review of the literature and a proposed typology. *Academy of Management Review, 13*(3), 454-470. URL: http://www.jstor.com/stable/258092.

Li, J. (2003). Strategic human resource management and MNEs' performance in China. *International Journal of Human Resource Management, 14*(2), 157-173. DOI: https://doi.org/10.1080/0958519021000029063.

Li, M., & Rasiah, R. (2025). High-performance work systems, psychological empowerment, and power distance orientation in shaping employee innovation, a moderated mediation model. *Scientific Reports.* 157-173. DOI: **10.1038**/s41598-025-08522-0.

Liao, H., Toya, K., Lepak, D. P., & Hong, Y. (2009). Do they see eye to eye? Management and employee perspectives of high-performance work systems and influence processes on service quality. *Journal of Applied Psychology, 94,* 371–391.

MacCallum, R.C., Browne, M.W., & Sugawara, H.M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods, 1*(2), 130–149.

MacDuffie, J. (1995). Human resource bundles and manufacturing performance: organizational logic and flexible production systems in the world auto industry. *Industrial and Labor Relations Review, 48*(2), 197–221.

Macky, K., & Boxall, P. (2007). The relationship between 'high-performance work practices' and employee attitudes: An investigation of additive and interaction effects. *International Journal of Human Resource Management, 18,* 537–567.

Mahoney, J. T., & Pandian, J. R. (1992). The resource-based view within the conversation of strategic management. *Strategic Management Journal, 13*(5), 363-380.

Marchington, M., & Grugulis, I. (2000). 'Best practice' human resource management: perfect opportunity or dangerous illusion? *International Journal of Management Reviews, 11*(6), 1104-1124.

Mathis, R. L., & Jackson, J. H. (2011). *Human Resource Management* (13th edi). USA: South-Western Cengage Learning.

Mekonnen Manyazewal. (1993). The macro economic policy environment and public enterprise reform in Ethiopia. *Privatization and Public Enterprise Reform in Ethiopia*, 101-110.

Mesfin Taffesse. (2009). The Ethiopian Civil Service Reform Program. In Taye Assefa (Ed.), Digest of Ethiopia's National Policies, Strategies and Programs (pp. 373–417). Addis Ababa, Ethiopia: Forum for Social Studies.

Messersmith, J. G., Patel, P. C., & Lepak, D. P. (2011). Unlocking the Black Box: Exploring the Link between High-Performance Work Systems and Performance. *Journal of Applied Psychology, 96*(6), 1105-1118. DOI: https://doi.org/10.1037/a0024710.

Meyer, J. P., & Allen, N. J. (1997). *Commitment in the workplace: Theory, research, and application.* New Delhi: SAGE Publications, Inc.

Meyer, J. P., & Allen, N. J. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review, 1,* 61–89.

Meyer, J. P., & Smith, C. A. (2000). HRM Practices and Organizational Commitment: Test of a Mediation Model. *Canadian Journal of Administrative Sciences 17*(4), 319-331.

Michie, J., & Sheehan, M. (2005). Business strategy, human resources, labor market flexibility and competitive advantage. *International Journal of Human Resource Management, 16,* 445-464.

Miles, R. E., & Snow, C. C. (1984). Designing strategic human resources systems. *Organizational Dynamics, 12*(4), 36-52.

Nunnally, J.C., & Bernstein, I.H. (1994). *Psychometric Theory* (3rd edi). New York, NY: McGraw-Hill.

O'riordan, J. (2017). The practice of human resource management. *State of the public service series, 20*.

Osterman, P. (1994). How common is workplace transformation and who adopts it? *Industrial and Labor Relations Review, 47*(2), 173-188.
URL: https://www.jstor.org/stable/2524415.

Park, J., Ok, C., & Ryu, S. (2023). The two faces of HPWS in employee perceptions and organizational performance. *Asia Pacific Management Review, 28*, 519-530. DOI: 10.1016/j.apmrv.2023.03.001.

Peteraf, M. A. (1993). The Cornerstones of Competitive Advantage: A Resource-Based View. *Strategic Management Journal, 14*(3), 179-191.

Pfeffer, J. (1998). Seven practices of successful organizations. *California Management Review 40*(2), 96–124.

Pfeffer, J. (1995). Producing sustainable competitive advantage through the effective management of people. *Academy of Management Executive, 9*, 55–69.

Pfeffer, J. (1994). *Competitive Advantage Through People: Unleashing the Power of the Workforce*. Boston: Harvard Business School Press.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y., & Podsakoff, N.P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879–903.

Posthuma, R. A., Campion, M.C., Masimova, M., & Campion, M. A. (2013). A high performance work practices taxonomy: integrating the literature and directing future research. *Journal of Management, 39*(5), 1184-1220. DOI: https://doi.org/10.1177/0149206313478184.

Powell, T.C. (1992). Organizational alignment as a competitive advantage. *Strategic Management Journal, 13*(2), 119–134. URL: https://www.jstor.org/stable/2486409.

Rauch, A., & Hatak, I. (2016). A meta-analysis of different HR-enhancing practices and performance of small and medium sized firms. *Journal of Business Venturing, 31*(5), 485–504. DOI: 10.1016/j.jbusvent.2016.05.005

Richard, O. C., & Johnson, N. B. (2001). Strategic human resource management effectiveness and firm performance. *International Journal of Human Resource Management, 12*(2), 299-310. DOI: https://doi.org/10.1080/09585190121674.

Robinson, M. (2015). From old public administration to the new public service: implications for public sector reform in developing countries. UNDP Global Centre for Public Service Excellence. Singapore.

Robinson, R.B., & Pearce, J.A. (1988). Planned patterns of strategic behavior and their relationship to business-unit performance. *Strategic Management Journal, 9*(1), 43-60. URL: https://www.jstor.org/stable/2486001.

Rogg, K. L., Schmidt, D. B., Shull, C., & Schmitt, N. (2001). Human resource practices, organizational climate, and customer satisfaction. *Journal of Management 27*, 431–449.

Rowley, C., & Jackson, K. (2011). *Human Resource Management: The Key Concepts.* USA and Canada: Routledge.

Russell, J. S., Terborg, J. R., & Powers, M. L. (1985). Organizational performances and organizational level training and support. *Personnel Psychology, 38,* 849–863.

Saridakis, G., Lai, Y., & Cooper, C. L. (2017). Exploring the relationship between HRM and firm performance: A meta-analysis of longitudinal studies. *Human Resource Management Review, 27* (1), 87–96.

Saunders, M; Lewis, P., & Thornhill, A. (2023). *Research methods for business students* (9th edi). England: Pearson Education Limited.

Schmidt, F. L., Hunter, J. E., McKenzie, R. C., & Muldrow, T. W. (1979). Impact of valid selection procedures on work-force productivity. *Journal of Applied Psychology, 64*, 609–626.

Schuler, R. S. (1992). Strategic human resource management: Linking people with the strategic needs of the business. *Organizational Dynamics, 21*(1), 18–32.

Schuler, R. S., & Jackson, S. E. (1987). Linking competitive strategies with human resource management practices. *Academy of Management Executive, 1*(3), 207-219.

Schumacker, R.E., & Lomax, R.G. (2004). *A Beginner's Guide to Structural Equation Modeling* (2nd edi). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Sheppeck, M. A., & Militello, J. (2000). Strategic HR configurations and organizational performance. *Human Resource Management, 39,* 5-17.

Sheref Betabo, Demis Alamirew, & Zerihun Kinde (2024). Transforming Ethiopian Higher Education Institutions: Multilevel Analysis of High Performance Work Systems, Engagement, and Justice. *HELIYON*. DOI: https://doi.org/10.1016/ j.heliyon.2024.e32942.

Short, R. P. (1984). The role of public enterprises: an international statistical comparison. In *public enterprise in mixed economies: some macroeconomic aspects.* R. Floyd, C. Gray, and R. Short (Eds.). International Monetary Fund. Washington, D.C.

Smith, M. C. (2024). Public enterprise: A systematic literature review. In *Strategic leadership and sustainable development in public enterprises*. D. Tavželj (Ed.). International Center for Promotion of Enterprises. Ljubljana, Slovenia.

Solomon Markos, & Meheretab Lemma (2022). Assessment of strategic human resource management practices and challenges in selected Ethiopian commercial banks. *Journal of Strategic Human Resource Management 11*(1), 23-34.

Spreitzer, G. (2007). Giving peace a chance: Organizational leadership, empowerment, and peace. *Journal of Organizational Behavior, 28,* 1077–1095.

Spreitzer, G. (1996). Social structural characteristics of psychological empowerment. *Academy of Management Journal, 39,* 483–504.

Spreitzer, G. M. (1995). Psychological empowerment in the workplace: Dimensions, measurement, and validation. *The Academy of Management Journal, 38*(5), 1442-1465.

Tadesse Wodajo, & Dawit Senbet. (2017). Does privatization improve productivity? Empirical evidence from Ethiopia. *International Journal of African Development, 4*(2), 5-26.

Takeuchi, R., Chen, G., & Lepak, D. P. (2009). Through the looking glass of a social system: Cross level effects of high-performance work systems on employees' attitudes. *Personnel Psychology, 62*, 1–29.

Takeuchi, R., Lepak, D. P., Wang, H., & Takeuchi, K. (2007). An empirical examination of the mechanisms mediating between high-performance work systems and the performance of Japanese organizations. *Journal of Applied Psychology, 92*, 1069–1083.

Terpstra, D.E., & Rozell, E.J. (1993). The Relationship of Staffing Practices to Organizational Level Measures of Performance. *Personnel Psychology*, *46*, 27–48.

Tewodros Meheret. (2014). The concept and characteristics of public enterprises in Ethiopia: an overview. *Mizan Law Review, 8*(2), 333-370.

The Federal Government of Ethiopia. (2024). A proclamation on federal government-owned enterprises No.1314/2024.

Thomas, K. W., & Velthouse, B. A. (1990). Cognitive elements of empowerment: an "Interpretive" model of intrinsic task motivation. *Academy of Management Review, 15*(4), 666–681.

Truss, C. (2001). Complexities and controversies in linking HRM with organizational outcomes. *Journal of Management Studies, 38,* 1121-1149.

Ulrich, D. (1997). Measuring human resources: an overview of practice and a prescription for results. *Human Resource Management, 36*(3), 303-320.

Venkatraman, N., & Ramanujam, V. (1986). Measurement of business performance in strategy research: a comparison of approaches. *Academy of Management Review, 11*(4), 801-814. URL: https://www.jstor.org/stable/258398.

Wagner, J. A. (1994). Participation's Effect on Performance and Satisfaction: A Reconsideration of Research Evidence. *Academy of Management Review, 19,* 312–331.

Way, S. A. (2002). High performance work systems and intermediate indicators of firm performance within the US small business sector. *Journal of Management, 28*(6), 765-785.

Way, S. A., & Thacker, J. W. (2001). The successful implementation of strategic human resource management practices: A Canadian survey. *International Journal of Management, 18*(1), 25–32.

Wernerfelt, B. (1984). A resource based view of the firm. *Strategic Management Journal, 5,* 171-180.

Whitener, E. M. (2001). Do 'high commitment' human resource practices affect employee commitment? A cross-level analysis using hierarchical linear modeling. *Journal of Management 27,* 515–535.

Wright, P. M., & Ulrich, M. D. (2017). A road well-traveled: the past, present, and future. *Annual Review of Organizational Psychology and Organizational Behavior, 4*(1), 45–65. DOI: https://doi.org/10.1146/annurev-orgpsych-032516-113052.

Wright, P. M., Gardner, T. M., Moynihan, L. M., & Allen, M. R. (2005). The relationship between HR practices and firm performance: examining causal order. *Personnel Psychology, 58*, 409-446.

Wright, P. M., Gardner, T. M., & Moynihan, L. M. (2003). The impact of HR practices on the performance of business units. *Human Resource Management Journal, 13*(3), 21-36.

Wright, P. M., & Boswell, W. R. (2002). Desegregating HRM: A review and synthesis of micro and macro human resource management research. *Journal of Management, 28*(3), 247–276.

Wright, P., Gardner, T., Moynihan, L., Park, H., Gerhart, B., & Delery, J. (2001). Measurement error in research on human resources and firm performance: additional data and suggestions for future research. *Personnel Psychology, 54*, 875-902.

Wright, P.M , McCormick, B., Sherman, W.S., & McMahan, G.C. (1999). The role of human resource practices in petro-chemical refinery performance. *International Journal of Human Resource Management, 10*(4), 551-571.
DOI: https://doi.org/10.1080/095851999340260.

Wright, P. M., McMahan, G. C., McCormick, B., & Sherman, W. S. (1998). Strategy, core competence, and HR involvement as determinants of HR effectiveness and refinery performance. *Human Resource Management, 37(1),* 17–29.

Wright, P.M., McMahan, G.C., & McWilliams, A. (1994). Human resources and sustained competitive advantage: a resource-based perspective. *International Journal of Human Resource Management, 5*(2), 301-326.

Wright, P. M., & McMahan, G. C. (1992). Theoretical perspectives for strategic human resource management. *Journal of Management, 18*(2), 295–320.

Wright, P. M., & Snell, S. A. (1991). Toward an integrative view of strategic human resource management. *Human Resources Management Review, 1*(3), 203-225.

Wright, T. A., & Bonett, D. G. (2002). The moderating effects of employee tenure on the relation between organizational commitment and job performance: A meta-analysis. *Journal of Applied Psychology, 87*,1183–1190.

Youndt, M. A., & Snell, S. A. (2004). Human resource configurations, intellectual capital, and organizational performance. *Journal of Managerial Issues, 16*(3), 337-360. URL: https://www.jstor.org/stable/40604485.

Youndt, M. A., Snell, S. A., Dean, J. W., & Lepak, D. P. (1996). Human Resource Management, Manufacturing Strategy, and Firm Performance. *Academy of Management Journal, 39*(4), 836–866. URL: https://www.jstor.org/stable/256714.

Zheng, C. (2001). The relationship between HRM and Chinese SME performance. *International Journal of Organizational Behavior, 4*(4), 125-137.

LIST OF PUBLICATIONS

1. Reda, W. A., & Eshetu, B. T. (2025). The moderating effect of internal fit in the relationship between HPWS and financial performance in public enterprises in Ethiopia. *Management Dynamics, 24*(2), 128–144. https://doi.org/10.57198/2583-4932.1351

2. Reda, W. A. & Eshetu, B. T. (2025). The moderating effect of external fit in the relationship between HPWS and financial performance in public enterprises in Ethiopia. *Journal of Perspectives in Management – JPM, 9,* e265541. https://doi.org/10.51359/2594-8040.2025.265541

3. Reda, W. A. & Eshetu, B. T. (2025). The Mediating Effects of HR Outcome and Operational Outcome in the Relationship between HPWS and Financial Performance in Public Enterprises in Ethiopia. *Annals of the University of Craiova for Journalism, Communication and Management, 11*, 125-132. https://doi.org/10.5281/zenodo.15851165

APPENDICES

Appendix A: Federal Government Owned Public Enterprises in Ethiopia as of August 2024

No.	Name of public enterprise
1	Ethiopian Agricultural Businesses Corporation
2	Ethiopia Trading and Business Corporation
3	Ethiopian Tourist Trading Enterprise
4	National Alcohol and Liquor Factory
5	Ethiopian Minerals Petroleum and Bio-fuel Corporation
6	Chemical Industry Corporation
7	Sugar Industry Group
8	Ethio Telecom
9	Ethiopian Electric Utility
10	Ethiopian Petroleum Supply Enterprise
11	Commercial Bank of Ethiopia
12	Ethiopian Insurance Corporation
13	Berhanena Selam Printing Enterprise
14	Education Materials Production and Distribution Enterprise
15	Ethiopian Pulp and Paper Share Company
16	Ethiopian National Lottery Administration
17	Ghion Hotel
18	Spa Service Enterprise
19	Genet Hotel Enterprise
20	Development and Hotel Company
21	Ethiopian Airlines Group
22	Ethiopian Shipping and Logistics Services Enterprise
23	Ethiopian Toll Roads Enterprise
24	Federal Housing Corporation
25	Ethiopian Construction Works Corporation
26	Ethiopian Construction Design and Supervision Works Corporation
27	Ethiopian Railways Corporation
28	Ethiopian Postal Service Enterprise
29	Development Bank of Ethiopia
30	Liability and Asset Management Corporation
31	Ethio-Engineering Group
32	National Veterinary Institute
33	Ethiopian Electric Power
34	Industrial Parks Development Corporation
35	Ethiopian Industrial Input Development Enterprise

Source: Ministry of Finance

Appendix B: Assessment of Normality

Construct	Items	Skewness	Kurtosis
HPWS	HPWS3	-.348	-.480
	HPWS4	-1.178	2.087
	HPWS6	-1.055	1.194
	HPWS9	-1.042	1.166
	HPWS11	-1.038	.825
	HPWS14	-1.027	.863
	HPWS15	-.592	-.343
HRO	HRO1	-.758	.613
	HRO4	-.840	.858
	HRO5	-.870	.583
	HRO22	-.649	-.182
	HRO28	-.197	-.877
	HRO29	-.488	-.553
External Fit	EF1	-.704	.379
	EF2	-.708	.450
	EF3	-.323	-.108
Internal Fit	IF1	-.433	-.241
	IF2	-.501	.017
	IF3	-.816	.419
Operational Outcome	OO1	-.848	.668
	OO2	-.903	.540
	OO3	-.599	-.045
Financial Performance	FP1	-.734	-.059
	FP2	-.779	.136
	FP3	-.930	.870
	FP4	-.796	.093
Technology	Tec	-.732	-.153

Appendix C: Descriptive Statistics of the Measurement Items

Construct	Item	Mean	SD
HPWS	HPWS3	3.342	.9763
	HPWS4	3.913	.8506
	HPWS6	3.898	.9189
	HPWS9	3.969	.9023
	HPWS11	3.872	.9690
	HPWS14	3.699	.9741
	HPWS15	3.421	1.0536
HRO	HRO1	3.747	.8013
	HRO4	3.758	.8308
	HRO5	3.670	.8607
	HRO22	3.531	.9238
	HRO28	3.345	.9739
	HRO29	3.444	.9547
External Fit	EF1	3.696	.9245
	EF2	3.777	.8686
	EF3	3.584	.8465
Internal Fit	IF1	3.640	.9378
	IF2	3.611	.9088
	IF3	3.718	.9256
Operational Outcome	OO1	3.888	.8656
	OO2	3.820	.9474
	OO3	3.513	.9101
Financial Performance	FP1	3.748	1.0243
	FP2	3.873	.9337
	FP3	4.057	.8614
	FP4	3.827	.9992
Technology	Tec	3.820	1.0037

Note: N = 358, SD = Standard Deviation

Appendix D: Structured Questionnaire Used to Collect Data from Managers

High Performance Work System and Organizational Performance

Your views on the high-performance work system practices of public enterprises in Ethiopia

Dear Sir or Madam,

I am a PhD student in Public Management and Policy at Addis Ababa University. Currently, I am undertaking a research as part of the requirements for the successful completion of the program. The main objective of the research is to examine the high-performance work system practices of public enterprises in Ethiopia.

This questionnaire, therefore, is component of the research project to identify and understand manager's perceptions about the high-performance work system practices of public enterprises in Ethiopia. Since I have chosen you as a viable source of data, I would like to kindly request you to cooperate by responding honestly to the questions. Your responses are vital in enabling me to gain a thorough understanding of the topical issue.

Your decision to participate in the study is completely voluntary. If you do choose to participate, you will be able to complete the questionnaire within 20 minutes. Please use the spaces provided in order to answer the questions. I would like to assure you that the data you provide will be taken care of in the strictest confidence and only be used for academic purposes without disclosing your identity. Please notice that you are not required to write your name anywhere on the questionnaire.

I hope you will understand the significance of the issue and be willing to take part in the study. After completing the questionnaire, could you please hand it over to me? If you need any further information, please telephone me on 0911890541 or email me on wondmau@gmail.com.

Thank you for your time and cooperation.

Wondimagegne Assefa Reda

Please indicate your response by putting X or √ mark or filling the empty spaces as appropriate.

1. Gender: ☐ Male ☐ Female

2. Your work department: _____

3. Your level of management: ☐ Top level ☐ Middle level ☐ Lower level

4. Age: _____Years

5. Educational qualification: ☐ Certificate ☐ Diploma ☐ BA/BS ☐ MA/M☐ PhD

6. Your basic monthly salary in Ethiopian Birr: _____ Birr

7. How long have you been working for the company? _____Year _____Months

	Beside each statement, please tick the box that most accurately describes the HPWS practices that exist in your organization	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
1.	This organization administers one or more employment tests prior to hiring					
2.	This organization provides internal promotion opportunity by reserving non-entry level jobs to its existing employees					
3.	Promotions in this organization are primarily based upon merit or performance as opposed to seniority					
4.	This organization hires after carefully following a rigorous recruiting process					
5.	This organization routinely administers attitude surveys to identify and correct employee morale problems					
6.	This organization involves employees in programs that are designed to elicit participation and employee input (e.g., quality circles, problem-solving teams or similar groups)					
7.	Employees in this organization have access to a formal grievance and/or complaint resolution system					

8.	This organization provides operating performance information to its employees					
9.	This organization provides financial performance information to its employees					
10.	This organization provides information on strategic plans to its employees					
11.	Employees of this organization receive formal performance appraisal and feedback on a routine basis					
12.	Employees of this organization receive formal performance feedback from more than one source (i.e., from several individuals such as supervisors, peers, etc.).					
13.	Compensation in this organization is partially contingent on group performance (e.g., gainsharing, profit sharing, etc.)					
14.	Pay in this organization is based on a skill or knowledge-based system (versus a job-based system); i.e., pay is primarily determined by the employee's skill or knowledge level as opposed to the particular job that they hold					
15.	This organization provides rigorous training to employees in company-specific/job-related skills (i.e., task or firm-specific training)					
16.	This organization provides rigorous training to employees in generic skills (e.g., problem-solving, communication skills, etc.)					
17.	This organization provides rigorous training to employees in a variety of jobs or skills ("cross training") and/or routinely performing more than one job (are "cross utilized").					
18.	Employees in this organization are organized in self-directed teams in performing a major part of their work roles					
	Beside each statement, please tick the box that most accurately reflects the HPWS alignment and complementarities that exist in your organization	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
1.	My organization makes an explicit effort to align business and HR strategies					
2.	The HR department is involved in your organization's strategic planning process					
3.	HR managers throughout the organization are viewed by those outside the function as partners					

	in the management of the business and agents for change					
4.	This organization has a human resource strategy that is formally endorsed and actively supported by the top management					
5.	The human resource policies of this organization are deliberately integrated with each other					
6.	This organization has consistent human resource policies across its various divisions or business units					
	Beside each statement, please tick the box that best describes the HR outcomes that exist in your organization	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
1.	In general, employees like working in this organization					
2.	In general, employees don't like their job					
3.	All things considered, employees feel pretty good about their job					
4.	Employees would be happy to spend the rest of their career in this organization					
5.	Employees really feel as if this organization's problems are their own					
6.	Employees do not feel like 'part of the family' at this organization					
7.	Employees do not feel a strong sense of belonging to this organization					
8.	Employees do not feel 'emotionally attached' to this organization					
9.	This organization has a great deal of personal meaning for the employees here					
10.	It would be very hard for employees to leave this organization right now, even if they wanted to					
11.	Too much of employees life would be disrupted if they decided they wanted to leave this organization right now					
12.	Right now, staying with this organization for employees is a matter of necessity as much as desire					
13.	I believe that employees have too few options to consider leaving this organization					
14.	One of the few negative consequences of leaving this organization for employees would					

	be the scarcity of available alternatives					
15.	One of the major reasons employees continue to work for this organization is that leaving would require considerable personal sacrifice; another organization may not match the overall benefits employees have here					
16.	If employees had not already put so much of their self into this organization, they might consider working elsewhere					
17.	Employees do not feel any obligation to remain with this organization					
18.	Even if it were to their advantage, employees do not feel it would be right to leave this organization now					
19.	Employees feel guilty if they left this organization now					
20.	This organization deserves employees loyalty					
21.	Employees would not leave this organization right now because they have a sense of obligation to the people in it					
22.	Employees owe a great deal to this organization					
23.	The work employees do in this organization is very important to them					
24.	The job activities are personally meaningful to the employees here					
25.	The work employees do is meaningful to them					
26.	Employees are confident about their ability to do their job					
27.	Employees are self-assured about their capabilities to perform their work activities					
28.	Employees have mastered the skills necessary for their job					
29.	Employees have significant autonomy in determining how they do their job					
30.	Employees can decide by their own how to go about doing their work					
31.	Employees have considerable opportunity for independence and freedom in how they do their job					
32.	Employees have a large impact on what happens in their section of this organization					
33.	Employees have a great deal of control over what happens in their section of this organization					

34.	Employees have significant influence over what happens in their section of this organization					
	Beside each statement, please tick the box that most accurately describes the operational outcomes that exist in your organization	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
1.	Compared to other organizations that do similar work, your organization's quality of products, or services over the past three years is better?					
2.	Compared to other organizations that do similar work, your organization's ability to develop new products, or services over the past three years is better?					
3.	Compared to other organizations that do similar work, your organization's ability to attract essential employees over the past three years is better?					
4.	Compared to other organizations that do similar work, your organization's ability to retain essential employees over the past three years is better?					
5.	Compared to other organizations that do similar work, your organization's satisfaction of customers or clients over the past three years is better?					
6.	Compared to other organizations that do similar work, the relationship between management and other employees of your organization over the past three years is better?					
7.	Compared to other organizations that do similar work, the relationship among employees in general at your organization over the past three years is better?					
	Beside each statement, please tick the box that most accurately reflects the financial performance of your organization	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1.	Compared to your competitors over the last three years, your organization's marketing activity is better?					
2.	Compared to your competitors over the last three years, your organization's growth in sales is better?					

3.	Compared to your competitors over the last three years, your organization's profitability is better?					
4.	Compared to your competitors over the last three years, your organization's market share is better?					
	Beside each statement, please tick the box that best describes the business strategy of your organization	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1.	My organization tries to produce goods and services more cheaply than competitors (It follows cost-reduction strategy)					
2.	My organization produces and delivers the highest possible quality goods and services (It follows quality-enhancement strategy)					
3.	My organization designs and produces complex and rapidly changing products and services that differ from those of competitors (It follows innovation strategy)					
	Beside the following statement, please tick the box that most accurately describes the level of technology that exists in your organization	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1.	As compared to competitors, the technology that is currently being used by your organization is better					

THE END

Could you please go over the questionnaire and check if all the items have been responded?

Thank you for taking the time to complete this questionnaire. Please return the completed questionnaire to me, Wondimagegne Assefa. If you have any questions or need further information, please do not hesitate to contact me by telephoning 0911890541 or emailing wondmau@gmail.com.

Appendix E: Semi-Structured Questionnaire Used to Collect Data from HR Professionals

1. How many employees do you have?

2. How many employees do you have at the head office in Addis Ababa?

3. How many managers (top, middle, and lower) do you have at the head office in Addis Ababa?

4. Do you have a labor union?

   A. Yes
   B. No

5. If your answer for question number 4 above is yes, what is the percentage of employees who are members of the labor union?

   A. Below 20 percent
   B. 21 – 40 percent
   C. 41 – 60 percent
   D. 61 – 80 percent
   E. Above 80 percent

6. Do you have corporate strategic plan?

7. Do you have business strategies?

8. Do you have HR strategy?

9. Are the goals HRM (HR strategy) linked to business strategy?

10. What is the main goal of your organization's HR strategy?