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Innovation Adoption, Implementation and the Impact on Public Sector Performance: An Analysis Using SEM Modeling for Ethiopia

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Abstract

Innovation in the public sector has become mandatory in the current globalized economy and turbulent environment. Using the cross-section sample of 743 employees and management officials of public sector organizations at the Federal and Addis Ababa City Administration in Ethiopia, the study explores the level of innovativeness and the barriers as well as driving factors of innovation. A mixed methods research design has been employed with an emphasis on quantitative data using a structural equation model (SEM). The findings reveal that there is an evidence of adoption and implementation of innovation practices in the civil service sectors of Ethiopia. The results confirm that innovation significantly and positively affected organizational performance. Government expectation, customer demand, and globalization are the major driving forces of innovation in the civil service sector. Lack of incentives and protection along with inappropriate organizational culture and structure are the major barriers to innovation in the public sector. The policy implication is that the government should design innovation policy and strategy and the civil service organizations should create appropriate organizational culture and structure to nurture and faster innovation.

Key Words: Innovation adoption, Implementation, Performance, SEM modeling, Public sector

1. Introduction

Faced with continuous improvement, technological changes and increasing competition, public sector organizations are trying to improve their performance through different innovations. Organizational innovation is considered vital for organizations to compete and survive in the current turbulent, competitive and continuously changing environment (Damanpour, 2017). During the last couple of decades, due to global competition, technological changes and increased citizens demand countries in developing world have been forced to adopt and implement innovative ideas to their public sector services in order to be able to adapt to a

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situation that is changing quickly and respond to the continuously increasing citizen's expectations (Okafor, Fatile, & Ejalonibu, 2014). In this age of austerity, where politicians highlight the need to "innovate to do more with less," innovation is a critical issue for public services and a crucial component of public services reform (Osborne & Brown, 2013). Innovation in the public sector services cannot be underestimated, because it is the central idea of public sector performance and productivity (Awosika, 2014). Innovation in the public sector has become mandatory in the current Covid-19 pandemic scenario, where public sector organizations are facing stern challenges in delivering their services and meeting citizen's demands (Azoulay & Jones, 2020). There is a continuously increasing demand for services, with rising citizen expectations around delivery of virtual services which are supported with innovative digital technologies (Papadopoulos, Baltas, & Balta, 2020).

Organizations must be open to the possibility of innovation due to rising customer demands, intense global rivalry, and very turbulent markets (Fay, Shipton, West, & Patterson, 2015). As a result, bureaucrats are struggling to increase performance in the current climate of rapid change in order to benefit from the New Public Management (NPM) and outperform the private sectors (Amusan & Oyekunle, 2016). The current global environment is highly characterized by ferocious competitor, incessant technological changes, and increased citizen's expectations, which require knowledge based economy with innovative public service (Bason, 2018).

Consequently, the need for innovation in the public sector has been well-recognized due to the understanding of that competence, knowledge, skill, product services and branding that are not competitive compared with the private sector may lead to poor performance results, low quality service and customer dissatisfaction (Bason, 2018). Public sector organizations face a number of innate obstacles with regard to innovation, due in part to the specific contexts in which they function. These can include complex, rigid organisational structures which limit the flow of information and reduce openness; regulation and formal processes that limit creativity; and inadequate investment for innovation. A key challenge is to understand how organisational structures, processes, and competencies should be adapted to design, monitor, implement public sector innovations, and make them work efficiently (Koch & Hauknes, 2005).

Previous research on innovation focused more on the private sector, especially on the industrial sector than the public sector, although innovation is an essential element of public service sector to meet citizen's demand and face their challenges (Sousa, Ferreira, Najberg, & Medeiros, 2015). Moreover, most public sector organizations in developing countries failed to adopt and implement innovation in order to deliver improved services (Amusan & Oyekunle, 2016). Scholars argue that, to quickly respond to the Covid-19 pandemic and other unpredicted crises, the public sector and public servants have to deploy quick thinking, instant creativity and innovation to counter the devastation caused by the pandemic in service delivery, particularly the health system and education sector (Papadopoulos et al., 2020).

However, there are still many challenges that need to be addressed in creating an innovative working environment in the public sector, which has been accustomed to operating in routine, predictable and regulated systems. On the other hand, De Vries, Bekkers, and Tummers (2016)

suggest that prior empirical research have focused on using qualitative methods, which necessitates the application of multi-method research approaches. Moreover, it has also been suggested that there is a need to study cross-sectoral differences regarding the adoption and implementation of innovation. Moreover, although the public sector organizations are trying to innovate across different services, sectors, and levels of government, there is still limited knowledge and analysis. Among other things, it is known that, for innovation to thrive, an unrestricted environment that fosters creative thinking and action is a necessity.

However, this is not always the case in the public sector, a context strongly defined by the existence of rules and regulations that impede innovative actions (Sousa et al., 2015). Understanding what makes successful innovations where the mechanics of change and its enabling factors are understood, along with the unique challenges faced by the public sector, as well as the needs and preferences of customers and citizens, is necessary for fostering creativity and innovation in the public sector (Bason, 2018).

Africa's ability to recover from the terrible Covid-19 outbreak and move forward depends largely on innovation. The continent's ability to generate sustainable jobs, and create new technologies to deliver services effectively and efficiently is highly dependent on the level of innovativeness. However, there is still lack of innovation capability in most of these countries in general and in the Ethiopian public sector in particular. The purpose of this study is, therefore, to investigate the adoption, implementation, and challenges in innovativeness of the public sector in Ethiopia. Due to these facts, this study examined the current extent of adoption and implementation of innovation in the Ethiopian Federal and Addis Ababa City Administration selected public sector organizations. The research also identified the factors that promote or hinder the adoption and implementation of innovation and the effect of innovation on the performance of public sector organizations.

The research is pursued with the following objectives: What is the current status of the public sector organizations to adopt and implement innovation? What are the driving forces that promote the adoption and implementation of innovation in the public sector? What are the barriers or challenges that hinder the effective adoption and implementation of innovation in the public sector? What is the effect of innovation on the performance of public sector organizations? The structure of the paper is as follows: Section 2 provides a brief review of related literature. Section 3 contains the research design, methods and findings, Section 4 presents a discussion on the results, and the final section provides the conclusion and the policy implications.

2. Literature Review

2.1 Conceptual Overview

Innovation is not a new phenomenon. Arguably, it is as old as human kind (Fagerberg, Mowery, & Nelson, 2005). In spite of its importance, innovation has not always received the scholarly attention it deserves. However, in recent years research on the role of innovation in economic and social change has flourished, particularly within the social sciences, and with a focus

towards cross-disciplinary. Sometimes invention and innovation have been used interchangeably to the extent that it is hard to distinguish one from another. However, an important distinction is made between the two concepts. According to Fagerberg et al. (2005) invention is the first occurrence of an idea for a new product or process, whereas, innovation is the first attempt to carry out into practice. Innovation has been defined in many different ways. Moreover, according to Hitt et.al, (2007), invention is the act of creating or developing a new product or process, whereas, innovation is the process of creating a commercial product from an invention. Thus, an invention brings something new into being, while an innovation brings something new into use.

For example, Schumpeter (1934) as cited in De Leede and Looise (2005) defined innovation as the creation of linkage between new ideas and markets, which is at the heart of the entrepreneurial role. The term innovation generally includes three types of innovations i.e., product innovation, process innovation and organizational innovation (Karim Suhag, Solangi, Larik, Lakh, & Tagar, 2017).

Organizational innovation refers to the development of a new organizational strategy that will change the organization's operational practices, as well as the way its workplace is organized and its relationship with external stakeholders. Organizational innovation is sometimes known as internal innovation. This kind of innovation can be again sub classified in to incremental and radical. Incremental is built on existing knowledge bases and provide small improvements in the current product lines. For this reason they are evolutionary and linear in nature. In contrast, radical innovations usually provide significant technological breakthrough and create new knowledge.

Process innovation is about implementing a new or improved production or delivery approach, including changes in operational methods, the techniques used and the equipment or software (Karim Suhag et al., 2017). Product innovation is the introduction of a new or improved good or service. These inventions or changes may have to do with improving technical specifications, the materials or the software used or even advancing on user experience (Agolla & Lill, 2013).

2.2 Innovation in the Public Sector

There is a continuous debate among scholars about the innovativeness of the public sector. Some scholars argue that the public sector is not innovative (Bekkers & Tummers, 2016). Whereas, others believe that, innovation in the public sector is alive and lively (Damanpour, 2017). Proponents of this view justify that; the public sector has undergone through continuous reformations and also introduced forms of electronic government, making use of the internet and social media, to improve the quality and efficiency of the public services. Innovation in the public sector is not very different from other sectors. It frequently happens as a pressing need for a solution to give better services with tighter budgets to citizens with rising expectations arises (Agolla & Lill, 2013). It is occasionally, but not always, a component of a reform agenda or a step taken to enhance how the current state apparatus operates.

Increasing worldwide competition, highly volatile markets and ever higher customer expectations make it necessary for organizations to be open to the prospect of innovation (Fay, et.al., 2015). Consequently, the need for innovation in the public sector has been well-recognized due to the understanding of that competence, knowledge, skill, product services and branding that are not competitive compared with the private sector may lead to poor performance results, low quality service and customer dissatisfaction (Amusan & Oyekunle, 2016).

The public sector is constantly subject to intense political pressure and must contend with social change. Because of this, innovation is essential to ensuring higher-quality services. In contemporary economies, the public sector has a very important function to play. Similar to the corporate sector, innovation has the potential to significantly increase productivity, reduce costs, and improve the quality of services. These advantages can then positively impact the individuals and businesses that depend on an effective and efficient public sector.

As a result, innovation performance across the economy is increasingly perceived as being dependent on the public sector's capacity for innovation (Amusan & Oyekunle, 2016). However, compared to those aimed at the commercial sector, public sector innovation policies and plans are significantly less advanced. Due to the distinct roles that the public and private sectors play in the economy, there are significant differences between the two in terms of incentives and motivation, resource allocation, and risk-taking behaviors. These differences have a significant impact on how innovation is carried out and how policy can support it (Bloch & Bugge, 2013).

The disruptive nature of innovation can sometimes appear to be at odds with the fundamental role of government institutions in reducing uncertainty and ensuring stability. A culture of risk aversion may be reinforced by the political environment in which public sector companies operate their highly visible activities, and the potentially serious repercussions of failure. Another key challenge is to develop risk management approaches, such as prototyping and piloting, and incentive structures that enable and reward public sectors to innovate efficiently while continuing to prioritize safety and the stewardship of public resources (Bason, 2018).

3. Research Design, Methods and findings

3.1. Research Approach and Design

In this study a concurrent mixed research approach has been used. The approach involves the collection of both qualitative and quantitative data simultaneously or in parallel within a single study. More weight is given to the quantitative data, the qualitative data playing a supportive role in addressing different issues. Based on the concurrent mixed research approach, a descriptive and explanatory research methods are applied in the data analysis.. The descriptive methods help in understanding the current practice regarding the adoption and implementation of innovation in the public sector and the explanatory methods help to verify the relationship between public sector innovativeness and organizational performance.

3.2. Study Area and the Sampling Methods

This study was conducted in the Federal Level and Addis Ababa City Administration selected Civil Service Organizations. The study population comprises all employees and management officials of public sector organizations at the Federal, and Addis Ababa City Administration level. The selection of these study areas is based on the fact that the federal government and institutions is the sole owner of innovation policy and strategies to be implemented throughout the country.

Addis Ababa City Administration is located together with the Federal government, which implies that the city is exposed to the adoption and implementation of innovation and other digital technologies based on the federal framework when compared to other regional states and city administrations. Accordingly, based on the data of the National Civil Service Human Resource Statistics (2018), at present there are 158, 617 (male = 93, 176 and female = 65, 441) permanent employees at Federal level and 115, 398 (male = 53, 898 and female = 61, 500) permanent employees at Addis Ababa City Administration. Thus the total study population of this research is 274, 015 permanent employees. We have used both probability and non-probability (purposive) sampling techniques in collecting data. The probability sampling technique was used to collect quantitative data through self-administered survey questionnaires, whereas, the non-probability sampling technique was used to collect qualitative data through semi-structured interviews.

A multi-stage sampling technique was applied in order to divide the research areas into two research sites (Federal and Addis Ababa City). Multi-stage is a sampling technique which is useful to choose a limited number of smaller geographic areas in which simple or systematic random sampling can be conducted. Consequently, based on the two research sites, we used a stratified random sampling technique in order to stratify the organizations in each cluster based on some common characteristics. As a result, the stratification of the public sector organizations within each cluster was based on their sector belongingness (i.e., social sector, economic sector, finance sector and administrative sector). Based on this stratification there are four strata and 4 public sector organizations that were selected from each stratum. Thus, a total of 32 organizations from the two clusters (research sites) were included in the study using simple random sampling method so that all public service organizations have an equal chance of being selected in the sample.

The sample size for each cluster was determined using the formula suggested by Yamane (1967) i.e. $n= N /1+ N (e)^{2}$. Where n is the sample size, N and e are the population and the margin of error respectively. Thus sample sizes of 383 and 360 were determined for Federal cluster and Addis Ababa cluster respectively, making a total of 743 as the sample size. In order to identify the sample size of each selected organization, the sample proportion was calculated by dividing the sample size by the total number of employees for each selected organization. In addition the sampling interval was decided by dividing the total number of employees in the selected organization by the sample size.

3.3. Data Sources and Methods

Both qualitative and quantitative data were used in order to investigate the current adoption and implementation of innovation in the civil service organizations. Primary data were collected using self-administered questionnaires distributed to selected sample respondents and through semi-structured interviews. In order to investigate the current adoption and implementation of innovation practices in the civil service organizations, a cross-sectional survey instrument was used in order to collect quantitative data. The instrument was implemented in two phases using 10 days interval to avoid the common method bias. In addition, VIF statistics are computed for all the constructs and they were below 3.3 as suggested in literature (Kock, 2015). A semi-structured interview was conducted to collect qualitative data from key informants. The data were transcribed using MaxQDA software. Efforts were made to ask similar questions framed in the questionnaire and an association analysis has been done. Based on the strength of association, the questions in the questionnaire were reframed. On the other hand, secondary data were collected from documents such as strategic plans, annual reports, and guidelines. .

Factor analysis was used in order to reduce the data (variables) and to identify the core underlying factors (uni-dimensionality) of research constructs. Both exploratory and confirmatory factor analyses methods were used in order to explore the underlying factors and confirm the proposed relationships. The statistical software, SPSS and AMOS were used for data analysis. Internal consistency is verified using Cronbach's alpha and composite reliability methods are used using Amos software. Content and construct validity was established discussing with subject experts. Convergent and discriminant validity of the variables is also verified.

Out of the total 743 questionnaires, 717 questionnaires were retained after verifying for missing data, outliers and patterns. For the final analysis 378 and 339 questionnaires from Federal and Addis Ababa respectively were used. This is about 96.5% response rate which is more than the minimum threshold value in social science research. Data analysis and results
The demographic characteristics of the participants are presented in table 1 below. .

3.4. Demographic Variables

The majority of the respondents were male (422) with the frequency of 58.9% and female participants were 295 with the frequency of 41.1%. On the other hand, the majority of civil servants who participated were first degree holders with a frequency of 65.3% followed by second degree holders (26.4%) with a few were having masters and PhD degrees, 7.8% and 0.06% respectively.

Table 3.1 Demographic Characteristics of the respondents

Variables		**Frequency**	**Percent (%)**	
Gender	Male	422	58.9	
	Female	295	41.1	
Education	Diploma	56	7.8	
	Degree	468	65.3	
	Masters	189	26.4	
	PhD	4	.6	
	Mean	**SD**	**Minimum**	**Maximum**
Experience	8.08	7.122	1	38
Age	35.2887	8.54509	21.00	59.00
Total (N)	717			

Source: Field Survey

Table 3.2 displays the results of the reliability test. The results confirm that all the variables have reported internal consistency above the minimum threshold value of 0.70.

Table 3.2 Reliability Test

No	**Variable**	**No. of Items**	**Cronbach's Alpha**
1	Product Innovation	6	.895
2	Process Innovation	5	.913
3	Innovativeness Level	12	.929
4	Driving Factors of Innovation	7	.860
5	Barriers of Innovation	11	.899
6	Innovation Performance	7	.887

Source: Own Computation

3.5. Factor Analysis

Before conducting the factor analysis, preliminary tests were undertaken. First the factorability of the data was checked by KMO and Bartlett's test of Sphericity. The results of both tests confirmed the factorability of the data. The next step was to perform exploratory factor analysis with principal component factoring and varimax rotation on innovation types. The result produced a single factor for both process and product innovation types. All the items were loaded significantly on a single component. Based on the earlier literature, the component was named as innovation. This single component factor analysis, explained 62% of the variance in innovation. This was further verified using confirmatory factor analysis and the model fit measures perfectly fit the one component model. As it can be seen in Figure 3.1, all the items of both product and process innovation loaded on a single component with above the minimum recommended threshold value of 0.5.

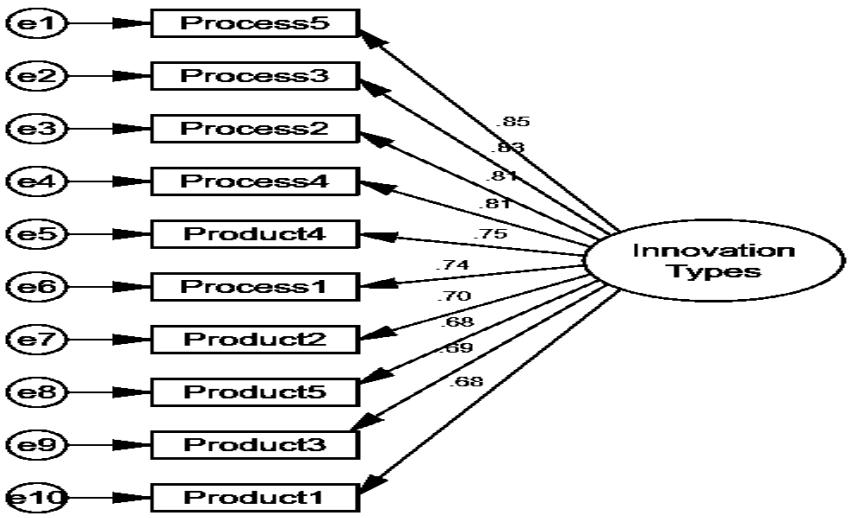

Figure 3.1: Results of Confirmatory Factor Analysis for Innovation Types

3.6. Driving factors of innovation

Table 3.3 presents the results of the driving factors of innovation adoption and implementation in the Ethiopian civil service organizations. Based on the results, the most driving forces of innovation are high level of government expectation with a mean value of (M = 3.7001, SD = 1.00316), followed by increasing customers demand with a mean value of (M= 3.6981, SD = 1.03899). Finally, globalization was also found to be the most significant driving force for innovation with a mean value of (M = 3.6555, SD = 1.09335).

Table 3.3 Descriptive Statistics of Driving Forces of Innovation

Variable	N	Mean	Std. Deviation
Leadership influence	717	3.2385	1.17482
Technological changes	717	3.3291	1.09488
Competition	717	3.1897	1.11754
Government policy & strategy	717	3.5411	1.08702
Increasing customers demand	717	3.6987	1.03899
High level of government expectations	717	3.7001	1.00316
Globalization	717	3.6555	1.09335
Valid N (listwise)	717		

Source: Field Survey

3.7. Barriers of innovation

Table 3.4 presents the results of the barriers that may affect the adoption and implementation of innovation in the public sector.

Table 3.4 Barriers of Innovation in the Public Sector

Statement	Mean	Std. Devn
Employees' reluctance to change	2.8257	1.21053
Low employees' competency (skill & knowledge)	3.0377	1.21328
Lack of sufficient information technology infrastructure	3.3515	1.23351
Rigid and complex organizational policies/strategies	3.3529	1.16976
Shortage of Research & Development budget	3.3794	1.21835
Inadequate government support	3.4338	1.18893
Inappropriate organizational structure to support innovation	3.4909	1.19776
Lack of Innovation strategy to promote innovation	3.5105	1.15016
Inappropriate organizational culture to support innovation	3.5453	1.13587
Impossibility or difficulty to protect innovations	3.5718	1.12585
Inadequate incentive and compensation systems for innovation	3.5858	1.14212

Source: Own Survey

As it can be understood from the table, the major barriers of innovation are inadequate incentive and compensation systems for innovation with a mean and standard deviation value of (M = 3.5858, SD = 1.14212) followed by difficulty to protect innovations with a mean and standard deviation value of (M = 3.5718, SD = 1.12585). Other barriers of innovation include, lack of innovation strategy, inappropriate organizational culture and structure to support innovation are also the major challenges that may influence the effective adoption and implementation of innovation in the Ethiopian civil service organizations.

3.8. The effect of innovation on the performance public sector organizations

The results confirm that, both process and product innovation significantly and positively affect the organizational performance. In addition, the items measuring product and process innovation were combined to measure the total (combined) effect of innovation on organizational performance. Again the result revealed that innovation significantly and positively influences organizational performance with *(B=0.343, P =0.000).* Further, the level of organizational innovativeness was included in the regression model to verify whether there is a relationship between innovativeness level and performance. The result confirmed that, organizational innovativeness significantly and positively affects organizational performance with *(B =0 .394, P = 0.000).*

Table 3.5: Model Summary

R Square	Adjusted R Square	Std. Error of the Estimate
0.486	0.484	.60737

Source: Own Computation

Table 3.6 Effect of Innovation on Performance

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.875	0.089		9.820	.000
Innovation	0.323	0.041	0.343	7.843	.000
Innovativeness	0.386	0.043	0.394	9.009	.000
Dependent Variable: Performance					

Source: Own Computation

Finally, in order to verify the causal relationships between innovation, innovativeness and organizational performance, a confirmatory factor analysis was performed using structural equation modeling. As it is indicated in Figure 3.2, both independent variables significantly and positively affect performance outcomes.

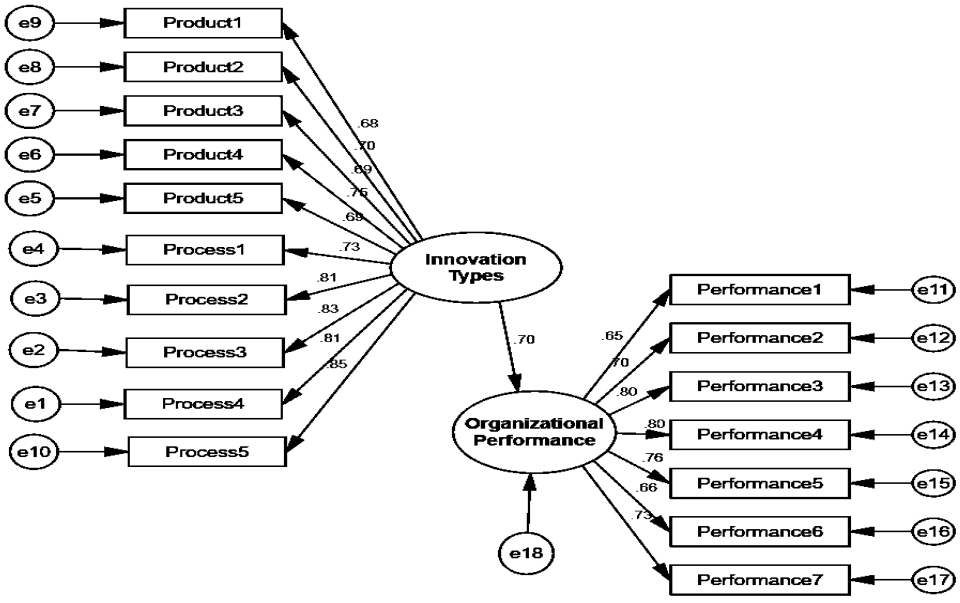

Figure 3.1 The effect of Innovation on Performance

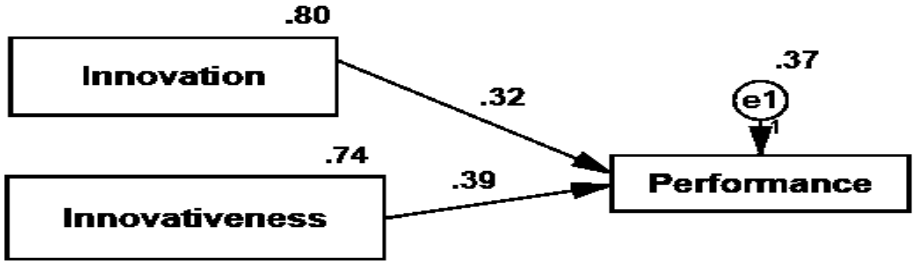

Figure 3.2 The Effect of Innovativeness on Performance

The study examined the joint effect of innovation and the level of innovativeness on organizational performance. As displayed in Figure 3.3, both innovation (product and process) and also the level of innovativeness of the civil service organizations significantly and positively affect organizational performance. Based on the result of the above structural model, all the model fit measures achieved above the minimum requirement threshold level (CFI = 0.977, AGFI = 0.956, X^2 = 2.12, RMSEA = 0.76 and SRMR = 0.053). The CFI and AGFI are above 0.90 indicating a very good fit and SRMR being less than 0.08. The Chi-Square value adjusted for degrees of freedom (0.212) is less than 3.3.

4. Discussion of Results

Innovations in the public sector mainly focus on processes, products, organisation and communication. Based on this general premise, this study investigated the current adoption and implementation of innovation the Ethiopian civil service organisations. The study also examined the driving forces and challenges of innovation.

The new public management (NPM) model has supported civil service reform for the past 20 years. This has concentrated on utilizing contracting-out, devolution, and performance management strategies from the private sector to increase the public sector's flexibility, decentralization, and responsiveness to user demands. Yet, the NPM model has, at times, led to organisational fragmentation, accountability and control gaps, poor institutional memory and inadequate democratic engagement among users.

When policy issues like globalization, international migration, and higher public expectations of government demand coordinated solutions, it has hampered joined-up government. The empirical findings of the study revealed that there is encouraging insight regarding the adoption and implementation of innovation in terms of process and product innovation types.

In this regard, Walker, Damanpour, and Devece (2011) stated that innovations are adopted by public organizations to improve the services delivered to users and citizens, with the broad aim of improving quality of life and building better and stronger communities. Previous empirical research also suggested that, in order to meet the increasing demand of citizens, governments should be innovative.

For many firms, innovation is a crucial driver of growth and a source of competitive advantage. Achieving innovation requires the coordinated efforts of many different actors and the integration of activities across specialist functions, knowledge domains and contexts of application. Thus, organizational creation is fundamental to the process of innovation.

Innovation in Public Sector Organisations (PSOs) is now recognized as a vital factor in meeting the challenges of globalization and demographic changes, while at the same time, sustaining a high level of services to citizens and businesses (Agolla & Lill, 2013). This study empirically demonstrated that, there are different driving factors of innovation in the public sector.

But, past empirical evidence and theoretical reviews suggested that, still there is a need for innovativeness in the public sector. For example according to Amusan and Oyekunle (2016), many emerging governments have reviewed their approaches to service delivery as a result of the

current economic climate, the effects of globalization, the desire for innovation, and the public's demand for better services.

The daily pressures of providing services, functioning, and reporting to senior managers, legislators, and agencies occupy the majority of public service managers' and professionals' time. They have very little or no time to consider innovation, which might lessen the demands and difficulties of providing services.

The public sector is operating in a new landscape. In this regard, public sector institutions face economic, social and environmental challenges; technology is also transforming how citizens interact with the government. Accordingly, individuals and organizations across society are forming new kinds of partnerships. Thus, together these factors create opportunities for new ways of thinking about government and how it works. Consequently, the sum of all these issues paved the way to think about innovation in the public sector to respond quickly to the increasing demand of citizens and to compete and survive in the current globalized world. As a result, the public sector is an important employer, service provider and procurer.

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Over the last twenty years, civil service reform has been underpinned by the new public management (NPM) model. This has focused on applying private sector techniques such as contracting-out, devolution and performance management to make the public sector more flexible, decentralised and responsive to users' needs. Yet, the NPM model has, at times, led to organisational fragmentation, accountability and control gaps, poor institutional memory and inadequate democratic engagement among users. It has impeded joined-up government at a time when policy challenges like globalization, international migration and greater public expectations of government require cohesive solutions.

5. Conclusion and Policy Implications

The present study tried to provide the evidence for the effect of innovation on public sector performance. Based on the findings, it is concluded that, the level of innovativeness in the public sector of Ethiopia is encouraging although it is still in its infant stage. Thus, the public sector should be able to create different platforms that may encourage product and process innovation. In this regard, the government should design innovation policy and strategy that help cultivate innovativeness and create a culture of innovation in the civil service sector organizations.

The results confirm that increasing government expectations, increasing customer demand and globalization are the important driving forces of innovation. As earlier research reveals, globalization stimulates innovation by domestic firms through the vertical transfer of capabilities and increases product market competition. In addition, there are major challenges that influence the effective adoption and implementation of innovation in the civil service organizations. Inadequate incentive and compensation systems for innovation, difficulty to protect innovation

and inappropriate organizational culture and structure are the major barriers that influence the effective adoption and implementation of innovation. Therefore, the government should be able to create a legal framework to protect process and product innovations.

There should be also national innovation strategy that highlights the government's direction regarding innovation in the public sector. On the other hand, civil service organizations must create innovative culture to promote and foster innovation within their respective organizations. A culture of innovation is a setting that encourages original thought and advances initiatives to derive economic and social value from knowledge, producing new or improved goods, services, or procedures in the process. In this regard, the theoretical literature suggests that, the most important driver of organizational innovation is the internal organizational culture. A culture that fosters innovation is one that actively promotes the unconventional and innovative thinking of its citizens and actively encourages it. In addition, appropriate organizational structure also plays a significant role in nurturing innovation.

According to Kalay and Lynn (2016), through their direct control over an organization's structure, organizational decision-makers have the ability to affect innovation within their company. For businesses to ensure strategic decision-making, the settlement of conflicts, and the active and efficient coordination of the process of innovation, organizational structures that enable cross-functional knowledge and resource sharing are essential.

The study empirically confirmed the positive and significant influence of innovation on organizational performance. Previous theoretical literature and empirical evidence demonstrated that innovation positively affects firm level performance outcomes. In this context, it has been proposed that innovation is widely regarded as one of the most significant sources of sustainable competitive advantage in a rapidly changing environment because it results in improvements to products and processes, makes ongoing advancements that aid in the survival of businesses, and enables businesses to grow more quickly, be more efficient, and ultimately be more profitable than non-innovators (Atalay, Anafarta, & Sarvan, 2013).

In general, public sectors managers need to change their attitude and manage these organisations like their counterparts in the private sector, while bearing in mind that they are accountable to the general public and government. They must create strong links with other public or private institutions, particularly in knowledge sharing, that feed innovations.

Public-sector innovation involves significant improvements in the services that government has a responsibility to provide, including those delivered by third parties. It covers both the content of these services and the instruments used to deliver them. Today increasingly sophisticated public demand and new challenges due to fiscal pressures require innovative public-sector approaches. Nowadays, innovation is gaining in importance in the public sector as well, as it can improve the quality of service delivery as well as reduce costs. Collaboration between public and private entities creates better and more effective public and private services and products.

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